



no 18



1881

ILLUSTRATED

CATALOGUE

PRINCE & BROS.
PHOTOGRAPHERS
SUPPLIES

108 W. FOURTH ST.
CINCINNATI, O.



T ERMS

AND

Important Remarks.

CASH, or COLLECT ON DELIVERY.

Persons unknown to us will remit part of the estimated amount of bill with order, remainder to be sent C. O. D.

Orders for shipment per freight lines must be accompanied with the amount of invoice.

As prices of all kinds of goods fluctuate, this catalogue gives merely their value at date of issue, and prices may change without notice. At all times orders will be filled at the market prices.

Do not order Gun Cotton, Liquids, Poisonous Chemicals or Glassware sent by mail.

We pack with the utmost care, but we can not be accountable for breakage in transportation.

New customers, seeking to establish a line of credit, will avoid delay by sending their references with order.

When goods are to be sent by mail, amount of postage must accompany remittance, and packages so sent are at purchaser's risk.

Orders for goods not made or kept in stock by us will be filled with the understanding that such goods can not be returned, or the prices, which we are obliged to charge, altered.

Remit by Express, Money Order, Draft, Post-Office Order, or Registered Letter.

We pay charges for return of money on all C. O. D's amounting to \$10.00 or over.

In estimating the cost of an order, always use the prices given in this catalogue, otherwise it will be laid aside until others properly made out are attended to. If too large an amount is sent, you will receive change immediately.

All open accounts must be settled once a month.

All orders will be shipped the same day as received, unless held for printing or embossing of cards.

Always mention when you wish goods sent by freight, otherwise we will use our own judgment as to express or freight.

Sullivan Printing Works, Cincinnati, O.

DESCRIPTIVE CATALOGUE

29697
... AND ...

PRICE LIST

... OF ...

PHOTOGRAPHIC APPARATUS

INCLUDING ALL THE

• DESIRABLE GOODS •

IN THE LINE OF

LENSES, CAMERAS,

AND OTHER APPARATUS AND MATERIALS FOR THE USE OF AMATEUR AND PROFESSIONAL PHOTOGRAPHERS.



L. M. PRINCE & BRO.,

108 West Fourth Street,

CINCINNATI, O.



:: PREFACE ::



THIS revised Catalogue of Photographic Supplies will, we believe, be found to be complete and reliable in every particular. Many novelties have been included, and indeed, every really desirable requisite of the Photographer has been listed. The prices will, we feel sure, favorably compare with any others, and the quality of our goods has been fully demonstrated during the past.

Customers can assure themselves of the promptest service by observing the following instructions:

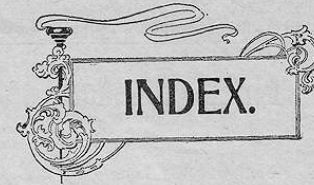
Indicate name and full address very clearly.

With the order enclose a post office or express money order for the amount of your purchase. These are safe forms of remittance. Stamps and money are not safe, as they are liable to be stolen.

State how goods are to be sent, by mail, express or freight.

If by mail, add enough to catalogue prices to pay for postage.

If no instructions are given, we will ship according to our best judgment.



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Photography.

PHOTOGRAPHY is growing more and more in favor the world over. It affords greater attractions than all the arts heretofore introduced in popular form, for while it answers fully the requirements of mechanical taste, it affords constant opportunities for the exercise of other intellectual qualities.

The Love of Pictures

and the desire to produce them in some form are prominent characteristics in the human mind. Formerly lovers of the beautiful tried to garner up the choice bits of nature with the aid of brush or pencil; but now how easy to save not only outline but detail as well with the camera.

Photography is Instructive,

enjoyable and very fascinating. It educates the eye, teaches one to observe more closely objects in the every-day walks of life, and is in every way elevating to the human mind. So simple and certain are its methods that an intelligent child can make admirable pictures; yet so mysterious are the causes which produce the exquisite results that scientists disagree and are in doubt as to their precise nature.

The Value of Photography

is now recognized by leading manufacturers, architects, engineers, artists, physicians, surgeons—in fact by men and women in nearly every walk of life.

For the Bicyclist

photography affords the means of securing a pictorial diary of the many scenes and incidents constantly passing in panoramic view, as he pedals mile after mile on his steed of steel.

In the following pages will be found apparatus designed especially for the use of wheelmen. So compact and portable are these new cameras, that they can be attached to a bicycle the same as a tool bag, without causing any inconvenience.

To the Tourist

photography affords a never ending source of enjoyment. To record with accuracy the events and scenes of his tour is an enjoyment at the time, and a greater one when he sees the finished photograph, which is always a valuable memento of a pleasant holiday.

Business Men

own a camera for the pleasure they derive from it, and as a source of relaxation from the cares of the office. The most enthusiastic amateurs are among those who stand high in the business world.

Manufacturers

recognize the value of photography as a means of accurately representing their products. A photograph of a machine or other wares gives a truthful and readily comprehended idea of their value; the minutest detail, which neither pencil, brush nor graver can portray accurately, is faithfully represented.

Insurance Men

use photography to a great extent to take views of risks for the home office, as a photograph conveys more definite knowledge than a sketch or diagram, and is much easier obtained.

Photography . . Continued.

Physicians and Surgeons

with the aid of a camera are able to note and preserve for reference photographs of the many interesting cases constantly being brought under their care. The exposure is all that is necessary to be made in the sick room, and requires but a few moments' time.

Sportsmen

will find the camera a valuable companion. Pictures of camp life will prove intensely interesting to the friends at home, who are thus enabled to catch a glimpse of life in the woods. Then too they are not "fish stories" when you can show a photograph of the "catch."

Artists

now use the camera to replace the slow process of sketching. Where it would require hours to sketch a view, it will take but a few seconds to make an exposure with the camera, and the minutest detail is preserved.

Architects

find the camera invaluable, as it enables them quickly and at a small cost to secure a record of their executed work to show a client when necessary. The power of a photograph to seize the minutest detail, gives it a value far beyond the most careful free-hand sketch. Not only is there a charm to the architect in photographing his own work, but the rapidity with which he can secure views makes photography of great value to him.

Engineers

find the camera a valuable aid, as in making reports to their chiefs of the progress of work on a contract, they find that a photograph will give a more definite idea than the longest written report. Photographs containing data as to the number of men employed, state of weather, etc., will convey an idea how much work a certain number of men will do in a given time.

Selecting a Camera.

A camera that will afford the amateur the most pleasure, and prove of the highest service, must possess such features as will adapt it for "all around work," as the field now covered by the ambitious photographer is a wide one, and constantly growing.

A good lens is the most important part of the outfit, as well as a durable time and instantaneous shutter, free from jar and vibration. Compactness is a desirable point, provided strength and rigidity are not sacrificed to secure it. Another feature, and one of great importance, is the ease with which the camera may be manipulated. It should be simply constructed and free from complicated parts. An instrument combining in the highest degree these important factors will be found to best meet the demands of the amateur photographer.

Can I Succeed?

We are frequently asked the question, "Can I succeed in making good photographs even though I have had no experience?" Our answer is "Yes." We wish it were more generally known how easy it is to make the most beautiful photographs. Provided the amateur is supplied with apparatus of approved quality, we have no hesitancy in emphasizing the statement that anyone of average intelligence and ability can readily produce pictures of the most satisfactory character without previous experience.

KODAKS.

There is no Kodak but the Eastman Kodak.

KODAK SIMPLICITY.

Freed from the annoying details with which it was formerly associated photography gains a double charm. In the kodak the amateur has an instrument which adds to the delights of picture taking by making it simple and easy and yet is lacking in nothing that is required for the very best photographic work. In every detail the kodak is constructed with a view to simplicity, but the "Cartridge System," which is the kodak's distinguishing feature, marks its superiority over other cameras.

COMPARATIVE WEIGHT.

All 1899 kodaks use our light proof film cartridges. They weigh but ounces where plates weigh pounds. A cartridge of twelve exposures 4 x 5, for instance, tips just 2½ ounces, while an equivalent in glass plates and the necessary holders weighs three pounds, about twenty times as much.



NON-BREAKABLE.

The cartridges are non-breakable; a half dozen can be carried in the pocket without inconvenience and they may be sent by mail without fear of damage.

DAYLIGHT LOADING.

Above all is the convenience of loading and unloading the kodak in broad daylight. In the cartridge system the film is put up in light-tight rolls that may be inserted in the kodak anywhere at any time. Extending the full length of the strip of film and several inches beyond each end is a strip of black paper, which, in connection with the flanges on the spool, forms a light-proof cartridge.

After inserting the cartridge spool in the kodak and threading up the black paper, the camera is closed and the key turned until the black paper has been reeled off and the sensitive film brought into place in the focal plane ready for the picture-taking to begin. The black paper runs with and behind the film, and at proper intervals is marked in white with the number of the section of film, 1, 2, 3, etc. In the back of the camera is a small window of red celluloid through which the figures appear as the key is turned. The figures as seen through the window thus show just how far to turn the key and how many exposures have been made. After all the exposures have been made a few extra turns of the key entirely covers the film with black paper, and the kodak may be unloaded in daylight.

LENSES.

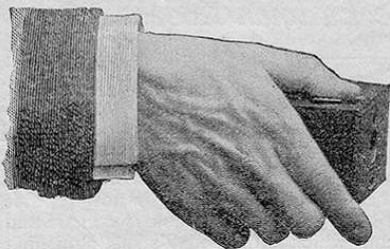
Every lens used by us is tested by our own inspector. Folding Pocket Kodaks, Falcon, Bullet and Bull's-Eye Kodaks, and the Nos. 2 and 4 Eureka Cameras have strictly achromatic lenses. The Bullet and Bull's-Eye Special, the Cartridge Kodaks and the Panoram Kodaks have lenses that are not only achromatic, but are rapid rectilinear as well, and all of our lenses are of sufficient focal length to avoid that disagreeable distortion found in some hand camera work. We allow none but perfect lenses to be used.

SHUTTERS.

All the shutters used in our cameras are mechanically accurate, are adapted to either time exposures or instantaneous work, and are provided with suitable sets of stops.

The Pocket Kodak.

CARTRIDGE SYSTEM.



Measures $2\frac{1}{4} \times 2\frac{1}{2} \times 3\frac{3}{8}$ inches, makes a picture $1\frac{1}{2} \times 2$ inches, and weighs only 5 ounces.

The lens is of the fixed focus type, and of sufficient length of focus ($2\frac{1}{2}$ inches) to avoid distortion.

Has improved rotary shutter and set of three stops for lens. The slides for changing stops and for time exposures are alongside of the exposure lever and always show by their position what stop is before the lens and whether the shutter is set for time or instantaneous exposures, thus acting as a warning.

A plate holder for glass plates can be provided with each Pocket Kodak, no extra attachment being required,

The change from a film to a plate camera can be made in a few seconds. A rectangular finder is provided for locating the image with accuracy.

They make negatives of such perfect quality that enlargements of any size can be made from them. We do it, at a reasonable price, or you can do it yourself with a Pocket Kodak enlarging camera.

The Pocket Kodaks are covered with fine leather, and the trimmings are handsomely finished and lacquered. They are elegant, artistic and durable.

PRICE.

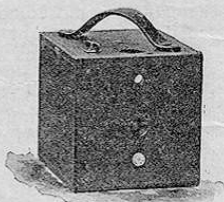
Pocket Kodak covered with fine leather, with roll of film for 12 exposures	\$ 5 00
Leather Hand Carrying Case (for Pocket Kodak and three extra spools of film). Price of case only,	75
Leather Bicycle Carrying Case (for Pocket Kodak and three extra spools of film). Price of case only,	1 00
Film Cartridges, 12 exposures	25
Complete A B C Developing and Printing Outfit	1 50
Pocket Kodak Plate Holders	each, 25
Glass Plates for Pocket Kodak	per doz., 20

No. 2 Falcon Kodak.

For square pictures $3\frac{1}{2} \times 3\frac{1}{2}$ inches; capacity, 12 exposures without reloading; size of camera, $4\frac{1}{2} \times 4\frac{1}{2} \times 5\frac{3}{4}$ inches, = 116 cubic inches; weight, 19 ounces; length of focus of lens, $4\frac{1}{2}$ inches.

This camera is built on the Cartridge System and can be loaded in daylight. The No. 2 Falcon lenses have a fixed focus of $4\frac{1}{2}$ inches, are strictly achromatic and are given the most rigid tests. No other five dollar camera is equipped with a lens of equal depth, definition and rapidity. Set of three stops, view finder, socket for tripod screw and safety shutter, which is perfectly adapted to time or instantaneous exposures.

Well made, covered with grain leather and handsomely finished. Can be readily carried on the bicycle by use of our special cases.



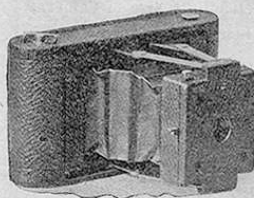
NOTE—The prospective purchaser should bear in mind that the price of the Falcon Kodak includes every requisite for taking pictures except the film, whereas the price of most of the so-called five-dollar plate cameras includes only one plate holder, and a further expenditure of \$2 or \$3 is necessary if it is desired to make more than two exposures between each trip to the dark room.

PRICE.

No. 2 Falcon Kodak, not loaded.....	\$5 00
Light-proof Film Cartridge, 12 exposures. $3\frac{1}{2} \times 3\frac{1}{2}$	60
Black Sole Leather Carrying Case	1 25
Complete Bull's-Eye Developing and Printing Outfit	1 00

No. 1 Folding Pocket Kodak.

For Rectangular Pictures $2\frac{3}{4} \times 3\frac{3}{4}$ inches; Capacity, 12 exposures without reloading; Size of Kodak, $1\frac{1}{8} \times 3\frac{1}{2} \times 6\frac{3}{8}$ inches; Weight, $14\frac{1}{2}$ ounces; Length of Focus of Lens, 4 inches.



In this Kodak we have adapted the Film Cartridge System to an instrument that has been appropriately called a "Photographic Pocket Piece." Though but a trifle over one and one-half inches in thickness, and so light as hardly to be noticed when carried in the pocket, it is in every way a complete camera.

The lenses used in these instruments are specially ground, are strictly achromatic, are carefully tested by an experienced inspector, and have a fixed focus of 4 inches, a sufficient length to avoid that violent perspective which is so disagreeable in many amateur photographs. They are in short the finest achromatic lenses that can be made, covering the plate clear and sharp to the very corners.

The shutter is entirely new and is simplicity itself. It is always set. A single downward pressure on one exposure lever makes a snap shot. The instant the pressure is removed the shutter sets itself ready for the next exposure. A pressure on another lever opens the shutter for time exposure while a second pressure closes it.

It has a set of three stops and is equipped with two view finders, one for vertical and one for horizontal exposures. There are no loose parts to become lost or mislaid, and to load the instrument is simplicity itself. Made of aluminum, covered with the finest black morocco, with handsomely nicked fittings, it is at once strong, dainty and durable. In short, the Folding Pocket Kodak is an instrument of the finest quality and workmanship, but of the smallest compass; and, though a practical pocket camera makes pictures of good size and of artistic shape, and so sharp that they can be enlarged to any size.

Can be readily carried on the bicycle by the use of our special cases.

No. 1 Folding Pocket Kodak with achromatic lens, not loaded.....	\$10 00
Light-proof Film Cartridge, 12 exposures, $2\frac{3}{4} \times 3\frac{3}{4}$	40
Black Sole Leather Carrying Case.....	1 25
Complete Developing and Printing Outfit	1 50

No. 2 Folding Pocket Kodak.

For Square Pictures $3\frac{1}{2} \times 3\frac{1}{2}$ inches; Capacity, 12 exposures without reloading; Size of Kodak, $1\frac{1}{2} \times 4\frac{1}{2} \times 6\frac{3}{4}$ inches; Weight, $16\frac{1}{2}$ ounces; Length of Focus of Lens, $4\frac{1}{2}$ inches.

In the No. 2 Folding Pocket Kodak we have adapted the popular $3\frac{1}{2} \times 3\frac{1}{2}$ size to a pocket instrument of extreme lightness and mechanical perfection. It slips readily into an ordinary coat pocket, and being in every way equipped for the best photographic work it marks a distinct advance in Pocket Photography.

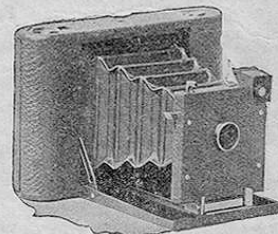
The lenses are the finest meniscus achromatic, having wonderful depth, definition and speed, and cover fully with the largest stop opening. They have a fixed focus of $4\frac{1}{2}$ inches, a sufficient length to overcome the violent perspective seen in so many hand camera pictures, and each one is given a rigid photographic test by our own inspector.

The shutter is the same as that which during 1898 proved so deservedly popular on the No. 1 Folding Pocket. It is always set. A single downward pressure on one exposure lever makes a snap shot. The instant the pressure is removed the shutter sets itself ready for the next exposure. A pressure on another lever opens the shutter for time exposure while a second pressure closes it.

Fitted with set of three stops, socket for tripod screw and square finder. There are no loose parts to become lost or mislaid, and to load the instrument is simplicity itself. Made of aluminum, covered with the finest black morocco, with handsomely nicked fittings, it is at once strong, dainty and durable. An instrument of the finest quality and workmanship, but of the smallest compass. Makes pictures of good size and so sharp that they can be enlarged to any size.

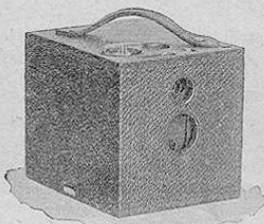
Can be readily carried on the bicycle by the use of our special cases.

No. 2 Folding Pocket Kodak with achromatic lens, not loaded.....	\$15 00
Light-proof Film Cartridge, 12 exposures, $3\frac{1}{2} \times 3\frac{1}{2}$	60
Black Sole Leather Carrying Case.....	1 25
Complete Bull's-eye Developing and Printing Outfit	1 00

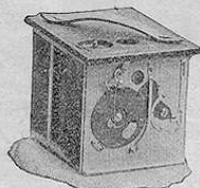


No. 2 Bull's-Eye Kodak.

For Square Pictures, $3\frac{1}{2} \times 3\frac{1}{2}$ inches; Capacity, 12 exposures without reloading; Size of Camera, $4\frac{1}{2} \times 4\frac{1}{2} \times 5\frac{1}{2}$ inches = 116 cubic inches; Weight, 24 ounces; Length of Focus of Lens, $4\frac{1}{2}$ inches.



Ready for Use.



Showing Shutter.

This Camera is built on the "Cartridge System," and can be loaded in daylight. Fitted with fixed focus, meniscus achromatic lens of the finest quality, set of three stops, socket for tripod screw, and improved rotary shutter for snap shots or time exposures. The slides for changing stops and for time exposure are alongside of the exposure lever, and always indicate by their position what stop is before the lens, and whether the shutter is set for time or instantaneous exposure. There is, therefore, no danger of committing the too common error of making snap shots with the smallest stop in the lens, or setting the shutter for a time exposure when a snap shot is intended, or vice versa. Handsomely finished with fine grain leather covering and nickeled fittings.

Can be readily carried on the bicycle by use of our special cases.

No. 2 Bull's-Eye Kodak fitted with achromatic lens, not loaded.....	\$ 8 00
Light-proof Film Cartridge, 12 exposures, $3\frac{1}{2} \times 3\frac{1}{2}$	60
Black Sole-Leather Carrying Case.....	1 25
Complete Bull's-Eye Developing and Printing Outfit.....	1 00

No. 2 Bull's-Eye Special Kodak.

For Square Pictures, $3\frac{1}{2} \times 3\frac{1}{2}$ inches; Capacity, 12 exposures without reloading; Size of Camera, $4\frac{1}{2} \times 4\frac{1}{2} \times 6\frac{1}{2}$ inches = 140 cubic inches; Weight, 28 ounces; Length of Focus of Lens, 5 inches.



This instrument combines the extreme simplicity of the Cartridge System, as exemplified in the No. 2 Bull's-Eye with a shutter and lens of the finest quality.

The shutter is, in fact, the Eastman triple action, which is furnished with the Cartridge Kodaks, but arranged to work with a finger release instead of with a bulb. It has three speeds for instantaneous exposures, and by the moving of a single lever can be instantly changed from instantaneous to time or to "Lever" exposures—the latter being used for very short "time exposures," the shutter remaining open as long as the exposure lever is kept under pressure, and closing the instant it is released. This shutter is fitted with iris diaphragm stops graduated for Nos. 4, 8, 16, 32, 64 and 128. The shutter is set and operated without opening the front, except to change stops or change action from time to instantaneous, or vice versa.

No expense has been spared in fitting this instrument with a lens of the finest quality. It has a fixed focus, a length of 5 inches, is strictly rectilinear and very rapid, with wonderful depth and definition. Every lens being carefully tested by our own expert, the highest quality will be maintained. In short, each one must be perfect.

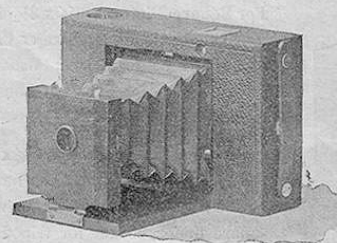
This Kodak has square finder, socket for tripod screw, nickeled fittings, is covered with fine black morocco and beautifully finished.

Can be readily carried on a bicycle by the use of our special cases.

No. 2 Bull's-Eye Special Kodak, with rapid rectilinear lens and Eastman triple action shutter with iris diaphragm stops, not loaded.....	\$15 00
Light-proof Film Cartridge, 12 exposures, $3\frac{1}{2} \times 3\frac{1}{2}$	60
Black Sole-Leather Carrying Case.....	1 25
Complete Bull's-Eye Developing and Printing Outfit.....	1 00

No. 2 Folding Bull's-Eye Kodak.

For Square Pictures, $3\frac{1}{2} \times 3\frac{1}{2}$ inches; Capacity, 12 Exposures without reloading; Size of Camera closed, $1\frac{3}{4} \times 4\frac{1}{2} \times 7\frac{1}{2}$ inches; Weight, 15 ounces; Length of Focus of Lens, $4\frac{1}{2}$ inches.



Being but $1\frac{3}{4}$ inches in thickness when closed is very convenient to carry. Will go in an ordinary overcoat pocket.

Built on the "Cartridge System," and can be loaded in daylight. Fitted with fixed focus, achromatic lens, set of three stops, socket for tripod screw and improved rotary shutter for snap shots or time exposures. The slides for changing stops and for time exposure are near the exposure lever and always indicate by their position what stop is before the lens, and whether the shutter is set for time or instantaneous exposure. There is, therefore, no danger of committing the too common error of making snap shots with the smallest stop in the lens, or setting the shutter for a time exposure when a snap shot is intended, or vice-versa. Handsomely finished with fine grain leather covering.

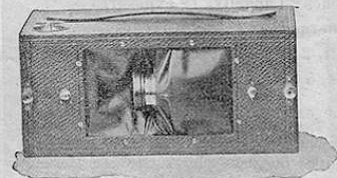
Can be readily carried on the bicycle by use of our special clamps and the regular hand case.

No. 2 Folding Bull's-Eye Kodak, for $3\frac{1}{2} \times 3\frac{1}{2}$ pictures.....	\$10 00
Transparent Film Cartridge, 12 exposures, $3\frac{1}{2} \times 3\frac{1}{2}$	60
Black Sole Leather Carrying Case, with strap.....	1 25
Complete Bull's-Eye Developing and Printing Outfit.....	1 00

No. 4 Panoram-Kodak.

USES No. 4 BULL'S-EYE FILM CARTRIDGES.

For Pictures $3\frac{1}{2} \times 12$ inches, Size of Camera, $4\frac{1}{2} \times 5\frac{1}{2} \times 10\frac{1}{2}$ inches; Weight, 2 pounds 6 ounces; Length of Focus of Lens, 5 inches.



Broad landscapes, views of cities from high buildings, the intersections of wide streets, river and marine views—all offer to the photographer beautiful panoramic effects that are well worth preserving, but which are beyond the scope of the ordinary camera. It is to put into the hands of the photographer an instrument capable of taking such views in all their breadth and beauty that we offer the Panoram-Kodak. It will fill this niche in the photographer's outfit and fill it perfectly. The Panoram-Kodak is not intended for interiors or time exposures, the very nature of the instrument preventing its use in this way, and we do not, therefore, recommend its purchase by anyone not already having another instrument for ordinary work.

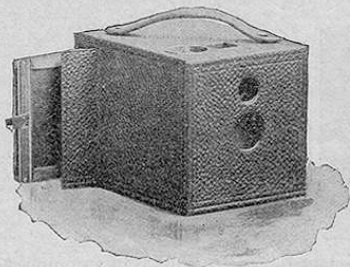
The No. 4 Panoram-Kodak has a scope of view 142° , with a rapid rectilinear 5-inch focus lens, revolving through the arc of the circle and covering fully. Stop opening of lens is $f. 10$ and the shutter working practically in the focal plane allows of extreme speed. Detachable handle allows of carrying by either the side or the top. Space in back provides for carrying two extra film cartridges. Fitted with tripod socket. V shaped lines on top show the operator the scope of view. Has nickeled fittings, is covered with the finest black morocco and beautifully finished.

No. 4 Panoram-Kodak, rapid rectilinear lens, not loaded.....	\$20 00
Light Proof Film Cartridge, 5 exposures, $3\frac{1}{2} \times 12$ (regular No. 4 Bull's-Eye Cartridges).....	90
Black Sole Leather Carrying Case.....	2 00

No. 2 Bullet Kodak.

FOR FILMS AND PLATES.

For Square Pictures $3\frac{1}{2} \times 3\frac{1}{2}$ inches; Capacity, 12 exposures without reloading; Size of Camera, $4\frac{1}{4} \times 4\frac{3}{4} \times 6\frac{1}{4}$ inches; =137 cubic inches; Weight, 26 ounces; Length of Focus of Lens, $4\frac{1}{2}$ inches.



Showing No. 2 Bullet adapted to Plates.

The Improved Bullet uses either roll films or glass plates (with plates the picture is $3\frac{3}{4} \times 3\frac{1}{2}$ inches), and being built on the "Cartridge System" can be loaded in daylight. It is fitted with a fixed focus, meniscus achromatic lens, set of three stops, square finder, socket for tripod screw, and has our improved rotary shutter for snap shots or time exposures. The slides for changing stops and for time exposures are alongside of the exposure lever and always show by their position what stop is

before the lens, and whether the shutter is set for time or instantaneous exposure. There is, therefore, no danger of committing the too common error of making snap shots with the smallest stop in the lens, or setting the shutter for a time exposure when a snap shot is intended, or vice versa. Handsome finish, nickel fittings, covered with fine leather.

Can be readily carried on the bicycle by use of our special cases.

No. 2 Bullet Kodak, for film and plates, fitted with achromatic lens, not loaded.....	\$10 00
Light-proof Film Cartridge, 12 exposures, $3\frac{1}{2} \times 3\frac{1}{2}$	60
Single Plate Holders, $3\frac{3}{4} \times 3\frac{1}{2}$ inches, each.....	60
Black Sole Leather Carrying Case.....	1 25
Complete Bull's-eye Developing and Printing Outfit.....	1 00

No. 2 Bullet Special Kodak.

FILMS AND PLATES.

For Square Pictures $3\frac{1}{2} \times 3\frac{1}{2}$ inches; Capacity, 12 exposures without reloading; Size of Camera, $4\frac{3}{4} \times 4\frac{3}{4} \times 7\frac{1}{2}$ inches =182 cubic inches; Weight, 2 lbs. 1 oz.; Length of Focus of Lens, 5 inches.

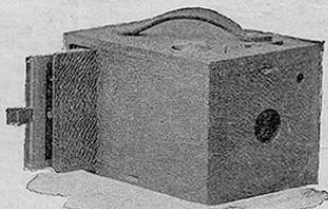
This instrument combines the extreme simplicity of the Cartridge System, with a shutter and lens of the finest quality, and can be used with film cartridges or glass plates. (With plates the picture is $3\frac{3}{4} \times 3\frac{1}{2}$ inches.)

The shutter is the Eastman triple action, but arranged to work with a finger release instead of with a bulb. It has three speeds for instantaneous exposures, and by the moving of a single lever can be instantly changed from instantaneous to time or to "Lever" exposures. The shutter is fitted with iris diaphragm stops graduated for Nos. 4, 8, 16, 32, 64 and 128. The shutter is set and operated without opening the front except to change stops or change action from time to instantaneous, or vice versa.

No expense has been spared in fitting this instrument with a lens of the finest quality. It has a fixed focus of 5 inches, is strictly rectilinear and very rapid, with wonderful depth and definition. Square finder, socket for tripod screw, covered with fine black morocco. Nickel fittings and beautiful finish.

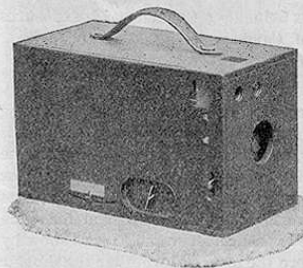
Can be readily carried on a bicycle by the use of our special cases.

No. 2 Bullet Special Kodak, for film and plates, with rapid rectilinear lens and Eastman triple action shutter with iris diaphragm stops, not loaded.....	\$18 00
Light-proof Film Cartridge, 12 exposures, $3\frac{1}{2} \times 3\frac{1}{2}$	60
Double Plate Holders, $3\frac{3}{4} \times 3\frac{1}{2}$, each.....	1 00
Black Sole Leather Carrying Case.....	1 25
Complete Bull's-eye Developing and Printing Outfit.....	1 00



No. 4 Bull's-Eye Kodak.

For Rectangular Pictures, 4 x 5 inches; Capacity, 12 exposures without reloading; Size of Camera, $5 \times 5\frac{1}{2} \times 9\frac{1}{4}$ inches=268 cubic inches; Weight, 2 pounds 10 ounces; Length of Focus of Lens, $6\frac{1}{4}$ inches.



The No. 4 Bull's-Eye is fitted with an achromatic lens of superior quality, having a set of three stops; has two finders, one for vertical and one for horizontal exposures; and is also provided with two sockets for tripod screws, one for vertical and one for horizontal exposures. Fitted with our improved rotary shutter, for snap shots or time exposures. The slides for changing stops and for time exposures are alongside of the exposure lever and always show by their position what stop is before the lens, and whether the shutter is set for time or instantaneous exposure. There is, therefore, no danger of committing the too common error of making snap shots with the smallest stop in the lens, or setting the shutter for a time exposure when a snap shot is intended, or vice-versa. It has a carefully adjusted focusing scale, and, being built on the "Cartridge System," can be loaded in daylight.

Handsome finish, nickel fittings, covered with fine leather.

No. 4 Bull's-Eye Kodak, fitted with achromatic lens (not loaded).....	\$12 00
Light Proof Film Cartridge, 12 exposures, 4 x 5.....	90
Black Sole Leather Carrying Case.....	2 00
Prince's Complete Developing and Printing Outfit.....	1 50

No. 4 Bull's-Eye Special Kodak.

For Rectangular Pictures, 4 x 5 inches; Capacity, 12 exposures without reloading; Size of Camera, $5 \times 5\frac{1}{2} \times 8\frac{3}{4}$ inches=257 cubic inches; Weight, 2 pounds 12 ounces; Length of Focus of Lens, $6\frac{1}{2}$ inches.

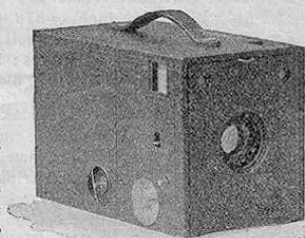
This instrument combines with the simplicity of the original No. 4 Bull's-Eye, a rapid rectilinear lens of superior quality and the Eastman triple action shutter, which has given such perfect satisfaction on the Cartridge Kodak. The shutter is, however, arranged to work with finger release instead of bulb. It has three speeds for instantaneous exposures, and by the moving of a single lever can be instantly changed from instantaneous to time or to "lever" exposures, the latter being used for very short "time exposures," the shutter remaining open as long as the exposure lever is kept under pressure, and closing the instant it is released. This shutter is fitted with iris diaphragm stops graduated for Nos. 4, 8, 16, 32, 64 and 128. The shutter is set and operated without opening the front except to change stops or change action from time to instantaneous or vice-versa.

Fitted with two finders, one for vertical and one for horizontal exposures, and two sockets for tripod screw. It has a carefully adjusted focusing scale, and being built on the "Cartridge System" can be loaded in daylight.

The construction is of the strongest, the finish rich and elegant. The No. 4 Bull's-Eye Special Kodak is, in short, the most convenient of high grade 4 x 5 cameras, and will be fully appreciated by those who demand the very best in camera construction but who prefer the box to the folding form because it is always ready for use.

Covered with fine black morocco with nickeled fittings.

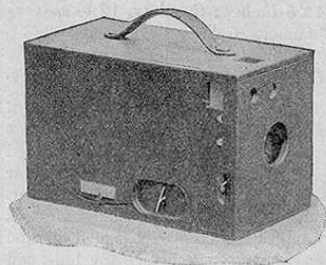
No. 4 Bull's-Eye Special Kodak, rapid rectilinear lens, Eastman triple action shutter, with iris diaphragm stops (not loaded).....	\$20 00
Light Proof Film Cartridge, 12 exposures, 4 x 5.....	90
Black Sole Leather Carrying Case.....	2 00
Prince's Complete Developing and Printing Outfit.....	1 50



No. 4 Bullet Kodak.

FOR FILMS AND PLATES.

For Rectangular Pictures, 4 x 5 inches; Capacity, 12 exposures without reloading; Size of Camera, $5\frac{1}{4} \times 6 \times 9\frac{3}{4}$ inches = 307 cubic inches; Weight 3 pounds; Length of Focus of Lens, $6\frac{1}{4}$ inches.



The No. 4 Bullet uses either roll films or glass plates, and, being built on the "Cartridge System," can be loaded in daylight. It is fitted with an achromatic lens, set of three stops, two finders, one for vertical and one for horizontal exposures, two sockets for tripod screw, and has our improved rotary shutter for snap shots or time exposures. The slides for changing stops and for time exposures are alongside of the exposure lever and always show by their position what stop is before the lens, and whether the shutter is set for time or instantaneous exposure. There is, therefore, no danger of committing the too common error of making snap shots with the smallest stop in the lens, or setting the shutter for a time exposure when a snap shot is intended, or vice-versa.

Handsome finish, with nickel fittings, and covered with fine leather.

No. 4 Bullet Kodak, for film and plates, fitted with achromatic lens (not loaded) ..	\$15 00
Light Proof Film Cartridge, 12 exposures, 4 x 5	90
Single Plate Holders, 4 x 5 inches, each	75
Black Sole Leather Carrying Case	2 00
Prince's Complete Developing and Printing Outfit	1 50

No. 4 Bullet Special Kodak.

FOR FILM AND PLATES.

For Rectangular Pictures, 4 x 5 inches; Capacity, 12 exposures without reloading; Size of Camera, $5\frac{1}{2} \times 6\frac{1}{4} \times 10\frac{3}{4}$ inches = 373 cubic inches; Weight, including roll holder, 3 pounds, 12 ounces; Length of Focus of Lens, $6\frac{1}{2}$ in.

In the No. 4 Bullet Special Kodak we offer in box form an instrument of the highest grade and greatest efficiency, adapted to either plates or film cartridges. Has the finest rapid rectilinear lenses, Eastman triple action shutter, and is capable of a wide range of work. It is simple to operate, instantly ready for use, is of the strongest construction, and is rich and elegant in finish. Unlike the other Bullet Kodaks the roll holder is detachable (the regular No. 4 horizontal cartridge roll holder, see page 13), and being equipped with a dark slide is interchangeable with plate holders in the field and permits of focusing on the ground glass when using film.

The shutter is the Eastman pneumatic, arranged to work with a finger release instead of a bulb. It has three speeds for instantaneous exposures, and by the moving of a single lever can be instantly changed from instantaneous to time or to "lever" exposures. Fitted with iris diaphragm stops graduated for Nos. 4, 8, 16, 32, 64 and 128. The shutter is set and operated without opening the front. Fitted with finders and tripod sockets for both vertical and horizontal exposures, and has carefully adjusted focusing scale. Handsome leather covering, nickeled fittings.

No. 4 Bullet Special Kodak, for film or plates, including cartridge roll holder and one double plate holder, rapid rectilinear lens, Eastman triple action shutter, iris diaphragm stops (not loaded)	\$25 00
Do. with one double plate holder, but without roll holder	20 00
Cartridge Roll Holder for No. 4 Bullet Special	5 00
4-inch Light Proof Roll Holder Cartridge, 12 exposures, 4 x 5	90
Double Plate Holders, 4 x 5 inches, each	1 00
Black Sole Leather Carrying Case	2 25
Prince's Complete Developing and Printing Outfit	1 50

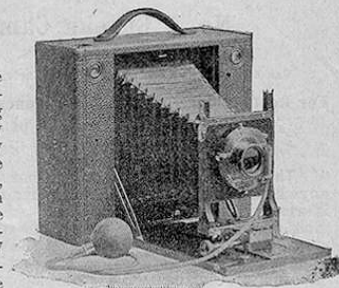


Cartridge Kodaks.

In the Cartridge Kodaks we have adapted the "Film Cartridge System" to Folding Kodaks of the finest quality and greatest capabilities. They are hardly more than half the thickness of other cameras, which are adapted to both film and plates, and are the only folding instruments capable of taking 4 x 5 and 5 x 7 pictures and having the daylight loading feature. We never place a camera upon the market until we have



Cartridge Kodak Closed.



Cartridge Kodak Open.

thoroughly tested its actual working qualities under all conditions, and the finished product is always an improvement over the first model, but in our years of experience in camera making no instrument which we have introduced has been so carefully planned, so severely tested, or has been the subject of so much thought and experiment as the Cartridge Kodak. The result is an instrument which is the embodiment of photographic perfection.

The Cartridge Kodaks of both sizes use either our daylight loading film cartridges or glass plates, are fitted with carefully tested rapid rectilinear lenses and our pneumatic release shutter fitted with iris diaphragm stops. This shutter has three speeds for instantaneous exposures; it makes short time exposures by one pressure of the bulb, the shutter closing when the bulb is released; and makes longer time exposures by pressing the bulb once to open the shutter and again to close it. It may be operated by the finger trigger instead of the bulb when so desired.

The Cartridge Kodak is provided with a rising, sliding and falling front, two view finders, one for vertical and one for horizontal exposures, two sockets for tripod screws; has Eastman's patent non-collapsing bellows, and is equally perfect as a hand or as a tripod camera. It has an index for focusing and when used with plates may be focused on the ground glass if desired.

When used with film there are no projecting parts, no attachments to become lost, no extras to be mislaid. The plate adapter is simple and compact, and can be put in place or removed in five seconds.

Both the No. 4 and No. 5 Cartridge Kodaks are perfectly adapted to use on the wheel and can be readily carried by the use of our special cases. For the wheelman's use no cameras capable of making 4 x 5 or 5 x 7 pictures are to be compared with the Cartridge Kodaks. A Film Cartridge for 12 exposures, 5 x 7, weighs 4 ounces. An equivalent in glass plates and the necessary holders weighs 4 pounds. The moral is obvious.

Strength and reliability have not been sacrificed to mere lightness, nor efficiency to compactness. The finish is rich and beautiful. When closed for carrying they are inconspicuous, there being no metal parts in sight, even the key, which is in the bottom of the camera, being recessed and entirely hidden from view. When open for use it exposes to view a bed and front board of highly polished mahogany with buffed brass fittings set off in brilliant contrast by the highly polished nickeled shutter. In short, it has in a superlative degree that rich and dainty finish which characterizes all our goods.

No. 4 Cartridge Kodak.

FOR FILM AND PLATES.

For Rectangular Pictures 4 x 5 inches; Capacity, 12 exposures without reloading; Size of Camera, $3\frac{1}{2} \times 6\frac{3}{4} \times 8\frac{3}{4}$ = 167 cubic inches; Weight, 2 lbs. 10 oz.; Length of Focus of Lens, $6\frac{1}{2}$ inches.

*No. 4 Cartridge Kodak with Rapid Rectilinear lens and Eastman Pneumatic Shutter ..	\$25 00
Light-proof Film Cartridge, 12 exposures, 5 x 4 inches	90
Glass Plate Adapter with ground glass	2 50
Double Glass Plate Holders, each	1 00
Prince's Complete Developing and Printing Outfit	1 50

No. 5 Cartridge Kodak.

FOR FILM AND PLATES.

For Rectangular Pictures 5 x 7 inches; Capacity, 12 exposures without reloading; Size of Camera, $3\frac{1}{2} \times 8\frac{1}{2} \times 10\frac{3}{4}$ = 280 cubic inches; Weight, 3 lbs. 15 oz.; Length of Focus of Lens, $8\frac{1}{2}$ inches.

*No. 5 Cartridge Kodak with Rapid Rectilinear lens and Eastman Pneumatic Shutter ..	\$35 00
Light-proof Film Cartridge, 12 exposures, 7 x 5 inches	1 60
Glass Plate Adapter with ground glass	3 00
Double Glass Plate Holders, each	1 25
Prince's 5 x 7 Developing and Printing Outfit	2 00

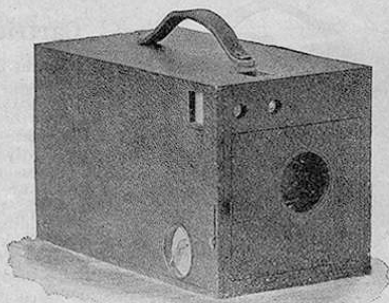
*Customers having favorite lenses or shutters can have them fitted to these cameras at a small extra charge. All matters of change in equipment should, however, be made the subject of correspondence.

No. 4 Eureka Camera.

FOR GLASS PLATES.

Can be used with Film by addition of Cartridge Roll Holder.

For Rectangular Pictures, 4 x 5 inches; Size of Camera 5½ x 6½ x 11 inches; Weight 2 pounds, 3 ounces; Length of Focus of Lens, 6¼ inches.



The No. 4 Eureka is the only camera at the price or at anywhere near the price, which permits of focusing. It is arranged to focus either by index scale or on the ground glass, and has a fine achromatic lens with a set of three stops, and our improved rotary shutter. Fitted with finders and tripod sockets for both vertical and horizontal exposures. Can be used with films by the addition of a No. 4 (horizontal) Cartridge Roll Holder, plate holders and roll holder being interchangeable in the field. Has space in back for three double plate holders or Cartridge Roll Holder. Well made in every particular and of greater capabilities than any other 4 x 5 camera sold at less than double the price. Covered with fine grain leather.

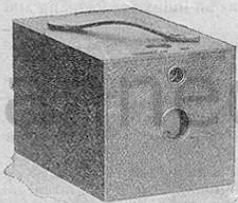
No. 4 Eureka Camera with one double plate holder, achromatic lens	\$6 00
Double plate holders, 4 x 5 each	1 00
Eastman's No. 4 Horizontal Cartridge Roll Holder, to fit No. 4 Eureka, see page 13	5 00
Light-proof film roll holder cartridge, 12 exposures, 4 x 5, 4-inch spool to fit above	90
Black sole leather carrying case	2 25
Prince's Complete Developing and Printing Outfit	1 50

No. 2 Eureka Camera.

FOR GLASS PLATES.

Can be used with Film by addition of Cartridge Roll Holder.

For Square Pictures, 3½ x 3½ inches; Size of Camera, 4¼ x 4¼ x 7½ inches; Weight, 18 ounces; Length of Focus of Lens, 4¼ inches.



The new model is equipped with our improved rotary shutter for snap shots or time exposures, the same shutter which has been so successfully used on the Pocket Kodak, the Bullet and the Bull's-Eye. It has a fine achromatic lens, set of three stops, view finder and socket for tripod screw. Perfectly adapted to hand or tripod use and has space in back for three double plate holders or Cartridge Roll Holder. Covered with fine grain leather and fitted with leather handle for carrying.

No. 2 Eureka Camera, with achromatic lens and one double plate holder	\$4 00
Double plate holders, 3½ x 3½, each	75
No. 2 Cartridge Roll Holder, see page 13	5 00
Light-proof roll holder cartridge, 12 exposures, 3½ x 3½	80
Black sole leather carrying case	1 25
Eastman's Bull's-Eye developing and printing outfit, complete for developing and printing 12 pictures	1 00

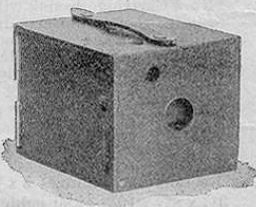
No. 2 Eureka Jr. Camera.

GLASS PLATES ONLY.

For Square Pictures, 3½ x 3½ inches; Size of Camera, 4¼ x 4¼ x 6¼ inches; Weight, 12½ ounces; Length of Focus of Lens, 4½ inches.

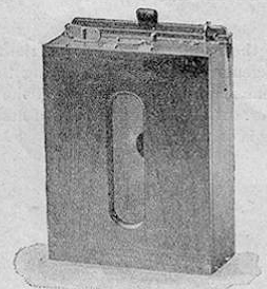
It is an honest camera, honestly made and is fully fitted for the best photographic work. The lens has great depth and definition and covers the plate fully. The shutter is our improved rotary, such as we use on the Pocket Kodak, the Bullet and the Bull's-Eye Kodaks. Fitted with set of three stops, brass socket for tripod screw, view finder and with single aluminum plate holder. This plate holder is the lightest, simplest and safest form of holder made, is quickly loaded and weighs but 1¼ ounces.

The camera is well made in every particular and covered with black leatherette.

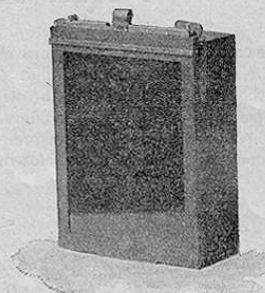


No. 2 Eureka Jr. Camera, with carefully tested lens, rotary shutter and one single plate holder	\$2 50
Single plate holders, 3½ x 3½, each	40
Carrying case to hold No. 2 Eureka Jr. Camera and five extra plate holders	50
Bull's-eye developing and printing outfit	1 00

The Cartridge Roll Holder.



Cartridge Roll Holder Showing Back.



Cartridge Roll Holder Showing Front.

We are now prepared to furnish Cartridge System Roll Holders which can be fitted to any ordinary camera by an intelligent cabinet maker, or we will do the fitting for a small charge, varying, of course, according to the camera and the work necessary.* They take special light-proof film cartridges of twelve exposures; are provided with red celluloid windows in the back for counting exposures in same manner as the Cartridge System Kodaks; have an improved tension device to make the film lie flat during exposure, and are equipped with dark slides, making them interchangeable with plate holders in the field. Well made of hard wood, with brass fittings, and handsomely finished.

Special Spools for Cartridge Roll Holders.

In ordering cartridges, be sure and state that they are for Cartridge Roll Holder, giving length of spool and size of roll holder, as the film and paper are wound differently from those used in the Bullets, Bull's-Eyes, etc. Kodak Spools will not fit Cartridge Roll Holders.

PRICE LIST.

No. 2 (3½ x 3½) Cartridge Roll Holders	\$5 00
No. 3 Vertical, for 4¼ x 3¼ pictures, ¼-inch spool	5 00
No. 4 (4 x 5) Cartridge Roll Holders (specify whether vertical or horizontal)	5 00
No. 5 (5 x 7) Cartridge Roll Holders (vertical style only)	6 50
3½-inch Light-proof Film Cartridge, for No. 2 Cartridge Roll Holder, 12 exposures	60
4¼-inch Light-proof Film Cartridge, for No. 3 Vertical Cartridge Roll Holder, 12 exposures	70
4-inch Light-proof Film Cartridge, for No. 4 Horizontal Cartridge Roll Holder, 12 exposures	90
5-inch Light-proof Film Cartridge, for No. 4 Vertical Cartridge Roll Holder, 12 exposures	90
7-inch Light-proof Film Cartridge, for No. 5 Cartridge Roll Holder, 12 exposures	1 60

*No extra charge for fitting to Eureka Cameras or No. 4 Bullet Special Kodak.

Eastman's Light-Proof Film Cartridges.

For Pocket Kodaks, Cartridge Kodaks, Bullets, Bull's-Eye and Falcon.

12 exposures, 1½ x 2 inch Pocket Kodak	\$0 25
12 " " " 2½ x 3¼ " No. 1 Folding Pocket Kodak	40
12 " " " 2 x 2½ " No. 1 Falcon	40
12 " " " 3½ x 3½ " No. 2 Bullet, Bull's-Eye, Folding B. E., F. P. K., Falcon or Specials	80
18 " " " 3½ x 3½ " " " " " " " " " " " " " "	90
12 " " " 4 x 5 " No. 4 Bullet, No. 4 Bull's-Eye or Special (5 exposures, Panoram)	90
12 " " " 5 x 4 " No. 4 Cartridge Kodak	90
12 " " " 7 x 5 " No. 5 Cartridge Kodak	1 60

Films for Cartridge Roll Holders are Special Cartridges. See Cartridge Roll Holder.

Developing, Printing and Finishing Cartridge Films.

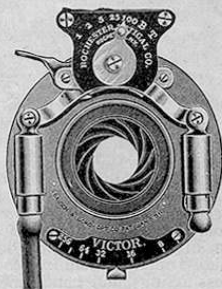
	Pocket Kodak. 1½ x 2.	No. 1 Falcon. 2 x 2½.	Folding Pocket Kodak. 2½ x 3½.	No. 2 Bull's-Eye, etc. 3½ x 3½.	No. 4 Bull's-Eye. 4 x 5.	No. 5 Kodak, etc. 5 x 7.
Developing, Printing and Mounting 1 Film Cartridge, 12 exposures	\$0 50	\$0 80	\$1 00	\$1 50	\$1 80	\$2 40
Developing only, each	02	03	04	06	08	10
Printing and Mounting only, each	02	04	05	08	10	12½
Developing, Printing and Mounting, each	04	07	09	12½	15	20

On orders for less than one dozen prints, 25 cents extra will be charged.

NOTE.—Where there are any failures on orders for full rolls we furnish enough duplicates from the good negatives to make up the full number.

PREMO CAMERAS.

These cameras have an established reputation, and cover in their different models all the requirements of the amateur and professional. They are made in two general styles, one carrying the plate holders in the back of the camera; the others, known as Pony Premos, have cases which carry the camera in one compartment and the plate holders or roll holder in the other. All cameras are made of mahogany, finely polished and trimmed with lacquered brass. The covering is of fine grain leather, and all metal parts are concealed when camera is closed.



The feature of the new Victor shutter, which combines instantaneous exposures, from $\frac{1}{100}$ second to 1 second; time or bulb releases, either by finger or by pneumatic pressure.

The iris diaphragm, as applied to the Victor shutter, is an important feature, and is the best adjustment for regulating the amount of light entering the lens yet devised. By simply moving the index at the bottom to the right or left, the size of the aperture is increased or diminished. The movement of the leaves of the iris is very smooth, and the size of each opening is indicated by an index and scale on the margin of the shutter.

THE VICTOR RAPID RECTILINEAR LENS

Furnished with the Premo Cameras, is very carefully and accurately made. It is manufactured especially for hand camera work, by the Bausch & Lomb Optical Company, which is a sufficient guarantee, and will be found admirably adapted for general photography, such as portraits, groups, architectural subjects, landscapes, etc. It possesses ample speed for rapid instantaneous exposures, a flat field, depth of focus, good covering power, and freedom from distortion.

Victor lenses and shutters are sold separately, when desired, for use with other cameras. The prices given below include lens and shutter complete with bulb, tube and flange.

Price List of Victor Lenses, fitted with Victor Shutter.

	4 x 5.	5 x 7.	6½ x 8½.	8 x 10.
Victor Rapid Rectilinear Lens	\$15 00	\$18 00	\$22 00	\$28 00

Premo Cameras are furnished with the Perfection Jr. plate holder, conceded to be the most efficient, durable and easiest to operate of any holder in the market, without exception. It is fitted with our patent spring bar, by means of which the holder may be readily loaded in the dark—so simple is the operation. The Perfection Jr. is extremely compact and very light, the 4 x 5 weighing only three ounces. Kits for smaller sized plates may be used when desired. All holders are fitted with a safety catch, preventing the slides being accidentally withdrawn.

ROLL HOLDER FOR FILMS.

Premo Cameras are adapted for both glass plates and roll films. The roll holder, which is necessary for the use of film, is not included in the price, as most of our customers prefer to use plates. Unless you contemplate a long journey we would advise the purchase of the Premo with plate holders only, for the start at least. You can secure a roll holder at any subsequent time, and it will fit the camera perfectly. For a long trip, however, where you desire to make a large number of exposures before developing, films will be found very convenient, being lighter than glass and more portable.

All 4 x 5 and 5 x 7 Premo roll holders are arranged for cartridge or light-proof film, and can be loaded or unloaded in daylight.

The Premo A.

Premo A is fitted with rising and falling front swing back, and a fine rack and pinion movement for focusing.

The lens is the Victor Rapid Rectilinear, adapted for general work, and made especially for use with the Premo. This lens may be removed from the shutter and the Victor Wide Angle substituted when desired, as the cells of both are interchangeable.

The new Victor Shutter has both finger and pneumatic release, and is fitted with Iris diaphragm.

The ground glass screen is spring-actuated. Glass plates, cut and roll films, may all be used. The plate holder is the Perfection, Jr., with rubber slides.

The Roll Holder is of the latest design, arranged for cartridge or light proof film, and can, therefore, be loaded in daylight. The 4 x 5 measures, when closed, 5¼ x 6¾ x 4¼ inches, including space for three plate holders or roll holder, and weighs only a trifle over two pounds.

The price includes camera, lens, shutter, and one double plate holder.

PRICES.

	3¼ x 4¼	4 x 5	5 x 7	6½ x 8½
Premo A.....	\$25 00	\$25 00	\$33 00	\$42 00
Wide Angle Lens, extra.....		10 00	12 00	15 00
Extra Plate Holders.....	1 00	1 00	1 25	1 60
Cut Film Holder.....	1 35	1 35	1 60	1 85
Cartridge Roll Holder, empty.....	5 00	5 00	6 50	12 00*
Light Proof Roll of Film.....	12 exp. 75	12 exp. 90	12 exp. 1 60	{ 24 exp. 4 00 48 exp. 8 00
Leather Covered Case.....	2 50	2 50	3 00	3 50
Sole Leather Case.....	3 50	3 50	4 00	4 50

*Not made for Cartridge Film.

The Premo B.

Premo B is similar in general design to style A.

Premo B is furnished with the Victor shutter, having Iris diaphragm and pneumatic release.

Either single achromatic or the Victor rapid rectilinear lens is fitted, as may be preferred.

The rapid rectilinear lens is precisely the same as furnished with Premo A.

The outside dimensions of 4x5 Premo B are only 4¼x6¾x5½ inches, including space for three plate holders or roll holder, and the weight a little over two pounds.

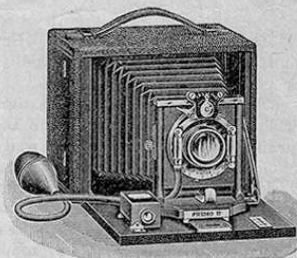
It is handsomely covered with fine black leather, and has a leather handle for carrying.

The roll holder is arranged for cartridge film and can be loaded in daylight. Glass plates, cut and roll films may be used.

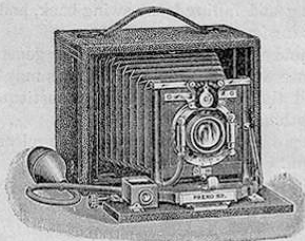
Price includes camera, lens, shutter, and one double plate holder.

PRICES.

	4 x 5	5 x 7
Premo B, with achromatic lens.....	\$15 00	\$23 00
With Victor Rectilinear Lens.....	20 00	30 00
Wide Angle Lens, extra.....	10 00	12 00
Extra Premo Plate Holders.....	1 00	1 25
Cut Film Holders.....	1 35	1 60
Cartridge Roll Holder, empty.....	5 00	6 50
Light Proof Roll of Film.....	12 exposures, 90	12 exp. 1 60
Leather Covered Case.....	2 50	3 00
Sole Leather Case.....	3 50	4 00



The Premo, Sr.



The Premo, Sr., combines all the essential features necessary for either hand or tripod work in the most compact form.

The Premo, Sr., has double swing back, double sliding front, and rack and pinion for focusing.

We make the bed in two sections, hinged together, when desired for use with extremely wide angle lenses. Ordinary wide angle lenses do not need it.

The lens is the Victor Rapid Rectilinear.

The new Victor Shutter, with iris diaphragm, is furnished with the Premo, Sr. It works between the lenses without noise or jar.

The holder is our Perfection, Jr., with rubber slides, recognized as being the best in the market. Glass plates, cut and roll films may all be used.

The roll holder is the latest pattern, arranged for light proof or cartridge rolls of film, and it can, therefore, be loaded in daylight.

The size of the 4 x 5 Premo, Sr., when closed, is only 5½ x 4½ x 7 inches, including space for three holders, or roll holder; and it weighs but 2½ pounds.

The price includes the camera, lens, shutter and one double plate holder.

PRICES.

	3¼ x 4¼	4 x 5	5 x 7	6½ x 8½	8 x 10
Premo, Sr.	\$30 00	\$30 00	\$40 00	\$50 00	\$60 00
Wide Angle Lens, extra		10 00	12 00	15 00	18 00
Hinged Bed, extra		3 00	3 00	3 50	4 00
Extra Plate Holders	1 00	1 00	1 25	1 60	2 00
Cut Film Holders	1 35	1 35	1 60	1 85	2 30
Cartridge Roll Holder, empty	5 00	5 00	6 50	12 00*	
Light Proof Roll of Film .. 12 exp. 75	12 exp., 90	12 exp., 1 60	24 exp., 4 00	48 exp., 8 00	
Leather Covered Case	2 50	2 50	3 00	3 50	4 00
Sole Leather Case	3 50	3 50	4 00	4 50	5 00

* Not made for Cartridge Film.

The Premo, Sr., Special.

The description of the Premo, Sr., excepting lens and shutter, will apply equally well to the Premo, Sr., Special.

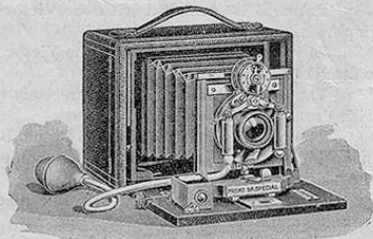
The merits of the Zeiss Anastigmat Lens, Series IIa, fitted with the Bausch & Lomb Diaphragm Shutter, as furnished with this camera, are well and favorably known among both amateur and professional photographers the world over. The series IIa Zeiss Lens embraces an angle of about 80°. It yields an absolutely flat image, free from astigmatism, sharply defined to the extreme edges of the plate; and the speed is such as to particularly commend it for hand camera use.

The price includes camera, Zeiss Lens, Series IIa, diaphragm shutter and one plate holder.

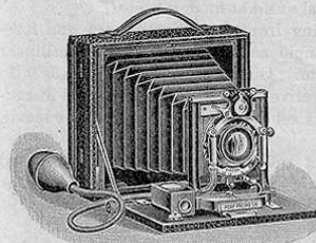
PRICES.

	4 x 5	5 x 7	6½ x 8½	8 x 10
Premo, Sr., Special	\$67 00*	\$84 00	\$103 00	\$120 00
Special Wide Angle Lens, extra	15 00	17 00	20 00	25 00
Extra Plate Holders	1 00	1 25	1 60	2 00
Cut Film Holder	1 35	1 60	1 85	2 30
Cartridge Roll Holder, empty	5 00	6 50	12 00†	
Light Proof Roll of Film .. 12 exp., 90	12 exp., 1 60	24 exp., 4 00	48 exp., 8 00	
Leather Covered Case	2 50	3 00	3 50	4 00
Sole Leather Case	3 50	4 00	4 50	5 00

* Fitted with the No. 2 Lens. † Not made for Cartridge Film.



Pony Premo A.



The Pony Premo A has proved a universal favorite ever since its introduction in 1897. A mere description utterly fails to convey an adequate idea of its real merits. The Camera must be seen to be appreciated. Although extremely compact, every part is so perfectly adjusted and works with such exquisite smoothness that the manipulation is a pleasure.

This compact Camera has a rack and pinion, together with additional adjustments of double sliding front and rack and pinion, permitting the most delicate focusing. Even with these additional features the 4 x 5 Pony Premo A measures only

5½ x 6½ x 2½ inches when folded and weighs only 30 ounces.

The Lens is the Victor Rapid Rectilinear, fitted with our new Victor Shutter.

The Plate Holder is the Perfection, Jr., with rubber slides.

The Roll Holder is of the most recent design, arranged for Cartridge Rolls of Film. It can be loaded and unloaded in daylight.

The Pony Premo A is furnished with a handsome sole leather case, made to contain Camera complete, with three Plate Holders or the Roll Holder. It may be attached to the frame of a bicycle or carried by means of the shoulder strap, as preferred.

The price includes Camera, Lens, Shutter, one Double Plate Holder and Carrying Case.

PRICES.

	4 x 5	5 x 7
Pony Premo A	\$22 00	\$32 00
Wide Angle Lens, extra	10 00	12 00
Extra Plate Holders	1 00	1 25
Cut Film Holder	1 35	1 60
Cartridge Roll Holder, empty	5 00	6 50
Light-proof Roll of Film, 12 exposures	90	1 60

The Pony Premo, Sr.

This model bears the same relation to the preceding Camera as the Premo, Sr., holds to the Premo A. It has a double swing back, protected from injury by a wooden shield, double sliding front, rack and pinion movement for focussing, thus adapting it to all classes of hand and tripod work.

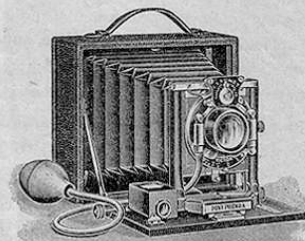
The Lens is the Victor Rapid Rectilinear, and is fitted with the new and improved Victor Shutter. There is a neat Black Leather Carrying Case, specially adapted for bicycle use, which will hold Camera and three Holders, or Cartridge Roll Holder, carrying Cartridge Films.

The price includes Camera, Lens, Shutter, one Double Plate Holder and Carrying Case with Strap.

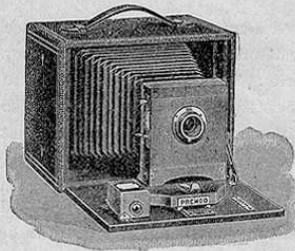
PRICES.

	3¼ x 4¼	4 x 5	5 x 7	6½ x 8½
Pony Premo, Sr.	\$28 00	\$28 00	\$38 00	\$48 00
Wide Angle Lens, extra		10 00	12 00	15 00
Extra Plate Holders	1 00	1 00	1 25	1 60
Cut Film Holder	1 35	1 35	1 60	1 85
Cartridge Roll Holder, empty	5 00	5 00	6 50	12 00*
Light-proof Roll of Film .. 12 exp. 75	12 exp., 90	12 exp., 1 60	24 exp., 4 00	48 exp., 8 00

* Not made for Cartridge Film.



The Premo D.



Premo D will at once find favor among a large class of amateurs desiring a thoroughly practical outfit at moderate cost.

It is provided with sliding front for adjusting sky and foreground, and is fitted with single achromatic or rapid rectilinear lens with rotating diaphragm. Our new safety shutter is also supplied, being a neat and effective device for both time and instantaneous work. The shutter is set by a lever at the side, the leaves remaining stationary.

Premo D is both compact and light in weight. When closed the 4x5 measures only 4 7/8 x 5 5/8 x 6 7/8 inches, including space for three plate holders or roll holder, and it weighs but a trifle over two pounds. Handsomely covered with fine black leather.

Glass plates, cut and roll films may all be used. Price includes camera, lens, shutter, and one plate holder.

PRICES.

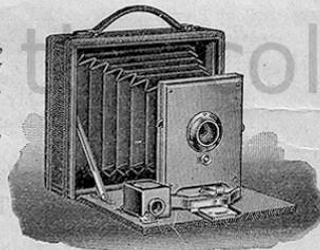
	4 x 5	5 x 7
Premo D, with Achromatic Lens.....	\$10 00	\$18 00
With Rapid Rectilinear Lens.....	15 00	24 00
Extra Premo Plate Holders.....	1 00	1 25
Cut Film Holders.....	1 35	1 60
Cartridge Roll Holder, empty.....	5 00	6 50
Light Proof Roll of Film..... 12 exposures,	90	1 60
Leather-Covered Case.....	2 50	3 00
Sole Leather Case.....	3 50	4 00

Pony Premo E.

Pony Premo E is very compact, measures but 2 x 5 1/4 x 6 inches, and weighs but a trifle over one pound. It is fitted with a new safety time and instantaneous shutter and a single achromatic lens. It has ground glass and screw plate for use on tripod.

The plate holder is the Perfection, Jr., with hard rubber slides, conceded to be the best in the market.

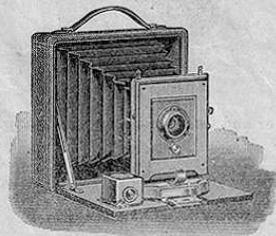
Pony Premo E is furnished with a neat leather-covered case, made to contain the camera complete and three plate holders.



PRICES.

Pony Premo E, Case, and Plate Holder.....	\$8 00
Extra Plate Holders.....	1 00
Cut Film Holders.....	1 35

Pony Premo, No. 2.



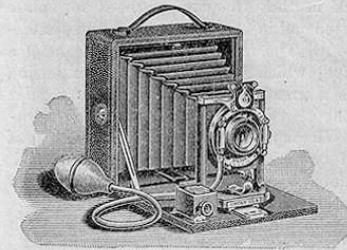
This design has, reversible back and solid sliding front and shutter combined. The shutter is a new safety device, set by a milled head on the side, and gives both time and instantaneous exposures. Weight is but a trifle over two pounds, and it measures, closed, 2 3/4 x 5 5/8 x 5 5/8 inches. Either glass plates, cut or cartridge films, may be used.

The roll holder is the latest pattern, arranged for cartridge or light proof film, and may therefore be loaded in daylight. The plate holder is the Perfection, Jr.

PRICES.

	4 x 5
Pony Premo, No. 2, with Achromatic Lens, Case, and Plate Holder.....	\$10 00
With Rapid Rectilinear Lens.....	15 00
Extra Plate Holders.....	1 00
Cut Film Holder.....	1 35
Cartridge Roll Holder, not Loaded.....	5 00
Light Proof Film Cartridge, 12 exposures.....	90

Pony Premo, No. 4.



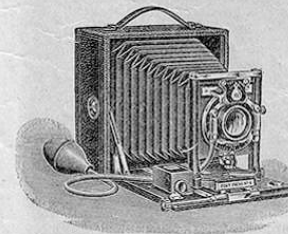
In designing the Pony Premo, No. 4, the aim has been to present a high-grade camera, containing in the most compact form all desirable features that appeal especially to wheelmen and tourists—yet at moderate cost, which may be used equally well in the hand or on the tripod. Pony Premo, No. 4, is such a camera. It has a rising and falling front, spring actuated ground glass, swing back, and a reversing back, which may be easily turned so as to give either horizontal or vertical photographs at will. The lens is the Victor rapid rectilinear, fitted with the new Victor shutter. Measurements are 2 3/8 x 5 5/8 x 5 5/8, and weight a little over two pounds. The camera is made of mahogany, neatly covered with seal grain leather. Carrying case, of black sole leather, with neat and serviceable catch, is furnished with each outfit.

Pony Premo, No. 4, is furnished with either the single achromatic or the Victor rapid rectilinear lens, as may be preferred. The price includes camera, lens, shutter, case and one plate holder.

PRICES.

	4 x 5	5 x 7
Pony Premo, No. 4, with Achromatic Lens.....	\$15 00	\$23 00
With Victor Rapid Rectilinear Lens.....	20 00	30 00
Wide Angle Lens, extra.....	10 00	12 00
Extra Premo Plate Holders.....	1 00	1 25
Cut Film Holder.....	1 35	1 60
Cartridge Roll Holder, empty.....	5 00	6 50
Light Proof Roll of Film, 12 exposures.....	90	1 60

Pony Premo, No. 5.



This resembles the No. 4 model, but is more complete and convenient. A rack and pinion for fine focusing is added. It has rising and falling front, swing back, which may be securely clamped in place, and is fitted with Victor rapid rectilinear lens, with the new and improved Victor shutter. Each camera is made of the best mahogany, with fine leather covering and laquered brass trimmings. A fine black sole leather carrying case with a safety catch is furnished with each camera, and will hold camera and three extra holders, or roll holder, loading in daylight.

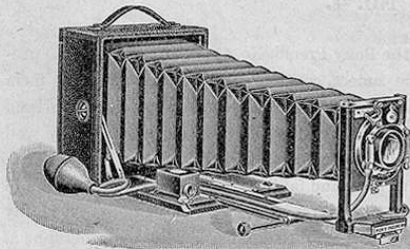
Price includes camera, lens, shutter, one plate holder and case.

PRICES.

	4 x 5	5 x 7	6 1/2 x 8 1/2
Pony Premo, No. 5.....	\$25 00	\$35 00	\$45 00
Wide Angle Lens, extra.....	10 00	12 00	15 00
Extra Plate Holders, each.....	1 00	1 25	1 60
Cut Film Holder.....	1 35	1 60	1 85
Cartridge Roll Holder, empty.....	5 00	6 50	12 00*
Light Proof Roll of Film, 12 Exposures.....	90	1 60	24 Exp., 4 00 48 Exp., 8 00

*Not made for Cartridge Film

Pony Premo, No. 6.



This model is designed with the idea of extreme compactness. It differs from the regular long focus reversible back in that the compartment for plate holders is omitted and in having all the bellows extension in the front. The front is moved by means of a rack and pinion, which operates on the extension bed, and gives a great focal capacity. The regular equipment is the new Victor shutter, with iris diaphragms, and the Victor rapid rectilinear lens. This lens is composed of two combinations, both symmetrical, and may therefore be used either as a double lens or a single achromatic lens.

The single combination will be found excellent for the purpose of photographing distant views, such as mountain scenery—in fact, any objects at long range.

Pony Premo No. 6, is adapted for the use of glass plates, cut and roll films. The Plate Holder is the regular Perfection, Jr.

The Roll Holder is of latest design, arranged to carry cartridge film.

Focal Capacity or Length of Bellows.

4 x 5 15 inches.	5 x 7 19 inches.	6½ x 8½ 22 inches.
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The price includes camera, lens, shutter, sole leather carrying case, with strap and one double plate holder.

PRICES.

	4 x 5	5 x 7	6½ x 8½
Pony Premo No. 6	\$30 00	\$40 00	\$ 50 00
Pony Premo No. 6, Special*	80 00	95 00	127 00
Wide Angle Lens, extra	10 00	12 00	15 00
Extra Plate Holders	1 00	1 25	1 60
Cut Film Holder	1 35	1 60	1 85
Cartridge Roll Holder, empty	5 00	6 50	12 00†
Light Proof Roll of Film	12 exposures,	90 12 exp., 1 60	24 exp., 4 00 48 exp., 8 00

*Pony Premo No. 6 Special is fitted with Goerz Double Anastigmat Lens and Iris Diaphragm Shutter, as supplied with the Long Focus Premo Special.

†Not made for Cartridge Film.

Premo, Sr., Reversible Back.

The Premo, Sr., Reversible Back is a recent design, presented for the first time last season. It is practically a counterpart of the regular Premo, Sr., which has proved so popular, but having, as its name indicates, the back arranged to reverse for either upright or horizontal pictures.

It has a double swing, operating at the centers, and rising and sliding front. A rack and pinion is supplied for fine focusing. The lens is the Victor rapid rectilinear, specially adapted to hand camera work. The shutter is the new Victor, with instantaneous, bulb and time exposures. The 4 x 5 size is 5 x 7½ x 7½, and weighs 2½ pounds.

The Perfection, Jr., Holder, with rubber slides, is furnished.

Glass plates, cut and roll films, may all be used, the holders being interchangeable.

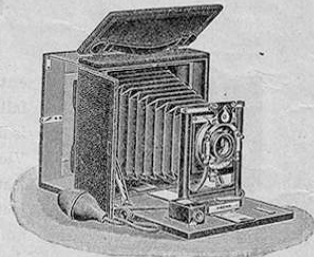
The Roll Holder is the latest pattern, arranged for light proof or cartridge rolls of film.

The price includes camera, lens, shutter, and one double plate holder.

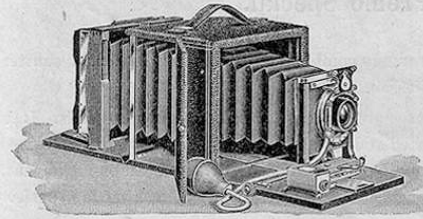
PRICES.

	4 x 5	5 x 7	6½ x 8½	8 x 10
Premo, Sr., Reversible Back	\$35 00	\$45 00	\$55 00	\$65 00
Wide Angle Lens, extra	10 00	12 00	15 00	18 00
Hinged Bed, extra	3 00	3 00	3 50	4 00
Extra Plate Holders	1 00	1 25	1 60	2 00
Cut Film Holder	1 35	1 60	1 85	2 30
Cartridge Roll Holder, empty	5 00	6 50	12 00*	
Light Proof Roll of Film	12 exposures,	90 12 exp., 1 60	24 exp., 4 00 48 exp., 8 00	
Leather Covered Case	2 50	3 00	3 50	4 00
Sole Leather Case	3 50	4 00	4 50	5 00

*Not made for Cartridge Film.



Long Focus Premo.



When not fully extended the Long Focus Premo is similar in appearance to the Premo, Sr.

Though but a trifle larger than the Senior, the Long Focus Premo has nearly double the focal capacity.

The extra length of draw is obtained by the addition of a folding back.

The Long Focus Premo has double swing back, double sliding front, and a fine rack and pinion movement for focusing. Both the horizontal and vertical swings are at the centre of the plate.

The lens is the Victor rapid rectilinear, the same as furnished with the Premo, Sr.

The New Victor Shutter with Iris diaphragm and pneumatic release is fitted to the Long Focus Premo.

Focal Capacity or Length of Bellows.

4 x 5—15 inches.	5 x 7—19 inches.	6½ x 8½—22 inches.	8 x 10—28 inches.
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The price includes the camera, lens, shutter, and one double plate holder.

PRICES.

	4 x 5	5 x 7	6½ x 8½	8 x 10
Long Focus Premo	\$35 00	\$45 00	\$55 00	\$65 00
Wide Angle Lens, extra	10 00	12 00	15 00	18 00
Extra Plate Holders	1 00	1 25	1 60	2 00
Cut Film Holder	1 35	1 60	1 85	2 30
Cartridge Roll Holder, empty	5 00	6 50	12 00*	
Light Proof Roll of Film	12 Exposures	90 12 Exp., 1 60	24 Exp., 4 00 48 Exp., 8 00	
Leather Covered Case	2 50	3 00	3 50	4 00
Sole Leather Case	3 50	4 00	4 50	5 00

Reversible Back Premo.

The Reversible Back Premo is provided with all modern improvements. It has double swing back, both rising and sliding front, and a fine rack and pinion movement, permitting the most delicate focusing.

In general appearance the camera resembles the regular Long Focus Premo, though it possesses even a greater focal capacity, and as its name indicates, has a reversible back. This adjustment is especially desirable when the camera is used on a tripod, as the position of the plate may be instantly changed without moving the camera.

For the use of long focus lenses for copying, enlarging, and all other purposes requiring an extended length of bellows, the Reversible Back Premo is particularly well adapted.

The lens is the Victor rapid rectilinear. The New Victor Shutter, having a triplicate movement, with Iris diaphragm, pneumatic and finger release, is furnished with the Reversible Back Premo.

Focal Capacity or Length of Bellows.

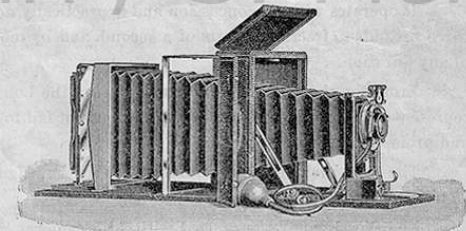
4 x 5—17½ inches.	5 x 7—23 inches.	6½ x 8½—29 inches.	8 x 10—33½ inches.
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The price includes the camera, lens, shutter, and one double plate holder.

PRICES.

	4 x 5	5 x 7	6½ x 8½	8 x 10
Reversible Back Premo	\$40 00	\$50 00	\$62 00	\$72 00
Wide Angle Lens, extra	10 00	12 00	15 00	18 00
Extra Plate Holders	1 00	1 25	1 60	2 00
Cut Film Holder	1 35	1 60	1 85	2 30
Cartridge Roll Holder, empty	5 00	6 50	12 00*	
Light Proof Roll of Film	12 Exposures	90 12 Exp., 1 60	24 Exp., 4 00 48 Exp., 8 00	
Leather Covered Case	2 50	3 00	3 50	4 00
Sole Leather Case	3 50	4 00	4 50	5 00

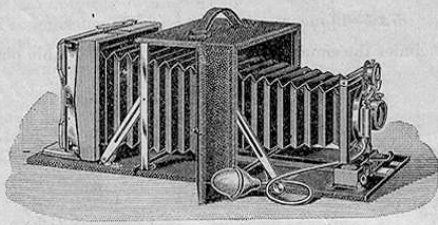
*Not made for Cartridge Film.



The Long Focus Premo Special.

The Long Focus Premo Special represents the strongest combination of camera, lens, and shutter that can possibly be desired for either amateur or professional use.

In constructing this camera no expense has been spared to make it complete in all details. It is manufactured of the finest mahogany, handsomely polished and covered outside with heavy black grained leather. Every adjustment, such as rising and sliding front, double swing back, rack and pinion movement, drop bed, for wide angle lenses, spring actuated ground glass screen, etc., is fitted, making it a perfect instrument for both hand and tripod work.



The Goerz Double Anastigmat Lens, Series III, furnished with this camera.

The Bausch & Lomb Diaphragm Shutter now so well and favorably known among the foremost amateur and professional photographers is also used.

It operates without concussion and is practically noiseless in action. The speed may be varied from three seconds to fractional parts of a second, and by moving a small lever it can be set for time exposures of any duration.

From the above description it will be seen the Long Focus and Reversible Back Premo Specials both represent outfits of the highest order, and can not fail to meet the demands of the most advanced amateur and professional photographers.

The price includes Camera, Goerz Double Anastigmat Lens, Series III, Diaphragm Shutter and one Double Plate Holder.

The No. 1 lens is furnished with 4x5 cameras, No. 2 with 5x7, No. 4 with 6½x8½ and No. 6 with 8x10.

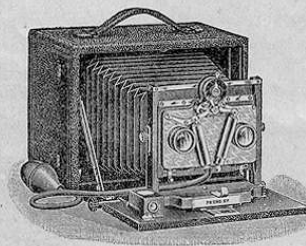
PRICES.

	4 x 5	5 x 7	6½ x 8½	8 x 10
Long Focus Premo Special.....	\$85 00	\$100 00†	\$132 00	\$170 00
Reversible Back Premo Special.....	90 00	105 00†	139 00	177 00
Special Wide Angle Lens, extra.....	15 00	17 00	20 00	25 00
Extra Plate Holders.....	1 00	1 25	1 60	2 00
Cut Film Holder.....	1 35	1 60	1 85	2 30
Cartridge Roll Holder, empty.....	5 00	6 50	12 00*	
Light Proof Roll of Film.....12 exposures,	90	12 exp., 1 60	24 exp., 4 00	
			48 exp., 8 00	
Sole Leather Case.....	3 50	4 00	4 50	5 00

*Not made for Cartridge Film.

†The No. 3 Lens of 8¼ in. focus will be substituted if preferred, for \$12.00 additional.

The Stereoscopic Premo.



Stereoscopic photography is one of the most interesting branches of the art, and as the hand camera is now designed especially for this class of work, it will undoubtedly gain favor among a large number of amateurs, who have heretofore never attempted the production of stereoscopic pictures.

We can furnish Premo A, Premo, Sr., and Long Focus Premo in both 5x7 and 6½x8½ sizes, arranged for stereo work, for which the front must be wider than regular.

The Stereo Lenses are a matched pair of 4x5 Rapid Rectilinear Lenses, same as used with 4x5 Premo A, and fitted with Bausch & Lomb Stereo Shutter. This shutter is designed especially for use with stereoscopic lenses. The action is so perfect that exactly the same amount of light is admitted through both lenses.

All desirable features of the Iris Diaphragm Shutter are applied to the Stereo, the actuating mechanism and pneumatic retarding device being the same.

The regular lens and shutter and the stereo lenses are on different lens boards, so that the change from full sized views to stereo work requires but a moment's time.

The price includes the Victor rapid rectilinear lens and Victor shutter for full sized views, and the stereo lenses and shutter, together with a division in the camera and one plate holder. Glass plates, cut and roll films may all be used.

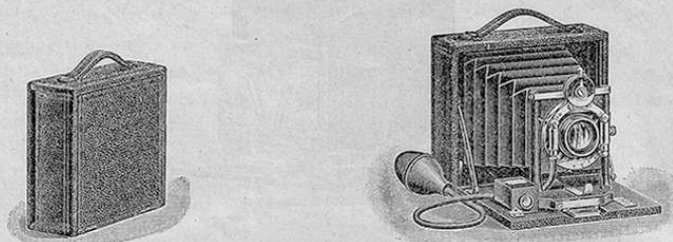
Wide angle lenses may be adjusted for full size views, same as with the Premo A or Premo, Sr.

PRICES.

	5 x 7	6½ x 8½
Stereo Premo A.....	\$70 00	\$80 00
Stereo Premo, Sr.....	75 00	85 00
Stereo Long Focus Premo.....	80 00	90 00
Wide Angle Lens, extra.....	12 00	15 00
Hinged Bed, extra.....	3 00	3 50
Extra Premo Holders.....	1 25	1 60
Cut Film Holders.....	1 60	1 85
Cartridge Roll Holder, empty.....	6 50	12 00*
Light Proof Roll of Film.....12 exposures,	1 60	{ 24 exp. 4 00
		{ 48 exp. 8 00
Leather Covered Case.....	3 00	3 50
Sole Leather Case.....	4 00	4 50

* Not made for Cartridge Film.

Prince's Senior Camera.



To meet a large and growing demand for a thoroughly practical 4 x 5 camera with rapid rectilinear lens and pneumatic release shutter at moderate cost we present the Senior.

Although sold at an exceptionally low price, the Senior is constructed in a first-class manner throughout, being made of mahogany, with metal work of lacquered brass. The bellows is of the best red leather, and the camera when opened presents a handsome appearance.

The lens is our new Special Rectilinear. It possesses the requisite speed essential for hand camera work, has good covering power, a flat field, great depth, and is therefore available for general use. The Unicum Shutter is so well known that a detailed description is unnecessary. It may be operated for time, instantaneous or bulb exposures, and the speed can be changed at will.

The Senior camera is fitted with a sliding front for varying the amount of sky and foreground.

Both plates and film may be used, the Senior being adapted for a cartridge roll holder.

The finder is located in a convenient position on the bed, and may be reversed for upright pictures.

The outside dimensions of the 4 x 5 Senior, when closed, are 5½ x 2¼ x 6 inches, including space for three double plate holders.

This Camera must be seen to be fully appreciated, and we feel warranted in saying no instrument yet placed on the market at anywhere near the Price approaches it in Completeness of Detail and thorough Workmanship.

The Senior is furnished with a handsome sole leather case, made to contain camera complete, with three plate holders or the roll holder. It may be attached to the frame of a bicycle or carried by means of the shoulder strap, as preferred.

The price includes camera, rapid rectilinear lens, Unicum Shutter, and one Perfection Jr., Plate Holder with hard rubber slides.

PRICES.

	4 x 5
Senior Camera	\$15 00
Extra Plate Holders, each	1 00
Cut Film Holders, each	1 35
Cartridge Roll Holder, empty	5 00
Light Proof Roll of Film, 12 exposures	90

CYCLE POCO CAMERAS.

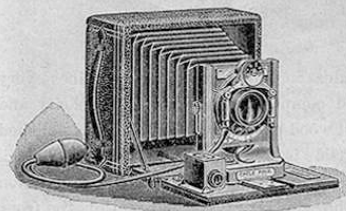
This series is designed especially for wheelmen and other tourists, who wish a complete outfit in the smallest space. The price on each camera includes the carrying case, which will hold the camera and extra holders, or a roll holder, which will carry the Eastman cartridge films, loading in broad daylight.

It has a leather handle for use in hand, and rings on the ends by which a shoulder strap may be attached. It may be rigidly attached to the bicycle frame by means of the Poco bicycle carrying attachment.

Cycle Poco, No. 1.

This camera is designed especially for the tourist and wheelman. There is a double swing and receding plate back, and rack and pinion for fine focusing. The front rises and slides, and has a detachable front board, so that other lenses may be easily fitted.

The lens is a symmetrical double combination, perfectly rectilinear, with a Unicum shutter, made by the Bausch & Lomb Optical Co. This may be operated either by a bulb or by the finger release, and may be set either on time, bulb, or automatic exposures, from 1 second to 1/100 part of one second. The diaphragms are of the iris pattern, operated by a lever at the bottom of the shutter, which is graduated according to the uniform system.



PRICE.

	4 x 5	5 x 7	6½ x 8½	8 x 10
Camera, complete, with Unicum shutter, lens, plate holder and carrying case	\$25 00	\$32 00	\$40 00	\$50 00
Camera, complete, with diaphragm shutter, lens, plate holder, and carrying case	33 00	40 00	50 00	62 00
Complete, with Unicum shutter, Rochester anastigmat lens, plate holder, and carrying case	50 00	60 00	90 00	110 00
Wide angle lens, extra	8 00	10 00	15 00	18 00
With Unicum shutter, other lens fitted	24 00	30 00	35 00	40 00
Without lens and shutter	16 00	20 00	26 00	35 00
Double dry plate holders	75	1 00	1 25	1 50
Cartridge roll holders	5 00	6 50	.....	.....
Bicycle clamp	75	75	75	75
Poco bicycle carrier	1 00	1 00	1 00	1 00

Cycle Poco, No. 2.

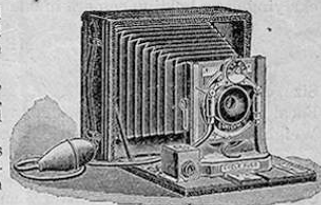
Very strong and rigid, light in weight, compact, serviceable, and neat in appearance, of polished mahogany, trimmed with polished and lacquered brass, and covered with best selected morocco grain leather, with leather handle.

It has tripod plates, for both horizontal and vertical pictures, a rack and pinion, but no swing backs. The front rises and falls, and has a detachable front board. The Poco combined finder and level is supplied with each camera.

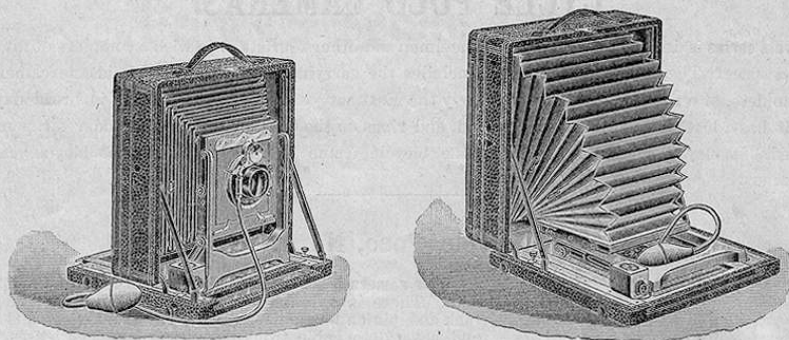
Cycle Poco, No. 2, has Unicum shutter, with iris diaphragms and the Rochester symmetrical lens. A sole leather case accompanies each camera. The case holds five holders and camera in 4 x 5 size, and four in the 5 x 7.

PRICE.

	4 x 5	5 x 7
Camera, complete, with shutter, lens, one dry plate holder, and carrying case	\$20 00	\$25 00
Complete, with Unicum shutter, Rochester anastigmat lens, one holder, and case	45 00	55 00
Wide angle lens, extra	8 00	10 00
Double dry plate holders	75	1 00
Roll holders, daylight loading	5 00	6 50
Bicycle clamp, as tripod	75	75
Poco carrier, for attaching camera to cycle	1 00	1 00
Shoulder straps	25	25



KING POCO.



The King Poco fills the demand of the present up-to-date ideas in photography. It combines every adjustment that can be applied to a camera. It is small and compact considering its capacity and many advantages, strength and rigidity not being sacrificed. All wood parts are made of highly polished mahogany and all brass parts polished and lacquered. The outside is covered with best selected black cowhide leather, with Morocco grain, making it very handsome and serviceable. It has swinging motion both to the back and front. The back may be swung in either a horizontal or vertical direction, the front in a vertical plane. The advantage being, when the camera is used for photographing objects either above or below its level, that it may be tilted and the front and back swung parallel to each other and exactly vertical, giving the advantage of a great rise and fall without distortion. The back of the camera is arranged to slide up close to the front for use with wide angle lenses, therefore, there is no projecting bed to cut off the angle of view when a very wide angle lens is used. A lens of two inch focus can be used without the bed obstructing the view, still the extreme range of focus is available.

The camera box is square, the back being reversible so that when the view is wanted either horizontally or vertically, the change can be effected by simply reversing the back instead of the entire camera. It has no loose parts and is very easy and simple of manipulation. It has two fine rack and pinion focusing movements, rising and falling front, spring actuated ground-glass screen, Poco view finder and level, leather handle and two tripod plates for balancing it on the tripod for any adjustment. The Unicum Shutter with Iris Diaphragms, hand and pneumatic release bulb and hose attachment is the regular shutter supplied. It is fitted with our high-grade Rochester Symmetrical Lens. The front lens may be removed and the rear combination used alone when taking views of objects at a distance, which nearly doubles the size of the image, thereby requiring the long draw. It is furnished with sole leather carrying case, holding camera in one end and plate holders in the other.

MEASUREMENTS AND WEIGHTS.

	4 x 5	5 x 7	6 1/2 x 8 1/2	8 x 10
Size, closed	6 x 6 x 3 3/8	8 3/8 x 8 3/8 x 3 1/2	10 x 10 x 3 3/4	11 1/8 x 11 1/8 x 4
Focal Length	14 in.	17 1/4 in.	21 1/2 in.	25 1/4 in.
Weight	2 1/4 lbs.	3 1/4 lbs.	4 1/2 lbs.	6 1/2 lbs.

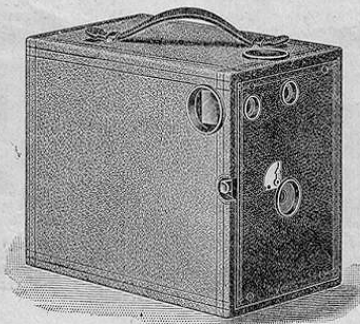
PRICE.

	4 x 5	5 x 7	6 1/2 x 8 1/2	8 x 10
Complete, with Unicum Shutter, Lens, and one Dry Plate Holder	\$40 00	\$50 00	\$65 00	\$75 00
Complete, with Unicum Shutter and Rochester Anastigmat Lens	65 00	80 00	110 00	130 00
Complete, with B. & L. Shutter and Zeiss Convertible, Series VIIa, Lens	No. 5 Lens. 105 00*	No. 8 Lens. 125 00	No. 11 Lens. 160 00	No. 17 Lens. 250 00
Complete, with B. & L. Shutter and Goerz Double Anastigmat, Series III, Lens	85 00*	110 00	130 00	165 00
Without Lens or Shutter	35 00	40 00	50 00	55 00
Double Dry Plate Holder	75	1 00	1 25	1 50

*4 x 5 sizes furnished with Unicum Shutter only.

MAGAZINE CYCLONE.

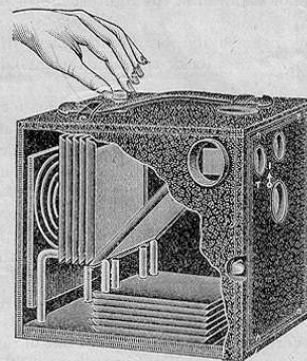
Nos. 1, 2 and 3.



This is the Camera which met with such phenomenal success during the past year. It is so constructed that it can be loaded with twelve plates at one time, enabling the operator to make twelve pictures without opening the camera to change the plates. We take great care to make it a camera easy to understand, simple of construction, devoid of complications, and so perfect in workmanship and detail that the youngest amateur may meet with success at once. Every article used is of the best quality that can be procured and fully guaranteed, as are all of our productions. The following description will interest you:

LENS.—The lens is of universal focus, achromatic, combination meniscus, remarkable for its depth and definition, and made by the Gundlach Optical Co., who are deservedly renowned for the excellence of their productions.

SHUTTER.—The shutter is very simple of construction, therefore the most satisfactory to the amateur. It is always set, requiring but a touch to make your exposure, automatically resetting itself without further effort.



MAGAZINE.—As this camera can be loaded with twelve plates, it is not necessary to carry with you a quantity of plate holders. Neither is it necessary to open the camera to change your plates. You merely give the little button on the top a half turn and your exposed plate drops, leaving another ready for exposure.

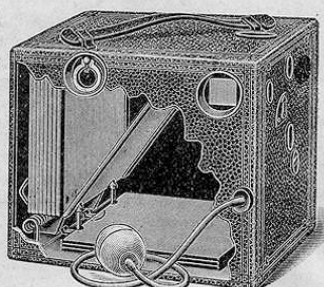
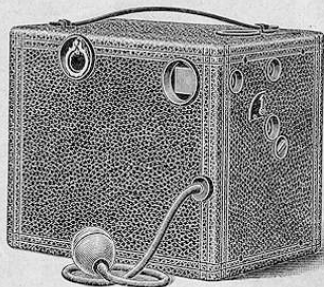
UNLOADING.—When you have made your twelve exposures, you have only to open your camera at the back and draw out the tray carrying the twelve plates, which are removed by merely lifting them off. We make the following sizes:

PRICES.

	No. 1	No. 2	No. 3
Magazine Cyclone	2 1/2 x 2 1/2	3 1/4 x 4 1/4	4 x 5
Prince's Complete Developing and Printing Outfit	\$3 50	\$6 00	\$8 00
Sole Leather Carrying Case	1 50	1 50	2 00
	1 50	2 00	2 50

Improved Magazine Cyclones.

Nos. 4 and 5.



The most complete and reliable magazine camera ever produced. We call your particular attention to the following new and exclusive features: Detachable bulb release, automatic register, aluminum plate holders, diaphragms, automatic shutter, unloading attachment, etc.

Bulb Release.—This is the only universal camera having this attachment, which is indeed a boon to amateurs. By its use you prevent the possible jarring of the camera, so often the cause of failures, particularly in making time exposures, when otherwise the results would be satisfactory. The shutter is always set; this means no levers to pull or buttons to push. By merely pressing the bulb the exposure is made and the shutter resets itself automatically. By a simple and ingenious device this bulb can be detached to permit operating the shutter by the finger release. We cannot impress upon you too strongly the value of this bulb release, especially for time exposures.

Register.—This register is operated automatically when releasing the plate, the number of unexposed plates being readily determined by the figure on the dial, which is at all times in plain sight of the operator.

Plate Holders.—These are made of aluminum, the lightest metal known, reducing the weight of the camera to the minimum.

Diaphragms.—A set of these has been added, permitting three different openings. In connection with this is also a cut-off which, when set, locks the shutter, avoiding any possibility of premature exposures.

Unloading.—Here we again improve over all others, as you can remove any or all of the exposed plates without disturbing or handling those remaining. This is a great advantage as well as a convenience.

Magazine.—This is stationary, being attached to the inside of the camera, holding the twelve plates firmly and securely. It is loaded through the hinged door at the rear, and unloaded from the hinged door at the bottom.

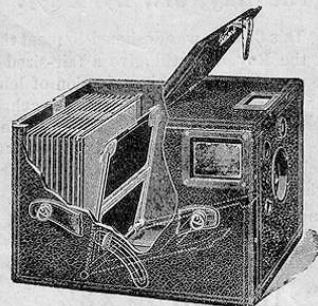
Operation.—"Twelve pictures in twelve seconds." The above words express it exactly. What we want to impress upon you is the extreme simplicity of this camera, for it has fewer parts than any other magazine camera made. You press the bulb to expose the plate and turn a button to place the next in position. That is all you do, the camera does the rest—two movements. Without any exception the simplest and easiest camera to operate ever before produced. This is a very important part to be considered when buying a camera, for the more adjustments, levers or buttons you have to handle, the more complicated your instrument, and therefore more liable to get out of order.

Lenses.—Let us tell you about the lenses. We have thoroughly investigated the lens question, having tested all the well-known makes, looking for quality and not cheapness, and we have decided upon the justly famous lens of the Gundlach Optical Co.'s make. We have placed an expert optician in charge of this department, who tests each and every lens before its going into the camera, thereby doubly assuring the purchaser of its excellence. They are of the single achromatic variety—combination meniscus—consisting of a positive crown glass lens, combined with a negative flint glass lens, corrected for actinic light. Every camera and all lenses guaranteed.

PRICES.

	No. 4. $3\frac{1}{4} \times 4\frac{1}{4}$.	No. 5. 4×5 .
Improved Magazine Cyclone.....	\$8 00	\$10 00
Prince's Complete Developing and Printing Outfit.....	1 50	2 00
Sole Leather Carrying Case.....	2 00	2 50

THE ADLAKE REGULAR AND ADLAKE SPECIAL CAMERAS.



The Adlake Regular and Adlake Special Cameras are equal to any for amateurs. The twelve light proof plate holders accompanying each camera allow the use of two or more kinds of plates, at the pleasure of the operator. When loaded the holders may be adjusted in and taken out of the camera in broad daylight. If you want to remove one or more exposed plates from the camera you need only open the hinged cover and lift out the holder or holders wanted, leaving the unexposed plates undisturbed.

Specifications.

The box is made of tough, light wood, covered with black seal grain leather. The two finders are unusually large, and the finder boxes in the 4×5 are made of metal. The lens is the best achromatic single meniscus the Bausch & Lomb Optical Company can make. The lens can be easily and quickly removed for cleaning. There are four stops, numbered according to the F system.

The Adlake Shutter (used on all Adlake cameras) is mounted on metal. It cannot be affected by any possible shrinking, warping or swelling of the shutter board. This shutter is of a high order of plan and work, will wear forever, and can not get out of order.

Adlake Plate Holders are very compact. They are light, thin steel or aluminum portfolios, formed at the edges to shut out light, and blackened, and open and close like a watch case. The plate holders are numbered from one to twelve, for convenience in keeping a record of exposures. Blackened metal trimmings protect all openings on the 4×5 -inch cameras. On the $3\frac{1}{4} \times 4\frac{1}{4}$ -inch, everything is protected except the lever groove.

Adlake Portrait Attachment for taking cabinet pictures and Adlake Panoramic Device free with each camera. The Adlake Multiplex Attachment for taking two or four pictures of same object in different positions on one plate may be used on both sizes.

The cameras have the standard tripod screw sockets. Adlake patented cover catch on all Adlake cameras.

PRICES.

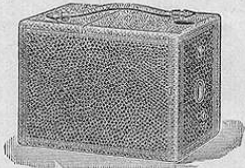
Adlake Regular, $3\frac{1}{4} \times 4\frac{1}{4}$ inch (with twelve steel plate holders).....	\$ 6 50
Adlake Regular, 4×5 inch (with twelve steel plate holders).....	10 00
Adlake Special, 4×5 inch (with twelve aluminum plate holders)*.....	12 00
Adlake Multiplex Attachment.....	1 00

We cannot furnish the $3\frac{1}{4} \times 4\frac{1}{4}$ inch with aluminum plate holders.

*The only difference between the 4×5 Regular and Special cameras is in the plate holders; otherwise they are alike.

THE RAY CAMERAS.

The Ray, Jr., 2½ x 2½.



This Camera was designed to meet the demand for something cheaper than the Ray, and still give a fair-sized picture with good results. The same care is taken in the selection of lenses and material as in the more expensive cameras. It has a single achromatic lens that covers the plate perfectly, has a round view finder, single diaphragm, and rotary shutter.

It is covered with seal grain leather, has leather handle, and a capacity of six plate holders, and measures but 5¼ x 3¾ x 3½ inches, and weighs 7 ounces.

Price, including two single plate holders \$2 50
Extra holder..... 25

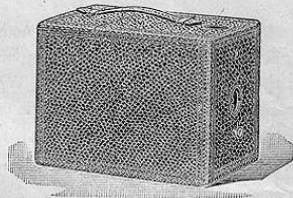
The Ray, 3½ x 3½.

This is the most complete and perfect camera ever offered for the price. It makes a 3½ x 3½ picture. Has a revolving diaphragm with three openings, brilliant square view finder, properly adjusted, universal tripod socket, and a simple and practical improved patent revolving shutter.

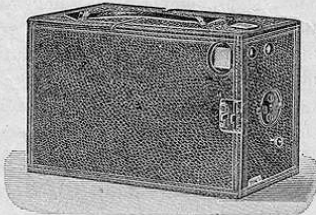
It is covered with genuine morocco grain leather, trimmed with polished and lacquered brass.

The Ray has a capacity of six plates, measures 6½ x 4¾ x 4½ inches, and weighs less than 14 ounces.

Price, Ray, including two single plate holders \$4 00
Extra plate holders..... 35



The Ray B Camera, 3¼ x 4¼.



WITH NEW MULTIPLYING ATTACHMENT.

The wonderful success with which the Ray cameras have met has induced the manufacturers to put on the market new styles, which we now illustrate for the first time. These new cameras are made in the same careful manner as the Ray and Ray, Jr., and the thousands now in use, giving almost universal satisfaction, are the best recommendation that we can offer.

These cameras are as complete and perfect as it is possible to make a camera for this price.

The Ray B camera makes 3¼ x 4¼ pictures; has revolving diaphragm with three openings, brilliant square view finder (accurately adjusted), universal tripod sockets, and the popular, simple, improved Ray shutter. These cameras are covered with genuine morocco grain leather, and trimmed with polished and lacquered brass.

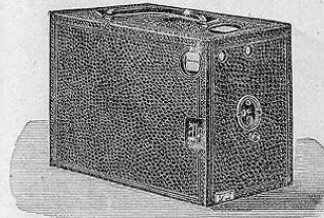
The "Ray B" has a capacity for twelve plates, measures 8½ x 5¼ x 4¾ inches, and weighs 23 ounces.

PRICES.

Ray B, including twelve holders..... \$8 00
Ray B, including two holders..... 5 00
Extra Holders..... 35
Ray B Carrying Case, for bicycle or shoulder..... 1 50

The Ray C Camera, 4 x 5.

WITH NEW MULTIPLYING ATTACHMENT.



This camera is designed to meet the demand of those who wish to make a picture as large as possible with a fixed focus camera. It has a single achromatic lens with good covering capacity. A great deal of time has been spent perfecting this lens so that it will do the work in a proper manner. It has two square view finders (accurately adjusted), universal tripod sockets, and the popular, simple, improved Ray shutter. The Ray C has a capacity for three double wooden plate holders, 4 x 5, with rubber slides.

Price, including one double plate holder \$5 00
Extra holders, each..... 1 00
Carrying case for bicycle or shoulder..... 2 00

The Ray D Camera, 4 x 5.

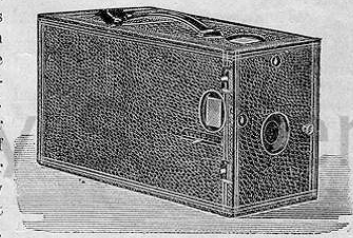
This new camera has been added to the already large list of the well-known Ray cameras in order to meet the requirements of those wishing a good 4 x 5 focusing camera of the box pattern at a moderate price. It is especially fitted for those who are not suited by the compact folding cameras because of the necessary opening and shutting of those cameras before and after use.

The Ray D is handsomely covered with fine seal grain leather throughout, is fitted with a fine, high-grade achromatic lens of good covering capacity, has two large and brilliant rectangular view finders, two tripod sockets, a focusing scale accurately marked for views from six feet to any distance, and has a door at the back to admit of focusing on the ground glass when desired.

The shutter is of the new Ray pattern, the simplest and nearest to perfection of any ever placed on a hand camera. It does not expose the plate in setting, can be easily regulated for different speeds of the instantaneous, and is so arranged that one lever operates both time and instantaneous exposures.

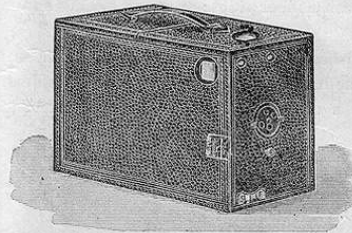
The Ray D camera is made to hold four double plate holders or roll holder.

Price, complete, with one double holder \$8 00
Extra holders, each..... 1 00
Carrying case for bicycle or shoulder..... 2 00



The Ray E Camera, 4 x 5.

WITH NEW MULTIPLYING ATTACHMENT.

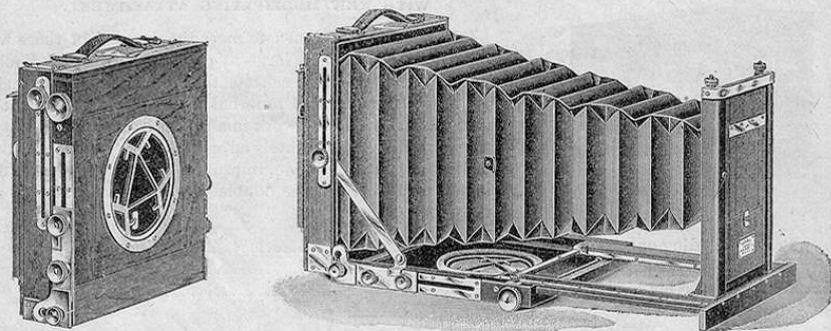


With the new thin metal plate holders the manufacturers of the Ray cameras have designed a 4 x 5 universal focus camera, having a capacity of twelve plates. It has single achromatic lens, fully covering the plate, two accurate view finders, universal tripod socket, and the popular Ray shutter. Every camera fitted with our simple duplicating device, by which many weird and curious effects may be produced.

Price, complete, with twelve single plate holders \$10 00
Extra holders..... 40
Carrying case for bicycle or shoulder..... 2 00

THE CARLTON CAMERA.

REVERSIBLE BACK.



The Carlton Camera is without question one of the finest cameras yet placed on the American market.

The great popularity achieved by the Universal Camera throughout the United States and Canada led us to believe that the Carlton, with its additional features, would meet with a reception even more cordial than that given the Universal, and we have not misjudged the result.

When the Universal Camera was introduced improvements seemed almost impossible. We are progressive, however. Experience suggests new ideas and methods, and we believe in embodying them in our apparatus.

For the enthusiastic amateur and professional photographer who believes in having the very best of everything, the Carlton, with its manifold features, adapting it to an almost infinite variety of work, will be found to fully meet their views as the camera *par excellence*.

Forward Movement of Camera Back.—When lenses of extreme width of angle are employed on the compact form of camera it sometimes happens that a portion of the bed is included in the picture. To prevent this the back of the Carlton can be moved forward, thus allowing the focus to be obtained with the lens entirely out of range of the bed. This movement is quickly made by the use of two milled heads, which, when loosened, permit the back to be placed above the bed, in which position it can be moved forward.

Of course this improvement is only required with lens of the shortest focus, or "extreme angle," as the ordinary wide angle lens can be used without it.

No Loose Top for Tripod.—The bed of the Carlton carries its own Tripod top, adapted to the Rochester Optical Company's Combination Tripod. The top, made of metal, is neatly fitted in the bed, and revolves easily and with great smoothness, permitting the operator to adjust the camera in any direction. A small milled head secures it firmly in position.

All Carlton Cameras have double swing back. The dimensions are the same as given for the Universal.

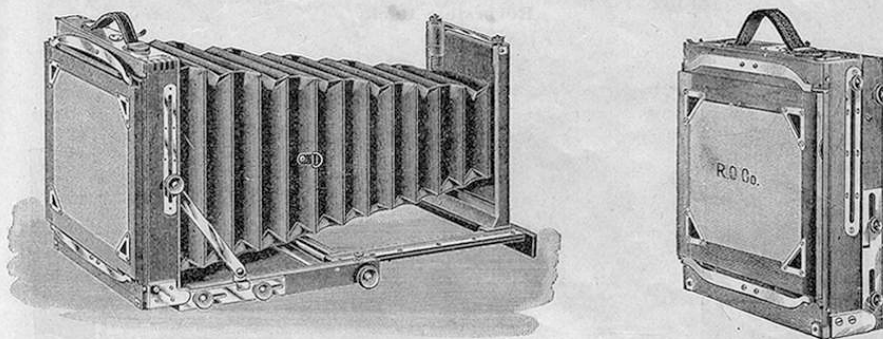
The price includes one mahogany Perfection holder, with rubber sides; mahogany combination tripod and canvas case, but no lens.

The Carlton Cameras, in sizes 8 to 10 inclusive, are furnished with either a short or long canvas case. The former carries the camera and three holders only; the latter will hold the camera, six holders, combination tripod, and in sizes 6½ x 8½ inclusive, there is a compartment for lenses. In ordering, specify style of case desired.

Size of View.	Focal Capacity.	Weight of Camera.	Double Swing.
4 x 5	13 inches	2½ pounds	\$35 00
5 x 7	17 "	4¾ "	40 00
5 x 8	19 "	5¾ "	42 00
6½ x 8½	20½ "	7 "	45 00
8 x 10	24 "	9¼ "	50 00
10 x 12	26¾ "	12¾ "	55 00
11 x 14	30¾ "	15¼ "	62 00

THE UNIVERSAL CAMERA.

Reversible Back.



Double Swing Universal, Fully Extended.

FOLDED.

The Universal Camera is a modified English pattern and is the most compact Camera in market, the 6½ x 8½ being but 2¾ inches thick when folded and weighs but 5¼ pounds. It has extra long bellows, the 6½ x 8½ having a focal capacity of 20¾ inches, and other sizes in proportion; this allows the use of lenses of extreme length of focus, while wide-angle lenses can also be used. Owing to the extra length of bellows the Camera can be used for copying and enlarging, if desired, and in fact is as near a Universal Camera as can well be made.

The Universal is made from selected mahogany, finished in the best possible style, and has all latest improvements. The ground-glass frame is held to the camera-back by two springs which allow it to recede so as to insert the holder between the ground-glass and camera-back. The Universal is made with both single and double swing, has swinging front and rising and falling front controlled by a spring acting in a ratchet, doing away with milled heads. It has fine rack and pinion, the movements being perfectly smooth. All metal work is of brass, polished and lacquered. Price includes canvas carrying case, one Perfection holder, combination tripod, but no lens. (With sizes above 11x14 we send English Book-holder.)

Universal Cameras, up to and including 8x10, are supplied with either a short or a long canvas case. The former carries the camera and 3 holders. The latter holds camera, 6 holders and combination tripod, and in sizes up to 6½ x 8½ inclusive, there is a space for lenses. In ordering, specify style of case desired.

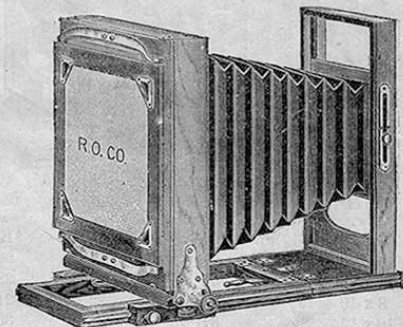
Size of View.	Focal Capacity.	Weight of Camera.	Single Swing.	Double Swing.	Size of View.	Focal Capacity.	Weight of Camera.	Single Swing.	Double Swing.
4 x 5	13 in.	2½ lbs.	\$28 00	\$30 00	8 x 10	24 in.	7½ lbs.	\$40 00	\$43 00
4½ x 6½	15½ "	3½ "	30 00	32 00	10 x 12	26½ "	10½ "	45 00	48 00
5 x 7	17 "	3¾ "	33 00	35 00	11 x 14	30¾ "	13½ "	50 00	55 00
5 x 8	19 "	4¾ "	35 00	37 00	14 x 17	36 "	21½ "	64 00	70 00
6½ x 8½	20¾ "	5½ "	38 00	40 00	17 x 20	43 "	34 "	75 00	85 00

THE STANDARD CAMERA.

Reversible Back.

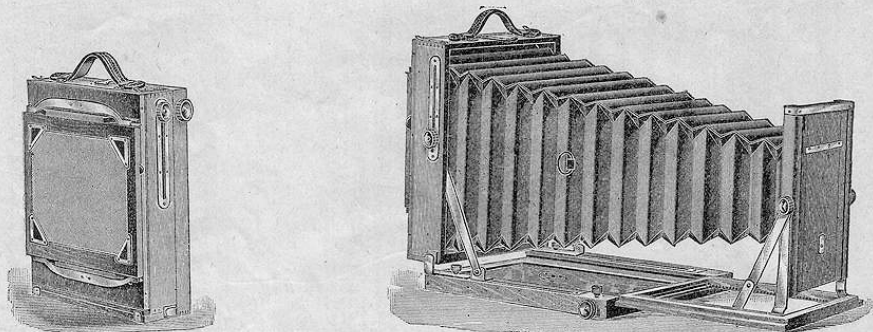
Though low in price, the Standard is thoroughly well made of seasoned mahogany, finely finished in shellac; the metal work is of polished and lacquered brass, and as much pains are taken with the working parts as with the higher priced cameras. The Standard has reversible back fitted with our spring acting ground-glass frame, same as the Ideal and Universal. It is furnished with the Perfection Plate-Holder, and the slide may be drawn from the top or either side—a great convenience when working in confined situations. For those desiring a thoroughly serviceable camera with all the important adjustments, yet at a moderate outlay, we commend the Standard. The price includes canvas carrying case and one Perfection holder, but no lens or tripod. The carrying case will hold two extra plate-holders.

Size of View.	Focal Capacity.	Weight of Camera.	Single Swing.	Double Swing.
3½ x 4½	9½ in.	1½ lbs.	\$10 00	\$12 00
4 x 5	10½ "	2 "	10 00	12 00
4½ x 6½	12 "	2½ "	12 00	14 00
5 x 7	13 "	3½ "	12 00	14 00
5 x 8	13½ "	3¾ "	14 00	16 00
6½ x 8½	14½ "	4½ "	16 00	18 00
8 x 10	16½ "	5½ "	18 00	20 00



THE MONITOR CAMERA.

Reversible Back.



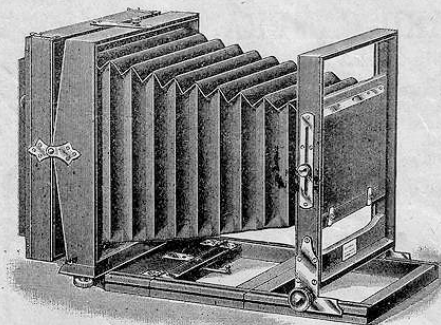
The Monitor has been especially designed with a view of making a strictly high grade compact camera, possessing all the latest improvements, and yet at a lower price than the Universal. It is constructed of the best mahogany, highly polished, and in adjustments and regulations like the Universal. The back will slide forward by loosening two milled heads, so that extreme wide angle lenses can be used (see cuts).

The Perfection, Jr., Plate Holder is used with the Monitor, and is a feature of the outfit. This holder is the same as fitted to the Premo Camera, and is conceded to be the best holder in the market and is the most compact.

Price includes canvas carrying case, one Perfection, Jr., holder and combination tripod, but no lens.

Monitor cameras, up to and including 8 x 10, are supplied with either a short or long canvas case. The former carries the camera and three holders. The latter holds camera, six holders and combination tripod, and in sizes up to 8 1/2 x 8 1/2 inclusive, there is a space for lenses. In ordering, specify style of case desired.

Size of View.	Focal Capacity.	Weight of Camera.	Double Swing.	Size of View.	Focal Capacity.	Weight of Camera.	Double Swing.
4 x 5	13 in.	2 lbs.	\$24 00	8 x 10	24 in.	6 1/4 lbs.	\$36 00
5 x 7	17 "	3 1/2 "	27 00	10 x 12	26 1/2 "	9 1/2 "	40 00
5 x 8	19 "	4 1/4 "	30 00	11 x 14	30 3/4 "	12 "	45 00
6 1/2 x 8 1/2	20 1/4 "	4 5/8 "	33 00				



The Empire State Camera.

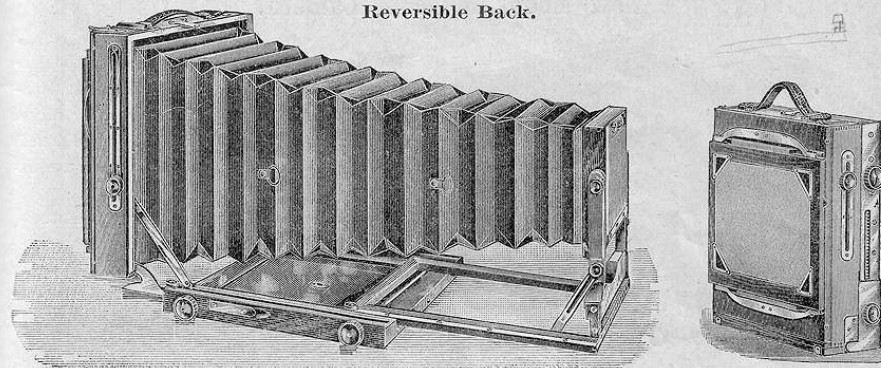
Reversible Back.

To meet a constantly increasing demand among our professional friends especially, we now offer this thoroughly serviceable camera, which possesses all the adjustments requisite for general work, and can be sold at a moderate price. The Empire State is made of select mahogany with polished brass trimmings. It is a front focus camera, and the bed is hinged so as to fold completely under the camera, thus allowing lenses of extremely short focus to be used. It has reversible back and spring actuated ground glass frame. Prices as follows:

Size of View.	Focal Capacity.	Weight of Camera.	Single Swing.	Double Swing.	Size of View.	Focal Capacity.	Weight of Camera.	Single Swing.	Double Swing.
5 x 7	15 1/4 in.	5 lbs.	\$17 00	\$19 00	11 x 14	23 1/2 in.	11 1/2 lbs.	\$30 00	\$33 00
5 x 8	16 "	5 1/2 "	18 00	20 00	14 x 17	29 "	23 3/4 "	40 00	45 00
6 1/2 x 8 1/2	16 3/4 "	5 3/4 "	20 00	22 00	17 x 20	37 "	30 "	48 00	54 00
8 x 10	19 "	7 3/4 "	22 00	24 00	18 x 22	39 "	38 "	60 00	68 00
10 x 12	21 "	8 3/4 "	28 00	30 00	20 x 24	41 "	46 "	78 00	87 00

KING CAMERA.

Reversible Back.



The principal points aimed at in the designing of this camera were to produce an instrument that would combine every modern improvement of practical utility; compact and portable as possible, consistent with strength and rigidity; that should be simple in its parts, so as to avoid difficulties in use and liability to be easily put out of order.

It has rising and falling front, with very great range in either direction. It has swinging motion both to the back and front. The back may be swung in either horizontal or vertical direction. The front may be swung in a vertical plane, the great advantage of this being when the camera is used for photographing objects, either a good deal above or below its own level, the camera may be tilted and the front and back be swung parallel to each other, and exactly vertical, so giving the advantage of a great rise or fall without any distortion.

The back part of the camera is arranged to slide up close to the front for use with wide angle lenses, there is, therefore, no projecting base-board to cut off the angle of view when a very wide-angle lens is used. A lens of two-inch focus can be used without the bed obstructing the view, yet the extreme range of focus is available, the 5 x 8 having a range of 20 inches, and other sizes in like proportion.

The 6 1/2 x 8 1/2 measures 2 1/4 inches thick, all other sizes in the same proportion.

The price of the King includes one holder and canvas case.

When desired, cases will be furnished to hold camera with six holders; or camera, six holders, tripod and pocket for lenses.

Size of view, 5 x 7	price, \$32 00	Size of view, 8 x 10	price, \$36 00
" 5 x 8	" 32 00	" 11 x 14	" 45 00
" 6 1/2 x 8 1/2	" 35 00		

ROCHESTER VIEW CAMERA.

Reversible Back.

For a thorough business camera, it can be recommended for both professional and amateur photographer. It is made up in a first-class manner in every respect, light and compact as possible consistent with rigidity. It is made of the best selected mahogany, highly polished, and all the wearing parts are made of polished and lacquered brass. It has reversible back with our latest adjustable spring-actuated ground-glass screen. The cases are made to hold camera and three holders.

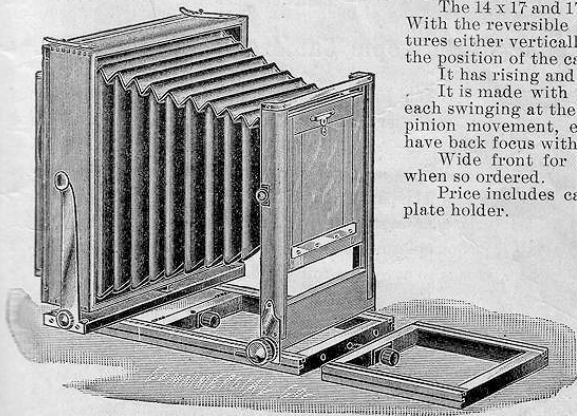
The 14 x 17 and 17 x 20 are furnished with bookholders. With the reversible back you can change it to take pictures either vertically or horizontally, without changing the position of the camera or altering the focus.

It has rising and falling front, cone shaped bellows.

It is made with both vertical and horizontal swing, each swinging at the center. It has front focus, rack and pinion movement, excepting 14 x 17 and 17 x 20, which have back focus with sliding movement.

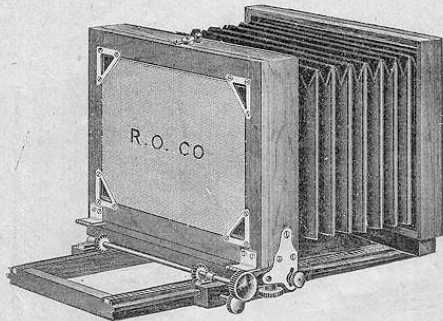
Wide front for stereoscopic work will be supplied when so ordered.

Price includes canvas carrying case and one double plate holder.



Size of View.	Focal Capacity.	Price.
5 x 7	16 1/2 in.	\$18 00
5 x 8	17 "	18 00
6 1/2 x 8 1/2	17 3/4 "	20 00
8 x 10	20 "	22 00
10 x 12	21 3/4 "	28 00
11 x 14	22 3/4 "	30 00
14 x 17	28 3/4 "	40 00

New Model Improved Camera.



The New Model Improved is made after the general style of the New Model of the best Honduras mahogany, highly polished, with nickel trimmings; it has sliding front, folding bed, and is reversible by means of our new adjustable reversing clamp.

It has rack and pinion focusing movement.

Price includes R. O. Co.'s single view lens, Carlton sliding tripod, carrying case and one Perfection plate holder (except 8 x 10, where neither lens or tripod are included). The carrying case will hold two extra plate holders.

Size of View.	Focal Capacity.	Weight of Camera.	Single Swing.	Double Swing.	Size of View.	Focal Capacity.	Weight of Camera.	Single Swing.	Double Swing.
3 1/4 x 4 1/4	8 1/2 in.	1 3/8 lbs.	\$13 00	\$15 00	5 x 8	12 1/2 in.	2 3/4 lbs.	\$18 00	\$20 00
4 x 5	9 "	1 3/4 "	14 00	16 00	6 1/2 x 8 1/2	14 "	3 1/4 "	22 00	24 00
4 1/4 x 6 1/2	9 1/2 "	2 1/8 "	16 00	18 00	8 x 10	16 "	5 1/2 "	*15 00	*17 00
5 x 7	11 3/4 "	2 3/8 "	18 00	20 00					

*Not including lens or tripod.

New Model Camera.

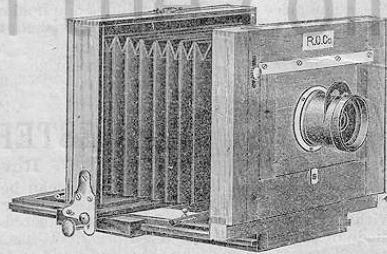
The New Model is made of selected cherry, well finished, and with nickel trimmings. It is provided with sliding front, folding bed, and is easily reversed for upright pictures with our new adjustable reversing clamp.

Price includes R. O. Co.'s single view lens, standard folding tripod, carrying case and one Perfection plate holder (except 8 x 10, where neither lens or tripod are included).

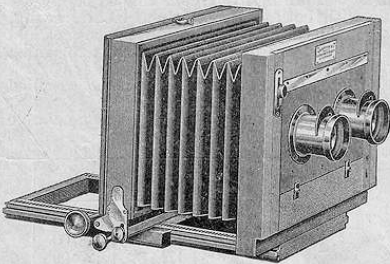
The carrying case will hold two extra plate holders.

Size of View.	Focal Capacity.	Weight of Camera.	Single Swing.
3 1/4 x 4 1/4	8 1/2 in.	1 3/8 lbs.	\$10 00
4 x 5	9 "	1 3/8 "	10 00
4 1/4 x 6 1/2	9 1/2 "	2 "	11 00
5 x 7	11 3/4 "	2 1/4 "	12 00
5 x 8	12 1/2 "	2 1/2 "	12 00
6 1/2 x 8 1/2	14 "	2 3/4 "	15 00
8 x 10	16 "	5 "	*14 00

* Not including lens or tripod.



New Model Stereoscopic Camera.



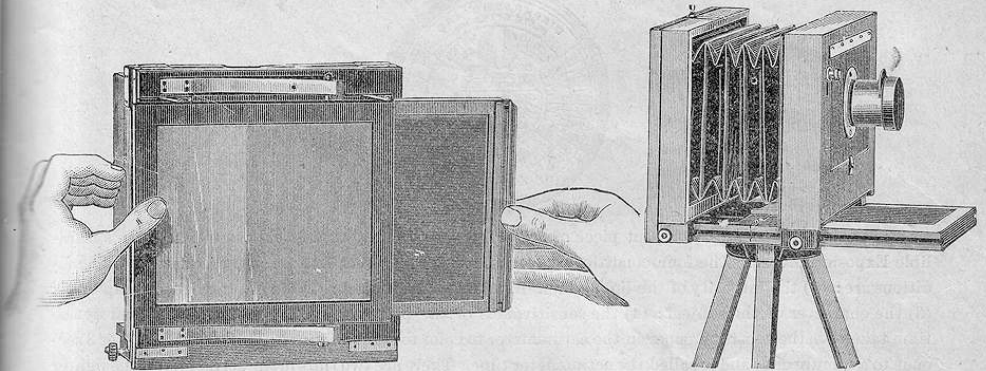
The New Model Stereoscopic Camera is patterned closely after the New Model Improved, having rack and pinion for focusing, sliding front, folding bed, and is reversible by means of our new adjustable reversing clamp.

The partition and front board are removable so that the camera may be used, if desired, for other than stereoscopic pictures, by the addition of a lens of sufficient focus to cover the full plate.

Each camera is enclosed in a neat canvas case, with room for two extra Perfection holders.

Price for 5 x 8, with matched pair of No. 1 R. O. & Co.'s achromatic lenses, Carlton sliding tripod and one Perfection holder.....\$22 00
 Complete without lenses..... 16 00
 Complete without lenses or tripod..... 14 00

PRINCE'S IMPROVED UTILITY CAMERA.



Method of Applying the Plate Holder.

This camera is especially adapted to the requirements of the Amateur, being exceeding portable, compact and light, and is the only cheap camera made to-day that has all the advantages of the high-priced boxes.

The focusing is achieved by the front of the camera, and the lens moving forward, the fine adjustment is accomplished by the focusing screw in the back. The most accurate focus can be attained with ease (this is the only cheap camera made that has a fine focusing attachment) and greater ease in focusing is experienced, as the bothersome bed is moved out of the way entirely, and the more control given to the use of the focusing cloth in excluding the light; and further, the absence of the bed behind enables the operator to get closer to a wall, or in a corner, when photographing interiors or in confined positions.

Another most unique part in its construction is the means of attaching the plate holder and ground glass. The latter is attached by all four corners, and kept in position whenever it may come to a bearing, by springs, and when the plate holder is to be attached, the sideways movement of a couple of inches causes it to recede sufficiently for the holder to be slid in freely, without a spring to retard its motion and jar the camera; and when in position, and the ground glass frame, acted upon by the spring, is released, the latter lies firmly behind it, all of which is accomplished without the touching of a catch (as, indeed, there is none), or removing or swinging the ground glass frame.

It has a vertical swing, raising and falling front (adjusting for sky and foreground), is easy to set up for use, and is adapted for vertical and horizontal work, is made of the best quality of mahogany, well seasoned, is highly polished and trimmed with nickel mountings, has folding bed for compactness in packing.

The plate holder is the feather-weight.

The lens with this outfit is our popular single view lens. These are conceded to be the best of the low-priced lenses. They have the quality most sought in a view lens, clear definition and great depth of focus. Though designed for landscape work, they will make excellent interiors, and even portraits in a well lighted room or on a porch.

The tripod is in extension form; it can be set up ready for use quicker than any other, and can be extended to any desired length. When it is placed on uneven ground the camera can be leveled by simply adjusting the length of the tripod legs. It has no detachable parts to be mislaid or lost. On the whole this is a very desirable outfit.

Price List Prince's Improved Utility Outfit.

4 x 5 Improved Utility Outfit.....	\$12 00
5 x 7 " " " ".....	14 00
6 1/2 x 8 1/2 " " " ".....	16 00

The above prices include camera, lens, tripod, plate holder, copy Amateur's Guide, one focusing cloth and carrying case.

Wynne's Infallible Exposure Meter.

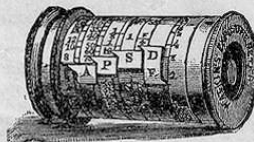


The simplest and most compact piece of apparatus for correctly timing exposures is Wynne's Infallible Exposure Meter. The four conditions governing exposure are all taken into account. These conditions are: (1) the intensity of the light which illuminates the subject; (2) diaphragm or stop employed; (3) the character of the subject; (4) the sensitiveness of the plate used. The first is determined by the time taken for the sensitive paper in the actinometer to color to standard tints. This varies from 2 or 3 seconds to a minute or so and is called the actinometer time. There are two tints in the actinometer, the lighter tint being one-fourth the darker or standard tint, and being used in cases where the light is very weak. The instrument is marked with the diaphragm numbers. A table of the relative sensitiveness of the various brands of plates is supplied with each instrument. To calculate the correct exposure, one movement only is necessary. The movable scale of the instrument is turned until the actinometer time in seconds upon the exposure scale is opposite the diaphragm number of the plate. The correct exposure in seconds and fractions of seconds will be found against each stop, from the largest to the smallest. As an example, we will suppose that we are photographing an ordinary landscape on a Cramer Banner plate. The sensitiveness of the plate is given on the table as *F. 78*. The paper, we will presume, took twelve seconds to darken to the standard tint, and the diaphragm we are using is *F. 16*. Move the scale until twelve is opposite *F. 78*. Then against *F. 16* will be found the correct exposure, one-half second.

Price, with full instructions..... \$2 75
 Box of Extra Sensitive Paper..... 20

The Watkins Exposure Meter.

A New and Reliable Meter for Correctly Timing Exposures.



Patented in England and America.

This compact little instrument works splendidly for intense, difficult subjects and all daylight camera exposures and is a thorough practical success. It is a combination of a bromide silver actinometer (most simple in use) a chain pendulum for timing the exposure, and a set of calculating rings, each carrying a pointer, which, when set to the correct value for each factor, cause a fifth pointer to indicate the correct exposure in seconds or fractions of a second. It is beautifully finished in brass, and measures only 2½ inches long and 1¾ inches in diameter. It is not complicated in use, and the average time occupied in testing the light and adjustment of calculator is only 30 seconds.

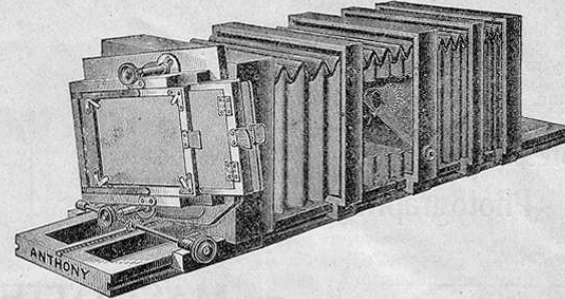
Each instrument is sent out complete with supply of sensitive paper for 120 exposures, full instructions for use, and an important paper on "The Elements of Photographic Exposure."

PRICE.

Regular Meter with "F" Ring.....\$5 00
 Extra Exposure Ribbons, each..... 25
 Watkins' Exposure Note Books..... 50

Lantern Slide Camera.

For Copying 4 x 5 Negatives for Use in the Lantern.



Is made with special reference to transparency work, and has an oscillating frame carriage for ground glass and plate holder, to facilitate the adjustment of picture on plate.

It is well made, light and simple of construction, and unsurpassed for excellence and convenience. An important feature of this camera that is found in no other is that the center board with lens can be used in the end of the camera, converting it at once into an extra long copying camera. This will be found very advantageous in enlarging small pictures by one operation.

Price.....\$12 00
 Special Holders, extra, 3¼ x 4, or 3¼ x 4¼..... 1 50

Extra Parts of Apparatus.

Including Holder Slides, Front Boards, Ground Glass, Tripod Screws, Bellows, Reversible Backs, Carrying Cases, Etc.

SIZE.	Regular Holder Slides.	Hard Rubber Holder Slides.	Front Boards for Model Cameras.	Front Boards for Imp. Model and Standard.	Front Boards for Universal, Carlton and other View Cameras.	Front Board and Division for Stereo Work.	Ground Glass for Focusing Screen.	Tripod Screws.	Reversible Backs for View Cameras.	Square Bellows for Model and Imp. Model.	Cone Bellows for Empire and Standard.	Long Cone Bellows for Carlton and Universal.	Canvas Cases for Camera and Two Holders.	Long Canvas Case for Universal Six Holders and Tripod.
3¼ x 4¼	\$0 15	\$0 25	\$0 25	\$0 40	\$0 50	\$0 50	\$0 12	\$0 25	\$4 50	\$2 00	\$3 50	\$4 00	\$2 25	\$3 00
4 x 5	15	25	25	40	50	50	12	25	5 00	2 00	3 50	4 00	2 25	3 00
4¼ x 6½	20	30	25	40	50	50	15	25	5 50	2 00	3 75	4 25	2 50	3 25
5 x 7	20	35	25	40	50	50	18	25	6 00	2 00	4 00	4 50	2 50	3 50
5 x 8	20	35	25	40	50	50	18	25	6 00	2 00	4 00	4 50	2 50	3 50
6½ x 8½	25	45	25	40	50	75	20	25	6 50	2 25	4 50	5 00	3 00	3 75
8 x 10	30	50	25	40	50	75	25	25	7 00	2 50	5 00	5 50	3 25	4 00
10 x 12	45	80												
11 x 14		1 25			60		35	40	7 50					
14 x 17		2 00			75		65	50	8 50					
17 x 20		3 00					80	55	10 00					
									12 00					

Caps and Flanges.

Morocco Caps for Lenses.

Nos.....	1	2	3	4	5	6	7	8	9
Diameter, inches.....	1½	1¾	1¾	2¼	2½	2½	2¾	3¼	3½
Price, each.....	\$0 60	\$0 60	\$0 65	\$0 70	\$0 70	\$0 75	\$0 80	\$0 90	\$1 00

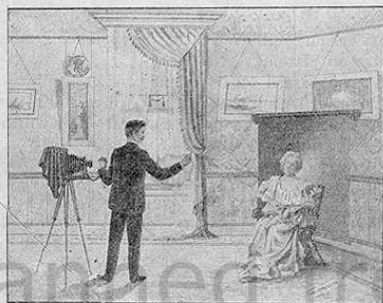
Brass Flanges for Lens.

Nos.....	1	2	3	4	5	6	7	8	9
Diameter, inches.....	1½	1¾	2	2¼	2½	3	3½	4	5
Price, each.....	\$0 50	\$0 50	\$0 75	\$1 00	\$1 00	\$1 25	\$1 50	\$1 75	\$2 00

..Amateur Photographers..

If you want to get the BEST RESULTS in your Portrait Pictures, you cannot evade using the same Back-Ground Appliances as are used by

Professional ...
Photographers



ILLUSTRATING HOW TO MAKE PORTRAITS AT HOME.

[PATENT APPLIED FOR.]

Two Effective
Scenic Grounds
on One Piece of Cloth

On one side a clouded ground; on other side a blended ground as shown in illustration above. Both these designs are adapted for either right or left light.

SPECIAL EXTRA DESIGNS MAY BE HAD IF DESIRED.

In addition to many advantages of this Outfit, special plain white grounds, mounted on spring rollers, can be furnished for **Magic Lantern Home Shows.**

- No. 1 Outfit comprises Japanned Extension Folding Stand with two 4x4 Scenic Grounds mounted on spring rollers Price, complete, \$6 50
- No. 2 Outfit comprises Nickel-Plated Extension Folding Stand with two 4½x4½ Scenic Grounds mounted on spring rollers Price, complete, 10 00
- No. 3 Outfit comprises Japanned Extension Folding Stand with 5x5 Duplex Ground—plain white on one side for Magic Lantern Screen, and on reverse side clouded head ground for portraiture..... Price, complete, 6 50



THE MASCOTTE
PORTABLE
BACK-GROUND
OUTFIT

...FOR...

Home Portraiture

LENSES.

Every Lens We Sell Is Guaranteed.

In purchasing a photographic outfit, either professional or amateur, whether for view, portrait, or architectural work, particular care should be taken in getting a lens suitable for that class of work which it is intended mostly to do.

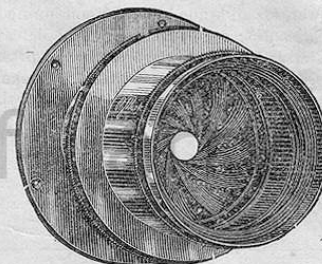
Experts usually select a Dallmeyer, Voigtlaender, Goerz, Zeiss, Beck or Prince's, one of which is indispensable.

The selection of a lens for use in the studio depends upon a variety of conditions, chief of which are the size of the picture, the working speed of the lens, and the length of studio. The greater the illuminating power of the instrument, the more quickly it works, but in the same proportion the focal length and size of picture are diminished. Increase of illuminating power is always attended with a sacrifice of depth of focus, and *vice versa*. Objectives of longer focus produce pictures excelling in correct physical proportions; but this result is never obtained by straining the covering-power of a lens—a practice quite common among photographers. An experienced artist will always prefer a large instrument, provided his studio will admit of its use, instead of trying to make large pictures with a small lens, which is accomplished only by the use of small stops, and at the expense of speed. Then, too, a large, quick-acting portrait-lens has the added advantage of enabling the operator to increase the size of field by the use of stops.

Every enterprising photographer should possess a set of lenses capable of producing any class of work required of him.

No one lens can be expected to do the work of three lenses.

One of Prince's Rapid Hemispherical Lenses comes nearer filling the needs of a photographer than any lens we know of.



Iris Diaphragms.

Perhaps no more annoying occurrence can happen to the photographer in the field, than the loss of his Diaphragms; yet how often is he obliged to meet it. The thin sheets of metal have a perverse way of dropping into tangled grass or muddy streams, and eluding all attempts at recovery. Loss of time, temper and money are thus incurred, which are happily rendered unnecessary by the ingenious application of the Iris Diaphragm to the series of Rectilinear Lenses. These open and close in the regular standard series from the full opening to the smallest stop used with the larger sized lenses; having a graduated and numbered scale with metal indicator. The whole affair adds almost nothing to the size of the mount, and is both dust-proof and light-tight. The illustration gives an excellent idea of the arrangement.

If desired, lenses will be sent C. O. D., with instructions to Express Agent to hold money five days to allow a trial. If not perfectly satisfactory money will be refunded, less charges for returning the package.

Any make of lens not carried in stock by us will be furnished on short notice, and at the lowest price.

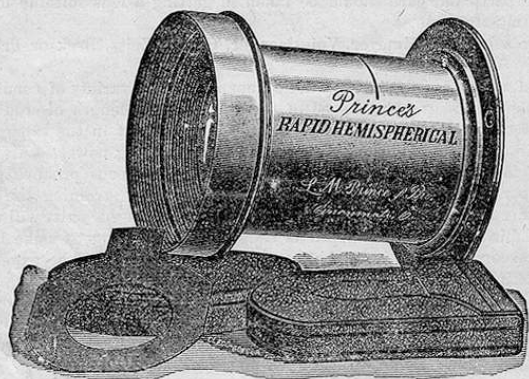
To Find the Focal Length of a Lens.

W. H. Sherman's Rule.

Make two images of any object of convenient length, so that the difference between the images will be equal to some part of the object, marking the position of the ground glass on the base of the camera, where each image is in focus. The distance between the two positions of the ground glass thus found will be the same part of the focal length that the difference of the two images is of the object. Example: With two images of a foot rule; let one image be 8 inches long and the other 4 inches. The difference being one-third the length of the object, the distance between the two positions of the ground glass will be one-third of the focal length of the lens.

Prince's Rapid Hemispherical Lenses.

For Portraits, Groups, Landscapes or Instantaneous Work.



A new Lens, of wonderful power, for all kinds of work; combining *width of angle with rapidity and freedom from distortion—perfectly achromatic*; covering the largest plate, in proportion to size of Lens, of any in the market; giving perfectly straight lines for architectural work and copying. These Lenses have an angle of seventy degrees, and possess all the qualities required to make them equally valuable for either landscape or portrait work. They have a working aperture giving twice the rapidity of ordinary rectilinear lenses, giving excellent results when used for portraits and groups. As for view lenses, they stand unrivalled. Each Lens is supplied with a set of diaphragms in a morocco case or with the Iris Diaphragm.

No.	Size No.	Diameter of Lens.	Back Focus.	Size of Portrait or Group.	Size Landscape.	Price.	With Iris Diaphragms.
5340	1	$\frac{3}{8}$ in.	$3\frac{1}{8}$		4 x 5	\$ 12 00	\$ 16 00
5341	2	$1\frac{1}{16}$ "	$4\frac{3}{4}$	4 x 5	$4\frac{1}{2}$ x $6\frac{1}{2}$	15 00	20 00
5342	3	$1\frac{5}{8}$ "	$7\frac{1}{2}$	5 x 8	$6\frac{1}{2}$ x $8\frac{1}{2}$	20 00	25 00
5343	4	$1\frac{1}{2}$ "	9	$6\frac{1}{2}$ x $8\frac{1}{2}$	8 x 10	25 00	30 00
5344	5	$1\frac{1}{8}$ "	$10\frac{3}{4}$	8 x 10	10 x 12	30 00	37 50
5345	6	$2\frac{1}{8}$ "	$13\frac{3}{4}$	10 x 12	11 x 14	40 00	47 50
5346	7	$2\frac{1}{4}$ "	$15\frac{3}{8}$	11 x 14	14 x 17	60 00	70 00
5347	8	$2\frac{1}{16}$ "	$21\frac{1}{8}$	14 x 17	17 x 20	80 00	92 50
5348	9	$3\frac{3}{8}$ "	$25\frac{3}{8}$	16 x 20	20 x 24	100 00	112 50

Prince's Special Portrait Lenses.

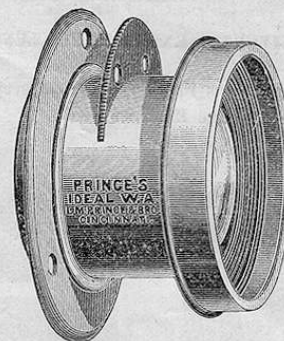
SERIES B.

For Portraits and Groups in the Studio.

The excellent covering qualities render them specially useful for busts and groups, in well-lighted studios.

No. 1 B, Card $5\frac{1}{4}$ -inch focus.....	Price, \$30 00
No. 2 B, Cabinet $6\frac{1}{2}$ -inch focus.....	" 45 00

Prince's Ideal Wide Angle Lenses.



This Lens has been found to be the most rapid of its class yet produced, and for interiors, landscapes, buildings, copying, and wherever the regular long focus is not serviceable, is most excellent, working always with technical fidelity and fulfilling the most exacting requirements. With the largest stop it will cut a much larger plate than what is claimed for it. These Lenses embrace angles of pictures from 90 to 100 degrees.

The Wide Angle Lens has the following advantages over existing non-distorting double combination lenses: It is entirely free from a central spot. It can be used with a larger stop, *i. e.*, it is quicker in action. It produces a more brilliant picture. The lenses of which it is composed are smaller and thinner, for a given sized plate, than those of other lenses intended for the same size of picture.

The Ideal Wide Angle Lenses are mounted in rigid settings or tubes and furnished with rotating diaphragm plates, the stops of which bear the same number and ratios as those of the Rectilinear sizes. The No. 1 size can be had in matched pairs for stereoscopic work.

No.	Size No.	Diameter of Lenses.		Back Focus.	Size of Plate with Full Open.	Size of Plate with Small Stops.	Price.
		Front Lens.	Back Lens.				
5440	1	$\frac{1}{8}$ in.	$\frac{1}{8}$ in.	2 $\frac{3}{8}$ in.	$3\frac{1}{2}$ x $4\frac{1}{2}$	5 x 7	\$15 00
5441	2	$1\frac{1}{16}$ "	$1\frac{1}{16}$ "	4 $\frac{1}{8}$ "	$4\frac{1}{2}$ x $6\frac{1}{2}$	$6\frac{1}{2}$ x $8\frac{1}{2}$	20 00
5442	3	$1\frac{1}{8}$ "	$1\frac{1}{8}$ "	6 $\frac{1}{8}$ "	$6\frac{1}{2}$ x $8\frac{1}{2}$	8 x 10	25 00
5443	4	$1\frac{1}{4}$ "	$1\frac{1}{4}$ "	7 $\frac{1}{8}$ "	10 x 12	11 x 14	38 00
5444	5	$2\frac{1}{16}$ "	$2\frac{1}{16}$ "	10 $\frac{1}{8}$ "	12 x 15	14 x 17	50 00
5445	6	$2\frac{1}{8}$ "	$2\frac{1}{8}$ "	13 $\frac{1}{8}$ "	15 x 20	18 x 22	65 00
5446	7	$3\frac{1}{16}$ "	$3\frac{1}{16}$ "	18 $\frac{1}{8}$ "	20 x 24	24 x 30	85 00

Correct Focusing.

Complaints often reach us that Lenses do not cut sharp to the edges even with the smallest stop. This is due to incorrect focusing and is *not the fault of the Lens*. To get the best definition and the finest depth of focus proceed as follows:

Focus, without a stop, on any object midway between the nearest and farthest points of the picture, which usually falls between the centre and the right or left of the ground glass. Now insert a small diaphragm, and the picture will be sharply focused from edge to edge. For upright pictures focus above or below the center of the plate. Adopt this method of focusing also in making groups and in copying, and even with a medium stop finer results will be obtained than when focusing in the center and using the smallest stop. For Large Heads it is important that the focus should be well divided, to insure clear and uniform definition, the fine depth of focus, and a round soft effect. The smaller the stop used, the greater the resulting definition and depth of focus.

In making groups of single figures it is well to not strain the capacity of a lens, as thereby the marginal portions of the picture are liable to be out of proportion.

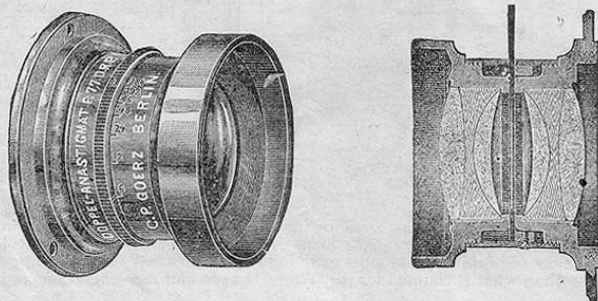
For near views, focus well on the foreground; but in all cases where the camera is tilted, see that the ground-glass is plumb before focusing. Insert the diaphragm last.

Goerz's Double Anastigmat, F 7, 7.

SERIES III.

UNIVERSAL EXTRA-RAPID LENS.

For Portraits, Groups, Instantaneous Photography, Landscapes, Architecture, Interiors and Enlargements.



The lenses of this series are Universal instruments in the full sense of the word. At full aperture, they admit of instantaneous photographs embracing an angle of 70° being taken, even on dull days. By the use of small stops the photograph may be made to include an angle of 90°. The Double Anastigmats of Series III. satisfy, therefore, the highest requirements and are eminently adapted for all-round purposes, in and out of doors.

As the image is perfectly sharp, even with large apertures, the definition, brilliancy and depth of every point of the field is absolutely uniform. Hence perfectly sharp wide-angle instantaneous photographs may be taken.

The back lens, the focus of which is about the double of that of the entire objective may, by itself be used as a landscape lens.

No.	Equivalent Focus.	Free Aperture.	SIZE OF PLATE SHARPLY COVERED AT			Price With Iris-Diaphragm.
			F 7, 7.	F 15, 5.	F 62.	
00	3 1/4	1/2	3 x 3	3 1/4 x 4 1/4	4 x 5	\$ 35 50
0	4 3/4	3/8	3 1/4 x 4 1/4	4 x 5	4 3/4 x 6 1/4	37 50
1	6	5/8	4 x 5	4 3/4 x 6 1/4	5 x 8	45 00
2	7	1	4 3/4 x 6 1/4	5 x 8	7 x 9	51 50
3	8 3/4	1 1/4	5 x 8	6 1/2 x 8 1/2	8 x 10	62 50
4	9 1/2	1 1/2	6 1/2 x 8 1/2	7 x 9	10 x 12	75 50
5	10 3/4	1 3/8	7 x 9	8 x 10	12 x 15	91 00
6	12	1 1/2	8 x 10	10 x 12	16 x 18	107 00
7	14	2	10 x 12	12 x 15	18 x 22	140 00
7a	16 1/2	2 3/8	11 x 14	13 x 17	21 x 25	182 00
8	19	2 3/8	12 x 15	16 x 18	22 x 25	219 00
9	24	3 1/2	16 x 18	18 x 22	24 x 30	325 00
10	30	4 1/4	18 x 22	22 x 25	28 x 36	539 00
11	35	5	22 x 25	24 x 30	34 x 44	1,070 00

Nos. 00 to 5 are particularly adapted for hand and field cameras. The higher numbers will be found of great service for large portraits and group photography and similar work.

The size of plate indicated sub F 7, 7 represents the area which is sharply covered up to the edge. It is, however, advisable to select a higher number than that actually required in all cases where the lens is largely used at full aperture and where, at the same time, it is important that the entire plate should be uniformly illuminated when the camera front is moved out of its central position.

We are prepared to supply lenses mounted for adaptation to detective cameras if ordered in sufficiently large numbers.

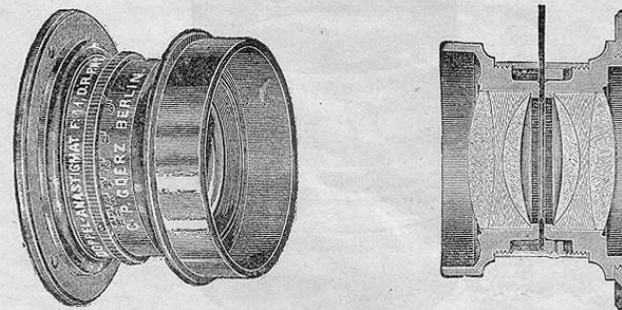
For stereoscopic views the lenses are "paired" at an extra charge of \$2.50.

Goerz's Double Anastigmat F, 11.

SERIES IV.

RAPID COPYING LENS.

For Full-Size Reproductions, Enlargements, Large Groups, Landscapes, Instantaneous Photography and Interiors.



Series IV. of the Double Anastigmatic Lenses has been specially computed for copying in full size. It is, for this purpose, made to cover a plate of a diameter which is double the focal length of the lens without any distortion and without astigmatic aberrations and with perfectly uniform sharpness up to the extreme edge.

This excellent lens may also be used for photographing distant objects; for in this case the curvature of the image is barely appreciable and is counterbalanced by the depth of the focus and the sharpness of the image, which is free from astigmatic aberrations. The sharp image subtends an angle of 75° with the largest stop: hence instantaneous wide angle photographs, groups, landscapes and architectures may be taken with these lenses. By means of small stops the image may be made to embrace an angle of 90°.

The hood is, as may be seen from the illustration, detachable and is fitted on in such a manner as to admit of the adaptation of a prism or mirror.

The back lens, whose focus is about double that of the whole objective, may in like manner as the lenses of Series III. be used by itself as a landscape lens.

No.	Equivalent Focus.	Free Aperture.	Normal Size of Plate for Copying at		Size of Plate Covered at		Price with Waterhouse Stops.
			F, 15-5.	To F, 22.	F, 15-5.	With Smaller Stops for Landscapes, Interiors, etc.	
	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	
6	12	1 1/8	16 x 18	10 x 12	10 x 12	16 x 18	\$ 110 00
7	14	1 1/8	18 x 22	12 x 15	12 x 15	18 x 22	141 50
8	19	1 3/4	22 x 25	16 x 18	16 x 18	22 x 25	230 00
9	24	2 3/8	24 x 30	18 x 22	18 x 22	24 x 30	345 00
10	30	2 3/4	28 x 36	22 x 25	22 x 25	28 x 36	565 00
11	35	3 1/4	34 x 44	24 x 30	24 x 30	34 x 44	1,096 00
12	47	4 1/8	40 x 60	28 x 36	28 x 36	40 x 60	1,980 00

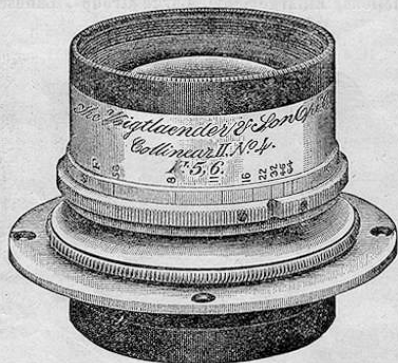
The normal plate sizes tabulated above for copying in full size are covered with great uniformity and with a degree of sharpness which is equal to that of a fine engraving. Where this degree of sharpness is not insisted upon, e. g. for reproductions in mezzotint, the same area may be covered with full aperture.

In order to obviate any misunderstanding, we beg to remark that the double anastigmatic lenses F, 11 cover a considerably larger plate than those usually required by photographers. Nearly all cameras now in use are designed for long focus lenses, owing to the inferior capabilities of the older types of copying lenses. For this reason it is often advisable not to choose a lens of inconveniently short focus, but rather to take the next size larger.

Voigtlaender's Collinear.

SECOND SERIES—"EXTRA RAPID."

F 5, 6 for Small Sizes. F 6, 3 for Large Sizes.



For Hand Camera Work.

The small sizes are the most valuable lenses known. With absolute sharpness, depth of focus and brilliant, uniform illumination they show twice as much speed as other Anastigmats at 7, 7. For athletic work, animals in motion, and extremely rapid exposures they are preferable to all other lenses.

They admit four times as much light as the better grade of hand camera lenses. While the ordinary hand camera will fail in taking pictures on cloudy days or in dark places, where the illumination is incomplete, the Collinear II. will succeed.

They are ten times as quick as the lenses of the average snap-shot camera. Consequently shutters of extreme speed can be used; objects moving with the highest speed can be caught.

For Studio Work.

The large sizes meet all the demands of the studio for large portrait work and groups. High speed, brilliant illumination, excellent covering power and depth of focus for groups.

No. 7 is a splendid lens for cabinet work, 8 x 10 heads, 10 x 12 or even 11 x 14 groups.

Nos. 9 and 10 are choice lenses for 14 x 17 to 18 x 22 heads and groups.

Note the low prices of the large sizes compared with other makes.

The size of plates, listed below, do not represent the maximum covering power, or utmost capacity.

Full Aperture F 5, 6.

No.	Equivalent Focus.	SIZE OF PLATES SHARPLY COVERED.			Price with Iris Diaphragm.
		F 5, 6.	F 8.	F 32.	
1	Inches. 3 3/8	Inches. 3 3/4 x 3 3/4	Inches. 3 x 4	Inches. 3 1/2 x 4 1/2	\$ 35 00
2	4 1/4	3 3/4 x 4 3/4	4 1/4 x 6 1/2	5 x 7	40 00
3	5 1/2	4 3/4 x 6 1/2	5 x 7	6 1/2 x 8 1/2	45 00
4	7 1/2	5 x 7	6 1/2 x 8 1/2	8 x 10	60 00

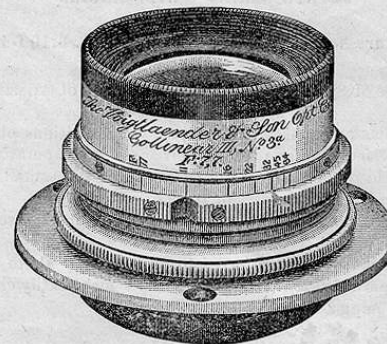
Full Aperture F 6, 3.

5	9 7/8	6 x 8	6 1/2 x 8 1/2	9 x 11	77 50
6	11 1/2	6 1/2 x 8 1/2	8 x 10	10 x 12	105 00
7	14 1/2	8 x 10	10 x 12	12 x 15	140 00
8	17	11 x 14	12 x 15	16 x 20	187 50
9	20	12 x 15	14 x 17	20 x 24	235 00
10	23 3/8	14 x 17	18 x 22	22 x 28	325 00

The back combination of this series can be used separate, forming an anastigmatic lens with largest aperture of F 11, 3 possessing double the focal length of the original.

Voigtlaender's Collinear.

THIRD SERIES—"RAPID."



Full Aperture, F 7, 7.

The third series of Collinears is an extremely useful one for all-around views, hand camera work, groups, instantaneous architectural and copying work.

The speed is second to no other similar lens, except Collinear II.

Series III, with full opening, covers 80°—85° and stopped down comprises even a larger angle, so that it can be used as a wide angle lens with fine results. The small sizes are excellent lenses for hand cameras. The anastigmatic definition is microscopically sharp and the negatives are highly adapted for enlarging.

The medium and larger sizes are extremely popular with photographers for large views and difficult groups. As in the previous series the sizes listed below do not represent the maximum covering power or capacity of the lens. The rear combination can be used separate as a long focus anastigmat with the aperture of F 16.

No.	Equivalent Focus.	Size of Plates Sharply Covered.			Price with Iris Diaphragm.
		F 7, 7.	F 16.	F 32	
0	Inches. 2 1/2	Inches. 1 3/4 x 1 3/4	Inches. 1 3/4 x 2 1/2	Inches. 2 1/2 x 2 1/2	\$20 00
00	2 3/4	1 3/4 x 2 1/2	2 1/4 x 3 1/2	3x4	22 50
1	3 1/2	3 3/4 x 3 3/4	3 3/4 x 4 3/4	4x5	27 50
2	4 3/4	3 3/4 x 4 3/4	4 3/4 x 6 1/2	5x6 1/2	32 50
3	5 7/8	4 3/4 x 6 1/2	5 x 7	6 1/2 x 8 1/2	40 00
3a	7	5 x 7	6 x 8	7x9	50 00
4	7 7/8	6 x 8	7 x 9	8x10	55 00
5	9 7/8	7 x 9	8 x 10	11x14	72 50
6	11 7/8	8 x 10.	11 x 14	12x15	100 00
7	14 1/2	11 x 14	14 x 17	16x18	130 00
8	17	14 x 17	16 x 18	18x22	165 00
9	20	16 x 18	18 x 22	22x27	210 00
10	23 3/8	18 x 22	20 x 24	25x30	300 00
11	31 1/2	20 x 24	25 x 30	30x35	525 00

Voigtlaender's Collinear.

FOURTH SERIES—"WIDE ANGLE."

Aperture Nos. 1-5 f-11.3. Aperture Nos. 6.10 f-12.5.

Series IV is the first series of Symmetrical Wide Angle lenses of Anastigmatic type to be offered in a variety of sizes.

For Wide Angle work it has no equal. The sharpness of definitions obtained with the largest stop of this series of Collinears is perfect, and as a result their speed is comparatively very high.

With full aperture a field of 75° to 80° is perfectly sharp, with small stops 90° is easily exceeded, without the introduction of the least unevenness or trace of astigmatism.

The plates listed below are by no means the maximum. In most cases much larger plates will be covered sharply.

For line work the Fourth Series is preferred to all others by photo engravers, owing to the unapproachable detail and microscopic definition. In the large sizes customarily chosen for this work we furnish Waterhouse stops, the iris not being adapted to process work.

No.	Equivalent Focus.	Size of Plates Sharply Covered.			Price with Iris or Waterhouse.
		F 11.3.	F 32.	F 64.	
1	Inches. 4	Inches. 3½ x 4½	Inches. 4 x 6	Inches. 4½ x 6½	\$ 30 00
2	4½	4½ x 6½	5 x 7	5½ x 7½	35 00
3	5½	5 x 7	6 x 8	7 x 9	40 00
4	7½	7 x 9	9 x 11	10 x 12	48 00
5	10½	9 x 11 F 12.5	10 x 12	12 x 15	72 00
6	12½	10 x 12	12 x 15	14 x 17	90 00
7	17½	14 x 17	16 x 18	18 x 22	145 00
8	23½	18 x 22	20 x 24	24 x 28	215 00
9	31½	20 x 24	22 x 27	27 x 35	325 00
10	39½	25 x 30	27 x 35	35 x 40	465 00

The Care of Lenses.

It is not infrequently that a lens of standard reputation is accused of working slow or of failing to produce a sharp picture even with the smallest stop. When the matter is thoroughly investigated, however, the trouble is usually found to be with the photographer and not with the lens.

When not in use, the instrument should be capped, and the lenses occasionally be relieved of any dust or mist that may have accumulated. Care should be taken to replace the glasses correctly, or otherwise the instrument will be incapacitated.

Numerous photographers indulge in the pernicious habit of removing with their fingers particles of dust adhering to the outer surface of a lens, which in time produces innumerable fine scratches, and naturally impairs the working speed of the lens. A clean chamois skin or soft silk handkerchief should be used in cleaning the lenses of any objective.

In removing the lenses from the tubes for the purpose of cleaning or inspection, it is essential that they be replaced in their proper original position, otherwise the Diaphragms will not, as they ought, pass through the optical centre of the instrument. The best plan is to remove, clean and return one combination at a time, thus insuring the correct adjustment of the objective.

NOTE.—We are pleased to call the photographer's attention to the above articles, and, if followed out, a great deal of time and trouble will be saved.

Voigtlaender & Son's Regular Portrait Lenses.

FIRST SERIES.

Exclusively for Portraits. "Quick Workers."



These are double-combination lenses; possess the greatest illuminating power consistent with fine definition and work in less time than any other regular portrait lens. They are, therefore, very desirable for photographing children and nervous persons, but specially adapted to bust portraits on cards and cabinets, yielding pictures which excel in roundness (stereoscopic effect) and extreme brilliancy. All are provided with rack and pinion movement (except No. 6 B and No. 7 B, which are mounted in rigid settings) and central stops. Ratio of aperture to focus 1 to 3½ or $\frac{F}{3.16}$

No.	Diameter of Lens.	Equivalent Focus.	Size of Plate.	Price.
3B	2	6½	3¼ x 4¼	\$42 00
4B	2½	8¼	4¼ x 6½	78 00
5B	3	9½	5 x 7	95 00
6B	3½	11	6½ x 8½	135 00
7B	4	14	8 x 10	167 00

Extra Rapid Euryscope.

FOURTH SERIES.

Symmetrical lens, for general portraiture, also general outside work, photo-process work and copying.

No. 0—4¾ inch, for 3½ x 4½	\$27 00
" 00—6½ " " 4 x 5	36 00
" 1—8¼ " " 5 x 7	45 00
" 2—10 " " 6½ x 8½	52 00
" 3—11½ " " 8 x 10	65 00
" 4—14½ " " 10 x 12	90 00
" 5—17½ " " 11 x 14	135 00
" 6—21½ " " 14 x 17	180 00
" 7—24½ " " 18 x 22	220 00
" 8—32 " " 27 x 32	412 00
" 9—46 " " 30 x 36	900 00

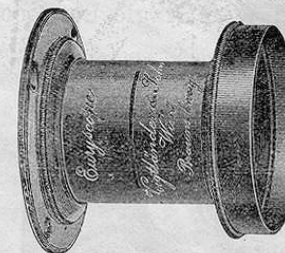
Estimated Distances required for working the Euryscope.

The distance from Camera to sitter for standing figure, say 5 inches long, on a cabinet.

No. 1 requires	about 12 feet
" 2 "	" 14 "
" 3 "	" 18 "
" 4—7½ inch panel picture, requires	" 18 "
" 5—10½ " " " " " "	" 20 "
" 6—12 " " " " " "	" 20 "
" 7—15 " " " " " "	" 20 "

For busts and half-length figures you must be much nearer the sitter.

Voigtlaender's New Portrait Euryscope.



The Portrait Euryscopes are made in two series as regards working speed. The first or second series are short focus, and take the place of Voigtlaender's Portrait Lenses of normal speed, having the same ratio of aperture to focal length, but excel them in covering capacity, depth of focus and definition. The third series will be found more useful, being longer focus and consequently less rapid, but sufficiently quick working for all ordinary portrait work in the studio. Possessing, too, greater covering power and more depth of focus, they are especially adapted to taking groups and standing figures in short studios, where the regular Euryscopes, on account of their longer focus, may not be available. They are also excellent for instantaneous work, inasmuch as the flare, characterizing portrait lenses when used out of doors, does not exist.

NOTE.—Nos. 3, 4 and 5 have rack and pinion Nos. 6 and 7 are mounted in rigid settings.

Portrait Euryscope.

SECOND SERIES.

No.	Diameter.	Equivalent Focus.	Size of Plate.	Price.
3	Inches. 2	Inches. 7½	Inches. 5¼ x 6½	\$62 00
4	2½	9½	6½ x 8½	86 00
5	3	11½	8 x 10	118 50
6	3½	14	10 x 12	145 00
7	4	17½	12 x 15	175 00

Specially adapted to general portrait work in very short or dimly lighted studios.

Portrait Euryscope.

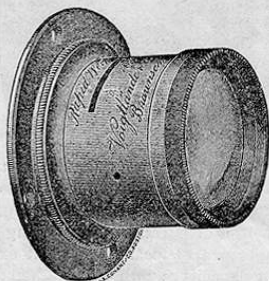
THIRD SERIES.

Symmetrical lens. Longer focus. For general portrait work.

No. 1A—6½ inch, for 3½ x 4½	\$45 00
" 2A—7½ " " 4½ x 6	55 00
" 3A—8½ " " 5 x 8	70 00
" 4A—10½ " " 6½ x 8½	95 00
" 5A—13 " " 10 x 12	130 00
" 6A—15½ " " 12 x 15	186 50
" 7A—19½ " " 14 x 17	226 50
" 8A—25 " " 17 x 20	426 50

Voigtländer & Son's Rapid Wide Angle Euryscope.

FIFTH SERIES.



A NEW GROUP LENS.

Ratio of Aperture to Focal Length, 1 to 6.
Angle, 80 Degrees.

Symmetrical and very rapid Lens for groups in short studios, also for general inside and outside work.

No. 0—	5½ inch, for	4 x 5	.....	\$35 00
" 00—	8 " " "	5 x 7	.....	48 00
" 1—	9½ " " "	6½ x 8½	.....	63 00
" 2—	11 " " "	8 x 10	.....	82 00
" 3—	12½ " " "	10 x 12	.....	100 00
" 4—	15½ " " "	11 x 14	.....	135 00
" 5—	19 " " "	13 x 16	.....	180 00

Will cover larger than listed.

Wide Angle Euryscope.

SEVENTH SERIES.

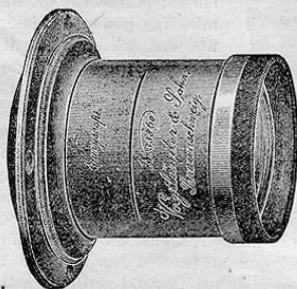
Symmetrical Lens for interiors, general outside work and copying.

No. 0—	4½ inch, for	4¼ x 5½	.....	\$31 00
" 1—	5½ " " "	5 x 7	.....	36 00
" 2—	6½ " " "	6½ x 8½	.....	41 00
" 3—	7½ " " "	8 x 10	.....	51 00
" 4—	9 " " "	11 x 14	.....	69 00
" 5—	16 " " "	14 x 18	.....	87 00
" 6—	20 " " "	17 x 20	.....	108 00
" 7—	25 " " "	20 x 24	.....	139 00
" 8—	32 " " "	24 x 36	.....	231 00

Will cover larger than listed.

Voigtländer & Son's Rapid Euryscope.

SIXTH SERIES.



For Landscapes, Buildings, Instantaneous Work,
as well as Standing Figures, Groups, and
Large Heads in the Studio.

Symmetrical Lens for general portraiture in strongly-lighted Studios only; and especially for general outside work, photo-process work and copying.

No. 0—	7 inch, for	4 x 5	.....	\$30 00
" 00—	9½ " " "	5 x 7	.....	40 00
" 1—	11½ " " "	6½ x 8½	.....	52 00
" 2—	14½ " " "	8 x 10	.....	60 00
" 3—	17½ " " "	10 x 12	.....	72 00
" 4—	19½ " " "	12 x 15	.....	108 00
" 5—	23¼ " " "	16 x 18	.....	158 00
" 6—	28 " " "	18 x 22	.....	208 00
" 7—	32 " " "	20 x 24	.....	243 00
" 8—	42 " " "	30 x 36	.....	475 00

Will cover larger than listed.

Wide Angle Euryscope.

EIGHTH SERIES.

(Supplementary Series.)

Symmetrical Lens, longer focus than Series VII, thus covering larger plates. For interiors, general outside work and copying.

No. 1—	4½ inch, for	5 x 7	.....	\$27 00
" 2—	5½ " " "	6½ x 8½	.....	31 50
" 3—	6½ " " "	8 x 10	.....	36 00
" 4—	7½ " " "	10 x 12	.....	40 50
" 5—	9 " " "	11 x 14	.....	49 00
" 6—	11 " " "	13 x 16	.....	57 00
" 7—	13½ " " "	16 x 20	.....	68 00

Will cover larger than listed.

Bausch & Lomb-Zeiss Planar Lens.

SERIES Ia.

Speed f-3.6.

Description.—These objectives are composed of two systems, the outer element of each being a single collective lens, and the inner composed of two dispersive lenses, having approximately the same refractive, but different dispersive power. On account of their extreme rapidity and the consequent large size of the lenses, the Planars are somewhat heavier than the other anastigmats.

Optical Properties.—These lenses reach the extreme limit of rapidity, the speed varying from f-3.6 in the smaller and medium sizes to f-5 in the larger sizes. The angle of the image circle is 72 degrees, of which 50 degrees are utilized on the small plates for which the lenses are rated. The Planars are superior in precision of defining power to any of the other anastigmats. In fact the results obtainable are such as to leave nothing further to be desired.

Application, Photo-Engraving.—In this lens the photo-engraver will find that which he has looked in vain for in other lenses, viz.: a lens which will give a reproduction equal to the copy, from same size down to the smallest reduction. They possess in addition great speed, making them time savers, not only in giving the best work, but with very short exposure.

Ultra Rapid Instantaneous Photography.—For those difficult and peculiar classes of instantaneous photography where speed is the imperative quality, the Planar will be found a great improvement over the extra rapid lenses of other types heretofore used, as they have speed equal to that of the fastest portrait lenses, and at the same time a covering power which the others have not. For making kinemograph and other negatives for the projection of animated pictures, these lenses are particularly well adapted, the smaller sizes having the requisite depth of focus and speed.

PRICE-LIST.

All Lenses are Supplied with Improved Iris Diaphragm and Morocco Cap.

No.	Size of Plate Covered with Largest Stop.*	Equivalent Focus.	Diameter of Lens.	Speed.	Angle. Degrees.	Price. Lens Only.†
	Inches.					
9	2½ x 3¼	4½	1½	f-3.6	70	\$ 53 00
10	3¼ x 3¾	5	1½	f-3.8	70	63 00
11	3¼ x 4¼	6¼	1¾	f-3.8	70	77 00
12	4¼ x 6½	8	2	f-4.	65	109 00
13	5 x 8	10	2½	f-4.	65	150 00
14	6½ x 8½	12	2¾	f-4.2	62	192 00
15	7 x 9	14½	3¼	f-4.5	72	241 00
16	8 x 10	16¾	3¾	f-4.5	72	300 00
17	10 x 12	18½	3¾	f-5.	68	349 00
18	12 x 16	24	4¾	f-5.	68	698 00

* The next larger plate is well covered with intermediate stop.

† Nos. 9, 10, 11 and 12 only can be fitted with Iris Diaphragm Shutter.

Sizes larger or smaller than listed above will be made to order if desired.

When ordering lenses fitted with shutter by telegraph, specify Diaphragm in addition to the size of the lens.

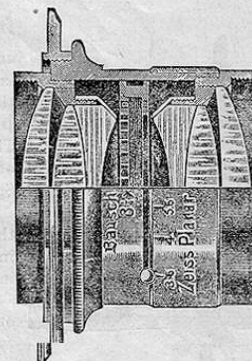


Figure shows 3¼x4¼ Series Ia Lens actual size.

Bausch & Lomb-Zeiss Anastigmat Lens.

SERIES II.

Speed f-6.3.

Description.—The front system of these objectives is composed of two and the back system of three lenses. As the systems are necessarily quite large, on account of the large aperture, the lens as a whole is somewhat heavy; the mounts, however, are reduced in weight in every practical way. The Iris Diaphragm shutter may be fitted to all sizes up to and including the $6\frac{1}{2} \times 8\frac{1}{2}$. The sizes larger than $6\frac{1}{2} \times 8\frac{1}{2}$ have an aperture greater than the largest opening of the shutter, hence, if fitted with a shutter, the speed would be reduced. Special shutters must therefore be used on these larger sizes.

Optical Properties.—The speed of this series is f-6.3. Being one of the most rapid of the anastigmats, they are particularly adapted for the fastest instantaneous exposures, ordinarily rapid instantaneous work on cloudy days, in shaded situations, and in the studio.

The full angle of the field is 85 degrees, of which 46 degrees are utilized on the plates for which the respective sizes are rated. The anastigmatic and spherical corrections are of a very high order, especially considering the speed and angle.

Application, Instantaneous Photography.—Where a lens is to be selected solely on account of great speed, and where the VIIa is too expensive, this lens will be found the best of all anastigmats.

General Work.—They possess a further advantage, that they may be used for all ordinary purposes by reducing the speed (aperture), thus giving the same covering power and depth of focus which other lenses working under the same conditions have.

Studio.—The Series II lenses are especially desirable for the studio on account of their great speed, combined with optical qualities, which enable the photographer to place sitters for groups in any desired position, and does not confine them to the usual semi-circular arrangement in order to secure equal definition and size of figures.

PRICE-LIST.

All Lenses are Supplied with Improved Iris Diaphragm and Morocco Cap.

No.	Size of Plate Covered with Stop f-6.3. Inches.	Equivalent Focus. Inches.	Free Diameter of Largest Lens. Inches.	Price.	
				Lens Only.	When Fitted with Diaphragm Shutter.
1	$2\frac{1}{4} \times 3\frac{1}{4}$	$3\frac{1}{2}$	$\frac{1}{2}$	\$ 30 00	\$ 45 00
2	$3\frac{1}{4} \times 4\frac{1}{4}$	$4\frac{1}{2}$	$\frac{1}{2}$	33 50	48 50
3	4×5	$5\frac{1}{2}$	$\frac{1}{2}$	40 50	55 50
4	$4\frac{1}{4} \times 6\frac{1}{4}$	$6\frac{1}{2}$	$1\frac{1}{4}$	51 00	66 00
5	5×7	$8\frac{1}{2}$	$1\frac{1}{2}$	64 50	80 50
6	5×8	$9\frac{1}{2}$	$1\frac{1}{2}$	78 50	96 00
7	$6\frac{1}{4} \times 8\frac{1}{4}$	$11\frac{1}{2}$	$2\frac{1}{4}$	108 50	126 00
8	8×10	$14\frac{1}{2}$	$2\frac{3}{4}$	150 00	
9	10×12	$16\frac{1}{2}$	$2\frac{3}{4}$	192 00	
10	11×14	$20\frac{1}{2}$	$3\frac{1}{4}$	240 50	
11	12×15	$23\frac{1}{2}$	$3\frac{1}{2}$	300 00	

*The next larger plate is well covered with small stop.

Price for matching two lenses for stereoscopic work, \$3.00.

Special sizes of Series II lenses, either larger or smaller than listed above, are made to order only.

Prices on application.

When ordering shutters fitted to lenses, by telegraph, specify *Diaphragm* in addition to the size of the lens.

Bausch & Lomb-Zeiss Anastigmat Lens.

SERIES IIa.

Speed f-8.

Description.—The front system of these objectives is composed of two and the back system of three lenses, special Jena glass being used. The two systems have a greater separation than in the other anastigmat lenses, and therefore admit the application of the Iris Diaphragm shutter, as well as the Unicum and other shutters which operate between the lenses, to the smaller sizes. The mountings are extremely neat and compact.

Optical Properties.—These lenses have a speed of f-8 and give ample illumination under unfavorable circumstances. The anastigmatic and spherical corrections are not equalled in any other lens, except the Series VIIa. They have therefore unequalled covering power, reproducing the minutest detail without the necessity of reducing the aperture, and rendering straight lines at all angles and in all parts of the field as such. They have an angular field of 75 degrees, 60 degrees of which are utilized on the plates for which the various sizes are rated. The focus of each lens of the series is shorter for the plate for which it is rated, than can be employed with other lenses, thus giving greater depth of focus and angle.

Application, Hand Cameras, General Photography.—On account of their superior optical qualities, short focus, the compactness of the mounting, and the applicability of shutters to them, the smaller numbers are better suited for use with hand cameras than any other lenses, excepting only the Series VIIa. This is also true regarding all the sizes when used for tripod cameras. In fact, they are the best of all the Zeiss Anastigmats where one lens only is to serve for all kinds of work.

Studio.—In a well-lighted studio they are suited for portraits of heads and full figures on account of their depth of focus and for groups, as they do not require the proverbial semi-circular arrangement in order to secure definition and equal size of all figures.

Reproductions.—Severe and practical tests have shown the Series IIa lenses to be well suited for copying, on account of faultless reproduction of detail, flatness of the field, and the capacity to copy straight lines at all angles. They are in every-day use by a large number of photo-engravers.

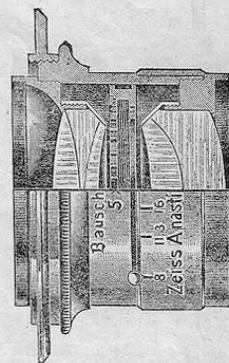


Figure shows the 5x7 Series IIa Lens, actual size.

PRICE LIST.

All Lenses are Supplied with Improved Iris Diaphragm and Morocco Cap.

No.	Size of Plate Covered with Stop f-8.3. Inches.	Equivalent Focus. Inches.	Free Diameter of Largest Lens. Inches.	Price.	
				Lens Only.	When Fitted with Diaphragm Shutter.
1	4×5	$4\frac{1}{2}$	$\frac{1}{2}$	\$ 30 00	\$ 45 00
2	$4\frac{1}{4} \times 6\frac{1}{4}$	$5\frac{1}{2}$	$\frac{1}{2}$	33 50	48 50
3	5×8	$6\frac{1}{2}$	$\frac{1}{2}$	44 00	59 00
4	$6\frac{1}{4} \times 8\frac{1}{4}$	8	$1\frac{1}{4}$	54 50	69 50
5	8×10	$9\frac{1}{2}$	$1\frac{1}{2}$	64 50	80 50
6	10×12	$11\frac{1}{2}$	$1\frac{3}{4}$	85 50	103 00
7	11×14	$13\frac{1}{2}$	2	125 50	143 00
8	14×17	17	$2\frac{3}{4}$	180 50	

*The next larger plate is well covered with small stop.

Price for matching two lenses for stereoscopic work, \$3.00.

Special sizes of the Series IIa lenses, either larger or smaller than listed above, will be made to order only. Prices on application.

When ordering shutters fitted to lenses, by telegraph, specify *Diaphragm* in addition to the size of lens.

Bausch & Lomb-Zeiss Anastigmat Lens.

SERIES III.

Speed f-7.2.

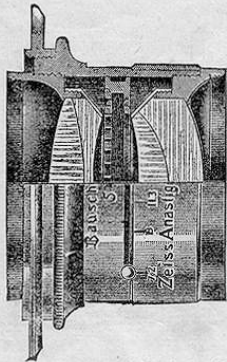


Figure represents the 5x7 Series III Lens, actual size.

Description.—The front system of these objectives is composed of two and the back system of two lenses, not, however, of symmetrical construction. This is the original type of the anastigmat lenses, and embodies the principles of correction on which the anastigmats are founded. They are of simpler construction than the Series II and IIIa.

Optical Properties. The speed of this series is f-7.2. The anastigmatic corrections are not quite equal to the Series IIIa and IIIa, but the speed being greater, it meets the requirements for a lens between the Series II and the IIIa and IIIa.

The field embraces an angle of 85 degrees, about 50 degrees of which are intercepted by the plate for which the special sizes are rated.

Application, General Photography.—The Series III Lenses being less in price than the Series II and IIIa, and still spherically and anastigmatically well corrected, are often preferred to the latter, as they are sufficiently rapid for nearly all instantaneous work.

Studio.—They are particularly adapted for portraiture and for photographing groups, as they do not require the proverbial semi-circular arrangement and for single figures give roundness with excellent definition.

PRICE LIST.

All Lenses are Supplied with Improved Iris Diaphragm and Morocco Cap.

No.	Size of Plate Covered with Stop f-7.2* Inches.	Equivalent Focus. Inches.	Free Diameter of Largest Lens. Inches.	Price.	
				Lens Only.	When Fitted with Diaphragm Shutter.
1	3½ x 4½	3½	½	\$24 50	\$39 50
2	4 x 5	4½	¾	28 00	43 00
3	4½ x 6½	5½	1	31 50	46 50
4	5 x 7	7½	1½	42 00	57 00
5	5 x 8	8½	1¾	52 50	68 50
6	6½ x 8½	9½	1¾	63 00	80 50
7	8 x 10	12½	2	84 00	101 50
8	10 x 12	17½	2½	132 50	
9	12 x 15	23½	3½	188 50	

* The next larger plate is well covered with small stop.

Price for matching two lenses for stereoscopic work, \$3.00.

Special sizes of Series III Lenses, either larger or smaller than listed above, are made only to order. Prices on application.

When ordering shutters fitted to lenses, by telegraph, specify Diaphragm in addition to the size of lens.

Bausch & Lomb-Zeiss Anastigmat Lens.

SERIES IIIa.

Speed f-9.

Description.—The objectives of this series are composed of four lenses, somewhat less in diameter than the preceding series, therefore lighter and more compact.

Optical Properties.—Having a speed of f-9, they are suitable for all ordinary instantaneous work. The anastigmatic corrections are perfect beyond the size of plate for which they are rated. The field embraces an angle of 97 degrees, and about 55 degrees are included by the plates for which the various numbers are scheduled. It is therefore practical to use them as medium wide-angle lenses on larger plates than those for which they are rated, giving perfect definition to the margin, an advantage not possessed by any lens of any other make.

Application, Hand Cameras.—Where a cheaper though somewhat slower lens than Series IIIa is desired for hand camera work, the IIIa is recommended.

General Photography.—For general photography, they are good outdoor lenses and cheaper than Series IIIa, and may be used as medium wide-angle objectives on larger-sized plates than those for which they are rated.

Stereoscopic Work.—The small sizes have the proper angle for stereoscopic work with great depth of focus.

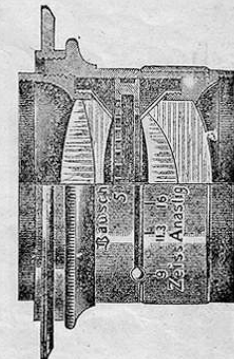


Figure represent the 5x7 Series IIIa Lens, actual size.

PRICE LIST.

All Lenses are Supplied with Improved Iris Diaphragm and Morocco Cap.

No.	Size of Plate Covered with Stop f-9.* Inches.	Equivalent Focus. Inches.	Free Diameter of Largest Lens. Inches.	Price.	
				Lens Only.	When Fitted with Diaphragm Shutter.
0	2¼ x 3¼	3	7/8	\$21 00	\$36 00
00	3¼ x 4¼	3½	1	21 00	36 00
1	4 x 5	4½	1¼	23 00	38 00
2	4½ x 6½	5½	1¾	26 50	41 50
3	5 x 7	6½	2	31 50	46 50
4	5 x 8	7½	2¼	35 00	50 00
5	6½ x 8½	9½	2½	45 50	60 50
6	7 x 9	10½	2¾	56 00	72 00
7	8 x 10	12½	3	70 00	86 00
8	10 x 12	16	3½	105 00	122 50
9	11 x 14	19½	4	139 50	
10	12 x 15	23½	4½	174 50	
11	14 x 17	27½	5	227 00	
12	16 x 20	32½	5½	279 00	

* Next larger plate is well covered with smaller stop.

Price for matching two lenses for stereoscopic work, \$3.00.

Special sizes of Series IIIa lenses, either larger or smaller than listed above, are made to order only. Prices on application.

In ordering by telegraph specify Diaphragm if diaphragm shutter is desired, in addition to the size of lens.

Bausch & Lomb-Zeiss Anastigmat Lens.

SERIES VII.

SINGLE ANASTIGMAT.

Speed f-12.5.

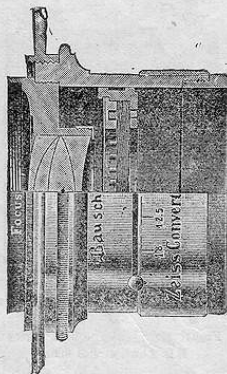


Figure shows No. 1, Series VII Lens, actual size.

Description.—The single anastigmatic system is composed of four elementary lenses (two pairs) cemented together. The lens system is mounted in a separate adapter, of standard size, which fits either end of the tube of the mount. This construction has been adopted to carry out the original design of the inventor of this remarkable lens, viz.: the combination of two systems of the same or different foci, each of which is in itself a perfect anastigmat, to form a doublet of extreme speed and angle. A Series VII single anastigmat consists of one lens system in an adapter, as described above, and a mounting into which the lens system fits (see figure). The mounting is provided with Iris Diaphragm. The diaphragm apertures (stop numbers) are engraved in U. S. numbers on a movable ring, which may bear numbers for two or more single anastigmats of different foci, and also for their combined focus. Each system has a serial number and the focal length engraved upon it for reference.

Optical Properties.—The history of lenses shows the invention, trial, and decadence of a large number of "all purpose" lenses, *i. e.*, doublets in which it was sought to produce single systems of sufficient covering power to be usable separately, and which, when combined, would produce a good doublet.

PRICE LIST.

All Lenses are Supplied with Improved Iris Diaphragm and Morocco Cap.

No.	Size of Plate Covered with Stop f-12.5.*	Equivalent Focus.	Back Focus.	Diameter of Front Lens.	Diameter of Image.	Price.	
						When Fitted with Diaphragm Shutter.	Lens Only.
1	4 3/4 x 6 1/2	7 1/2	8	1 1/4	11	\$ 26 50	\$ 41 50
2	5 x 7	9	9 3/4	1 1/2	13 1/2	30 00	45 00
3	6 1/2 x 8 1/2	11 1/2	12 3/4	1 3/4	17 1/2	35 00	50 00
4	8 x 10	14	15 1/2	2	21 1/2	42 00	57 00
5	10 x 12	18 1/2	18 1/2	2 1/4	25	54 50	70 50
6	11 x 14	19 1/2	21 1/4	2 1/2	29	75 00	92 50
7	12 x 16	23 1/2	26 1/4	2 3/4	35 1/2	96 00	
8	13 x 16	27 1/2	30 1/2	2 3/4	41 3/4	125 50	
9	16 x 18	30 3/4	34	3	47 1/4	174 50	
10	16 x 20	34	37 1/2	3 1/4	52	227 00	
11	18 x 22	39 1/2	43 1/2	3 3/4	60	293 50	

* The next larger plate is well covered with small stop.

When ordering shutters fitted to lenses, by telegraph, specify Diaphragm when the Iris Diaphragm shutter is desired, in addition to the size of lens.

The mountings of these lenses are provided with a revolvable ring, engraved with the F value of each of the Single and of the Doublet combinations.

If an additional combination is purchased, the graduating ring is exchanged for another engraved with scales for all the combinations. A stop fixes the scale in the proper position.

When ordering an additional Single combination, give the serial number of the lens with which it is to be used.

When the Single combination is desired without mounting, an allowance of \$1.50 will be made on numbers 1-5, and \$3.00 for numbers 6-10.

Nos. 1, 2 and 3 fit the same mount, and each larger size requires a succeeding larger mount; all sizes below any given size can, however, be fitted for that mount if desired.

Sets of Bausch & Lomb-Zeiss Convertible Anastigmats.

While a large number of doublet combinations are listed, having their uses for the same purposes as other doublet lenses, there are two sets of the Single Anastigmats which practically cover the entire field. These sets are offered complete with the lenses mounted interchangeably, each set consisting of: One lens mount with Iris diaphragm, cap and flange, as described under Series VII. The Single Anastigmat Lenses (three or four, as the case may be). A neat and compact morocco case containing all the parts of the set.

C Set of Anastigmats.

Complete in case, \$103.00.

C set of anastigmats fitted with Iris Diaphragm Shutter, \$118.00.

The six lenses which may be found with the C set of anastigmats are shown in the accompanying table, together with their angles, covering power, and speeds.

SERIES.	No.	Size of Plate Covered with Largest Stop.*	EQUIVALENT FOCUS OF LENSES IN INCHES.			Speed.	Angle on 5 x 8 Plate. Degrees.
			Front Lens.	Back Lens.	Combined Focus.		
VII.	2	5 x 8		9		f-12.5	48
	3	6 1/2 x 8 1/2		11 1/2		f-12.5	38
	4	8 x 10		14		f-12.5	32
VIIa.	5	4 1/2 x 6 1/2	11 1/2	9	5 3/4	f- 7.0	70
	6	5 x 7	14	9	6 1/4	f- 7.7	65
	8	5 x 8	14	11 1/2	7	f- 7.0	59

D Set of Anastigmats.

Complete in case, \$200.00.

D set of anastigmats fitted with Iris Diaphragm Shutter, \$217.50.

The lenses of this set are the numbers 3, 4, 5 and 6 of Series VII.

The following table shows the ten lenses which may be formed with this set, together with their angles, covering power, and speed.

SERIES.	No.	Size of Plate Covered with Largest Stop.*	EQUIVALENT FOCUS OF LENSES IN INCHES.			Largest Stop.	Angle on 8 x 10 Plate. Degrees.
			Front Lens.	Back Lens.	Combined Focus.		
VII.	3	6 1/2 x 8 1/2		11 1/2		f-12.5	47
	4	8 x 10		14		f-12.5	39
	5	10 x 12		16 1/2		f-12.5	34
VIIa.	6	11 x 14		19 1/4		f-12.5	29
	8	5 x 8	14	11 1/2	7	f- 7.0	71
	9	5 x 8	16 1/2	11 1/2	7 1/2	f- 7.7	67
	9a	5 x 8	19 1/4	11 1/2	8	f- 7.7	64
	11	6 1/2 x 8 1/2	16 1/2	14	8 1/2	f- 7.0	61
	12	6 1/2 x 8 1/2	19 1/4	14	9 1/4	f- 7.7	57
	14	8 x 10	19 1/4	16 1/2	10	f- 7.0	53

* The next larger plate is well covered with small stop.

Bausch & Lomb-Zeiss Convertible Anastigmat Lens.

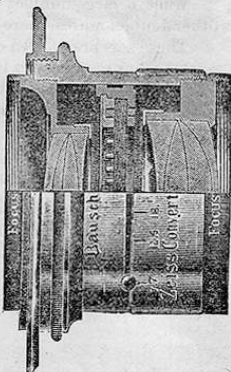
SERIES VIIa.

Quadruple Anastigmats. Speed F-6.3.

Description.—The Convertible Anastigmats are doublet lenses composed of two of the single anastigmats, Series VII. They contain eight elementary lenses arranged in pairs, two pairs in each system. They may therefore be properly termed quadruple anastigmats. Such a lens is convertible into three lenses of different foci and angle where the two single anastigmats are of different foci, or into two where they are of the same foci. The most practical combinations of single anastigmats are indicated in the appended table of Series VIIa lenses.

Optical Properties.—The speed when composed of two single anastigmats of the same foci is f-6.3. When the single anastigmats are of different foci, the speed is F-7 or F-7.7, according to the relative foci employed. The full angle of the image circle is 80 degrees. The average angle utilized on the size plate for which the numbers are commonly used is about 55 degrees.

As might be expected from the excellence of the single anastigmats, the Convertible Anastigmats formed by combining two of them are simply perfection in all the qualities which are desired in a photographic lens. The covering and defining power is faultless. All parts of the image circle are equally well corrected. It is possible, therefore, to use—and still retain the large aperture—lenses of much shorter foci than where the optical properties are of a lower order, hence the great depth of focus and angle which the members of this series possess.



PRICE-LIST.

No.	Size In Inches of Plate Covered with Full Aperture.*	Combinations of Single Anastigmats. Focus.		Combined Equivalent Focus. Inches.	Speed.	Diameter of Image. Inches.	Price.	
		Front Lens.	Back Lens.				Lens Only	When fitted with Diaphragm Shutter.
1	3½ x 3½	7¼	7¼	4½	f-6.3	6¾	\$ 51 00	\$ 66 00
2	3½ x 4½	9	7¼	4½	f-7	7½	54 50	69 50
3	4 x 5	11½	7¼	5	f-7.7	8½	59 50	74 50
4	4 x 5	9	9	5	f-6.3	8½	58 00	73 00
5	4½ x 6½	11½	9	5½	f-7	9½	63 00	78 00
6	4½ x 6½	14	9	6¼	f-7.7	10½	70 00	85 00
7	4½ x 7½	11½	11½	6½	f-6.3	10¾	68 00	83 00
8	5 x 7½	14	11½	7	f-7	12	75 00	90 00
9	5 x 8½	16½	11½	7½	f-7.7	12¾	87 50	103 50
10	5 x 8½	14	14	8	f-6.3	13¼	82 00	97 00
11	6½ x 8½	16½	14	8½	f-7	14¼	94 50	110 50
12	6½ x 8½	19¼	14	9¼	f-7.7	15¼	115 50	133 00
13	6½ x 8½	16½	16½	9¼	f-6.3	15½	106 50	122 50
14	7 x 9	19¼	16½	10	f-7	16¾	127 50	145 00
15	7 x 9	23½	16½	11	f-7.7	18¼	148 50	166 00
16	7 x 9	19¼	19¼	11	f-6.3	18¼	146 50	164 00
17	8 x 10	23½	19¼	12	f-7	20	167 50	185 00
18	8 x 10	27½	19¼	12¾	f-7.7	21½	197 00	214 50
19	8 x 10	23½	23½	13¼	f-6.3	22¼	188 50	206 00
20	10 x 12	27½	23½	14½	f-7	24	218 00	
22	10 x 12	27½	27½	15½	f-6.3	26	247 50	
25	10 x 12	30¾	30¾	18¼	f-6.3	26	345 50	
28	11 x 14	34	34	20¾	f-6.3	28¾	450 00	
30	12 x 16	39½	39½	23½	f-6.3	31½	589 50	

*The next larger plate is covered with smaller stop.

The mountings of these lenses are provided with a revolvable ring, engraved with the F value of each of the single and of the doublet combinations. The correct stop for each of the lenses is thus always read from the scale, exactly as in the case of a single lens. If an additional combination is purchased, the graduated ring is exchanged for another, engraved with scales for all the combinations. When ordering an additional single combination, give the number of the lens with which it is to be used.

Nos. 1, 2, 3, 4, 5, and 7, when desired for hand cameras, are mounted in special compact mountings, and the 4x5 Iris Diaphragm shutter can then be fitted to them, in which case a reduction of \$1.00 is made from the listed price of the respective sizes fitted with Iris Diaphragm shutter.

Bausch & Lomb-Zeiss Anastigmat Lens.

SERIES V.

Speed f-18.

Description.—The two dissymmetrical systems are composed of two lenses each. Being small and very close together, the objectives are the most compact possible to construct. The mountings are fitted with the Iris Diaphragm, except in the two smaller sizes, where the systems are so close together that the revolving diaphragm only can be used.

Optical Properties.—The speed of the lenses of this series is f-18. The field embraces an angle of 110 degrees in the sizes up to and including No. 7a. The full angle of the lenses above No. 7a is 90 degrees. On the plate for which the smaller numbers are rated, the angle is 75 degrees, but the full angle may be obtained by using them on larger plates with smaller stops. The larger sizes have an angle of about 40 degrees on the plates for which they are listed. The anastigmatic and spherical corrections are the most perfect yet obtained in a wide-angle lens, and the images are entirely free from distortion to the margin of the plate even with the most extreme angle.

Application, Extreme Wide-Angle Work.—The lenses of this series are without question the most desirable wide-angle lenses made, and should be selected wherever an extreme wide angle is required. They have greater speed and covering power, and greater effective angle than any other extreme wide-angle lens, and are at the same time much more compact.

Copying.—The larger sizes are designed especially for copying, and for that purpose cannot be equaled in the quality of work which they will do. They are, however, not quite rapid enough for some kinds of photo-engraving.

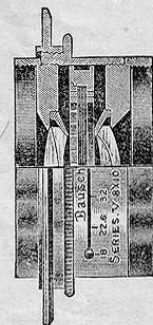


Figure shows 8x10 Series V lens, actual size.

PRICE-LIST.

All Lenses are Supplied with Improved Iris Diaphragm and Morocco Cap.

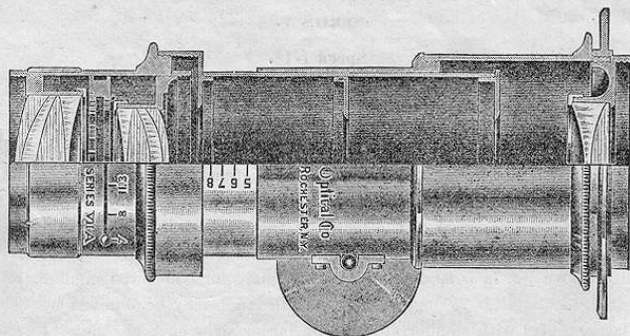
No.	Size of Plate Covered with Stop f-18.* Inches.	Equivalent Focus. Inches.	Free Diameter of Largest Lens. Inches.	Price.	
				Lens Only.	When Fitted with Diaphragm Shutter.
1	4½ x 6½	3¾	¾	\$ 22 50	
2	5 x 7	4¾	¾	22 50	
3	6½ x 8½	5½	½	28 00	\$ 43 00
4	8 x 10	7¾	½	35 00	50 00
5	10 x 12	8¾	½	44 00	59 00
6	11 x 14	10½	½	54 50	69 50
7	12 x 15	12¾	½	64 50	79 50
7a	16 x 18	15¾	1	75 00	90 00
8	12 x 15	18¾	1	85 50	100 50
9	16 x 18	24¾	1½	125 50	141 50
10	20 x 25	37¾	2½	247 50	

*The next larger plate is covered with small stop.

Special sizes of Series V lenses, either larger or smaller than listed above, will be made to order only. Prices on application.

When ordering shutter fitted to lenses, by telegraph, specify *Diaphragm* if the Iris Diaphragm shutter is desired, in addition to the size of the lens.

Tele-Photo Attachment, Bausch & Lomb.



The Figure shows a Tele-Photo Attachment as applied to a Photographic Lens.

Description.—The purpose of the Tele-Photo attachment is to produce larger pictures in connection with a photographic lens than can be obtained with the lens alone.

The Tele-Photo attachment is so designed that any ordinary photographic lens may be used with it. It possesses the advantage over a single long-focus lens that it does not require nearly as long a camera or extension of bellows to obtain the same magnification, and over the fixed tele-photo lens that it is easily applicable to lenses already in use, thus greatly reducing the cost and permitting a considerable variation in focus.

The attachment consists of an achromatic negative system mounted in a barrel with sliding tube, which is adjustable by rack and pinion.

The front of the barrel is threaded to receive the photographic lens, and the rear end is provided with a flange for attachment to the front board of the camera. The sliding-tube has scale indicating the exact amount of magnification.

Optical Properties.—In the construction of this negative system, the greatest latitude has been allowed for variation in the lenses with which it is to be used, but it must always be borne in mind that any lack of sharpness in the image formed by the photographic lens will be exaggerated by the Tele-Photo attachment in direct proportion to the amount of enlargement, hence only lenses of the highest grade are suitable for tele-photo work.

Our Tele-Photo attachment permits a variation of magnifying power from three to eight diameters by simply adjusting the distance between the negative and positive lenses with the rack and pinion.

Application; Photographing Distant Objects.—There are many objects so situated that they cannot be satisfactorily photographed with an ordinary lens, but may be, readily, from a distance. In such cases a magnified (tele-photo) picture is required.

Distance from the Front Board to the Ground Glass.

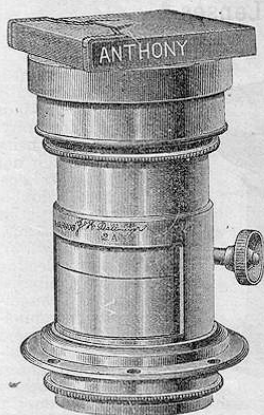
Size.	Equivalent Focus of Photo Lens.	POWER.						Brass Mounting Price.	Aluminum Mounting Price.
		3	4	5	6	7	8		
	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.		
4 x 5	6 1/2	6 3/8	9 5/8	12 7/8	16 1/8	19 3/8	22 5/8	\$16 00	\$20 00
5 x 8	8 3/4	8 5/8	13	17 3/8	22	26 1/2	31	18 00	22 00
6 1/2 x 8 1/2	11 1/2	10 7/8	16 1/2	22 1/2	28 1/2	34 1/2	40 1/2	20 00	25 00
8 x 10	13 1/2	13 1/2	20 1/2	27 1/2	34 1/2	41 1/2	48 1/2	24 00	30 00
CIRCLE OF LIGHT.									
4 x 5		5 1/4	7 1/2	9 1/4	12	15	17 1/2		
5 x 8		6 1/2	9 3/4	12 3/4	16 1/4	19 3/8	22 1/2		
6 1/2 x 8 1/2		8	11	14 1/4	18	22	26		
8 x 10		9	12 3/4	16 1/2	20 3/4	26	30		

N. B.—We do not advise the fitting of a Tele-Photo attachment to any except the very best quality lenses, as results will not be satisfactory.

Lenses should in all cases be sent us in order to secure correct adjustment and fitting.

The scale indicating magnification is computed for prevailing foci of photographic lenses, but special standardized scale will be made at an extra cost of 75 cents.

Dallmeyer's Patent Portrait Lenses (A).



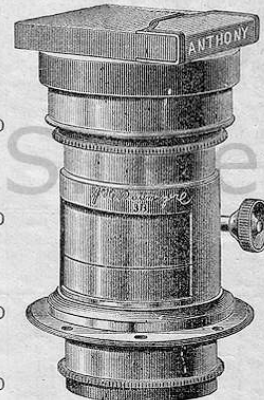
- No. 1A.* Patent Lens, with rack and pinion movement. Diameter of front and back combinations, 2 3/4 and 2 3/8 in. respectively, and 10 in. equivalent focus; for picture 5x4 in. \$100 00
- No. 2A.* Ditto, ditto. Diameter of front and back combinations, 3 1/2 and 3 1/4 in. respectively; 13 1/2 in. equivalent focus; for pictures 6 1/2 x 4 3/4 in. 136 00
- No. 3A.* Ditto, ditto. Diameter of Lenses 4 in., and 16 in. equivalent focus; for pictures 8 1/2 x 6 1/2 in. and Promenades and Cabinets. 208 00
- No. 4A. Ditto, ditto. Diameter of Lenses 4 1/2 in., and 18 in. equivalent focus; for pictures 10x8 in. 292 00
- No. 5A. In Rigid Mount. Diameter of Lenses 5 in., and 21 in. equivalent focus; for pictures 15x15 in. and under. 380 00
- No. 6A. Ditto, ditto. Diameter of Lenses 6 in., and 28 in. equivalent focus; for pictures 20x16 in. and under. 456 00

*These Lenses are well adapted for Cabinet Portraits, according to length of gallery. Thus No. 1A requires a distance of 14 feet between subject and lens (not recommended if a longer focus lens can be used); No. 2A, 20 feet; and No. 3A, 24 feet.

Dallmeyer's Patent Portrait Lenses (B).

Quick-Acting Lenses.

- No. 1B. Patent Lens, with rack and pinion movement. Diameter of Lenses 2 in., and equivalent focus 6 in. For Carte de Visite Portraits, distance between subject and lens for a standing figure, 12 to 13 feet. \$ 56 00
- No. 2B. Patent Lens, with rack and pinion movement. Diameter of Lenses 2 3/4 in., and equivalent focus 6 in. Especially constructed for Carte de Visite Portraits. Distance between subject and lens for a standing figure, 18 feet. 102 00
- No. 3B. Ditto, ditto. Diameter of Lenses 3 1/2 in., and equivalent focus 8 in. Especially constructed for Cabinet Portraits. Distance between subject and lens for a standing figure, 18 feet. 152 00
- No. 4B. Ditto, ditto. Diameter of Lenses 4 1/2 in., and equivalent focus 12 in., for pictures 8 1/2 x 6 1/2 in. and under. Distance for a Cabinet Portrait, 25 feet. 304 00



Dallmeyer's Patent Portrait and Group Lenses (D).

These Lenses are perhaps the most generally useful instruments a photographer, more especially the amateur, can be possessed of. Thus, with the full opening, they are well adapted to portraiture in the studio (as for groups, studies, large heads, etc.); possessing four times greater intensity than the well-known Triple Achromatic Lens; and, when used with smaller stops, these new Lenses answer equally well for outdoor photography, such as architectural views, landscapes, etc. They are entirely free from distortion and flare.

With the exception of No. 3D, the Lenses are mounted in rigid settings, i. e., without rack and pinion movements.

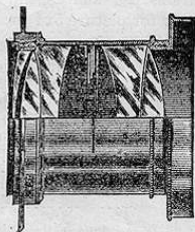


No.	Diameter of Lens.	Equivalent Focus.	Size of Group.		Price.
			Inches.	Inches.	
2D*	Pat., 1 1/2	9	6 1/2 x 4 1/2	8 1/2 x 6 1/2	\$ 54 00
3D*	" 2 1/2	12 1/2	8 1/2 x 6 1/2	10 x 8	72 00
4D*	" 2 3/4	17	10 x 8	12 x 10	104 00
5D	" 3 1/4	19	12 x 10	15 x 12	133 00
6D	" 4	24	15 x 12	18 x 16	202 00
7D	" 5	30 1/2	18 x 16	22 x 20	366 00
8D	" 6	37	22 x 20	25 x 21	444 00

*Distance for a Cabinet Portrait with No. 2D, 15 ft.; with No. 3D, 18 ft.; with No. 4D, 25 ft.

The Dallmeyer Stigmatic Lens.*

SERIES II.—F-6.



This is a new universal Lens of more simple construction than Series I, consisting of five lenses only. It is intended to be a Lens suitable for every class of photography, from Portraiture to Wide-Angle work, and is the quickest stigmatic lens made, except the Dallmeyer stigmatic portrait lenses, Series I, which work in f-4. The smaller sized plates mentioned in these specifications are the sizes we should advise for general work with lenses of the respective foci, since the use of a lens of too short focus tends to the production of exaggerated perspective. At full aperture these lenses cover slightly larger plates than those given, and include an angle along the diagonal of the plates of about 85 degrees.

Moreover, being perfectly free from spherical aberration, the full aperture of the lens may be used in focusing, there being no fear of any alteration taking place in the focal length of the lens, when changing the size of the stop, as is the case with many lenses of the Wide-Angle type.

No.	Plate Covered at Full Aperture.	Largest Plate Covered at	Diameter of Lens.	Eq. Focus.	Price with Iris Diaphragm.
	f-6.	f-16.	Inches.	Inches.	
1	3 1/2 x 3 1/2	4 1/2 x 6 1/2	.8	4.5	\$ 38 00
2	3 1/2 x 4 1/2	5 x 8	.9	5.3	46 00
3	4 x 5	6 1/2 x 8 1/2	1.1	6.4	54 00
4	4 1/2 x 6 1/2	8 x 10	1.3	7.6	65 00
5	5 x 8	10 x 12	1.6	9	84 00
6	6 1/2 x 8 1/2	12 x 15	1.9	10.7	108 00
7	8 x 10	15 x 15	2.2	12.7	148 00
8	10 x 12	16 x 18	2.6	15.1	196 00
9	12 x 15	20 x 22	3.1	18	252 00

Use of the Single Combinations.

By using either the back or front combination singly the choice of two extra focal lengths is obtained, and for the best results the single lens used should be screwed into the back of the mount. The equivalent focus of the front lens will then be found to be one and one-half times and the back two times that of the whole combination, and they require respectively three times and five times the exposure of the combined lens at the same aperture. For such subjects as large heads the single lenses may be used with full aperture, but for general use the Iris diaphragm should be set to an aperture not larger than f-11 or f-8 of the Iris diaphragm, for front or back respectively.

*NOTE.—We have had numerous inquiries for lenses for groups, to be used in galleries of limited length, and up to the present no lens has been found to supply the want, but this new lens of Mr. Dallmeyer's will perform the work and is very rapid, covering the largest plate at f-16.

Dallmeyer's Rapid Rectilinear Lenses.*

(PATENT.)



The Rapid Rectilinear Lens is emphatically "The Lens" for all kinds of out door photography. It works at an intensity of 1/2, and, although not so rapid as the D Lens, requiring nearly double the exposure, is superior to it for views, because of its having only four, instead of six, reflecting surfaces. It is composed of two exactly symmetrical cemented combinations, and unlike most existing double combination cemented lenses, requiring small stops to

cure the inherent excessive spherical aberration, the Rapid Rectilinear is applanatic, i. e., it works with the full opening. Hence its superiority for all kinds of quick out door pictures, groups, instantaneous effects, landscapes, architectural subjects, or for dimly-lighted interiors. For copying and enlarging this lens is unrivalled. With smaller stops each lens covers the next larger, or even two sizes larger plates than those recorded, thus embracing angles of pictures from 60 to 80 degrees, and this without any trace of flare or central spot. Many fine large portrait studies have been taken with this lens, and it is to be found in the possession of almost every photographer of eminence wherever the art is practiced. Either combination can be used singly as an ordinary landscape lens; focus, about twice that of the compound lens. Each lens is supplied with a set of Waterhouse Diaphragms. If required, any of the lenses marked below can be used, with smaller stops, for the next size larger view.

N. B.—It is recommended that all Rapid Rectilinear Lenses above the 12x10 size should always be focused with a medium stop (No. 3), whether the picture is to be afterwards taken with a larger or smaller stop. Each lens is constructed to give the greatest possible "depth of focus" which involves the above conditions.

Size of View or Landscape	Size of Group or Portrait.	Diam. of Lens.	Back Focus.	Equivalent Focus.	Price Rigid Set.	Fitted with Iris Diaphragm.
Inches. 4 1/2 x 3 1/2	Inches. 3 1/2 x 3 1/2	Inches. 3/8	Inches. 4	Inches. 4	\$28 00	\$31 00
5 x 4	4 1/2 x 3 1/2	1	5 1/2	6	34 00	37 00
6 x 4 1/2	5 x 4	1 1/4	7 1/2	8 1/2	42 00	45 00
8 x 5	6 x 5	1 3/8	10	10	48 00	52 00
8 1/2 x 6 1/2	6 x 5	1 1/2	10 1/2	11	53 00	57 00
10 x 8	8 1/2 x 6 1/2	1 3/4	12 1/2	13	68 00	74 00
12 x 10	10 x 8	2	15	16	84 00	90 00
15 x 12	12 x 10	2 1/2	18	19 1/2	114 00	124 00
18 x 16	15 x 12	3	23	24 3/4	152 00	164 00
22 x 20	18 x 16	3 1/2	28	30 1/2	206 00	218 00
25 x 21	22 x 20	4	31	33 1/2	252 00	264 00

Fitted with Iris Diaphragm larger than 10x8, to order only.
5x4 furnished in matched pairs for stereoscopic work.

*The apertures of all stops or diaphragms supplied with Dallmeyer's lenses (portraits, views and landscapes) are so arranged that, counting from the largest to the next size smaller, the time exposure is doubled. Stops marked x are exceptions to this rule, and require an exposure only half as long again as the preceding larger stop.

Dallmeyer's Wide-Angle Rectilinear Lenses.

(PATENT.)



These lenses embrace angles of pictures from 90 to 100 degrees, and enable photographers to take views of buildings, interiors, etc., in confined situations, where lenses of longer focus cannot be used, and where absolute rectitude of lines is imperative.

The lenses of which it is composed are smaller and thinner for a given size plate than those of other lenses intended for the same size of picture.

The lenses are mounted in rigid settings or tubes, and each is furnished with a rotating diaphragm plate. In the column below, the largest size of plate covered by each lens is recorded; and if microscopic definition up to the corners be required, the smallest or smallest but one stop should be used.

No.	Largest Dimension of Plate.	Diameter of Front Combination.	Back Focus.	Equivalent Focus.	Price.
1AA	Inches. 7 1/2 x 4 1/2	Inches. 7/8	Inches. 3 1/2	Inches. 4	\$ 34 00
1A	8 1/2 x 6 1/2	1 1/4	4 1/2	5 1/2	42 00
1B	10 x 8	1 3/8	5 1/2	6 3/4	50 00
1	12 x 10	1 1/2	6 1/2	7	58 00
2	15 x 12	2	7 1/2	8 1/2	80 00
3	18 x 16	2 1/2	11	13	106 00
4	22 x 20	3	14	15 1/2	152 00
5	24 x 21	3 1/4	17	19	228 00

Morrison Wide-Angle View Lenses.

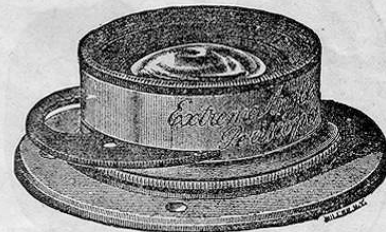


These lenses are absolutely rectilinear; they embrace an angle of 90°, and are the most rapid, and are universally conceded to be the best wide-angle lenses made.

No.	Diameter of Lens.	Size of Plate.	Equivalent Focus.	Price.
0	Inches. 1	Inches. 3 x 4 1/2	Inches. 2 1/4	\$ 20 00
3	1	4 1/2 x 6 1/2	4 1/4	25 00
4	1	5 x 8	5 1/4	25 00
5	1	6 1/2 x 8 1/2	6 1/2	25 00
6	1	8 x 10	8	30 00
7	1 1/4	11 x 14	10 1/2	40 00
8	1 3/4	14 x 17	14	50 00
9	1 1/2	17 x 20	17	60 00
10	1 3/4	20 x 24	22	80 00
11	1 1/2	25 x 30	28	100 00

Nos. 1 to 6 are all made in matched pairs for stereoscopic work. The shorter focused lenses are specially adapted for street and other views in confined situations.

Gray's Extreme-Angle Periscope.



No.	Equivalent Focus.	Size of Plate, Largest Stop.	Largest Plate Covered.	Largest Aperture.	Price.
1	Inches. 2.9	Inches. 2 1/2 x 2 1/2	5x7	f-10	\$24 00
2	3.6	3 x 3	6 1/2 x 8 1/2	f-10	27 00
3	4.2	3 1/2 x 4 1/2	8x10	f-10	32 00
4	5.	4 x 5	10x12	f-14	40 00
5	5.9	4 1/2 x 6 1/2	11x14	f-14	51 00
6	7.1	5 x 8	14x17	f-14	66 00
7	8.4	6 1/2 x 8 1/2	16x20	f-16	87 00
8	10.	8 x 10	20x24	f-16	116 00
9	12.6	10 x 12	25x30	f-16	150 00

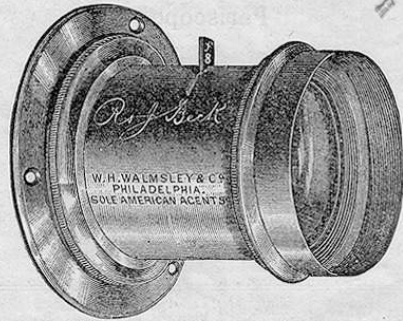
In out-door as well as interior photography, both the professional and amateur finds himself almost daily in positions where he earnestly desires to include on his plate a little more of the subject than his "Wide-Angle" lens covers. In presenting the Extreme-Angle Periscope this need has been met, and everything that photographic optics admits of has been turned to account.

In compiling the list of lenses in this series, the basis adopted has been to make each lens of a focal length that, when used on the size plate quoted, will involve on the diagonal of the plate an angle of view actually equal to 115° or more, the idea being that even on the axis of the plate (which is considerably less than the diagonal), the angle of view should never fall below 100°. It will be found that these facts are adhered to, and that these extreme angles can be practically made use of when the size of plate and the lens quoted are used together. To attain these results, a complete departure from heretofore accepted optical practice has been made. Both the flint and crown glasses employed are the results of the latest discoveries in the manufacture of optical glass, and the usual method of combining them has been reversed, thus securing many and great advantages. In addition to embracing this unprecedented great angle of view, a far greater equality has been secured in the distribution of the light on the margin of the plate as compared to its centre.

The objective is a symmetrical combination, and is absolutely free from astigmatism and secondary image or "ghost," besides which it is achromatic and perfectly rectilinear. As each lens is individually achromatized, the front one can be removed and the back one used as a single landscape lens of about double the focal length of the entire combination.

For instantaneous exposures on the plates quoted in the third column, it is advisable to use the pair of extension tubes, furnished with each instrument; this extends the length of tube considerably, confines the angle of illumination to about 60°, and renders the field very flat. To insert extensions, remove both front and back cells, screw one of the extensions in each end of mount, then screw in the cells containing lenses.

R. & J. Beck, Autograph Lenses.



These lenses are perfectly Aplanatic, covering with full aperture to the extreme corners the size plate for which they are designated in the list, and much larger sizes when moderately stopped down. They are very rapid in action, rendering them particularly valuable for instantaneous and short-time exposures; are rigidly rectilinear and symmetrical; possess wonderful penetration and definition. The No. 5 Lens will make life-size heads, sharp and free from distortion.

No.	Size of Plate, Full Opening.	Size of Plate with Small Stops	Diameter of Lenses.	Back Focus.	Equivalent Focals.	Angle of Aperture.	Price.
	Inches.	Inches.	Inches.	Inches.	Inches.		
1	3 1/2 x 4 1/2	4 1/2 x 6 1/2	4 1/2	4 1/2	5	75°	\$25 00
2	4 1/2 x 5 1/2	5 x 8	5	6	7	70°	30 00
3	5 x 8	8 x 10	6	8	9	64°	35 00
4	6 1/2 x 8 1/2	10 x 12	8	10	11	67°	50 00
5	10 x 12	11 x 13	11	12	13	66°	60 00
6	10 x 12	14 x 17	14	14 1/2	16	66°	75 00
7	11 x 14	18 x 20	2	16 1/2	18	66°	100 00
8	14 x 17	20 x 22	3	22	24	66°	160 00
9	20 x 22	24 x 30	3	27 1/2	30	66°	200 00
10	24 x 30	30 x 33	3	30	33	66°	275 00
11	30 x 33	36 x 40	4 1/2	38	38	66°	375 00

Darlot's Wide-angle Hemispherical Lenses.



These Lenses embrace an angle of 90 degrees, and being rectilinear, they are valuable for interiors, buildings, landscapes, etc., and in confined localities, where lenses of longer focus can not be used. Provided with three lever diaphragms.

Nos. 1 and 2 furnished in matched pairs for Stereoscopic work.

No.	Diameter. Inches.	Back Focus. Inches.	Size View. Inches.	Price.
1	3 1/2	3	Stereoscopic.	\$14 00
2	1	3 1/2	4 x 5	16 50
2 1/2	1	4 1/2	5 x 7	16 50
3	1 1/2	6 1/2	6 1/2 x 8 1/2	22 50
4	1 1/2	8 1/2	10 x 12	28 00
5	2 1/2	13 1/2	14 x 17	39 00
6	3	17 1/2	17 x 20	55 00

Darlot's Rapid Hemisphericals.



For Portraits and Views.

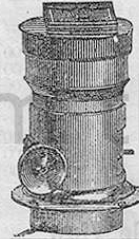
These Lenses embrace an angle of from 60 to 75 degrees, are quick-acting, perfectly rectilinear, and for rapidity are surpassed only by the Euryscopes.

Most excellent for portraits and general gallery work; also buildings, landscapes, instantaneous work, and copying purposes. No. 1 is specially recommended for work with Detective Cameras.

No.	Diameter. Inches.	Back Focus. Inches.	Portrait. Inches.	View. Inches.	Price.
1*	1	6 1/2	4 x 5	5 x 7	\$15 00
2	1 1/2	9 1/2	5 x 7	6 x 8	22 50
3	1 1/2	11 1/2	6 x 8	8 x 10	33 50
4	1 3/4	14 1/2	8 x 10	11 x 14	50 00
5	2 1/2	17 1/2	11 x 14	14 x 17	85 00
6	3	24 1/2	14 x 17	17 x 20	100 00

* This size can also be had in a rigid oxidized setting, and provided with rotating stops suitable for Detective Cameras.

* Nos. 1 and 2 can be had in matched pairs of equal focus for Stereoscopic work, and with rotary stops.



Darlot Portrait Lenses.

We have these Lenses made expressly for Magic Lanterns and Stereopticons; can be had in matched pairs of equal focus.

With Rack and Pinion Plain.

Size.	Diameter. Inches.	Focus. Inches.	Price.
1-4	1 1/2	3 1/2	\$10 00
1-3	1 3/8	5 1/2	13 50
1-2	2 1/2	7	16 00
2-3	2 1/2	8 1/2	24 00
4-4	3	10 1/2	36 00

With Rack and Pinion, and Central Stops.

Size.	Diameter. Inches.	Focus. Inches.	Size of Plate. Inches.	Price.
1-4	1 1/2	5	3 1/2 x 4 1/2	\$10 00
1-3	1 3/8	5 1/2	4 1/2 x 5 1/2	16 00
1-2	2 1/2	7	5 x 7	20 00
4-4	3	10 1/2	8 x 10	40 00
8-4	4	15	11 x 14	105 00

The 1/2, 1/3 and 1/4 can be had in matched pairs of equal focus.

Quick-Working—Rack and Pinion, Central Stops.

Size.	Diameter. Inches.	Focus. Inches.	Size of Plate. Inches.	Price.
1-2	2 1/2	5 1/2	3 1/2 x 4 1/2	\$24 50
2-3	2 1/2	7	5 x 7	36 00
4-4	3	8	6 1/2 x 8 1/2	48 00
Extra 4-4	4	11	8 x 10	95 00

Alvan G. Clark Lenses.

F-8.

For Instantaneous, Outdoor Work, Groups, Standing Figures, Interiors and Architecture.

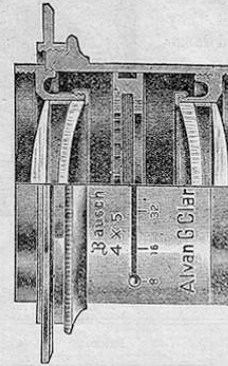


Figure shows the 4x5 Alvan G. Clark Lens, actual size.

These lenses are the invention of Alvan G. Clark, the celebrated manufacturer of telescopes, and are of a construction dissimilar from anything heretofore followed, and are as striking in their results as Mr. Clark's success in the telescope objectives has been. They may be used:

In all work to which the Rapid Rectilinear type may be adapted, when they give an angle of about 55 degrees with stop f-8, on size of plate as listed.

As wide angle objectives, giving an aperture of about 90 degrees with stop f-45, on larger sizes of plates up to the stated limit of image circle. They are quite free from marginal distortion and magnified perspective, so common to lenses of this class.

The lenses are uncemented, each lens of the combination being mounted for itself, and are therefore free from danger of gradual decrease in speed, so common in many lenses owing to the chemical change in the cement. The crown glass is on the outside, and therefore less liable to become scratched.

They possess less astigmatism than any known lenses of the symmetrical type. The back combination may be used on larger plates at one-half the speed.

These lenses are fully covered by patent. Our new test chart (copyrighted) accompanies each lens.

No.	Size of Plate Covered with Largest Stop.	Equivalent Focals.	Diameter of Image Circle.	Diameter of Lenses.	Back Focus.	Price.	
						Lens Only.	When Fitted with Diaphragm Shutter.
4 1/2	3 1/2 x 4 1/2	5	8 1/2	4 1/2	4 1/2	\$20 00	\$35 00
5	4 x 5	6	13	5 1/2	5 1/2	24 00	39 00
8	5 x 8	8	16	7	7	30 00	45 00
8 1/2	6 1/2 x 8 1/2	11	21 1/2	10 1/2	10 1/2	38 00	54 00
10	8 x 10	13	24 1/2	12 1/2	12 1/2	50 00	67 50
12	10 x 12	16	33	15	15	64 00	
15	12 x 15	19 1/2	37	18	18	82 00	
18	16 x 18	23 1/2	43	22	22	105 00	
22	20 x 22	30	64	4 1/2	28	145 00	

Bausch & Lomb's Extra Rapid Universal Lenses.

F-6.

SERIES D.

For Heads, Groups, Figures and Outdoor Work of Great Speed.

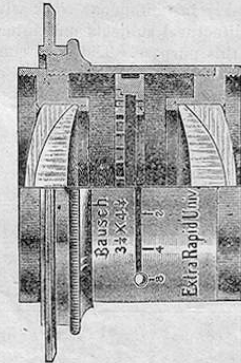


Figure shows 3 1/2 x 4 1/4 Series D Lens, actual size.

The larger lenses of this series will be welcomed as portrait lenses par excellence, having unusually delicate definition with uniform illumination, good depth and speed in all ordinarily lighted studios. It is rare that a lens which is designed to do good portrait work is suited for good landscape work as well, but these qualities are combined to an unusual degree in these lenses. The lower numbers are designed for very quick hand camera work, giving even illumination and possessing perfect definition. The mountings are comparatively short, which overcomes to a considerable extent the inherent astigmatism in lenses of similar construction. These lenses may be had with or without hood, but will be supplied with hood unless otherwise ordered. By unscrewing the front combination the back only may be used, giving about twice the focus with about one-half the speed. These lenses have an angle of 70 degrees.

No.	Size of Plate.	Diameter of Lenses.	Equivalent Focals.	Back Focus.	Price.	
					Lens Only.	Lens with Diaphragm Shutter.
0	In. 3 1/2 x 4 1/2	In. 1	In. 4 1/2	In. 4 1/2	\$24 00	\$39 00
00	4 x 5	1 1/2	6 1/2	5 1/2	28 00	43 00
1	5 x 8	1 1/2	8	7	36 00	51 00
2	6 1/2 x 8 1/2	1 3/4	9 1/2	8	46 00	62 00
3	8 x 10	2	11 1/2	9 1/2	58 00	75 50
4	10 x 12	2 1/2	14 1/2	12 1/2	75 00	
5	12 x 15	3	17 1/2	15 1/2	100 00	
6	16 x 20	3 1/2	22 1/2	19	130 00	

THEY ARE SUPPLIED ONLY WITH THE IMPROVED IRIS DIAPHRAGM.

Bausch & Lomb's Rapid Universal Lenses. F-8.

For Instantaneous Outdoor Work, Groups and Standing Figures.

These Lenses have enjoyed an unusual popularity since their first introduction. They are of the rectilinear, symmetrical type, and have a construction peculiarly their own. The glass is specially manufactured of unusual hardness and brilliancy, involving specially favorable curves. While these lenses do not have the speed of the Extra Rapid Series, they give excellent results in a well lighted studio on groups, figures and large heads, having great depth and covering capacity.

For outdoor work they have an unusual crispness of definition, with full opening and great covering capacity and depth. The speed is ample for all ordinary instantaneous work without sunlight. While it may be used on architectural subjects and interiors, a wide angle lens is recommended for this purpose. The back combination may be used with good results on twice the size of plate with about one-half the speed. These lenses vary in angle from 70 degrees in the smaller to 60 degrees in the larger sizes.

Our new test chart (copyrighted) accompanies each lens.

They are Supplied only with the Improved Iris Diaphragm.

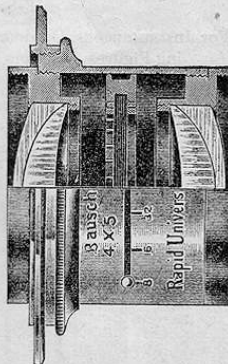


Figure shows the Rapid Universal Lens, 4 x 5 actual size.

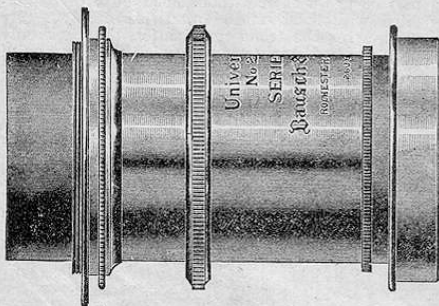
No.	Large Stop Covers.	Equivalent Focus. Inches.	Diameter of Image Circle. Inches.	Diameter of Lenses. Inches.	Back Focus. Inches.	Price.	
						Lens Only.	When Fitted with Diaphragm Shutter.
4 1/2	3 1/2 x 4 1/2	5 1/2	8	1 1/2	4 1/2	\$ 18 00	\$33 00
5	4 x 5	6 3/4	9 1/2	1 3/4	5 1/2	22 00	37 00
8	5 x 8	8 1/2	11	1 7/8	7 1/2	26 00	41 00
8 1/2	6 1/2 x 8 1/2	11 1/2	13 1/2	1 7/8	10 1/2	35 00	51 00
10	8 x 10	13 1/2	15 1/2	1 7/8	12 1/2	48 00	65 50
12	10 x 12	17	20	2	15 1/2	60 00	
15	12 x 15	20 1/2	21 1/2	2 1/8	18	75 00	
18	16 x 18	24 1/2	27 1/2	2 3/8	22 1/2	95 00	
22	20 x 22	31 1/2	36	2 7/8	28	125 00	

Bausch & Lomb's Universal Portrait Lenses. F-4.

SERIES A.

Quick Working Lenses for General Portrait Work.

Although these Lenses have been in use in the hands of some of our best known photographers for the purpose of testing their particular qualities, they are herewith introduced for the first time to the general public.



Cut 1/2 size No. 3.

The general commendations of their high qualities convince us that after these become more generally known they will be the means of making these the leading lenses with professional photographers. They are quick-working and have an unusual delicacy of definition, freedom from distortion and even illumination. They are at least equal to the lenses of the best European makers intended for the same work, and are very materially lower in prices than any of these.

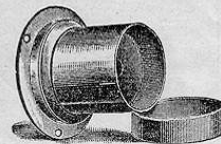
The No. 3 of this series is recommended as the most useful lens for cabinet and whole-plate work in the studio.

They are Supplied only with the Improved Iris Diaphragm.

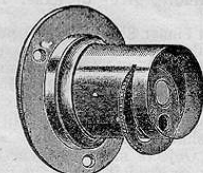
No.	Size.	Diameter of Lenses.	Back Focus.	Price.
1	4 x 5 inch	2 3/4 inch	6 1/2 inch	\$ 65 00
2	5 x 8 "	3 1/2 "	8 1/2 "	90 00
3	6 1/2 x 8 1/2 "	4 1/2 "	11 1/2 "	135 00
4	8 x 10 "	4 3/4 "	13 1/2 "	190 00

Prince's Single View Lenses.

Reduced Price List on Single View Lenses.



Prince's Single View with two Extra Stops.



Prince's Single View with Revolving Diaphragm.

These Lenses are conceded to be the best of the low-priced lenses. They have the qualities most sought in a View Lens, clear definition, and great depth of focus.

Though designed for landscape work, they will make excellent interiors and even portraits in a well-lighted room or on a porch.

They are mounted in brass mountings, and one style has the revolving diaphragm, a point of the greatest importance, to compensate for the varying strength of different lights. This is the only low-priced lens in the market having this important feature, all others having one permanent diaphragm, which has to be used for all degrees of light and preventing the taking of instantaneous views which, on account of the exceedingly short period of exposure, require a much larger diaphragm than for a time exposure with the cap.

Prince's Single View with 2 Extra Stops.					Prince's Single View with Revolving Diaphragm.				
No.	Size of Plate.	Diameter of Lens.	Back Focus.	Price.	No.	Size of Plate.	Diameter of Lens.	Back Focus.	Price.
1	4 x 5	1 1/2	6 in.	\$3 00	1	4 x 5	1 1/2	6 in.	\$3 50
2	5 x 8	1 5/8	8 "	4 00	2	5 x 8	1 5/8	8 "	4 50
3	6 1/2 x 8 1/2	1 7/8	11 "	5 50	3	6 1/2 x 8 1/2	1 7/8	11 "	6 00
4	8 x 10	1 7/8	13 1/2 "	7 50	4	8 x 10	1 7/8	13 1/2 "	8 00
5	10 x 12	2 1/8	15 1/2 "	10 00	5	10 x 12	2 1/8	15 1/2 "	11 00
6	12 x 15	2 3/8	17 1/2 "	13 00	6	12 x 15	2 3/8	17 1/2 "	14 00

Gem Lenses.



These we can supply in sets of four, six, eight, nine or more, all perfectly matched. In order to work uniformly well, they should all be screwed tightly into position, be kept clean and replaced correctly if separated for inspection.

1 9 Size	.....	each, \$2 50
1-6 Size	.....	3 75
1-4 Size	.....	4 00
Brass Plate for 4 1/2 Gem Lenses	.....	1 35
" " " 4 1/2 " "	.....	1 25
" " " 9 1/2 " "	.....	1 80

Condensing Lenses.

The Condensing Lenses listed below are accurately ground and polished, and will be found much superior to the imported lenses commonly employed for this purpose. When condensers are wanted mounted, we supply them in our improved mounts, which are so constructed that there is the least possible danger of the lenses breaking when heated. The mountings are also very neat and compact.

Diameter Inches.	Focus Inches.	One Lens Unmounted.	Pair of Lenses Mounted.
4	5 1/2 or 6 1/2	\$1 25	\$4 00
4 1/2	5 1/2 or 6 1/2	1 50	6 00
5	6 1/2	1 75	7 50
5 1/2	8	2 25	9 00
6	8	3 00	12 00
6 1/2	8	4 00	18 00
7	9	5 75	24 00
8	12	7 50	32 00
9	14	10 00	40 00
10	15	13 50	50 00
12	18	27 00	80 00
14	21	40 00	120 00

The Iconoscope—A New Finder.

Description.—The purpose of a finder is to give a reduced image of that portion of the view of which a photograph is desired. It should, therefore, give an exact reproduction of that view in miniature.

What a Finder Should Be.—A perfect finder should meet the following requirements:

The image should have the same proportions as the plate in the camera. The angle of view of the finder should be the same as that of the lens in the camera.

The image should be so bright as to be easily seen under all conditions, sharply defined to the extreme edges, and free from reflections. Objects should appear in their natural position—not upside down, or the left where the right should be.

What Other Finders Are.—All finders heretofore constructed have been lacking in several or all of the above respects, giving a very dim, poorly defined, reversed or inverted image, reflections interfering with the distinctness of the image, image projected vertically or horizontally so that the operator is forced to assume an unnatural and unsteady position in order to watch the image, a fatal defect for hand camera work.

Iconoscope the Ideal Finder.—The Iconoscope is an instrument of precision, constructed on correct optical principles, and possesses none of the defects mentioned above, even in the smallest degree. It is, therefore, the ideal finder.

Brilliant Image.—The image is even more brilliant than the actual objects appear to the eye, being formed by a concave lens which projects the picture through a solid glass prism direct to the eye. One sees with the Iconoscope all that is visible to the eye alone.

Sharply Defined and Rectilinear.—The image is as sharp and clear as that formed by a good photographic lens, and is perfectly rectilinear, so that not only the objects as a whole may be clearly seen, but every detail, position, or expression as well.

Not Reversed or Inverted—Convenience in Use.—The image is not reversed or inverted, hence objects appear in their natural position. The adjustable hood prevents all reflections and permits the image to be viewed without shading the instrument. It is held in the proper position by a spring click. The image is projected at a convenient angle, so that the photographer stands in a natural position and easily glances from the image to the object without moving the head.

Perfect Mounting.—The mounting of the Iconoscope is extremely ingenious, and, being of metal throughout, forms a perfect protection for the glass parts without undue weight. The mounting proper is attached to a small metal slide piece ("S" Fig 3) by a spring hinge, so that, whether the camera is used for vertical or horizontal pictures, the Iconoscope is always vertical.

One Iconoscope for Several Cameras.—The slide works in a metal bed plate which is attached by screws to the bed of the camera. The Iconoscope may thus be instantly detached if desired, or by having several bed-plates may be used on any number of cameras with equal facility.

The Iconoscope is made in three sizes, in each of which the proportions of the image are exactly the same, although varying in size. The larger sizes, therefore, give larger images, and permit a more precise judgment of a view. The smallest Iconoscope is applicable to and may be conveniently enclosed in the smallest folding hand camera to which ordinary finders are fitted.



Photographic Enlargement of the Image in the Iconoscope Shows Definition to Margin of Field and Rectilinear Image.

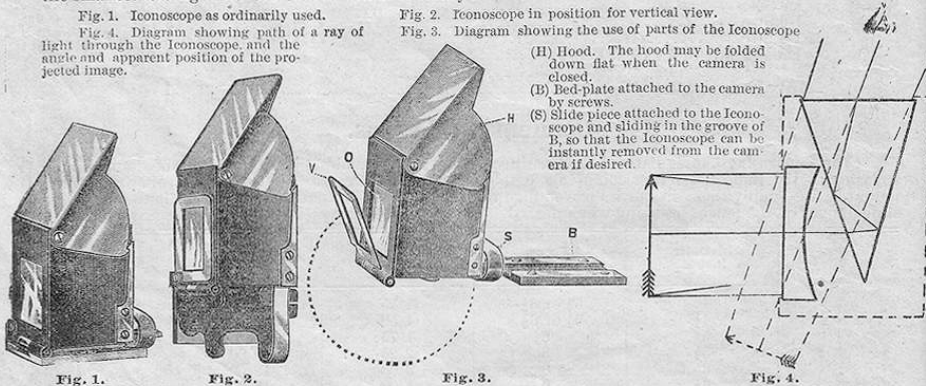


Fig. 1. Iconoscope as ordinarily used. Fig. 2. Iconoscope in position for vertical view. Fig. 3. Diagram showing the use of parts of the Iconoscope. Fig. 4. Diagram showing path of a ray of light through the Iconoscope and the angle and apparent position of the projected image.

Price List of Iconoscopes. Each Iconoscope is Furnished in a Neat Box.
 Size A—Height, 1 1/2 in., Width, 7/8 in., Depth, 3/4 in. Each \$5 00
 Size B— " " 1 1/4 " " 1 1/8 " " 1 1/8 " " " " 5 50
 Size C—Height, 2 in., Width, 1 1/4 in., Depth, 1 1/4 in. Each \$6 00
 Extra Bed Plates 75

Finders.

These ingenious little devices are a great help for those who intend taking instantaneous pictures, as the operator can always place the object in the center of the plate during the time they are in motion.

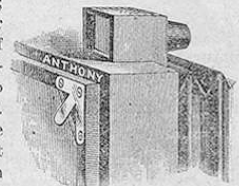
Anthony's Universal Finder.

This is a neat, compact article that can instantly be attached to any camera, and is of great value in composing a view. The object to be photographed being plainly visible, and occupying the same relative position as on the



Showing method of fastening Finder to Camera.

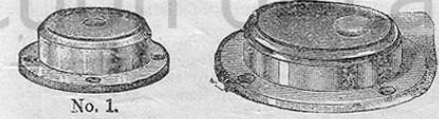
ground glass or plate; it is indispensable for instantaneous views of moving objects. It corresponds in shape to the ordinary negative. The ground side of the glass can be marked at will to denote position desired when taking instantaneous views.



Showing Finder on Camera.

Price..... \$1 50

Camera Levels.



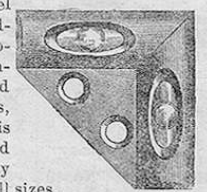
No. 1—In metal mounting, round, with flange and screw holes..... \$0 75
 " 2—In metal mounting, round, large size.. 1 00
 " 3—In metal mounting, without flange.... 75



No. 5—Pocket Level..... \$0 75

The Scovill Double Level.

The Scovill Double Level will be appreciated by landscape and tourist photographers. It is quite compact and may be attached to the body of hand cameras, but if a Tripod Camera is used it should be attached to the swing-back, and may be used with cameras of all sizes.



Price..... \$0 40

Focusing Glasses.

Very desirable is assisting the operator to get a sharp focus.



THE NEW DUPLIX FOCUSING GLASS.

Cheap and good.
 Price..... \$1 25



FOCUSING GLASS.
 Three-legged Microscopic.
 Price, each..... \$0 75



DARLOT FOCUSING GLASS.

Nicely mounted in brass tube.
 Price, each..... \$2 50

The Ideal Telemeter.



This little instrument has proved itself a boon to the amateur photographer. It is designed to enable those using the hand camera to measure with accuracy the distance between the camera and the subject to be photographed so that the camera can be adjusted to the focus quickly and without attracting attention.

By looking through the sight-tube toward the base of the subject to be photographed the index hand will point to the number of the feet (on the scale) between the observer and the subject.

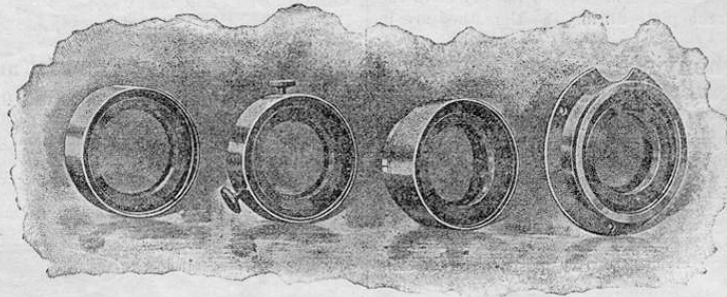
The Telemeter can also be used as a plumb indicator to accurately level the camera when on the tripod.

This instrument is made of brass and handsomely nickel plated.

Price..... 50 cts.

Bausch & Lomb Bichromate of Potash Ray Filters.

For Cloud Photography, Landscape Work, Copying Paintings, Process Work, and all work requiring correct color values.



Style A. Style B. Style IP. Style IFF.

The desire of every photographer is to produce natural-looking pictures. It is conceded, however, that even with the most careful handling of lenses, plates and prints, much is still to be desired in the average landscape photograph.

White light is a combination of the seven primary colors; violet, indigo, blue, green, yellow, orange and red, named in the order of their actual intensity.

The result in the photograph is, some blue or green objects appear too light, as compared with yellow or red objects, which are much lighter to the eye; furthermore, objects which reflect a very great quantity of violet or blue rays, impress the plate so deeply and quickly that portions touched by the rays become hopelessly over-exposed long before darker colors have acted at all.

Marine views are similarly well rendered. For the same reasons, snow scenes are practically within the scope of ray filter work, every detail in the snow itself as well as in the darker objects, being reproduced and of correct printing intensity. Mountain photography, which is absolutely impossible without the filter, lends itself especially well. The white which seems to fill up the distance is due to the reflection of the most actinic rays from minute particles in the air. The ray filter absorbs these rays, eliminating the haze and giving perfectly distinct pictures of distant peaks which are often invisible to the eye.

The filter slips over the hood of the lens like a cap, and may itself be covered by a lens-cap if it is desired to make cap exposures. By varying the density of solution, skies of any tint may be obtained and any brand of plate may be used. Instructions for using accompany each ray filter.

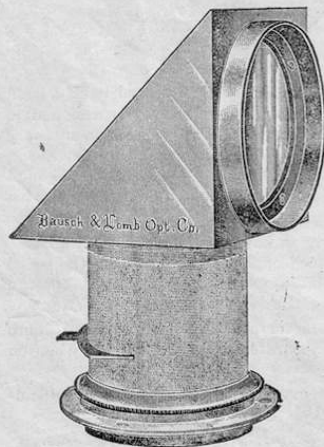
N. B.—The ray filter in no way interferes with the defining power of the lens.

Number	P	IFF	1	2	3	4	5	6	7	8
Inside Diameter, in inches	1 1/2	1 3/4	1 3/4	1 3/4	2 1/8	2 1/8	2 1/8	3 3/8	3 3/8	4 1/2
Price	\$3 25	\$3 25	\$3 50	\$3 50	\$4 00	\$4 50	\$5 00	\$5 00	\$5 50	\$6 00
Price of Morocco Cap	70	75	70	70	75	80	90	1 00	1 10	1 20

Bausch & Lomb Optical Co.'s Prisms.

These Prisms are intended to be used in all classes of photo-mechanical processes. They invert the image and make stripping of the film unnecessary.

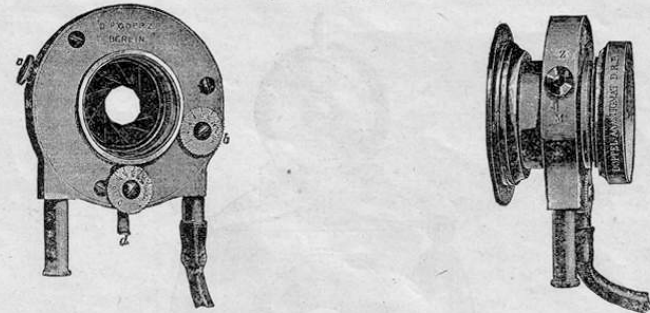
In estimating the size of prism which is required for a particular lens, a size should be selected which is at least equal to the diameter of the hood. A size which is larger than this is preferable, but under no conditions should a smaller one be selected, as in the work in which these prisms are required, it is of great importance to utilize all the possible light which the lens can transmit.



Full Aperture of Prism, Inches.	Figures in the margin show correct size Prism for Lenses as below.					Price.	
	Bausch & Lomb Planar, Series Ia.	Bausch & Lomb Zeiss An-astigmat, Series IIa.	Bausch & Lomb Zeiss An-astigmat, Series IV.	Bausch & Lomb Zeiss An-astigmat, Series V.	Bausch & Lomb Zeiss Con-vertible An-astigmat, Series VIIa.	When fitted to B. & L. Lenses.	When of other make.
2 1/2	No. 12	No. 6	No. 7	No. 9	No. 16	\$45 00	\$47 00
2 3/4	No. 13					53 00	55 00
3	No. 14	No. 7	No. 8	No. 10	No. 19	65 00	67 00
3 1/2	No. 15	No. 8			No. 22	78 00	80 00
4	No. 16				No. 25	90 00	93 00
4 1/2	No. 17		No. 9		No. 28	140 00	145 00
5 1/2	No. 18		No. 10		No. 30	180 00	185 00

New Sector Shutter.

(Goerz Patent.)



This new Shutter is formed by segments situated in the plane of the diaphragm, and opening from and closing toward the center.

This shutter not only combines the good qualities of the best system of shutters hitherto known, but actually surpasses them in many respects.

Its advantages are as follows:

1. Simplicity of mechanism; hence, permanently uniform and reliable action.
2. All moving parts are completely covered in; hence, they are not susceptible to disturbing external influences, such as concussion, dust, moisture, etc.
3. It can be fitted between lens systems which have very little separation from each other (e. g. double anastigmats with short focus), as the segments are one-tenth of a millimetre only in thickness.
4. After opening with the greatest velocity it will remain for a certain period in this fully-opened position, thereupon closing with the same rapidity. Hence the lens will work during the greater part of the time of the exposure with the full size of opening for which it is set.
5. It will work without any shock or jerk, and permits, with certainty, great variations of speed, ranging from 1-150 to one second. The speeds marked on the shutter are absolutely reliable, and will apply equally for any adjustment or size or stop. In most shutters hitherto known the speed will vary with the size of stop for which they are set, without alteration of the speed adjustment.
6. It serves at the same time as a "stop," and can be adjusted for any desired "size of aperture."
7. It is set for action without opening it in doing so.
8. It is perfectly light-proof, its manipulation is most simple, and it is very light, being made of aluminum (Nos. 1 to 4 weigh 2 3/4 ounces only); it occupies very little space (see illustration showing full size). The workmanship is most perfect.

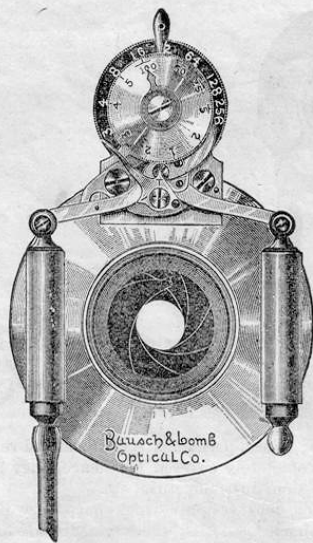
The shutter being fitted between the lenses, it is necessary that it should be well-centered with them. We can not guarantee faultless mounting unless the lens, whether of our make or of any other, is sent to us for fitting.

So far, the segmental shutter is made in the following sizes only, suitable for lenses as stated below:

Size of Shutter.	Diameter of Lens Tube.		For Goerz's Lenses. Series and No.	Price.
	mm.	Inches.		
1	34	1 1/4	Double-Anastigmat 111-0	\$22 00
2	34	1 1/4	Double-Anastigmat 111-1	22 00
3	38	1 1/2	Double-Anastigmat 111-2	22 00
4	44	1 3/4	Double-Anastigmat 111-3	22 00

The shutter can also be fitted to any other lens with a similar diameter of tube, provided that the largest size of stop is not more than 24mm. (= 1 inch) in diameter.
 Cost of fitting, \$1.50 to \$2.50 each, according to size.
 The original lens tube is not altered, and will be returned.
 No charge will be made for fitting if the shutter is ordered simultaneously with one of our lenses.

Bausch & Lomb Optical Company's Diaphragm Shutter.



Cut Full Size, 4 x 5.

No Shutter has ever introduced, the advantages of which have been so quickly appreciated, and which from its first appearance has been conceded to excel all others. It has stood the test of years, and is without a rival.

It requires little argument to show that the proper place for opening and closing a shutter is in the optical axis of the lens; and in both time and instantaneous photography it is evident that this shutter, starting its opening with a pin-hole and gradually increasing to the size of stop for which it is set, and returning in the same manner, will give the effect of a small stop, *i. e.* more depth, flatness and equality of illumination. Comparative tests show that in practice these advantages are obtained to a marked degree.

Furthermore, the quality of workmanship in these shutters is altogether superior to that in other devices. This and the construction enables us to adapt lenses to them under the exact original conditions and truly centered, a fact of the greatest importance, as there is not the slightest depreciation in any of the good qualities which a lens may possess.

This shutter meets every requirement of gallery and out door work. We disclaim, however, its suitability to so-called "lightning work," although surprising results, such as trains running sixty miles an hour, and trotting horses, show its capacity under suitable management. For all other work it has no rival, either in its results, advantages, conveniences or workmanship.

While the shutter is easy and delicate in its action, and from its variety of motions comparatively complicated, there is no danger in this fact, as the parts exposed to wear are especially strong. There are no weak points; and, with ordinary care, there is not the slightest deterioration in its operation. Its reputation is not alone confined to this country; but it is used at every point of the globe where photography is practised.

All the parts to be operated are at the front and easy of access. The upper lever sets the shutter without making an exposure; the lower sets for time or instantaneous exposure. The larger black disk sets the size of opening; the smaller for time of exposure, varying from 3 to 1-100 seconds. The shutter is very compact and well balanced in its operation, so that there is no jar, even at its quickest speed, while making an exposure.

Its Advantages Over Other Constructions Are:

It gives greater depth, more even illumination, greater covering capacity.

It allows a variation in speed from 1-100 to 3 seconds.

It gives every variation in size of stops, from pin-hole to full opening.

It does not jar the camera.

Can be operated by rubber bulb or finger release.

Requires the setting of one lever only for each exposure.

Can be easily applied to hand cameras.

Makes no exposure when setting.

Its workmanship is of the highest grade, with lenses true and optically centered.

On account of the variations in size and pitch of threads and varying conditions in the lenses of the same make, we assume no responsibility in setting unless the complete lenses are sent us, whether of our or other manufacture.

Bausch & Lomb's Diaphragm Shutter.

PRICE LIST.

Size.	When Fitted to Rapid Universal, Extra Rapid Universal with Regular Barrel and Diaphragm.	When fitted to lenses of other manufacture leaving barrel intact.	Bausch & Lomb Zeiss Anastigmat. Series II, IIa and III.	Bausch & Lomb Zeiss Anastigmat. Series II and IIa. Special for Hand Cameras.	Bausch & Lomb Zeiss Anastigmat. Series VIIa.	Bausch & Lomb Zeiss Anastigmat. Series VIIa. Special for Hand Cameras.
4 x 5	\$14 00	\$14 50		+1 } +2 } \$14 00 +3 }	1 } 2 } 3 } 4 } 5 } \$15 00 6 } 7 } 8 } 10 }	+1 } +2 } +3 } \$14 00 +4 } +5 } +7 }
5 x 8	15 00	15 50	1 } 2 } \$15 00 3 } 4 }	+4 } +5 }		
6½ x 8½	16 00	16 50	5 } 6 }		9 } 11 } 16 00 13 }	
8 x 10	17 50	18 00	7 } 17 50		12 } 14 } 16 } 17 50 *15 } *17 } *18 }	

* Gives effective aperture when lens is used as a doublet, but reduces speed of the single combination of longest focus. † Owing to additional work involved when so adapted, no extra barrel is supplied.

To graduate disk to correspond with stop accompanying lens, extra 50 cts. Finger release attachment to shutters, ¼ to 8-10 size, extra, \$1.00. (4x5 is regularly supplied in this way at no additional charge.)

B. & L. Stereoscopic Shutter.

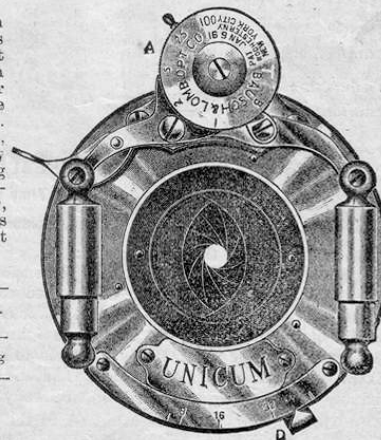
Opening.	Rapid Universal.	A. G. Clark	Velox Rectilinear	Zeiss Anastigmat.				Price.	
				Series II.	Series IIa.	Series III.	Series IIIa.	Brass.	Aluminum
¾ in.	No. 5	No. 5	No. 1	No. 2	No. 2 & 3	No. 2 & 3	No. 2 & 3	\$18 00	\$22 00

Unicum Shutter.

The Unicum Shutter is the latest product of the Bausch & Lomb Optical Company, especially made for us, and is one of the best working shutters now on the market. It has both finger and pneumatic release. It is fitted with Iris Diaphragms, which are regulated by moving the lever D to the right or left. The openings are in accordance with the uniform system, and are indicated on the scale. It works automatically from 1/100 of a second to 1 second, and any fraction between these desired is obtained by simply revolving the disc to the desired speed. Long time exposures are given by placing letter T at indicator. One pressure of the bulb will open the shutter, and the second pressure will close it. When letter B is at indicator, one pressure of the bulb will open it; and it will close when pressure is released.

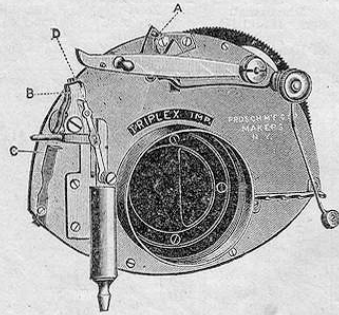
Price List of Unicum Shutters.

No.	Size.	Diam. of Opn'g. In.	Fitted to Universal Clark or Zeiss Lenses, without Barrel.		Fitted to our own or other Lenses, leaving Barrel Intact.	
			With Retarding Device.	Without Retarding Device.	With Retarding Device.	Without Retarding Device.
1	4x5	1 1/8	\$8 00	\$6 50	\$9 00	\$7 50
2	5x8	1 1/4	9 00	7 50	10 00	8 50
3	6½x8½	1 3/8	10 00	8 50	11 00	9 50



The Improved Triplex and Athlete Photographic Shutter.

The Improved "Triplex" Shutter.



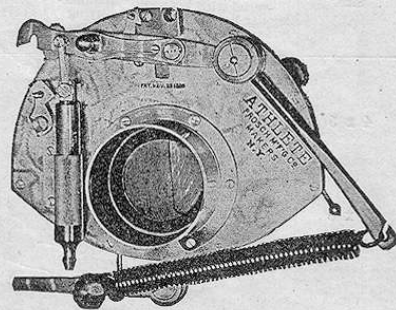
The "Triplex" Shutter, an improvement on the well-known Duplex has been recognized for the past five years as the leading all-around shutter. The Improved Triplex is similar in appearance to the regular Triplex, the features of the improvement being:

1. A New Release, by which the spring in use is the only factor in the duration of exposure. This enables the operator to get a range of exposure from about 1-20 to 1-150 of a second.
2. Four Springs are furnished with each shutter instead of two.
3. A Speed Card with directions for use is sent with each shutter.

The Improved Triplex Shutter is fitted between the combination of the lens at the diaphragm, the only proper place for a shutter, and an entirely new lens tube is attached, leaving the original lens tube intact. A rotary stop is fitted, having usually five openings. If desired, the shutter can be fitted with Waterhouse stops.

Size	00	0	0A	1	1A	2
Aperture, inches	3/4	7/8	1	1 1/4	1 1/2	1 3/4
Price	\$14.00	\$15.00	\$15.50	\$16.00	\$16.50	\$17.00
Extra for Aluminum	4.00	4.00	5.00	5.00	6.00	6.00
Size	2A	3	3A	4	5	6
Aperture, inches	1 1/2	1 3/4	2	2 1/4	2 1/2	3
Price	\$18.00	\$18.50	\$19.00	\$20.00	\$22.00	\$26.00
Extra for Aluminum	7.00	7.00	8.00			

The Athlete Shutter.



The "Athlete" Shutter is unique in that it is unqualifiedly the only shutter made to work at the diaphragm rapidly enough for athletic, race track, and general high-speed work. In appearance and essential principles it is like the Triplex, but is built more strongly throughout. It has two springs, one front and one back, and is fitted with a rotary stop inside shutter case, having four openings.

The "Athlete" attains a maximum speed of from 1-300 to 1-400 of a second, according to size. Using one spring on the front, the speed is, closely enough for all practical purposes, that of the Triplex.

(For working directions see our "Direction and Speed Card.")

Using both springs, the speed is somewhat more than twice that of the Triplex Shutter, same size, using springs in the same relative position.

Size No.	2	3	4	5	6	7	8
Aperture	3/4	1	1 1/4	1 1/2	1 3/4	1 3/4	1 3/4
Price	\$20.00	\$21.00	\$22.00	\$23.00	\$24.00	\$25.00	\$26.00

The Thornton-Pickard Behind-Lens Shutter.

Time and Instantaneous.

Price, including Speed Indicator, \$10.00.

Particulars of the smallest size:

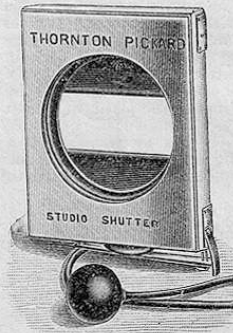
Speed up to 1-90 of a second. Dimensions, 3 3/8 x 2 3/4 x 7/8. Weight, 4 1/2 ounces.

This Shutter is arranged to be screwed to the panel of the camera front, practically acting as an inside shutter. It then forms a part of the camera and is always firmly attached and in position. The back is fitted with velvet, which insures a light tight joint when the shutter is screwed to the panel of the camera front. The lens flange is screwed to a detachable panel which fits into the front of the shutter. Extra panels for other flanges may be had, so that any number of lenses may be used with same shutter, and any one instantly dropped into place ready for immediate use.

The shutter should be attached to the camera front panel by four ordinary small screws passed through from the back of the panel into the velvet covered back of the shutter. Care should be taken that these screws are not too long, so as to injure the blind.

The Thornton-Pickard New Silent Studio Shutter.

Exposure, from 1/8 of a Second. Works in Front of the Lens or Inside the Camera.



Patent Applied for.

It is made on the blind principle, as will be seen from the illustration, but unlike any other form of Thornton-Pickard Shutter, it is constructed with two separate blinds which wind onto rollers at opposite ends of the box.

In their normal condition the blinds cover the aperture and overlap each other. On squeezing the pneumatic ball to make an exposure each blind instantly winds on to its roller, causing the shutter to open from the centre, as shown partly accomplished in the illustration. On releasing the ball the blinds immediately close. In this manner any exposures may be given from 1/8 of a second downward.

The length of exposure is controlled entirely by the length of time that the ball is squeezed. It is therefore under perfect control of the operator, so that in case the subject shows any sign of movement, the shutter can be instantly closed.

It is fitted in front or behind the lens, or inside the camera.

When placed in front, on the hood or tube of the lens, it is fitted with our patent rubber moulding in the usual manner, and will work in any position, either as shown in the illustration, or upside down or sideways. When fitted inside the camera it is screwed to the back of frontboard.

To fit on a Lens Hood or Tube up to inches diameter	2	2 1/2	3	3 1/2	4	4 1/2	5
Price	\$8.50	\$10.00	\$12.00	\$14.50	\$16.50	\$19.00	\$21.50

When ordering please send a narrow strip of paper just long enough to exactly meet round the Lens Hood or Tube.

The Thornton-Pickard Patent Time and Instantaneous Shutter.

Standard Pattern. To fit on either the Hood or Tube of the Lens

The illustration shows the external appearance of the Thornton-Pickard Time and Instantaneous Shutter, which is the one recommended for general all-round work. The shutter is simplicity itself: there is no complicated mechanism to get out of order. It is a perfect substitute for the lens cap, and much more handy and reliable. The same shutter may be used with any number of lenses, of different sizes, by the use of our Patent Adaptors (price, each, 30 cents and upward). The action of the shutter is as follows:

For an Instantaneous Exposure place the lever opposite the word "Inst." The cord is then pulled out as far as it will come by means of the tassel, which causes the wheel to revolve until the second stud catches in the notch of the lever, making two clicks. The pulling of the cord winds the blind upon the top roller, so that the opaque bottom end covers the opening, and consequently the lens. If, now, the pneumatic ball is pressed, it will lift the lever clear of the stud and release the wheel, allowing the blind to rapidly re-wind upon the bottom spring holder. The aperture in the blind therefore passes rapidly across the opening in the shutter case, which is instantly covered again by the opaque end of the blind. The exposure thus given is an instantaneous one.

For Time Exposures the cord is pulled to its limit, the lever is placed opposite the word "Time." On squeezing the pneumatic ball the blind stops open by means of the stud, which catches in the notch of the lever; it remains open until the pressure on the ball is released. Thus a Time Exposure of any required duration may be given.

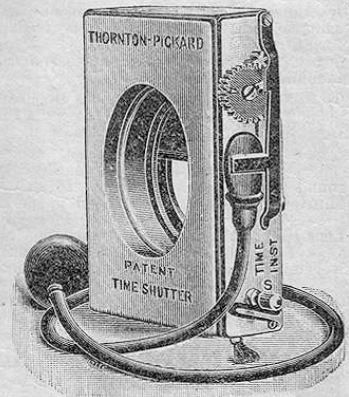
For very long exposures, such, for instance, as are required for interiors, there is no necessity to hold the ball all the time. Without first setting the shutter pull the cord half-way, that is, until the first click is heard. This sets the shutter full open, and it may be left so for the desired time of exposure, after which it can be closed by simply squeezing the ball.

For Focusing the shutter remains open in the same manner, that is, if the cord is pulled only half-way until the first click is heard.

Time and Instantaneous Shutter (Standard Pattern). Including Speed Indicator. The best shutter for general all-round work. It will give any exposure from fractions of a second up to minutes or hours without vibration. It will fit two or more lenses of different sizes by means of Adaptors.

Price List including Speed Indicator.

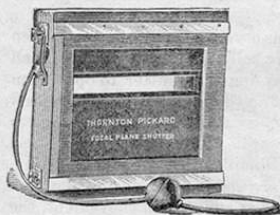
To fit on a Lens Hood or Tube up to inches diameter.	1 1/2	1 3/4	2	2 1/2	3	3 1/2	4	4 1/2	5
Price	\$9.00	\$9.00	\$10.00	\$11.50	\$13.50	\$16.00	\$18.00	\$20.50	\$23.00



The Thornton-Pickard Patent Focal Plane Shutter with Patent Adjustable Slit.

Speed ranges from $\frac{1}{25}$ to $\frac{1}{1000}$ of a second in every size of this Shutter.

For those who desire to obtain instantaneous photographs of subjects having an extremely rapid movement, such as flying birds, animals and men leaping, jumping, etc., this is the best Shutter. It gives a shorter exposure and passes a larger percentage of light than any other form.



The "Focal Plane" Shutter is made upon the Roller Curtain principle, like all the Thornton-Pickard Shutters. It fits at the back of the Camera, and the Plate Holder fits into the back of the Shutter. The Shutter Curtain, therefore, works just in front of the plate, and has a narrow slit in it the full width of the plate, which gives the exposure as it passes rapidly across. The speed is regulated by means of a small knob that winds up the driving spring, and also by altering the width of the Adjustable Slit. A Speed Indicator is always fitted to the Shutter, without extra charge.

The Winding Indicator is an arrangement which automatically prevents the blind being wound up too far when setting the Shutter, and will be found on the opposite side of Shutter from the Winding Knob. When it is required to focus, wind the curtain up as far as it will go, then press the spring lever over the Winding Indicator with

the finger of the other hand, and continue the winding. The curtain will now open to the full size of plate for focusing, and in this way Time exposures may be made with the cap of the lens, or with a Time and Instantaneous Shutter fitted to the lens.

For prolonged exposures the Shutter is wound up to the top as when focusing, and a cap or a Time Shutter may be used in the ordinary way without removing the Focal Plane Shutter from the Camera.

A good and very easy way of giving Time exposures when the lens is not fitted with a Time and Instantaneous Shutter, is to remove the cap at the commencement of the exposure, whilst the Shutter is full open, and squeeze the ball to finish it, the Shutter will then immediately close.

Focal Plane Shutter. Including Speed Indicator. For High Speed Instantaneous Exposures. It has a range of speed from $\frac{1}{25}$ to $\frac{1}{1000}$ of a second, and is fitted with the Patent Adjustable Slit. It fits at the back of the Camera, in front of the plate.

For Plates, inches. 4x5 in. 4½x6½ in. 5x7 in. 5x8 in. 6½x8½ in. 8x10 in. 10x12 in. 11x14 in.
Price \$19 50 \$22 00 \$24 00 \$28 00 \$29 00 \$34 00 \$39 00 \$43 50

The Thornton-Pickard Patent Stereoscopic Shutter.

(Time and Instantaneous.) To Fit on the Hoods or Tubes of Lenses.

For Stereoscopic Work a good Time and Instantaneous Shutter is an absolute necessity. This is the simplest and best Shutter for the purpose. It is constructed upon exactly the same lines as the Standard Pattern Time and Instantaneous Shutter, of which a detailed description is given on page 75. It has a great range of speed for instantaneous exposures, in addition to time exposures, and will, therefore, give any exposure from fractions of a second up to minutes or hours. The exposure is exactly the same to each lens, and there is no vibration. This Shutter is unequalled for Stereoscopic work.

Stereoscopic Shutter, Time and Instantaneous (Standard Pattern), including Speed Indicator.

To fit a pair of Stereoscopic Lens Hoods or Tubes up to inches diameter: 1½", \$12.50; 2", \$18.50; 2½", \$15.00
These prices are for Stereoscopic Shutters up to 3¼ inch centers. If 3½ inch centers, \$1.00 extra; 3¾ inch centers \$2.00 extra.

Instructions for Ordering.

For Time and Instantaneous Shutter. Please send a narrow strip of paper just long enough to meet round the Lens Hood or Tube. Insist upon having the Shutter made a good fit upon the Lens. The Shutters work equally well fitted to the Lens Hood or the Lens Body.

For Stereoscopic Shutter. Please send a narrow strip of paper just long enough to meet round the Lens Hood or Tube, and also state the exact distance apart of the Lenses from center to center.

For Focal Plane Shutter. This Shutter is fitted into the back of the Camera in the same way as the Reversible Back, and in fact takes the place of it. The Plate Holder fits into the back of the Shutter.

The cost of fitting is included if Reversible Back with Focusing Screen and a Plate Holder are sent to us when ordering, otherwise we supply the Shutter with an adapting frame which may be cut down and fitted to the required size by any cabinet maker. If the Camera has no Reversible Back it is sufficient to send a Plate Holder.

Universal Drop Shutter.

This is a very simple, yet effective form of Shutter. The slide falls of its own weight when released, and by the use of a rubber band, any degree of rapidity may be obtained.

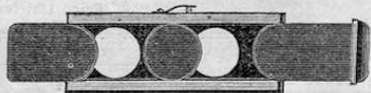
The body of the Shutter being of mahogany, it has a very handsome appearance. A thin strip of rubber is placed in the top of the Shutter to lessen the concussion caused by the falling slide.

Price with spring release, \$1.25. With Britton's pneumatic release, bulb and tube, \$2.00.

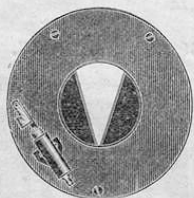
Universal Shutter for Stereoscopic Lenses.

This is similar to the Universal Drop Shutter except for two lenses and as the slide moves horizontally, it is moved by a rubber band.

Price, \$1.75.



No. 10, Low Shutter for Time and Instantaneous Exposures.



Price, \$6.00 each.

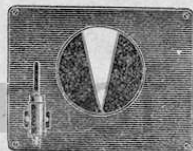
1½ in. opening, 3¾ in. round, | 2 in. opening, 4¾ in. round.
1¾ " " " 4¼ " " | 2½ " " " 5¼ " " "

The Low Shutter No. 10 is the same as No 8, with the addition of the instantaneous attachment.

There are now many hundreds of them in use, and are giving universal satisfaction and splendid results. They can be readily changed from time to instantaneous exposures by moving the brass lever to one side.

The Low View Shutter No. 8 is designed to make only time exposures. \$4.00.

No. 3, Low Shutter for Time Exposures.



Price, \$4.00 each.

1½ inch opening, 2¾ inch wide by 3¾ inch long.
1¾ " " " 3 " " " 4 " " " "
2 " " " 3½ " " " 4½ " " " "
2½ " " " 4 " " " 5 " " " "
3 " " " 4½ " " " 5½ " " " "
3½ " " " 5 " " " 6 " " " "
4 " " " 5½ " " " 6½ " " " "

The Low Shutter No. 3 is designed to be attached to the front board on the inside of camera.

It opens so as to light the drapery and foreground most. Will balance open while focusing.

No. 5, Low Shutter for Time Exposures.



1½ inch opening, 3 inches square \$4 00
1¾ " " " 3½ " " " 4 50
2 " " " 4 " " " 4 50
2½ " " " 4½ " " " 4 50
3 " " " 5 " " " 5 00
3½ " " " 5½ " " " 5 50
4 " " " 6 " " " 6 00
4½ " " " 6½ " " " 6 50
5 " " " 7 " " " 7 00

The Low Shutter No. 5 is a very simple, well made and nicely finished shutter, having the special advantage of a very large opening in a small shutter. Works lightly and easily, and gives the correct exposure.

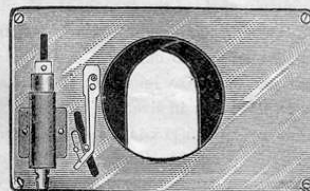
For cameras having small front boards the Shutter No. 5 is especially adapted.

The small sizes are admirably adapted for time view work.

The Low Shutter No. 6 is exactly the same as No 5 with the addition of an instantaneous attachment, which can only be applied to the four smallest sizes.

1½ \$5 50 | 2 \$6 00
1¾ 3 50 | 2½ 6 00

No. 1, Low Kazoo Shutter for Time and Instantaneous Work.



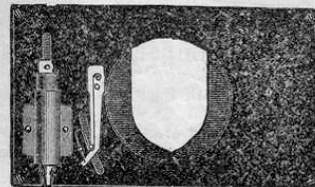
1½ inch opening, 4 inches long by 2¼ wide . . . \$6 00
1¾ " " 4½ " " " 2½ " " " " . . . 6 50
2 " " " 5 " " " " 3 " " " " . . . 7 00
2½ " " " 5½ " " " " 3½ " " " " . . . 7 50
3 " " " 6 " " " " 4 " " " " . . . 8 00

The Low Kazoo Shutter No. 1 is a handsomely finished nickel plated shutter.

Can be instantly changed from time to instantaneous exposures by simply moving the small lever to one side.

Gives the correct exposures and requires no setting after either time or instantaneous movement, as it sets itself after every exposure without opening the wings. This shutter is provided with an adjustable spring back that will fit any size of lens tube.

No. 2, Low Kazoo Shutter for Time and Instantaneous Work.



1½ inch opening, 4 inch by 2¾ outside \$6 00
1¾ " " " 4½ " " " 2½ " " " " 6 50
2 " " " 5 " " " " 3 " " " " 7 00
2½ " " " 5½ " " " " 3½ " " " " 7 50
3 " " " 6 " " " " 4 " " " " 8 00

This Low Kazoo No. 2 is designed to be placed on the inside of the camera and attached to the front board.

It can be operated entirely from the outside of the camera at any distance away.

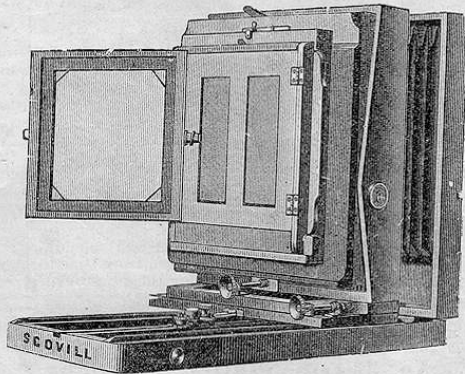
To change from time to instantaneous exposures it is only necessary to push in or pull out a small brass pin, which passes through the front board and into the shutter. It will balance open for any length of time while focusing.

CAMERAS FOR STUDIO USE.

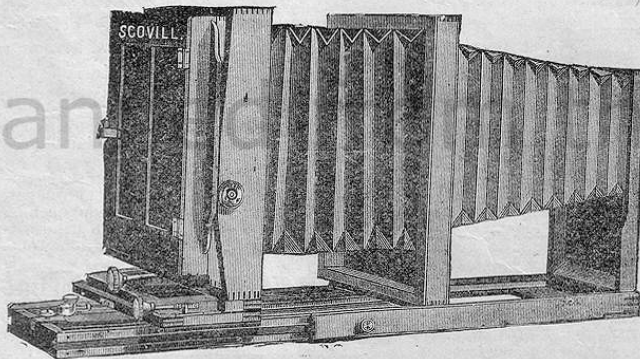
American Optical Co.'s Boston Imperial Cameras.

The Boston Imperial Camera is shown in the two accompanying illustrations.

No. 1 shows the Camera with the 8x10 carriage and holder in use, and the ground glass swung aside. Illustration No. 2 shows the instrument with the telescopic bed drawn out, the 11x14 holder in place of the detachable carriage. Will make two imperials on an 8x10 or 4-4 plate, using one 4-4 lens; two cards on a 5x8 plate, using one one-half size lens; two large panel pictures, 6x10 inches in size, can also be made, and regular work from 11x14 to 1-4 inclusive.



Cut No. 1.



Cut No. 2.

With Double Swing back, 8x10 attachment and holder.

- No. 30. 11 x 14 \$ 85 00
- 31. 14 x 17 100 00
- 32. 17 x 20 110 00
- 33. 18 x 22 120 00
- *34. 20 x 24 140 00

*With 11x14 attachment and holder.

N. Y. Imperial Camera.

Fitted with Benster Plate Holder.

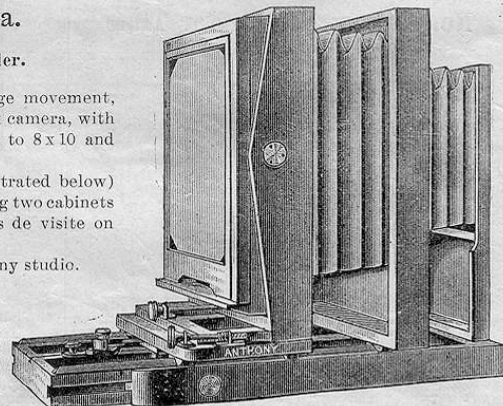
A new combination camera, with carriage movement, consisting of an 11x14 double swing back camera, with telescopic bed, for portraiture from 11x14 to 8x10 and reversible.

Also with an 8x10 Attachment (as illustrated below) for 8x10 to 1-4 reversible, as follows: Making two cabinets on an 8x10, using one tube, and two cartes de visite on 4 1/4 x 6 1/2.

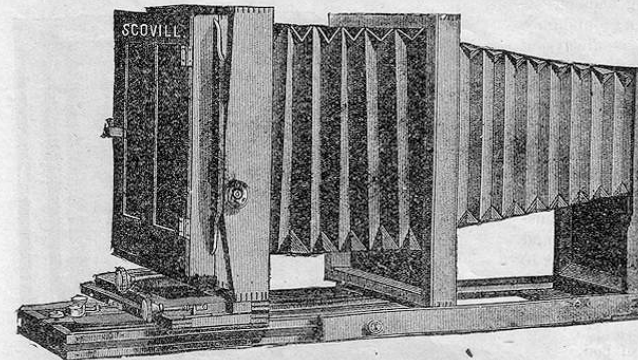
These will fill all the requirements of any studio.

Price, complete:

- 11 x 14. Length of bed, 49 inches... \$ 85 00
- 14 x 17. " " 60 " 100 00



American Optical Co. High Grade Portrait Cameras, with Reversible Shields.



The following cameras are manufactured from the best mahogany, well polished, with India rubber bellows and V shaped wooden guide. They are also furnished with the Lever Focusing Attachment, by which the most delicate focus can be adjusted with the utmost facility and ease. When ordering please specify whether Waterbury or Bonanza holder is preferred.

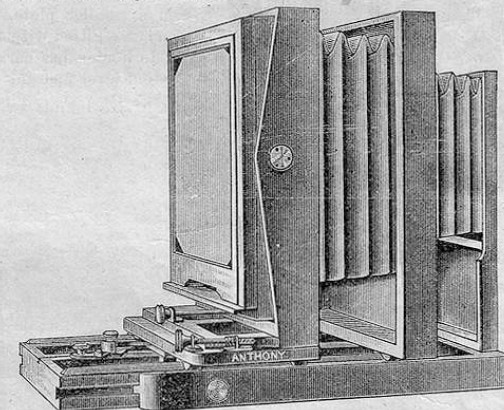
Attention of operators is especially called to the double swing back on these fine Studio Cameras. When lenses of short focal length are used, the face is very often distorted, unless the

operator tips his camera, and even then he is apt to get the face elongated or widened, unless he is very careful. Any operator who has been annoyed by being unable to reflect the image upon the ground glass without distortion, will see how completely this arrangement overcomes the difficulty.

Size of Plate. Inches.	Length of Platform. Inches.	When fully Extended. Inches.	Double Swing.	Size of Plate. Inches.	Length of Platform. Inches.	When fully Extended. Inches.	Double Swing.
11 x 14	26	48	\$64 00	18 x 22	38	70	\$100 00
14 x 17	33	60	76 00	20 x 24	40	72	110 00
17 x 20	36	65	90 00	25 x 30	40	80	170 00

Climax Cameras, Fitted with the "Benster" Plate Holders.

These Cameras are manufactured in the most substantial manner from the best of mahogany, and handsomely finished with all late improvements.



No. 14 B Climax Camera, with Telescopic Bed and Benster Holder.

Climax Portrait Cameras.

Double Swing Back, Tangent Screw Motion and Telescopic Bed.

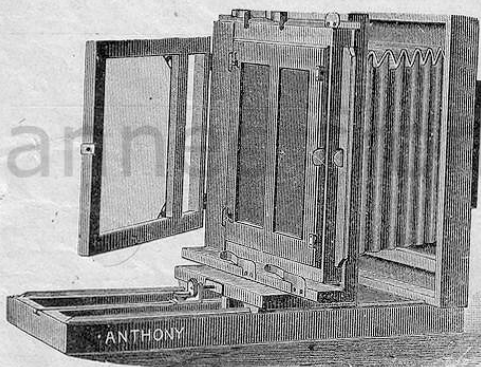
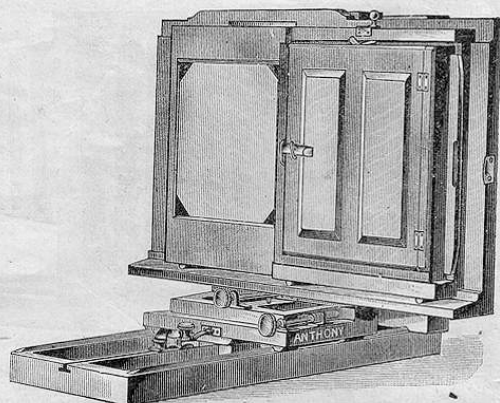
- No. 13 B. 11 x 14 and under, length of bed, 49 inches..... \$64 00
 - No. 14 B. 14 x 17 " " " 60 " 76 00
 - No. 15 B. 17 x 20 " " " 65 " 90 00
 - No. 16 B. 18 x 22 " " " 75 " 100 00
 - No. 17 B. 20 x 24 " " " 77 1/2 " 110 00
 - No. 18 B. 22 x 27 " " " " " 130 00
 - No. 20 B. 25 x 30 " " " " " 170 00
- Cameras made to order only.

All the above are supplied with a lever attached, by which the most minute adjustment of the focus may be instantly obtained.

Climax Royal Camera.

This Camera has the sliding back or carriage for plate holder, and has a ground glass attached in place, where it is always at hand. When the operator has the plate holder ready, he places it in the carriage, instead of laying it on the floor or some other inconvenient place, while he gets his focus; this done, he merely slides the holder, ground glass and all, together. It is made in the best manner, of fine mahogany, and is fitted with the celebrated Benster plate holder, working 8x10 plates, and smaller; two 5x8 negatives on an 8x10 plate; two 4½x6½ negatives on a 6½x8½ plate; two 4x5 negatives on a 5x8 plate, etc. Prices:

- 8 x 10 size, complete; length of bed, 30½ inches..... \$50 00
- 11 x 14 size, complete; length of bed, 41½ inches..... 85 00



Our 19-C Imperial Camera.

For 8x10 plates and smaller, making two cabinets on an 8x10 plate, or two C. de V. on a smaller plate. Length of bed, 30½ inches. Fitted with new Benster curtain slide holder, has carriage movement and patent lever focusing attachment.

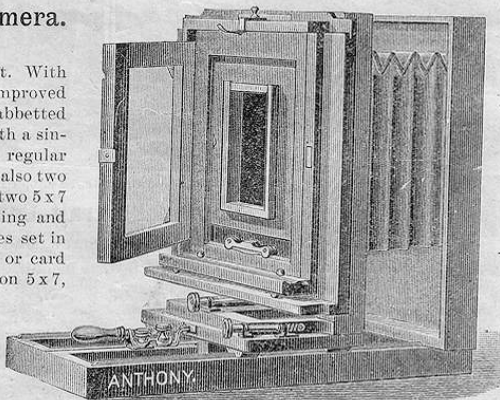
8 x 10 size, double swing..... \$30 00

Climax Portrait and Gem Camera.

(No. 43-C.)

The best every-day camera in the market. With sliding holder and swinging ground glass; improved focus screw; extension bellows. With rabbetted kits for dry plate and ferrotype work. With a single 6½x8½ or 8x10 lens it will make all regular work, reversible, from 4½x6½ size to 8x10; also two cabinets on 8x10 plate or two 5x7 size on two 5x7 plates. With a ¼ or ½ size tube, copying and enlarging to 8x10; with four ¼ gem tubes set in brass plate, it makes eight large bon-tons or card size on 7x10; also four of the same size on 5x7, and eight small bon-tons on 5x7. Prices:

- No. 43-C. All complete except tubes..... \$22 50
- No. 43-C. As above, fitted with four ¼ gem tubes..... 35 00



The New York Studio Outfit

Is, without exception, the most complete and the cheapest Outfit for the Studio.

IT COMPRISES

Mahogany Portrait Camera of newest design, fitted with double swing back and patent lever focusing attachment, and having curtain slide Benster holder, the most perfect plate holder in existence.

Anthony's Automatic Cabinet Attachment, with one holder, 4¼x6½, 5x7 or 5x8, as desired, by means of which, in one movement, the ground glass is pushed aside and holder placed in position with slide automatically drawn, ready for use.

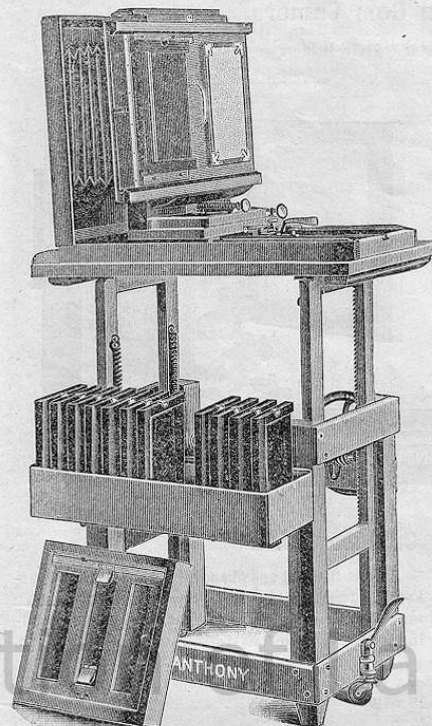
No. 1 New York Stand, the most modern studio stand, having only one hand-wheel for raising, lowering and tilting the top.

Holder Rack, carried on the side of the stand, and having thirteen grooves for twelve plate holders, the odd groove always separating exposed and unexposed plates, as shown in the cut. This rack is not included when the stand is purchased separately.

- Price complete, 8 x 10 size Camera..... \$45 00
- " " " 11 x 14 " " 70 00
- " " 8 x 10 outfit with 5 x 7 reversible holder 47 50
- " " 11 x 14 " 5 x 7 " " 72 50

EXTRA HOLDERS—With Curtain Slide:

- 4¼x6½, 5x7 or 5x8 each, \$1 50



The Camera as described above, fitted with C. S. Bonanza Plate Holder only.

- No. 11-C, 8x10..... \$21 00 Additional for attachment, \$10 00
- " 13-C, 11x14..... 50 00 " " " 12 00

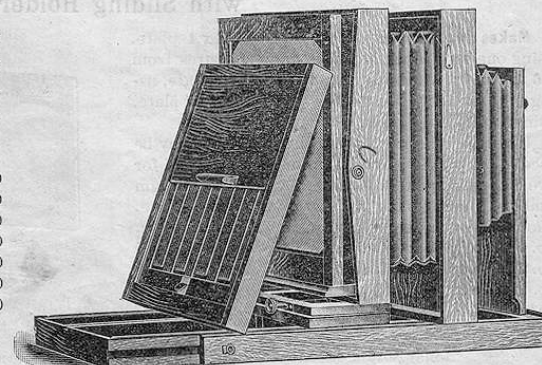
For Price of N. Y. Stand, see Camera Stands.

Anderson's Extra Quality Portrait Cameras.

Front bellows made either cone or square shape, with either level or ordinary screw for focusing, and supplied with Anderson's New Curtain Slide Holder.

- 11 x 14 Double Swing..... \$51 00
- 14 x 17 " " 62 00
- 17 x 20 " " 72 00
- 18 x 22 " " 78 00
- 20 x 24 " " 82 00
- 22 x 27 " " 90 00
- 25 x 30 " " 100 00

The above have telescopic beds.



Climax Cincinnati Gem Camera.

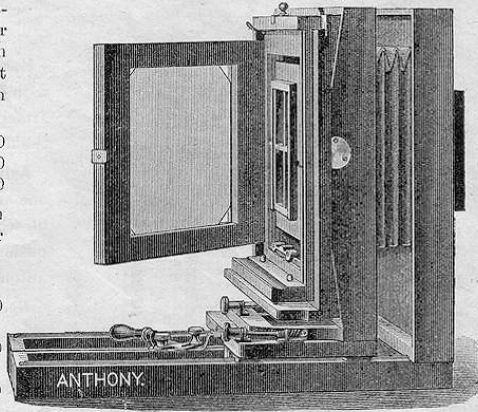
Fitted with the "Benster" Plate Holder.

For Negatives or Ferrotypes (admitting a picture 8x10 and under, two on 8x10, 7x10 or 5x7 with one lens) with carriage movement on our patent rollers, lever focusing attachment and fitted with the "Benster" holder with wooden slide. Prices:

No. 43-B. Without swing	\$27 00
No. 43-B. Single swing	30 00
No. 43-B. Double swing	34 50

When fitted with four 1/4 gem tubes on plate it will admit of eight on 7x10, and four on 5x7. Prices:

Without swing, fitted with four tubes on plate	\$40 00
Single swing, fitted with four tubes on plate	43 00
Double swing, fitted with four tubes on plate	47 50



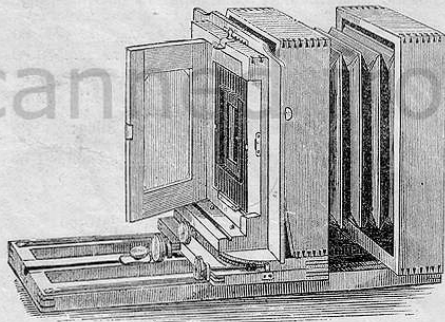
Length of Bed, 30 1/2 inches.

Peerless Imperial Camera No. 1.

This is the best and cheapest Camera on the market for the money. It is made of first growth mahogany, neatly polished, has carriage with sliding bonanza holder, extra rail rubber bellows, etc.

PRICES.

8 x 10, D. S. B.	\$35 00
10 x 12, "	45 00
11 x 14, "	70 00

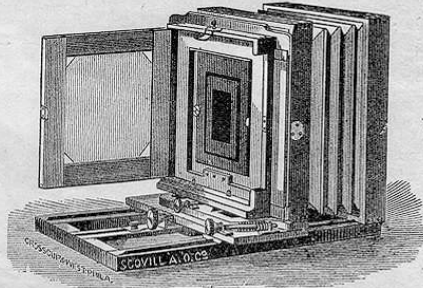


No. 2.

Peerless Imperial Camera No. 2.

These Cameras are the same as the No. 1, but are *not polished*.

	D. S. B.	Without Swing
8 x 10	\$25 00	\$20 00
10 x 12	40 00	



American Optical Co.'s Imperial Card or Cabinet Box with Sliding Holder.

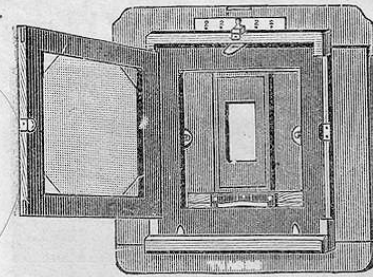
Makes two cabinets on an 8x10 or 4x4 plate, using one 4x4 tube; any size single pictures from 1-6 to 8x10; two cards on a 4x4 or 5x7 plate, using a 1/2 size lens; four cards on 4x4 or 5x7 plate, using two 1/2 size lenses.

It will be observed, then, that this box may be used for all single portraits up to 8x10 size, and for two cabinets on an 8x10 plate. A small diaphragm enables you to make two cards on a 5x8 plate. Photographs or ferrotypes made with equal ease.

No. 21, 6 1/2 x 8 1/2 Camera, D. S. B.	\$40 00
No. 22, 8 x 10 " "	45 00
No. 23, 10x12 " "	60 00
No. 24, 11x14 " "	80 00
No. 26, 14x17 " "	100 00

Bonanza holders supplied with these cameras if preferred to Waterbury holders.

Attachments for American Optical Co.'s Portrait Cameras.



Consisting of a carriage and Bonanza holder. These attachments can, without bother, be laid aside when large-sized pictures are to be taken, and be replaced when Imperial work is to be executed, for which service they are available, from the size specified down to the smallest work.

In ordering these, it will be necessary to specify camera in use, and the outside size at the back, to guard against possibility of error.

Attachment.	Camera.	Price.
8 x 10 for No. 7.	11 x 14.	\$22 00
8 x 10 " " 9.	14 x 17.	26 00
8 x 10 " " 11.	17 x 20.	32 00
11 x 14 " " 13.	20 x 24.	42 00

NOTE.—In most instances this Attachment on the largest size box in use, will do all the work required about a Gallery. There is an inset front supplied to use with a small lens or one of short focus, when a box and attachment are sold together. We keep boxes No. 5 and 6 in stock with 8x10 attachments complete. Price, \$85.00 and \$100.00.

The American Optical Co.'s Adjusters for Cabinet Work.

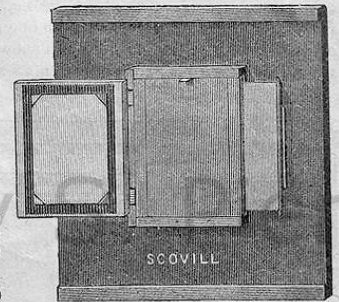
This Attachment fits precisely in the same position as the holder that accompanies the box, in the center of which is an opening to receive smaller holders as selected, 4x6 1/2, 5x7 or 5x8. The use of this device will save the expense of extra large holders. It will also be found to be a great help to the operator. With this attachment and 6 or 12 extra holders loaded, he will save about half the time ordinarily used.

Price of Adjuster with hinged ground glass and carriage arranged for either 4 1/4 x 6 1/2, 5x7 or 5x8 cabinet negatives according to choice as follows:

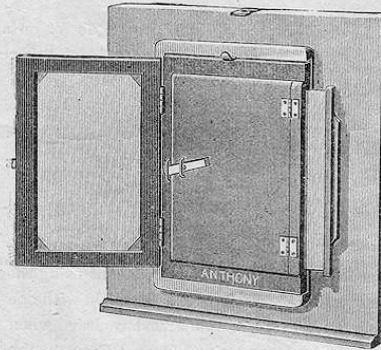
For American Optical Co.'s Portrait Camera with one single Light-Weight Holder:					
For 8 x 10.	\$ 8 00	For 12 x 15.	\$11 00	For 17 x 20.	\$13 00
" 10 x 12.	9 00	" 14 x 17.	11 00	" 18 x 22.	13 00
" 11 x 14.	10 00	" 15 x 18.	12 00	" 20 x 24.	14 00

EXTRA SINGLE LIGHT-WEIGHT HOLDERS PER DOZEN.

4 1/4 x 6 1/2.	\$13 00	5 x 7.	\$14 50	5 x 8.	\$15 50
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Climax Attachment for Cabinet Size Dry Plate Holders.



This cut represents an attachment for use with either single or double dry plate holders, which will be found especially desirable by those doing a large amount of cabinet work, who, by its use are enabled to load any number of holders they may wish, and be ready for sittings as fast as they may appear.

Each carrier is fitted with one single dry plate holder, and additional holders, either single or double, will be furnished at prices quoted below.

The carrier is supplied with a swinging ground glass, and for use is attached to the back of the camera, in same place as the ordinary ground glass and frame.

The dry plate holders which are supplied for this carrier are all of the same outside dimensions, but are fitted to receive plates either 4 1/4 x 6 1/2, 5 x 7 or 5 x 8, as desired.

In ordering please state which size plate is to be used.

SIZE OF CARRIER OUTSIDE.

12 1/2 wide x 12 1/2 high, for 8x10 No. 19-C and Royal Climax Cameras, fitted as above.	\$ 8 00
13 1/4 " x 13 1/4 " for 43-B Climax Cameras, fitted as above.	8 00
17 " x 17 " for 13-B, 11x14 Climax Cameras, fitted as above.	10 00
20 1/2 " x 21 " 14-B, 14x17 Climax Cameras, fitted as above.	11 00

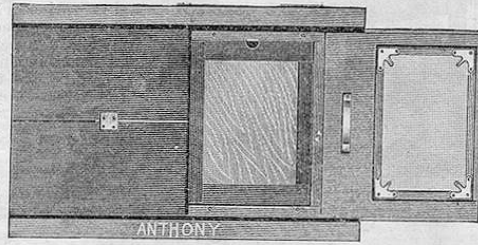
Larger sizes to order.

Cabinet single dry plate holders per doz., \$14 40

Automatic Cabinet Attachment.

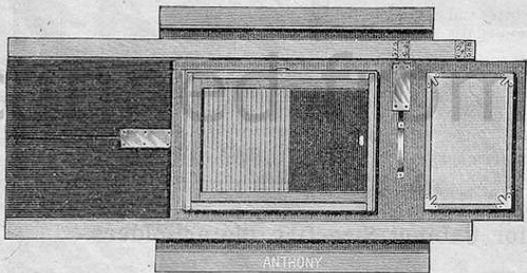
It consists of a mahogany back that can be fitted to any 8 x 10 or larger camera, and has a ground glass and receptacle for plate holder on a sliding carriage, which moves from left to right. The plate holder being adjusted, and the focusing being done, the carriage is moved and the ground glass is replaced by the plate holder, the slide being automatically withdrawn.

The automatic attachment will be made to fit any 8 x 10, 10 x 12 or 11 x 14 camera. It fits the camera where the ordinary holder is adjusted. 5 x 8, 5 x 7 or 4 1/2 x 6 1/2 holders are supplied, as desired.



- 8 x 10 attachment, with one holder..... price, \$10 00
- 10 x 12 or 11 x 14, with one holder..... " 12 00
- Extra (single) holders, each..... " 1 50

In addition to the above we make automatic attachments for carrying 8 x 10, 7 x 10 or 6 1/2 x 8 1/2 plates, for making two cabinets on one plate. The same holders will of course hold two 5 x 8, two 5 x 7 or two 4 1/2 x 6 1/2. The cut herewith shows the attachment with the slide partly drawn as it would appear when exposing for a 5 x 7 picture on a 7 x 10 plate.



PRICES AS FOLLOWS:

- 8 x 10 automatic attachment for 8 x 10 cameras, with one 8 x 10 curtain slide holder..... \$13 00
- 8 x 10 automatic attachment for 11 x 14 cameras, as above..... 15 00
- Extra holders for these attachments, each..... 4 00

We also make an attachment similar to the above for 5 x 7 reversible and two C. de V. on a 5 x 7 plate.

- The price for this attachment is \$12 50
- Extra holders, each..... 2 00

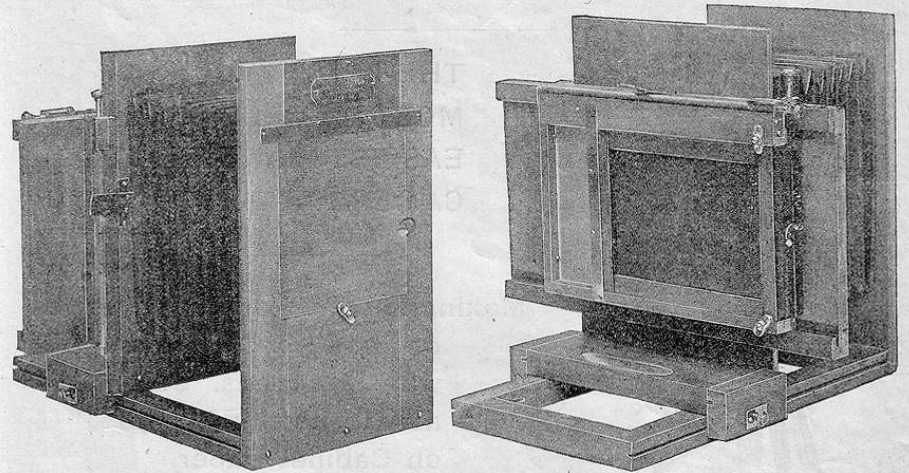
Attachments for Large Size Portrait Cameras.

Consisting of a carriage and plate holder to be attached to larger portrait cameras, by occupying the place of the ground glass or shield of the same for producing smaller pictures, without using the large shield belonging to the camera. The carte de visite or cabinet portraits can be made with one lens. These attachments can be laid aside when large-sized pictures are to be taken, and replaced when imperial work is to be done, for which they are available, from the largest size specified down to the smallest imperial work.

In ordering please state what kind of camera is in use, and give the outside size at the back, to guard against error.

- 8 x 10 and Cabinet and C. de V. attachment for 11 x 14..... \$22 00
- 8 x 10 " " " " " " " " 14 x 17..... 26 00
- 8 x 10 " " " " " " " " 17 x 20..... 32 50

"Klondyke Multiplying Camera."



For "Penny Pictures," Button Pictures, Copying, Making Enlargements, Etc.

A Simple, Practical, Complete instrument for the production of photos of the size for buttons, watchcases, charms, lockets, penny, and small work to be mounted in any manner.

So simple that any one can understand it.

So practical that no one can afford to be without it.

So complete that it requires no attachment to another camera or apparatus, and does the work in such a manner as to save labor and material.

It makes 6, 8, 12 and 15 exposures on 4 1/4 x 6 1/2 plate to be printed on cabinet paper—the most convenient size to handle and at the least cost to make.

The two movements are regulated by true and accurate guides that are so constructed that the changing from one size to another is done instantly.

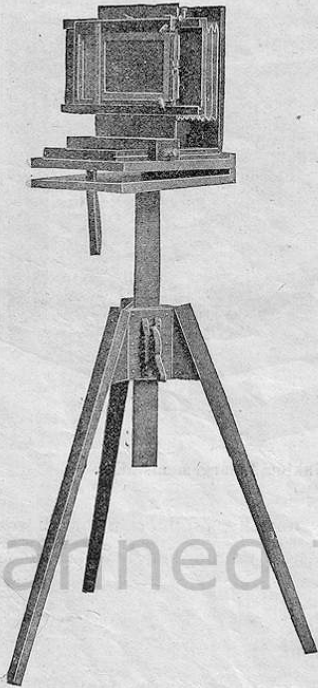
The ground glass is brought into use and shifting of plate is done in one movement, and the same movement back places the ground glass away and brings the part of plate to be used in place. It is all done with the least possible movements and no conflicting of parts.

It has two guides, one on top which regulates the movement of plate lengthwise, and one on the side which regulates the plate up and down. The changing of the size of picture is done by simply revolving the guides to the set of notches wanted, and placing the corresponding diaphragm in position.

Any lens of from 4 to 10 inch focus can be used, the portrait series, one-quarter size, however, is advised.

- Price with one holder, \$20 00
- Price including one one-quarter Gem Lens, 24 00

Prince's Miniature Camera.



THE BEST,
MOST COMPLETE and
EASIEST MANIPULATED
CAMERA IN THE MARKET.

Making 6, 8, 12 or 15 Negatives
on a 4 1/4 x 6 1/2 Plate
with one Lens. Suit-
able for Printing same
on Cabinet Paper.

If you want a Camera for making
small photos for Buttons, Stick
Pins, etc., send to us for the

BEST OUTFIT IN THE MARKET.



Price, Outfit Complete, Consisting of Camera, Lens, Stand and Shutter, \$30.00.

Order one at once, and be prepared for all gatherings, such as fairs, races, conventions, picnics, excursions, etc., etc. There is a mint of money to be made by the progressive photographer with this Outfit, for every one will buy small pictures because they are cheap, and, as it takes the nickels and dimes and quarters to make the dollars, just so the extra dollar thus earned will swell the bank account and improve business generally through the advertising your enterprise will bring you.

The Outfit consists of a camera, holder, lens, shutter and stand, as shown by the engraving. The camera is so constructed that it will make 15 exposures on plate, using but one lens. The scheme is to make one exposure of each sitter and 15 exposures or 15 sittings, in other words, before removing the plate from the holders. After development, therefore, 12 prints from one negative will fill 15 orders of 12 prints each.

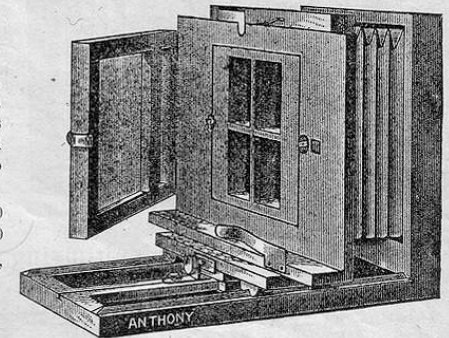
- Extra plate holders, each \$1 25
- Cards for penny pictures, per 1,000 1 00
- No. 870 mantello, per 1,000 2 50

FERROTYPE CAMERAS.

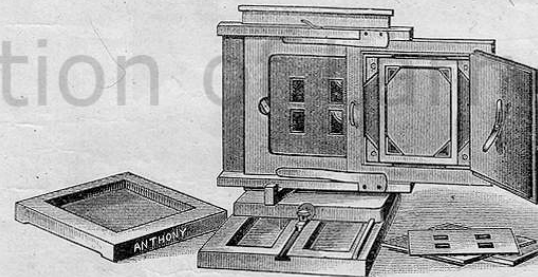
5 x 7 Improved Victoria Camera.

For making 5 x 7, 4 1/4 x 5 1/2 and 3 1/4 x 4 1/4 pictures, and reversible, and 4 or 8 on 5 x 7 plates with 4 Gem tubes. It is handsomely finished in mahogany, has rabbeted shield and kits. The camera has several improvements over anything heretofore offered to the trade.

- Price, without lenses \$15 00
- “ with four 1/4 lenses on plate 28 50
- Extra diaphragms for 9 or 18 on a 5 x 7 plate, \$1.50 each.
- Extra holders, \$5.00 each.



New York Gem Camera.



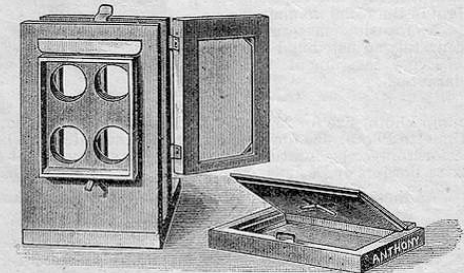
This camera has been in great demand for small ferrotype work and photographs to half size.

- | | | |
|---|--------------------|-----------------------|
| | Without
Lenses. | With 4 1-9
Lenses. |
| No. 42, for 4, 8 and 16 on 1-4 plate with 4 1-9 lenses, 2 on 1-2 plate, and 1-2 to 1-6 reversible with 1 portrait lens..... | \$18 00 | \$28 00 |

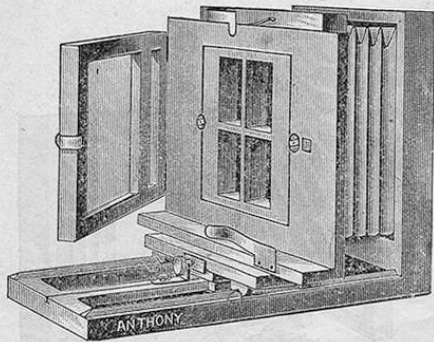
Climax Ferrottype Camera.

No. 41. This is an excellent and cheap camera for making four bon-tons on a 5 x 7 ferro. plate with four tubes, or one card or cabinet picture on a 5 x 7 plate with one lens.

- Without lenses \$12 00
- Fitted with four 1-4 lenses 25 00



8 x 10 Lakeside or Cincinnati Camera.

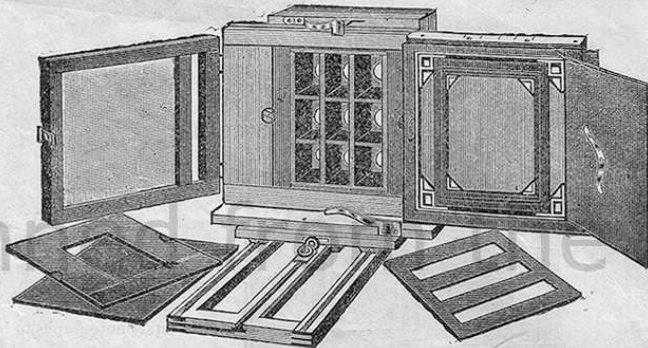


For variety of work it has no equal. It is made of mahogany, finely polished, India rubber bellows, fine focus screw and plate-holder, moves upon friction rollers, fitted with Bonanza holder with 5 x 7 and 7 x 10 rabbeted kits for ferrotypes. With one tube it will make one or two on plates from 1-4 to 8 x 10, and with four 1-4 gem tubes will make four or eight on 5 x 7 plates and eight on a 7 x 10 plate.

Plain, without lenses.....\$22 50
 " fitted with 4¼ Darlot Gem Lenses 37 50
 Double swing, without lenses..... 30 00
 " fitted with 4¼ Darlot Gem Lenses 45 00

Prince's Multiplying Victoria Camera.

The Ferrotyper's Camera.



The Multiplying Victoria Camera will make nine or eighteen Gems on 5 x 7 plate, using 9½ Gem Lenses, or four or eight on 5 x 7 plate, using 4¼ Gem Lenses. It has sliding holder, and admits of cabinet work on 5 x 7 plate and two pictures on that size or smaller when Gem fixtures are removed and single lens is used.

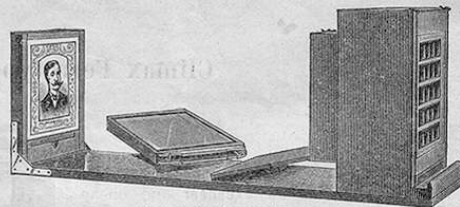
Box, without lenses\$25 00
 " complete with 9½ lenses 47 00
 " " 9½ and 4¼ lenses 62 00

Hyatt's Stamp Portrait Apparatus.

With this wonderful little instrument the photographer is enabled to reproduce from a cabinet photograph 25 small pictures, the size of a postage stamp, on a 5 x 7 plate, by simply placing the picture to be copied on the easel behind the matt or border and exposing and developing the plate in the usual manner.

No focusing is required, as all the lenses are accurately adjusted and focused.

Every instrument thoroughly tested and guaranteed.



Stamp Photo, size for 25, on 5 x 7 plate, including two borders.....\$50 00
 Minnette Photo, size for 8, on 5 x 8 plate, including two borders..... 40 00
 Perforators for perforating same under our stamp patent (also issued July 12, 1887)..... 35 00
 Extra Borders or Designs, each..... 1 00

Adhesive preparation for gumming the backs of same:

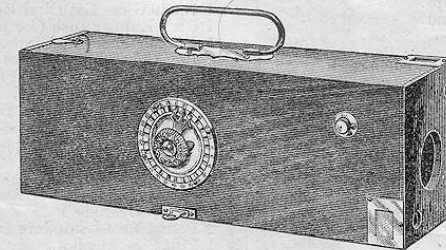
1 pint can.....\$0 45 | ½ Gallon can.....\$1 25
 1 quart can..... 75 | 1 " "..... 2 00

Burnishing the sheets of stamp photos is done, after they have been gummed and dried, by folding the ends of the sheet over a piece of cardboard and passing them through the burnisher together.

THE NODARK.

A Magazine Dry Tintype Camera for 26 Pictures Without Reloading.

Short Exposures. No Dark Room Required. Develop and Fix on the Spot.
 Each Carefully Tested.



The Nodark.

Size of the Picture, 2½ x 3½.

Price of the Nodark, \$6.00, Loaded for 26 Exposures.

The engraving above illustrates "The Nodark," which, after careful tests, proves successful and is now offered to the trade for the first time. Its utility will suggest itself; the price is nominal; the results are phenomenal. Following are the directions:

DIRECTIONS.

The Cameras are sent out ready for use and No. 1 plate is ready to expose.
Before making an exposure see that the proper stop or opening in the diaphragm is in front of the lens.
The smallest stop is for bright sunlight on out-of-door exposures. Time, say two to six seconds.
The middle stop is for ordinary out-of-door light. Time, say four to eight seconds.
The largest stop is for in-door or dark day exposures. Time, say thirty to forty seconds.
Plates under-exposed will be very dark.

After locating the object in the finder, press the button, which makes the exposure. Then fill the developing chamber (to the lid) with No. 1 liquid, fix it on the slot in the bottom of the "Nodark," pull the slide out to allow the plate to drop into the liquid, push slide in again, close lid and remove chamber from the "Nodark." The plate will be developed within one minute. Then pour liquid back into its bottle, keeping lid of developing chamber closed all the time. Wash the chamber carefully before using liquid No. 2.

Pour some No. 2 liquid into chamber, which will fix the picture within say twenty seconds. Pour liquid back into its bottle. Open the lid and take out the finished picture, lifting it by the bar on the side.

N. B.—Wash the developing chamber and picture with cold water after each operation.
 After developing the first plate move the dial to No. 2 and so on, until the magazine is empty.

When placing a loaded magazine in the "Nodark," have the dial hand on 25, insert the magazine, turn to the right until the arrow is on No. 1, and the plates are ready for exposing.

Developer and fixer are put up in eight ounce bottles. This quantity of solution will develop and fix eighty plates.

PRICE LIST.

The Nodark Camera, loaded for 26 exposures.....\$6 00
 Dry Ferro Plates, 2½ x 3½, per package 26..... 75
 " " " " " 12..... 40
 Developing and Fixing Solution, per set of two 8-ounce bottles..... 40
 Card Mounts, embossed for holding pictures, per 100..... 1 50
 Gem Slips, No. 11, per 1000..... 1 50

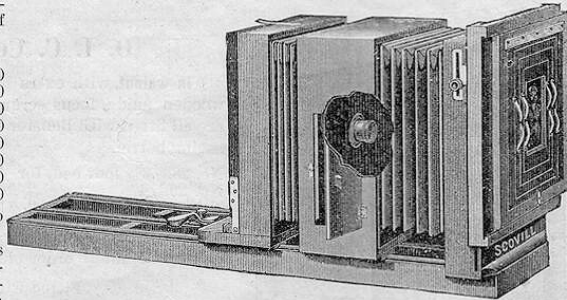
The American Optical Co.'s Enlarging, Reducing and Copying Cameras.

When ordering, please specify number and sizes of kits, also style of holder wanted.

Size.	Price.
6½ x 8½, 4 feet bed.	\$30 00
8 x 10, 5 "	35 00
10 x 12, 5 "	48 00
11 x 14, 5 "	60 00
14 x 17, 6 "	72 00
17 x 20, 7 "	90 00
18 x 22, 7 "	100 00
20 x 24, 7 "	110 00

Special sizes and styles made to order.

The form of construction of this new camera is apparent by the illustration here shown. The experienced copyist will not need any such simple directions for use as we append. attachment, L. S. plate holder, \$15.00. of cameras, refer to page 80.



Camera back with revolving, rising and vertical sliding lantern slide. If screen plate holder is desired with either of the above styles

Directions for Use.

To copy a negative in the natural size, place it in the kit on the front of the Camera and button it in. Attached to the center frame of the Camera is a division upon which, on the side towards the Camera front, a lens is mounted. Suppose this to be a quarter-plate portrait lens, the focal length of which we will suppose to be 4 inches—draw back the center frame and the lens twice the focal length of the lens (8 inches); slide the back frame with ground-glass the same distance from the center frame. To enlarge with same lens to eight times the size of the original, the center of the lens must be 4½ inches from the negative, and the ground-glass be 36 inches from the center of the lens. To reduce in the same proportion, reverse and have 36 inches from the center of the lens to the negative, and from the center of lens to ground-glass 4½ inches.

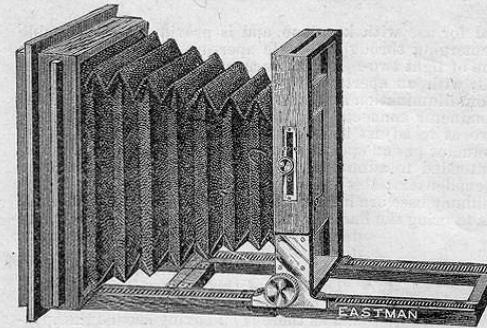
Table for Enlargements.

FOCUS OF LENS.		TABLE FOR ENLARGEMENT AND REDUCTION.							
TIMES	1	2	3	4	5	6	7	8	
INCHES.	INCHES.	INCHES.	INCHES.	INCHES.	INCHES.	INCHES.	INCHES.	INCHES.	
2	4	6	8	10	12	14	16	18	
	4	3	2¾	2½	2¼	2⅓	2½	2¼	
2½	5	7½	10	12½	15	17½	20	22½	
	5	3¾	3½	3¼	3	2½	2½	2¼	
3	6	9	12	15	18	21	24	27	
	6	4½	4	3¾	3½	3¼	3½	3¼	
3½	7	10½	14	17½	21	24½	28	31	
	7	5¼	4¾	4½	4¼	4½	4	3½	
4	8	12	16	20	24	28	32	36	
	8	6	5¼	5	4½	4¾	4½	4½	
4½	9	13½	18	22½	27	31½	36	40½	
	9	6¾	6	5½	5¼	5¼	5½	5¼	
5	10	15	20	25	30	35	40	45	
	10	7½	6¾	6¼	6	5¾	5¾	5¾	
5½	11	16½	22	27½	33	38½	44	49½	
	11	8¼	7½	6¾	6½	6¾	6½	6½	
6	12	18	24	30	36	42	48	54	
	12	9	8	7½	7¼	7	6½	6¾	
7	14	21	28	35	42	49	56	63	
	14	10½	9½	8¾	8¾	8½	8	7½	
8	16	24	32	40	48	56	64	72	
	16	12	10¾	10	9½	9½	9½	9	
9	18	27	36	45	54	63	72	81	
	18	13½	12	11¼	10½	10½	10½	10½	

It is assumed that the photographer knows exactly what the focus of his lens is, and that he is able to measure accurately from its optical center. The use of the table will be seen from the following illustration:—A photographer has a *carte* to enlarge to four times its size, and the lens he intends employing is one of six inches equivalent focus. He must, therefore, look for 4 on the upper horizontal line, and for 6 in the first vertical column, and carry his eye to where these two join, which will be at 30—7½. The greater of these is the distance the sensitive plate must be from the center of the lens, and the lesser the distance of the picture to be copied. To *reduce* a picture any given number of times the same method must be followed, but in this case the greater number will represent the distance between the lens and the picture to be copied; the latter, that between the lens and the sensitive plate. This explanation will be sufficient for every case of enlargement or reduction. If the focus of the lens be 12 inches, as this number is not in the column of focal lengths, look out for 6 in this column and multiply by 2; and so on with any other numbers.

Eastman's Daylight Enlarging Cameras.

Patent Applied For.



With one of these Cameras and one of our enlarging easels, any one may make enlargements from small negatives upon our permanent bromide paper that will compare favorably with prints made from large direct negatives. Any Lens, large or small, may be used, the size of the enlargement depending only upon the relative distances between the negative and the easel and the focal length of the Lens.

8 x 10 Camera, with Kits for 8 x 10 negatives and under, price complete. \$25 00

Eastman's Enlarging Easel.

Consists of a base, supporting two uprights, in which slides the Exposing screen. On the face of the screen swings a hinged frame which clamps the sensitive paper flat in position. The swinging frame is arranged to receive smaller frames or kits, adapted to clamping any size of paper. On the top of the screen is a light-tight box, provided with bearings, in which revolves the spool carrying the roll of sensitive paper. Each box is supplied with a wooden spool, and the paper is wound for the market upon a strong paper tube, which slides onto the wood spool. Thus, a tube carrying any width of paper, not above the capacity of the easel, can be used with the same box.

The easel is arranged to slide back and forth on a track laid on the floor of the dark room.



- No.
1. For spools up to and including 11 in., (for 11 x 14 pictures) \$7 50
 2. " " " " 16 " " 16 x 20 " 10 00
 3. " " " " 22 " " 22 x 27 " 12 50
 4. " " " " 25 " " 25 x 30 " 15 00
 5. " " " " 30 " " 30 x 40 " 20 00

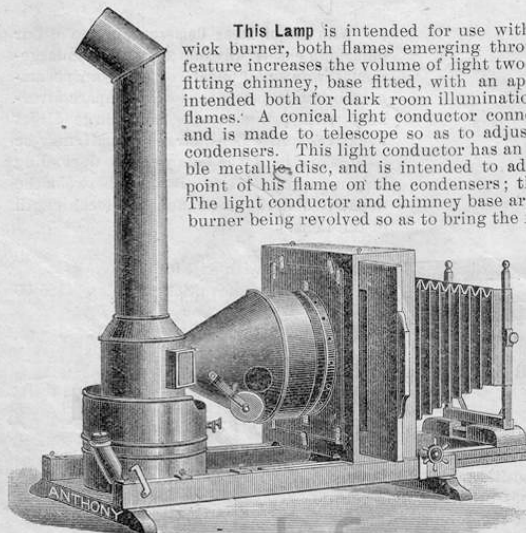
Enlarging Outfits.

For Making Enlargements on Eastman's Permanent Bromide Paper.

In ordering enlarging outfits, specify how many sizes of enlargement it is desired to make, and size of largest negative from which they are to be made, and order the apparatus accordingly. For instance, say an operator which to make 25 x 30, 20 x 24, 18 x 22, 16 x 20, 14 x 17 enlargements from 8 x 10 or smaller negatives, a complete outfit would be as follows:

One 8 x 10 Eastman's Daylight Enlarging Camera, with Kits up to 8 x 10.	\$25 00
" No. 4 Eastman's Enlarging Easel (25 x 30)	15 00
" Kit, 22 x 27, inside	1 50
" " 20 x 24, "	1 40
" " 18 x 22, "	1 30
" " 16 x 20, "	1 20
" " 14 x 17, "	1 00
Total for complete outfit	\$46 40

The Cooper Universal Enlarging Lantern and its Uses.



This Lamp is intended for use with kerosene, and is provided with a double wick burner, both flames emerging through a single aperture in the dome. This feature increases the volume of light two-fold; the burner is provided with a close-fitting chimney, base fitted, with an aperture covered with a non-actinic glass, intended both for dark room illumination and also for observing the height of the flames. A conical light conductor connects the lamp with the condensing lenses, and is made to telescope so as to adjust the light accurately to the focus of the condensers. This light conductor has an aperture at the side covered with a movable metallic disc, and is intended to admit of the operator finding the centering point of his flame on the condensers; this he will see at a glance by the reflector. The light conductor and chimney base are held rigidly, and admit of the lamp and burner being revolved so as to bring the flame in any desired position. Experience demonstrates that a position of the flame diagonally to the condensers gives the most perfect and even illumination.

The form of this lantern is such that all heat passes upwards through the chimney, and as there is no boxing around the apparatus, it is always cool and all risk of breaking lenses or negatives is avoided. The change from the use of artificial light to daylight is better shown in the cut than described in writing. With this lantern and a half-inch stop in a half-size portrait lens, life size enlargements from cabinet negatives may be easily made with bromide paper in from thirty-five seconds to one minute, according to density of negative.

The design of this lantern is the result of long practical experience with various methods of illumination for enlarging. This lantern is also admirably suited for

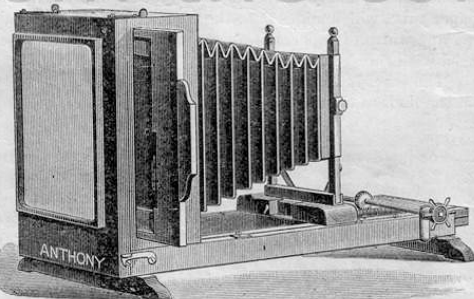
Above shows it as in use with Artificial Light. slide protection, and is, therefore, of double value to societies and colleges.

Any Double Combination Lens can be used as an objective with this lantern and a portrait lens for enlarging. This lantern can be transformed into an 8 x 10 portrait or copying camera by the addition of an adapter, double dry plate holder and ground glass, at an extra expense of \$10.00.

PRICE WITHOUT OBJECTIVE.

No. 1, with two 5½ inch condensers.....	\$ 40 00
No. 2, with two 8 inch condensers.....	60 00
No. 3, with two 9 inch condensers.....	80 00
No. 4, with two 10 inch condensers.....	100 00

The Nos. 3 and 4 are not kept in stock, and only furnished to order.



Above shows it as transformed into a Daylight Enlarging Camera.

The Cooper Lantern.

Used as a Copying or Portrait Lantern.

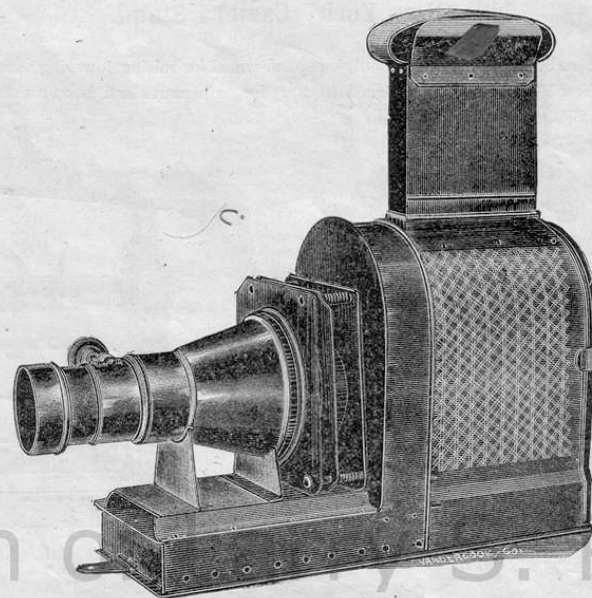
Price of Attachment with 8 x 10 Double Dry Plate Holder, \$10.00 in addition to cost of Lantern.

Beside the double use for artificial or daylight work, this Camera may be fitted with an attachment by which it can be quickly and easily adapted to the purpose of a copying or portrait camera. The camera being put together as in use for daylight enlarging, the ground glass and carrier are removed, and in their place a regular camera back is buttoned on. This is provided with a double dry plate holder, 8 x 10, which is slid into position under the ground glass. For ordinary work up to 8 x 10 in the gallery, this is as good as any camera made.

Prince's Peerless Sciopticon.

With Patent Tri-Unial Lamp.

Adapted for Public Entertainments, Army Posts, Societies, Sunday Schools, Etc.



No. 230.

No. 230.—The Peerless Sciopticon is made of Russia sheet iron; has a double body, the outer one being perforated to avoid heating; extension front with nickel-plated hood, which shuts off all reflected and diffused light; spring clip for holding carrier with slide: Patent Tri-Unial Lamp, the light of which is intensely white; the flame is regulated by an opening in the rear of the lantern, through a tinted glass which avoids confusing the eye, sight, gives a uniform 10-foot sharp cut picture at a distance of about 18 feet from the screen; has fine achromatic objective, with rack and pinion adjustment for focus; a pair of 4-inch plano-convex condensing lenses, mounted in brass, adjusted to heat and cold, expansion and contraction, packed in a neat Russia sheet iron case (with lock) which can be used as a stand for the lantern.

Price, complete without views\$30 00

No. 231.—The same lantern with the addition of the "Aphengoscope," a Russian iron cone to receive opaque objects and photographic cards, and projecting them through the lens on the screen.

Price\$35 00

Prince's Imperial Acetylene Lantern.

The Latest and Best Projecting Apparatus.

The features of which are: compactness for transportation, rigidity when in use, steady and even illumination, and general perfection of optical and mechanical construction. It consists of a central framework of metal supporting the 4½-inch condenser cell (which is our improved pattern) and slide stage, and a secondary stand connected thereto by two sets of horizontal tubes for the adjustment of the objective lens in front and acetylene burner in back. These tubes, sliding one within the other, allow the lantern when not in use to be reduced in length from both ends so that it may be packed into the smallest compass yet attained for a high class lantern, at the same time providing bearings of ample length to secure perfect alignment and rigidity. The hood for the burner is so constructed that perfect ventilation is secured and all parts for its adjustment are easily accessible. The objective frame is provided with flanges to fit either ¼ or ½ size objectives.

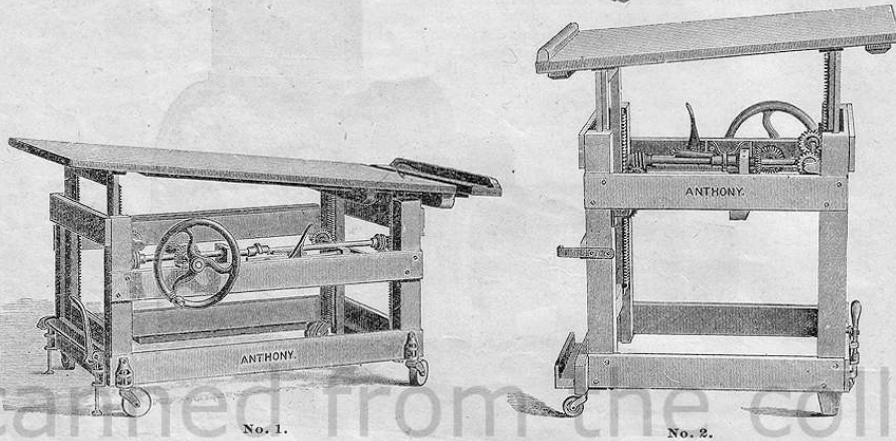
Price, complete\$65 00

Consisting of imperial lantern, with 4½-inch condensing lenses; ¼-size objective lens; No. 6 quad-plex burner; No. 3 generator and connecting tubes; 10-lb. can of calcium carbide; carrying case.

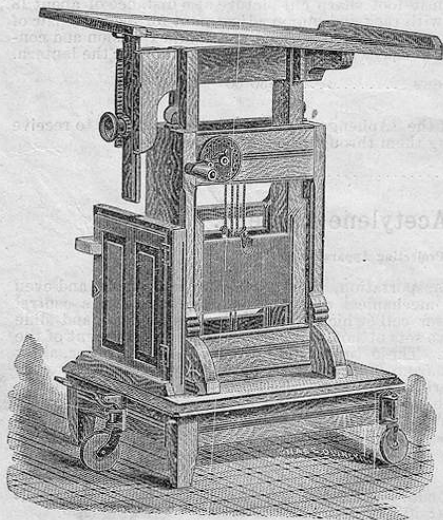
STUDIO STANDS.

The "New York" Camera Stand.

The most modern Studio Stand, having only one hand-wheel for raising, lowering and tilting the top. The No. 2 "New York" Stand is designed to carry larger cameras and has an extension top. It may be lowered to a height of only 21 inches.



No. 1—For Cameras 11 x 14 and smaller.....	\$16 50
" 2— " " 20 x 24 "	21 50
" 3— " larger sizes	32 50



The Bonanza Camera Stand.

This Stand was first introduced at the Cincinnati Convention and elicited general admiration. It has been in great demand since then.

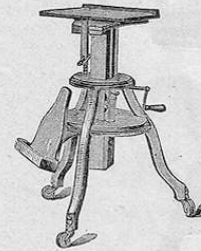
The superior elevating crank and fitting arrangement used on the Gem City stand have recently been put on the Bonanza, thus making it one of the best stands in the market for 8 x 10 cameras and under.

By means of an ingenious attachment it can be made instantly rigid on the floor.

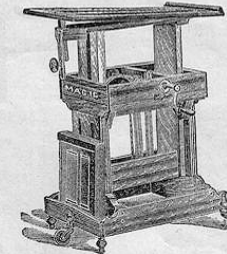
Finished in ash \$15 00

The Magic Camera Stands.

Reduced in Price.



This cut represents No. 1, size for 8 x 10 and smaller.



This cut represents No. 2, size for 11 x 14 and smaller.



This cut represents No. 3, size for 14 x 17 and No. 4, for 18 x 22 or 20 x 24.

These Stands are made of ash and are provided with patent shaft and belt system of elevating the Camera. A patent roller stop stops the Camera automatically at any desired height.

Nos. 2, 3 and 4 are provided with automatic coil springs which bear the greater part of the weight of the Camera, so that the use of heavy weights is done away with.

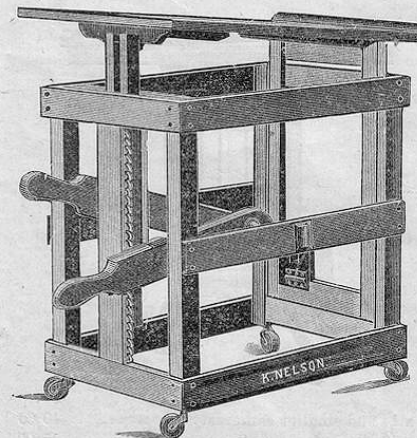
No. 1, Magic Stand.....	\$9 00
" 2, "	12 00
" 3, "	16 00
" 4, "	20 00

The Semi-Centennial Camera Stand.

It is built strong and rigid, and by the use of coiled spring and a key you can make it counterbalance any weight Camera from 8 x 10 and 14 x 17 inclusive. It is set on rubber wheel castors, making it perfectly noiseless. Another advantage it has is that the bed can be lowered to within 13 inches of the floor as well as raising it as high as you wish, thus enabling the operator always to look the sitter squarely in the face.

To see it is to buy it.

Price..... \$25 00



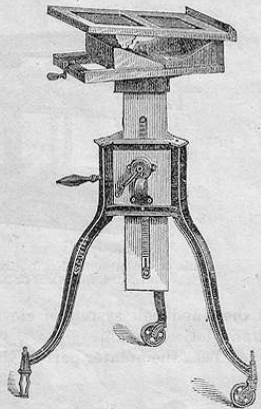
Lever Adjustment Gallery Stand.

These stands will be found light and easily moved, yet perfectly free from vibration. The adjusting levers are so arranged that the stand may be made level at any desired height.

They are supplied with bracket castors, and will be found complete in every particular.

For 8 x 10 Cameras.....	\$9 00
" 14 x 17 "	10 00
" 18 x 22 "	16 00

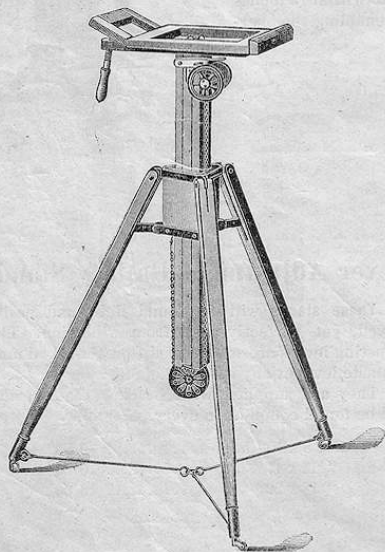
Perfect Camera Stand.



The "Perfect" Camera Stand has been manufactured for several years, and is, as it has been justly called, a "Perfect" camera stand, made of finely polished black walnut and the best of metal castings. It has superior advantages for cameras up to 10 x 12 size.

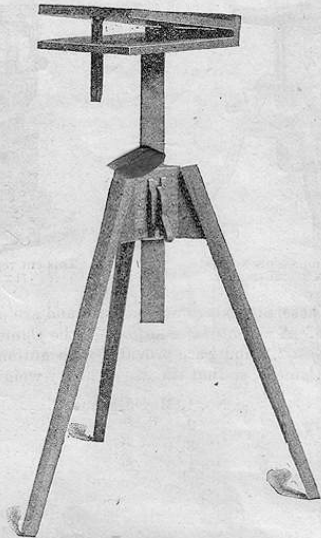
Price, each \$13 50

Empire City Camera Stand.



Price..... \$4 50

Prince's Excelsior Stand.

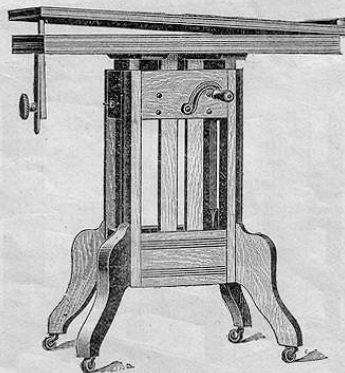


This stand is perfectly rigid, nicely polished for 5 x 7 Gem Cameras.

Price..... \$3 50

Imperial Camera Stand.

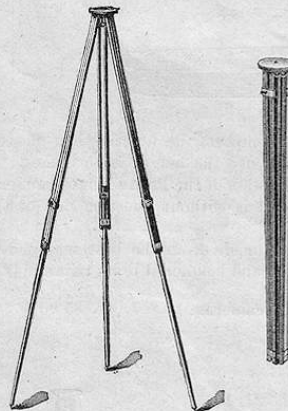
ENTIRELY NEW.



11 x 14 and smaller cameras..... \$10 00
14 x 17 " " " 15 00

TRIPODS.

Prince's Model Sliding Tripod.



The Model is an exceedingly neat and convenient style of tripod, intended for use with any camera up to and including 5 x 7 size.

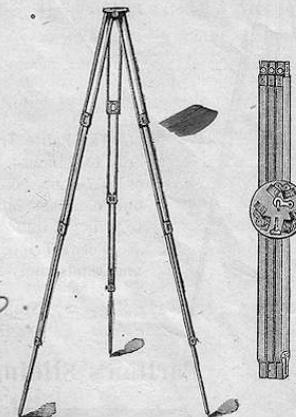
It is thoroughly well made of seasoned spruce, finished with brass trimmings. The top is cloth covered, and contains a screw for attaching the camera.

The lower section slides within the upper and may be clamped at any desired height by means of a milled head. When closed the length is only 29½ inches. Extended for use it measures 55½ inches. Weight, 1 lb. 2 oz.

The Model will be found a very desirable tripod for use with small hand cameras.

Price \$1 50

The Premo Tripod.

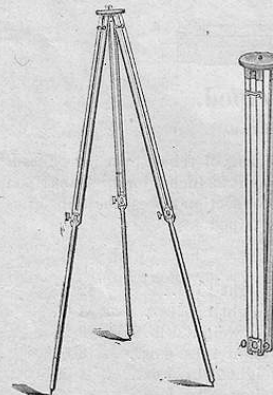


The Premo Tripod is made with three joints. The lower section slides into the second, and these two into the third, while the upper section folds back upon the third. By this means extreme compactness and portability are secured.

When closed the Premo Tripod measures only 16 inches long, and the No. 1 weighs but 15 ounces, including the aluminum top. The length extended is 55 inches.

No. 1, for 4 x 5 and 5 x 7 cameras, weight 15 oz. \$4 50
No. 2, for 6½ x 8½ cameras, weight 23 oz. 5 00

The Facile Sliding Tripod.



In presenting the Facile Tripod, a new design this year, we are confident that we are offering the neatest and altogether the best moderate priced tripod in the market.

The lower section of the Facile is made to slide into the upper, and by means of a neat milled head is held at any desired height.

The Facile Tripod is constructed of fine quality spruce, with trimmings of polished and lacquered brass.

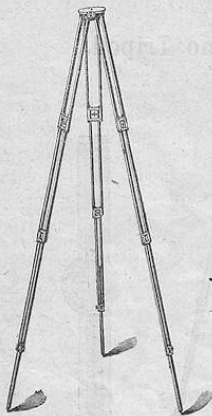
A neat hook is attached to each leg, which makes it impossible for them to become disconnected from the head when tripod is in use. The head may be removed, if desired.

When closed the Facile measures only 30 inches long. Extended for use the length is 57 inches.

No. 1, for 4 x 5 and 5 x 7 cameras, weight 17 ounces \$2 00
No. 2, for 6½ x 8½ cameras, weight 1 pound 9 ounces..... 2 25

TRIPODS:

The **Petite Tripod** is another new form made expressly for hand camera use. Its construction is somewhat similar to the Premo, being made with three joints, but the top remains attached.



The **Petite Tripod** is exceedingly compact, the length when closed being only 16 1/4 inches. When extended for use the length is 55 inches. Weight only 17 ounces complete. The construction of the Petite Tripod renders it not only compact, but rigid as well, and it is without question one of the best tripods yet introduced.

Petite Tripods are thoroughly well made from the best seasoned spruce, and handsomely finished with polished and laquered brass trimmings.

No. 1. For 4 x 5 and 5 x 7 cameras.....\$5 00

Carlton's Sliding Tripod.



This is the simplest and best form of sliding tripod yet made. The legs are made in three pieces, same as the folding, which renders the tripod firmer when set up than where made of two pieces, which is the ordinary form. The tripod top is of wood, with cloth cover. The brass clamps each side of the leg have the ends turned towards each other, and when clamped, the pressure is exerted from all sides, rendering it the most rigid tripod on the market. The special advantages of a sliding tripod over a folding one, are ease of leveling the camera in rough places by adjusting the length of tripod legs, and the quickness with which it is set up or taken down.



PRICE.

No. 1, for 3 1/4 x 4 1/4 to 4 1/4 x 6 1/2 camera	.....\$2 25
" 2, " 5 x 8 and 6 1/2 x 8 1/2 "	..... 2 50
" 3, " 8 x 10 " 10 x 12 "	..... 3 00
" 4, " 11 x 14 " 14 x 17 "	..... 4 00
" 5, " 17 x 20 to 20 x 24 "	..... 5 00



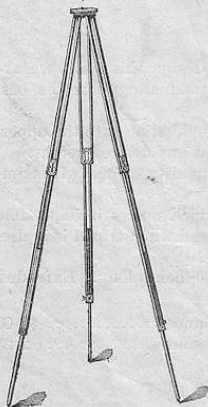
Combination Tripod.

Combined Sliding and Folding.

This **Tripod** is one of the most convenient forms of tripod ever introduced. It is jointed in three lengths and when closed is but 22 inches long. The tripod top is of wood, covered with cloth. As the lower section slides, the tripod has all the advantages of adjustment of the sliding tripod.

PRICE.

No. 0—Spruce, for cameras up to 4 x 5, weight 1 lb.	..... \$2 75
No. 1—Spruce, for cameras up to 5 x 7, weight 1 lb. 6 oz.	..... 3 00
No. 2—Spruce, for cameras up to 6 1/2 x 8 1/2, weight 1 lb. 8 oz.	..... 3 25
No. 3—Ash, for cameras up to 10 x 12, weight 4 lbs. 6 oz.	..... 3 50
No. 4—Ash, for cameras up to 14 x 17, weight 7 lbs. 1 oz.	..... 4 50
No. 5—Ash, for cameras up to 20 x 24, weight 8 lbs. 8 oz.	..... 6 00

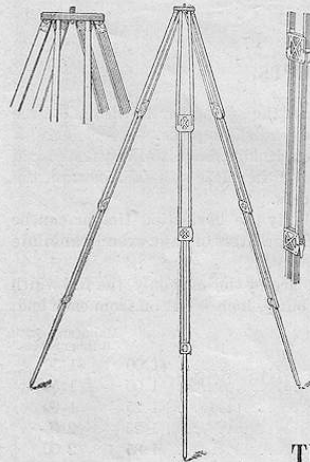


Eastman Kodak Company's Tripods.

Feather Tripod.

Length folded, 14 1/2 inches. Length extended, 52 1/2 inches.

Suitable for any 4 x 5 Camera or smaller.



Wonderfully light, compact and strong, this tripod is especially designed for the tourist and cycling kodaker. Only 14 1/2 inches in length when closed, it can be readily strapped to the bicycle handle bar, whether carried in case or not. An aluminum top plate with milled edges, holds the socket screw securely in place, and seats it in place in the camera when turned, thus doing away with the nuisance of the ordinary screw, turned by means of a key handle inconveniently located under the plate between the tripod legs, and always likely to be missing when most wanted. The Feather tripod folds in four sections, has brass fittings, except the top plate, which is of aluminum, and weighs in spruce but 17 1/2 ounces, in cherry or in mahogany finish 20 1/2 ounces.

PRICE.

Eastman's Feather Tripod, Cherry	.....\$4 00
" " " Spruce	..... 4 00
" " " Mahogany finish	..... 4 50
Black sole leather hand carrying case	..... 1 50

The Bull's-Eye Tripod.

The **Bull's-Eye Tripod** folds in two sections and is provided with a leather hand-strap for carrying. Made of the best seasoned spruce with brass fittings.

Price..... \$2 00

The Eastman Tripod.

Folds in three sections.

No. 1 Spruce, for cameras up to 6 1/2 x 8 1/2, weight 1 pound, 10 ounces	.....\$3 00
No. 1 Maple, for cameras up to 6 1/2 x 8 1/2, weight 2 pounds, 2 ounces	..... 3 00

NOTE—When kind of wood is not specified, we will furnish in maple.



The Victor Tripod.

Folds in two sections.



No. 1 Spruce, for cameras up to 6 1/2 x 8 1/2, weight 1 pound, 11 ounces	.....\$2 00
No. 1 Maple, " " 6 1/2 x 8 1/2, " 2 " 3 "	..... 3 00

NOTE—When kind of wood is not specified, we will furnish in maple.

The Staff Tripod.

This tripod does not fold but closes together, forming a staff or cane.

Improved Staff Tripod\$1 50	Special Adjustable Head, extra\$1 00
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When for use with Pocket Kodak so specify.

"Adjustable" Tripod Head.

By the use of our "Adjustable" Tripod Head the camera can be tilted to any desired angle and fastened securely in position without moving the tripod legs.

No. 1. For the Eastman Tripod No. 1 and Victor No. 1	..... \$1 25
No. 2. For Kodak Tripod	..... 1 50

In ordering always give the name and number of Tripod for which you want adjustable head.

Any of the foregoing Tripods (except Feather, Staff and Bulls-Eye) may be ordered with the adjustable head and without the regular head, at the following prices:

Eastman No. 1\$3 75	*Kodak No. 2\$4 80	Victor No. 1\$2 75
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*We do not furnish the "Adjustable" head with folding legs.

Adjustable Jr. Head.

No. 1 Adjustable Jr. for cameras up to 4 x 5, can be used on Bulls-Eye, Feather or Staff Tripods	.....\$1 00
No. 2 " " " 4 1/2 x 8, fits any ordinary tripod	..... 1 50

PLATE HOLDERS.

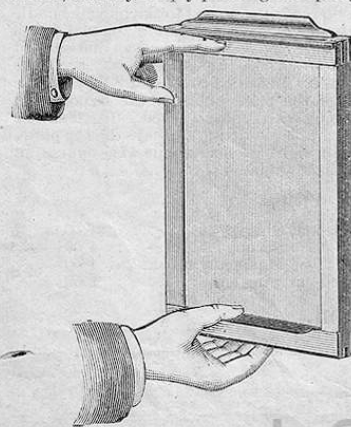
R. O. Co.'s Perfection Holders.

To load the Perfection Holder, the end of the plate is rested against the spring bar at the end of the holder, then by simply pressing the spring bar with the thumb the plate falls into place.

To unload the Perfection Holder, hold it as illustrated and by pressing on the spring bar the plate will fall forward, the edge resting against the fingers.

On account of its simplicity the Perfection Holder can be loaded and unloaded with the greatest of ease, even in absolute darkness.

As the plate is held in place by the ends only, the full width of the plate is exposed and but $\frac{1}{8}$ inch is cut off from each end.



	Mahogany, with Rubber Slides.	
$3\frac{1}{4} \times 4\frac{1}{4}$	\$1 00	\$1 50
4 x 5	1 00	1 50
$4\frac{1}{4} \times 6\frac{1}{2}$	1 25	1 90
5 x 7	1 25	2 00
5 x 8	1 35	2 00
$6\frac{1}{2} \times 8\frac{1}{2}$	1 60	2 40
8 x 10	1 85	2 85
10 x 12	3 00	4 50
11 x 14	5 00	6 00

Always state whether rabbit or sliding holder is wanted.

The Perfection Jr. Holder.

This Holder is made on the same principle as the Perfection, but is more compact and has rubber slides. It is not interchangeable with the regular style.

$3\frac{1}{4} \times 4\frac{1}{4}$	\$1 00	$6\frac{1}{2} \times 8\frac{1}{2}$	\$1 60
4 x 5	1 00	8 x 10	2 00
5 x 7	1 25	10 x 12	4 25
5 x 8	1 50	11 x 14	4 75

Scovill's Light Weight Holders.

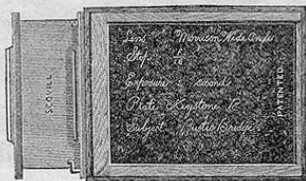
The Light Weight Holders are made with a solid frame so they will not come apart, leak, light or warp.

Every holder has the patent registering slides.

Light Weight Holders can be fitted to any American Optical Co. or Scovill Camera.

Price of Light Weight Double Holders; also Scovill Double Film Holders:

$3\frac{1}{4} \times 4\frac{1}{4}$	\$1 25	5 x 7	\$1 30
4 x 5	1 25	5 x 8	1 60
$4\frac{1}{4} \times 5\frac{1}{2}$	1 25	$6\frac{1}{2} \times 8\frac{1}{2}$	1 75
$4\frac{1}{4} \times 6\frac{1}{2}$	1 50	8 x 10	2 25



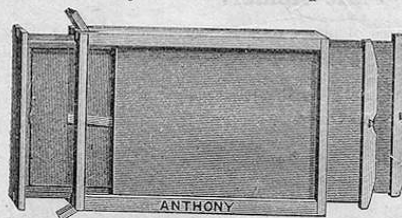
Showing Patent Registering Slide.

Blair's Feather-Weight Double Plate Holders.

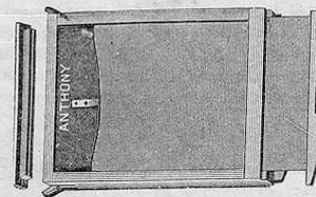
Are absolutely light-tight, substantial and accurate. They are extremely compact and light in weight, and so constructed that the slide may be drawn from either right or left of the holder when desired to be reversed in cramped positions. All sizes under 10 x 12, unless otherwise ordered, are fitted with blackboard registering slides.

No. 2090, $3\frac{1}{4} \times 4\frac{1}{4}$	\$1 00	No. 2093, $4\frac{1}{4} \times 6\frac{1}{2}$	\$1 25	No. 2096, $6\frac{1}{2} \times 8\frac{1}{2}$	\$1 60
" 2091, 4 x 5	1 00	" 2094, 5 x 7	1 25	" 2097, 8 x 10	1 85
" 2092, $4\frac{1}{4} \times 5\frac{1}{2}$	1 00	" 2095, 5 x 8	1 85	" 2098, 10 x 12	3 50

Anthony's Patent Eclipse and Zephyr Double Dry Plate Holders.



Eclipse Holder.



Zephyr Holder.

The Plates are held in place by means of an inside frame, made of tin, as shown in above cut.

The Plates are dropped in at the end of the holder, thus saving the wear and tear on the slides.

For Plates.	Price.	For Plates.	Price.	For Plates.	Price.
4 x 5	each, \$1 20	5 x 8	each, \$1 35	10 x 12	each, \$6 00
$4\frac{1}{4} \times 6\frac{1}{2}$	" 1 25	$6\frac{1}{2} \times 8\frac{1}{2}$	" 1 60	11 x 14	" 7 00
5 x 7	" 1 25	8 x 10	" 1 85	14 x 17	" 10 00

Rochester Camera Co.'s Dry Plate Holders.

Size.	Price.	Size.	Price.
$3\frac{1}{2} \times 4\frac{1}{2}$, with hard rubber slides	\$0 75	10 x 12, with hard rubber slides	\$3 30
4 x 5, "	75	11 x 14, "	4 00
5 x 7, "	1 00	$6\frac{1}{2} \times 8\frac{1}{2}$, with press board slides	1 25
5 x 8, "	1 00	8 x 10, "	1 50
$6\frac{1}{2} \times 8\frac{1}{2}$, "	1 75	10 x 12, "	2 50
8 x 10, "	2 10	11 x 14, "	3 00

Eastman Kodak Co.'s Dry Plate Holders.

SINGLE METAL HOLDERS.			
$1\frac{1}{2} \times 2$, Pocket Kodak	\$0 25	$3\frac{1}{2} \times 3\frac{1}{2}$, Bullet No. 2	\$0 60
$3\frac{1}{2} \times 3\frac{1}{2}$, No. 2 Eureka, Jr.	40	4 x 5, Bullet No. 4	75

DOUBLE WOODEN HOLDERS.			
$3\frac{1}{2} \times 3\frac{1}{2}$, Bullet Special, No. 2	\$1 00	4 x 5, Bullet Special, No. 4 and No. 4 Eureka	\$1 00
$3\frac{1}{2} \times 3\frac{1}{2}$, No. 2 Eureka	75	5 x 7, Cartridge Kodak, No. 5	1 25
4 x 5, Cartridge Kodak, No. 4	1 00		

Ray Camera Co.

SINGLE METAL HOLDERS.			
$2\frac{1}{2} \times 2\frac{1}{2}$, Ray Jr.	\$0 25	$3\frac{1}{2} \times 4\frac{1}{2}$, Ray B.	\$0 35
$3\frac{1}{2} \times 3\frac{1}{2}$, Ray	35	4 x 5, Ray E.	40

DOUBLE WOODEN HOLDERS.			
$3\frac{1}{2} \times 3\frac{1}{2}$, Ray Special.	\$1 00	5 x 7, Ray Folding	\$1 25
4 x 5, Ray C. D. or Folding Rays	1 00		

Miscellaneous Holders.

Monroe	2 x $2\frac{1}{2}$, \$0 50;	$3\frac{1}{2} \times 3\frac{1}{2}$ or $3\frac{1}{2} \times 4\frac{1}{2}$, \$1 00;	4 x 5, \$1 00;	5 x 7, \$1 25;	$6\frac{1}{2} \times 8\frac{1}{2}$, \$1 50
Korona	4 x 5, 1 00;	5 x 7, 1 25;	$6\frac{1}{2} \times 8\frac{1}{2}$, 1 50;	8 x 10, 2 00	
Cyclone	4 x 5, 1 00;	5 x 7, 1 25			
Hawkeye	4 x 5, 1 00;	5 x 7, 1 25			
Hawkeye, Jr.	$3\frac{1}{2} \times 3\frac{1}{2}$, 75;	4 x 5, 1 00.			



Inside Kits.

4 x 5 to hold $3\frac{1}{2} \times 4\frac{1}{2}$ plates, each	\$0 25
$4\frac{1}{4} \times 6\frac{1}{2}$ " $3\frac{1}{2} \times 4\frac{1}{2}$ plates, each	25
5 x 7 " $3\frac{1}{2} \times 4\frac{1}{2}$ or 4 x 5 plates, each	30
5 x 8 " $3\frac{1}{2} \times 4\frac{1}{2}$, 4 x 5 or $4\frac{1}{4} \times 6\frac{1}{2}$ plates, each	30
$6\frac{1}{2} \times 8\frac{1}{2}$ " 4 x 5, $4\frac{1}{4} \times 6\frac{1}{2}$, 5 x 7 or 5 x 8 plates, each	35
8 x 10 to hold $4\frac{1}{4} \times 6\frac{1}{2}$, 5 x 7, 5 x 8, or $6\frac{1}{2} \times 8\frac{1}{2}$ plates, each	40
10 x 12 " 5 x 7, 5 x 8, $6\frac{1}{2} \times 8\frac{1}{2}$ or 8 x 10 plates, each	50
11 x 14 " 8 x 10 or 10 x 12 plates each	60
14 x 17 " 8 x 10, 10 x 12 or 11 x 14 plates, each	75
17 x 20 " 11 x 14 or 14 x 17 plates, each	1 00
18 x 22 " 14 x 17 or 17 x 20 plates, each	1 50

The Waterbury Dry Plate Holder.

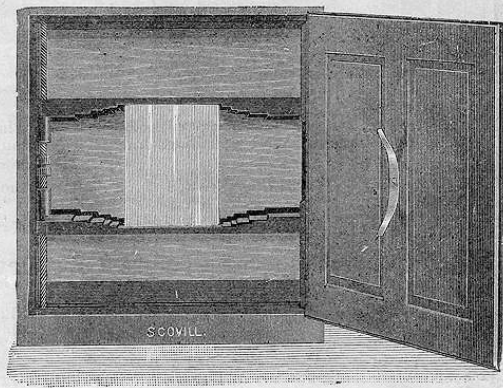
The Waterbury Holder may be adjusted to various sizes of plates quicker and easier than any other holder. No kits are required, and the plates used must be in the center; in fact, they cannot be out of the center, and may be laid in the proper place in the dark.

The Waterbury Holder requires no latches to secure the plate firmly in place. The mechanism is so simple that it cannot get out of order except by destroying the holder.

Revised Price List of Waterbury Studio Holders:

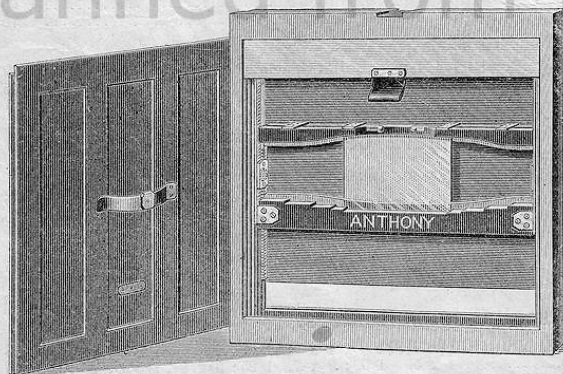
6½ x 8½	\$9 00
8 x 10	10 00
For Cincinnati Camera	15 00
10 x 12	16 00
11 x 14	21 00
14 x 17	24 00
17 x 20	28 00
18 x 22	30 00
20 x 24	35 00
25 x 30	44 00

Add 10 per cent. to above list when with curtain slide.



The "Benster" Plate Holder.

With Curtain Slide.



The glass plate rests on a wooden ledge, notched for different sized plates. As the lower ledge is raised, the upper ledge descends, so that the center of the plate is at all times in the center of the holder, no matter what size is used. This obviates the use of inside kits, and adapts itself at once to any size of plate, from the largest the holder will admit, to one not under three inches square. This is unquestionably the best gallery plate holder made. The ledges may be instantly fastened for plates of any size. For dry plate studio work, it is the holder *par excellence*. It is fitted to all climax cameras, with the

exception of the 43B, 43C, copying, and enlarging and reducing cameras.

The Benster Holder, with wooden slide, is applied only to boxes for wet plate work, such as 43B and copying cameras, and in these holders the plate rests on pure silver wire, and there is a trough with large bottle underneath, into which all the silver waste readily finds its way.

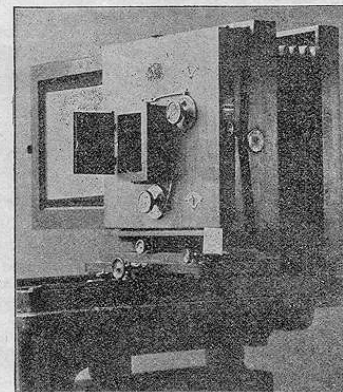
The price of Benster Holders for portrait cameras are as follows:

For 8 x 10 plate and under, 12½ inches wide, 13¾ inches high	\$10 00
" 8 x 10 " " 13¾ " " 13¾ " "	10 00
" 10 x 12 " " 15 " " 15¾ " "	16 00
" 11 x 14 " " 17 " " 17¾ " "	21 00
" 14 x 17 " " 20½ " " 21 " "	24 00
" 17 x 20 " " 23½ " " 24 " "	27 50
" 18 x 22 " " 26 " " 26½ " "	30 00
" 20 x 24 " " 28 " " 28½ " "	35 00

Special sizes to order will cost 20% additional.

Klay's Multiplying Plate Holder.

A Unique Patented Device for Producing from Two to Twenty-Eight Different Pictures on a Single Plate 4¼ x 6½ or 5 x 7 Inches.



Holder on Camera: Wicket or Door Open to Obtain Focus.

In these days of American enterprise and push, a constant demand for "something new" is being felt by photographers in every city, and that demand has now happily been supplied by the invention of the Klay Multiplying Plate Holder. It is a unique patented device for producing from two to twenty-eight different pictures on a single plate, 4¼ x 6½ or 5 x 7 inches. For variety, novelty and convenience, it excels all other devices for producing these small pictures. Any photographer who once sees the holder and its work wants one immediately.

Price of the Klay Holder, 4¼ x 6½ or 5 x 7.....\$15 00

DESCRIPTION OF KLAY MULTIPLYING PLATE HOLDER.

A Unique Patent Device for Producing from Two to Twenty-Eight Different Pictures on a Single 4¼ x 6½ or 5 x 7 Plate.

The Holder is made of thoroughly seasoned wild cherry lumber, all in panel work to prevent it from warping, and is elegantly finished in natural wood, with plain brass mountings. The outside measurements are 13 x 13 inches, and 1¼ inches in thickness. The inside construction is made of sheet and sawed brass.

The focusing tube, including the holder, is 4 inches deep. The opening and ground glass is 2¾ x 3¾ inches, which is one-half the size of standard cabinet paper, and will make two pictures of the size above mentioned on a 4¼ x 6½ or 5 x 7 inch plate. Seventeen different diaphragms and the corresponding indices are furnished with the holder, which enable you to make eighteen different sizes and forms, horizontal, vertical or diagonal. The indices furnished with each holder are lettered as follows: A, B, C, D, E, F, G and H, correctly spaced off and plainly stamped in figures, which will enable the operator to make the changes from two to twenty-eight of any size or number desired in an incredibly short time.

The plate is put in the holder at the UPPER RIGHT HAND CORNER, and by means of two knobs, as shown in the cut, is operated from the outside. By turning one knob the plate is carried up or down, and with the other from side to side, as is required to secure the number and variety of poses on the one plate, the plate being successfully carried into the field of the lens by these movements. Each holder is accompanied by a direction chart, giving full and minute instructions for operating the holder.

Two ⅝-inch strips are furnished with each holder, all ready with screw holes and screws, making holder when put on, 13¼ x 13½ inches. These strips can be dressed down to proper thickness, as cameras vary in size.

Portrait cameras larger than 8 x 10 can be adapted for the Klay Multiplying Plate Holder, by fitting a board in place of the regular holder, with an opening cut in the same to take the Klay Holder. Care must be used to have the latter in line with the lens.

Anthony's Patent Lined Screen Holder.

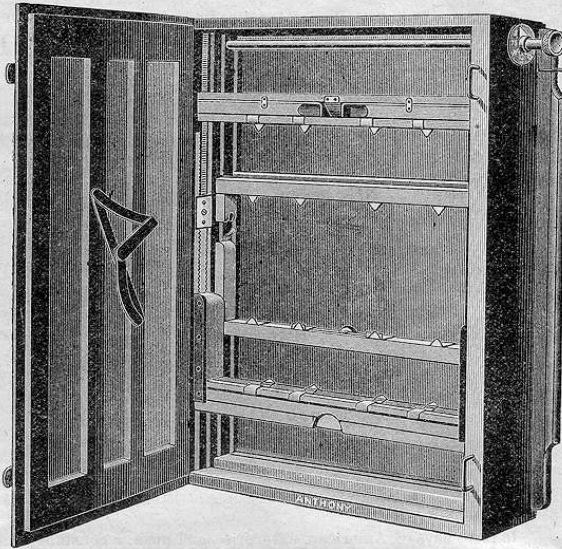
Constructed on the Benster Principle.

Holds any size of plate or screen, and distance between plate or screen may be regulated from the outside of the holder.

PRICES.

8 x 10	\$18 00
10 x 12	22 50
11 x 14	28 00
14 x 17	32 00
17 x 20	36 00
18 x 22	40 00
20 x 24	45 00

	Ground Glass and Frame.	Frame only for Ground Glass.
8 x 10	\$3 00	\$1 50
10 x 12	3 25	1 50
11 x 14	3 50	1 88
14 x 17	4 00	2 25
17 x 20	4 50	2 63
18 x 22	5 50	2 63
20 x 24	6 50	3 00



Ruled Cross-Line Screens for Half-Tone Work.

Examine under microscope and note perfect sharpness of edge, perfect opacity of lines, and perfect transparency of spaces.

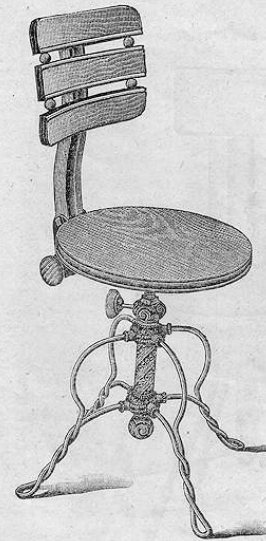
All sizes and rulings furnished at shortest notice. Write us if you are in the market for the best ruled screen. All plates are made square unless otherwise ordered.

PRICE LIST

SIZES IN INCHES.	LINES PER INCH.						
	75, 80 or 85	100	110 or 120	125 or 133	140 or 150	160 or 175	200
6 x 8	\$15 00	\$18 00	\$20 00	\$22 00	\$26 00	\$32 00	\$40 00
6½ x 8½	18 00	20 00	24 00	28 00	32 00	40 00	50 00
7 x 9	24 00	25 00	30 00	36 00	42 00	50 00	65 00
8 x 10	32 00	35 00	42 00	48 00	54 00	68 00	82 00
10 x 12	40 00	52 00	70 00	80 00	95 00	110 00	130 00
11 x 14	60 00	80 00	98 00	115 00	135 00	160 00	185 00
12 x 15	75 00	100 00	120 00	142 00	170 00	200 00	230 00
13 x 16	95 00	122 00	144 00	172 00	208 00	240 00	280 00
14 x 17	115 00	145 00	168 00	208 00	252 00	280 00	340 00
16 x 20	168 00	208 00	240 00	305 00	360 00	420 00	500 00
20 x 20	205 00	260 00	300 00	380 00	450 00		
TRIAL SIZES.							
3½ x 4½	\$2 00	\$2 00	\$ 2 00	\$ 2 00	\$ 3 00	\$ 5 00	\$ 8 00
4 x 5	4 00	4 00	4 00	4 00	6 00	8 00	12 00
4½ x 6½	6 00	6 00	6 00	6 00	8 00	10 00	16 00
5 x 7	9 00	9 00	10 00	12 00	14 00	16 00	22 00
5 x 8	12 00	12 00	12 00	14 00	16 00	20 00	28 00

For single-ruled screens, deduct 33½ per cent. Special quotations furnished on different rulings and sizes.

Prince's Photographer's Chair, No. 2.



Our object in putting this on the market is to supply a chair that is useful as well as ornamental to every gallery, and in price within the reach of every photographer.

The back mechanism, which is very simple, is clearly shown and will be readily understood. By loosening the knob in the lower end of the upright, the back can be brought front over the seat as far as desired, or put back entirely out of the way; and, by merely tightening the knob, it can be held rigid at any point.

The knob in the base fastens the center screw, so that the base is held rigid with the seat. By loosening this knob, the seat can be raised or lowered by means of the center screw, and can be held rigid at any point by the knob.

The back can be raised or lowered by loosening the knob, which works in the slot in the upper end of the upright.

Price.....\$6 00

Columbian Poser.



We represent here the most complete Posing Chair that has ever been put on the market—it is the Photographer's Ideal. The foot-rest or platform can be folded up under the seat and out of the way for large people, and for small people or children, it is found to be the most useful attachment ever put on a posing chair.

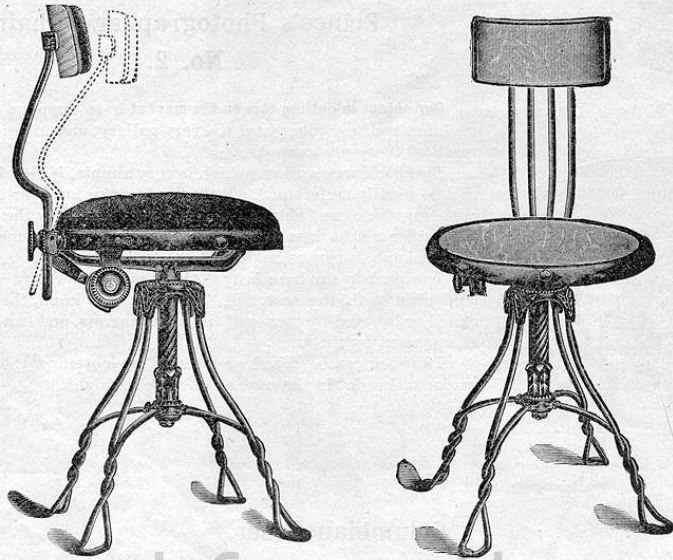
The mechanism which is very simple, is clearly shown by above cuts, and will be readily understood. By loosening the knob in the lower end of the upright, the back can be brought forward over the seat as far as desired, or put back entirely out of the way. And, by merely tightening the knob, it can be held rigid at any point.

The knob in the base fastens the center screw so that the base is held rigid with the seat. By loosening this knob, the seat can be raised or lowered by means of the center screw, and can be held rigid at any point by the knob.

Price with Foot-Rest\$10 00
 Extra for large Circular Arm, with heavy fringe, same as on seat... 3 75
 Extra for Baby Chair Attachment..... 3 50

The Elite Poser.

A Beautiful, Common-Sense Posing Chair for Bust Portraits.



Constructed principally of steel, the legs and back supports being of steel rods. Entirely metal, except the covering of seat and back rest. The seat revolves and can be raised or lowered to any desired height; set screw holding it firm; back tilts forward or back.

- With solid oak seat and back, each..... \$8 00
- With leather seat and back, each..... 9 50
- With plush seat and back, each..... 9 50

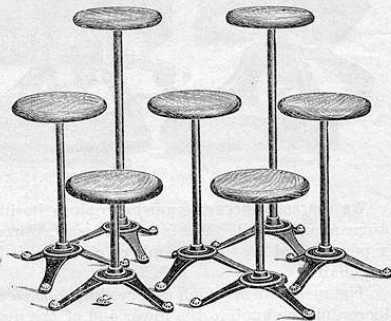
The Globe Grouping Stools.



They are made of twisted steel rods, antique copper finish, oak seat. These are the most compact, durable, attractive and sensible group-arrangement ever devised, as well as the lowest in price. They are made in three sizes. No. 1, 11 inches; No. 2, 17 inches; No. 3, 24 inches high.

Price, any size..... each \$2 50

The James Grouping Stools.



These are built to meet the demands of those who cannot afford to pay the price of the Globe Stools. They are strong and durable and answer the purpose for which they were designed perfectly. They are made 11, 17 and 24 inches high.

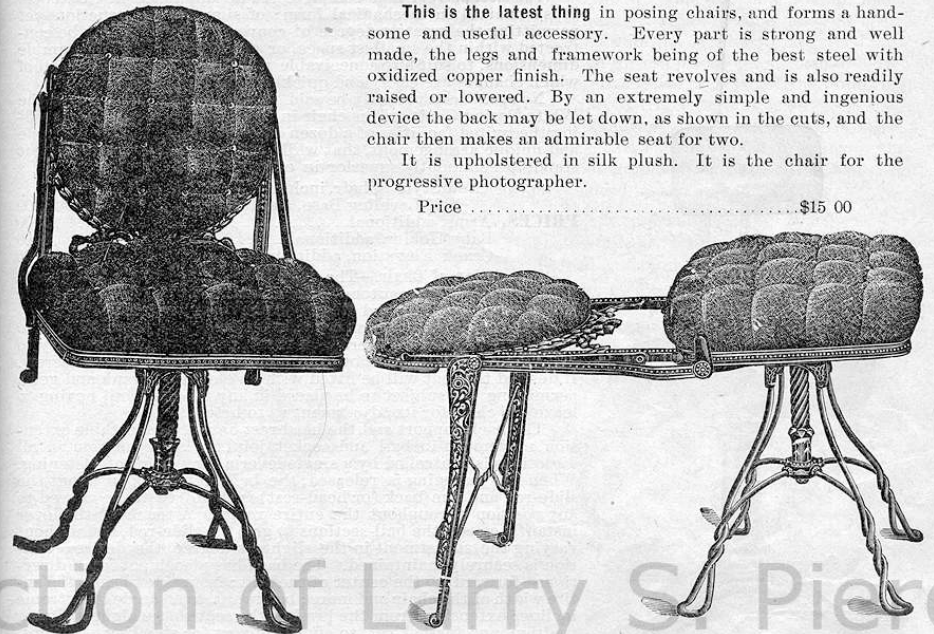
Price, any size..... each \$1 25

The "Duplex" Chair.

This is the latest thing in posing chairs, and forms a handsome and useful accessory. Every part is strong and well made, the legs and framework being of the best steel with oxidized copper finish. The seat revolves and is also readily raised or lowered. By an extremely simple and ingenious device the back may be let down, as shown in the cuts, and the chair then makes an admirable seat for two.

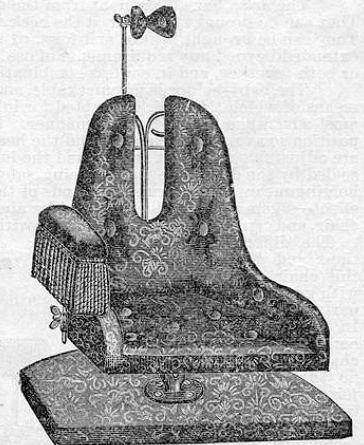
It is upholstered in silk plush. It is the chair for the progressive photographer.

Price \$15 00



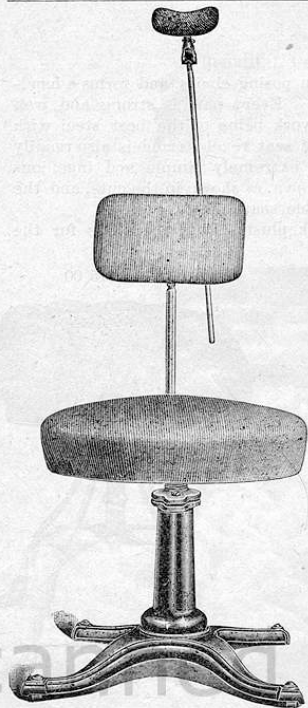
The Baldwin Baby Holder.

This Holder is arranged with a flat base—No legs. A tilting arrangement under the seat allows the adjustment of the seat to any angle desired. In the slot in the back is a spring clamp, into which the operator may force a portion of the child's dress or clothing, thereby holding the baby firmly in position without further assistance. A neat little head rest is attached to the back of the seat, by an adjustable clamp, which can be placed in any position or removed out of sight instantly. The head rest is upholstered, covered with cloth that will not be uncomfortable or objectionable to the most fastidious "kid." Arms can be attached to either or both sides, by an adjustable clamp, which can be placed in any position or removed at will. It can be placed in any chair, on a table or anywhere, to suit the operator, hereby utilizing a variety of accessories for baby pictures, which can not be done with any other baby chair heretofore offered to the fraternity.



REDUCED PRICES.

- Without arm, imitation raw silk cover..... \$7 50
- Without arm, drab velveteen cover, nickel-plated trimmings..... 9 00
- Without arm, in plain or crushed mohair plush..... 10 00
- Arms, with attachments, either style..... each, 1 00



Latest in the White's "New Style" Chair.

The most perfect and complete studio appliance in existence. It is a marvel in mechanical form; of simplest construction, yet permitting the greatest degree of convertibility. It may be contracted within the smallest space, or extended to the most ample dimensions, to suit any conceivable position of the subject, all of which changes are easily and quickly effected.

No studio can properly be said to be "equipped" without the White Posing Chair. This chair in itself affords facilities exceeding the united facilities of a dozen other chairs, and in such simple and unique arrangement, that while combining all excellencies, it stands preeminently superior in every point of comparison.

"New Style" Chair, including Back, Head Rest and Self Leveling Base, as illustrated, boxed \$27 00

PRICES. Arms, additional 8 00
 Baby Holder, additional 8 00
 Crank Elevation, additional 7 00

Description of Chair.—The iron base of the chair contains a decided novelty in its automatic leveling device, by which the chair is made to stand firm and steady on the most uneven floor.

The seat is mounted on a quick action screw, permitting it to be quickly raised or lowered or rotated freely. All tendency to rotate may be checked at once by a clamp acting upon the screw. If desired the seat will be fitted with an elevating crank and gear, permitting the subject to be placed in any pose without having to leave the chair for its adjustment as to height.

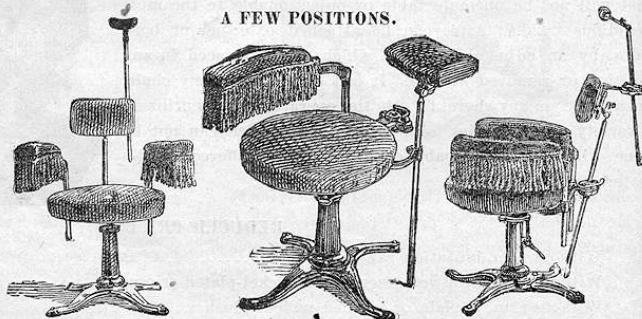
The back support and the head rest have the adjustable extension movement in ball and socket joints, whereby action in all directions is controlled by a single lever at one point of fastening. When this fastening is released, the ball-sections open about the slide-rod and the back (or head-rest) is then free to be moved to any position throughout the entire range. A touch of the lever instantly causes the ball-sections to grip the slide-rod, and without varying the adjustment in the slightest degree, the desired position is securely maintained. The back has placement in all directions—forward, to the center of the seat; from side to side, the entire width of the chair and more; backward, to an angle of extreme incline; extension, from the level of the seat to the highest sitting position, and further yet, to afford support for standing positions. The cushion of the back is reversible, and the head-rest removable.

so that the chair may be readily used as a leaning stand, or as an elevated seat for children either with or without the baby-holder attachment. The head-rest is adapted to all these changes to give support invisibly. A simple touch secures it firmly in any desired adjustment.

The arms have placement from the greatest requirements of elevation down to the level of the seat. They can be brought together at the back as a sofa, or separated and placed parallel at the sides of the seat. They can be brought inward and forward to make a small seat for a child, and can also be spread out and extended beyond any requirements of use. The arms can be used singly and independently of each other, or both together, and in endless combinations.

The baby-holder is a remarkable and unique feature of this chair. It is a very useful adjunct, by means of which the chair is adapted for infants, and for giving display of long skirts and draperies in the most advantageous and artistic manner. In using this attachment, the back rest is turned to a horizontal position so as to form the seat, and the head rest is replaced by the baby-holder proper. The waist clasps are adjustable to height and around the infant; they may be covered with ribbon and tied in front or concealed by the dress, the infant being safely held without distortion of outlines by chair arms or other holding means. The arms and hands of the infant thus retain freedom and grace, to bring out a fine clean effect—a gem in art. The baby holder above the back cushion is the same as the upper part of the child's chair, and can be interchangeably used with the seat and telescoping standard shown.

The different combinations and adjustments of this chair can be effected with great quickness. The parts are interchangeable. In the entire and various combinations of this posing chair, however, there are no shaky, clumsy or loose joints. All parts are firmly held by neat, conveniently accessible, easily operated fastenings, a mere touch of the hand suffices to effect the changes and the adjustments conform to the pose as if by magic.



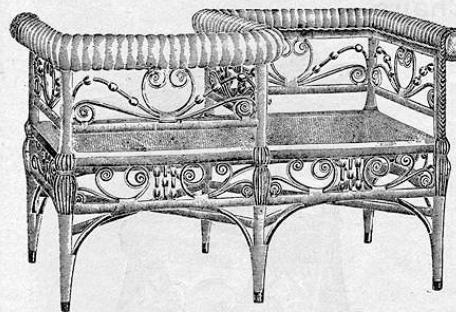
With Arms. In Grouping, as a seat for holding child. With Arms, side view.

Rattan Chairs.

With the advent of this new and complete catalogue we are able to show to our many patrons a novelty, which not only makes a beautiful and substantial accessory, but is equally well adapted for use in reception room or office.

These chairs are finished in the following styles: Natural color, stained cherry or shel-laced and mahogany, white and gold or bronzed.

These chairs are now in use by many of the leading photographers of the country, and they are pronounced by all to be THE thing.



No. 6260.

No. 6260.
 Shellac finished \$20 00
 Stained cherry or mahogany 20 00
 Enamel, gold leaf or all bronze 26 00



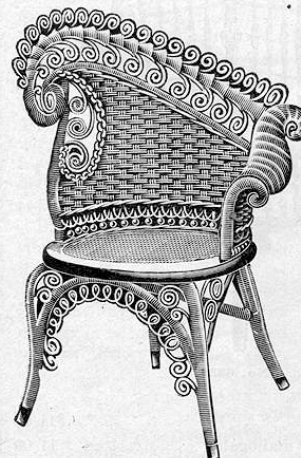
No. 6338.

No. 6338.
 Shellac finished \$13 00
 Stained cherry or mahogany 13 00
 Enamel, gold leaf or all bronze 17 00



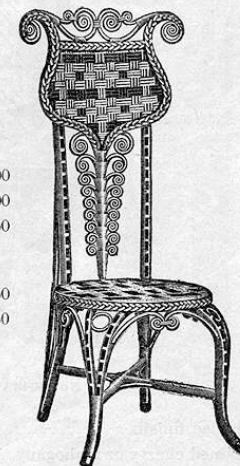
No. 6340.

No. 6340.
 Shellac finish \$16 50
 Stained cherry or mahogany 16 50
 Enamel, gold leaf or all bronze 21 00



No. 6326.

No. 6326.
 Shellac finish \$9 00
 Stained cherry or mahogany 9 00
 Enamel, gold leaf or all bronze 12 50



No. 6500A.

No. 6500A.
 Shellac finish \$7 50
 Enamel, gold leaf or all bronze 10 50

Rattan Chairs.



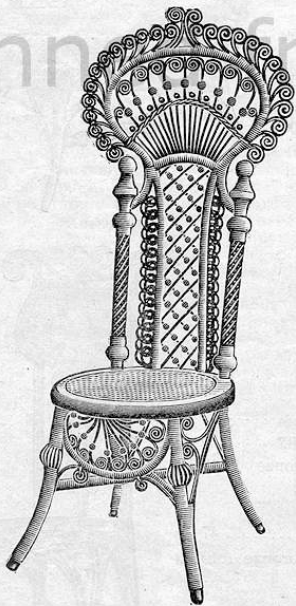
No. 6327.

Shellac finish.....\$10 00
 Stained cherry or mahogany 10 00
 Enamel, gold leaf or all bronze 14 00



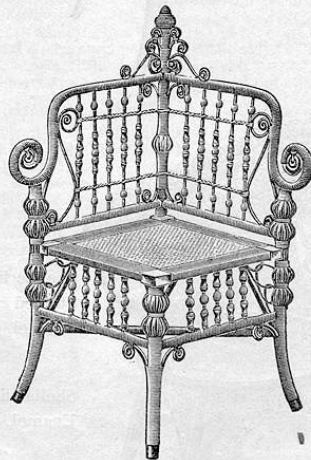
No. 6508A.

Shellac finish.....\$11 00
 Stained cherry or mahogany 11 00
 Enamel, gold leaf or all bronze 15 00



No. 6042A.

Shellac finish.....\$ 8 50
 Stained cherry or mahogany 8 50
 Enamel, gold leaf or all bronze 12 00

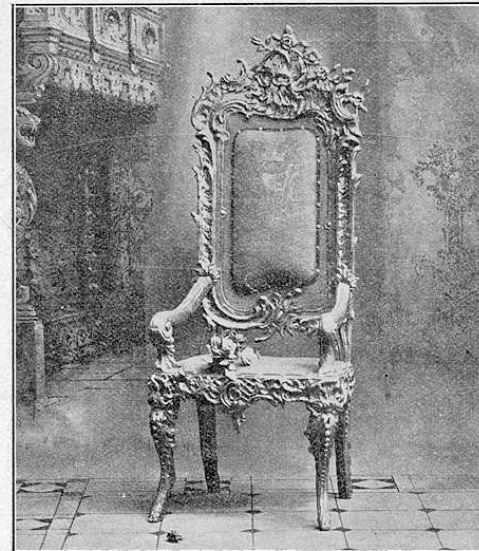


No. 6332.

Shellac finish.....\$11 00
 Stained cherry or mahogany 11 00
 Enamel, gold leaf or all bronze 15 00

Lafayette W. Seavey's
 Chateau Blois Chair.

No. 1543.



This is the only chair of its kind ever offered to the profession. It is new and novel. The proportions are exactly right for the various standing, leaning and sitting poses, having been carefully determined by using models when the chair was designed. The back being high, frames the head of the sitter and gives a very beautiful result in the picture. The relief work is of papier mache. It is covered with a durable furniture tapestry, and is finished in light green and gold to suit medium and light backgrounds, but a dark finish can be had if specially ordered. It will be found a great acquisition to any gallery.

Price F. O. B., New York, all rail, \$22 00

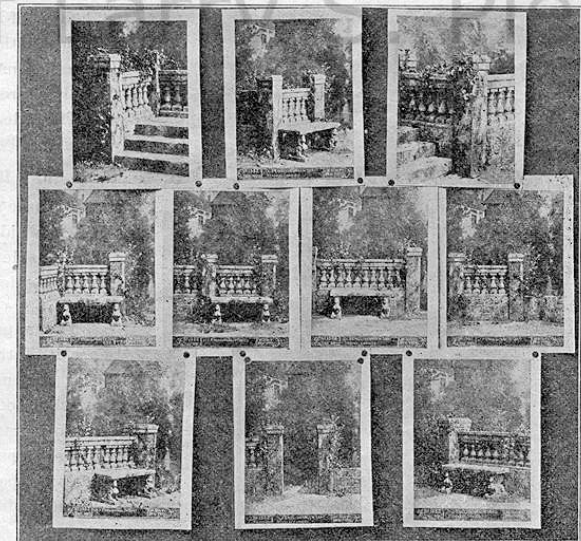
The Old English Wall.

Made at the Workshop of Seavey

No. 1332 consists of two posts, two balustrades, two bases or walls, one seat, and one set of steps. The combinations which can be had with these parts are manifold. The accompanying cut of reduced prints simply shows a few of the changes—there are four other excellent arrangements which have suggested themselves to us, showing the use of gates not illustrated here. It is at once useful for adults and children, and while it is essentially a spring or summer accessory, and can be rendered very picturesque by the free use of ivy, it also presents a delightful fleecy effect when treated with artificial snow.

Bracket supports for seat, instead of the Sphynx, can be had if requested.

It is very effective when used in its entirety, but equally telling effects can be had when it is used in part. Prices are as follows:



No. 1332.—Old English Wall Seat and Steps.

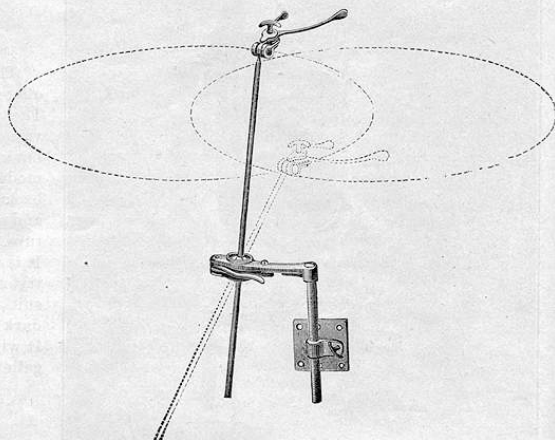
Accessory with Seat and Steps\$30 00
 Accessory without Steps 28 00
 One-half Accessory with Seat 20 00
 Seat only..... 10 75
 One Pair Gates 8 00

HEAD SCREENS.

White's Photographic Chair Rest.

This appliance is for attachment to any studio chair by means of the plate, into which the supporting rod slides, and as shown by cut, has the ear-clips and ball and socket adjustment, and as shown by dotted lines, may be applied in almost any direction or angle. It will be found to be a very valuable accessory.

Price \$8 00
Extra Brackets ...each, 50



White's Perfection Head Screen and Side Shade.

This Screen permits of an adjustment from a height of 8 feet to the floor, and to any position within a circle of 8 feet, and without any other means of adjustment than is instantly afforded by the cam lever.

This side shade is independent of the head screen in all of its movements.

No. 1 Head Screen, as illustrated.

With square side shade \$10 00
With oval side shade 9 50
Without side shade 7 00
Separate side shade 3 00

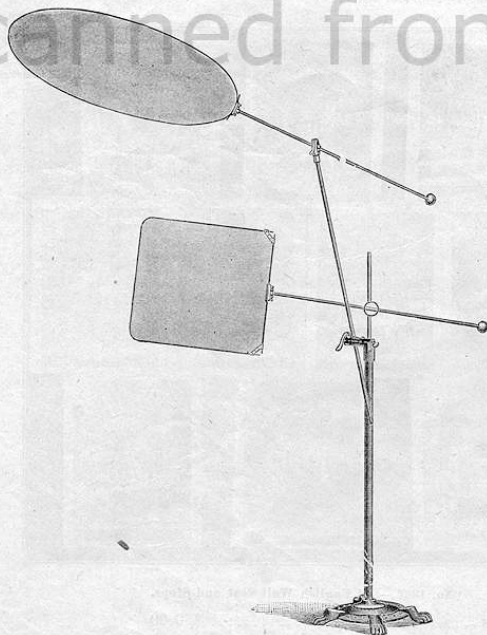
The unprecedented sales of this article since its introduction demonstrates its popularity and usefulness more effectively than any words of ours can do.

No operating room can now be considered fully equipped without a head screen, which makes it possible to soften high lights or deepen shadows, subdue light on white draperies, etc.

The screen can be adjusted instantly to any height or position. The rods are nickel plated, and the base is ornamented, Japan

finish. They have recently been greatly improved by the adoption of a new double clamp ball joint for holding the cross rod.

A trial will insure its perpetual use.



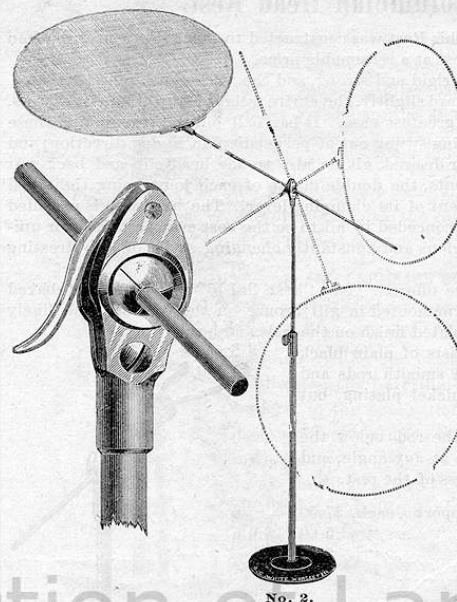
White's Photographic Head Screens.

Style No. 2.

This style Head Screen has a circular base with the elevating rod telescoping into the base standard without the off-set or projecting Sectional Ball Joint. The adjustment of the elevating rod is made by a saddle and thumb screw at the top of the base standard. In all other respects it is like No. 1, having the same Slide Rod Ball and Socket Joint with binding lever, as shown in detail in this cut. Side shades can be used with this style of head screen.

PRICES:

No. 2 Head Screen, same as illustrated, including box \$8.50
If with new ornamental base, extra 25
Square Side Shades, extra 3.00

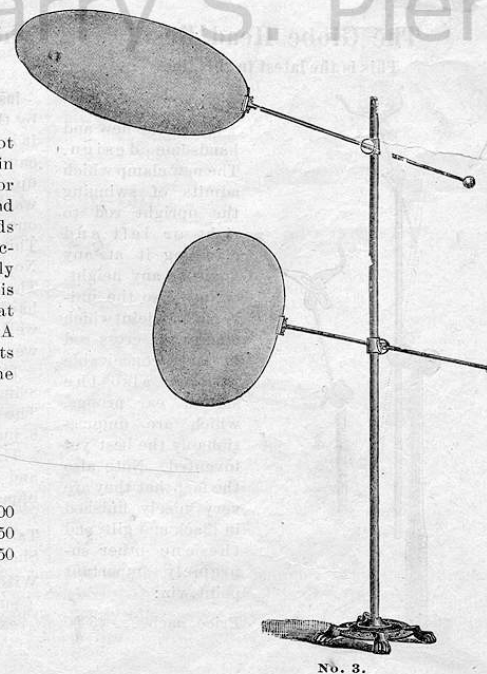


Style No. 3.

This is a new pattern, having ornamental foot base. The standard is one piece, 1 1/4 inches in diameter, 6 feet high, of hard wood, ebonized or of cherry finish. It has the new compound clamping and swiveling joint, which affords adjustment to all positions in a secure and practical manner by one fastening. By slightly releasing the clamping joint, the shade rod is free to slide or be turned to place the shade at any angle around the supporting standard. A greater release of the clamping joint permits adjustment of the screen up or down on the standard.

PRICES:

No. 3 Head Screen, as illustrated, with oval side shade \$7.00
If with square side shade 7.50
No. 3 Head Screen, without side shade 4.50



HEAD RESTS.

The Columbian Head Rest.

The latest. The best. This Rest was constructed to meet the desires so often expressed for a good head rest at a reasonable price.

New and neat in design, rigid and strong, and the workmanship first-class. By tipping the rest forward slightly, the entire weight is thrown on its casters, and can be moved with the greatest ease. It has ball joints throughout; these admit of the upright rod being swung out of perpendicular, in any direction, and clamped in any position ever desired, giving also to the head-clip and back-rest the same universal movements, the double clamp of each joint being tightened by a slight and easy movement of its clamping lever. The head-clip is provided with the slotted ear prongs, conceded by all to be the best ever produced for universal adjustment to the various and constantly changing styles of hair dressing practiced by the ladies.

In finish two grades are offered. The "best finish" will consist of baked Japan, neatly striped and ornamented in gilt bronze on the castings, and finely turned and polished nickel plated finish on the rods and head-clip.

The "plain finish" consists of plain black Japan on the castings, with smooth rods and head-clips, whitened with nickel plating, but not polished.

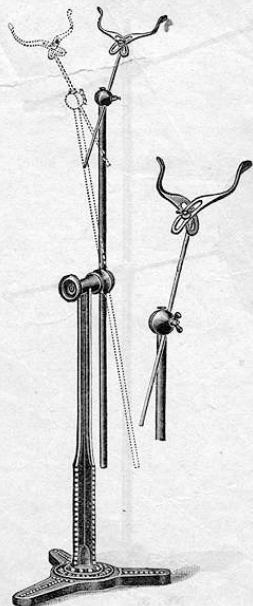
The back support on the rod below the head-clip also is adjustable at any angle, and adds greatly to the usefulness of the rest.

Best finish, without back support	each, \$7 50
Plain " " " " " "	5 00
Back support, best finish	" 2 00
" " plain	" 1 50



The Globe Head Rest.

This is the latest in this line.



Notice the new and handsome design. The new clamp which admits of swinging the upright rod to right or left and clamping it at any angle or any height.

Note also the universal ball joint which clamps the cross rod in any conceivable position; also the slotted ear prongs, which are unquestionably the best yet invented. Note also the fact that they are very nicely finished in black and gilt, and the one other supremely important point, viz:

Price, each. . . . \$3 50

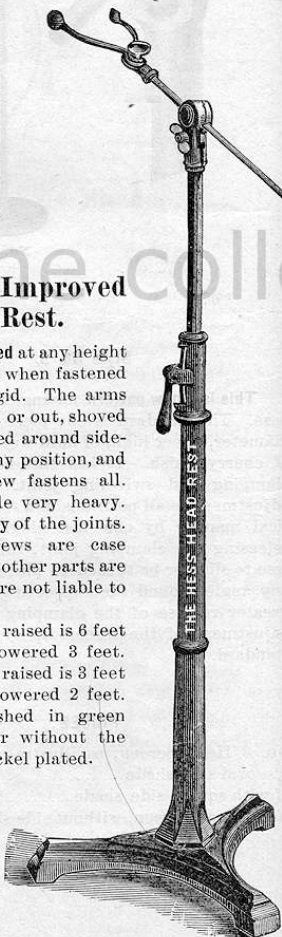
The Hess Improved Head Rest.

Instantly fastened at any height by the lever, and when fastened it is perfectly rigid. The arms can be pushed in or out, shoved up or down, moved around sideways or put in any position, and one thumb screw fastens all. This rest is made very heavy. No "shake" in any of the joints. The thumb screws are case hardened and all other parts are well made and are not liable to wear out.

The tall, when raised is 6 feet 8 inches, when lowered 3 feet. The short, when raised is 3 feet 6 inches, when lowered 2 feet.

They are finished in green and gilt, with or without the upper portion nickel plated.

Tall	..... \$3 25
Short	..... 3 15
With back support,	
extra	... 75



White's Posing Support.

Style No. 1.

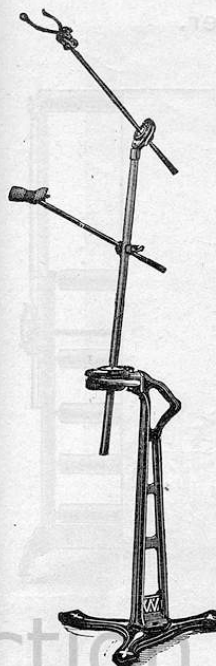
This Posing Support has the applied principle of the Improved Combination Slide-Rod, Ball and Socket Joints. It is adapted to the Smallest or Tallest Person, and for all adjustments or positions. It is in design and finish, a refined and elegant piece of mechanism, and in every way commends itself to the knights of the camera. It is a suitable aid and accompaniment to the highest artistic portraiture of the present age.

THE EAR-CLIPS OF THE SUPPORT

have swiveling wrist movement as well as lateral or spread adjustment combined at one fastening, affording facility for either horizontal or vertical positions of the Carrying Rod, placing the parts to conform to the pose without regard to instrument itself, or the liability of portions thereof appearing in view.

A Detachable Back-Rest is provided which has all desirable facilities of adjustment, easily and quickly handled.

Price, boxed complete. \$20 00

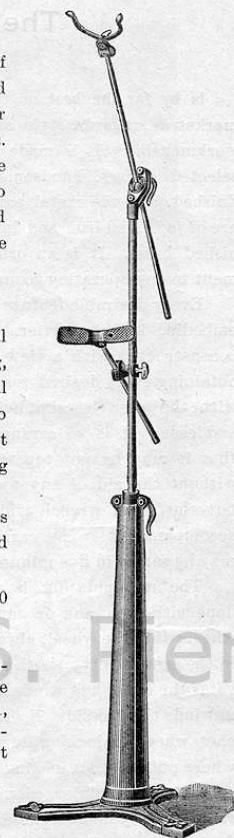


Style No. 1.

Style No. 2.

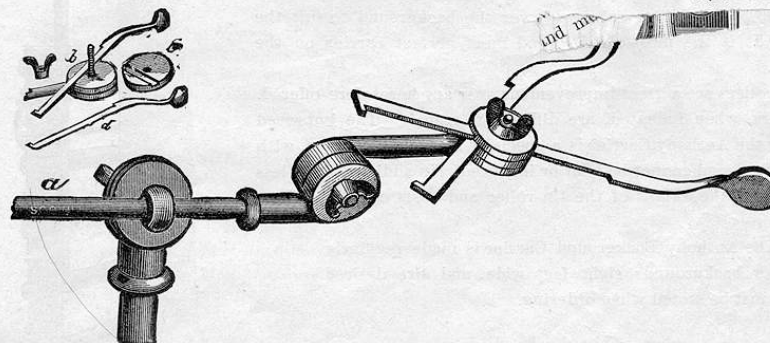
This cut shows another form of the Posing Support of somewhat lighter construction. It has the Improved Swivel Clamping Back Joint with the adjustable Ear Clips of No. 1, but lacking the Ball and Socket Joint at top of base, but which instead is provided with telescopic movement, and handle for convenience in moving about the studio.

Price, style of No. 2, boxed. \$14 00



Style No. 2.

Scholten's Head-Clip.



Made of solid brass, working smoothly, and finished in the very best manner. Every intelligent photographer can readily see and appreciate the convenience of this handy attachment. It can be used on any head-rest. The prongs slide six inches, and can be quickly adjusted for any pose. They are invaluable for lady sitters. It embodies everything wanted in a head-clip.

Price, each \$1 50

The Anthony Background Carrier.

Is by far the best on the market as regards style and workmanship. It is made of selected cherry, handsomely finished, and the metal parts are of japanned iron and burnished brass. It is an ornament to any operating room.

Every desirable feature is embodied in this carrier. It is constructed with a view to obtaining every desired result with the greatest simplicity and ease. It is so arranged that it may be put together without the aid of any tools but the small wrench which accompanies it. The carrier may be set up in five minutes.

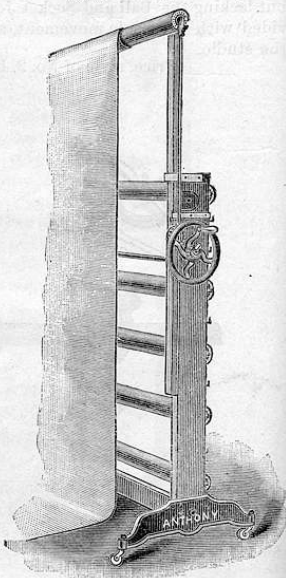
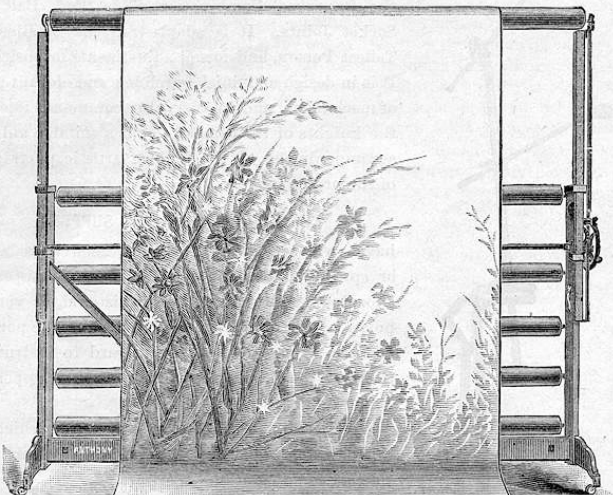
The manipulating is all done with one crank or hand-wheel; this one wheel, always in the same position, both elevates the roller and winds and unwinds the ground. No ratchet wheel or locking device of any kind is used, the roller staying where put, without locking. There being no ropes, chains, pulleys or ratchets, the carrier cannot get out of order. The roller can be raised to any height, the end posts, or roller supports, being telescopic. In handling backgrounds behind a subject, it is a great advance over the old method of lowering the background to suit the subject. It is the most perfect carrier on the market.

The rollers are a great improvement over any heretofore offered. Tin rollers, when indented, are difficult to repair. The improved roller for the Anthony Carrier is a specially made hollow tube, with canvas cover, and cannot be bent or indented. In addition, it is less than one half the weight of the tin roller and costs one dollar less.

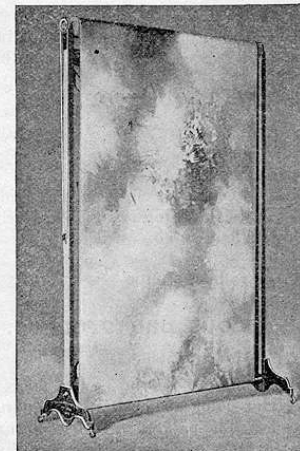
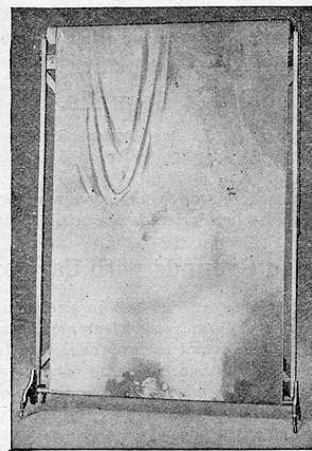
The Anthony Background Carrier is made regularly for backgrounds eight feet wide, and size desired must be stated when ordering.

PRICES:

- Complete, with one roller \$25.00
- Extra (5-inch) rollers..... 3.50



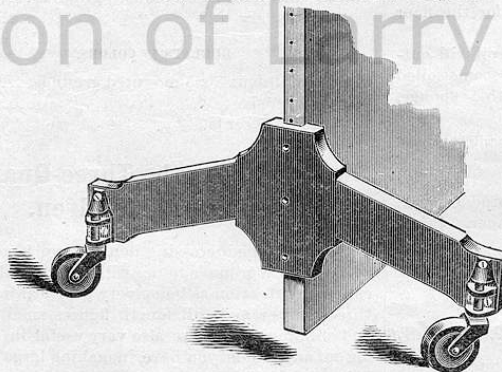
The King Belt Background.



Quick Changes! Endless Variety! Artistic Effects!

These Backgrounds are painted on burlap, in dark effects, for Aristo Platino. They are in the form of a continuous belt, 5 feet wide and 16 feet long, working on a roller at the top and bottom of the carrier. This arrangement makes possible a great variety of artistic effects, and the changes can be made with great rapidity.

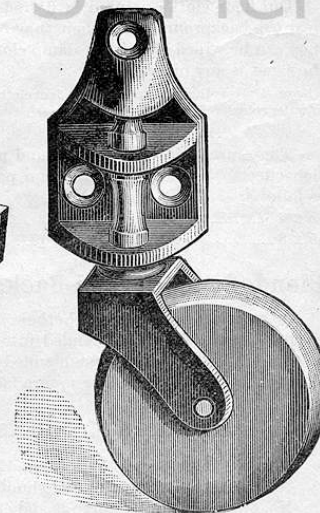
Price, Background and Carrier, complete \$35 00



Magic Background Bracket.

This consists of a bracket made of ash wood, 1 1/4 in. thick, nicely finished and provided with a suitable groove and screw holes for fastening to backgrounds or screens. It is neat in appearance, and it is fitted with the popular Magic Casters, which do not drop out when lifted from the floor.

Price, complete..... Per pair, \$2.00.



Magic Caster.

For Backgrounds, Camera Stands, Screens, etc.

The best Caster ever produced for studio purposes, for which it was especially invented. The wheel is of wood, 3 inches in diameter, and does not drop out when raised from the floor.

Price, per set of four..... \$1 00

Globe Eye Rest.

Constructed wholly of iron, excepting the block for pictures. Block slides up or down, and remains where placed.

Price..... \$1 25

BACKGROUNDS.

NOTE—We will furnish any design painted on muslin in neutral tints, or on burlaps in colors at the following prices.

Scenic Backgrounds.

Muslin, 8 x 6.....\$5 50	Burlaps, 8 x 6.....\$6 00
“ 8 x 8..... 8 00	“ 8 x 8..... 9 60
“ 8 x 10.....10 00	“ 8 x 10.....12 00

Any sizes without floor cloth not given here will be furnished at the following prices. On muslin, 12½ cents per square foot, and on burlaps at 15 cents per square foot.

Boxing and roller 40 cents.

Continuous Backgrounds.

MUSLIN.

We will furnish any design with floor cloth, painted in water color at 10 cents per square foot. These grounds will be painted in distemper throughout and in our very best style, and while the floor cloth will not be so durable as those we paint in oil, they will be equal to any other on the market. All backgrounds must have at least a four foot floor cloth to come under the price of 10 cents per foot. If the floor cloth is desired painted in flatted oil color, the price will be 10 cents per square foot for the background, and 15 cents per square foot for the floor cloth.

Our floor cloths painted in flatted oil will outwear the background, and when they become soiled they can be wiped off with a damp cloth or sponge, the same as any oil cloth.

NOTE—Unless otherwise specified the floor cloth will be painted in water color.

BURLAPS.

These are painted in colors and produce dark, rich effects. Especially for platino paper. Prices as follows:

15 x 6.....\$12 00	15 x 10.....\$20 00
15 x 8..... 16 00	16 x 10..... 21 50

Blended and Graded Backgrounds.

In ordering please state whether you wish the ground light at top, and blended into dark at the bottom, or light one side and blended into dark on the other. Price 15 cents per square foot.

Rembrandt Effects.

Nos. 899 and 896 give the Rembrandt effects.

No. 897 gives Rembrandt and shoulder cloud.

No. 898 gives the Rembrandt and cloud blend.

These are mounted on a light, strong wheel with iron hub and iron spindles of suitable size and length to adjust to any head-rest, so they can be turned around to produce any effect of light and shade desired. Price mounted on 48-inch wheel, \$4.25; 54 inch wheel, \$5.00; 60-inch wheel, \$6.00; 72-inch wheel, \$7.00.

Head Grounds.

Muslin, 5 x 5.....\$2 50	Burlaps, 5 x 5.....\$3 75
“ 5 x 6..... 3 00	“ 5 x 6..... 4 50
“ 5 x 7..... 3 50	“ 5 x 7..... 5 25

Plain backgrounds 8 cents per square foot.

Boxing for head grounds 20 cents.

Head Grounds with Carrier.

These grounds are 5 x 5 feet in size, mounted on each side of a light frame. Our handy carrier is made to hold four and six grounds. One frame on each side and one stored in the carrier when six grounds are ordered. To use them raise or lower the frame to the point desired and fasten by pressing on the catch at the edge of carrier.

The grounds are neatly stored in the carrier when not in use.

Order by number any design wanted.

Price of carrier is as follows:

MUSLIN.

Carrier with four 5 x 5 mounted grounds.....\$16 00
“ “ six “ “ “ “..... 20 00

BURLAPS IN COLORS.

Carrier with four 5 x 5 mounted grounds.....\$18 00
“ “ six “ “ “ “..... 24 00

Boxing 75 cents.

For Full Length, Three-Quarter Figure and Children.

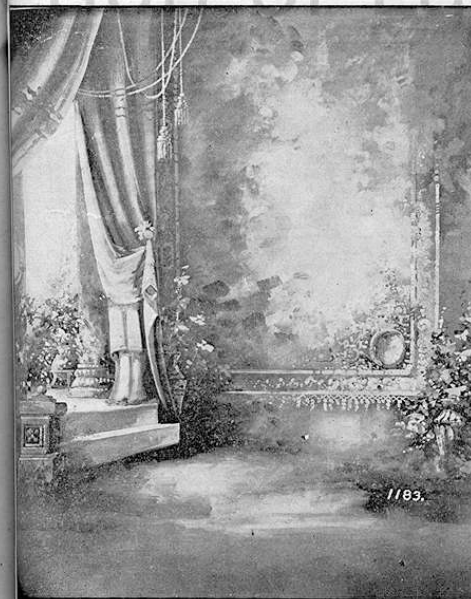
Owing to the increasing demand, we have added a line of 8 x 6 grounds to our catalogue, to which we call your attention as being very practical in posing three-quarter and full length figures, small groups and children. They are also very useful in extending out any ground you have, in making large groups. Price, 8 x 6, \$5.50. Any other size without floor cloth, 12½ cents per square foot.

If ordered with floor cloth (any size) the price will be 10 cents per square foot for the ground and floor cloth.

How to Avoid Delays.

In ordering backgrounds use the following form: Number of design..... feet high,..... feet wide,..... feet continuous. Does your light fall on right or left side of sitter? Do you desire your ground light, dark or medium tint. Do you desire the floor cloth painted in water color or flatted oil? Do you desire your ground painted on burlaps in colors or on muslin in the regular way?

BACKGROUNDS.



We will furnish any of the above designs painted in water color. Nos. 1181, 1182, 1183, 1184. 8 x 8 without extension, \$8.00; with 7 ft. extension, \$12.00.

8 x 10 without extension, \$10.00; with 7 ft. extension, \$15.00.

If extension is desired painted in flatted oil, 5c. per square foot extra will be charged. Unless otherwise specified, all extensions will be painted in water color.

BACKGROUNDS.



1187.



1188.



1189.



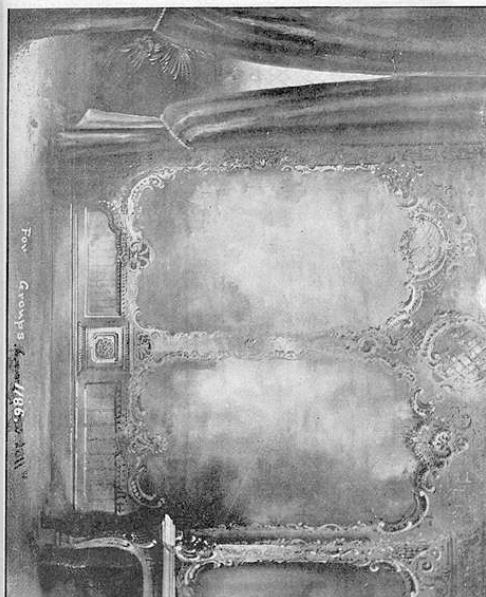
1190.

We will furnish any of above designs painted in water color.
 Nos. 1187, 1188, 1189, 1190. 8 x 8 without extension, \$8.00; with 7 ft. extension, \$12.00.

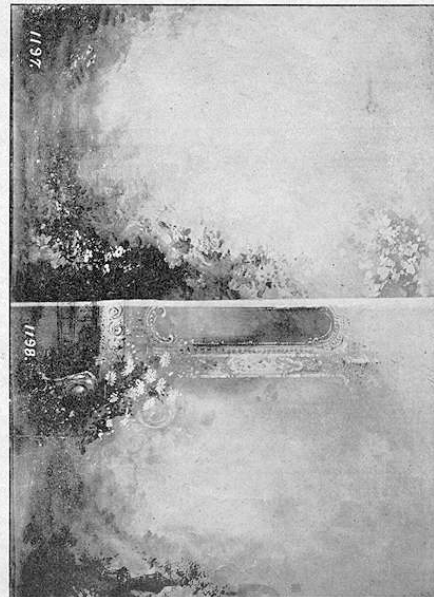
8 x 10 without extension, \$10.00; with 7 ft. extension, \$15.00.

If extension is desired painted in flatted oil, 5c. per square foot extra will be charged. Unless otherwise specified, all extensions will be painted in water color.

BACKGROUNDS.



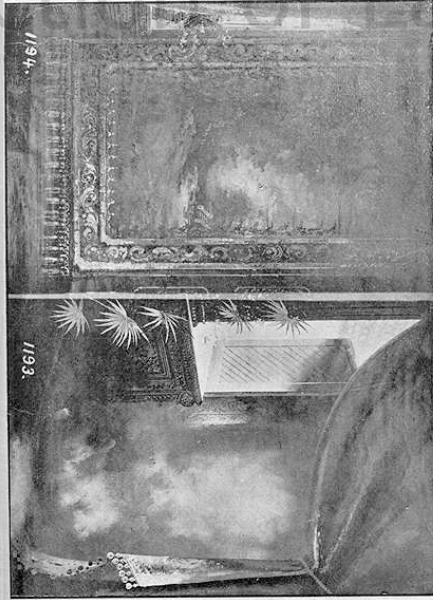
For Groups 1186-1187



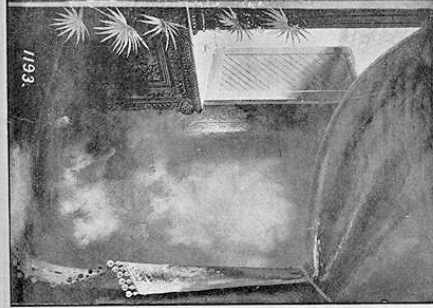
1197



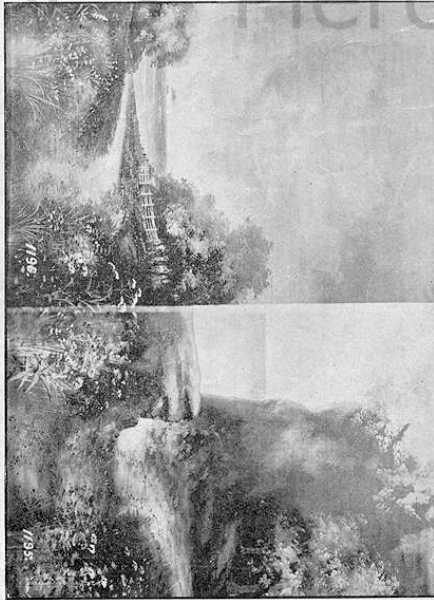
1198



1194



1193



1195

We will furnish any of the above designs painted in water color.

Nos. 1193, 1194, 1195, 1196, 1197, 1198 for full length, three-quarter figures, and children, and 1186 for groups.

6 x 8 without extension, \$5.50; with 7 ft. extension, \$9.00

8 x 10 " " 10.00; " " " 15.00

8 1/2 x 12 " " 12.00; " " " 18.00

If extension is desired painted in flatted oil,

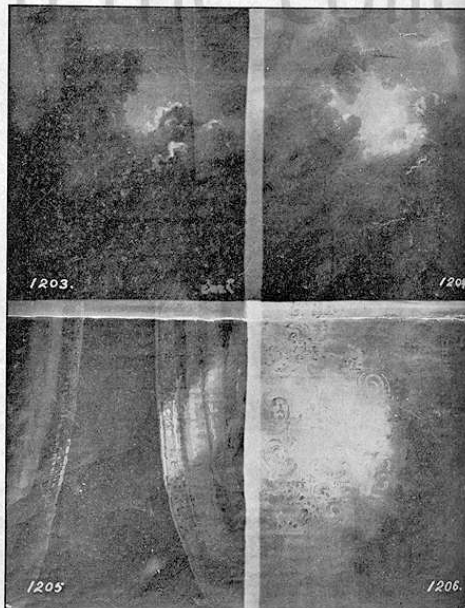
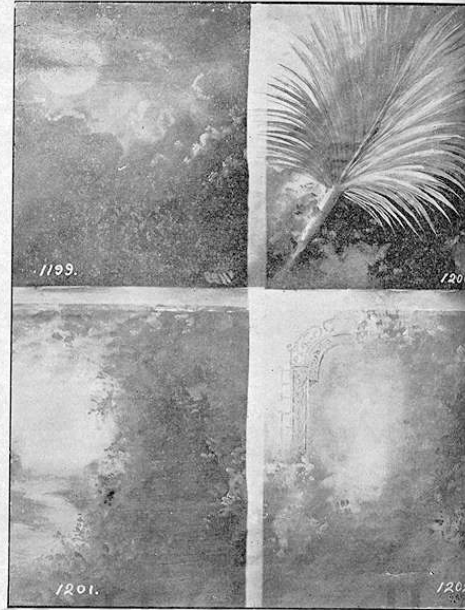
5c per square foot extra will be charged.

Unless otherwise specified, all extensions will be painted in water color.

BACKGROUNDS.



HEADGROUNDS.

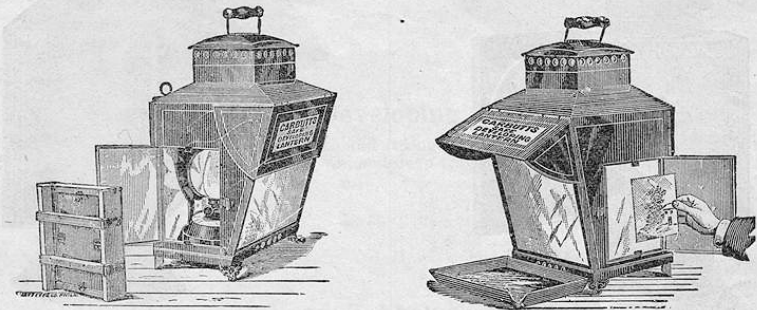


We will furnish any of the above designs painted in water color.
 Nos. 1199, 1200, 1201, 1202, 1203, 1204, 1205, 1206 head grounds, and Nos. 1185, 1191, regular grounds.
 Head grounds, 5 x 5, \$2.50; 5 x 6, \$3.00; 5 x 7, \$3.50. Regular grounds, 8 x 8 without extension, \$8.00; with 7 ft. extension, \$12.00. 8 x 10 without extension, \$10.00; with 7 ft. extension, \$15.00.
 If extension is desired painted in flatted oil, 5c. per square foot extra will be charged. Unless otherwise specified, all extensions will be painted in water color.

DARK ROOM LANTERNS.

FOR THE PROFESSIONAL AND AMATEUR.

Carbutt's "Multum in Parvo" Lanterns.



(Patented, April, 1882.)

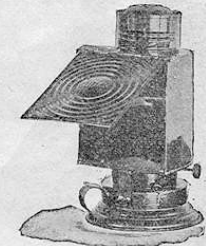
This Lamp gives a safe light for developing the most sensitive plates, while for preparing developer or doing other work, the room can be instantly flooded with white light and as quickly changed to red, giving abundance of light by which to develop the largest size plates used. The adjustable hood effectually shields the eyes from the glare of the red light.

By the adjustment of condensers and holder for slides and objective in front of the clear light, a very effective magic lantern is formed.

Price \$6 00
 Attachment for using gas, extra 75

Prince's Universal Ruby Lantern.

Eastman's Kodak Dark Room Lamp.



The Universal Ruby Lantern is indeed the best Dry-Plate Lantern for the price in the market, it being the only really good dark room lantern at so low a price.

The ventilation is perfect and the volume of light is ample for the purpose of the ordinary amateur.

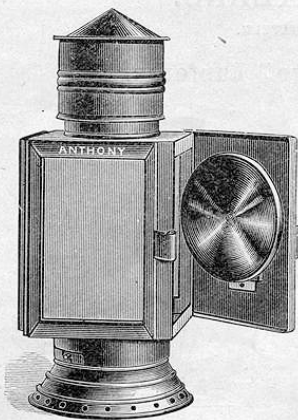
To light the Universal Lantern, the glass is raised in the slide. The light is controlled from the outside.

This Lamp is well made and safe. It is equipped with improved burner carrying extra broad wick, and has new ventilating top, insuring a bright, steady flame. It is the safest dark room lamp made, being fitted with both ruby and orange glass. The flame can be controlled from the outside, and it is fitted with adjustable shield to protect the eyes from light and throw it directly on the work.

No. 1 \$0 80
 No. 2 1 00

No. 1 Improved Kodak Dark Room Lamps,
 one-inch wick, each \$1 50
 No. 2 1 00

Climax Dark Room Lantern.

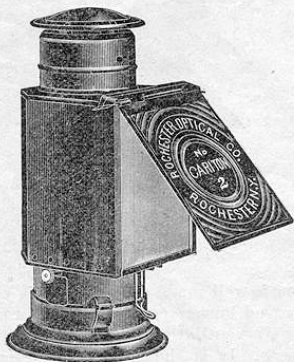


Patented.

This is truly the best lantern for its price in the market. It has three large illuminating surfaces and reflector. The glass is of the correct non-actinic hue. It will be found exceedingly agreeable to the eye, while perfectly safe for ordinary dry plate development, and it is by all odds the most comfortable kerosene lantern to work by we have yet seen.

Price \$2 00

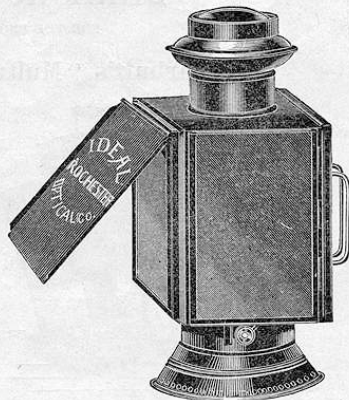
The Carlton Lantern.



The front is fitted with both orange and ruby glass. The body is hinged at the back, giving easy access to the interior. The flame is regulated entirely from the outside. The back of the lamp serves as a reflector, and aids in producing a volume of light sufficient for work in any dark-room. Made in two sizes.

Price, No. 1 \$1 50
 " " 2 2 00

Prince's Ideal Lantern.



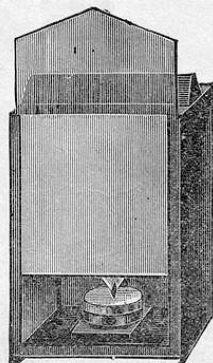
There are three sides for light, each of which has double glass, one sheet each, orange and ruby, which combination makes a perfectly safe light.

The front side is provided with a shield to protect the eyes, and also to reflect the light down toward the developing tray. It also has a silvered reflector, thus increasing the volume of light.

If desired, one side may be used for making transparencies or for printing with bromide paper, by using a sheet of ground-glass in place of the orange and a tin slide or shield in place of the ruby.

Price \$3 00

Prince's Little Giant Ruby Lantern.

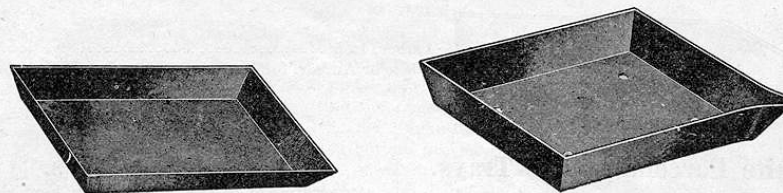


Is without exception the best lantern of its price in the market. It is light, portable, and especially adapted to the wants of the amateur. Its construction is simplicity itself, and the light is brilliant and steady.

Extra lights, ready for immediate use in the lantern, may be obtained at any time.

Price 40 cents.

DEVELOPING TRAYS.



Fibre Developing Trays.

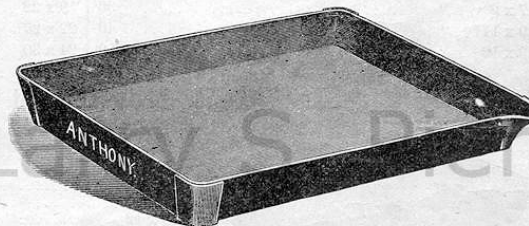
The latest, cheapest and best. Black, smooth and strong. Both acid and alkali proof. All trays have slight knobs at bottom, and deep trays have a lip.

	Shallow.	Deep.		Shallow.	Deep.
3½ x 4½	\$0 18		8½ x 10½	\$1 08	\$1 15
4½ x 5½	28	\$0 50	10½ x 12½		1 75
5 x 7	42	60	12 x 16		2 40
5½ x 8½	56	70	19 x 24		5 75
7 x 9	72	85			

Hard Rubber Trays.

These Trays are deeper than any heretofore offered to the trade in the smaller sizes, and as deep as any in the larger sizes. Following are the sizes and prices:

EMPIRE.			
	Each.		Each.
4½ x 5½	\$0 40	8½ x 10½	\$1 00
5½ x 7½	50	10½ x 12½	1 50
5½ x 8½	60	12 x 16	2 50
7 x 9	75		
HARD RUBBER.			
	Each.		Each.
4½ x 5½	\$0 55	12 x 16	\$2 80
5½ x 7½	70	15 x 19	4 75
5½ x 8½	80	18 x 22	6 00
7 x 9	96	19 x 24	6 75
8½ x 10½	1 25	21 x 26	8 50
10½ x 12½	1 85		



Economy or Glossy Rubber Trays.

As will be seen by the cut the glass negative lays flat on the bottom of the tray, necessitating the least possible quantity of developer, and the depressed channel in bottom of tray is sufficiently deep to allow the finger or plate-lifter to engage firmly underneath the plate and remove it without risk of scratching. They are made of polished hard rubber.



4½ x 5½	each \$0 35
5½ x 8½	each 65
7 x 9	each 85
8½ x 10½	each 1 25

Papier Mache Trays.



A recent importation of our own, of superior quality, and at reduced prices. These goods are very durable, light in weight and deep. They are black in color, and in general appearance not unlike the hard rubber tray.

No.		Each.
1.	3½ x 4½	\$0 25
2.	4½ x 5½	30
3.	5½ x 8½	40
4.	7 x 9	60
5.	8½ x 10½	90
6.	10½ x 12½	1 25
7.	12 x 14½	1 75
8.	14½ x 18½	2 75
9.	16 x 20	3 25
10.	19 x 24	5 00
11.	23 x 27	6 00
12.	26 x 30	9 75
13.	28 x 34	10 50

White and Amber Glass Trays.



Amber, 4 x 5 \$0 25
 White or Amber, for 5 x 8 plates or under..... 35
 " " " " 8 x 10 " " 75

White Porcelain Glass Trays.

These trays are strong and light, and will be found very convenient.

For Plates 4 x 5 \$0 35
 " 5 x 8 45
 " 7 x 9 75
 " 8 x 10 90

Black Glass Trays.

A new style of tray, which is easily kept clean, is strong, and from its non-actinic color is perfectly suited to use in the dark room.

For Plates 4 x 5 \$0 35
 " 5 x 8 45
 " 7 x 9 75
 " 8 x 10 90

Patent Black Japanned Developing Trays.

Made of selected metal for dry-plate photography.



Size.	Price each.	Size.	Price each.
4 1/2 x 5 1/2 inches	\$0 20	12 x 15 inches	60
5 1/2 x 8 1/2 " "	25	15 x 18 " "	\$1 00
7 x 9 " "	30	19 x 22 " "	2 00
9 x 11 " "	40	22 x 26 " "	2 50
10 x 12 " "	50	24 x 30 " "	4 50

Agate Iron-Lipped Trays.

(The dimensions given are for inside bottom of the tray.)

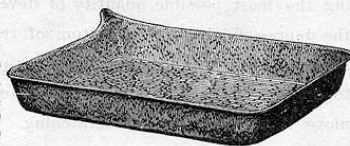


	Shallow.	Deep.
5 x 7	\$1 00	\$1 25
7 x 9	1 25	1 75
8 x 10	1 75	2 25
10 x 12	2 75	3 25
11 x 14	4 00	4 75
14 x 17	6 00	7 00

Porcelain Trays.

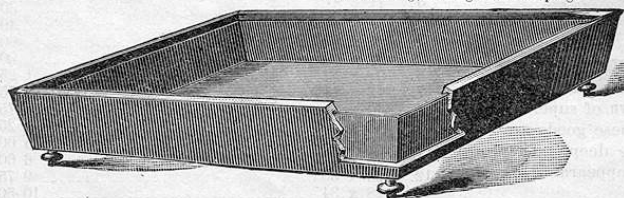
(Dimensions given are for inside bottom of tray.)

	Shallow.	Deep.
5 x 7	\$0 44	\$0 62
5 1/2 x 8 1/2	60	75
7 x 9	66	82
8 x 10	82	1 00
10 x 12	1 32	1 66
11 x 14	2 16	2 64
14 x 17	5 10	6 60
16 x 20	6 28	8 00
19 x 23	11 60	14 50
20 x 24	12 88	16 00



The Common Sense Tray.

For Silvering, Toning or Developing.

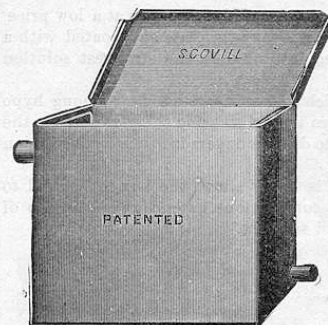


For washing, silvering, etc. Made of kiln dried lumber, with acid-proof paper lining, bound corners, canvassed joints, etc. We do not guarantee these trays for the handling of glass plates.

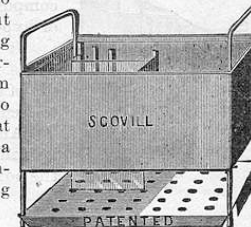
15 x 19 (1/2 sheet size), each \$3 50
 19 x 24 (whole " " " 5 00
 21 x 26 6 00

The Scovill Negative Washing Boxes.

PATENTED.



The Scovill Negative washing Boxes are all now made adaptable and so that plates may be taken out without putting the fingers in the washing water. See illustration. The perforated bottom prevents water from passing through the box with too great force, and distributes it so that every plate and every portion of a plate is equally washed, and this cannot be done with any other washing box.



Prices. Adaptable.

For 3 1/4 x 4 1/4 Plates	each, \$1 60	For 6 1/2 x 8 1/2 Plates and smaller sizes	each, \$2 50
" 4 x 5 " and smaller sizes	1 75	" 8 x 10 " " " " " " " " " "	2 50
" 4 1/4 x 5 1/2 " " " " " " " " " " " "	1 90	" 10 x 12 " " " " " " " " " "	4 00
" 4 1/4 x 6 1/2 " " " " " " " " " " " "	2 00	" 11 x 14 " " " " " " " " " "	5 00
" 5 x 7 " " " " " " " " " " " "	2 10	" 14 x 17 " " " " " " " " " "	6 00
" 5 x 8 " " " " " " " " " " " "	2 15	8 x 10 Adjustable Washing Box	4 00

Adjustable for 6 1/2 x 8 1/2, 5 x 8, 5 x 7, 4 x 5, 3 1/4 x 4 1/4 Plates. All sizes to be washed at once.

Prince's Ideal Zinc Washing Box.



This is a thoroughly practical, well made washer at a low price. The water enters by attaching a rubber hose to the small tube at the top which extends to the bottom of the box. Here the water is distributed and goes up through the perforated bottom and flows out through the large tube at the other side. To take negatives out, lift the rod in the center, this will raise the perforated bottom and will bring the negatives along with it, so that they will project a little above the top, and can be held by the edge when taken out.

PRICE.

For plates 4 x 5 and 5 x 7 \$1 25
 No. 4. For plates 5 x 7 and 6 1/2 x 8 1/2 1 75
 Adjusters for small sizes 20

Prince's Ideal Combined Washing and Drying Rack.



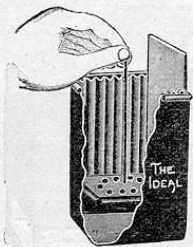
As a portable rack this has no equal. No tourist can afford to be without one. Plates can be washed in this rack and laid away to dry without having to remove the plates. The tray being water tight catches the drip while the plates are drying. There are no loose parts to get lost. The sides collapse and lay into the tray, allowing it to fold into compact space when not in use.

Each rack is made to hold 12 plates. They are practical, well made and enameled black. Made in three sizes:

- No. 1—3 1/2 inches wide, for plates 3 1/2 x 3 1/2, 3 1/4 x 3 1/2.
- No. 2—4 1/4 inches wide, for plates 3 1/4 x 4 1/4, 4 1/4 x 4 1/2, 4 1/4 x 6 1/2.
- No. 3—5 inches wide, for plates 4 x 5, 5 x 7, 5 x 8.

Price, any size..... \$0 50

Prince's Ideal Fixing Bath.



This bath removes the long-felt want for a practical fixing-box at a low price. It is perfect in its construction, being made of heavy tin plate and coated with a composition that has been tested and proved insoluble in the strongest solution of hypo.

It is fitted with the rising bottom, which makes it pre-eminent among hypo boxes. As will be seen in the cut, the bottom is used to bring the plates above the top of the box, which makes it unnecessary to dip the fingers into the hypo solution to secure the plates.

Another advantage of the rising bottom is that it allows the box to be used to its full capacity, which is 12 plates. The corrugations extend from the top of the box downward. They are extra deep and smooth.

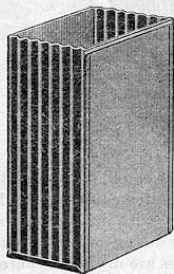
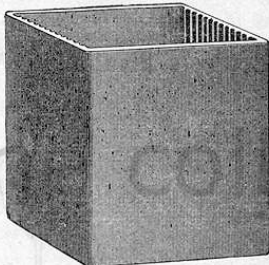
PRICES.

No. 0.	For Plates	3½ x 3½ and 3½ x 3¼	.....	\$0 90
" 1.	"	3½ x 4, 3¼ x 4½ and 3¼ x 3½	.....	90
" 2.	"	4 x 5 and 3½ x 4	.....	1 00
" 3.	"	5 x 7 and 5 x 8	.....	1 50
" 4.	"	6½ x 8½	.....	1 75

Improved Hard Rubber Fixing Baths.

These Baths are provided with a plug at the bottom. By removing this a perfect washing box is formed.

3½ x 4½ or Lantern slide size	.....	each,	\$2 00
4 x 5	.....	"	2 15
4½ x 6½	.....	"	2 30
5 x 7	.....	"	2 60
5 x 8	.....	"	2 85
6½ x 8½	.....	"	3 50
8 x 10	.....	"	4 00



James' Fixing Boxes.

These are made of metal, thoroughly coated with a preparation which renders them impervious to the action of the hypo. They are a very great convenience at a very low price. They hold six plates each.

No. 1.	For Plates	3½ x 3½	.....	\$0 40
" 2.	"	3½ x 4½ or 4½ x 4½	.....	50
" 3.	"	4 x 5	.....	50
" 4.	"	5 x 7 or 5 x 8	.....	75

The Universal Hard Rubber Fixing Bath, with Cover.

Provided with grooves on four sides, thus holding any size of plate. The plate stands half an inch above the ridges, allowing the operator to remove it without touching the film.

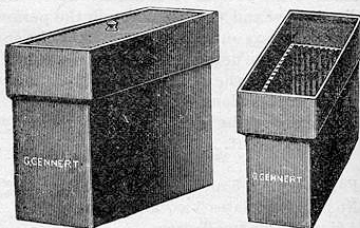
Made in two sizes.

No. 1 will fix 20 3½ x 4½, 4½ x 5½, or 4½ x 6½, or 11 6½ x 8½ plates at one time.

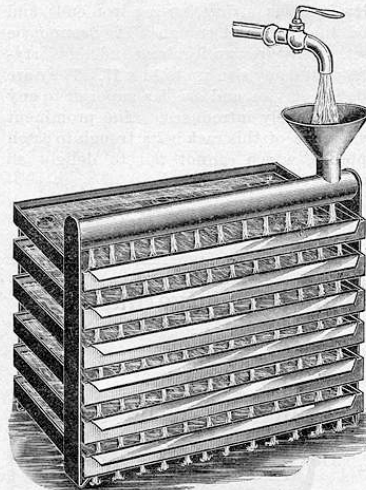
Price \$4 50

No. 2 will fix 22 4 x 5, 5 x 7 or 5 x 8, or 11 8 x 10 plates at one time.

Price \$5 00



The Improved "Globe" Negative Washer.



The quickest and most effective negative washer ever produced. Constructed of zinc, and on common sense principles. It will thoroughly eliminate all traces of hypo from negatives in fifteen minutes; no edges or corners left unwashed, as rapidly running water is constantly flowing over the entire surface of each negative.

The improved "Globe" washers stand perfectly rigid and strong, being built much stronger than the original design, which were being criticised as being unsteady; and by another improvement in construction, all the trays are inserted or removed from one side of the frame, instead of opposite sides.

In use each negative is submerged under a thin covering of water in rapid motion. The cut illustrates its construction and use very faithfully. No rubber tubing required to connect with faucet.

PRICES.

No. 1.	For negatives	4 x 5 or smaller	.....	each,	\$1 25
" 2.	"	6, 5 x 7 or 5 x 8, 12, 4 x 5 or smaller	.....	"	1 60
" 3.	"	6, 8 x 10, or 6½ x 8½, or 12, 5 x 8 or smaller	.....	"	2 00

LARGER SIZES TO ORDER.

The California Automatic Print Washer.

It is a recognized fact that washing in constantly changing water is superior to a continual soaking. The last washing is beyond a doubt the most important operation of the entire process, and it is the most neglected in many cases. Prints placed in this washer need no attention, and thus its cost is saved in labor alone.

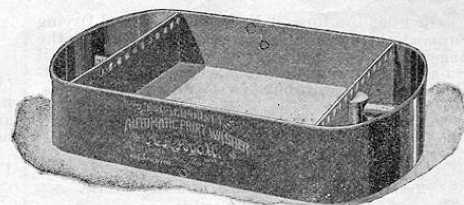
A rubber hose is attached to the tap and the inlet pipe of the washer, and the water turned on. The water fills the space between the bottom of the washer and the perforated bottom of the tank, and fills the tank by rising through the perforations in the bottom. The water then rises in the pipes in the pockets at the right and left of the tank. The weight of the tank resting on one of the valves closes the outlet of the side pipe in the pocket on the lower side, consequently opening the outlet of the pocket and carrying off the overflow of the tank. On the opposite side of the tank the valve closes the outlet of the pocket by its own weight, and the water from the side pipe fills the pocket until the water in the pocket becomes of sufficient weight to throw that end of the tank down, opening the valve on the side, closing the other, and repeating the operation. The water in the tank takes an upward and circular motion from being forced through the small holes, and the rocking of the tank gives the entire body of water exactly the same motion that separates the prints in the ordinary tray by rocking. With this apparatus prints never settle at the bottom of the tank, but float in the water, and move gently from side to side.

The face of each print is in this way presented to the moving water, and imperfect washing is an impossibility.

They are furnished in three sizes, and made and finished for service and wear.

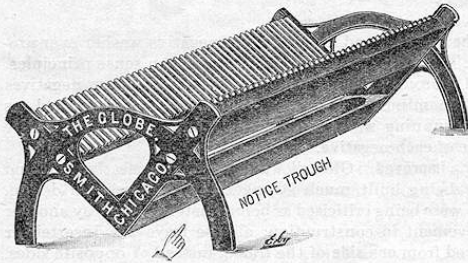
PRICE.

12 x 12 inches	.....	\$ 7 00
20 x 20 "	.....	8 50
25 x 25 "	.....	10 00



Globe Negative Rack.

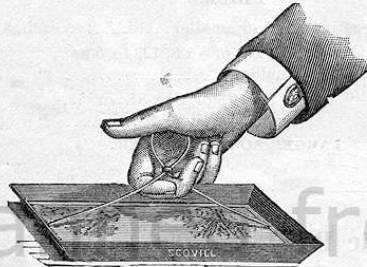
With Trough to Catch the Drippings.



New in design, strong, having iron ends, and wood side bars and trough. They cannot be upset. They are two feet long and hold forty-three plates, any size up to 14 x 17. They are made for service, and are far superior to any rack previously introduced. The prominent new feature of this rack is its trough to catch drippings, which cannot fail to delight all purchasers.

Price, with wood fluting... \$1 25

Russell Negative Clasp and Drying Support.

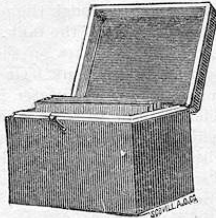


By using the Russell Negative Clasp and Drying Support, there is no need of wetting or staining the fingers in the developer, or of touching a plate until it has been developed, varnished and dried. Adaptable for all sizes, from 3 1/4 x 4 1/4 to 8 x 10 inclusive.

Price, each... \$0 15

Negative Boxes.

Manufactured from Whitewood, with Hinged Cover. A Very Superior Article.



For Holding Twenty-Four Plates. Regular with Hook.

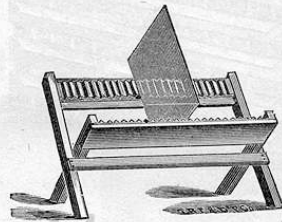
3 1/4 x 4 1/4	each, \$0 65	5 x 8	each, \$0 90
4 x 5	65	6 1/2 x 8 1/2	1 00
4 1/4 x 5 1/2	70	8 x 10	1 10
4 1/4 x 6 1/2	75	10 x 12	1 50
5 x 7	85		

For Holding Twelve Plates. Regular with Hook.

11 x 14	each, \$2 50	14 x 17	each, \$3 00
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Special sizes made to order to hold any number of plates required.

Folding Negative Rack.



A convenient and inexpensive dark room accessory, to hold twenty-four plates, from 1-4 to 8 x 10 inches.

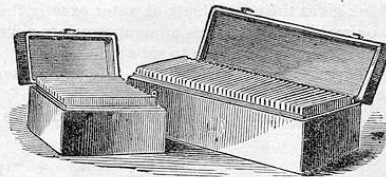
Price, each... \$0 25

Negative Preservers.

These are made of heavy manilla paper, printed for the name and number of the negative. At the price they are sold they are within the reach of all, and will save a great deal of confusion and loss of negatives. Put up 500 in a package.

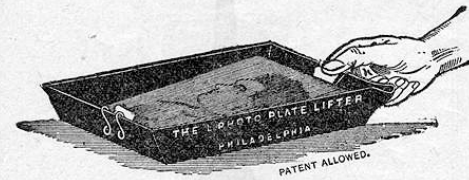
	Per 100	Per 1000
For 3 1/4 x 4 1/4 plate	\$0 25	\$2 25
" 4 x 5 "	30	2 50
" 4 1/4 x 6 1/2 "	30	2 75
" 5 x 7 "	35	3 00
" 5 x 8 "	35	3 25
" 6 1/2 x 8 1/2 "	45	4 20
" 8 x 10 "	55	5 00
" 10 x 12 "	1 00	10 00
" 11 x 14 "	1 25	12 50
" 14 x 17 "	2 75	

Lantern Slide Boxes.



No. 1, to hold 25 Lantern Slides	\$0 65
" 2, " 50 " "	1 30
" 3, " 100 " "	2 50

The "L" Plate Lifter.

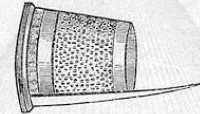


Price, each... \$0.25

In developing negatives the process has been greatly marred heretofore, by the inability of the operator to keep clean hands. By using this plate-lifter not only can the plate be raised instantly from the bottom of the tray without staining the hands, or scratching the film, but, by gentle pressure, the surge of the chemical over the plate, in ebb and flow, prevents spots, and the true chemical value of the solution is obtained, thus insuring more perfect pictures.

Saves developer. Saves hands. Saves money.

Scovill's Efficient Plate Lifter.



This plate lifter is very nearly like an ordinary open-end thimble with a pointed piece of metal soldered securely to it as shown in the illustration. Where a number of plates are developed in one dish, this plate lifter is not only a convenience, but quite a necessity.

Price... each, \$0 15

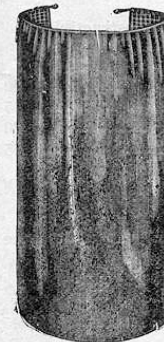
Artists' Water Proof Cuffs.



For photographers' use, to prevent soiling the sleeves and cuffs while developing negatives, etc.

Price... per pair, \$0 60

The Handy Protector.



It answers the double purpose of apron or focus cloth. Just the thing you want. Operators are crying for it and viewers are shouting its praise. It is simply a patented steel wire spring with ball ends slipped through the hem of a rubber focus cloth of large size and fine quality, thus forming what can be used either as an apron or focus cloth. It can be clasped around the body of the operator, or the bellows of the camera, instantly, and it stays there. When used as a

focus cloth it does not pull off or blow off. It is, in fact, a handy and useful thing to have in the (photographic) family.

Price... each, \$1 25

Rubber Apron and Sleeves.

An absolute protection to the clothes, thus saving their cost many times.

Large apron, 48 in. long	each, \$1 00
Small apron, 39 in. long	each, 75
Sleeves	per pair, 50



Rubber Gloves.



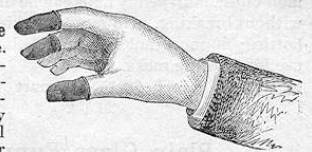
Just the thing to keep silver off the hands.

Ladies' long, Nos. 7, 8 and 9	per pair, \$1 50
" short, " 7, 8 " 9	1 25
Gents' long, " 12, 13 " 14	1 65
" short, " 12, 13 " 14	1 50

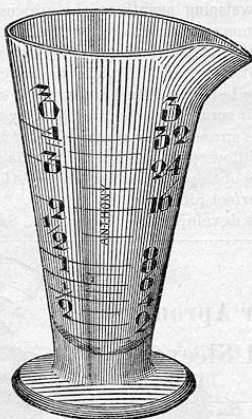
Pure Rubber Finger Tips.

Specially made for photo use. A perfect protection and relief for the fingers. The only economical means ever

offered against the discoloration of nails and fingers from acids and chemicals. A great improvement over the expensive and clumsy glove, as they do not impair the sense of touch, but rather increase it. Very easily applied or removed. Per set of 3. \$0 15

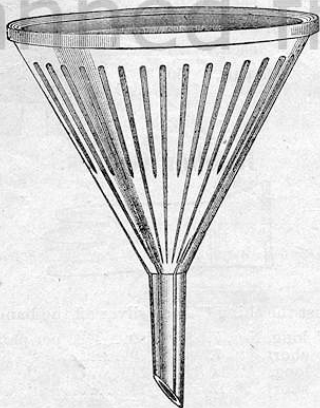


Glass Graduates.



Minim	\$0 20	8 ounce	\$0 45
1 ounce	20	12 "	60
2 "	20	16 "	60
4 "	30	32 "	1 25
6 "	35		

The Patent Ribbed Funnel.



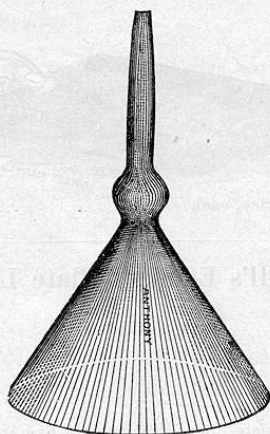
These funnels are three times heavier than common ones; four-penny nails can be driven with them without breaking. No more chocking up in neck of bottles; no more holding funnels in hand; no more use for filtering racks.

½ pint	each, \$0 15	1 quart	each, \$0 30
1 "	" 20	2 "	" 45

Plain Glass Funnel.

¼ pint	\$0 10	1 quart	\$0 20
½ "	12	½ gallon	25
1 "	15	1 "	50

Combined Funnel and Filter.



In this combination of funnel and filter, the bulb contains the filtering cotton in such a manner as to obviate the difficulty experienced in the ordinary funnel from the cotton being compressed too tightly. A glance at the cut will readily explain its advantages. The sizes and prices are as follows:

1 pint	\$0 35
1 quart	40
½ gallon	85

Hard Rubber Funnel.

¼ pint	\$0 40
½ "	45
1 "	50
1 quart	65

Granite Iron Funnel.

These funnels are practically indestructible.

Prices.

½ pint	\$0 40
1 "	45
2 "	60
4 "	75

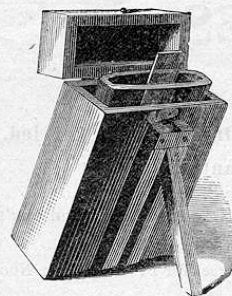
Granite Iron Measures.

Every gallery should be equipped with these measures, they will not rust nor leak.

Prices.

¼ pint	\$0 45
½ "	50
1 "	65
1 quart	85
½ gallon	1 00
1 "	1 50

German Glass Bath.



In Box. Made for the Studio.

5 x 7, for ¼ size plate	\$ 2 50
7 x 10, " 4-4 "	3 25
9 x 12, " 8 x 10 "	4 50
11 x 14, " 10 x 12 "	7 00
12 x 16, " 11 x 14 "	8 75
16 x 20, " 14 x 17 "	16 00
18 x 22, " 17 x 20 "	35 00

Hydrometers.

FOR TESTING STRENGTH OF SILVER BATHS AND ALL OTHER SOLUTIONS.



Best single degree scale.
Price, each

Spirit Lamps.

Glass, each

Bath Dippers.



Hard Rubber—New Style.

No. 3, for 4 x 5 bath	\$0 35
" 4, " 5 x 7 "	40
" 5, " 7 x 10 "	45
" 6, " 9 x 11 "	50
" 6½, " 11 x 14 "	55
" 7, " 12 x 16 "	60
" 8, " 14 x 18 "	90
" 9, " 17 x 20 "	1 10
" 10, " 19 x 24 "	1 60

Glass Mortars and Pestles.

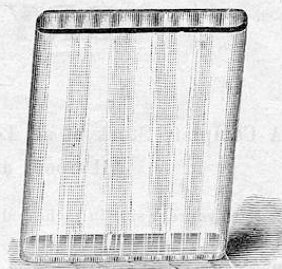


Glass, 2½ inch	\$0 15
" 3 "	20
" 3½ "	25
" 4 "	35
" 5 "	55
" 6 "	88

Wedgewood Mortars and Pestles.

2 inch	\$0 40	5 inch	\$1 00
2½ "	45	5½ "	1 25
3 "	50	7 "	1 75
4 "	70	8 "	2 25

German Glass Bath.



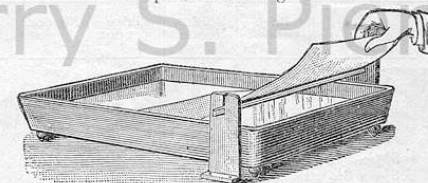
Without Box. New Mold, Best Quality.

5 x 7, for ¼ plate	\$ 0 95
7 x 10, " 4-4 "	1 30
9 x 12, " 8 x 10 "	2 00
11 x 14, " 10 x 12 "	3 50
12 x 16, " 11 x 14 "	5 25
16 x 20, " 14 x 17 "	12 00
18 x 22, " 17 x 20 "	28 00

Hollow Glass Tubes.



For silvering paper. One end flattened to prevent turning.



The above cut shows the manner of adjusting it for use. Every printer should have one. No waste from dripping of silver solution.

15 inches long, ½ inch diameter	each, \$0 25
19 " " " " "	" 40
23 " " " " "	" 50

Porcelain Evaporating Dishes.

These are the genuine imported; cheaper goods are in the market, but are not so reliable.

No.	Diameter.	Containing	Price.
00	16 inches	3 gallons	\$5 00
0	14 " "	2 " "	3 50
1	12 " "	1 " "	2 10
2	11 " "	3 quarts	1 75
3	10 " "	2 " "	1 30
4	9 " "	3 pints	1 00
5	8 " "	2 " "	85
6	7 " "	24 ounces	75

Glass Stirring Rods.

For mixing chemicals, etc. Both ends are glaze finish.

Each.	Each.
6 inch	\$0 15
8 "	20
10 "	25
12 inch	\$0 15
14 "	20
18 "	25

DRY PLATES.

A Complete Stock of all Leading Brands of Dry Plates is Carried.
All Goods are Fresh and Guaranteed.

NOTE—Always order size in inches; do not say "card size" or "cabinet size," and don't forget to state brand and kind. We carry the following brands in stock:

- CRAMER'S Banner, Crown, Transparency, Lantern Slides, Contrast for Process Work, Non-halation, Isochromatic.
- SEED'S Gilt Edge No. 27, No. 23, 26, and 26x, No. 26x Non-halation, Process, Transparency.
- HAMMER'S Fast and Extra Fast, Aurora, Non-halation, and Special.
- STANLEY'S.

SIZE*	*Seed—No. 23-26, 26x and 27.		Cramer Plates—Anchor, Banner, Crown, Contrast, Isochromatic and Non-Halation.		Hammer Plates—Slow, Fast, Extra Fast and Special.		Stanley—No. 50.		Hammer—Aurora, Extra Fast, D. C. Non-Halation.	
	Price per doz.	No. doz. in case.	Price per doz.	No. doz. in case.	Price per doz.	No. doz. in case.	Price per doz.	No. doz. in case.	Price per doz.	No. doz. in case.
2 x 2	\$0 25	30	\$0 25	30	\$0 20	30	\$0 18	30		
2 1/2 x 2 1/2	30	30	30	30	30	30	25	30		
2 1/2 x 4	35	30	35	30	35	30	35	30		
3 x 3 1/2	40	30	40	30	35	30	35	30		
3 1/4 x 3 1/4	40	30	40	30	40	30	35	30		
3 1/4 x 3 1/2	40	30	40	30	40	30	35	30		
3 1/2 x 3 1/2	40	30	40	30	40	30	35	30		
4 1/4 x 4 1/4	60	30	60	30	60	30	60	30		
3 1/2 x 4 1/4	45	30	45	30	45	30	45	30	\$0 55	18
4 x 5	65	30	65	30	65	30	65	30	80	12
4 1/4 x 5 1/2	75	30	75	30	75	30	75	30	95	12
4 1/4 x 6 1/2	90	30	90	30	90	30	90	30	1 10	12
4 1/2 x 6 1/2	1 00	20	1 00	20	1 00	26	1 00	26	1 20	12
5 x 7	1 10	20	1 10	20	1 10	20	1 10	24	1 40	12
5 x 8	1 25	20	1 25	20	1 25	20	1 25	24	1 55	12
6 1/2 x 8 1/2	1 65	12	1 65	12	1 65	12	1 65	12	2 10	8
7 x 10	2 10	10	2 10	10	2 10	12	2 10	12	2 65	6
8 x 10	2 40	10	2 40	10	2 40	12	2 40	12	3 00	6
10 x 12	3 80	4	3 80	4	3 80	4	3 80	4	4 75	2
11 x 14	5 00	4	5 00	4	5 00	4	5 00	4	6 25	2
14 x 17	9 00	3	9 00	3	9 00	3	9 00	3	11 25	2
16 x 20	12 50	2	12 50	2	12 50	2	12 50	2	15 65	1 1/2
17 x 20	13 00	2	13 00	2	13 00	2	13 00	2	16 25	1 1/2
18 x 22	15 50	1 1/2	15 50	1 1/2	15 50	1 1/2	15 50	1 1/2	19 40	1 1/2
20 x 24	18 50	1	18 50	1	18 50	1 1/2	18 50	1 1/2	23 75	1

*Seed N-H and Specialties will be found on next page.

NOTE—No trade discount is mentioned on above plates, as the discount depends on the quantity and kind of plates wanted. We will quote discount on application. All orders received will be filled at lowest prices.

OFFICE OF

L. M. Prince & Bro.

Importers and Manufacturers of

Photographic Apparatus and Material.

Cincinnati, Ohio

108 WEST FOURTH STREET

SOLE AGENTS FOR PRINCE'S "H. H. H." IDEAL WIDE ANGLE LENSES

OUR OFFICE IS OPEN DAILY FROM 9 A. M. TO 6 P. M.

TELEPHONE 11

HARD MOUNTED PAPER STYL

ELECTRIC DRY PLATE CHEMICALS

QUININE & SPECIALTY

Ginhardt, February 1, 1907

Price of photographic stock in general, and particularly plates and cards have for some time past been very uncertain. We were obliged recently to advance the price of the stock ten per cent on account of a corresponding increase by the manufacturers and the prices have now been advanced by a new General List issued by the A. M. Collins Company. All cards of that manufacturer.

The new list we are pleased to state does not indicate a great increase as expected and from this date we will fill all orders for card stock at the new list.

The list price of Dr. Prince's also recently advanced by the manufacturer.

We are also obliged owing to a general further advance by the manufacturers of Seed, Cramer and other plates to withdraw all former quotations and call your attention to the following list as being the correct list from this date:

2 x 2	\$0 25	30
2 1/2 x 2 1/2	30	30
2 1/2 x 4	35	30
3 x 3 1/2	40	30
3 1/4 x 3 1/4	40	30
3 1/4 x 3 1/2	40	30
3 1/2 x 3 1/2	40	30
4 1/4 x 4 1/4	60	30
3 1/2 x 4 1/4	45	30
4 x 5	65	30
4 1/4 x 5 1/2	75	30
4 1/4 x 6 1/2	90	30
4 1/2 x 6 1/2	1 00	20
5 x 7	1 10	20
5 x 8	1 25	20
6 1/2 x 8 1/2	1 65	12
7 x 10	2 10	10
8 x 10	2 40	10
10 x 12	3 80	4
11 x 14	5 00	4
14 x 17	9 00	3
16 x 20	12 50	2
17 x 20	13 00	2
18 x 22	15 50	1 1/2
20 x 24	18 50	1

Very truly yours,

L. M. PRINCE & BRO.

—OFFICE OF—

L. M. Prince & Bro.

Importers and Manufacturers of

TELEPHONE 17.

Photographic Apparatus and Material,

OUTFITS A SPECIALTY.

108 WEST FOURTH STREET.

SOLE AGENTS FOR PRINCE'S R. H. LENSES
IDEAL WIDE ANGLE LENSES.

LENSES, DRY PLATES, CHEMICALS,
CARD MOUNTS, PAPER, ETC.

Cincinnati, February 1, 1900.

Prices of Photographic stock in general, and particularly plates and cards have for some time past been very uncertain. We were obliged recently to advance the price of all card stock ten per cent on account of a corresponding increase by the Manufacturers and the prices have now been superseded by a new General List, issued by the A. M. Collins Company embracing all cards of their manufacture.

The new list, we are pleased to state, does not indicate as great an increase as was expected and from this date we will fill all orders for card stock at the new list.

List price of Dry Plates was also recently advanced, by the manufacturers, in sizes above 8 x 10.

The list on these sizes now being as follows:

10 x 12	\$ 4.20
11 x 14	6.00
14 x 17	9.00
16 x 20	13.25
17 x 20	14.00
18 x 22	16.50
20 x 24	20.00

We are also obliged, owing to a still further advance by the manufacturers of the Seed, Cramer and Hammer plates, to withdraw all former quotations, and call your attention to the following discounts to take effect from this date:

	Case Lots or \$25.00 List	Less than Case Lots.
Seed Nos. 23, 26 and 26x,	20 and 10 per cent. 25 per cent.	20 per cent.
Seed No. 27 Gilt Edge,	15 and 10 per cent. 20 "	15 "
Seed Non-halation,	10 and 10 per cent. 15 "	10 "
Cramer Banner,	20 and 10 per cent. 25 "	20 "
Cramer Crown,	15 and 10 per cent. 20 "	15 "
Cramer Non-halation,	10 and 10 per cent. 15 "	10 "
Hammer Fast, Extra Fast and Slow,	25 and 10 per cent. 30 "	25 "
Hammer Special Extra Fast,	15 and 10 per cent. 20 "	15 "
Hammer Aurora Non-halation,	15 and 10 per cent. 20 "	15 "

Above prices will prevail until further notice.

The prices of many other Photographic goods at present are very uncertain, but we will at all times, as in the past, give our customers the benefit of lowest possible price and trusting we shall be favored with a continuance of your kind favors, we are,

Very truly yours,

L. M. PRINCE & BRO.

Above new discounts established by
Manufacturers, March 1, 1900.

M. A. Seed Plates.

M. A. Seed Orthochromatic, Stripping, Transparency, X-Ray, Process and Opal Plates are made on special orders and subject to 10 days' delay.

SIZES.	Non-halation Ground Glass Transparency Plates. (Black Tones.)		Orthochromatic Plain Glass Transparency Plates. (Black Tones.) X-Ray Process.		Ground Surface G. B. P. R. Transparency Plates. (Six Tones.)		G. B. P. R. Transparency Plates. (Six Tones.)		Ground Surface Opal Plates.		Negative Films.		Positive Films. (Black and Sepia Tones.)	
	Doz. in Case.	Price Per Doz.	Doz. in Case.	Price Per Doz.	Doz. in Case.	Price Per Doz.	Doz. in Case.	Price Per Doz.	Doz. in Case.	Price Per Doz.	Price Per Doz.	Price Per Doz.	Heavy	Thin.
													Price Per Doz.	Price Per Doz.
3 1/2 x 4 1/4	18	\$0 55	18	\$0 45	18	\$0 55	12	\$0 50	18	\$0 60	\$0 55	\$0 60	\$0 55	
4 x 5	12	80	12	65	12	80	12	70	12	85	80	95	80	
4 1/2 x 5 1/2	12	95	12	75	12	95	12	85	12	1 05				
4 1/2 x 6 1/2	12	1 10	12	90	12	1 10	12	1 00	12	1 45	1 10	1 25	1 10	
4 3/4 x 6 3/4	12	1 20	12	1 00	12	1 20	12	1 10	12	1 55	1 20	1 40	1 20	
5 x 7	12	1 40	12	1 10	12	1 40	12	1 25	12	1 80	1 40	1 60	1 40	
5 x 8	12	1 55	12	1 25	12	1 55	12	1 40	12	2 25	1 55	1 80	1 55	
6 1/2 x 8 1/2	8	2 10	8	1 65	8	2 10	8	1 80	8	2 90	2 10	2 40	2 10	
7 x 10	6	2 65	6	2 10	6	2 65	6	2 30	6	3 60				
8 x 10	6	3 00	6	2 40	6	3 00	6	2 65	6	4 80	3 00	3 45	3 00	
10 x 12	2	4 75	2	3 80	2	4 75	2	4 20	2	6 50	4 75	5 45	4 75	
11 x 14	2	6 25	2	5 00	2	6 25	2	5 50	2	8 40	6 25	7 20	6 25	
14 x 17	2	11 25	2	9 00	2	11 25	2	9 75	2	14 00				
16 x 20	1 1/2	15 65	1 1/2	12 50	1 1/2	15 65	1 1/2	13 75	1 1/2	17 20				
17 x 20	1 1/2	16 25	1 1/2	13 00	1 1/2	16 25	1 1/2	14 30	1 1/2	20 00				
18 x 22	1 1/2	19 40	1 1/2	15 50	1 1/2	19 40	1 1/2	17 00	1 1/2	27 00				
20 x 24	1	23 15	1	18 50	1	23 15	1	20 35						

Larger Sizes in
Proportion.

Carbutt's Ground Glass Opal Transparency Plates.

For Window Transparency Decoration and Lantern Slides, for Printing by Contact.

Beautiful results are obtained from portraits and landscape negatives by development; no toning is required.

Size.	Per doz.	OPAL PLATES.		CELLULOID FILMS.
		PLAIN.	GROUND.	
4 x 5	\$0 70	\$0 80	\$0 85	\$0 80
4 1/2 x 6 1/2	1 15	1 20	1 45	1 10
5 x 7	1 40	1 50	1 80	1 40
5 x 8	1 60	1 70	2 25	1 55
6 1/2 x 8 1/2	Per 1/2 doz. \$1 15	Per 1/2 doz. \$1 20	Per 1/2 doz. \$1 45	2 10
8 x 10	1 65	1 75	2 15	3 00

Lantern Slide Plates.

On Thin Crystal Glass. Seed's, Cramer's, Carbutt's and Eastman's Brands.

Size 3 1/4 x 4 inches. Price per doz., \$0 55 | Cover Glass for Lantern Slides . . . per doz., \$0 35

Ferrotypes Plates.

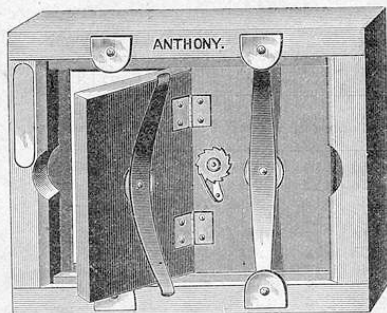
Centennial—Black or Chocolate Tint.

10 x 14—Per box, 200 sheets \$12 50 | 10 x 14—Per dozen \$1 00

Squeegee Plates.

Heavy, Glossy.	Light, Glossy.
10 x 14—Per sheet \$0 25	10 x 14—Per sheet \$0 10
14 x 20— " 60	
24 x 30— " 2 00	

PRINTING FRAMES.



Flat, with Registering Tally.

3 1/4 x 4 1/4 size	flat, \$0	36
4 x 5 "	"	38
4 1/4 x 5 1/2 "	"	40
4 1/4 x 6 1/2 "	"	42
5 x 7 "	"	50
5 x 8 "	"	52
6 1/2 x 8 1/2 "	"	60
8 x 10 "	"	75
10 x 12 "	"	1 00
11 x 14 "	"	1 80
14 x 17 "	"	2 40
16 x 20 "	"	3 00
17 x 20 "	"	3 00
18 x 22 "	"	4 00
20 x 24 "	"	5 00

When made to open lengthwise, 10 per cent. is added to the above prices.

Amateur Printing Frames.

Are made on the same general principle as the Regular Printing Frames, but are of lighter construction, and are manufactured in the smaller sizes only, as follows:

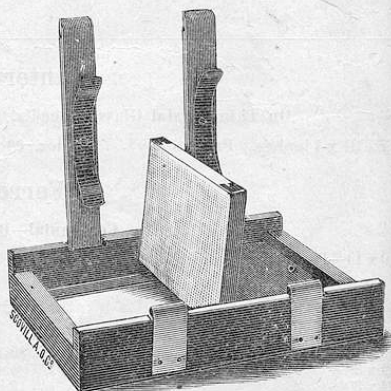
Sizes, 2 1/2 x 2 1/2	price, \$0	20
" 3 1/4 x 3 1/4	"	25
" 3 1/4 x 4 1/4	"	25
" 3 1/2 x 3 1/2	"	25
" 4 1/4 x 4 1/4	"	25
" 4 x 5	"	25
" 5 x 7	"	35

They are without printing tally or registering device.

Deep Printing Frames.

6 1/2 x 8 1/2	\$1	25
8 x 10	1	50
10 x 12	1	75
11 x 14	2	50
14 x 17	3	00
16 x 20	4	25
17 x 20	4	60
18 x 22	5	20
20 x 24	5	50

Larger sizes to order.



Leigh's Combination Photographic Printing Frame.

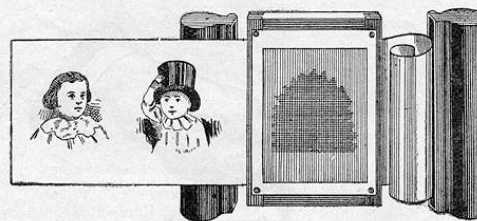


Fig. 1.

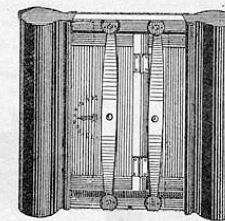


Fig. 2.

DIRECTIONS.

Figure 1 shows the manner of filling the frame. A strip of paper the length required is rolled up and placed in one of the metal covers shown. Enough is drawn out for the first negative, the back and both covers placed in position, and the frame is ready to go out, see Figure 2. When the print is finished, negative No. 2 is placed in the frame, the paper moved along, both ends of the paper being protected by the covers.

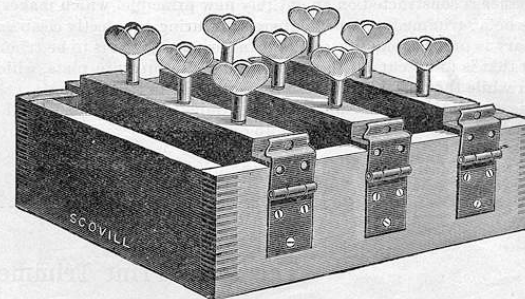
Vignetting, etc., is done in the same way as for ordinary prints.

We furnish two styles of frames, one to open in the regular way, taking paper the narrow way of the frame, and the other with lengthwise opening, taking the paper as shown in the illustration.

PRICES FOR EITHER STYLE COMPLETE.

4 1/2 x 6 1/2	each,	\$2	25
5 x 7	"	2	50
5 x 8	"	2	50
6 1/2 x 8 1/2	"	3	00
8 x 10	"	3	50
11 x 14	"	5	00

Printing Frames for Photo-Engraving.



The Printing Frames made by the American Optical Co. for photo-engraving are like everything else manufactured by this factory, of the highest degree of perfection, and the utmost care was given to the comparative distance of screws so as to produce an even pressure. Many negatives have been either ruined or snapped by the use of imperfect Printing Frames.

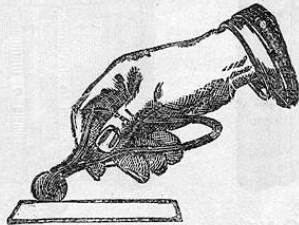
The American Optical Co. Printing Frames for photo-engraving are the only safe ones on the market.

PRICES.

8 x 10, including one-inch glass	\$8	00
9 x 11, " " "	9	50
10 x 12, " " "	12	00
11 x 14, " " "	13	00
14 x 17, " " "	19	00

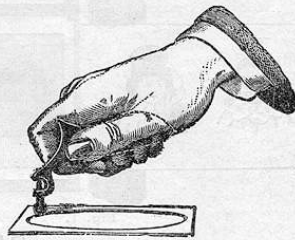
Larger and special sizes made to order.

PHOTOGRAPH TRIMMERS.



Plan of holding the Straight Cut Trimmer when in use.

Price\$0 20



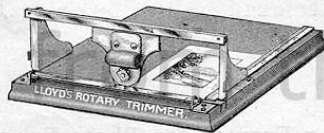
Plan of holding the Revolving Trimmer when in use.

Price\$0 30

This Photograph Trimmer is substituted for the knife for trimming photographs, and does the work much more expeditiously and elegantly. They save time, save prints, and save money.

They do not cut but pinch off the waste paper, and leave the print with a neatly beveled edge, which facilitates adherence to the mount. Try one, and you will discard the knife and punch at once. For ovals and rounded corners they are worth their weight in gold.

Lloyd's Rotary Trimmer.



Lloyd's Rotary Trimmer is constructed on an entirely new principle, which makes it impossible for the print or paper, which is being trimmed, to buckle, thereby insuring a perfectly clean and true edge.

All that is necessary is to place one side of the print or paper, that is to be trimmed, square with the rule, and allow the part that is to be cut off to extend under the pressure plate, which holds the print or paper firmly in position while the wheel is revolved from one side to the other.

Unmounted prints or printing paper can be trimmed quick and true so simply that it will be economy for any photographer, either amateur or professional, to own one.

PRICES.

7-inch.....\$2 50 8½-inch.....\$3 00 10-inch.....\$3 50

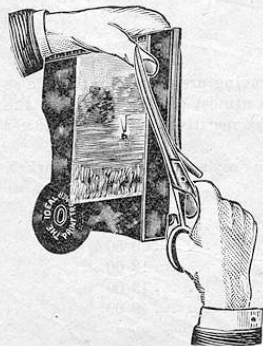
The Ideal Print Trimmer.

Patent Applied For.

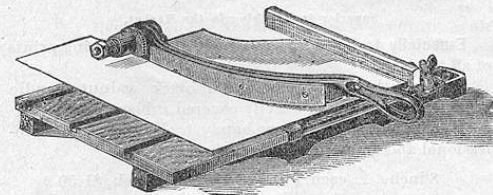
This is a practical and perfect trimmer for prints up to 5 inches square. It is made of metal, finely plated, and is equipped with a graduated measure.

To trim prints, place the print in the trimmer with the edge to be trimmed under the guide, and the other edge in contact with the measure at the top, now press with the thumb on the guide, this will hold the print in its place, and then with a pair of shears cut along the edge of the guide, and perfectly trimmed prints will be the result. The cut fully illustrates the operation.

Price.....\$0 25



Photographic Card and Ferrotypc Plate Cutter.



Photographers will find this a grand thing for cutting paper, and it is also invaluable for cutting ferrotypc plates

The advantages of this cutter are: with 12 inch blades it will cut any size sheet. No other machine ever made will cut a sheet wider than the length of the blades.

All the parts are made to gauges, by which they are interchangeable, so that if any part is worn out, broken or lost, a duplicate can be ordered.

All the parts are made of the best material, and a cutter capable of a range of work never before attempted in a small machine. It is offered at less than one-half the price of any other cutter with the same length of blades.

A number of important improvements have been made in this machine for closer register and the prevention of sagging where large sheets are being cut.

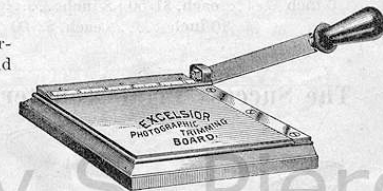
Price, complete, with adjustable gauges and latest improvements\$10 00
Each machine boxed and no extra charges.

The Excelsior Photographic Trimming Board.

PATENT APPLIED FOR.

This Cutter will supply a long-felt want for a cheap, serviceable article. The knives are made of the best steel and are guaranteed for wear. Cuts clean and smooth.

No. 1.	Trims up to 6 inches	.....\$2 50
" 2.	" " 8½ "	.....3 00
" 3.	" " 10 "	.....3 50



Graves' Outfits.

OVALS ARE ALL THE RAGE.

FORMS—Polished Brass.

	Each.	Doz.
All *Regular Size Circles	\$0 50	\$5 40
" " " Ovals	80	9 00
Revolving Cutter	25	2 50

*As per numbers below.

SPECIAL SIZES—To Order Only.

	Each.
Circles, not exceeding 5 inches in diameter	\$0 75
Ovals, not exceeding 5 inches in length	1 50

Special quotations on larger sizes.

OUTFITS—Consisting of Form and Cutter.

Nos.	Size of Form	Each.	Doz.
101, or Circo A	2½ ins.	\$0 75	\$8 00
193	3¼ "	75	8 00
534 or 585	3 "	75	8 00
Circo B	2½ "	75	8 00

OVAL.

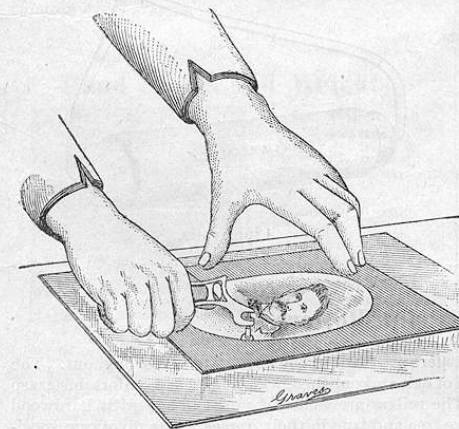
181, 195, 536, 537, 546 or 549	3½ x 4¾ ins.	1 00	10 80
182, 194, 523, 538 or 547	3¼ x 5 "	1 00	10 80
522, 531 or 532	2 x 2½ "	1 00	10 80
548	3¾ x 5¾ "	1 00	10 80

NOTE.—The numbers correspond to A. M. Collins Mfg. Co.'s Mounts.

"The difficulty usually encountered in trimming Oval or Circle prints is completely obviated by Grave's Outfits, which are designed to facilitate this detail."—Wilson's Photographic Magazine.

Glass Forms.

2½ x 2½, \$0 25 3½ x 4½, \$0 25 5 x 7, \$0 50 6½ x 8½, \$0 75 3½ x 3½, \$0 25 4 x 5, \$0 30 5 x 8, \$0 60
Card size, \$0 30 Mantello size, \$0 25 Cabinet size, \$0 40 Circles: 3½-in. diameter, 4-in. diameter, \$0 40
Special sizes to order at short notice.



Scovill Squeegee Roller.

Superior to Anything in the Market.

Especially designed for squeegeeing and mounting prints of all kinds.

It is neatly constructed with black walnut handle brass trimmings and a heavily covered rubber roller.

It will be found a very handy tool alike to the professional and amateur photographer.

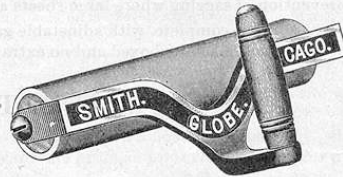
8 inch each, \$1 00 | 12 inch each, \$1 50



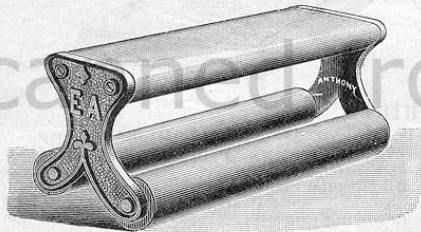
The Globe Print Roller.

The center of the Globe Roller is solid steel as well as the handle. It requires no pressure from the user, as its own weight is sufficient. Fully nickel plated.

6 inch each, \$1 50 | 8 inch each, \$1 75
10 inch each, \$2 00



The Success Print Mounter.

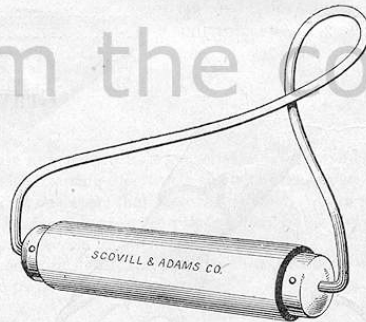


The above illustration describes it fully.
6 inch \$0 50 | 12 inch \$1 50

Velvet Rubber Squeegees.

6 inches each, \$0 40
8 " " 50
12 " " 75

Simplex Roller No. 2.

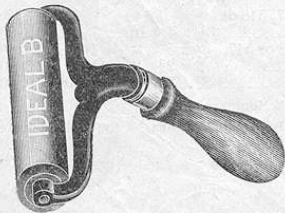


4 inch rolls.
Each \$0 25

Prince's Ideal Print Rollers.

These Print Rollers are made of the best material throughout. The handles are made of oak and polished, which makes a comfortable grasp for the hand. The rollers are made of pure rubber with hardwood center and revolve free and true in their frames. The pivots are specially manufactured for these rollers and are driven far into the hardwood center. We guarantee that they will not loosen and come out, which often happens with wood screws generally used for this purpose.

The Ideal Rollers are superior to any on the market in beauty and design and in strength they are second to none.



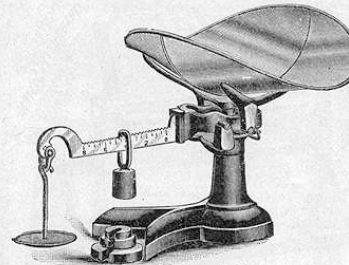
PRICES.

4 inches \$0 25
5 " 35

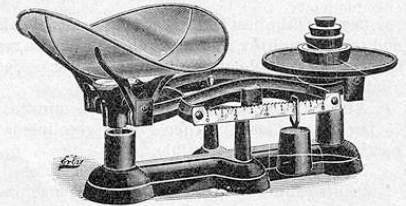
SCALES.

Every Gallery Should Have an Accurate Scale.

SCALES! CHEAP! GOOD!



No. 50.



No. 60.

These are good reliable scales especially adapted to the wants of the photographer, at a very low price. They weigh from quarter ounce to 4 lbs., are strong, well made, with brass scoops and brass beams, handsomely finished, and what is most important of all is, they are warranted accurate, and guaranteed satisfactory. They are especially useful to photographers in weighing packages for mailing, weighing chemicals, etc.

LOOK AT THE PRICES.

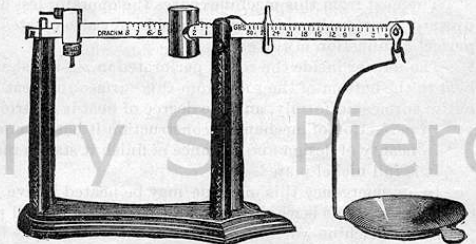
No. 50 each, \$2 00 No. 60 each, \$2 75

New Patent Dispensing Scale.

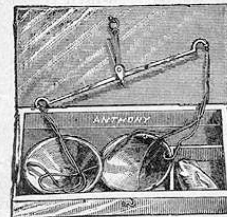
No Weights—Quickly Adjusted.

It has 9-inch nickel plated beam neatly mounted on a japanned iron stand. The front end of the beam weighs from 1 to 30 grains, the other end weighing from one-half to eight drams, or one ounce, and is very accurate. The pan is movable and has no side bar to interfere. We guarantee them in every respect.

Price \$5 00



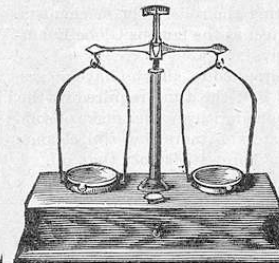
Hand Scales and Weights.



Neat, Complete and Accurate.

In boxes, 5 in. beam, with weights . . \$0 75
In boxes, 6 in. beam, with weights . . 85
Extra sets of Dram and Grain weights, 25

Lever Scales.



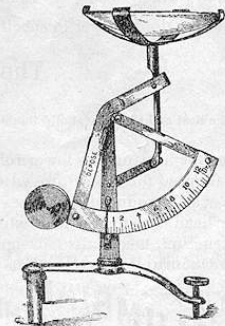
Price \$3 50

Diameter of pans, 2 3/4 inches.

Weights from 1/2 ounce to 1/2 grain.

On polished walnut box; scales takes apart and packs away in drawer of box. A well finished and reliable scale. Entire scale and pans nickel plated. A full set of weights included.

Prince's Eagle Scale.



A marvel of neatness and compactness, consisting of a brass stand and frame with glass chemical pan. The graduated scale is made of steel and the capacity of the scale is from 1 grain to 12 or 16 drams.

Price, 12 drs \$ 75
Price, 16 drs 1 00

Grain Weights.

1/2 to 5 grains, aluminum per set, \$0 60
" 10 " square aluminum 60
2 drams and down to 1/2 grain, coin shape, " 60

BURNISHERS.

The Globe Enameler.

PATENTED JUNE 1, 1886, AND AUGUST 28, 1888.

No Scratching, Sweating, Lubricating, Smoking, no Discomfort from Heat and no Dirt. The Quickest Heater. Elegantly Finished.

Combines the best features of the Quadruplex Enamblers and the Humphrey Patent Hollow Roll; the result being a burnisher capable of producing the most perfect work at a minimum of cost, time and labor.

ADVANTAGES.—They heat in five minutes, and save 75 per cent. of gas. Either gas or gasoline is used for heating; no smoke is possible.

No other machine will give as fine a gloss.

Prints cannot be scratched with this machine.

Rolls never sweat a particle.

Pictures are not liable to stick to the roll, or pull off the cards.

Oil from the journals can not get on the rolls and soil them.

The polishing roll does not attract the dust and moisture from the atmosphere and become soiled, as do solid rolls.

No lubricator is required; in fact, the best gloss is produced without it.

The pressure is always perfectly uniform, and is quickly adjusted by turning one hand-wheel.

The heat from this machine causes the operator less discomfort than any other, as the surplus is carried upward through the chimney. The chimney also creates a circulation of air through the roll, which secures perfect combustion of the gas.

The burner inside the roll is perforated in zig-zag shape on the bottom. The flames thus furnish direct heat to the bottom of the roll; from this surface the heat is deflected and rises to the top, thus heating the entire surface uniformly, and the degree of heat is controlled perfectly by the lever at the left.

In perfection of mechanical construction it has no equal.

In beauty of design and elegance of finish it stands unrivalled.

It is full nickel plated.

In an emergency this machine may be heated in five minutes, and a few prints burnished while a customer waits. This is wholly impracticable with solid roll machines, requiring from 30 to 60 minutes to heat. Every machine warranted perfect and satisfactory. It pays to get the best. Take no other.

PRICES.

8-inch. \$22 00 10-inch. \$30 00 12-inch. \$35 00 15-inch. \$40 00 20-inch. \$50 00 25-inch. \$60 00

When ordering don't forget to specify whether gas or gasoline attachment is wanted.

The Columbian Polisher.

PATENTED.

The Latest, the Best and Cheapest, Solid Double Roll, Two Cog Burnisher ever Produced. No more annoying Sweat on Rolls. No more Roasted Operators.

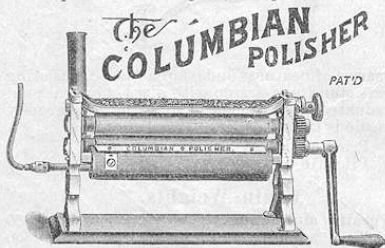
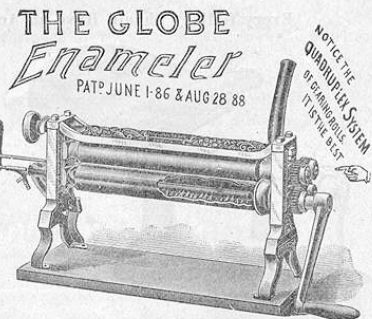
The fire box for heating the lower roll is the same new design with closed bottom and chimney attachment as that adopted for the Improved Quadruplex. It is the most important improvement for solid two roll machines ever introduced, as it does away almost entirely with sweating, saves time in heating and carries off overhead the surplus heat which has heretofore been such a great discomfort to operators.

The construction, mechanism, design and finish of these machines is also precisely the same as used in the Improved Quadruplex, except that two cogs only are used for connecting the rolls. The mechanism, design and finish are as perfect as the famous Globe Enameler, which has in fact no rival.

Gasoline heaters are supplied to all who have no gas, and not only heat in about half the time required by the dirty, smoky oil heaters supplied with another make of solid roll machines, but these heaters are more powerful, cleaner, smokeless and in every way more satisfactory than oil.

Prices with Gas or Gasoline Heaters.

8-inch. \$15 00 | 15-inch. \$30 00
10-inch. 22 50 | 20-inch. 40 00

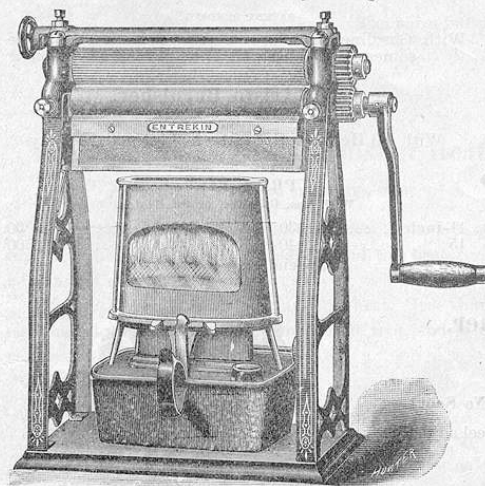


Entrekin's Improved Rotary Burnisher.

With Turn Back Roll and Swing Fire Pan.

The most essential improvements of this machine over all other Rotary Burnishers is, that the upper roll can be turned back from the polishing roll while heating, so as to prevent the moisture from dropping on the polishing roll and defacing the same; also, giving better facilities for cleaning the polished or nickel plated roll. The mechanical construction of these machines is first class in every particular. Both rolls are nickel plated, and every machine is guaranteed perfect. In the ten-inch size we build two styles—a light and a heavy machine.

Before heating, see that the lower or polished roll is perfectly clean; then place the gas heater, alcohol lamp or oil stove, as the case may be, under the fire pan, having the flame parallel with the roll. Turn the handle occasionally, so as to equally diffuse the heat through the roll. Wipe the moisture from the polished roll before it evaporates, so as to prevent its drying and leaving stains on the surface of the polished roll. To secure the best results, have the lower roll about the temperature of a laundry iron when in use, and perfectly clean, and the pictures slightly moist. Use medium pressure. Lubricator can be used or not, as you prefer.



PRICES.

8-inch Roll	\$12 00	15-inch Roll	\$30 00
10 " " light	15 00	20 " " "	40 00
10 " " heavy	25 00	25 " " "	55 00

Entrekin's New Victor Burnisher.

With patent movable burnishing tool and one wheel adjustment for uniform pressure and accuracy of adjustment at one motion.

PRICES.

8-inch Roll	\$10 00
10 " "	15 00
15 " "	20 00



The Model Duplex Burnisher.

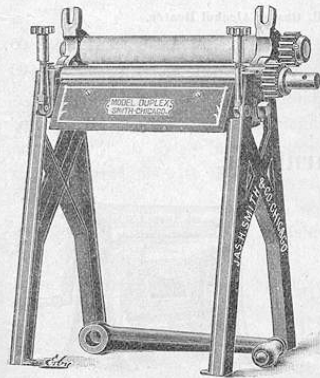
This is a new machine, built to meet the growing demand for a good Double-roll Burnisher, in small sizes, at lower prices.

It is well made and strong. The Roll is quickly heated with either gas, gasoline or coal oil, and will do work equal to any Burnisher made.

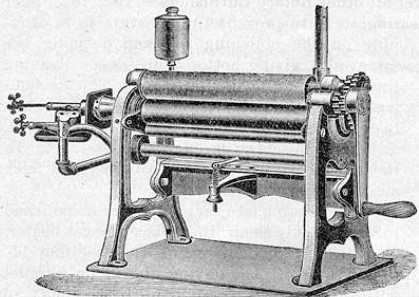
PRICES.

6-inch, with oil or gas heater	\$ 7 50
8 " " " "	10 00
10 " " " "	12 50
12 " " " "	15 00

Rubber Tubing for connecting with gas supply pipe, 10 cents per foot.



ACME BURNISHERS.



Acme Aristo Burnisher.

PATENT PENDING.

With Gasoline Attachment. Simplicity itself. Made so nearly automatic that anyone can use it.

Acme Aristo Burnisher.

PATENT PENDING.

With Oil Heater. Gives the highest polish of any Burnisher in the world.

PRICE-LIST.

With Gas, Gasoline, or Oil Heater.

11-inch	..... \$30 00	21-inch	..... \$50 00
15 "	..... 40 00	26 "	..... 60 00

Special sizes to order.

Acme Stationary Burnisher.

Patented '76, '86, '88, '90.

Finest Stationary Burnisher ever made.

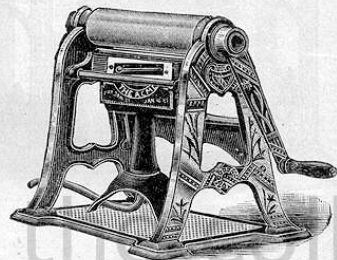
No Smoke! No Sweat! No Soot!

Simple. Well made. Guaranteed. One hand-wheel adjustment. Thermometer attached.

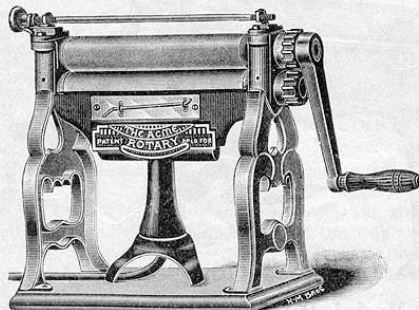
PRICE-LIST.

With Alcohol, Gas, or Oil Heater.

8-inch	..... \$10 00	21-inch	..... \$40 00
11 "	..... 18 00	26 "	..... 60 00
15 "	..... 22 00		



Acme Flue-Heating Rotary Burnisher.



One hand-wheel adjustment. Even tension. Acme thermometer attached.

Knurled Roll. Full Nickel Finish. Both Hollow Rolls.

All Acme Burnishers heat quickly.

PRICE-LIST.

Oil, Gas or Alcohol Heater.

11-inch	..... \$25 00
15 "	..... 35 00

Acme Improved Rotary Burnisher.

Beautiful nickel finish. An ornament to any amateur's outfit.

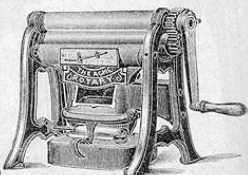
Thermometer attached. A strictly number one Burnisher.

Acme Burnishers Don't Smoke—Don't Sweat.

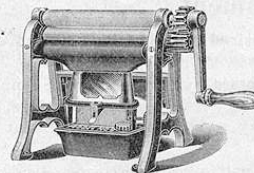
PRICE-LIST.

With Alcohol, Oil, or Gas Heater.

8-inch \$13 00	11-inch \$20 00	15-inch \$25 00
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Amateur Rotary Burnisher.



3/4 inch, with either oil or gas heater \$5 00

The finest burnisher of this size ever offered to the trade at any price.

The James Gasoline Burnisher Heater.

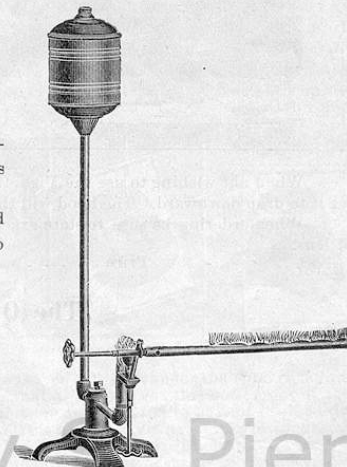
ADJUSTABLE TO ANY BURNISHER MADE.

Every photographer knows the disagreeable features of heating burnishers with alcohol or coal oil, and this heater comes as a boon to those who can not get gas.

It gives a steady, strong and uniform heat. It is simple and economical, producing neither smoke nor soot, and is easy to regulate.

PRICES.

10-inch burner	..... \$5 00
15 " "	..... 5 50
20 " "	..... 6 00
25 " "	..... 6 50



The Primus Lamp.

FOR KEROSENE OIL.

Safe, simple, efficient, economical, durable, clean. Will heat a 15-inch solid roll burnisher in 17 minutes. This is a wonderfully efficient form of lamp for burnisher, and stands without an equal for rapidity and volume of heat and economy of production.

Price \$3 50



C. S. Glace Polish.

The best lubricator for photographs ever produced. No trouble to use. Economical. Always ready. Put up nicely in tin boxes with hinged tops. Directions with each box.

Price, per box \$0 35

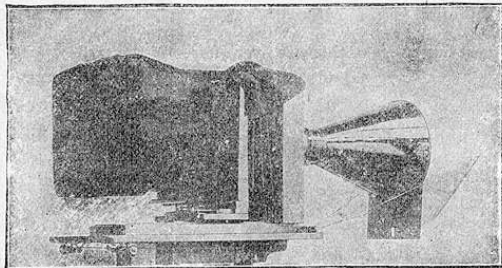


Richardson's Lubricator.

4 oz. bottle \$0 35 | 8 oz. bottle \$0 70

Rosch's Hood and Vignetting Attachment.

A Perfect Device for Vignetting under a Skylight. It will Blend to any Desired Shade of Background.



Used and endorsed by Strauss, Dana, Stein, Bellsmith, Rosch, Coover, Place, Hastings, Baker Art Gallery, and many other prominent photographers.

Ground-glass will indicate the correct blending at all times.

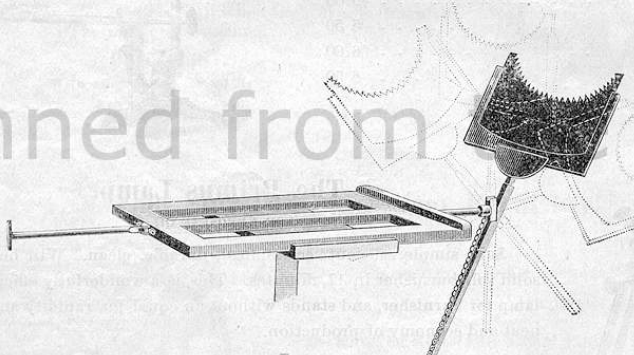
By drawing Vignetter in direct contact with cone a perfect black vignette can be obtained. Some lenses blend the black vignette too sharp. This difficulty can be overcome by placing the extra black Vignetter in the grooves of Vignetter E, and allowing it to drop slightly forward.

When not wishing to use the Vignetter, detach snap lock on chain F, in front of camera stand, allowing it to drop downward. The hood will then serve to protect lens from improper rays of light.

When ordering be sure to state exact diameter measurement, also name, grade and length of hood of lens.

Price \$15 00

The Queen City Vignetter.



Simple of construction. Easy of manipulation. Every movement possible without leaving the back of camera.

The camera rests upon the bed provided for it, which can be placed on any camera stand, and the Vignetter is slotted beneath it, working freely on its axis, and giving a rotating motion to the toothed card, which may be slanted at a greater or lesser angle by means of a handle behind the camera, or may be raised or lowered by the small rod that runs through its axis and works upon the chain.

Price \$7 50

Weymouth's Vignette Papers.

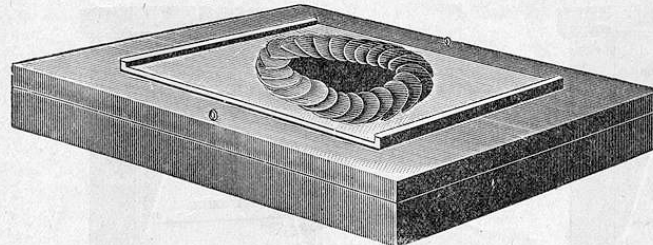
Nineteen sizes are now made, suiting all dimensions of pictures from a small carte figure to Victorias, cabinets, whole size, etc. They are printed in black for ordinary negatives, yellow bronze for thin negatives and red bronze for still weaker ones.

In envelopes containing one each, Nos. 1 to 15	\$1 00
Nos. 1, 2, 3, 4 and 5, for cartes per dozen,	50
" 6, 7, 11, 12 and 13, for large cartes and Victorias, "	75
" 8, 9, 10, 14, 15 and 15½, for cabinets and 4-4 size, "	1 00
" 16, 17 and 18, for cabinet and half size	1 25



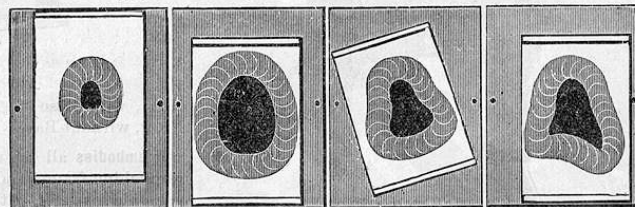
The Dixie Vignetter.

The First and Only Successful Adjustable Vignetter. Practicable, Cheap, Simple, Durable and Indispensable to all Photographers who Keep Up with the Times.



It is attached to the ordinary printing frame, and can be quickly, easily and accurately adjusted to any Negative—the Pear, Oval, Round, Square or any desired opening can be produced of any size required, and right where it is wanted.

It is all complete in itself and always ready for use. While you would be trying to decide what sized and shaped opening to use with the old style Vignetter you can have the Dixie adjusted and ready for work, as it not only allows any desired opening being formed, but also enables you to see at a glance just what size and shape is required and to make it as quick as you see it.



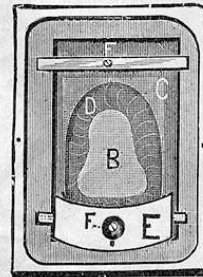
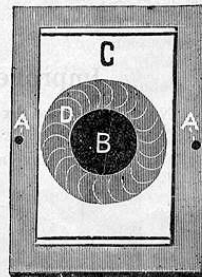
The above shows a few of its many possible Adjustments.

There has been so many worthless Vignettes on the market that it is little wonder that photographers, nearly all, think they can make a better one than they can buy, but they soon get this notion out of their heads after they have seen the Dixie. It will save them enough time and material to pay for itself a dozen times in a year, to say nothing of the superior results produced. It is as well made as your printing frames, and, with reasonable care, will last as long. We guarantee it to give satisfaction. Many thousands have been sold and we have yet to hear of a single case where it has failed to give entire satisfaction, and we have many warm words of praise for it from persons high in the art.

Don't Fail to Read the Following. It Tells How to Use the Dixie Vignetter. Also How Simple and Valuable It Is.

Attach the Vignetter to the printing frame through the holes A A, using screws, or if it is desired to remove it frequently, screw eyes will be more convenient. It can then be attached or removed very readily.

To adjust it to the negative place the latter in the frame in the usual manner, then holding it to the light and looking through from the back the same as when placing a paper for printing. Move the sliding panel C so as to bring the light opening B over the object to be vignettted with the top edge of the shield E at about the point on the bottom of the negative where you wish the print to terminate. It may occasionally be necessary to adjust the shield E, up or down, as the case demands, but usually this will not be required.



Now proceed to adjust the size and shape of the light opening B, to suit the subject by means of the discs D, comprising the adjustable diaphragm. Use the fingers to operate them. Working from the inside of opening to enlarge it and outside to reduce it. Bring the discs up at the bottom somewhat higher than the top edge of the shield E, more or less as you may desire a gradual or an abrupt blend. This is a very valuable feature of the Dixie Vignetter, as it places this important point fully under control of the printer.

The tension of the sliding part C should be such as to hold it firmly in place while in use, and still allow it to be shifted easily when required. Regulate it with the screws F F.

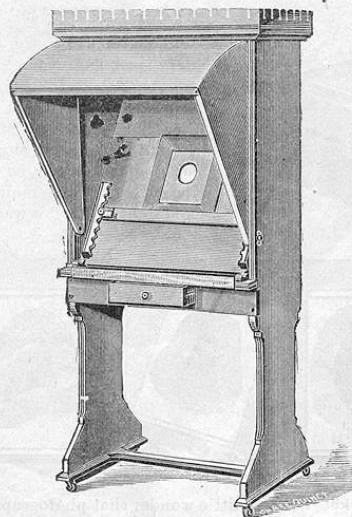
These directions may seem long, but the operation is very short. A few trials will enable any person to adjust the Vignetter in a moment, and after the printing begins, if it is found that it is not vignetting just right, it can be readily changed without disturbing the print. This is another most desirable advantage of the Dixie Vignetter, as it allows the printer to experiment and fully determine just what size and shape of opening is best adapted to the subject he is printing, thus enabling him to produce the best possible results.

	Each.	Per doz.		Each.	Per doz.
3½ x 4½ size	\$0 30	\$3 50	6½ x 8½ size	\$0 45	\$5 00
4 x 5 "	30	3 50	8 x 10 "	60	7 00
4½ x 6½ "	30	3 50	10 x 12 "	75	9 00
5 x 7 "	30	3 50			
5 x 8 "	30	3 50			

Sample by mail 10 cents additional.

The Novel Retouching Desk.

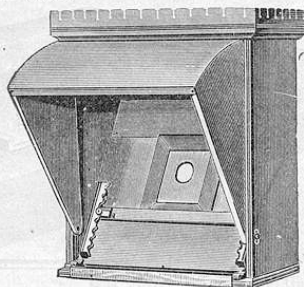
A Simple, Complete and Practical Apparatus for the Retoucher. Its Practical Usefulness is only Appreciated when Seen.



No. 1.

Suitable for 20 x 24 plates and all smaller sizes.

Suitable for 20 x 24 plates and all smaller sizes. The bed on which the negative is laid can be set at any inclination to suit the convenience of the artist. By means of a slide rest the negative may be moved up, down or slant, and held at any desired position.



No. 2.

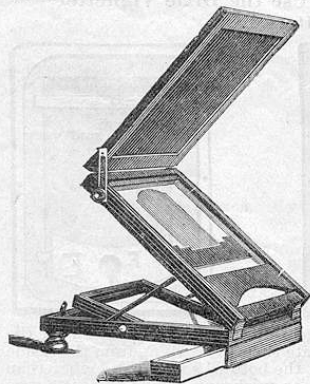
PRICE.

No. 1, with Base \$10 00
 No. 2, without Base 7 00

It embodies all the modern improvements of the retouching frame, and supplies many new and invaluable features. It is made of ash, thorough in construction and beautiful in finish.

It enables the retouchers to work on dark days as well as light days, and protects the eyes.

Has a hood which can be moved in or out to darken the space in front and intensify the light



Improved Retouching Frames.

No. 1, for 1-4 to 8 x 10 negatives, black walnut. \$3 00
 No. 2, for 1-4 to 11 x 14 negatives, black walnut. 4 00

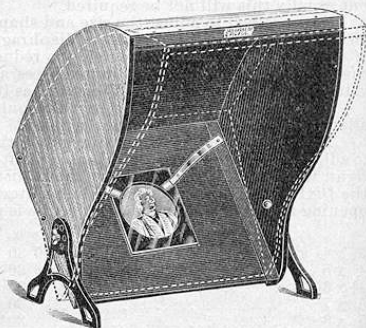
They have a drawer and all modern improvements.

The C. S. Retouching Frames.

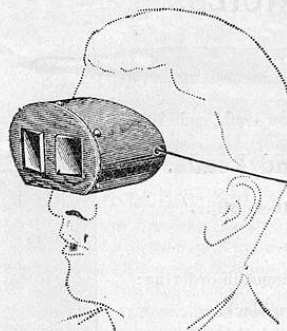
This is a new Frame for retouchers, built on common-sense principles, and at a low price. All the useless features of the various styles heretofore made are dispensed with.

The cut illustrates perfectly its construction. It is substantially made. Can be given any desired tilt, and will hold negatives of any size from C. D. V. to 14 x 17, and the negatives may be placed upright, horizontal or at any desired angle.

No retoucher can fail to be pleased with it.
 Price each, \$3 00



The Retouchers' Hood.



The cut shows the manner of using this handy little device. It is adjusted to the head with a rubber band, which holds it firmly in place.

Price, each . . . \$0 50

Calcined Flour for Retouching Negatives.



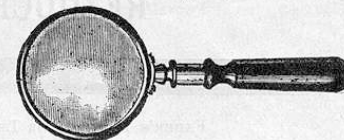
Price, per box . . . \$0 25

Hammer's Retouching Varnish.

A very excellent, quick drying varnish, giving a good tooth and is a preservative for the film. Applied the same as collodion.

Per pint bottle . . . \$0 50

Retouching Glasses.



German Silver Band. Ebony Handle.

2 inch Lens	each,	\$0 75
2½ "	"	1 00
3 "	"	1 50
3½ "	"	2 00
4 "	"	2 75
4½ "	"	3 75

James Lens Support.



This is the most practical device ever invented for the purpose. Screw base to side of retouching frame. The lens can be adjusted to, and held firmly in any conceivable position by the Universal ball clamp used. Made of brass, nickel plate finish.

Price, each . . . \$1 50

The Wagner or Hanover Retoucher.

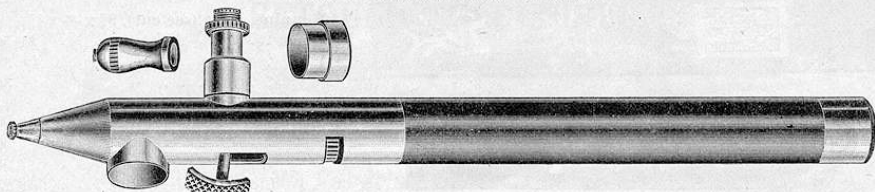


We might devote an entire page in praise of these and then fail to do them justice. There are three dark tints, viz.: No. 1, brownish tint; No. 2, reddish tint; No. 3, bluish tint. These are generally used before burnishing, instead of India ink.

Then there are three tints, to match up albumen tones, viz.: No. 1, pure white; No. 2, light yellow-white; No. 3, deep yellow-white. These dry glossy, and are very convenient in finish; also will bear burnishing. Everyone here is now using them, and once used they are indispensable.

The six colors, in polished mahogany box, with space for brushes, etc. \$3 00
 Per single cylinder 50

The Fountain Air Brush.



This cut shows exact size of New Fountain Air Brush.

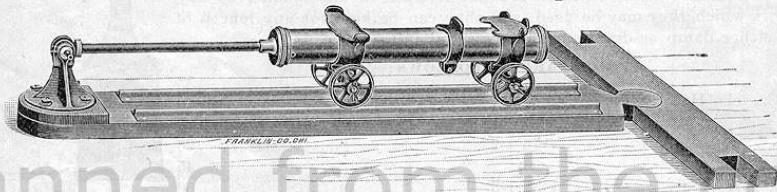
The Fountain Air Brush distributes color with marvelous rapidity. It will go from a hair line to a solid band of color, one-half inch in width, at a single stroke. The Fountain Air Brush will distribute four times the color that any other air brush will do in the same length of time.

It is possible, with the new brush, to obtain a uniform fine, soft spray, or to adjust it for coarser work where the specks or atoms of color are larger and further apart, adapting it for larger or broader work, and making it possible to produce the texture of the different surfaces that the artist has to depict. The Fountain Air Brush outfit, complete, consists of hand piece, case, holder, pump, air tank, air gauge and rubber tubing. A rubber tubing conducts the air from the air tank to the brush.

The pump is worked by the foot and forces the air into the tank, and from there is admitted to the brush at the will of the artist. Any liquid color may be used that is free from coarse particles, excepting architect's color called water-proof.

Send for special Brush and Fountain Catalogue.

The New Roller Foot Pump.



Fountain Air Brush, hand piece, 1899 model	\$27 75
Fountain Roller Pump and Tank	8 30
Fountain Air Gauge	1 15
Complete	\$37 20

Large Size Improved Fountain Air Brush.

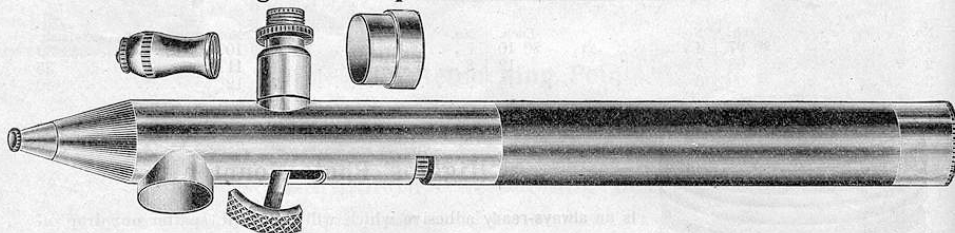


Illustration is exact size of Instrument.

The large Fountain Air Brush has three times the capacity of the regular sized Fountain Air Brush, which gives a capacity for throwing color nine times as great as the old form of Air Brush.

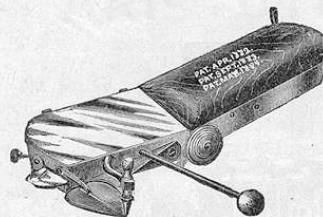
It will be found of great value in extra large portrait work, oil portraits, photographic backgrounds, lithographic work, stained glass work, china painting in potteries, tapestry painting, etc.

It is capable of nearly as fine line work as the regular sized Fountain Air Brush.

Large Size Improved Fountain Air Brush, hand piece, 1899 model	\$33 35
Improved Fountain Roller Pump and Tank	8 30
Fountain Air Gauge	1 15
Complete	\$42 80

We take pleasure in presenting to you our 1899 Model. The changes and additions are the out-growth of six years experience in manufacturing and improving the Fountain Air Brush. The two principal changes are an outside needle set and a spray adjuster which gives either a fine close spray or coarse open spray with any air pressure from 6 to 25 lbs. Radical changes have been made in the needle, valve and lever. All these changes are decided improvements. The illustrations will give one familiar with older patterns an idea of the changes.

The Rockford Air Brush.



The art world realizes that the effects obtained with the Air Brush aid the artist materially in getting desirable effects that are permanent, pleasing, and much desired by the appreciative of the beautiful; also saves time, thereby enabling the artist to furnish the best artistic production in fine, clean work, with all the detail desired, at proper prices.

With all the devices to compete with the Air Brush so far, there is nothing to approach it for the artist as an art tool.

The Air Brush is as yet in its infancy. Its growth has been slow because of its novelty. Entering upon a field where never before had anything been substituted for the old method, some avoided it because of its novelty or the fear that they would lose their individuality and be termed machine workers by others of their profession. Thanks to the young artists who are growing up to-day to take the place of the old, they have looked into this modern method of picture-making and have not found it wanting. They use the Air Brush, and are making pictures with a better finish and in less time than their predecessors ever dared to dream of.

Its use at the present day is largely confined to portrait artists. It has a place in every branch of art where delicate shading is needed. It is used successfully by lithographers, designers, monumental men, architects, etc.

The Air Brush handles all liquid colors; distributes on any surface. Is used in coloring maps, geological surveys, in silk, china, and porcelain decorations, colored glass work, on albumen, bromide, solar platinum, and electric light prints.

This artists' tool is, in brief, a device for applying liquid color by a jet of air. It consists of three parts, air pump, air reservoir, and hand-piece, connected by the necessary rubber tubing.

The distribution of color is entirely controlled by the thumb-valve, and the artist can produce the finest line or instantly change to a broad shadow. These effects with a single stroke have a finish that only hours of toil can equal by any other known means.

We know of no way in which a young person of artistic ability can so readily and profitably turn it to account in earning a livelihood as by the skilled use of the Air Brush for photo-copying and enlarging. Copyists who can also do retouching of negatives readily obtain excellent positions in photographic studios, and command good salaries.

FOR RETOUCHING.



This cut shows manner of using the Air Brush.

The Air Brush does admirable work on large negatives, in building up lights in any part of the picture, or "bringing up" shadows that too often lack detail with our quick-acting dry-plates; and after the operator has touched out the main spots and defects, the negative may be graded up to suit the requirements with the Air Brush. The Brush works on either side of the negative desired, and imparts a finish closely resembling the original film, thus giving a picture the appearance of having been perfectly manipulated from beginning to end, rather than exhibiting a tiresome amount of hand retouching and brush penciling. Every retoucher knows the difficulty of obtaining soft blending with the use of pencils. There is too likely to be a sharpness on the edge of the stroke. The Air Brush, on the other hand, affords a diffuse film, making the blending perfectly soft and even. And this also explains why the Brush can be used to such advantage in retouching draperies, hair, etc., for giving cloud effects in view work, masking backgrounds and the like.

REDUCED CASH PRICES.

Air Brush only	\$30 00
Air Brush and Easel	35 00
Easel	5 00

Egyptian Chemical Colors.



No. 1.

No. 2.

TO PHOTOGRAPHERS, ARTISTS AND OTHERS:

We take pleasure in calling your attention to the Egyptian Chemical Colors, prepared expressly for coloring photographs, either on plain or coated paper.

These colors are something new and far superior to anything of the kind heretofore used by photographers and others for the above purpose. The art of using them is so simple that the most inexperienced person can color photographs with entire satisfaction. Photographers who have tested these colors say that the *Blue, Brown, Rose* and *Flesh Colors* are almost indispensable and worth the price of the whole set.

Each box contains nine colors, and each bottle is labeled with full instructions for their use and how to obtain good effects. Burnishing the photograph after it is colored does not in the least disturb the colors, but softens down and improves them.

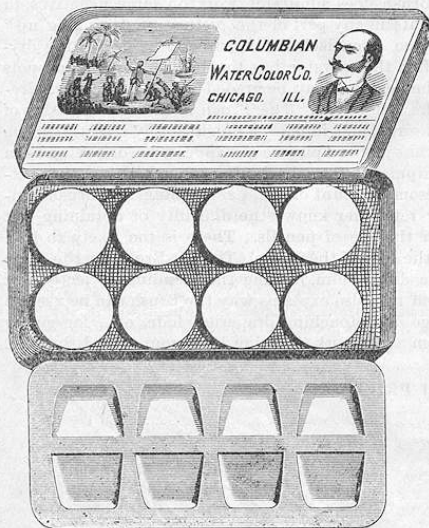
A box of these colors, by careful usage, ought to color three thousand photographs.

Full directions for using the colors and compound and making the Egyptian Crystal Photograph accompany each set. They are put up in three sizes, viz:

No. 1 size box contains fourteen 1-ounce (white glass) bottles of colors and one 6-ounce bottle compound for mounting photographs on flat or convex glass after it is colored. This is a lock box with nickel plated lock and hinges highly polished, and will color five thousand imperial size photographs.

Price per box, \$6 00

No. 2 contains nine 1/2-ounce (white glass) bottles of colors, in polished wood box.
Price \$3 00 Single bottles each, 30



Columbian Water Colors.

This is the Greatest Money Maker on Earth.
Read Our Offer.

A complete outfit including a box of 18 colors, Double Palette, and a 250 page Book of Instructions for only \$2 50

This is the most complete, perfect, and cheapest outfit ever offered, and any one can use it.

The book of instructions, entitled "Painting and Coloring in Water Colors" teaches how to do all kinds of photo coloring, plain or glass work by new process, also how to paint on porcelain, opal, ivory, celluloid, tile, plaque, silk, satin, linen, chamois skins and transparency and lantern slide painting, and portrait painting on all kinds of paper with brush or wash work. For aristo paper, transparencies or lantern slide work a special medium is required which is extra, price of 2-oz. bottle, 35 cents, 4-oz. bottle, 50 cents.

Box of Colors, alone \$1 50
Book of Instructions, alone 1 50
Outfit complete 2 50

The Color Wonder.

ARISTOTINT.

Each Set has Eight Colors and Brush.

One box of eight colors will answer for one thousand pictures.

These colors are without their equal for coloring photographs, maps, drawings, newspaper and magazine pictures.

Endorsed by photographers and architects in all parts of the country; any child can use them.

Perfectly harmless.

Price \$0 50

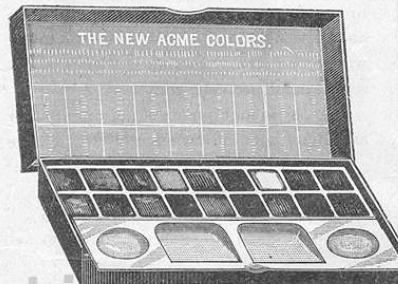
Try a set. Full directions in every box.



Acme

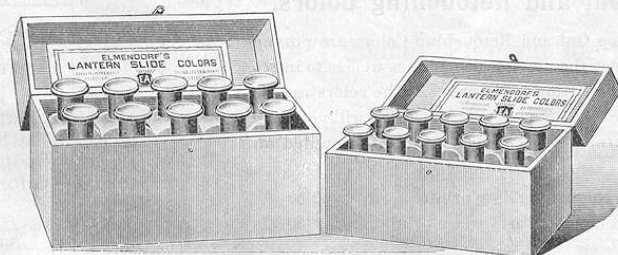
Transparent Water Colors

Are adapted to any and all kinds of paper, and are specially intended for views, lantern slides, transferotypes, transparencies, engravings, artotypes and prints. They are easy of application, economical, and of great permanency. Each color is put up in separate double pans and each set of colors in a neat box.



Large box containing 16 colors, palette and instructions	\$2 50
Amateur box containing 6 colors, palette and instructions	1 00
Single pan of color (except carmine, 35 cents)	25
Acme medium for gloss finish, per pan	35
Acme guide to coloring	25

Elmendorf's Colors.



These supply a long felt want, and are the result of many years of practical experimenting by one who is known from one end of the country to the other as being the greatest expert in the coloring of lantern slides. Full instructions for the use of these colors accompany each box, and detailed information regarding the making of slides generally, and minute details regarding the coloring, will be found in the "Elmendorf's Lantern Slides; How to make and Color Them." The lantern slide colors are put up in neat boxes, each box containing ten colors, by the combination of which any effect present in nature can be produced. Some four or five years' continued use of these colors has demonstrated their permanency even when constantly used in the lantern. They have the very decided advantage that they do not separate even after a long time, the colors remaining good for years. Each box contains the following colors in concentrated form: Light yellow, dark yellow, orange, rose, vermilion, brown, maroon, violet, blue No. 1 and blue No. 2.

PRICE.

No. 1 size \$1 50 No. 2 size \$2 50

SPURR'S SPECIALTIES.



Spurr's

Silk Printing Solutions.

These chemicals have no equal for brilliancy. No humbug but a practical process for making photographs on the most delicate silk fabrics or linen. They do not print in the cloth and make a flat picture. Any desired tone can be had from a rich brown to a blue black. Easy to manipulate and never failing. Can be used in many ways for souvenirs, hat marks, banners, silk scarfs, handkerchiefs, etc.

As easy to manipulate as albumen paper and none genuine unless put up in blue glass bottles.

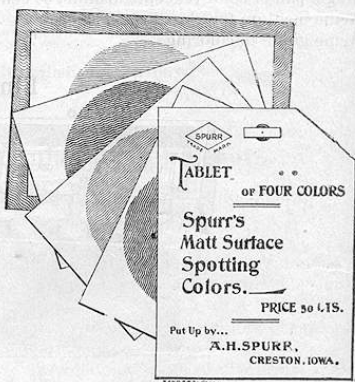
PRICES.

- 16-oz. Salting Solution . . . \$1 50
- 8-oz. Sensitising Solution . . . 1 50

Spurr's Spotting Out and Retouching Colors.

Spurr's Spotting Out and Retouching Colors are put up in this form to meet the popular demand, as well as to introduce the colors for spotting aristo prints. The colors can be mixed to spot any tone on any make of paper; will not come off or show in burnishing. Neatly boxed and mounted on celluloid.

- Price of seven colors for glossy prints . . . \$0 50
- Price of four colors for matt surface prints . . . 50



Gihon's Opaque.

Is designed for completely obscuring the imperfect backgrounds of copies, retouching faulty skies in landscape negatives, coating the inside of lenses or camera boxes, backing solar negatives, covering vignetting boards, etc. Wherever you want to keep out light use Opaque. It is applied with a brush, dries quickly and sticks.

Price per box, \$0 50

Spurr's Negative Scrolls.



These new designs are very attractive and artistic. We are prepared to furnish these negatives in Paris Panel (or eight by ten Imperial sizes). They are just the holiday boomer for which you are looking. You can print Paris Panel and Imperials from any cabinet size negative. Stiffen up Christmas trade by advertising a Paris Panel or Imperial size free, with each dozen cabinets, as a holiday souvenir. It's a sure business getter. This set of border negatives are made in three sizes, eight by ten, cabinet and four by five or half cabinet. The four by five size is just the thing for amateurs, as they can be used for figures or landscape.

8 x 10, for Paris Panel or Imperials, each, \$2 00 5 x 7, Cabinet Size, \$0 75 4 x 5, Half Cabinet Size, \$0 50

Spurr's Stucco.

For the Printer, Operator and Retoucher.



Stucco, for the printing room for use in vignetting, no printing room is complete without this useful article. Back Grounds and Pictorial Effects of any character can be drawn and etched on the back of the negative by the use of Stucco.

For Combination Negatives, Stucco excels all other opaques. It thoroughly seals the negatives where they come together. Retouchers will find it very superior in spotting out defects in negatives and working in high-lights. Price, per can . \$0 75

Spurr's Pigment for the Printer.



Pigment is used for printing negatives with or without the proper contrast, as follows:

Take a brush, No. 5 being a very suitable size, moisten the Pigment with a very little water and apply on the tissue immediately over the weak portions of the negative until it holds back the shadows for the high lights. Flat negatives can be made to produce brilliant prints by applying Pigment on the tissue over the high light side of the face, thus giving the shadows time to print in. Price \$0 75

PRINTING OUT PAPERS.

(COLLODION.)

Blue Label, Aristo Platino, and Delta Matt.

Subject to Change without Notice.

Table listing various paper sizes and prices for Blue Label, Aristo Platino, and Delta Matt. Columns include Size, Package, Half Gross, and Gross.

The above prices are net.

NOTE.—Half-dozen packages in following sizes only: 11 x 14, 75 cents; 14 x 17, \$1.15; 16 x 20, \$1.50; 18 x 22, \$1.90; 20 x 24, \$2.20.

Aristo Jr., and Atlas.

Subject to Change without Notice.

Table listing various paper sizes and prices for Aristo Jr. and Atlas. Columns include Size, Package, Half Gross, and Gross.

The above prices are net.

NOTE.—Half-dozen packages in following sizes only: 11 x 14, 65 cents; 14 x 17, 95 cents; 16 x 20, \$1.25; 18 x 22, \$1.60; 20 x 24, \$1.85.

"Aristo" Supplies.

"Aristo" Gold.

Specially refined for "Aristo" paper, and absolutely reliable.

Table listing prices for "Aristo" Gold in different bottle sizes.

Aristo Platinum Solution.

All ready for use by the addition of water. In connection with gold bath, this preparation secures reliably the Platinum and Carbon effects now so Popular on "Aristo Platino."

Table listing prices for Aristo Platinum Solution in different bottle sizes.

Aristo Single Toner.

Table listing prices for Aristo Single Toner in different bottle sizes.

Matt Surfacing Solution.

Per 6-oz. bottle, \$0.50

Aristo Spotting-Out Colors.

These colors will burnish to the same brilliancy as film, and are put up in packages containing three shades.

Package of three shades, \$0.50

Adamantine Negative Varnish.

Put up by American Aristotype Co. with special reference to use with "Aristo" Paper and Dry Plates.

No Sticking or Staining in any kind of weather if directions are followed. Does not remove retouching.

Table listing prices for Adamantine Negative Varnish in different quantities.

New Price List

General Aristo Co.

Manufacturers of

...PHOTOGRAPHIC PAPERS...

SEPTEMBER 1, 1899.

Please note that this Price List covers the Printing and Developing Out Papers listed on pages 162, 163, 164 and 165 of Catalogue.

Large table listing prices for Aristo Platino, Aristo Blue Label, and Aristo Junior papers in various sizes and packages.

ROLLS.

Table listing prices for Aristo Platino and Aristo Junior rolls.

BROMIDE PAPER IN 10 YARD ROLLS.

Table listing prices for bromide paper in 10 yard rolls.

Roll paper is not furnished in smaller sizes or lengths than shown above. Special sizes furnished at proportionate prices on orders amounting to \$1.00 list or more.

[OVER.]

New Price List

General Aristo Co.

Manufacturers of

...PHOTOGRAPHIC PAPERS...

SEPTEMBER 1, 1899.

Please note that this Price List covers the Printing and Developing Out Papers listed on pages 162, 163, 164 and 165 of Catalogue.

SIZE.	SOLIO. KLORO. ALBUMA. LITHIUM. VELOX. DEKKO.		SPECIAL. KLEAT. REX. AZO. BROMIDE.	
	1/2 Doz.	DOZEN.	1/2 GROSS.	GROSS.
2 1/2 x 2 1/2		2 Dozen, \$0.20		\$1.00
2 3/4 x 3 1/4		2 Dozen, .20		1.00
2 3/4 x 3 3/4		2 Dozen, .20		1.00
2 3/4 x 3 1/2		2 Dozen, .20		1.00
3 1/2 x 3 1/2		2 Dozen, .20		1.15
3 x 4		2 Dozen, .20		1.00
3 1/2 x 4		2 Dozen, .20		1.15
4 x 4		2 Dozen, .25		1.25
3 1/4 x 4 1/4		2 Dozen, .20		1.15
4 1/4 x 4 1/4		2 Dozen, .25		1.25
3 3/8 x 5 1/2 Cabt.		\$0.20		1.35
3 3/8 x 5 3/8		.20		1.60
4 x 5	1 Doz., .15; 2 Doz., .25		\$0.70	1.25
4 1/4 x 5 1/2		.20		1.60
4 x 6		.20		1.60
4 1/4 x 6 1/2		.25		2.10
4 3/4 x 6 1/2		.25		2.40
4 x 9 Celeron Panel				
5 x 7		.30	1.60	2.65
5 x 7 1/2		.30	1.70	2.90
5 x 8		.30	1.75	3.00
5 1/2 x 7 3/4 Paris Panel		.35	1.90	3.25
6 x 8		.40	2.25	4.00
6 1/2 x 8 1/2		.45	2.40	4.25
7 x 9		.50	2.75	5.00
7 1/2 x 9 1/2		.55	3.25	6.00
8 x 10		.60	3.50	6.50
10 x 12		.90	5.25	10.00
11 x 14	.65	1.20	7.00	13.00
12 x 15	.75	1.35	8.25	15.50
14 x 17	.95	1.80	10.50	20.00
16 x 20	1.25	2.40	14.00	27.00
17 x 20	1.35	2.60	15.00	29.00
18 x 22	1.60	3.00	17.50	34.00
20 x 24	1.85	3.50	20.50	40.00
22 x 27				6.00
24 x 30				7.20
25 x 30				7.50
24 x 36				8.70
30 x 40				12.00
40 x 60				24.00
40 x 72				28.80
Cabinet Seconds				1.10
4 x 5 Seconds Trimmed				1.00
Cabinet Seconds	100 Sheet Package			\$0 80
Cabinet Thirds				

ROLLS.

Solio, Kloro, Albuma.
Lithium, Special.
Kelat, Rex.

10 Foot Roll, 2 1/2 inches wide	\$1.75
5 Yard " 2 1/2 "	2.50
10 " 2 1/2 "	4.50

Roll Paper is not furnished in smaller sizes or lengths than shown above. Special sizes furnished at proportionate prices on orders amounting to \$1.00 list or more.

[OVER]

PRINTING OUT PAPERS.

(GELATINE.)

Solio, Albuma, and Kloro.

Subject to Change without Notice.

Size.	Half Doz.	Doz.	1/2 Gross.	Gross.
3 1/2 x 3 1/2	2 doz., \$0 20			1 15
*3 1/2 x 4	2 "	20		1 15
3 1/2 x 4 1/4	2 "	20		1 15
4 x 5	2 "	25		1 25
2 1/2 x 3 3/4 (Carte-de-V.)	2 "	20		1 00
3 x 4 (Mantello)	2 "	20		1 00
3 1/2 x 5 1/2 (Cabinet)		20		1 35
*3 1/2 x 5 3/8		20		1 50
4 x 6		20		1 60
5 x 7	30	\$1 60		2 65
5 x 8	30	1 75	3 00	
5 1/2 x 7 3/4	35	1 90	3 25	
6 x 8	40	2 25	4 00	
6 1/2 x 8 1/2	45	2 40	4 25	
7 x 9	50	2 75	5 00	
8 x 10	60	3 50	6 50	
10 x 12	90	5 25	10 00	
11 x 14	1 20	7 00	13 00	
14 x 17	1 80	10 50	20 00	
*16 x 20	\$1 25	2 40	14 00	27 00
*18 x 22	1 60	3 00	17 50	34 00
20 x 24	1 85	3 50	20 50	40 00

The above prices are net.

Cabinet Seconds	per gross, \$1.10
4 x 5 " (trimmed)	1 00
10-yard roll, 26 in. wide, untrimmed	\$4 50
5-yard " 26 "	2 50
10-foot " 26 "	1 75

The above prices are net.

*These sizes are no longer on the regular list, but will be furnished on special orders.

Solio Supplies.

Concentrated Toning and Fixing Solution.

4-oz. bottle of Solution	\$0 30
8-oz. " "	50
1/2-gal. " "	2 00

Solio Hardener.

8-oz. bottle of Solution	\$0 35
1/2-gal. " "	1 75
Powder to make 16 oz. of Solution	40

Kloro Hardener.

12-oz. bottle	\$0 50
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Willis & Clements Platinum Papers.

Artistic photographers use Willis & Clements platinum paper for their finest black and white effects. It is remarkably simple, and requires no tedious washing, toning, and fixing, etc. The whole operation is complete in less than three-quarters of an hour. No hypo is used at any stage, which avoids all possibility of fading from that source. Willis & Clements prints are absolutely permanent, since the image consists of metallic platinum, which is the most stable metal known. Platinum prints will stand the action of all corrosive fluids, except a boiling mixture of concentrated nitric and muriatic acids.

PRICE LISTS.

	A. A., Sepia.	
	A. A., Black.	B. B., Black and Sepia. C. C., Black and Sepia.
	Per doz.	Per doz.
3 1/2 x 3 1/2	\$0 30	\$0 30
3 1/2 x 4 1/4	30	30
4 x 5	45	50
3 3/8 x 5 1/2	45	55
4 1/4 x 5 1/2	50	60
4 1/4 x 6 1/2	60	70
5 x 7	70	80
5 x 8	85	95
5 1/2 x 7 3/4	1 00	1 25
6 1/2 x 8 1/2	1 15	1 25
8 x 10	1 70	1 85
10 x 12	2 50	2 80
11 x 14	3 40	3 75
14 x 17	5 25	6 00
16 x 20	6 75	7 00
20 x 26	9 00	10 00
20 x 26	per sheet, \$0 85	
Developer for 50 oz. Solution	\$0 35	
" 100 oz. "	60	
Sepia Solution, 2 oz.	15	
" 4 oz.	25	
" 10 oz.	50	

Two varieties, BLACK AND SEPIA.

In three grades:—

A. A., Thin Smooth.

B. B., Heavy Smooth.

C. C., Heavy Rough.

VELOX PAPERS.

Six Grades. Prints Day or Night.

Size.	Doz.		Gross.		Velox.
	Doz.	Gross.	Doz.	Gross.	
2 1/4 x 3 1/2	\$0 15	\$1 10			For Contrast Effects. For Soft Effects.
3 x 4	15	1 25			
3 1/2 x 3 1/2	15	1 25			
3 1/4 x 4 1/4	20	1 60			
3 3/8 x 5 1/2 Cabinet	25	2 00			
4 x 5	25	2 00			
4 1/4 x 4 1/4	25	2 00			
4 x 6	25	2 00			
4 1/4 x 6 1/2	35	2 75			
5 x 7	40	3 50			
5 x 8	45	4 00			
5 1/2 x 7 3/4	50	5 00			
6 x 8	55	5 50			
6 1/2 x 8 1/2	65	6 00			
7 x 9	75	7 00			
8 x 10	90	8 00			
10 x 12	1 25	12 00			

Size.	Doz.	Gross.
11 x 14	1 50	15 00
14 x 17	2 25	24 00
16 x 20	3 00	32 00
18 x 22	4 00	40 00
20 x 24	4 00	44 00

Seconds (Cabinets or 4 x 5) 1 20
One Sheet 25 in. x 10 ft., \$2.00.

This paper prints by artificial light or diffused daylight. It does not need a dark room, but may be developed under a low gas flame. Fixes in hypo just as a plate, after washing dries quickly. The permanency of Velox is unquestioned.

Nepera's Metol-Quinol Developer. For dry plates, bromide paper and "Velox" paper, ready prepared in powdered form. Per tin, 50 cents; per dozen tins, \$4.00

Nepera's Metol-Quinol Tubes. A developer for the same purposes, in powdered form ready for use. Per box containing five tubes 75 cents. Clean, practical and economical.

Nepera's Acid Hypo fixing powders, ready for use, per box, 15c.; per dozen boxes, \$1.50.

DEKKO.

Works Day or Night.

Dekko is the amateur's matte surface paper, as it can be printed by artificial or day light and developed in an ordinary room by gas light or subdued daylight, thus making it easy for the amateur to make and finish his prints at home, either in the daytime or in the evening, without the trouble and expense of fitting up a special room for the purpose.

Made in four grades: Carbon Matte, Plain Matte, Egg Shell Matte, Rough Matte.

Powders for Developing Dekko.

Twelve Eastman's Amidol Powders, prepared especially for Dekko paper, sufficient to make 48 oz. of developer, 50 cents.

Price List of Dekko Papers.

Dozen.	Gross.	Dozen.	Gross.
2 1/4 x 3 1/2	\$0 15	5 x 7	\$0 35
3 x 4	15	5 x 8	40
3 1/2 x 3 1/2	15	5 1/2 x 7 3/4	45
3 1/4 x 4 1/4	20	6 x 8	50
3 3/8 x 5 1/2	25	6 1/2 x 8 1/2	60
4 x 5	20	7 x 9	65
4 x 6	25	8 x 10	80
4 1/4 x 6 1/2	30		75

NEPERA BROMIDE PAPERS.

Platinoid, Enameled, Rough.

Size.	Dozen.	Gross.
2 1/4 x 3 1/2	\$0 15	\$1 10
3 x 4 or 3 1/2 x 3 1/2	15	1 25
3 1/4 x 4 1/4	15	1 60
3 3/8 x 5 1/2, Cabinet	25	2 00
4 x 5	25	2 00
4 x 6	30	
4 1/4 x 6 1/2	30	2 75
5 x 7	35	
5 x 8	40	4 00
5 1/2 x 7 3/4	50	
6 x 8	55	5 50
6 1/2 x 8 1/2	60	6 00
7 x 9	75	7 00
8 x 10	80	8 00
10 x 12	1 20	
11 x 14	1 55	
14 x 17	2 35	
16 x 20	3 20	
18 x 22	4 00	
20 x 24	4 80	

Size.	Dozen.	Gross.
22 x 27	6 00	
24 x 30	7 20	
25 x 30	7 50	
24 x 36	8 70	
30 x 40	12 00	

Bromide, in rolls at least 10 yards long.

10 inches wide	per yard.
11	33
12	36
14	42
16	48
18	54
20	60
22	66
24	72
25	75
35	1 07
41	1 23
54	1 75

only rough 1 75

Eastman's Bromide Papers.

LABEL REGISTERED 1885.

List and Description of the Various Kinds and Statement of Use to which each is Best Adapted.

Each of the various kinds and grades of bromide papers named below (except Royal) are made in two varieties of emulsion:—

HARD—Strong contrasts, for use with soft or flat negatives.

SOFT—Soft and rapid, for use with strong or hard negatives.

When not specified in order we furnish "soft" paper.

Standard Bromide Paper is a natural surface bromide paper, which is especially adapted for all kinds of enlargements, particularly copies on which crayon or pastel work is to be done.

The emulsion is coated on three different weights of paper—A, thin smooth—B, heavy smooth—C, heavy rough.

The A, thin smooth, should be used for contact prints or small enlargements which are to be spotted or finished in India ink or water colors.

The B, heavy smooth, should be used for large enlargements which are to be spotted or finished in water colors, India ink or oil.

The C, heavy rough, is best adapted for large work which is to be finished in crayon or pastel; it can also be finished in India ink, water colors or oil.

Platino Bromide Paper gives results so near like platinum that the difference, if any, would be difficult to detect. It has a fine surface and is best adapted for contact prints and enlargements from life negatives.

This is made in two weights of paper—A, thin smooth—C, heavy rough.

The A, thin smooth, should be used for contact prints or small enlargements which are to be spotted or finished in India ink or water colors.

The C, heavy rough, is intended for large enlargements which are to be spotted or finished in crayon or pastel, India ink, water colors or oil.

It is not expected that Platino or Standard Bromide will be used when sepia tones are wanted.

Matte-Enamel Bromide Paper.—Rich carbon blacks and a smooth velvety matte surface tinted just enough to lend warmth to the high lights and half tones, giving with Matte-Enamel an effect not heretofore obtained with bromide papers. When used with life negatives, enlargements can be made that closely resemble matte contact prints.

This paper gives excellent sepia tones, and is especially recommended for enlargements 16 x 20 and under, when it is desired to make prints ready for delivery by simply spotting. It is furnished on medium weight paper only. Its fine grain gives an excellent tooth on which to work crayon and pastel; it can also be finished in India ink, water colors or oil. Try this paper on solid prints from life negatives made for matte surface work.

Enameled Bromide Paper.—A glossy bromide paper, which when used with life negatives gives enlargements which closely resemble glossy contact prints. It gives excellent sepia tones and can be finished in water colors washed in or with the air brush. When squeegeed to ferrotype plate it gives a gloss which is fully equal to that produced by the glaucé process. It is furnished on medium weight paper only.

Royal Bromide Paper.—Enlargements on this paper made through bolting cloth and sepia toned have the softness and beauty of rare old etchings. Nearly all of the enlargements shown in our famous London and New York exhibitions, which received such favorable comment from the public and the press, were made on Royal Bromide. The color, tone, texture and all those qualities most valued by the artist are found in Eastman's Royal Bromide Paper.

Full directions for the development of which accompany each package.

PRICE LIST OF EASTMAN'S BROMIDE PAPERS.

Size.	per dozen, \$0 15	10 x 12	per dozen, \$1 20
2 1/4 x 3 1/2	15	11 x 14	1 55
3 x 4	15	12 x 15	1 80
3 1/4 x 4 1/4	25	14 x 17	2 35
3 3/8 x 5 1/2	25	16 x 20	3 20
4 x 5	25	17 x 20	3 40
4 x 6	30	18 x 22	4 00
4 1/4 x 6 1/2	35	20 x 24	4 80
5 x 7	35	22 x 27	6 00
5 x 7 1/2	40	24 x 30	7 20
5 x 8	40	25 x 30	7 50
5 1/2 x 7 3/4	45	24 x 36	8 70
6 1/2 x 8 1/2	60	30 x 40	12 00
7 x 9	65	40 x 60	24 00
8 x 10	80	40 x 72	28 80

IN ROLLS.

10 inches wide	per yard, \$0 30	22 inches wide	per yard, \$0 66
11	33	24	72
12	36	25	75
14	42	30	90
16	48	31	93
18	54	41	1 23
20	60		

Not less than 10 yards on a spool.

In ordering always specify whether Hard or Soft is wanted, and if the Standard or Platino is to be ordered, state which grade of paper is desired.

BACKING PAPER.

FOR BACKING PRINTS. FOR COMMERCIAL PURPOSES.

PRICE LIST.

	Gross.	1/2 Gross.	Dozen.
5 x 7	\$1 35	\$0 80	\$0 15
5 x 8	1 50	90	15
5 1/2 x 7 1/2	1 65	95	20
6 1/2 x 8 1/2	2 15	1 20	25
7 x 9	2 50	1 30	25
8 x 10	3 25	1 75	30
9 x 11	4 50	2 50	40
10 x 12	5 00	2 65	45
11 x 14	6 50	3 50	60
14 x 17	10 00	5 25	90
16 x 20	13 50	7 00	1 20
18 x 22	17 00	8 75	1 50
20 x 24	20 00	10 25	1 75

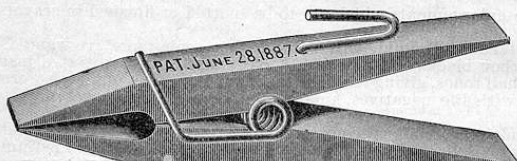
In Rolls.

10-yard roll, 26 in. wide, untrimmed	\$2 25
5 " " " " "	1 25
10-foot roll, 26 " " "	90

For our Backing Paper we use only imported stock coated with pure insoluble gelatine.

How to Use Backing Paper.—Soak the paper thoroughly in clear water and squilgee onto back of moist print on ferrotype plate, glossy side of backing paper being up. Set aside to dry and then strip whole from plate. Prints so mounted will not curl but lay flat like leaves of book.

U. S. Photo Clip.



Price per gross, \$2 50

Price per dozen, \$0 25

The latest and cheapest serviceable photo clip in the market. This Clip is exceedingly strong, being made of hardwood with heavy wire springs, and is provided with a hook. The quality of stock employed in its construction is of the best and the price the lowest.

Lockwood's Photo Clip.

Just the thing for hanging up paper or plates to dry, etc. Can be used instead of printing frames in some cases. These clips are made especially for photographic use. One dozen of Lockwood's Clips will outwear a gross of clothespins. It is hand made. The wood is yellow birch, the most durable known; the metal work is heavy and very strong. The spring is formed with a hook for hanging over a cord or wire.

Price per dozen, 75 cents.

The new small size is well suited for paper, etc. Per dozen, 60 cents.

Note.—Unless size is mentioned, we will send the old (large) size.

Strauss Modeler.

A peculiarly constructed face powder, delicately perfumed, which, when applied to the face or head of the subject, kills objectionable high lights. Every progressive operator should use it for subduing strong high lights on faces and bald heads.

Price per jar, \$1 00

Postage \$0 10

Strauss Stipple Plates.

A specially prepared plate, which, used in front of the sensitive plate during exposure, obviates the necessity for retouching; all the distinctive character of the face is preserved, while the harsh details are softened.

PRICES.

8 x 10	\$5 00	5 x 8	\$3 00
7 x 10	5 00	5 x 7	3 00

Strauss Marl.

Is an invaluable aid to operator, printer and retoucher. For working in shadows and backgrounds on the negative it has no equal. Invaluable for blocking out and vignetting. Far superior to any opaque. Sold in glass jars with metal screw top.

Price per jar, \$1 00

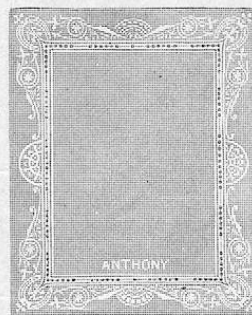
Postage, extra \$0 10

Transparency Portraits.

Any Photographer Can Make Them. Little Trouble. Good Profits.

Ground Glass for Transparencies.

Fancy Etched Border. As Illustrated in Cut.



6 1/2 x 7 1/2, for 4 x 5 picture	per light, \$0 30
6 3/4 x 9, " 5 x 7 and 5 x 8	" 45
6 1/2 x 8 1/2, " 5 x 7 and 5 x 8	" 45
8 x 10, " 6 1/2 x 8 1/2	" 50
10 x 12, " 8 x 10	" 65
11 x 14, " 8 x 10	" 90

Plain Ground Glass for Transparency Frames.

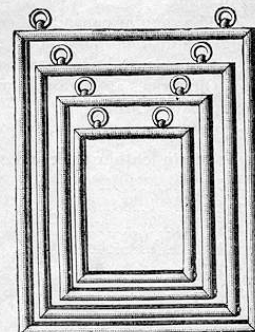
4 x 5	per light, \$0 12
5 x 8	" 20
6 1/2 x 8 1/2	" 30
8 x 10	" 35
10 x 12	" 50
11 x 14	" 1 00

Patent Transparency Frames.

Please specify, when ordering, "rings on end," or "rings on side."

These are made with one side removable, enabling the transparency to slide into the frame easily and without danger of breaking. They are also made to hang either vertically or horizontally.

4 x 5	each, \$0 28
5 x 7	" 30
5 x 8	" 35
6 1/2 x 7 1/2	" 40
6 1/2 x 8 1/2	" 45
6 3/4 x 9	" 50
8 x 10	" 50
10 x 12	" 75
11 x 14	" 90



Glaziers' Diamonds.

A good diamond is indispensable in every well-regulated gallery or framing establishment. These are warranted as first class.

No. 1, ebony handle, with key	each, \$3 25
No. 2, " " " " extra fine	" 4 00
No. 3, patent self-adjusting, with key	" 3 50
Novelty Glass Cutters	" 25
Resetting diamonds (good as new)	" 1 50

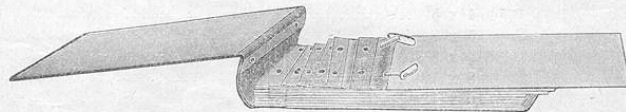
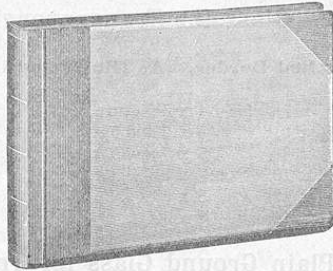
ALBUMS.

See the New Album. The Latest and the Best.

The Apex.

(Patent Pending.)

This is new and novel. It surpasses all others in neatness and simplicity. See engraving below, which is an exact representation of the Album as it appears closed.



DETACHED.

Its beautifully-finished appearance at once recommends it for the library or drawing-room table. The locking devices used in this book are so constructed as to permit one or more leaves to be taken from or added to in the fractional part of a minute, at the same time being entirely on the inside cover out of sight.

The regular capacity of each Album is twenty-five leaves, and will extend to accommodate from six to eight additional mounts.

The material used is all selected stock; the styles are neat and attractive.

Our prices are as low as any good book can be sold for, and on examination you will find our Album far superior to all others.

Style W.

Bound in leather back and cloth sides, plain.

6 x 7	\$1 25
7 x 10	1 50
8 x 10	2 00
10 x 12	2 25
11 x 14	2 50
14 x 17	3 50

Style Y.

Bound in morocco grain back and corners, handsomely embossed and rolled in gold leaf.

6 x 7	\$2 00
7 x 10	2 25
8 x 10	2 75
10 x 12	3 50
11 x 14	4 25
14 x 17	5 00

Will quote prices on all special sizes and styles on application.

Extra leaves or mounts may be had in either of the two colors, white or gray, at the following prices:

	Per doz.		Per doz.
6 x 7	\$0 35	10 x 12	\$0 75
7 x 10	45	11 x 14	1 00
8 x 10	50	14 x 17	1 50

Style X.

Bound in leather back and corners. Rolled and finished.

6 x 7	\$1 50
7 x 10	1 75
8 x 10	2 25
10 x 12	2 75
11 x 14	3 25
14 x 17	4 00

Style Z.

Bound in full morocco grain leather, heavy bevel covers, embossed. Our best binding.

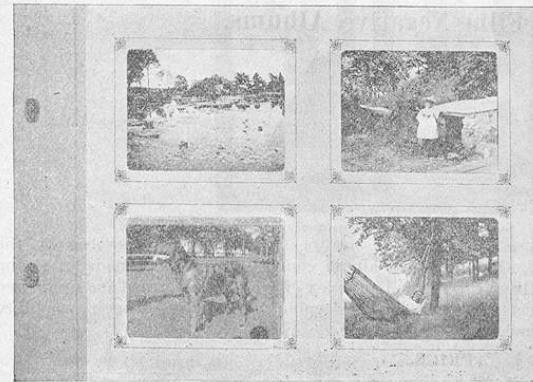
6 x 7	\$2 25
7 x 10	2 75
8 x 10	3 25
10 x 12	4 75
11 x 14	5 50
14 x 17	7 00

ALBUMS.

The Apex Squeegee.

Don't fail to investigate. Squeegee your prints on a tintype plate, then buy an Apex Album and you will have the correct thing for preserving photographs of all kinds.

This Album is now in great demand among amateurs who are fast adopting the idea of squeegeeing their photographs whereby much better results are obtained than is possible in mounting on cardboard. You save the cost of mounts. You save the time of mounting. You avoid the cockling and warping of leaves and the possibility of the surface of prints coming together and thus marring each other in the book, and in all you procure the handsomest and most complete album to be had. In ordering an Apex Squeegee Album state for what size picture it is intended.



The above cut represents a leaf for Album with openings for 4 x 5 prints.

Price List of Squeegee Albums.

Each contains 25 leaves corresponding to those listed below.

Style W.

Bound in leather back and cloth sides, plain.

6 x 7	\$1 75
7 x 10	2 00
11 x 14	3 50

Style X.

Bound in leather back and corners. Rolled and finished.

6 x 7	\$2 00
7 x 10	2 25
11 x 14	4 00

Style Y.

Bound in morocco grain back and corners handsomely embossed and rolled in gold leaf.

6 x 7	\$2 50
7 x 10	2 75
11 x 14	4 75

Style Z.

Bound in full morocco grain leather, heavy bevel covers embossed. Our handsomest and best stock binding.

6 x 7	\$2 75
7 x 10	3 25
11 x 14	6 50

Albums may be had with assorted leaves in any proportion desired.

Extra Leaves for Squeegee Prints.

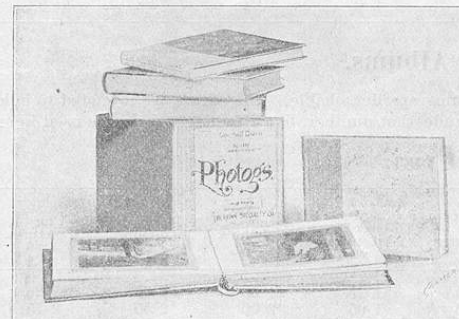
White No.	Gray No.		Per doz.	White No.	Gray No.		Per doz.
201	301	7 x 10 2 open'gs 3 1/2 x 3 1/2 on each page,	\$0 75	205	305	11 x 14 4 open'gs 4 x 5 on each page,	\$1 50
202	302	7 x 10 2 " 4 x 5 " " "	75	206	306	11 x 14 2 " 5 x 7 " " "	1 50
203	303	7 x 10 1 " 5 x 7 " " "	75	207	307	6 x 7 1 " 3 1/2 x 3 1/2 " " "	50
204	304	11 x 14 6 " 3 1/2 x 3 1/2 " " "	1 50	208	308	6 x 7 1 " 4 x 5 " " "	50

In ordering leaves, order by number only.

Photogs.

These little books represent the latest result in a constant effort to produce devices of the greatest utility, highest artistic merit and lowest cost for the preservation of the amateur photographer's collection. They are designed for daily, appropriate bindings for a few selected views, either for personal use or as a gift to a friend. They contain spaces for twelve and for twenty-four prints respectively, and are bound in an especially attractive manner, with wide backings embossed in aluminum scroll design and side binding of richly illuminated and embossed imported material. The mask leaves are made of rough finished drawing paper, with a delicately tinted border surrounding the opening, and altogether no neater or more attractive album has been placed on the market.

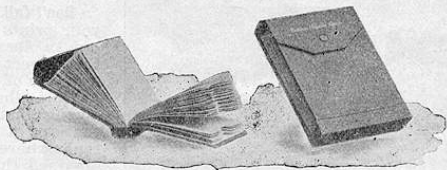
The albums are packed in neatly labeled cartons, containing one-half dozen books, and may be had in assorted bindings or all of one style. In ordering, it is only necessary to specify the number.



No.			
1000	Line, 48 openings for Pocket Kodak Prints, each,	\$0 50	
1100	" 12 " Folding Pocket "	50	
1200	" 12 " for 3 1/2 x 3 1/2 Prints	50	
1300	" 12 " " 3 1/2 x 2 1/4 "	50	
1400	" 12 " " 4 x 5 "	50	

ALBUMS.

Eastman's Film Negative Albums.

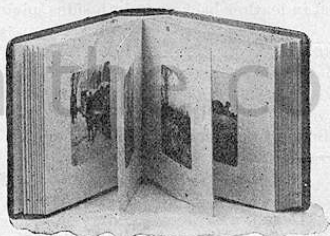


How to preserve film negatives is a question that has been successfully answered by the introduction of Eastman's Film Negative Albums. Each album contains 100 pockets made of strong manilla paper and consecutively numbered from 1 to 100, and an index on white paper, ruled and numbered for 100 entries. They thus provide for a perfectly safe means of keeping the negatives in such a way that the one desired can always be instantly found.

PRICE.

Eastman's Negative Albums for 100 3½ x 3½ negatives	\$0 75
“ “ “ “ 100 4 x 5 “	1 00
“ “ “ “ 100 5 x 7 “	1 50

Eastman's "Squeegee" Albums.



These albums are for unmounted prints, and are provided with openings in which the prints can be inserted.

Eastman's "Squeegee" Albums.	Pocket Kodak for 200 pictures.	Folding Pocket Kodak for 100 pictures.	Bull's-Eye for 50 pictures. 3½ x 3½.	No. 4 for 50 pictures. 4 x 5.
Style A, cloth bound	\$1 25	\$1 25	\$1 25	\$1 25
Style B, half morocco	1 50	1 50	1 50	1 50
Style C, full morocco, gold edges, heavily padded	4 00	4 00	4 00	4 00

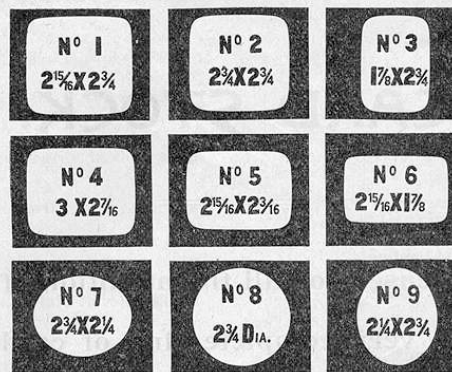
Kodak Albums.

For pasting in prints. The leaves in these albums are detachable. The covers are intended to hold thirteen leaves and prices of complete albums include that number, but fifteen leaves can be used in an album when desired.

PRICE LIST.

Albums.	Pocket Kodak for 104 pictures.	No. 1 Folding Pocket Kodak for 104 pictures. 2¼ x 3¼.	No. 2. for 104 pictures. 3½ x 3½.	No. 4. for 104 pictures. 4 x 5.	No. 5. for 52 pictures. 5 x 7.
Style A, cloth bound	\$0 75	\$1 25	\$1 80	\$2 00	\$2 25
Style B, half morocco, gold edges	1 00	1 65	2 00	2 50	2 75
Style C, full morocco, gold edges	1 50	2 25	2 75	3 50	3 75

Lantern Slide Mats.



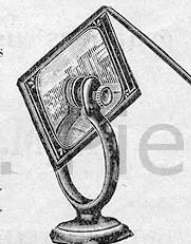
Made of the finest quality black glazed paper. Printed with great care in gilt and accurately cut. Sizes and shapes are shown in above cut. Order by number.

Price per package of 25..... \$0 20

Lantern Slide Vise.

The mat is held in close contact with the lantern slide and cover glass, thus leaving both hands free to manipulate the binding strip.

Price..... \$0 60



Lantern Slide Binders.

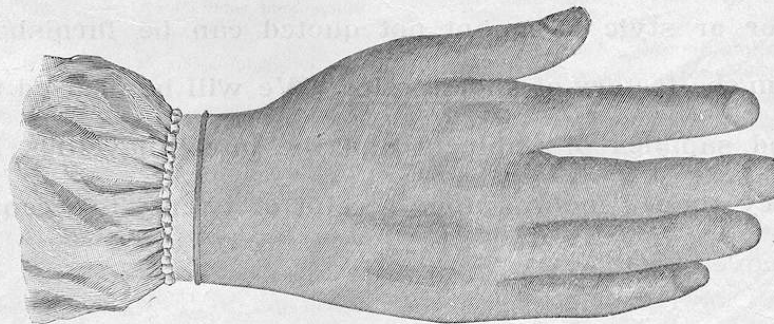
These are made of tough black paper and are thoroughly gummed. Warranted to adhere strongly to the glass. These are put up 50 in a package.

Price per 100..... \$0 20

Cover Glass for Lantern Slides.

Lantern slide covering glass, very thin, 3¼ x 4..... per dozen, \$0 35

The India Seamless Rubber Gloves.



The India are the original and only seamless rubber gloves now on the market. They are light and strong, the wearer wholly retains the sense of touch, which is practically lost when wearing other makes of gloves now on the market, which are made with seams. Of practical value to photographers when working in chemicals or water.

Two sizes, small and large. Price..... per pair, \$1 50

CARD STOCK.

WE are pleased to call the attention of our patrons to our very complete line of card stock of a superior quality, as listed in the following pages. We keep only the best, manufactured expressly for photographers' use, by the

A. M. COLLINS MANUFACTURING CO.

believing that the best is always the cheapest. For variety of styles, taste of design, quality and finish, the productions of this company have no equal. Any size, color or style of mount not quoted can be furnished from the factory at short notice. We will be pleased to send samples of Cabinets and the latest novelties in fancy shaped mounts upon receipt of twenty-five cents to cover postage.

Mantello Portrait Cards.

Square Corners.

Cards, $5\frac{1}{8} \times 7\frac{1}{4}$; for photographs, $3\frac{3}{8} \times 5\frac{1}{2}$.

Unenamelled—Plain Beveled Edge.

	Price per 1,000
No. 152, tea, sage, Queen's gray, mode or steel gray	\$13 00
No. 150, white or India, with sage or brown border	17 00

Enamelled Face—Plain Beveled Edge.

No. 460, dark olive, gray back	15 00
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Enamelled Both Sides—Plain Straight Edge.

DESIGN PATENTED, April 30, 1895.

No. 400, white	12 00
No. 401, white, Queen's gray border	15 50
No. 421, white	12 50
No. 422, white, Queen's gray border	16 00

White—Plain Straight Edge.

Enamelled Face—Plain Back.

No. 379. Cards, $2\frac{1}{4} \times 3\frac{3}{8}$; for photographs, $1\frac{1}{4} \times 2\frac{1}{4}$	3 50
No. 381. Cards, $2\frac{5}{8} \times 4\frac{1}{8}$; for photographs, $1\frac{1}{2} \times 2\frac{3}{4}$	4 50
No. 380. Cards, $3\frac{1}{8} \times 3\frac{3}{8}$; for photographs, 2×2	4 00
No. 213. Cards, $3 \times 4\frac{1}{4}$; for photographs, $2 \times 2\frac{7}{8}$	5 00
No. 382. Cards, $3\frac{7}{8} \times 3\frac{7}{8}$; for photographs, $2\frac{3}{4} \times 2\frac{3}{4}$	5 50
No. 375. Cards, $3\frac{1}{2} \times 5\frac{1}{4}$; for photographs, $2\frac{1}{4} \times 3\frac{3}{4}$	6 00

Desarto Cards.

Enamelled Beveled Edge—Round Corners.

Cards, $6\frac{3}{4} \times 8\frac{3}{4}$; for photographs, $3\frac{7}{8} \times 5\frac{1}{2}$.	
Plate Sunk Center, $4\frac{3}{4} \times 6\frac{3}{8}$; India tint, $4\frac{1}{4} \times 5\frac{7}{8}$.	
No. 519, dark olive, sage or mode	per 100, \$5 50
Cards, $6\frac{3}{4} \times 9$; for photographs, 4×6 .	
Plate Sunk Center, 5×7 ; India tint, $4\frac{1}{2} \times 6\frac{1}{2}$.	
No. 520, dark olive, sage or mode	per 100, \$5 50

Coranto Cards.

White—Plate Sunk—Embossed Border.

For Photographs, Vertical or Horizontal.

	Price per 1000
A. Cards, $4 \times 5\frac{3}{4}$; for photographs, $2\frac{1}{4} \times 3\frac{3}{4}$	\$11 00
B. " $4\frac{3}{4} \times 6$; " " " 3×4	13 00
C. " $5\frac{3}{4} \times 7\frac{3}{4}$; " " " $3\frac{3}{8} \times 5\frac{1}{2}$	18 00

Platinotype Cards.

Plain Straight Edge—Square Corners.

Plain Beveled Edge—Round Corners.

Cards, 8×10 ; for photographs, 4×5 .

Plate Sunk Center, $5\frac{1}{2} \times 6\frac{1}{2}$; India tint, $4\frac{3}{4} \times 5\frac{3}{4}$	Per 100
No. 265, white or tea, plain straight edge	\$ 3 50
No. 265, white or tea, plain beveled edge	4 75

Cards 8×10 ; for photographs, $3\frac{7}{8} \times 5\frac{1}{2}$.

Plate Sunk Center, $4\frac{3}{4} \times 6\frac{3}{8}$; India tint, $4\frac{1}{4} \times 5\frac{7}{8}$.	
No. 321, white, tea, sage or mode, plain straight edge	per 100, \$3 50
No. 321, white, tea, sage or mode, plain beveled edge	per 100, 4 75

Cards, 11×14 ; for photographs, 5×7 .

Plate Sunk Center, $6\frac{1}{4} \times 8\frac{1}{4}$; India tint, $5\frac{1}{2} \times 7\frac{3}{8}$.	
No. 119, white, tea, sage or mode, plain straight edge	per 100, \$6 50
No. 119, white, tea sage, or mode, plain beveled edge	per 100, 8 00

Cards, 11×14 ; for photographs, 5×8 .

Plate Sunk Center, $6\frac{1}{4} \times 9\frac{1}{4}$; India tint, $5\frac{1}{2} \times 8\frac{1}{2}$.	Per 100
No. 259, white or tea, plain straight edge	\$6 50
No. 259, white or tea, plain beveled edge	8 00

Cards, $11 \times 13\frac{1}{2}$; for photographs, $6\frac{1}{2} \times 8\frac{1}{2}$.

Plate Sunk Center, $7\frac{7}{8} \times 9\frac{7}{8}$; India tint, 7×9 .	
No. 320, white, tea, sage or mode, plain straight edge	per 100, \$6 50
No. 320, white, tea, sage or mode, plain beveled edge	per 100, 8 00

Cards, $12\frac{1}{2} \times 15$; for photographs, 8×10 .

Plate Sunk Center, 9×11 ; India tint $8\frac{3}{4} \times 10\frac{3}{4}$.	
No. 261, white, tea, sage or mode, plain straight edge	per 100, \$8 50
No. 261, white, tea, sage or mode, plain beveled edge	per 100, 10 50

Mantello Portrait Cards.

SQUARE CORNERS.

White—Plain Straight Edge.
Enamelled Face—Plain Back.

No.	Price per 1,000
*870. Cards 2½ x 2½; for photographs 1½ x 1½, \$2 25	
*889. " 2¾ x 3¾; " " 1½ x 2, 2 50	
+872. " 3½ x 3½; " " 2½ x 2½, 3 50	
+899. " 3¾ x 3¾; " " 2½ x 2, 3 50	
+896. " 4 x 5; " " 2¼ x 3¼, 4 50	
+873. " 5 x 5; " " 3½ x 3½, 6 00	
+874. " 4¾ x 5¾; " " 3¼ x 4¼, 6 50	
+875. " 5½ x 5½; " " 4 x 4, 7 00	
+876. " 5½ x 6½; " " 4 x 5, 8 00	
+892. " 7 x 9; " " 5 x 7, 15 00	

Tea, Sage or Queen's Gray—Plain Straight Edge.
Unenamelled.

No.	Price per 1,000
*891. Cards 2¾ x 3¾; for photographs 1½ x 2, \$2 50	
+882. " 3½ x 3½; " " 2½ x 2½, 3 50	
+897. " 4 x 5; " " 2¼ x 3¼, 4 50	
+883. " 5 x 5; " " 3½ x 3½, 6 00	
+884. " 4¾ x 5¾; " " 3¼ x 4¼, 6 50	
+885. " 5½ x 5½; " " 4 x 4, 7 00	
+886. " 6½ x 6½; " " 4 x 5, 8 00	
+893. " 7 x 9; " " 5 x 7, 15 00	

*500 in a box. †200 in a box. ‡100 in a box.

White, Tea, Sage or Queen's Gray.
Unenamelled—Plain Straight Edge.

Price per 100, in Boxes containing 25 Cards.

363. Cards 7 x 9; for photographs 3¾ x 5½, \$1 75
377. " 8 x 10; " " 4 x 5, 2 50
364. " 8 x 10; " " 5 x 7, 2 50
365. " 10 x 12; " " 6½ x 8½, 3 75
366. " 11 x 14; " " 8 x 10, 4 25
368. " 16 x 20; " " 11 x 14, 13 00
369. " 18 x 22; " " 14 x 17, 16 00

White—Queen's Gray Border, Plain Straight Edge.
Enamelled Face—Plain Back.

No.	Price per 1,000
392. Cards 3 x 4¼; for photographs 2 x 2¾, \$7 50	
387. " 3¾ x 3¾; " " 2¼ x 2¼, 8 00	
376. " 3½ x 5¼; " " 2¼ x 3¼, 8 50	
407. " 5 x 3¾; " " 3¾ x 2¼, 9 00	
399. " 4¼ x 6; " " 3 x 4, 11 50	
424. " 5½ x 4¾; " " 4 x 3, 12 00	

White—Queen's Gray Border—Plain Straight Edge.
Enamelled Face—Plain Back.

No.	Price per 1,000
*890. Cards 2¾ x 3¾; for photographs 1½ x 2, \$4 50	
+877. " 3½ x 3½; " " 2½ x 2½, 6 00	
+898. " 4 x 5; " " 2¼ x 3¼, 7 00	
+878. " 5 x 5; " " 3½ x 3½, 9 50	
+879. " 4¾ x 5¾; " " 3¼ x 4¼, 9 50	
+880. " 5½ x 5½; " " 4 x 4, 10 00	
+881. " 5½ x 6½; " " 4 x 5, 11 00	
+894. " 7 x 9; " " 5 x 7, 20 00	

White—Sage Border—Plain Straight Edge.
Enamelled Face—Plain Back.

200 in a Box.

+842. Cards 5 x 5; for photographs 3½ x 3½, \$9 50
+843. " 5½ x 6½; " " 4 x 5, 11 00

*500 in a box. †200 in a box. ‡100 in a box.

White, Tea or Queen's Gray.

Unenamelled—Plain Straight Edge.

Price per 100, in Boxes containing 25 Cards.

389. Cards 8 x 10; for photographs 4 x 6, \$2 50
434. " 10¼ x 6; " " 7¾ x 3¼, 2 00
435. " 12¾ x 6¾; " " 9¾ x 4, 3 00
388. " 9 x 12; " " 5 x 8, 4 00
384. " 9½ x 12; " " 5½ x 7¾, 4 00
367. " 14 x 17; " " 10 x 12, 7 50
390. " 22 x 26; " " 16 x 20, 21 00
385. " 25 x 29; " " 18 x 22, 27 50

White—Sage Border—Plain Straight Edge.
Plain Face—Enamelled Back.

No.	Price per 1,000
468. Cards 3½ x 5¼; for photographs 2¼ x 3¾, \$9 00	
469. " 5 x 3¾; " " 3¾ x 2¼, 9 50	
470. " 4¼ x 6; " " 3 x 4, 12 00	
471. " 5½ x 4¾; " " 4 x 3, 12 50	
472. " 5½ x 7¼; " " 3¾ x 5½, 16 00	
473. " 6¾ x 5¾; " " 5½ x 3¾, 16 50	

White Card Boards.

No. 1.		Extra No. 1.	
Price per 1,000	Price per 1,000	Price per 1,000	Price per 1,000
25 x 35.....\$7 00	11 x 14.....\$1 20	30 x 40.....\$18 00	13 x 16—12 x 14.....\$2 50
22 x 28.....4 75	10 x 12.....95	25 x 35.....10 00	11 x 14.....1 50
20 x 24.....3 75	9 x 11.....80	25 x 30.....9 00	10 x 12.....1 25
18 x 22—17 x 21.....3 25	8 x 10.....63	22 x 28.....6 00	9 x 11.....1 00
16 x 20—15 x 18.....2 50	7 x 9.....55	20 x 24.....5 00	8 x 10.....85
14 x 18—14 x 17.....2 00	6½ x 8½.....50	18 x 22—17 x 21.....4 25	7 x 9.....70
		16 x 20—15 x 18.....3 25	6½ x 8½.....60
		14 x 18—14 x 17.....2 50	

Gold Beveled Edge Cards.

No. 67 Enamelled Face—Gray Back—Round Corners. Dark Olive.

Price per 1,000	Price per 1,000
3½ x 4½.....\$ 9 00	5¼ x 8½.....\$22 00
4¼ x 5¼.....10 50	6½ x 8½.....26 00
5 x 7.....18 00	8 x 10.....37 50

No. 188 Unenamelled—Round Corners. White or Primrose.

Price per 1,000	Price per 1,000
3½ x 4½.....\$6 25	7 x 9.....\$19 00
4¼ x 5¼.....7 50	8 x 10.....23 00
5 x 7.....12 00	10 x 12.....42 00
5 x 8.....13 00	10¾ x 13¾.....44 00
6½ x 8½.....17 25	

Auroid Metal Beveled Edge.

NOT GUARANTEED.

No. 835 Primrose—Unenamelled.

Price per 1,000	Price per 1,000
4¼ x 5¼.....\$5 00	
5 x 7.....10 00	

No. 378 Primrose—Embossed Border.

Price per 1,000	Price per 1,000
†Cards 4¼ x 5¼; for photographs 4 x 5.....\$ 5 50	
† " 5½ x 7½; " " 5 x 7.....11 00	
† " 5½ x 8½; " " 5 x 8.....12 00	
" 8 x 10; " " 7 x 9.....22 50	

No. 836 Plain Beveled Edge—Round Corners. Queen's Gray, Sage or Ash Gray.

Price per 1,000	Price per 1,000
*Cards 4¼ x 5¼; for photographs 2¼ x 3¼.....\$4 25	
† " 5 x 5; " " 3½ x 3½.....5 50	
† " 5 x 6; " " 3¼ x 4¼.....5 75	
† " 5 x 7½; " " 4 x 5.....7 50	
	†200 in a box. ‡100 in a box.

Prince's Special Card Mounts.

CABINET SIZE.

Unenamelled—Square Corners—Beveled Edge. Tea, Sage, Queen's Gray.

Price per 1,000
No. 3943 Plain beveled edge.....\$5 25
No. 3943 " " embossed with name and double line.....6 75

Enamelled Both Sides—Round Corners.

Price per 1,000
No. 2773 White.....\$3 50
No. 2773 " embossed with name and double line or border.....5 00

Prince's La France Mounts.

Unenamelled—Square Corners. Tea, Queen's Gray, Sage or Steel Gray.

Price per 1,000
Size outside, 4¼ x 6½, for photographs, half cabinet size.....\$6 50

Unenamelled—Square Corners. White.

Price per 1,000
Size outside, 4¼ x 6½, for photographs, half cabinet size.....\$6 00

NOTE—In orders of one thousand or more, the "La France" mounts will be embossed with name, without extra charge, when die is furnished; otherwise a charge of \$4.00 will be made for new die.

Number "One A."

Round Corners Plain Beveled Edge—Sage or Ash Gray Colors.

An excellent card for matt surface prints.

Cards 7 x 9, with cabinet size opening (embossed with name when die is furnished).....per 100, \$4 00

NOTE—Where prices given above for "Prince's Special Mounts" include embossing with name, the die must be furnished, or charge of \$4.00 will be made for new die.

Mailing Envelopes.

To hold one dozen photos.

Cabinet, 5½ x 7½, 9283, 28-lb. manila	Per 1000	\$1 25
“ “ “ “ 9383, 36 “ “	“	1 50
“ “ “ “ 9503, 50 “ “	“	1 75
Corona, 6¼ x 8¼, 9503, 50 “ “	“	3 00
“ “ 8¼ x 10¼, 9503, 50 “ “	“	4 00

Non-actinic Proof Envelopes.

No. 6, size 3½ x 6, non-actinic, high cut	Per 1000	\$1 25
No. 7, “ 4½ x 6¼, “ “	“	2 00

Ferrottype Envelopes.

No. 15. Cabinet size, pink flap, buff or pearl cards, red borders, oval or arch top opening, 3 x 4½	\$5 00
No. 7. Pink flap, maroon cards, gilt borders, oval or arch top opening, 2 x 3½	3 00
No. 11. Pink flap, buff or pearl cards, red borders, oval or arch top opening, 2 x 3½	1 50

And many other sizes. Samples sent on application.

Lavette's Patent Envelopes.

FOR MAILING PHOTOGRAPHS.



Above envelope is composed of fine 60-lb. manilla paper, reinforced by two separate pieces of paste-board, one on each side. The cut represents the envelope open with photograph laid in. Fold over back marked B and seal with gummed flaps AAA.

The only envelope endorsed by the U. S. Postal service.

Cabinet size, 4½ x 7, \$10.00 per 1000; \$1.25 per box of 125; retail 2 for 5 cents.
No. 2—Size 5½ x 7½, \$15.00 per 1000; \$1.50 per box of 100; retail 4 cents each, 3 for 10 cents.
No. 3—Size 6 x 8½, \$25.00 per 1000; \$2.50 per box of 100; retail 5 cents each.
No. 4—Size 8¼ x 10¼, \$35.00 per 1000; \$1.75 per box of 50; retail 10 cents each.

The Photomailer



Here is an envelope that will just suit your customers who wish to mail Photographs, Christmas and Easter cards, valentines, calendars, leaflets, designs, drawings, pictures, samples, anything in fact, that looks better smooth and flat than crushed and curled.

As the peculiar construction permits of inspection, the postage is only one cent for two ounces.

PRICE LIST.

No.	Size.	Per Hundred.	No. in Box.
123	4½ x 7	\$1 00	100
126	5½ x 7¾	1 40	50
131	6½ x 9½	1 80	50
135	7½ x 10½	2 00	10
139	8½ x 11½	2 50	10
143	9½ x 12½	3 00	10
151	11¼ x 14¾	3 50	10

Put up in paper boxes.

Enclosures.

No.	Size.	Rice Bond Per M.	Napoleon Bond Per M.
5	2½ x 4¾	\$1 50	\$1 85
15	3¼ x 4	1 50	1 85
20	3¾ x 5¾	1 50	1 85
21	3½ x 5½	1 50	1 85
29	4 x 6	1 50	1 85
30	4¼ x 6¼	1 50	1 85
34	4½ x 5½	1 50	1 85
35	4¼ x 6¾	1 50	1 85
36	4¾ x 6¾	1 60	2 00
38	4¾ x 6¾	1 75	2 20
39	4¾ x 6¼	1 75	2 20
40	5¼ x 7½	2 20	2 90
40½	5¼ x 7½	2 40	3 00
42	5¾ x 7	2 60	3 10
42½	5¾ x 7½	2 60	3 10
43	5¼ x 7¾	2 75	3 25
45	5¼ x 8¼	3 10	3 50
46	6 x 8¼	3 25	3 65
47	5¼ x 8	3 40	3 90
49	6¾ x 9¼	3 50	4 00
50	7¾ x 10¼	3 75	4 25
52	7 x 9¼	3 75	4 25
60	8½ x 10½	4 00	4 50
70	10½ x 12½	4 75	5 00

FLASH-LIGHT MACHINES.

The Newcomb Flash-Light Machine

For Compound Powders.

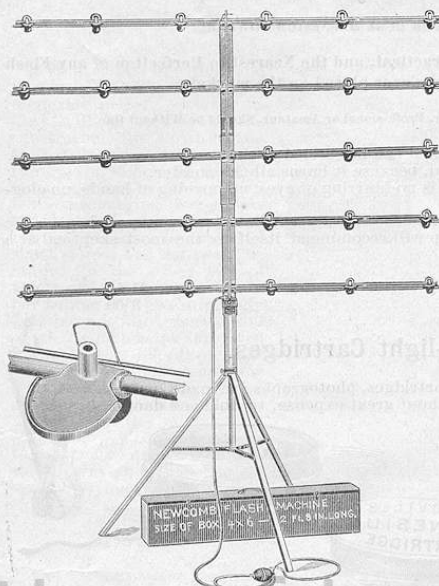
Awarded a diploma at the National Convention, Detroit, Mich., in 1895, as the best improved photographic apparatus.

The manufacturer says:

“After experimenting for over a year to get rid of the flash-light effect, I have succeeded perfectly. A negative made with my machine shows no effect of flash-light, but is exactly like a sky-light negative. The longest rods are placed at the top, giving the strongest light where it is the most needed, and producing a sky-light effect.”

The machine is simplicity itself. The powder (compounds only) being burned with a red hot wire, produces absolute combustion, and no powder is wasted. Twenty grains of powder will make a cabinet negative, one ounce only is needed for an interior of a room 40 x 60 feet. Size of machine packed up is 4 x 4½ x 34 inches.

Price for 24-light machine \$35 00



The New Compound Sun-Flash Lamp.

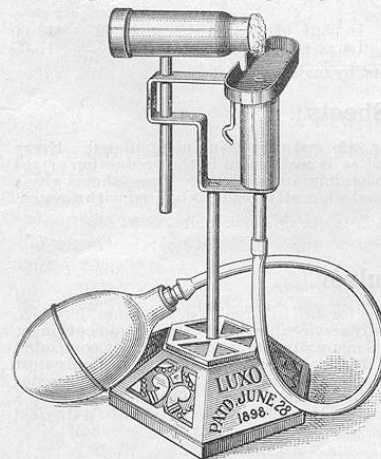
For Photographing Large Halls, Dark Interiors or Large Groups.

This lamp is composed of a battery of four Sun Flash Lamps, mounted on a light tray, which is itself supported on a telescopic tripod allowing of the adjustment of the lamps from three to nine feet from the floor.

All the lamps are connected and are discharged at the same instant. The long trough, shown in cut, can be filled with powder, and the whole discharged at once, producing an enormous volume of light.

The lamp can be taken apart and folded very compactly for transportation.

New Compound Sun Flash Lamp, complete with tube and mouth-piece, \$12 50



No. 1.

The No. 1 "Luxo" Flash-Lamp.

This illustration represents the latest, most convenient, and unquestionably the best flash lamp in the market. It is constructed on a new principle, is safe and is operated by pneumatic.

The advantages of this lamp are its portability and simplicity. It is sure pop. The powder is blown into the flame, and there is no possibility of missing fire.

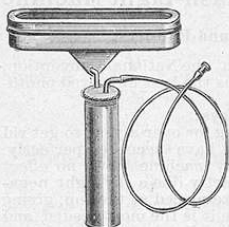
Always be careful when handling flash powders. Never pour the powder in the pan direct from the bottle, as a spark in the pan might explode the entire contents of the bottle.

PRICE LIST.

No. 1, Luxo Flash Lamp, 2 in. flash pan	\$1 25
No. 2, Luxo Flash Lamp, 2 in. flash pan, for gallery use	7 50

The Ray Flash Lamp.

FOR PURE MAGNESIUM POWDER.



Is the Simplest, Most Practical, and the Nearest to Perfection of any Flash Lamp ever placed on the market.

No Photographer, Professional or Amateur, Should be Without One.

It is small, compact, and can be carried in the pocket. The most economical, because it burns all the powder. With the Ray there is no blurring of eyes, no burning of hands, no clogging of intricate parts. The flash is instantaneous or steady, as the operator may wish. The Ray Flash Lamp will recommend itself to the most skeptical at a glance.

- No. 1. For amateurs..... \$1 50
- No. 2. For professionals..... 3 00

Magnesium Flash-light Cartridges.

Since the introduction of the Scovill Magnesium Cartridges, photographs are made instantaneously, which could not otherwise be secured without great expense, trouble and danger where daylight does not penetrate.

These are now made in the evening with the valued surroundings, under the happiest auspices which but a short time ago the most skillful photographer would not have thought it possible to secure. Among other occasions when this can be used to advantage are: Family groups, dinners, private theatricals and fancy dress parties, club and fancy dress parties, club and college dinners, companies, weddings, church fairs, picnic parties, lodge meetings, etc. The novelty for the public, and consequent advertisement of this method of photography, will be at once apparent to the intelligent and progressive photographer, aside from the fact that there are many special occasions constantly presenting themselves, where a picture made in the ordinary way could not be obtained, owing to the impossibility of securing proper light.



Price List of the Scovill Magnesium Cartridges.

In Silver Paper Wrappers.

	Per pkg.	Per gross.		Per pkg.	Per gross.
No. 1 Small size, in pkgs. of six,	\$0 25	\$6 00	No. 2½ In pkgs. of six,	\$0 60	\$13 00
No. 2 Medium,	40	9 00	No. 3 Large size, in pkgs. of six,	75	17 00

These cartridges cannot be sent by mail.

Eastman's Flash Sheets.

These give a sheet of strongly actinic flame, are absolutely safe and very easily manipulated. Every grain of powder is efficient, and only such powder is consumed as is really used in the production of the picture. The result is that a maximum light is produced with a minimum of smoke. These sheets give a correct flash light. To use, a sheet is pinned up to any support, and when all is ready, is ignited with a match.

- Eastman's Flash Sheets, per pkg. 1 doz..... \$0 40
- Illustrated Booklet, "Pictures by Flashlight"..... 10

Luxo and Blitz Pulver.

Luxo and Blitz Pulver are compound flash powders designed for use in large flash machines, in which the powder is thrown from a cup into the flame. They are equally serviceable for ignition on gun cotton, or without any other support than a board or shovel. They possess many advantages over ordinary compound powders, giving less smoke and smell and a very actinic flame. It should be remembered that the greatest efficiency is obtained from several small charges. Flame being explosive, large quantities of powder should not be fired, as only that part of the flame adjacent to the subject is used. The distribution of a large charge of powder over a considerable surface, or its division into several small heaps, will yield much better results.

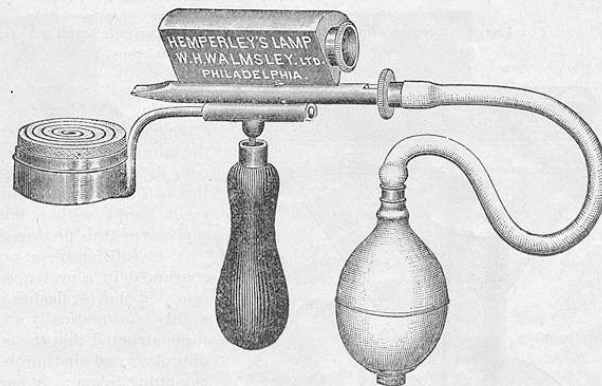
- Price, per ounce, Blitz Pulver..... \$0 60
- Price, " Luxo..... 33

Hemperley's Magazine Flash Lamp.

Self-Loading, for Use with Pure Magnesium Powder Only.

It is a simple, effective and perfectly safe instrument at a moderate price.

As will be seen from the illustration, the apparatus consists of a reservoir for containing the supply of magnesium powder, beneath which is the discharging barrel, flattened at one end in order to throw the magnesium in a thin sheet across the flame of the lamp. To the other end of the barrel is attached the rubber tubing and pressure bulb. The lamp is filled with a coil of wick, which being saturated with alcohol, affords a large service of flame, completely and instantly burning all the magnesium powder that is forced into it. A metallic cover is provided for the lamp to prevent evaporation of the alcohol when not in use. By its construction, the necessity of reloading after each exposure is avoided, thus obviating the use of glass capsules or shells, and the saving of much time and trouble.



Model of 1890.

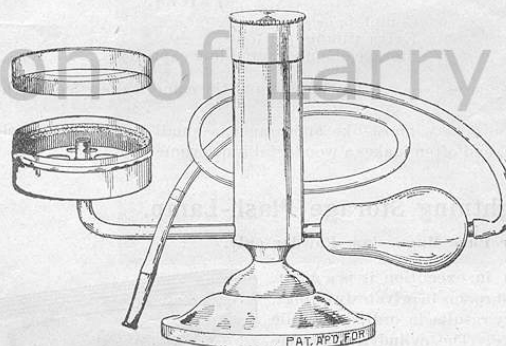
- Price of Lamp, complete..... \$2 75
- Magnesium, fine ground, per ounce..... 40

Perfection Magazine Flash Lamp.

For Pure Magnesium Powder Only.

Has a capacity of twenty flashes. An instantaneous or continuous flash may be produced at the will of the operator. Perfectly safe and thoroughly practical and cheap at the price.

Price, complete..... \$2 00



Pure Metallic Magnesium.

For Use with any of the Ordinary Flash Lamps, or in Combination with Anthony's Flash Cotton.

For use with magnesium lamps, according to printed directions furnished with the various kinds of lamp.

This magnesium powder, being entirely free from explosive compounds, will not ignite by application of fire only, but is suitable only for use with a flash lamp or with our flash cotton specially prepared for the purpose.

For use with cotton—Directions: sprinkle fifteen grains or a teaspoon filled to water level of the powder, lightly and evenly over one or two layers of the flash cotton which has previously been picked out into a flaky condition, free from lumps and bunches; taking care that the bottom layer is sufficiently thick to prevent the magnesium from filtering through it.

When ready to expose plate, ignite the cotton with match or taper, keeping well away from the flame, which is very hot; for this reason it should be prepared and ignited on a metal plate or piece of asbestos board.

Remember that with magnesium lamps pure metallic magnesium is the only safe thing to use.

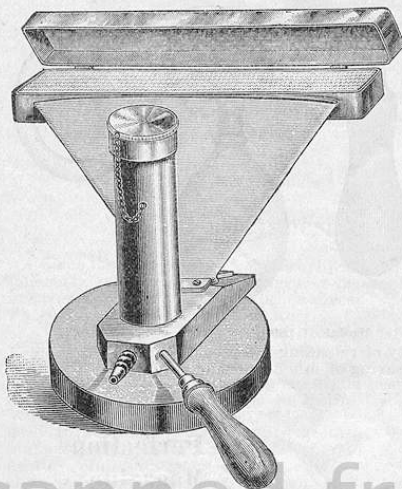
Never use compound flash powder of any kind in a lamp.

- Price..... 40 cents per ounce.

Prosch Professional Storage Flash-Lamp.

* For Pure Magnesium Powder.

For Large Interiors and Commercial Work it is unrivaled and gives as good results as many high priced Machines.



In size it is about $7\frac{1}{2} \times 5 \times 5\frac{1}{4}$ inches. Its mode of operation is evident from cut. A $\frac{1}{8}$ inch rubber tube is attached to the nozzle, and when blown into, undermines the pure magnesium powder in cylindrical storage chamber, drives it through fan shaped projector and out through the alcohol combustion frame. A broad vertical sheet flame, with a large and powerful illuminating capacity is thus produced.

The full charge of powder (about 200 grains) may be consumed in a prolonged flash of seconds duration, or repeated shorter flashes can be made. The powder feeds evenly, automatically and surely. The projector tube is so constructed that the powder does not clog, and a flame unbroken and undiminished can be depended on from beginning to end. A handle can be inserted either side of nozzle, and lamp held in hand.

Made of brass, heavily nickel plated and finely finished, each lamp packed in pasteboard box with wicks, handle, bottles for alcohol and magnesium, rubber tubing with mouth-piece.

PRICES.

Complete as above	\$9 00
Extra tubing, per foot	10
Storage chamber, doubling capacity	45

INFORMATION.—It is well, in most cases, to have the lamp behind the camera a few feet to the right or left, and held rather high.

To act as a diffuser, and prevent a chalky, ghost-like appearance, a small flag of cheese-cloth, or similar gauze-like fabric, is serviceable, and often makes a wonderful improvement.

Prosch Lightning Storage Flash-Lamp.

* For Pure Magnesium Powder only.

In size it is $4\frac{1}{2} \times 3 \times 3$ inches, but in execution it is a giant. One lamp is sufficient to light the largest rooms in private dwellings, while two to four will give satisfactory results in ordinary public halls, church and theater interiors, etc. The cylindrical storage chamber will hold about 100 grains of pure magnesium powder.

A $\frac{1}{8}$ inch rubber tube having a mouth-piece, is attached to the nozzle of lamp, which when blown into, causes the powder to be undermined and driven out through the fan-shaped projector tube into the alcohol combustion flame, thereby producing a broad vertical sheet flame, which presents to the object to be lighted an illuminating surface of nearly 100 square inches.

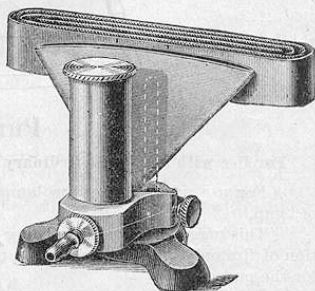
The full charge of powder may be consumed in a prolonged light of several seconds' duration, or repeated short flashes can be made. The powder feeds automatically and surely. The projector tube is so constructed that the powder does not clog in it, thus a flame unbroken and undiminished in size can be depended on from beginning to end.

A handle can be inserted either side of tube nozzle, and lamp held in the hand. The lamp may also be secured to a stand rod by binding screw on side. A reflector may be attached over nozzle and held in place by binding nut shown in annexed cut. Made of brass, heavily nickel plated, each lamp packed in pasteboard box with wicks, handle, bottles for alcohol and magnesium, and rubber tubing with mouth-piece. Bottles are not sent with lamps where freight regulations prohibit them.

Price, complete

\$4 50

* NOTE.—Never attempt to use the Explosive Compound Powder in a Magnesium Powder Lamp.



Prince's Improved Focusing Electric Lamps.

For Photographic Studios and Photo-Engraving.



This design shows the position of Electric Lamp, Side and Head Screens.

Electric Light Photography by means of 2,000 to 5,000 candle power electric lamps has been practiced for a number of years by photographers with more or less unsatisfactory results, because of insufficient light and unsteadiness of the same.

We have succeeded in producing a lamp for this purpose, the results of the use of which is guaranteed by testimonials, etc., of actual users of the apparatus in the studio. We will send a detailed description of the apparatus, and we feel that their use will provide the means for locations of ground floor studios and their operation where none can exist while daylight illumination is required.

The 5,000 candle power lamp, as shown above, is now being used successfully in a number of photo-engraving establishments, where it is desirable to make exposures and print in the quickest possible time. A single 5,000 candle power lamp will thoroughly light a design as large as 30 inches square, exposures of which may be made on a wet plate in three minutes time. In this work the covering power of the lamp is particularly noticeable. This lamp will print on zinc or copper by the line process in an average of two minutes; by the half-tone process on zinc or copper from eight to ten minutes, and on wood from ten to fifteen minutes.

Price, 5,000 Candle Power Lamp Reflector and Rheostat

\$110 00

CORRESPONDENCE SOLICITED.

CHEMICALS.

Prices Subject to Change without Notice. Warranted Pure and of Full Weight and Measurement.

We carry a full stock of Mallinckrodt's Chemicals, which we can recommend to be of exceptional purity and to produce the best possible photographic results.

	Price		Price
Acid, Acetic, No. 8	1 lb. bottle, \$0 20	Ammonium, Sulphate	per oz. \$0 25
" " " 8	2 lb. " 35	Balsam Fir	1 lb. bottle, 60
" " " 8	5 lb. " 75	Benzole, pure Mallinck	1/2 lb. " 70
" Citric, Mallinck	1 lb. " 1 00	Borax, powdered	1 lb. pkg. 20
" " " "	1/2 lb. " 55	" " "	1/2 lb. " 12
" " " "	1/4 lb. " 30	" " "	1/4 lb. " 08
" Muriatic, same price as Nitric C. P.		Cadmium, Chloride	1 oz. 50
" Nitric C. P., Mallinck	1 lb. bottle, 60	Calcium, Chloride	1 oz. bottle, 15
" " " "	1/2 lb. " 35	" " "	1 lb. " 60
" " " "	1/4 lb. " 25	Eikonogen, powdered	1 lb. can, 3 95
" " " "	2 oz. " 20	" " "	1/2 lb. " 2 10
" Oxalic	1 lb. " 25	" " "	1/4 lb. " 1 20
" Phosphoric	1 lb. " 50	" " "	1 oz. " 37
" " " "	2 oz. " 20	Ether, Sulph. Conc. Mallinck	3 1/2 lb. " 3 00
" Pyrogallie Mallinck	1 lb. can 3 00	" " "	1 lb. " 90
" " " "	1/2 lb. " 1 75	Gelatine	per ounce, 15
" " " "	1/4 lb. " 1 00	Gold, Chloride, C. P. Mallinck	15 gr. bottle, 45
" " " "	1 oz. " 30	" " "	per dozen, 5 00
" " Schering's	1 lb. " 4 00	Ground Glass Substitute, Hance's	per bottle, 50
" " " "	1/2 lb. " 2 25	Glycerine	1 lb. " 95
" " " "	1/4 lb. " 1 25	" " "	1/2 lb. " 50
" " " "	1 oz. " 35	Gum Arabic, selected	1 lb. pkg. 1 25
" Sulphurous U. S. P., Mallinck	1 lb. " 50	" Damar	1 lb. " 65
" Sulphuric C. P. Mallinck	1 lb. " 60	" Sandarac, best	1 lb. " 60
" " " "	1/2 lb. " 35	" Shellac, white	1 lb. " 80
" " " "	1/4 lb. " 25	" " orange	1 lb. " 50
" " " "	2 oz. " 20	" Turpentine	1 lb. " 25
" Tartaric	1 lb. " 60	Hydrochinon, Mallinck	1 oz. cartog 35
Alum, powdered	1 lb. pkg. 10	Iron, Proto-Sulphate	1 lb. pkg. 06
" lump (common)	1 lb. " 10	" Perchlor	1 lb. bottle, 35
" Chrome, Mallinck	1 lb. bottle, 30	Iron and Ammonia, Sulphate	per pound, 15
Alcohol, 98 per. ct., deodorized	1 gal. " 3 25	" Citrate and Ammonia	1 oz. 15
" " " "	1/2 gal. " 1 65	Iodine, crystal, resublimed	1 oz. bottle, 50
" " " "	1 qt. " 90	" tincture	1 oz. " 25
" " " "	1 pt. " 45	Lead, Acetate (Sugar of Lead) Mall	1 oz. " 15
" refined w'd, 95% for burning	1 gal. " 2 25	" Nitrate, Mallinck	1 oz. " 15
" " " "	1/2 gal. " 1 25	Lime, Chloride	1 lb. can, 25
" " " "	1 qt. " 65	Litmus, blue or red, in bottles	per bottle, 15
" " " "	1 pt. " 35	" Paper, blue or red	per sheet, 05
Amidol	1 lb. " 10 00	Lavender Oil	2 oz. bottle, 15
" " " "	1/2 lb. " 5 25	" " "	4 oz. " 75
" " " "	1/4 lb. " 2 75	" " "	8 oz. " 1 75
" " " "	1 oz. " 75	Magnesium, metallic pow. for flash	
Ammonia, Cone. Liq. Mallinck	4 lb. bottle, 75	lights, Mallinck	1 oz. can, 40
" " " "	1 lb. " 40	Metol, Hauff	per oz. 75
Ammonium, Sulpho-Cyanate	1 oz. " 20	Metacarboll	1 oz. " 75
" " Bi-Chromate	1 lb. " 1 00	" Chavant	1 oz. 75
" " " "	1 oz. " 15	" " "	2 oz. 1 50
" " Chloride	1 lb. " 45	" " "	4 oz. 2 75
" " " "	1 oz. " 15	" " "	8 oz. 5 25
" Hydrosulphuret	1 lb. " 60	" " "	1 lb. 10 00
" " " "	5 lb. " 2 00	Mercury, Bi-chlor., Mallinck	1 oz. bottle, 15
" Nitrate, fused	1 lb. " 45		

CHEMICALS.—Continued.

	Price	Iodides and Bromides.	Price
Ortol	1 oz. \$0 75	Iodide, Calcium	1 oz. bot. \$0 50
Parafine, Mallinckrodt's	per lb. 25	" Ammonium Mallinck	1 oz. " 55
Platinite	1 oz. 11 50	" Cadmium	1 oz. " 60
" " "	15 gr. vial, 50	" Lithium, Mallinck	1/2 oz. " 75
Pumice Stone, pulverized	1 oz. pkg. 10	" Potassium	1 oz. " 40
Potassium, Cyanide, Mallinck	1 lb. bottle, 75	Bromide Ammonium	1 oz. " 15
" " "	1/2 lb. " 40	" Cadmium	1 oz. " 30
" Sulpho-Cyanide, Mallinck	1 oz. " 30	" Lithium	1/2 oz. " 40
" Ferri-Cyanide, C. P.	1 lb. car. 1 50	" Potassium	1 oz. " 20
" (red prussiate)	1 oz. 15	" Calcium	1 oz. " 25
" Ferro-Cyanide, C. P.	1 lb. pkg. 75		
" (yellow prussiate)	1 oz. bottle, 10		
" Carb. (Salts Tartar)	1 lb. " 30		
" Sulphuret, Mallinck	1 lb. " 40		
" Meta-Bi-Sulphite	1 lb. " 1 00		
Potass. Permanganate, Mall.	1 oz. " 25		
" Bi-Chromate	1 oz. " 15		
" Neutral Oxalate	1 lb. " 25		
Potassa, Caustic, Mallinck	1/2 oz. " 20		
" " "	1 oz. " 35		
Rodinal	3 oz. " 60		
" " "	8 oz. " 1 10		
" " "	16 oz. " 2 00		
Soda Acetate, Mallinck	1 lb. " 35		
" " "	1/2 lb. " 25		
" " "	1/4 lb. " 18		
" " "	1 oz. " 10		
" Carbonate Granul or cryst.			
(Sal Soda) Mallinck	1 lb. carton 20		
" Citrate, Mallinck	1 oz. bottle, 20		
" Bi-Carbonate, Mallinck	1 lb. pkg. 15		
" Hyposulphite	per lb., 5		
" " "	per 112 lb. keg 3 75		
" Tungstate, Mallinck	1 oz. bottle, 20		
" Sulphate, "	1 oz. " 20		
" Sulphite, granular, Mall.	1 lb. 20		
" " crystals, 5 lb. can, 50c. or bottle,	75		
" " "	1 lb. 15		
" Caustic	1 lb. 75		
" " "	1/2 lb. 30		
" " "	1/4 lb. 20		
" " "	1 oz. 15		
" Meta Bi-Sulph	1 oz. 50		
*Silver, Nitr., cryst. C. P.	1 or 2 oz. bot., per oz. 60		
" " " "	4 oz. bot. 2 20		
" " " "	1/2 lb. 4 30		
" " " "	1 lb. 8 00		
*Silver, bath solution for ferrotypes,			
40 gr. strong	1 pt. bot. 1 75		
*Silver, bath solution for ferrotypes,			
40 gr. strong	1 qt. " 3 00		
Strontia Chloride (Muriate) Mall.	1 oz. " 15		
Tolidol	1 oz. " 60		
Uranium, Chloride	1 oz. " 50		
" Nitrate	1 oz. " 1 00		
" Sulphate	1 oz. " 1 00		
Venice Turpentine	1 oz. " 25		
Water, Distilled, C. P.	1 gal. 50		
" " "	1/2 gal. 30		
Wax, white	1 lb. pkg. 1 00		

* Present prices are very fluctuating, and are liable to change without notice.

Collodions.

Anthony's New Negative	8 oz. bottle, 65
" Positive	8 oz. " 65
" Instantaneous	8 oz. " 65
" Extra Portrait	8 oz. " 1 00
Porcelain (collodio-chloride) Collo-	
tion for making opal or porcelain	
pictures	8 oz. " 1 50
Lewis & Holt's Negative	8 oz. " 60
" Positive	8 oz. " 60

Varnishes.

Anthony's Flint for Negative	bottle, 40
" " "	pint, 1 00
" " "	quart, 1 90
" Diamond for Positives	bottle, 85
" " "	pint, 1 00
" " "	quart, 1 90
" Dry Plate	bottle, 50
" " "	pint, 1 00
Phenix Plate	bottle, 60
Mountfort's Crystal, for Negatives	bottle, 40
" " "	pint, 1 00
" " "	quart, 1 90

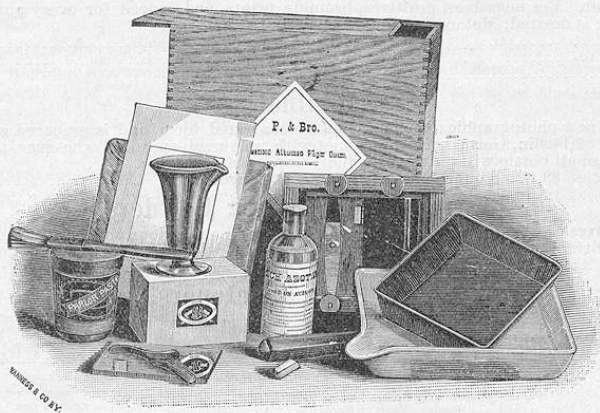
Cottons.

Anthony's Negative	per oz. \$0 50
Nos. 1 and 2 Soluble	" 50
Positive	" 50
Snowy	" 1 00
Glace Cotton	" 50
Climax	" 75
Special	" 1 00
Flash Cotton for Flash Light	" 50
Papyroxylene	" 1 00
Hance's Silver Spray Negative	" 50
" Delicate Cream Negative	" 75
Filtering Cotton	per package 65

Absorbent Cotton.

1 lb. package	\$0 40
8 oz., in paper box	25
4 oz., in paper box	15

Prince's Developing, Printing and Toning Outfits.



For the large number of amateurs who prefer not only to "take" pictures, but finish them as well, we have arranged the following complete outfits, comprising all necessary articles for developing the negative and making the print.

Outfit "A."

- | | |
|--------------------------|----------------------|
| 3 Fibre Trays. | 1 Bottle Toner. |
| 1 Bottle Developer. | 1 Measuring Glass. |
| 1 Printing Frame. | 1 Dozen Print Paper. |
| 1 lb. Hyposulphite Soda. | 1 Book Directions. |
| 1 Ruby Lamp. | |

Size.....	4 x 5 or smaller.	5 x 7
Price.....	\$1 50	\$2 50
Same articles figured separately would cost.....	2 50	3 75

Outfit "B."

- | | |
|--------------------------|----------------------|
| 3 Fibre Trays. | 1 Negative Rack. |
| 1 Bottle Developer. | 1 Bottle Toner. |
| 1 Ruby Lamp. | 1 Squeegee Roller. |
| 1 Printing Frame. | 1 Jar Paste. |
| 1 Graduate. | 1 Paste Brush. |
| 1 lb. Hyposulphite Soda. | 1 Dozen Card Mounts. |
| 1 Dozen Paper. | 1 Book Directions. |

Size.....	4 x 5 or smaller.	5 x 7
Price.....	\$2 00	\$3 50
Same articles figured separately would cost.....	3 50	5 00

Special Outfit "C."

In this outfit we offer for the professional or amateur the very best of everything, and a glance at the regular selling price of these articles will show the great reduction in price we have made on the complete outfit. Choice of any kind of trays is offered.

- | | |
|------------------------------|------------------------------------|
| 3 Trays. | 1 Printing Frame. |
| 1 Dozen Dry Plates. | 1 Package Printing-out Paper. |
| 8 Ounce Graduate. | 1 Bottle Prince's Toning Solution. |
| 1 Bottle Prince's Developer. | 25 Card Mounts. |
| 1 lb. Hyposulphite Soda. | 1 Negative Rack. |
| 1 Jar of Paste and Brush. | 1 Squeegee Roller. |
| 1 Universal Ruby Lantern. | 1 Instruction Book. |

Size.....	4 x 5	5 x 7	6 1/2 x 8 1/2	8 x 10
Price.....	\$4 50	\$5 50	\$7 00	\$9 00
The articles purchased separately cost.....	6 00	8 00	9 00	11 00

Note—When ordering, be sure and specify the size of camera for which outfit is desired.

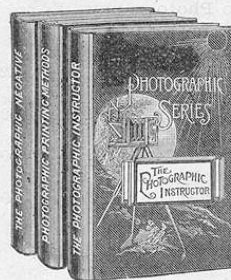
PHOTOGRAPHIC PUBLICATIONS.

THE ADVANTAGES OF READING.

One of the main reasons why so many photographers have attained such eminent success in their work is, without doubt, to be found in the fact that they are regular and careful students of photographic literature.

No matter what may be said to the contrary, the dissemination of ideas, the formulæ for new processes, and the interchange of thought and method which it is impossible to obtain except through the photographic journals and current photographic literature of the day, is the ladder on which many a one has risen to prominence from the excellence of his work.

We do not mean by this that reading makes an artist unless the principles of artistic composition are inherent in the operator, but a knowledge of the various methods of manipulation in use, the almost endless variety of agents to be employed for the accomplishment of certain results, and the apparently inexhaustible supply of "kinks" for arriving at a solution of any one or all of the difficulties so often arising to confront the worker in this field, is of inestimable value to him who would be more than a mere button pusher.



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		Letters on Landscape Photography. By H. P. Robinson. Illustrated. Paper, 50c. Cloth.....	1 00
		Photographic Primer. By J. C. Worthington and J. C. Millen. Plain and practical. 1897. Cloth.....	1 00

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First Principles of Photography. By Clement J. Leaper. 1892. 270 pp. (English.) Cloth	2 50	The Right Road Into Photography. By Dr. J. Nicol. 1898. A simple guide for the novice, plainly written. With instructions and formulae. Paper, 83c. Cloth	1 12
Practical Pocket Book of Photography. By E. Vogel. (English.) 1896. Comprehensive; brief. Paper	50	The Beginner's Book. By J. R. Gale and J. C. Cadett. (English.) 1896. Paper	50
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Photographic Amusements. By W. E. Woodbury. 2d edition. Illustrated. 1897. Paper, \$1 00. Cloth	1 50		
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Bromide Paper. By Dr. E. A. Just. 1896. (English.) 144 pp. Illustrated. Practical instructions for contact printing and enlarging, by a recognized authority.	75	The Photographic Negative. By Rev. W. H. Burbank. 1888. 198 pp. Illustrated. Cloth	1 00
Development. By Lyonel Clark. 1896. (English.) 48 pp. Cloth	50	The Photographic Image. By P. C. Duchochois. A treatise on development. 1891. 212 pp. Paper	1 50
Platintype, Its Preparation and Manipulation. By Capt. W. de W. Abney and Lyonel Clark. Original English edition. An exhaustive description of the platinum printing process. Price	1 25	Aristotypes and How to Make Them. By W. E. Woodbury. 1893. 153 pp. Illustrated with full-page aristotypes. Paper	1 50
Bromide Enlargements and How to Make Them. By J. Pike. A capital treatise on the subject of Bromide Enlarging. Postage, 2 cents; price	25	The Art of Retouching Negatives and Finishing and Retouching Photographs. By Robert Johnson. 1898. (English.) Mr. Johnson is a practical man, having been many years chief retoucher for W. & D. Downey. London. Full-page illustrations. Cloth	1 00
A. B. C. Type to Permanent Autotype (Carbon) Photography. By J. R. Sawyer. New edition. 1898. (English.) 104 pp. Illustrated. Cloth	1 25	A. B. C. of Retouching. By Andrew Young. 1898. (English.)	25
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GENERAL TEXT BOOKS.

(The more important only are listed here.)

Wilson's Quarter Century in Photography. A standard manual on modern photography. By Edw. L. Wilson. 1886. (10th thousand.) 528 pp. Quotations from 300 authorities; 280 engravings. Plain and practical; theory and working instructions. Cloth	\$4 00	The Barnet Book. (English.) Practical articles by well-known writers. 1898. 300 pp. Illustrated. Cloth	\$1 50
Photographics. By Edward L. Wilson. 1881. (9th thousand.) Especially valuable to professionals and process workers. 368 pp. Appendix. Illustrations throughout.	4 00	Introduction to the Science and Practice of Photography. By Chapman Jones. Revised edition 1895. Comprehensive and reliable. 320 pp. (English.) Cloth	1 25
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		A Treatise on Photography. By Capt. Abney. 1893. 384 pp. 115 woodcuts. Cloth	1 25

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Cloth bound, library edition (by mail, 15c. additional).....	1 00	British Journal Photographic Almanac. Genuine English edition. Postage extra.....	25
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The Half-Tone Process. By Julius Verfassner. A short treatise by a practical man. 1896. (English.) 170 pp. Illustrated. Cloth.....	1 00	How to Make Lantern Slides. By S. L. Colthurst. 1898. (English.) 80 pp. Diagrams. Cloth.....	50
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A Handbook of Illustration. By A. Horsley Hinton. A practical book. Fully illustrated. 120 pp. 1894. Cloth.....	1 10	Lantern Slides by Photographic Methods. By Andrew Pringle. 1897. 71 pp. Paper.....	75
		The Optical Lantern. By Andrew Pringle. 1890. 106 pp. Illustrated. Paper.....	1 00
		Lantern Slides: How to Make and Color Them. By Dr. D. L. Elmendorf. Cloth.....	1 00

REFERENCE BOOKS.

Wilson's Cyclopædic Photography. A complete handbook of the terms, formulae, materials, apparatus, processes and applications of photography. By Edw. L. Wilson. 1894. 500 pp. 2500 references. Cloth.....	\$4 00	The Chemistry of Photography. By W. Jerome Harrison. 1892. 426 pp. Cloth.....	\$3 00
Encyclopædic Dictionary of Photography. By W. E. Woodbury. 1898. 2000 references. 400 illustrations. Cloth.....	5 00	Chemistry for Photographers. By F. C. Townsend. 2nd edition. 1899. Practical and simply written. Cloth.....	75
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Photographic Reference Book. By W. A. Watts. (English.) 1898. Tells "how to do." 835 references. 300 pp. Cloth.....	3 00	A History of Photography. By W. Jerome Harrison. A practical guide to the developments of photography. Cloth.....	1 00
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A SHORT TALK ON NEGATIVE MAKING.

The Proper Care of Dry Plates.

Plates should always be kept in a dry room. The dark room, or developing room, is usually damp and poorly ventilated, for that reason it is not a safe place in which to keep gelatine plates.

The Developing Room.

The room in which plates are handled and developed must be a perfectly dark room, save for the light from a small ruby or orange colored window (or one containing a combination of these colors), by which the progress of development can be watched. If possible, have an abundance of pure running water, and provide good ventilation. You will have better negatives and better health by so doing.

The Developing Light.

The window in your dark room which illuminates the sensitive plate during the process of development must be as non-actinic as possible. There is no such thing as a perfectly safe light. Any light of sufficient illuminative power to be of practical use will affect a very sensitive plate, if given time enough; it is therefore necessary to use great care in developing. The best and safest light for your dark room window is a combination of ruby glass and orange paper, commonly called post-office paper. This is easier on the eyes than ruby glass alone, and by its use the quality of the negative may be more easily determined. Use a lamp or gas jet outside to illuminate the window, as it is safer and more uniform than daylight.

Test your light in this way: Place an extra fast plate in the plate holder in total darkness, draw the slide sufficiently to expose one-half of the plate, and allow the light from your window, twelve to eighteen inches distant, to fall on this exposed half for three or four minutes. Then develop the plate the usual length of time in total darkness. If the light is safe there will be no darkening of the exposed part. If not safe, the remedy is obvious.

Chemicals.

The best chemicals are always the cheapest. Keep bottles well stoppered and labeled; otherwise you will be dealing with uncertainties. In preparing developers, pure water is very important. If water from well or hydrant is used, boil it, and filter when cool. Accuracy in weights and measures

is important. Sulphite of sodium should be kept in bottles with close fitting glass stoppers, to protect it from the air, which will cause it to decompose and become worthless. If the hydrometer is used in preparing developer, for testing the strength of sulphite of sodium, or carbonate of sodium or potassium, the solutions must be of uniform temperature or great variations in strength will occur. Hyposulphite of sodium (fixing) solutions should be prepared in bottles and filtered into grooved boxes for use. Such solutions are best when freshly prepared.

Development.

No two developing agents are alike in their results. Pyrogallie acid, eikonogen, metol and hydrochinone, or combinations of two or more of these, are generally used. In this catalogue we give a variety of formulae which are in daily use and give excellent results. The conditions under which individuals must work are so varied that one particular formula can not be applicable to all. When strong, vigorous printing negatives are desired, pyrogallie acid in combination with either carbonate of sodium or carbonate of potassium is generally preferred, although by dilution and modification as much softness and detail can be produced with this as with any other developing agent. Eikonogen or metol is generally preferred, however, when soft, delicate negatives are desired, the addition of hydrochinone to eikonogen or metol solutions produces more contrast, or greater strength in the high lights. Overtimed plates, which would be flat and worthless if developed in normal developer alone, may be greatly improved by adding a few drops of bromide solution (ten ounces of water to one ounce of bromide of potassium) to the developer as soon as the overtimed condition of the plate is apparent. More bromide will be necessary in metol developer than in any other. A plate slightly undertimed should be removed from the normal developer as soon as its condition is known and, without washing, placed in a tray of water where no light of any kind can reach it. If this treatment brings out the detail of the shadows where there has been but little action of light, in thirty to sixty minutes, it may then be developed in normal developer, in a dark place. If much undertimed, it is better to destroy the plate and make another exposure. Sulphite of sodium is used in developers to give the negative the best possible printing color. If the quantity is insufficient, or if it has decomposed by continued exposure to the atmosphere, the negative will be of a yellow, slow printing color. It is not always necessary to use the precise amount of sul-

NEGATIVE MAKING—Continued.

phite mentioned in the formula; frequently less will be sufficient, and sometimes more will be required, the amount depending upon the condition of the water used in the developing solution.

Quick development, with strong solutions, means a lack of gradation, a forcing up of the high lights before the developer has time to act on the less exposed parts. Good results can only be obtained by slowly coaxing out the detail, so that all parts of the image come up fairly together. A developer too warm, or containing too much alkali (carbonate of sodium or potassium), will cause flat, foggy negatives. A developer too cold is retarded in its action, and causes thin negatives.

All developers should be carefully filtered immediately before using. If several plates are developed together in a large tray, the edges are liable to strike together, detaching small chips of glass which adhere to the soft gelatine surface. Keep them separated by little strips of wood tightly fitted to the tray.

Temperature.

Uniform results are unattainable without uniform temperature. Formulae will always be apparently at fault if the solubility of chemicals at different temperatures is not considered. The simple addition of a small quantity of boiling water, more or less, or a lump of clean ice, to the water used in diluting the developer will readily control the temperature of the solutions. Heat accelerates chemical action, cold retards it; therefore, developing solutions should be kept reasonably cool in summer, and used more dilute. Use sufficient developer to cover the plates well.

Fixing Bath.

To fix negatives properly it is necessary to use a fresh solution of such volume that no factor of uncertainty exists. When an unlimited number of negatives are fixed in a small quantity of solution the bath soon becomes loaded with chemicals and fails to do its work properly. In cool weather a plain hyposulphite of sodium bath is all that is required. During hot weather use one of the chrome alum and hyposulphite formulae given in this catalogue, or make a fresh solution for each lot of plates developed. If the latter plan is adopted no alum will be needed. Commercial hyposulphite of sodium usually contains foreign matter, which, if allowed to remain in the solution, will cause spots on the negatives. These impurities may be removed by filtering the solution. When the white bromide of silver is just dissolved, the plate is only half fixed. Thorough fixing is as necessary as thorough washing to insure permanency in the negative. Our non-halation plates will require more time in fixing and washing than the extra fast, on account of the double coating.

Washing and Drying Negatives.

After the plate is properly fixed, it must be thoroughly washed to remove all traces of the hyposulphite of sodium. An hour's washing in running water is none too much. If running water is not at hand wash at least an hour, changing the water frequently. Before placing the negatives in the rack to dry wipe the film carefully with a tuft of clean, soft, wet cotton to remove any sediment that may have been deposited from the water. The drying of negatives demands more attention than is generally given it. If dried slowly during hot weather the film will swell, become more dense and coarse grained, and can not yield fine prints. To prevent this result dry your negatives as quickly as possible in a moderate current of cool air, free from dust. A water fan is very desirable for this purpose.

FAILURES.**Foggy and Hazy Negatives.**

These may owe their origin to a variety of causes, the most common of which are: Over-timing; too much light in the developing room; exposing the plate too long to the light of the developing window; imperfections in plate holders and cameras, permitting the entrance of light; reflection of light through the lens; too much alkali in the developer; too much warmth in developing solutions; traces of hyposulphite of sodium or nitrate of silver in the developer; exposure of plate to white light before the bromide of silver is thoroughly dissolved in the fixing solution. Locate the cause and the remedy is obvious.

Spots and Pin-Holes.

Spots and pin-holes in negatives are produced in so many ways, and under so many different conditions, that it would be impossible to enumerate and describe them all. Cleanliness in every operation is the only sure preventive. If the dark-room, and also the graduated measures and trays which contain the developing solutions, are kept clean, the cameras and plate holders kept free from dust, the fixing solution free from sediment, and each plate is carefully dusted before being placed in the holder, very few spots of any kind will be seen.

The most common spots are small, round, or nearly round, and transparent, with sharply defined edges. These are generally caused by air bubbles adhering to the surface of the plate when the developing solution is flowed over it. These bubbles should be broken up by gently passing a tuft of soft cotton, or a fine camel-hair brush, over the surface of the plate immediately after it is covered with the developing solution. Use clean well water or melted ice in making developing solutions. River and cistern waters contain more vegetable matter, hence are more liable to produce bubbles.

NEGATIVE MAKING—Continued.

Small transparent spots, angular in shape and irregular in size, are caused by particles of dust adhering to the gelatine surface of the plate at the time of exposure in the camera, or by dirt in the developing or fixing solutions. Filter the solutions and wipe out the camera and plate holders, and no spots of this kind will appear.

Another kind of transparent spot, triangular in form and irregular in size, larger, usually, than dust spots, is caused by a scum which forms on the surface of the developing solution if it is prepared and left in an open vessel, such as a graduate or tray, some time before using it. When disturbed, this scum breaks up into small triangular particles and adheres to the surface of the plate, thus preventing the action of the developing solution. Remedy: Filter the developer immediately before using.

Small transparent spots, resembling little particles of lint and dust, are usually caused by brushing the surface of the plate hurriedly before placing it in the holder; the gelatine film becomes electrified by the friction and attracts to itself the dust and lint floating in the surrounding atmosphere. Remedy: Use a tuft of clean cotton and wipe slowly in one direction only.

Purple or dark, opaque spots, comet or irregular in shape, and irregular in size, are generally caused by adding dry pyrogallie acid to the developing solution immediately before using—little particles of undissolved pyro adhering to the surface of the plate causes the spots. Sediment in the fixing solution often causes opaque spots. To remove such spots, soak the plate a few minutes in water to which has been added a few drops of nitric acid. Use no more acid than is necessary to remove the spots in a reasonable time.

Thin Negatives.

If negatives are too thin in high lights to make satisfactory prints, it is usually the result of over-exposure, by using developer too much diluted with water, by stopping the action of the developer too soon, or by using the developing solutions too cold. The results produced by these different causes are not the same, but the difference is so slight that it is not easily described. Such negatives may be strengthened by using the intensifying solution given on another page.

THE TEMPERATURE of the developer is of just as much importance as is the length of the exposure.

Intense Negatives.

If the development is continued too long, the negative will be too dense. If thoroughly fixed and washed it may be reduced. (See formula for reducing solution.) All developers should be more dilute in warm weather than in cold, to avoid extreme density in high lights.

Yellow Negatives.

Plates developed with pyrogallie acid developer will sometimes turn yellow in the final washing. This is attributable to the water. Immerse them in the clearing solution, and rinse well just before putting in the rack to dry. If the yellow color is produced by decomposed sulphite in the developer, or a lack of sulphite, or by decomposed pyrogallie acid, it will show as soon as the plate is fixed. The remedy is the same in either case.

Uniformity in Development.

Those who are ignorant of the effect temperature has upon developing operations should make similar exposures upon two plates, and develop one with a cold and the other with a warm solution. The effect will appear remarkable. Hence, the temperature that is considered best for the purpose should be adhered to. 65° F. is about right. But if there is any variation, let the temperature go a little lower in hot weather, and a little higher in cold weather. Every dark room should be supplied with a thermometer for this purpose.

Uniform lighting, uniform strength of solutions and uniform temperature are the main factors in obtaining uniformity in development.

Don't Hurry Development.

Few beginners, says *Photographic Scraps*, recognize the great benefit to be derived from a deliberate slowness in developing. There is too much haste to see results—a too eager press to get a negative of any kind. Be the exposure what it may, nothing is lost, but much gained, by so compounding the developer that at least five minutes is spent before the development is complete. Quick development means a lack of gradation—a forcing up of the higher lights before the less exposed parts are acted on. The roundness and gradation necessary for good results are only attainable by slowly and carefully coaxing out the detail, so that all parts of the image come up fairly together.

HINTS ON DEVELOPING, ETC.

It is not possible to formulate a developer which will be best for all photographers. So much depends upon the modification of the developer to suit particular conditions. If a low, unobstructed skylight is used, the negatives will be inclined to flatness, and be lacking in contrast. Correct this by using a developer that will produce more contrast. A skylight, small and high, surrounded by tall buildings, will be inclined to produce negatives with too much contrast; in this case use a developer that will produce the opposite effect.

During hot weather it is advisable to dry negatives as rapidly as possible. This may be done by soaking them in alcohol a few minutes, then without further washing place them in a rack to dry. The alcohol will absorb the water from the film and will, in time, become so diluted with water that it will be unfit for use. When in this condition pour it into a large, wide-mouthed bottle and put into it a good quantity of unslacked lime, which will absorb the water from the alcohol.

Common washing soda—usually sold by grocers—is not pure or uniform in quality, and should not be substituted for carbonate of soda when making a developing solution. If possible, buy your chemicals all of a responsible dealer in photographic supplies and use the best. There is no economy in using impure chemicals in photography.

In hot weather the quantity of alkali (carbonate of soda or potassium) in the developing solutions should be reduced, and in cold weather it is frequently necessary to increase it slightly.

If hyposulphite of soda solution is spilled on the floor, wipe it up at once; if left to dry the soda will rise in fine dust and probably cause a fine crop of pin holes in your negatives.

Don't expect clean, faultless negatives to come out of dirty developing and fixing solutions.

Use plenty of developing solution to thoroughly cover the plate or plates. If an insufficient quantity is used, streaks, uneven development and general dissatisfaction will result.

When plates are exposed and set away for future development, be sure to set them *face to face*, as they were in the original boxes. If the face or film is placed against the back, you will probably have finger marks on the film, caused by the fingers coming in contact with the backs of the plates while placing them in the holder.

It is advisable to use a fresh solution of hyposulphite of sodium each day during the hot weather. The fresh solution hardens the film, and alum will not be necessary.

Thorough fixing and thorough washing, followed by quick drying, will insure permanency and fine printing quality in the negative.

To prevent sand or rust from striking the negatives while washing, tie a piece of cotton flannel over the faucet.

Negatives exposed to white light before the bromide of silver is thoroughly dissolved in the fixing solution will be foggy, and the printing quality will be injured.

A solution of bromide of potassium (one ounce of bromide to ten ounces of water) should be in every developing room. When plates are a little over-exposed, a few drops of this solution added to the developer will restrain its action, and may thus produce a good negative from what would otherwise be a worthless plate.

... REMEMBER ...

That Pyrogallie Acid, Hydrochinon, Metol, etc., are the developing agents proper.

That an excess of these chemicals produces clogging of the whites and too much contrast.

That an insufficient quantity causes slow development, want of vigor and brilliancy.

That Sulphite of Soda preserves the developing agent and keeps the film from staining.

That the sulphite must be fresh and pure, or it will in itself cause yellow stain.

That a smaller quantity of sulphite will produce a warmer tone, a larger quantity a gray or bluish black tone.

That the Alkalies, carbonate of potassium or carbonate of soda (sal soda) soften the film and open the pores, allowing the developing agent to act.

That too much alkali will make the negative too dense and cause fog and granulation.

That too little will not allow the developing agent to act and will develop too slowly.

That granulated sodas are twice as strong as the crystals.

That old and dry crystals are stronger than fresh, as the water of crystallization gradually evaporates.

That all chemicals will act with considerable more vigor when warm than when cold.

That an even temperature of about 70 degrees is most desirable for the chemicals and dark-room.

That in warm weather, when the dark-room is overheated, the developer should be used more dilute and cold and the fixing bath should also be kept cool to counteract the heat of the atmosphere.

That it is the best to buy chemicals prepared specially for photographic use.

That over-exposed plates can be restrained by adding a few drops of a ten per cent. bromide of potassium solution to the developer.

That an under-timed plate should be treated with a fresh diluted developer, and if sufficient detail does not appear, take the plate from the developer, and, without rinsing, place it in a tray containing water, to which a little of the alkaline solution (sulphite and carbonate of soda) has been added, and leave it there as long as it increases in detail. If it is not then strong enough, the development may be continued in fresh developer.

That a negative dried in a warm, close atmosphere will become more intense than when dried in cooler air with draft.

That all solutions must be kept in well-stoppered bottles.

That it is better to make up solutions often, than to use them when old.

That sensitive plates must be kept in a dry place and will not improve with age, therefore see

That the plates you get are fresh.

DEVELOPING FORMULÆ.

Seed Plates.

Pyro Developer.

No. 1.
Distilled or good well water 16 ounces.
Sulphite of Soda (crystals) 4 ounces.
Pyrogallie Acid 1 ounce.

No. 2.
Water 16 ounces.
Sal Soda (crystals) 4 ounces.

TO DEVELOP TAKE

No. 1. 3/4 ounce.
No. 2 1 ounce.
Water 8 ounces.

Pyro Developer by Hydrometer Test.

No. 1.
Of a clear Sulphite of Soda solution to test 60 with hydrometer, take 18 ounces.
Pyrogallie Acid 1 ounce.

No. 2.
Sal Soda Solution Hydrometer test, 40.

TO DEVELOP TAKE

No. 1. 3/4 ounce.
No. 2 1 ounce.
Water 8 ounces.

More water gives flatness, and less water contrast. Use less water in cold weather. About 10 drops Sulphuric Acid added to the stock Pyro Solution will make it keep better.

Eikonogen-Hydrochinon Developer.

No. 1.
Distilled or pure well water 32 ounces.
Sodium Sulphite (crystals) 4 ounces.
Eikonogen 240 grains.
Hydrochinon 60 grains.

No. 2.
Water 32 ounces.
Carbonate of Potash 4 ounces.

TO DEVELOP TAKE

No. 1. 2 ounces.
No. 2 1 ounce.
Water 2 ounces.

By Hydrometer.

No. 1.
Sodium Sulphite solution to test 30 34 ounces.
Eikonogen 240 grains.
Hydrochinon 60 grains.

No. 2.
Carbonate of Potash solution to test 50.

TO DEVELOP TAKE

No. 1. 2 ounces.
No. 2 1 ounce.
Water 2 ounces.

More water gives less contrast and density. An alum hypo bath used after this developer sometimes gives reticulation marks.

Amidol Developer.

Water 10 ounces.
Sulphite of Soda (crystals) 120 grains.
Amidol 20 grains.

This developer should always be used fresh.

Metol-Hydrochinon Developer.

No. 1.
Water 16 ounces.
Metol 30 grains.
Hydrochinon 30 grains.
Sodium Sulphite (crystals) 240 grains.

No. 2.
Water 10 ounces.
Potassium Carbonate 120 grains.

TO DEVELOP TAKE

No. 1. 1 ounce.
No. 2 1 ounce.
Water 1 ounce.

Hydrometer Test.

No. 1.
Sodium Sulphite solution test 10, take 16 ounces.
Metol 30 grains.
Hydrochinon 30 grains.

No. 2.
Potassium Carbonate solution test 10.

TO DEVELOP TAKE

No. 1. 1 ounce.
No. 2 1 ounce.
Water 1 ounce.

By taking equal parts of No. 1 and No. 2 without water, and adding 5 to 10 drops to the ounce of a 1 to 10 Potassium Bromide solution, this developer can be used for black tones on lantern slides and transparency plates.

Metol Developer.

No. 1.
Water 8 ounces.
Metol 100 grains.
Sulphite of Soda (crystals) 1 ounce.

No. 2.
Water 10 ounces.
Carbonate of Potash 1 ounce.

TO DEVELOP TAKE

No. 1. 1 ounce.
No. 2 1 ounce.
Water 5 ounces.

Eiko-Hydro Developer.

FOR LANTERN SLIDES AND TRANSPARENCIES.

A good developer to give brilliancy from flat negatives, and also for somewhat warmer tones than our Metol-Hydrochinon formula gives.

A.
Distilled Water 20 ounces.
Sulphite Soda (crystals) 1 ounce.
Citric Acid 20 grains.
Eikonogen 120 grains.
Hydrochinon 60 grains.

B.
Distilled Water 20 ounces.
Caustic Potash (fresh and dry) (or Caustic Soda) 120 grains.
Bromide Potash 120 grains.

Use 2 of A to 1 of B.

Expose somewhat longer than for the Metol Hydrochinon developer. Temperature of developer should be from 70° F. to 75° F.

CRAMER PLATES.

The Following Formulae Are Given in Apothecary Weights and Measures, Also by the Hydrometer Test.

The most convenient way is to make up saturated solutions and to add water to a portion thereof, until the hydrometer indicates the desired degree. It makes no difference if dried chemicals are used in place of crystals, when the solutions are prepared in this manner, but if they are prepared by weights and measures, proper attention must be paid to the **relative strength of the chemicals.**

Twelve parts of Carbonate of Sodium crystals (commonly termed Sal Soda or Washing Soda) are equivalent to five parts Carbonate of Sodium dried, or six parts Carbonate of Potassium.

Two parts of Sulphite or Sodium crystals are equal to one part of the dried or granular Sulphite.

Metol and Hydrochinon Developer.

Thoroughly dissolve:

Metol	1/4 oz.
Hydrochinon	1/4 "
In water	80 "

Then add:

Sulphite of Soda, crystals	4 "
Carbonate of Soda, crystals	2 1/2 "

To prepare this with hydrometer, mix:

20 oz. Sulphite of Soda solution, testing 60.
20 oz. Carbonate of Soda solution, testing 30.

1/4 oz. Metol,
1/4 oz. Hydrochinon, } dissolved in 40 oz. Water

For summer use, dilute the developer with an equal quantity of water, also for large plates, so that the development does not proceed too rapidly and can be properly controlled.

If negatives of less contrast are desired, use less Hydrochinon and more Metol.

This developer keeps well.

Metol-Bicarbonate Developer.

Thoroughly dissolve:

Metol	1 oz.
In Water	60 "

Then add:

Sulphite of Soda, crystals	6 oz.
Bicarbonate of Soda	3 "

To prepare with hydrometer, mix:

30 oz. Sulphite of Soda solution, testing 75.
30 oz. Bicarbonate of Soda solution, testing 50.
1 oz. Metol dissolved in 12 oz. water.

This developer has excellent keeping qualities, works very uniform, and can be used repeatedly, without difference in the results, if kept in a stoppered bottle while not in use. The Bicarbonate of Soda being a very mild alkali, it is not liable to injure the film, nor fog the plate.

Pyro Developer.

ALKALINE SOLUTION.

Water	60 oz.
Carbonate of Sodium Crystals (Sal Soda)	5 "
Sulphite of Sodium Crystals	10 "

A smaller quantity of Sulphite will produce a warmer tone; a larger quantity a gray or bluish black tone.

The Alkaline Solution must be kept in well stoppered bottles.

If the negatives show yellow stain, make a fresh solution, or try another lot of Sulphite of Sodium.

For hydrometer test, see note below.*

PYRO SOLUTION.

Dissolve 1 drachm of Sulphite of Sodium Crystals in 6 ounces Distilled or Pure Ice Water; add Acetic Acid until the solution turns blue litmus paper red, and finally add 1 ounce Pyrogallie Acid.

Mix in the following proportions:

Pyro Solution	1 drachm.
Alkaline Solution	1 ounce.
Water (tepid, for winter use)	2 ounces.
Water (cold, for summer use)	3 to 5 ounces.

If the high lights are flat, use more Pyro Solution. If they are too intense, use less Pyro Solution

For Aristo negatives about one-half the quantity of Pyro Solution will be sufficient.

If too little Pyro is used, the Alkali will be in excess and cause fog.

*To prepare the Alkaline Solution with the Hydrometer, mix equal parts of the following solution:

Carbonate of Sodium Solution	hydrometer test, 40
Sulphite of Sodium Solution	hydrometer test, 80

HAMMER PLATES.

The two following Pyrogallie Acid formulae are recommended if strong, vigorous negatives are wanted. The quantity of Sulphite of Soda in the developer must be regulated to produce the color desired. If a developer, made according to either formula, produces negatives too cold and gray in tone, reduce the amount of Sulphite until the quantity is found that produces the best color or tone. In many cases it may be reduced one-half and produce better results; in some cases it may even have to be increased. This is regulated entirely by local conditions, such as quality of the water, condition of the Sulphite Soda, etc.

Pyrogallie Acid Developer, with Carbonate of Soda.

English Weights and Measures.	No. 1.	Metric Weights and Measures.
30 ounces	Pure Water	900 c. em.
5 ounces	Sulphite Soda Crystals	150 grms.
2 1/2 ounces	Carbonate Soda Crystals	75 grms.

No. 2.		
24 ounces	Pure Water	720 c. em.
15 grains	Oxalic Acid	1 grm.
1 ounce	Pyrogallie Acid	30 grms.

TO DEVELOP TAKE

1 ounce	Solution No. 1	30 c. em.
1 1/2 ounce	Solution No. 2	15 c. em.
3 ounces	Pure Water	90 c. em.

More water may be used in warm weather and less in cool weather.

See that the developing solutions are not too cold in cold weather, nor too warm in warm weather. This applies to all developers.

If Solution No. 1 is made by hydrometer test, use equal parts of the following:

Sulphite Soda testing	80°
Carbonate Soda testing	40°

One ounce of this mixture will be equivalent to one ounce of Solution No. 1.

Pyrogallie Acid Developer, with Carbonate Potassium.

English Weights and Measures.	No. 1.	Metric Weights and Measures.
32 ounces	Pure Water	960 c. em.
8 ounces	Sulphite Soda Crystals	240 grms.
1 ounce	Carbonate Potassium, dry	30 grms.

No. 2.		
24 ounces	Pure Water	720 c. em.
15 grains	Oxalic Acid	1 grm.
1 ounce	Pyrogallie Acid	30 grms.

Pyrogallie Acid and Metol Developer.

FINE FOR SHORT EXPOSURES.

No. 1.		
57 ounces	Pure Water	1710 c. em.
2 1/2 ounces	Sulphite Soda Crystals	75 grms.
1 ounce	Metol	30 grms.

No. 2.		
57 ounces	Pure Water	1710 c. em.
2 1/2 ounces	Sulphite Soda Crystals	75 grms.
1/4 ounce	Pyrogallie Acid	8 grms.

No. 3.		
57 ounces	Pure Water	1710 c. em.
2 1/2 ounces	Carbonate Potassium	75 grms.

TO DEVELOP TAKE

3 ounces	Pure Water	90 c. em.
1 ounce	Solution No. 1	30 c. em.
1 ounce	Solution No. 2	30 c. em.
1 ounce	Solution No. 3	30 c. em.

This developer may be used repeatedly by adding a little fresh developer as required.

Keep the used developer in separate bottle.

It combines the desirable qualities of Metol and Pyro, and gives an ideal negative.

Metol and Hydrochinone Developer.

No. 1.		
80 ounces	Pure Hot Water	2400 c. em.
1 ounce	Metol	30 grms.
1/4 ounce	Hydrochinone	4 grms.
6 ounces	Sulphite Soda Crystals	180 grms.

No. 2.		
80 ounces	Pure Water	2400 c. em.
5 ounces	Carbonate Soda Crystals	150 grms.

TO DEVELOP TAKE

2 ounces	Pure Water	60 c. em.
1 ounce	Solution No. 1	30 c. em.
1 ounce	Solution No. 2	30 c. em.

TO DEVELOP TAKE

1 ounce	Solution No. 1	30 c. em.
1/2 ounce	Solution No. 2	15 c. em.
3 ounces	Pure Water	90 c. em.

When the plate is fully developed, if the high lights are too thin, use less water in the developer; if too dense, use more water.

Eikonogen Hydrochinone Developer.

AS USED ON HAMMER PLATES BY MR. J. W. ROOT, CHICAGO. VERY FINE.

No. 1.		
64 ounces	Pure Water	1920 c. em.
1 ounce	Eikonogen	30 grms.
1/4 ounce	Hydrochinone	4 grms.
2 1/2 ounces	Sulphite Soda Crystals	75 grms.

No. 2.		
64 ounces	Pure Water	1920 c. em.
2 1/2 ounces	Carbonate Potass'm, dry	75 grms.

TO DEVELOP TAKE

2 ounces	Solution No. 1	60 c. em.
1 ounce	Solution No. 2	30 c. em.

And old developer (solution previously used) in sufficient quantity to produce best results.

Rodinal Developer.

One part Rodinal to thirty parts pure water. Use repeatedly, adding fresh as required.

We have frequent requests for a formula for small quantity of developer, hence the following:

No. 1.		
8 ounces	Pure Water	240 c. em.
150 grains	Sulphite Soda Crystals	10 grms.
60 grains	Eikonogen	4 grms.
8 grains	Hydrochinone	1/2 grm.

No. 2.		
8 ounces	Pure Water	240 c. em.
150 grains	Carbonate Potass'm, dry	10 grms.

TO DEVELOP TAKE

2 ounces	Solution No. 1	60 c. em.
1 ounce	Solution No. 2	30 c. em.

Can be used repeatedly until exhausted.

FIXING BATHS.

Important Remarks.

After developing, a plate should always be rinsed well before fixing. This practice keeps impurities out of the fixing bath and makes the plate fix quicker. A plate should never be taken from the fixing bath as soon as all the white has disappeared from the back, but should be allowed to remain several minutes longer. This rule will give you cleaner and more permanent negatives.

Plain Fixing Bath.

Hypo 16 ounces.
Water 64 ounces.

In hot weather the best prevention from softening of the film is to make a fresh hypo bath each day just before it is needed. Laying the plate for a few minutes in a clear saturated solution of alum just before fixing will also act beneficially.

Acid Fixing and Hardening Baths.

A
Water 96 ounces.
Hypo 2 pounds.
Sulphite of soda (crystals) 4 ounces.

B
Water 32 ounces.
Chrome alum 2 ounces.
Sulphuric acid ½ ounces.

Pour B into A while stirring A rapidly. As chrome alum dissolves slowly a stock solution of B can be made up.

Another Acid Fixing Bath.

Prepare two solutions exactly according to directions.

No. 1.

48 ounces hyposulphite of soda.
96 ounces (3 quarts) water.

No. 2.

Water 32 ounces.
Add gradually sulphuric acid ½ ounce.
Sulphite of soda crystals 4 ounces.
Chrome alum 2 ounces.

After the ingredients are dissolved, pour No. 2 solution into No. 1.

DURING THE COLD SEASON, ONE-HALF THE QUANTITY OF No. 2 IS SUFFICIENT.

When the bath becomes weakened by constant use, it must be replaced by a new one. Prepare solutions No. 1 and 2 in advance (allowing plenty of time for the chemicals to dissolve) so as to have them ready when wanted.

This bath combines the following advantages: It remains clear after frequent use, does not discolor the negatives, forms no precipitate upon them and hardens the gelatine to such a degree, that the negatives can be washed in warm water, provided they have been left in the bath a sufficient time.

The plate should be allowed to remain in the bath five to ten minutes after the bromide of silver appears to have been dissolved. The permanency of the negative and freedom from stain as well as the hardening of the film depend upon this.

Wooden boxes with vertical grooves to hold a number of plates, will be found both convenient and economical for fixing.

With the use of the above described acid fixing bath, there is no danger of plates frilling, even in tropical climates.

Useful Formula.

INTENSIFYING SOLUTIONS.

Prepare a saturated solution of bichloride of mercury in water and pour of this a sufficient quantity gradually into a solution of 1½ ounces iodide of potassium, 6 ounces of water, until the point is reached when the forming red precipitate will no longer dissolve by shaking, but be careful not to add more mercury than just enough to make the solu-

tion very slightly turbid. Now add 1 ounce of hyposulphite of soda. Dissolve and add water to make 20 ounces solution.

For use, this should be diluted with about three parts of water. If the plate has not been thoroughly fixed, the intensifying solution will produce yellow stains. Be careful not to overdo the intensifying. Should it have gone too far, the negative can be reduced by placing it in the fixing bath for a short time.

Scolik's Method of Mercurial Intensification.

The fixed and well-washed negative is allowed to remain in the following mercuric chloride bath until the film is thoroughly whitened:

Bichloride of mercury 1 part.
Potassium Bromide 2 ounces.
Water 50 parts.

The bleaching being complete, the mercuric solution is rinsed off, and the negative is immersed in a mixture of equal parts of saturated solution of sodium sulphite and water; the darkening action will be seen to take place steadily and slowly, just as when ammonia is used. Wash away the excess of sulphite.

WILLIS AND CLEMENTS PLATINUM INTENSIFIER is also recommended for intensifying negatives.

Reducing Solution.

Dissolve 1 part red prussiate of potash in 15 parts of water. Wrap the bottle in yellow paper, to protect the solution from decomposition by light.

To a solution of 1 ounce hyposulphite of soda in 15 ounces of water add from ½ to 1 ounce of the red prussiate solution immediately before use.

The negative may be placed in this solution directly after fixing. A dry negative should first be soaked in water for a few minutes.

Watch it carefully while in the solution, rocking the dish and avoiding strong light during the operation, and remove it to running water immediately when sufficiently reduced.

To Clean Negatives Stained by Silver.

Take a plug of cotton wool and wet it well with a weak solution of cyanide of potassium, rub gently all over the negative, using a little more force on the stained parts. Wash well. Dry on blotting paper. If necessary to re-varnish, flood the plate once or twice with alcohol. Let dry, then varnish in the ordinary way.

Reducer for Gelatine Dry Plates.

J. BARTLETT'S.

Perchloride of iron 30 grains.
Citric acid 60 grains.
Water 1 pint.

Another Reducer.

No. 1.

Water 1 ounce.
Red prussiate of potassium 15 grains.

No. 2.

Water 16 ounces.
Hypo 240 grains.

Take No. 1, 4 drachms and add to No. 2. When the negative is thoroughly fixed and washed, lay into the above solution until sufficiently reduced. Wash after immersion.

FERROTYPE INSTRUCTIONS.

Preparing the Silver Bath.

Provide a glass bath and box with a rubber dipper for immersing your plate in the solution. Then dissolve 4 ounces nitrate of silver (Mallinckrodt's) in 42 ounces of distilled water. When thoroughly dissolved, test with a hydrometer. It should test about 40 grains of silver to the ounce of solution. Then add a small piece of iodide of potassium (about the size of a pea); shake well, and add about 10 drops of nitric acid, C. P., or enough to turn blue litmus paper slightly red, which is an indication that the bath is acid.

Now filter the bath very closely through absorbent cotton, after which the bath will be ready for use.

Great Care Must Be Taken with the Silver Bath

to keep it free from foreign matter of all kinds, such as hypo, iron or even an over supply of iodide of potassium or nitric acid.

Most any of the above is sufficient to cause discolor and cause trouble.

In the Start of a New Bath

you will observe that the tin-types you produce are inclined to have a slight scum or web over them. Don't try to doctor the bath by adding more acid or iodide, but let it act so, and in a short time it will produce the finest results.

After Working Bath Very Hard,

test it with the hydrometer, and if it tests below 35 grains, then take 4 ounces of distilled water, or more if you wish, and pour the bath into the water (not the water into the bath), shake the solution well and filter. After it is filtered then add nitrate of silver until the hydrometer test is 40 grains. Your bath will then be ready for use in the morning.

This work should be done each evening after a day's work.

You Should Always Have Extra Baths on Hand.

While working one, have the other baths in bottles and hung up by a string tied around the neck, or standing in some safe place where the sun will shine on them as much as possible. When No. 1 gives out, bring in No. 2, filter it, and it will be ready to take the place of No. 1.

You will find sunlight a good doctor for the bath, whether new or old.

In case the bath has become worn out and contaminated with organic matter, you will have to resort to the last measure, viz., that of boiling or evaporating it. To do this use a porcelain evaporating dish and boil or evaporate the solution into almost a dry state. After the dish has cooled off, you can re-dissolve the contents in distilled water, filter, and treat the solution as described above.

If you will adopt and adhere strictly to the foregoing suggestions as given, we assure you that you will have no trouble with the bath or the action of the chemicals, and your success will be crowned.

Make Fresh Developer

at least twice a day, and never allow the developer made one day to be used the next, as its power to do good work has left it. The cost is a mere nothing.

Mix your developer according to the formulae given on the collodion bottle label. For convenience, we will give one here also:

DEVELOPER:

Water Dist. 32 ounces.
Proto Sulphate Iron 2 "
Alcohol, 98 per cent 2 "
Acetic Acid, No. 8 2 "

The Bath, Collodion and Developer

should be alike in temperature as nearly as possible all the time. This can be done by placing them in a suitable vessel filled with water, either warm or cold, as required. From 65° to 75° F. is about right.

The Fixing Bath

is composed of cyanide of potassium (a rank poison) and water. There is no special directions as to strength, but the stronger the solution the quicker it acts. We would advise, however, slow fixing.

Tinting, Coloring and Varnishing

is done after the plate is thoroughly washed and dried. Use the dry colors made for the purpose. A mixture of carmine and flesh color is used for the lips and cheeks. The varnishing is the last operation. Use ferrotype varnish; flow it carefully over the plate and drain it off into the bottle; allow it to dry by a gentle heat. This varnish dries with a beautiful gloss.

WEIGHTS AND MEASURES.

Apothecaries' Weights.

SOLID MEASURE.

20 grains	= 1 scruple	= 20 grains.
3 scruples	= 1 drachm	= 60 grains.
8 drachms	= 1 ounce	= 480 grains.
12 ounces	= 1 pound	= 5760 grains.

FLUID MEASURE.

60 minims	= 1 fluid drachm.
8 drachms	= 1 ounce.
20 ounces	= 1 pint.
8 pints	= 1 gallon.

The above weights are those usually adopted in formulae.

French Fluid Measures.

The cubic centimeter, usually represented by "c.c.," is the unit of the French measurement for liquids. It contains nearly seventeen minims of water—in reality it contains 16.896 minims. The weight of this quantity of water is one gramme. Hence, it will be seen that the cubic centimeter and the gramme bear to each other the same relation as our drachm for solids and the drachm for fluids, or as the minim and the grain. The following table will prove to be sufficiently accurate for photographic purposes:

1 cub. cent'r	= 17 min. (as nearly as possible).
2 "	= 34 "
3 "	= 51 "
4 "	= 68 min. or 1 drm. 8 min.
5 "	= 85 " 1 " 25 "
6 "	= 102 " 1 " 42 "
7 "	= 119 " 1 " 59 "
8 "	= 136 " 2 " 16 "
9 "	= 153 " 2 " 33 "
10 "	= 170 " 2 " 50 "
20 "	= 340 " 5 " 40 "
30 "	= 510 " 1 oz., 0 drm. 30 min.
40 "	= 680 " 1 " 3 " 20 "
50 "	= 850 " 1 " 6 " 10 "
60 "	= 1020 " 2 " 1 " 0 "
70 "	= 1190 " 2 " 3 " 50 "
80 "	= 1360 " 2 " 6 " 40 "
90 "	= 1530 " 3 " 1 " 30 "
100 "	= 1700 " 3 " 4 " 20 "

The Conversion of French into English Weights.

Although a gramme is equal to 15.4346 grains, the decimal is one which can never be used by photographers; hence, in the following table it is assumed

to be 15 $\frac{1}{2}$ grains, which is the nearest approach that can be made to practical accuracy:

1 gramme	= 15 2-5 grains.
2 "	= 30 4-5 "
3 "	= 46 1-5 "
4 "	= 61 3-5 grains or 1 drm. 1 3-5 grains
5 "	= 77 " 1 " 17 "
6 "	= 92 2-5 " 1 " 32 2-5 "
7 "	= 107 4-5 " 1 " 47 4-5 "
8 "	= 123 1-5 " 2 " 3 1-5 "
9 "	= 138 3-5 " 2 " 18 3-5 "
10 "	= 154 " 2 " 34 "
11 "	= 169 2-5 " 2 " 49 2-5 "
12 "	= 184 4-5 " 3 " 4 4-5 "
13 "	= 200 1-5 " 3 " 20 1-5 "
14 "	= 215 3-5 " 3 " 35 3-5 "
15 "	= 231 " 3 " 51 "
16 "	= 246 2-5 " 4 " 6 2-5 "
17 "	= 261 4-5 " 4 " 21 4-5 "
18 "	= 277 1-5 " 4 " 37 1-5 "
19 "	= 292 3-5 " 4 " 52 3-5 "
20 "	= 308 " 5 " 8 "
30 "	= 462 " 7 " 42 "
40 "	= 616 " 10 " 16 "
50 "	= 770 " 12 " 50 "
60 "	= 924 " 15 " 24 "
70 "	= 1078 " 17 " 58 "
80 "	= 1232 " 20 " 32 "
90 "	= 1386 " 23 " 6 "
100 "	= 1540 " 25 " 40 "

Dr. Scott's Table of Comparative Exposure.

The following table, compiled by Dr. J. A. Scott, shows the comparative value of daylight (under like conditions) for photographic purposes at different hours of the day and seasons of the year:

TABLE OF COMPARATIVE EXPOSURE.

HOUR OF DAY.		June.	May. July.	April. Aug.	March. Sep.	Feb. Oct.	Jan. Nov.	Dec.
A. M.	P. M.							
11	12	1	1	1 $\frac{1}{2}$	1 $\frac{1}{2}$	2	3 $\frac{1}{2}$	4
10	2	1	1	1 $\frac{1}{2}$	1 $\frac{1}{2}$	3	4	5
9	3	1	1 $\frac{1}{2}$	1 $\frac{1}{2}$	2	4	*12	*16
8	4	1 $\frac{1}{2}$	1 $\frac{1}{2}$	2	3	*10	.....	.....
7	5	2	2 $\frac{1}{2}$	3	*6	.....	.....	.....
6	6	2 $\frac{1}{2}$	*3	*6	.....	.....	.....	.....
5	7	*5	*6	.....	.....	.....	.....	.....
4	8	*12	.....	.....	.....	.....	.....	.....

*The accuracy of these figures would be affected by yellow sunset.

EXAMPLE.—If it is necessary to give one-half second exposure in June, 12 m., under like conditions in December, 12 m., it will require two seconds exposure.

THE GENUINE Goerz Double Anastigmat



EAST DOCK, AMSTERDAM. By L. J. R. Holst.

WAS THE

First Symmetrical Anastigmat Lens,

And its remarkable qualities of speed and covering power have secured for it a foremost place amongst the most modern lenses. The circumstance, that at full opening perfect definition over the entire plate is obtained, permits to make rapid exposures under very unfavorable circumstances, even during rain, and at late hours of the afternoon.

The reproduction shown here is made from a photograph, made with a hand camera, fitted with Goerz Double Anastigmat, series 3, diaphragm F:11, (the original is 4 $\frac{1}{2}$ x 6 $\frac{1}{2}$) exposure 1-25th second, at 10 A. M., on the 12th of March, 1897, during a severe shower.

As to the Permanence of
PLATINOTYPE PRINTS.

MR. L. HART, F. R. M. S., Lecturer of the Ballarat School of Mines, and at the Working Men's College, Melbourne, writes as follows:

"The Platinum process is decidedly the most perfect process of Photographic Printing, as the metal is not affected by any sulphurous fumes or compounds such as are found in the atmosphere, whereas other processes are easily attacked by them.

"The impression is indeed unalterable, and were it possible to hold a Platino-type print in the hand for several hundreds of years, the paper would crumble, and rot away, but the photographic platino image would remain intact."

Under date of June 5th, 1899, MR. M. J. STEFFINS, of Chicago, an artist whose judgment cannot be questioned, writes:

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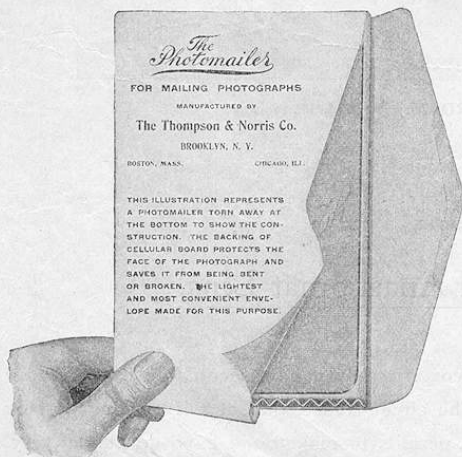
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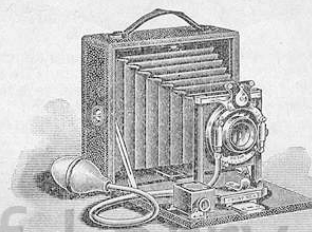
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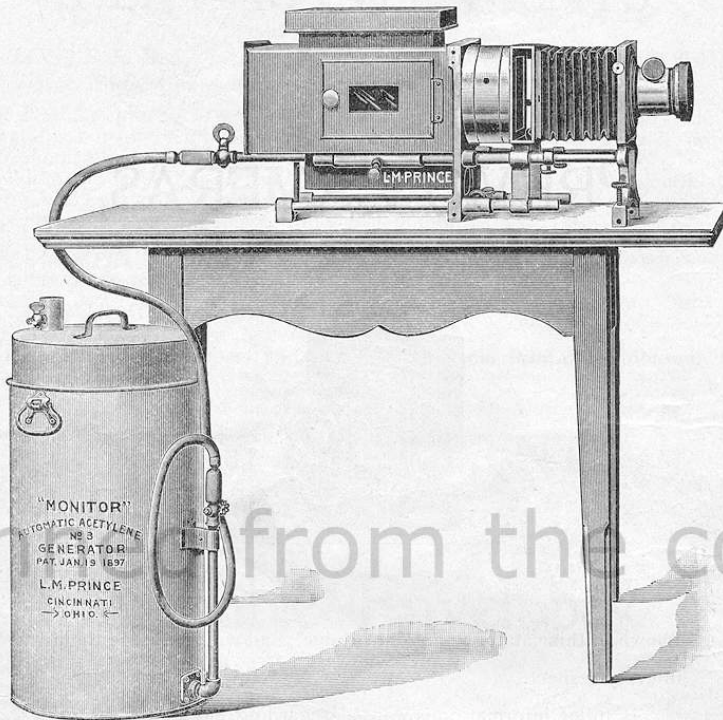
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With No. 3 Automatic Acetylene Generator and No. 6 Quadruplex Burner.



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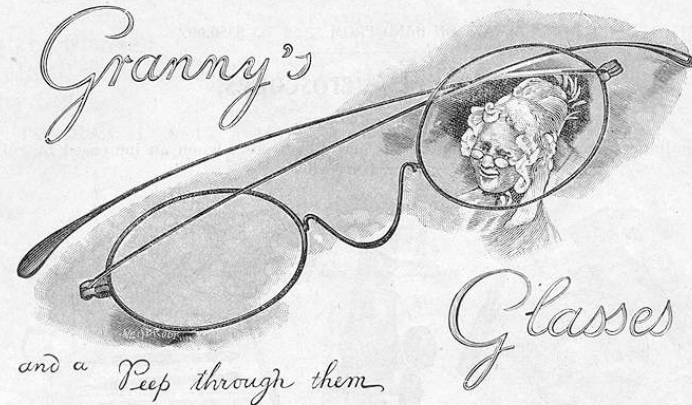
It consists of a central frame work of metal supporting the $4\frac{1}{2}$ -inch condenser cell (which is our improved pattern) and slide stage, and a secondary stand connected thereto by two sets of horizontal tubes for the adjustment of the objective lens in front and Acetylene burner in back. These tubes sliding one within the other, allow the lantern when not in use to be reduced in length from both ends so that it may be packed into the smallest compass yet attained for a high class lantern, at the same time providing bearings of ample length to secure perfect alignment and rigidity. The hood for the burner is so constructed that perfect ventilation is secured and all parts for its adjustment are easily accessible. The objective frame is provided with flanges to fit either $\frac{1}{4}$ or $\frac{1}{2}$ size objectives.

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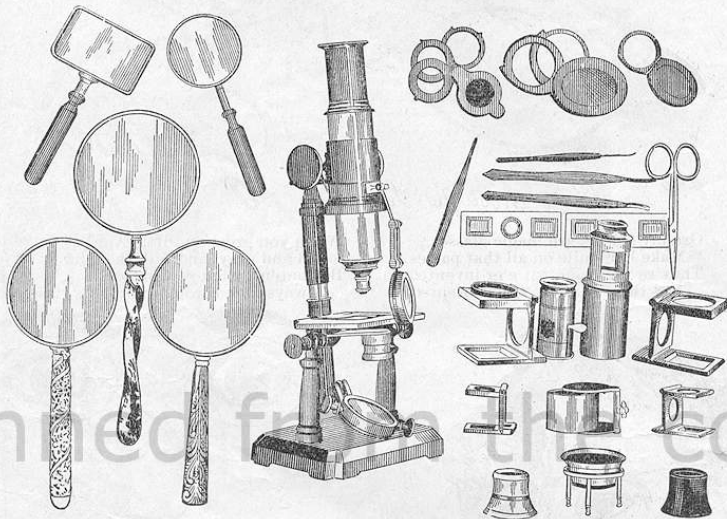
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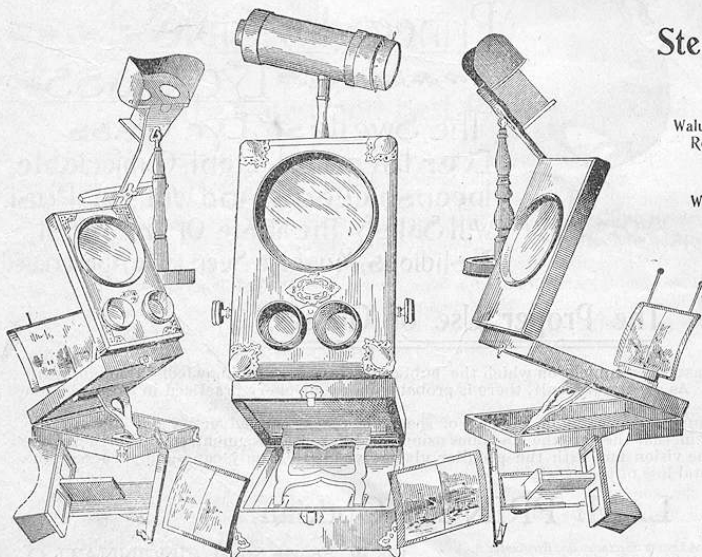
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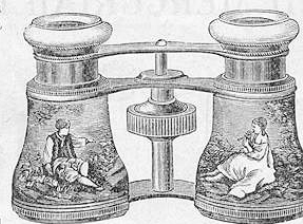
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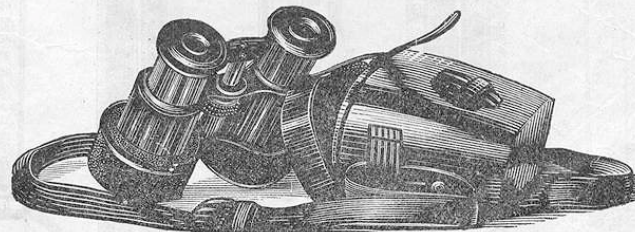
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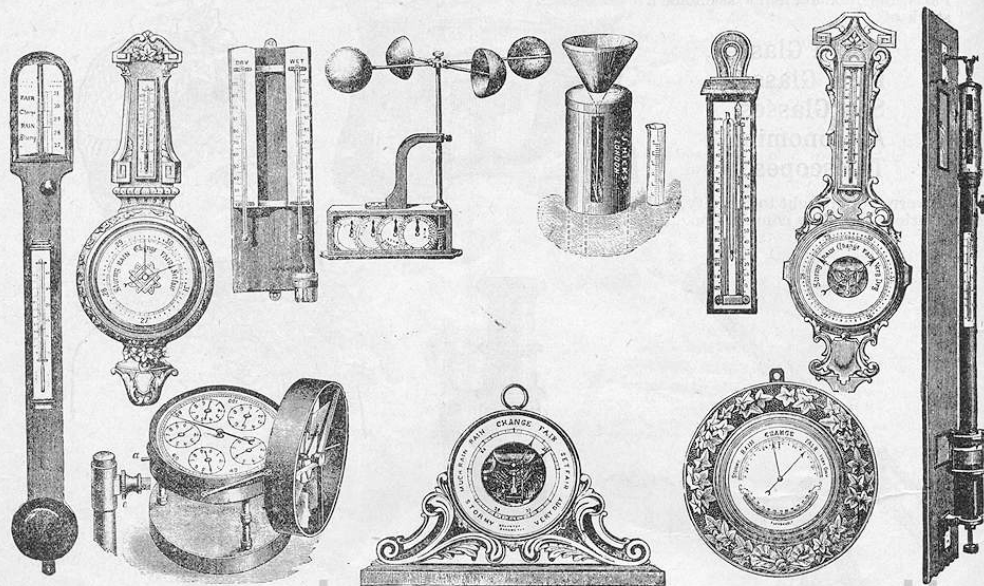
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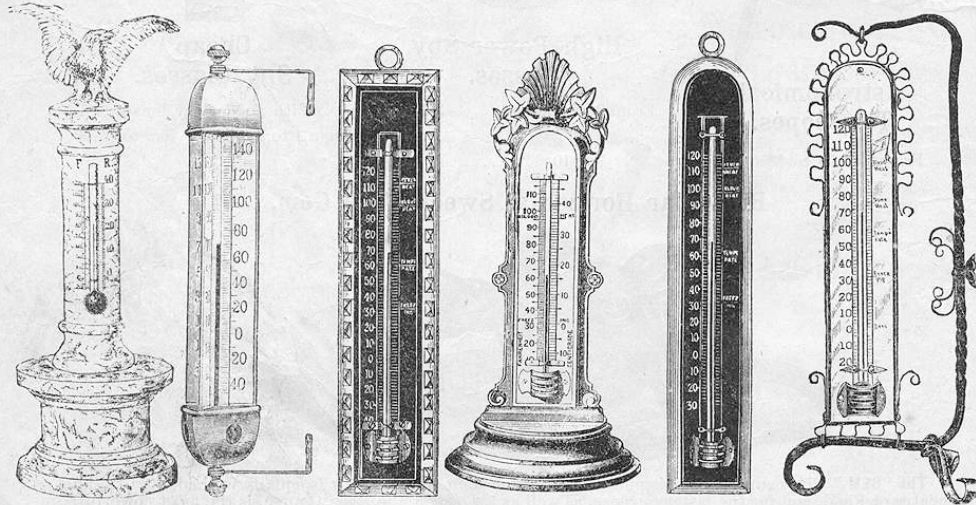
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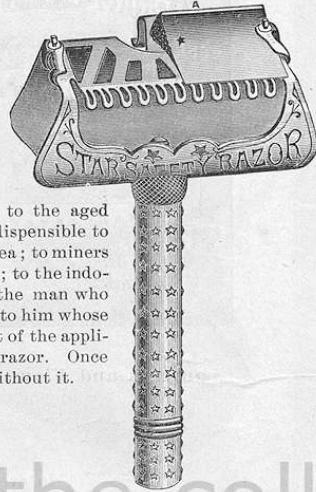
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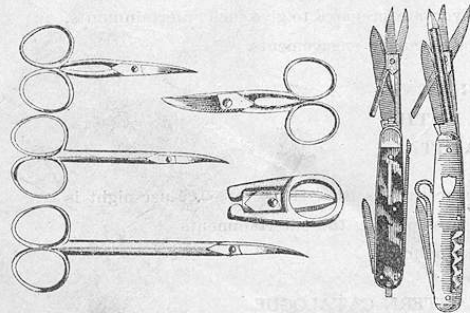
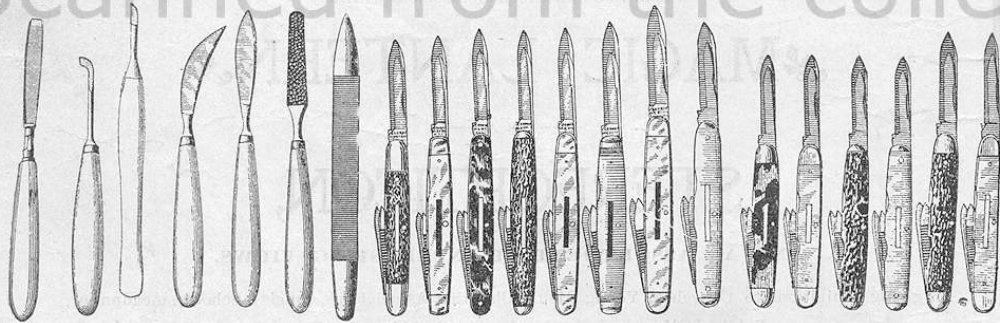


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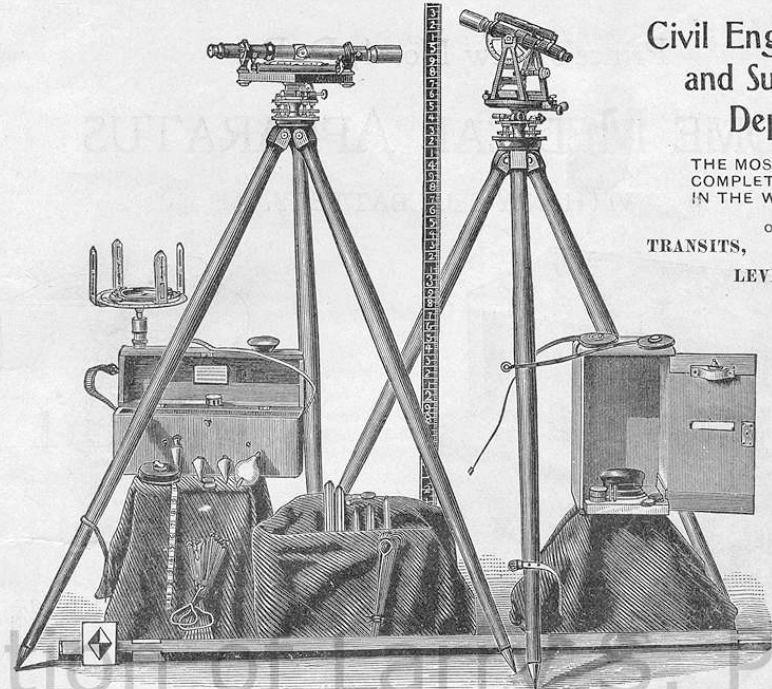
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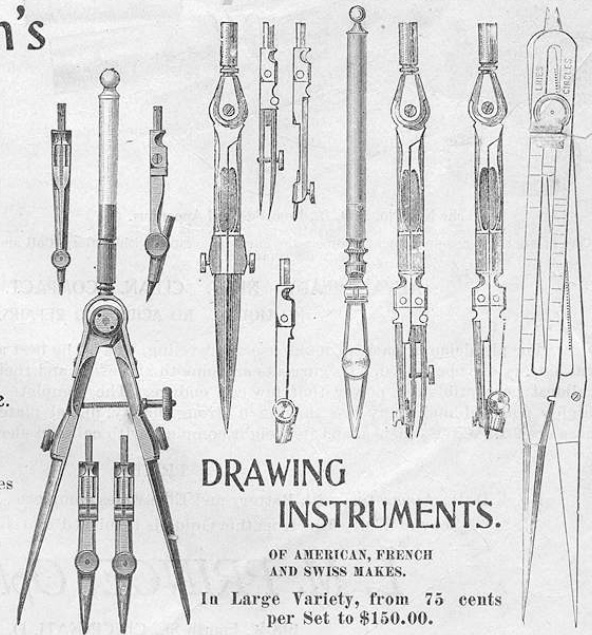
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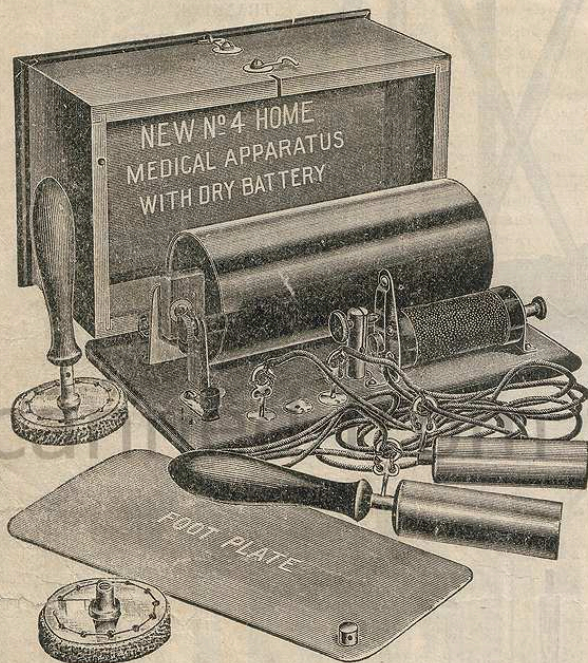
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