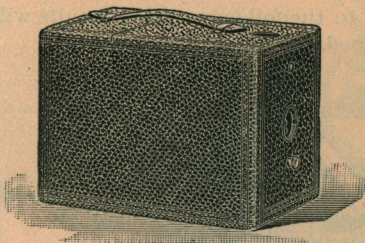


Instruction •
• • **B**ook.

6

INSTRUCTIONS

FOR USING THE



“RAY”

Mutschler, Robertson & Co.,
ROCHESTER, N. Y.

INSTRUCTIONS

FOR USING THE

RAY CAMERAS.



Recent improvements have so simplified the apparatus necessary for making pictures that very few instructions are necessary. If careful attention is given to the following, good results will readily be obtained.

THE MANIPULATION.

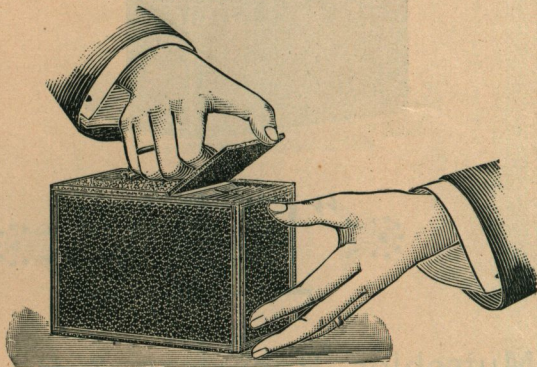


Fig 1.

When you receive the **RAY** or **RAY JR.** Cameras you will find on examination, the concealed button on the back; by pressing this as shown in Fig. 1 you can open the door, and you will find,

unless specially ordered, two single plate holders. Remove the one that is loose and you will then find the other is held in position by the brass springs on the side of the Camera. To remove this one, press it toward the back of the Camera and then draw it up, repeat this several times until you fully understand inserting and removing the holders. Now

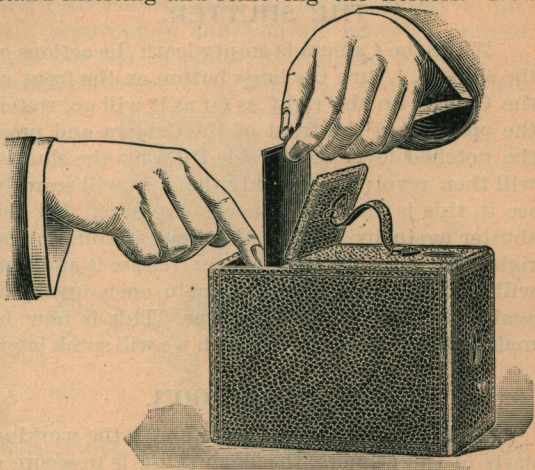


Fig. 2.

by forcing back the brass catch beside the leather strap you will see how to remove the rubber slide from the holder; insert the holder in Camera and repeat this operation as shown in Fig. 2.

Care must be taken in drawing the slide not to force the holder away from the position in which it is held by the springs, for when there is a plate in the holder, and it is forced away, the light would enter and injure it; repeat this several times until you see the simplicity of the operation.

THE SHUTTER.

While the Camera is empty learn the actions of the shutter. Turn the brass button on the front of the Camera to the right as far as it will go, watch the opening in the front of the Camera and press the notched lever on the side **DOWN**; the shutter will then revolve so quickly that you will scarcely see it, this is an instantaneous exposure. Set the shutter again by turning the brass button to the right, now press **UP** on the lever, release it and you will find the shutter will remain open until you again press **DOWN** on the lever. This is how to make a time exposure, of which we will speak later.

THE DARK ROOM.

Now having become familiar with the working parts of the Camera, the next thing is to secure a dark room, from which all white light is excluded, a ruby lamp and a box of plates. The reason a dark room is required is that the plates are very sensitive and will be ruined if the least ray of white light reaches them. Almost any room will do at night;

during the day, a dark closet or room in which all white light can be easily excluded will best answer the purpose.

LOADING THE PLATE HOLDERS.

Having lighted your ruby lamp and secured your plate holders, close the doors securely to prevent interruption and you are ready to proceed. Open the box of plates by running a thin knife around the edges of the box; draw slide out of plate

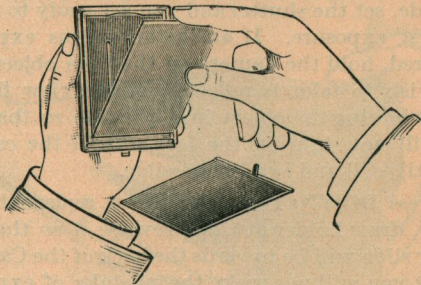


Fig. 3.

holder, wipe or brush the dust out of plate holder, as it will cause spots on the negative if allowed to get on the face of the plate. Take a plate out of the box, being careful not to touch the face or dull side. Handle as much as possible by taking hold of the edges, place one end against the spring in top end of holder as shown in Fig. 3, press it down until other

end catches under the two projecting pieces at bottom of holder, insert the slide in the holder so that the brass catch is over the head of slide and proceed with as many holders as you wish to load. Now replace the cover on your box of plates and you are ready for day light again.

EXPOSING THE PLATE.

Place the holders in the Camera, one of them being put in position in front of the springs, draw the slide, set the shutter and you are ready to make the first exposure. If an instantaneous exposure is desired, hold the Camera so that the object that you wish to take is reflected in the view finder, always having the object in a position so that the sun will not shine in the lens. Hold the camera perfectly still and level as possible.

Press **DOWN** the notched lever, replace slide in holder, draw holder out, and reverse it so that the rubber slide will be towards the back of the Camera, so that you will not make the mistake of exposing the same plate again. If you have followed the directions carefully, you have made your first picture.

Never try to make an instantaneous exposure on a dark, dull day, or inside a building. Objects should not be less than eight feet from Camera to secure the best results; beyond that point everything is in focus.

TIME EXPOSURE.

To make a picture on a dull day or an interior, never try to hold the Camera in your hands. It must be placed on a Tripod, table, or anything that will hold it steady. In making interior exposures, be careful not to have the Camera pointed directly at a window, as the glare of light will blur the picture. Locate the view in the view-finder, as you wish to have it, set the shutter, draw the slide, press **UP** the notched Lever, release, and give necessary time, then press **DOWN** as for instantaneous.

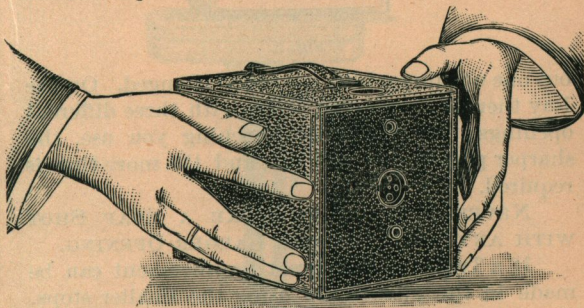


Fig. 4.

The timing of exposures is entirely a matter of practice; there are no rules that may be followed, with any degree of accuracy, as the conditions of light always vary. For dull day outside, 1 to 5 seconds, interiors, 10 to 20 seconds.

THE DIAPHRAGMS OR STOPS.

This is the opening through which the Light reaches the lens. If your Camera is a Ray Jr., this part of the instruction may be omitted, as there is

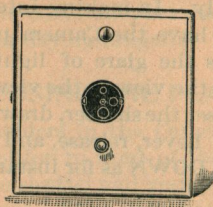


Fig. 5.

but one opening which cannot be changed. On the Ray there is a revolving plate, with three different openings; the smaller the opening you use, the sharper picture you will get, and the more time is required.

NEVER ATTEMPT TO MAKE A SNAP SHOT WITH ANYTHING BUT THE LARGER OPENING.

If a Tripod is used, great improvement can be made in the picture, by using the smaller stops. For a landscape view, in bright sunlight, smallest stop, one to three seconds will be required; with the next larger stop, about one-half as long. Interiors can also be made in about the same proportion.

Large Stop,	-	-	10 to 20 seconds.
Middle "	-	-	20 " 40 "
Small "	-	-	40 " 80 "

FLASH LIGHT PICTURES.

Magnesium Powder is now considered the best artificial light for taking pictures at night. Interiors, groups, dinner and card parties, may be taken as clear and sharp as if they were in the bright sunlight. There are many lamps and preparations in the market for producing the flash, but we recommend only the Ray Flash Lamp and pure Magnesium Powder. Never attempt to use any other powder in the Ray Lamp.

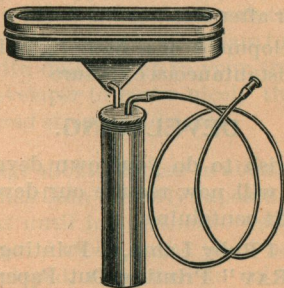


Fig. 6.

TAKING A FLASH LIGHT.

The Camera should be prepared the same as for a time exposure. Load the lamp according to directions furnished with it. Having the Camera in position and the lamp loaded, light the lamp, set the shutter open, as for a time exposure, hold the

lamp at arms length, a little to one side and behind the Camera, give a short, quick blow, there will be a bright flash which will instantly impress the picture on the plate, press the lever DOWN to close shutter, remove plate holder, insert another and repeat operation for the next picture.

A sheet of white card-board held behind the lamp will act as a reflector and defuse the light more evenly. Ordinary gas or lamp light in a room will not injure the picture, unless they are directly in front of the lens, or the shutter is left open too long before or after making the flash.

The development of a flash light is about the same as an instantaneous exposure.

DEVELOPING.

If you wish to do your own developing and printing you will now require our developing and printing outfit containing

3 Trays, 1 Ruby Lamp, 1 Printing Frame,
1 doz. "RAY" Printing Out Paper, 1 8 oz.
bottle "RAY" Toning and Fixing Solution,
2 Dry Developing Powders, sufficient for 8
oz. Developer, and 1 package Hyposulphite
of Soda.

TO DEVELOP.

First of all see that you have a room that is perfectly dark (see page 4) also a table or shelf that is

convenient to hold your Ruby Lamp, Trays, etc. See that everything is handy and in place. Prepare the developer and fixing bath before shutting the light from the dark room, dissolve contents of the two packages (No. 1 and No. 2) in eight oz. of water; this is the developer, and can be used repeatedly, or until it loses its strength. Dissolve contents of package No. 3 in a good sized tray of water, this is the Hypo Fixing bath and must not come in contact with your plates until they are fully developed. Always keep the Hypo bath separate from everything else—remember this and save trouble. Now close your dark room door, take plate to be developed and place with dull side up in your tray, pour over sufficient developer to cover nicely then rock tray gently to avoid streaks and spots.

The image should appear in about $\frac{3}{4}$ of a minute if the plate has been properly exposed, continue the development until image shows well through on back of plate. As soon as the plate has been sufficiently developed, rinse well in cold water, then place face up in Hypo bath and see that it is fully emersed. The plate is fully fixed when the milky or yellow appearance has entirely disappeared. When this has been done wash thoroughly and stand in a clean place to dry; it is now a negative, which the light no longer effects. Wash trays and set away to drain and dry. After a few trials, experience will teach you better than any set of rules.

PRINTING.

This is a very interesting part, and should also be done with the same care as developing. Place the frame with springs upward on the table, take out the back and place the negative in the frame, dull side up, place a sheet of sensitized paper face down on the plate, put on the back carefully, place in the sunlight and print about two shades darker than is required for the finished print. Look at the print occasionally in a subdued light by opening one end of the back board, turning back the paper but avoid handling the face of the paper as much as possible or finger marks will show on your print. When printed to the desired shade take out of the frame and place in a light tight box until you are ready for toning; if you have a number of negatives to print from you should have half a dozen printing frames, this makes it more interesting and also saves time.

TONING.

This operation is also very interesting and with a little care you cannot fail to get good results, with our combined toning and fixing solution. First pour the solution into one of your trays and immerse the prints first face down and then face up and repeat this operation during the process of toning, so as not to let them lie in contact, but to tone evenly. They will change color immediately and then gradu

ally change from a reddish yellow to a brown and then to purple. As soon as the desired tone is reached they should be washed one hour in running water or in eight or ten changes of water, transferring them one by one each time to a tray of clean fresh water. They are then ready for mounting.

MOUNTING.

Take the prints from the water, place on a sheet of glass, face down, one on top of the other, press the water out with a towel or blotting paper, then with a paste brush spread a thin coat of RAY Mounting Paste on the top print. Place the print on the mount evenly and rub down with a clean piece of blotting paper. To obtain a very high gloss squeeze the prints on a ferrotype plate, place the prints face down on the plate while wet, press the water by passing the rubber roller over them in all directions. Let them dry spontaneously, after which they may be taken from the plate. They should be mounted dry when treated this way.

.... Price List

CAMERAS.

RAY '97 Camera including 2 single Plate Holders,.....	\$5.00
RAY '97 extra single Plate Holders, each.	.35
“ '96 “ double “ “ “	1.00
RAY JR. Camera including 2 single Plate Holders.	2.50
RAY JR. extra single Plate Holders, each.	.25
Developing and Printing Outfit comprising 3 Compressed Fiber Trays, 1 Orange Candle Lamp, 1 Printing Frame, 1 doz. Printing Out Paper, 1 Bottle Ray Toning and Fixing Solution, 2 Packages Developing Powders for 8 oz. Developer, 1 package Hyposulphite of Soda.	
RAY Outfit,.....	\$1.50
“ Jr. Outfit,.....	1.25

Carrying Cases for Bicycle or with Shoulder Strap.

RAY Carrying Case,.....	\$1.25
“ Jr. “ “	1.00

TRIPODS.

Made of the best seasoned spruce, trimmed with lacquered brass, very light and neat.

No. 1, Sliding,.... \$2.00 No. 2, Folding,.... \$3.00

RUBY LANTERNS.

RAY Ruby Lantern No 1,.....	\$.80
“ “ “ No. 2,.....	1.00

September 1st, 1897.

RAY A Camera, including 2 single Plate Holders.....	\$5.00
Extra single Plate Holders, each35
RAY B Camera, including 2 single Plate Holders.....	5.00
Extra single Plate Holders, each35
RAY C Camera. including 1 double Plate Holder.....	6.00
Extra double Plate Holders, each.....	1.00
RAY D Camera. including 1 double Plate Holder.....	8.00
Extra double Plate Holders, each.....	1.00

OUTFITS.

For RAY A or B, " $3\frac{1}{4} \times 4\frac{1}{4}$ ".....	\$1.50
" " C or D, " 4×5 ".....	2.00

FLASH LAMPS.

No. 1, for amateurs.....	\$1.50
No. 2, for professionals.....	3.00

Carrying Cases for Bicycle or with Shoulder Straps.

RAY A.....	\$1.25
" B.....	1.50
" C or D.....	2.00

MISCELLANEOUS.

RAY Jr. Printing Frames, each.....	\$0.25
" " Plates, per doz.....	.25
" " Card Mounts, per package 25.....	.15
" " " " " 100.....	.60
RAY Printing Frames, each.....	.25
" Plates, $3\frac{1}{2} \times 3\frac{1}{2}$, per doz.....	.35
" Card Mounts, per package 25.....	.20

Miscellaneous.—Continued.

RAY Card Mouuts, per package 100.....	\$0.80
RAY A or B, Printing Frames.....	.25
“ “ “ “ Plates.....	.45
“ “ “ “ Card Mounts, per package 25..	.25
“ “ “ “ “ “ “ “ 100.	.90
RAY C or D, Printing Frames.....	.25
“ “ “ “ Plates, per doz65
“ “ “ “ Mounts, per package 2525
“ “ “ “ “ “ “ “ 100.90
Rubber Mounting Rollers, each.....	.25
Ferrottype Plates, 10 x 1420
Pure Magnesium Powder, per oz.....	.50
RAY Toning and Fixing Solution, 4 oz. bot.	.25
“ “ “ “ “ 8 “	.35
“ “ “ “ “ 12 “	.50
“ Eikonogen Developer, 8 oz. bottle.....	.30
“ “ “ “ 16 “60
“ Developing Powder, $\frac{1}{2}$ dozen.....	.50

