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PICTURE TAKING

WITH THE

No. 1A KODAK JUNIOR

Published by the

EASTMAN KODAK COMPANY,

ROCHESTER, N. Y.

KODAK

Trade Mark, 1888.

EASTMAN KODAK COMPANY,

ROCHESTER, N. Y.

MANUFACTURERS OF

Kodaks,
Brownie Cameras,
Kodiopticons,
Kodak Film Tanks,
Kodak Dry Mounting Tissue,
Velox Paper,
Angelo Platinum Paper,
Eastman Solio Paper,
Eastman Ferro-Prussiate Paper,
Eastman Velvet Bromide Paper,
Eastman Brilliant Velvet Bromide Paper,
Eastman Royal Bromide Paper,
Eastman Standard Bromide Paper,
Eastman Enameled Bromide Paper,
Eastman Matte-Enamel Bromide Paper,
Eastman Platino Bromide Paper,
Eastman Non-Curling Film,
Tested Chemicals,
Tripods and
Other Specialties.

October, 1914.

PICTURE TAKING WITH THE

No. 1A

KODAK JUNIOR

(R. R. and MENISCUS LENS)

PRICE, 10 CENTS.

Published by the

EASTMAN KODAK COMPANY,

ROCHESTER, N. Y.

ORDER FILM BY NUMBER

All Kodak Films may be distinguished by the numbers on the ends of cartons:

116

is the number for film for this Camera (No. 1A Kodak Junior). The number appears both on the carton and on the cartridge.

NOTICE.

The Duplex paper (black on one side, red on the other) now used in Kodak cartridges is superior to the black paper, in that it has no deleterious effect upon the keeping qualities of the film and absolutely does away with number markings.

In watching for numbers through the red window, one should now look for black numbers on red paper, instead of, as formerly, white numbers on black paper.

Wherever the term "duplex paper" is used in this manual, reference is made, of course, to this black and red paper.

BEFORE LOADING.

Before taking any pictures with the 1A Kodak Junior, read the following instructions carefully and make yourself perfectly familiar with the instrument, taking especial care to learn how to operate the shutter. Work it for both time and instantaneous exposures several times before threading up the film.

The first and most important thing for the amateur to bear in mind is that the light which serves to impress the image upon the sensitive film in a small fraction of a second when it comes through the lens, can destroy the film as quickly as it makes the picture. After the film has been developed and all *developer thoroughly washed out,* it may be quickly transferred in subdued white light to the fixing bath without injury. Throughout all the operations of loading and unloading be extremely careful to keep the duplex paper wound tightly around the film to prevent the admission of light.

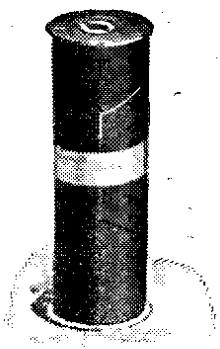
EASTMAN KODAK COMPANY,
Rochester, N. Y.

CONTENTS.

PART I.

SECTION I.

LOADING WITH FILM.



THE FILM
No. 116.

The film for the No. 1A Kodak Junior is furnished in light proof cartridges and the instrument can, therefore, be loaded in daylight. The operation should, however, be performed in a subdued light, not in the glare of bright sunlight. It should also be borne in mind that after the seal is broken care must be taken to keep the duplex paper taut on the spool; otherwise it may slip and loosen sufficiently to fog the film.

I. To load the Kodak, take a position at a table where the daylight is somewhat subdued, and grasping the instrument with the left hand, remove the back by pressing in simultaneously with the thumb and second

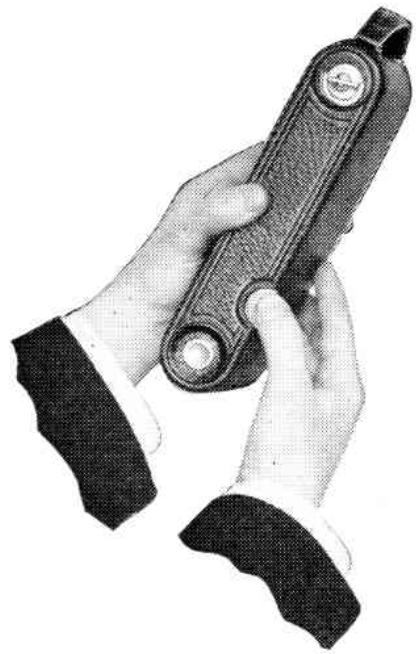


FIG. I.
Pressing in Catches.

finger of the right hand, as indicated in Fig. I. Then lift the back outwards and upwards in order to remove it, as shown in Fig. II.

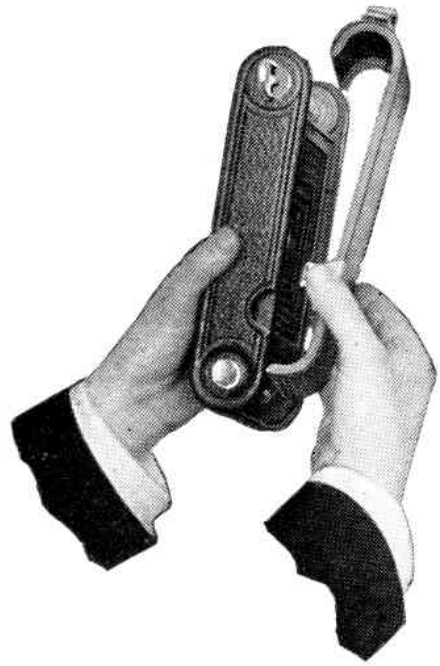


FIG. II.
Removing the Back.

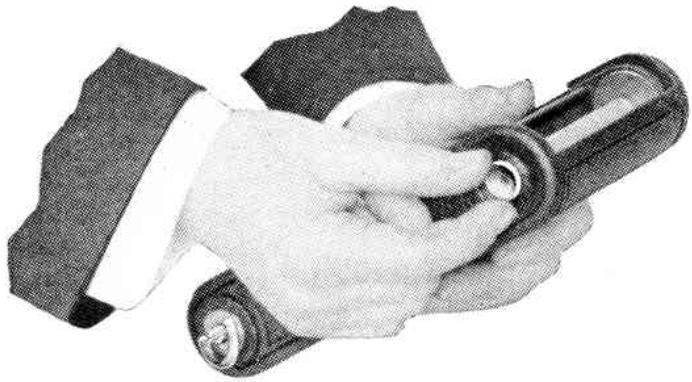


FIG. III.

Springing Out a Spool Pin.

II. The Kodak having been opened, an empty spool having a slit in it will be seen in the winding end of the camera. This forms the reel on which the film is wound after exposure. The full spool is to be placed in the recess at the opposite end of the Kodak. To accomplish this, pull out spool pins as shown in Fig. III.

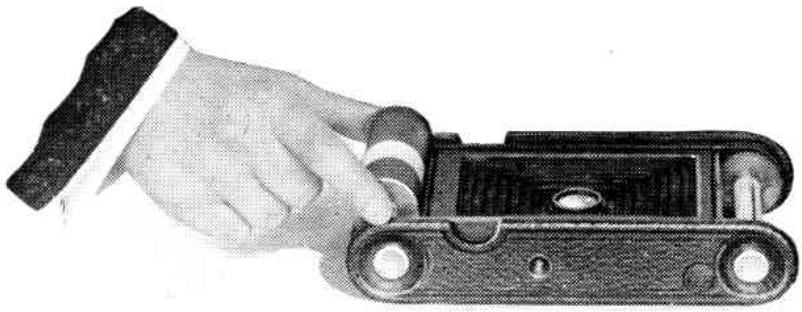


FIG. IV.

Inserting the Cartridge.

III. Drop the film cartridge into this recess, as shown in Fig. IV., being careful to *get the top of the spool at the top of the camera.* The

top is the winding side of the camera. Each cartridge is marked on the end or the word "Top" will be found printed on the duplex paper near the top of the spool.

NOTE: If the cartridge is inserted wrong side up, the duplex paper instead of the film will be brought next the lens, resulting, of course, in the absolute loss of the pictures.

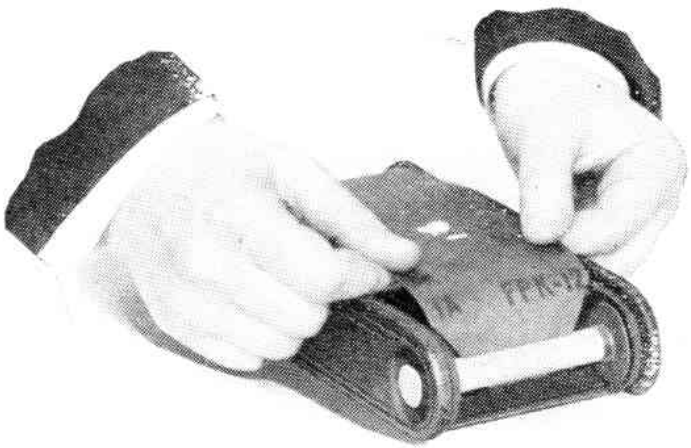


FIG. V.
Threading up the Duplex Paper.

IV. Push spool pins into place so that spool revolves upon them.

FIG. VI.
Turning the Key to Bind paper on Reel.

V. Remove the gummed slip that holds the end of the duplex paper; pass the paper over the two aluminum rollers and thread into the slit in reel, as shown in Fig. V. Be careful in so doing that the paper draws straight and true.

VI. Give the key one or two slight turns—just enough to bind the paper on the reel—and no more. See Fig. VI.

The paper should now be in position indicated in Fig. VII.

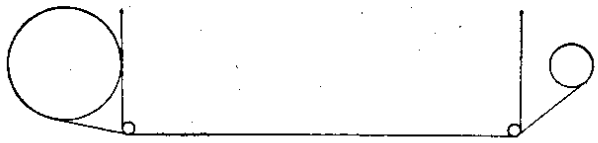


FIG. VII.
Showing position of paper.

VII. Replace the back on Kodak, reversing the operation as shown in figures I and II. Care should always be taken to handle the back of Kodak carefully, especially when it is detached from camera, as even a slight bend would make it fit badly, resulting very probably in a leakage of light, and consequently loss of film.

Throughout the foregoing operation, from the time the gummed slip is cut on the fresh roll of film until the back is once more in place, keep the duplex paper wound tightly on the roll. If it is allowed to loosen, light will be admitted and the film fogged.

VIII. The roll of film in the camera is covered with duplex paper, and this must be reeled off before a picture can be taken. Turn the key slowly to the left and watch the little red window at the back of the camera. When 15 to 18 turns have been given, a hand pointing

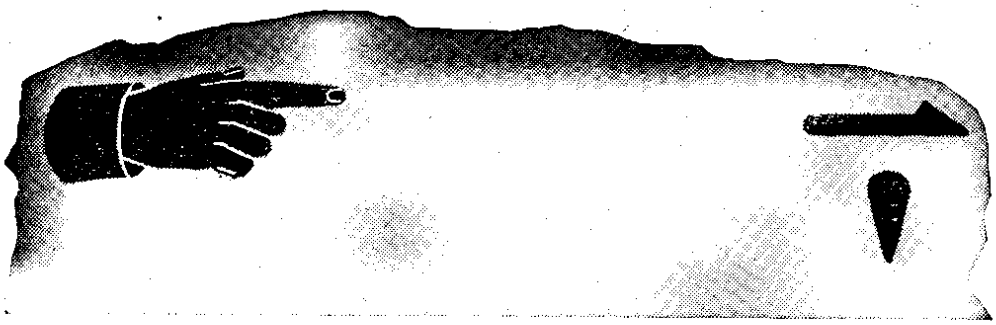


FIG. VIII.

toward the first number will appear; then turn slowly until the figure 1 is in front of the red window. Fig. VIII.

The film is now in position for taking the first picture.

PART II.

The general instructions in this No. 1A Kodak Junior manual apply equally well to the camera, whether fitted with *Single or Double Lens.*

The only difference lies in the timing of the exposures and the use of the diaphragm, inasmuch as the *Double Lens* will work at a larger stop or opening than the *Single Lens.*

MAKING THE EXPOSURES.

Before making an exposure with the No. 1A Kodak Junior, either time or instantaneous, be sure of four things:

FIRST—That the shutter is set properly.

SECOND—That the diaphragm stop is set at the proper opening.

THIRD—That the camera is focused.

FOURTH—That an unexposed section of the film is turned into position.

NOTE: Exposures are made by pressing push-pin at end of cable release D or pushing down on release C.

OPERATING THE SHUTTER.

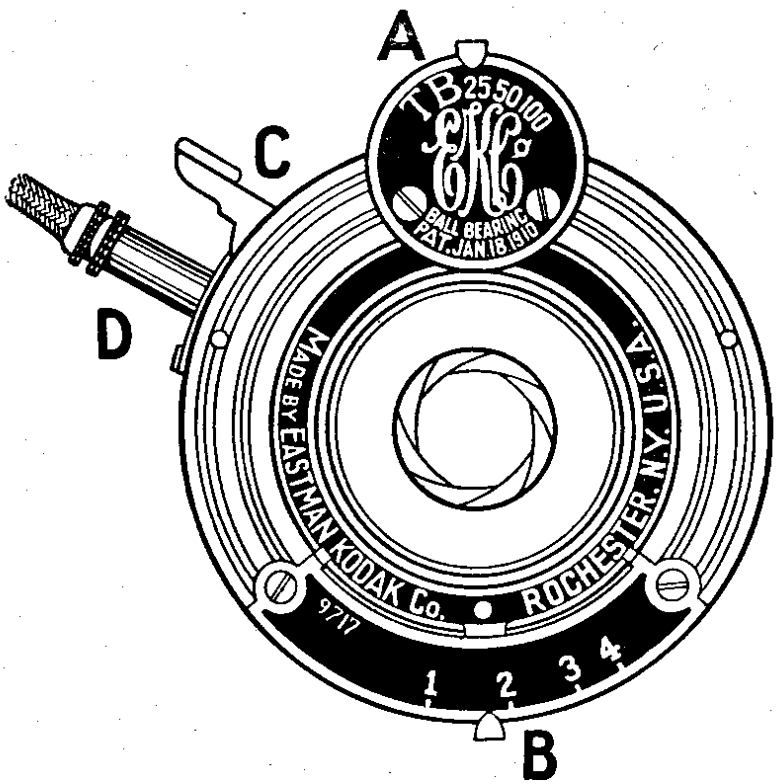
Perfect familiarity with the shutter is essential to successful picture-taking with any camera. The following directions should, there-

fore be carefully read and the shutter operated several times before threading the film up for use.

SECTION I.

Instructions when your Camera is fitted with *Single Lens* (Achromatic).

(If fitted with *Double Lens* disregard and follow instructions on page *15*.)



Instantaneous Exposures.

FIRST—Set the lever at 50 or 25 (representing 1-50 and 1-25 of a second), according to the time of instantaneous exposure desired.

NOTE: **The lever A should be used at 100, only when taking moving objects in bright sunshine, and lever B must always be placed at No. 1, when taking this kind of a picture.**

SECOND—Set the lever B at No. 1. Lever B controls the iris diaphragm and No. 1 is the proper opening for ordinary instantaneous exposures.

NOTE: For instantaneous exposures when the sunlight is unusually strong and there are no heavy shadows, such as in views on the seashore or on the water, use the diaphragm No 2. With *light* clouds, *slightly smoky* atmosphere use No. 1 at 25. *With heavy clouds do not attempt instantaneous exposures.*

THIRD—Press push-pin or push down on release C. This makes the exposure.

NOTE: Press push-pin with a firm quick movement, at the same time be sure to hold the Kodak rigid, as a slight jarring will cause a blurred negative.

Time Exposures.

FIRST—Set the lever A at the point T (time). This adjusts the shutter for time exposures.

SECOND—Set the lever B at No. 2, 3 or 4. See instructions for use of stops, page 35.

THIRD—Press the push-pin. *This opens the shutter.* Time exposure by a watch. Again press the push-pin. *This closes the shutter.* Shutter may be opened by pressing release C and closed by a second pressure if desired.

Bulb Exposure.

When it is desirable to make a very short time exposure this is best accomplished by making a "bulb exposure."

FIRST—Set the lever A at the point "B" (bulb). This adjusts the shutter for bulb exposures.

SECOND—Set the lever B controlling the stops at No. 2, 3 or 4 as desired. See page 35.

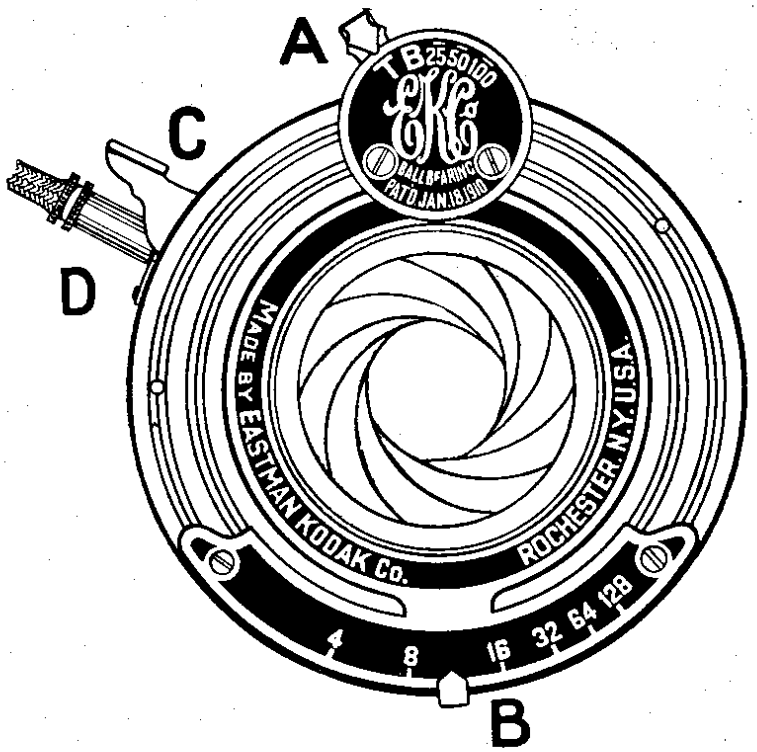
THIRD—Press push-pin to open the shutter, and release it to close the shutter. *This makes the exposure.* The shutter will remain open as long as the push pin is under pressure.

IMPORTANT.

Do not oil any part of the shutter.

In case of accident return shutter to your dealer or to us for repairs. As a general rule, make exposures with the cable release instead of with the release C, as the cable release is less likely to jar the camera.

Instructions for the use of the No. 1A Kodak Junior, when equipped with *Double Lens* (Rapid Rectilinear).



Instantaneous Exposures.

FIRST—Set the lever A at 25, 50 or 100, according to the time of instantaneous exposure desired.

NOTE: In bright light, set the lever at 100, the highest speed. In more subdued lights, set at 50 or 25, but do not attempt to make any instantaneous exposures in very dull light.

SECOND—Set the lever B at No. 8. Lever B controls the iris diaphragm and No. 8 is the proper opening for ordinary instantaneous exposures.

NOTE: For instantaneous exposures when the sunlight is unusually strong and there are no heavy shadows, such as in views on the seashore or on the water, use the diaphragm No. 16. With *light* clouds or *slightly smoky* atmosphere use No. 4 at 50 or No. 8 at 25. *With heavy clouds do not attempt instantaneous exposures.*

THIRD—Press push-pin or push down on release C. This makes the exposure.

NOTE: Press push pin with a firm quick movement, at the same time be sure to hold the Kodak rigid, as a slight jarring will cause a blurred negative.

Time Exposures.

FIRST—Set the lever A at the point T (time). This adjusts the shutter for time exposures.

SECOND—Set the lever B at No. 16, 32, 64 or 128 (which is indicated by a dot). See instructions for use of stops, page 35.

THIRD—Press the push-pin. *This opens the shutter.* Time exposure by a watch. Again press the push-pin. *This closes the shutter.* Shutter may be opened by pressing release C and closed by a second pressure if desired.

Bulb Exposure.

When it is desirable to make a very short time exposure this is best accomplished by making a "bulb exposure."

FIRST—Set the lever A at the point "B" (bulb). This adjusts the shutter for bulb exposures.

SECOND—Set the lever B controlling the stops at No. 16, 32, 64 or 128 (which is indicated by a dot), as desired. See page 35.

THIRD—Press push-pin to open the shutter, and release it to close the shutter. *This makes the exposure.* The shutter will remain open as long as the push pin is under pressure.

IMPORTANT.

Do not oil any part of the shutter.

In case of accident return shutter to your dealer or to us for repairs. As a general rule, make exposures with the cable release instead of with the release C, as the cable release is less likely to jar the camera.

SECTION II.

INSTANTANEOUS EXPOSURES.

"Snap Shots."

To take instantaneous pictures the objects must be in the broad, open sunlight, but the camera should not. The sun should be behind the back or over the shoulder of the operator.

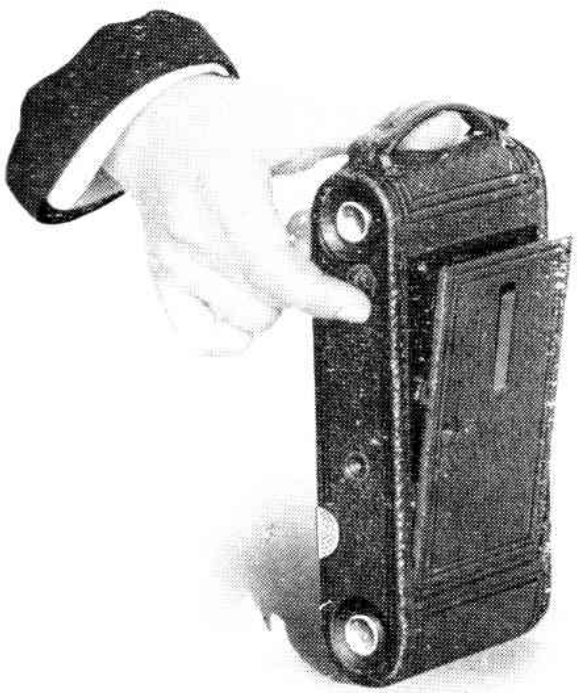


FIG. I.

Opening the Front.

1.—Focus on the Subject.

I. Press the concealed button, as shown in Fig. I., and push down the bed of camera to the limit of motion.

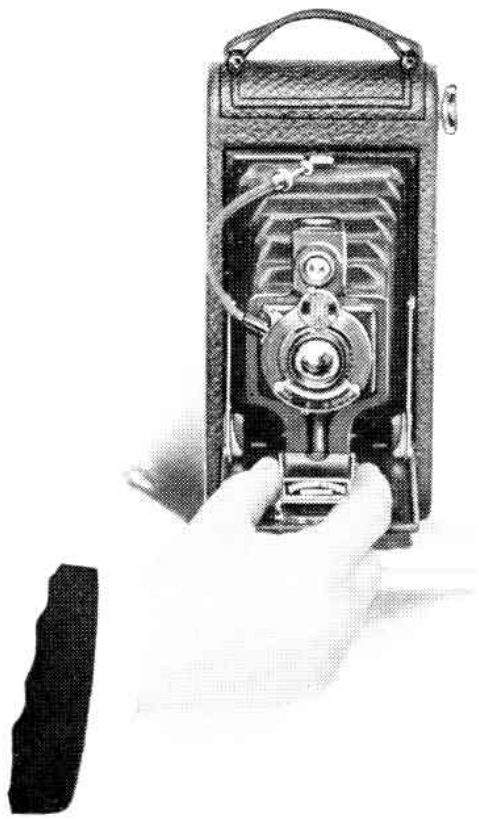


FIG. II.

Extending the Bellows and Focusing.

II. Grasp the springs at bottom of front board, and pull out front to the point nearest the estimated distance of *principal object* to be photographed in feet. Fig. II.

NOTE: The index plate is scaled both by feet and by metres and care should be taken not to confound them.

Except when working at distances of 15 feet or less, it is not necessary to estimate the distance with any more than approximate ac-

curacy; for instance, if the focus is set at 25 feet (the usual distance for ordinary street work), the sharpest part of the picture will be the objects at that distance from the camera, but everything from 15 to 35 feet will be in good focus. For general street work the focus may be kept at 25 feet, but where the *principal object* is nearer or farther away, the focus should be changed accordingly. The index plate is divided for 6, 8, 10, 15, 25 and 100 feet. Everything beyond 100 feet is in the 100-feet focus. Nothing nearer than 6 feet can be focused without using a portrait attachment. See page 32.

Automatic Locking Device.

The automatic locking device which is on the left side of the springs at bottom of front board, will be found a great convenience in focusing.

By means of this device, the front locks automatically at 6, 8, 10, 15, 25 or 100 feet focus.

To set the focus, press the lever on left side of the bottom of front board, then pull out front of camera to the slot marked for the distance desired, 6, 8, 10, 15, 25 or 100 feet (the scale is also marked in metres), and the camera will be in focus for the distance at which you have set the catch.

2—HOW TO USE THE No. 1A KODAK JUNIOR AS A FIXED FOCUS CAMERA.

Set focus at 25 feet.

Use speed of 1-25 of a second.

Set diaphragm midway between 1 and 2 or 8 and 16.

By following the above suggestions this camera can be used as a fixed focus instrument with the additional advantage of being instantly convertible to a focusing camera when conditions call for it. It must be remembered, however, that when using this Kodak as a fixed focus type, it is necessary that the subject be in brilliant sunlight, in order to obtain a fully timed exposure.

Explanation.

A lens is often spoken of erroneously as having a fixed focus.

There is no such thing as a universal or fixed focus lens, but in certain cameras, 3¼ x 4¼ and smaller (equipped with short focus lenses) the lens is immovable, i. e., set at a distance that is a compromise, as to its focus, between far and near points. A camera with a lens so focused, used in combination with a relatively small stop, is designated a universal or fixed focus instrument.

3.—USE STOP No. 1 or No. 8.

For all ordinary outdoor work, when the sun is very bright, use stop No. 1 when camera is equipped with the *single lens* and use No. 8 when it has the *double lens.* If a smaller stop is used, the light will be so much reduced that it will not sufficiently impress the image on the film, and failure will result.

In views on the water, when the sunlight is *unusually strong* and there are no heavy shadows, diaphragm No. 2 or No. 16 may be used.

If a smaller stop opening than No. 2 or No. 16 be used for ordinary snap shots, *absolute failure will result.*

4.—LOCATE THE IMAGE.

Aim the camera at the object to be photographed and locate the image in the finder. For a horizontal picture hold the camera as shown in Fig. III., reversing the finder as

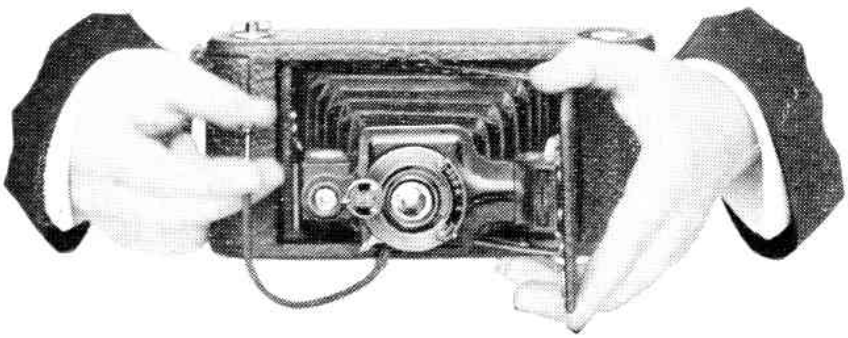


FIG. III.

indicated. Always look into the finder from directly over it, *not at an angle.*

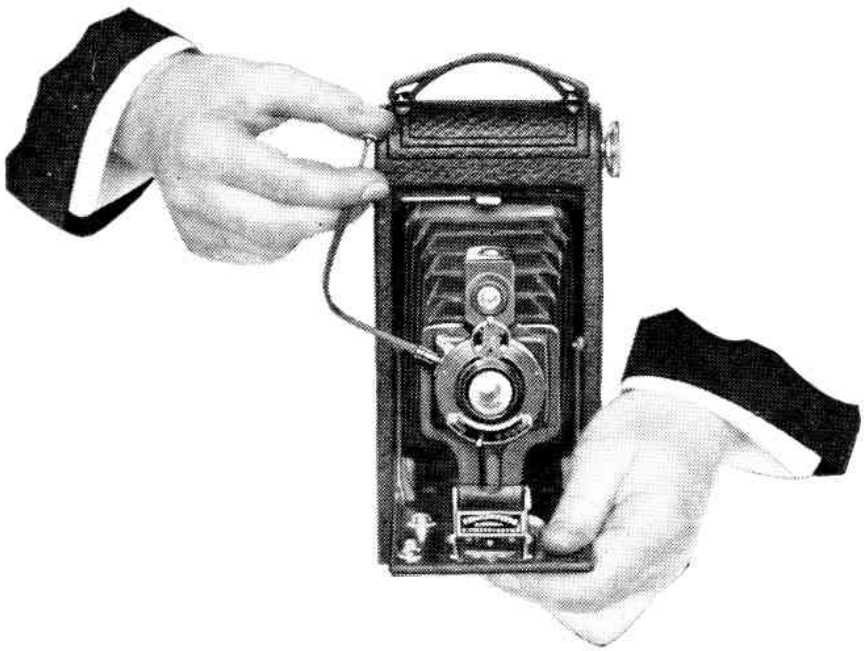
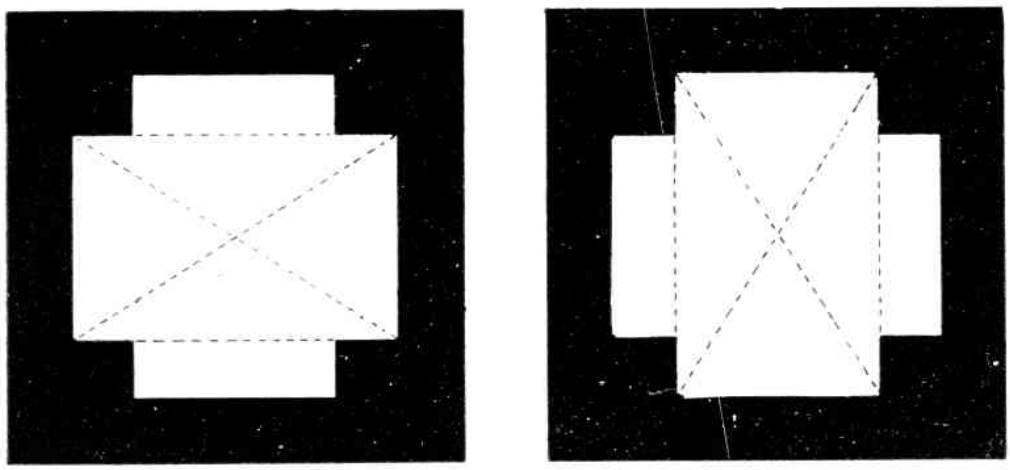


FIG. IV.

For a vertical exposure the camera must be held as shown in Fig. IV. The finders give the scope of view and show a facsimile of the picture as it will appear, but on a reduced scale.



VIEW INCLUDED WHEN MAKING A HORIZONTAL PICTURE.

VIEW INCLUDED WHEN MAKING A VERTICAL PICTURE.

FIG. V.

Any object that does not show in the finder will not show in the picture.

It will be noticed that the top of the finder is notched, as shown in Fig. V. This is done so that the one finder will correctly show the view included when the Kodak is held in either horizontal or vertical position. As the picture taken with the 1A Kodak Junior is oblong, it will readily be seen that unless the finder was made in this manner it could not correctly show the exact view intended when held in either position.

Remember that only the view indicated within the dotted lines will show in the picture.

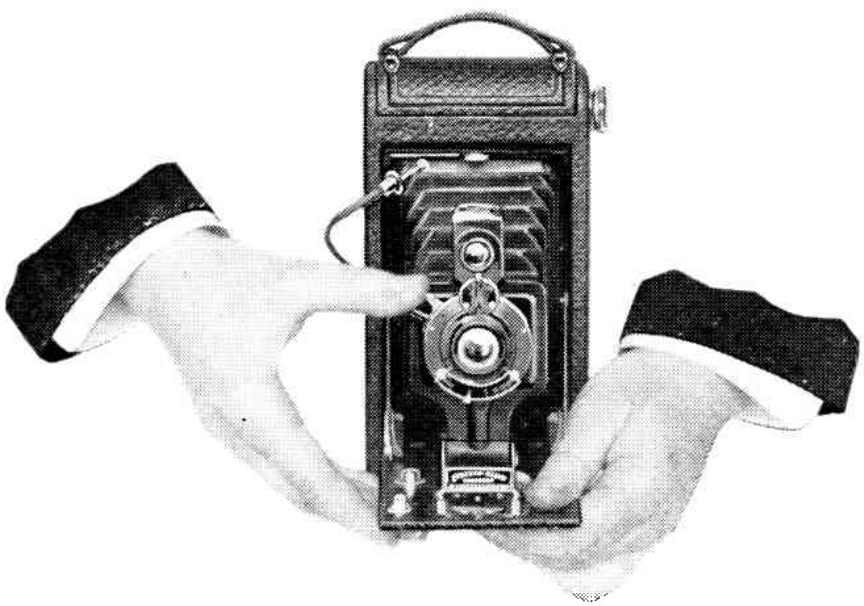


FIG. VI.

Fig. VI shows how to hold the camera when making an exposure without the use of the cable release. Grasp the bed of Kodak

firmly with the left hand, steady it with the right and with the thumb of the right hand lightly touch the exposure lever.

5.—Hold it Level.

The Kodak must be held level.

If the operator attempts to photograph a tall building while standing near it by pointing the camera upwards (thinking thereby to center it), the result will be similar to Fig. VII.

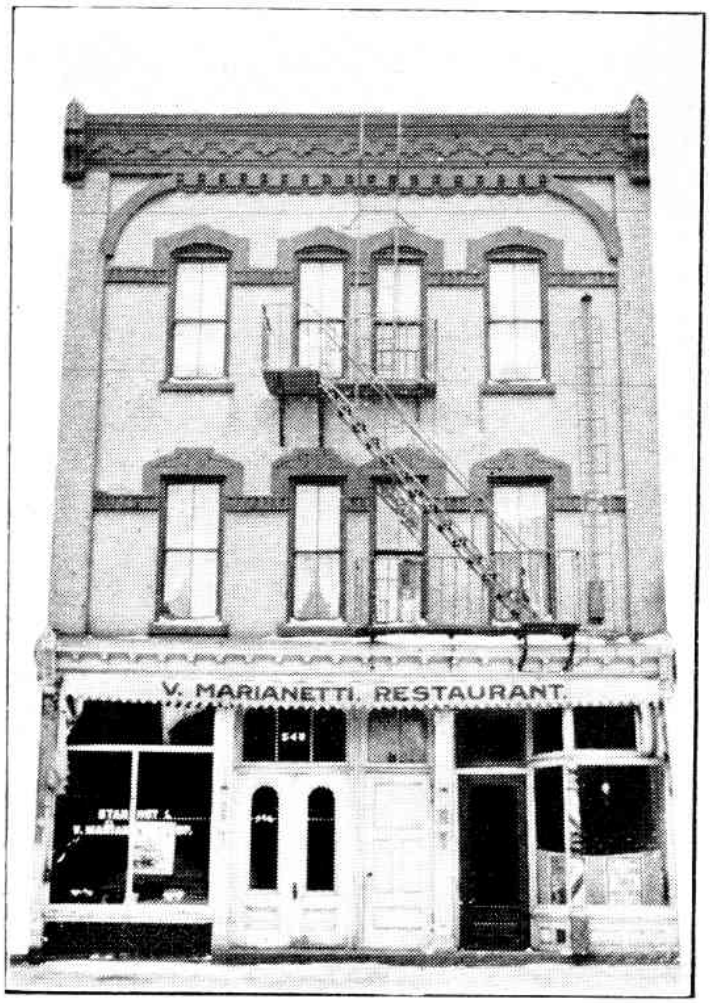


FIG. VII.

This was pointed too high. This building should have been taken from the middle story window of the building opposite.

The operator should hold the camera level, after withdrawing to a proper distance, as indicated by the image shown in the finder on the top of the camera.

If the object be down low, like a small child, or a dog, the Kodak should be held down level with the center of the object.

6.—Press Push-Pin on Cable Release.

HOLD THE CAMERA STEADY,
HOLD IT LEVEL AND
PRESS PUSH-PIN.

This makes the exposure.

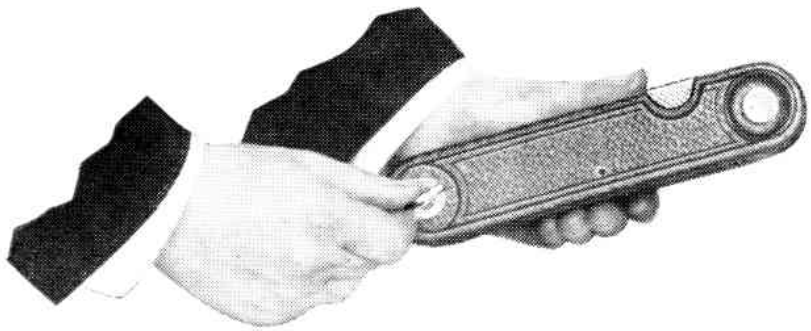


FIG. VIII.

TURN A NEW SECTION OF FILM INTO POSITION: Turn the key in top of camera slowly to the left, until the next number appears before the red window. Three or four turns will be

sufficient to accomplish this. The warning hand appears only before No. 1. See Fig. VIII.

Repeat the foregoing operations for each picture.

SECTION III.

TIME EXPOSURES.—INTERIORS.

Place the Kodak in position.

Set camera in such a position that the finder will embrace the view desired.

The diagram shows the proper positions for the Kodak. It should not be pointed directly at a window, as the glare of light will blur the picture. If all the windows cannot be avoided, pull down the shades of such as come within range of the Kodak.

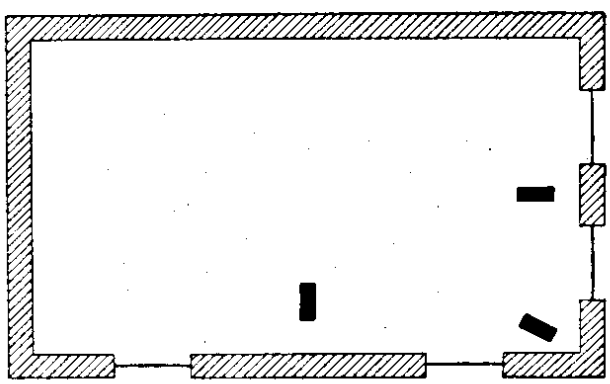


Diagram showing positions of Kodak.

To make a time exposure, place the Kodak on some firm support like a table, and focus as before described.

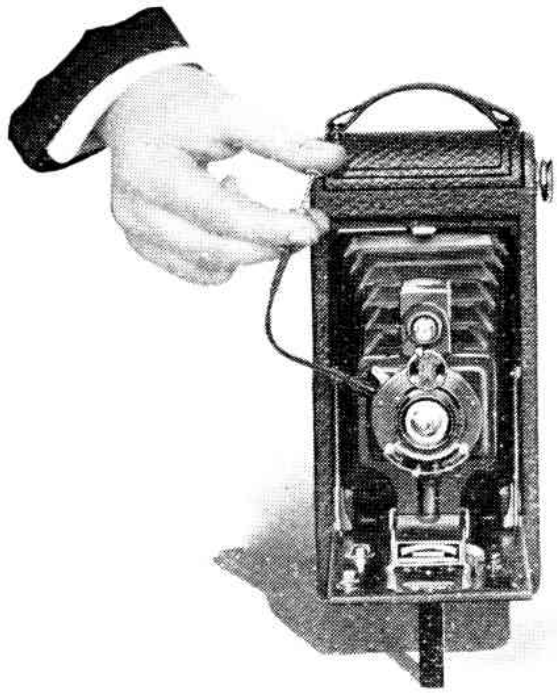


FIG. I.

Fig I shows the Kodak in position for a vertical exposure. The Kodak is also provided with tripod sockets and may be used on a tripod.

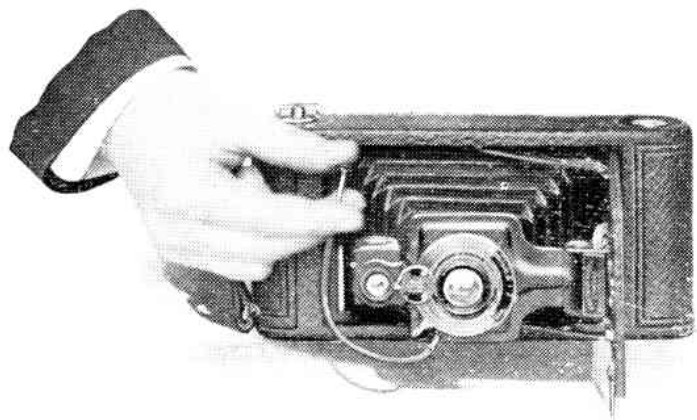


FIG. II.

When it is desired to make a horizontal time exposure without the use of a tripod, pull down the lever on bed of Kodak, as shown in Fig. II.

Adjust the shutter for a time exposure, as described on pages 13 and 16.

All being in readiness, press the push pin or touch the lever, once to open and again to close the shutter. Time the exposure by a watch.

TURN THE KEY.

Turn a new film into position, as described before (see page 26).

THE KODAK IS NOW READY FOR THE NEXT INTERIOR EXPOSURE.

Follow the directions given heretofore for each successive exposure.

When the last Interior Exposure is made, adjust the shutter for instantaneous exposures as before directed.

Time Needed for Interior Exposures.

The following table gives the time of the exposure required under varying conditions of light for the Kodak equipped either with the *single lens* or *double lens*. When using the model equipped with the *single lens* the time given in the table is with the stop No. 2 in the lens. If the stop No. 1 is used give only

one-half the time; if the stop No. 3 give twice the time and if stop No. 4 is used give four times the time of the table. When using the model equipped with the *double lens,* the time given in the table is with the stop No. 16 in the lens. If the stop No. 8 is used give only one-half the time; if the stop No. 128 is used, give 8 times the time of the table. The smaller the stop the sharper the picture. The No. 2 or the No. 16 give the best results for interiors.

White walls and more than one window:

bright sun outside, 4 seconds;
hazy sun, 10 seconds:
cloudy bright, 20 seconds;
cloudy dull, 40 seconds.

White walls and only one window:

bright sun outside, 6 seconds;
hazy sun, 15 seconds;
cloudy bright, 30 seconds;
cloudy dull, 60 seconds.

Medium colored walls and hangings and more than one window:

bright sun outside, 8 seconds;
hazy sun, 20 seconds:
cloudy bright, 40 seconds;
cloudy dull, 80 seconds.

Medium colored walls and hangings and only one window:

bright sun outside, 12 seconds;
hazy sun, 30 seconds;
cloudy bright, 60 seconds;
cloudy dull, 120 seconds.

Dark colored walls and hangings and more than one window:

bright sun outside, 20 seconds;
hazy sun, 40 seconds;
cloudy bright, 80 seconds;
cloudy dull, 2 minutes, 40 seconds.

Dark colored walls and hangings and only one window:

bright sun outside, 40 seconds;
hazy sun, 80 seconds;
cloudy bright, 2 minutes, 40 seconds;
cloudy dull, 5 minutes, 20 seconds.

The foregoing is caluculated for rooms whose windows get the direct light from the sky, and for hours from three hours after sunrise until three hours before sunset.

If earlier or later the time required will be longer.

To Make a Portrait.

Place the sitter in a chair partly facing the Kodak (which should be located slightly higher than an ordinary table) and turn the face slightly towards the instrument, having the eyes centered on an object at the same level with the lens. Center the image in the finder. For a three-quarter figure the Kodak should be from 6 to 8 feet from the figure; and for a full figure from 8 to 10 feet. The background should form a constrast with the sitter.

Kodak Portrait Attachment.

The attachment is simply an extra lens slipped on over the regular lens, and in no way affects its operation except to change the focus.

By means of the Portrait Attachment large head and shoulder portraits of various sizes may be obtained. With the Attachment in position and the focus set at 6 feet, the subject should be placed exactly 2 feet, 8 inches from the lens.

At 8 feet focus, place the subject 3 feet from the lens.

At 15 feet focus, place the subject 3½ feet from the lens.

At 25 feet focus, place the subject 4 feet from the lens.

At 100 feet focus, place subject 4½ feet from the lens.

TIME EXPOSURES IN THE OPEN AIR.

When the smallest stop is in the lens the light admitted is so much reduced that time exposures out of doors may be made the same as interiors, but the exposures must be much shorter.

WITH SUNSHINE—1/5 second.

WITH LIGHT CLOUDS—From ½ to 1 second will be sufficient.

WITH HEAVY CLOUDS—From 2 seconds to 5 seconds will be required.

The above is calculated for the same hours as mentioned above and for objects in the open air. For other hours or for objects in the shadow, under porches or under trees, no accurate directions can be given; experience only can teach the proper exposure to give.

Time exposures cannot be made while the Kodak is held in the hand. Always place it upon some firm support, such as a tripod, chair or table.

For exceedingly short time exposures as above described, use the "bulb exposure." See pages 14 and 17.

"*F.*" and "U. S." Systems.

A lens is said to work at a certain "speed;" this means that the lens will cut sharp to the corners, with an opening a certain proportion of its focal length. It should be borne clearly in mind that this speed depends *not* upon the size of the opening, but upon the size of the opening *in proportion to the focal length of the lens*. (distance from the lens to plate when focused on infinity). The lens that will

cut sharp with the largest opening is said to possess the greatest speed.

Such openings are termed stop or diaphragm openings, and for convenience in estimating exposures, are arranged according to two systems, the *f* system and the Uniform System, or U. S. system, as commonly abbreviated.

In the *f* system the proportional size or "value" of the stop opening is designated by "*f*," and is the quotient obtained by dividing the focal length of the lens by the diameter of the stop.

Taking, for instance, a lens of 8-inch focus with a stop 1 inch in diameter, and we find that 8÷1=8; hence, 8 is the *f*. value of the stop and would be designated *f*.8. Suppose the stop is ¼ inch in diameter, we would then have 8÷¼=*f*.32.

For convenience, the uniform system of marking stop openings has been adopted by nearly all manufacturers of iris diaphragms. Such convenience is at once apparent when we understand that each higher number stands for an opening having *half* the *area* of the preceding opening, each smaller stop (or higher number) requiring double the time of the one next larger.

With the *f*. system, each stop is a certain proportion of the focal length and not ar-

ranged with reference to the other openings, so that estimating exposure is much more complicated by this system.

As a number of exposure meters and similar devices for determining the proper exposure are based upon the *f.* system, we append the following table showing the "*f.* value" for each of the uniform system openings:

U. S.	4=*f.* 8	U. S.	32=*f.* 22.6
U. S.	8=*f.* 11.3	U. S.	64=*f.* 32
U. S.	16=*f.* 16	U. S.	128=*f.* 45.2

Diaphragms.

When using the model equipped with the SINGLE LENS, the stops should be used as follows:

No. 1. THE LARGEST — For all ordinary instantaneous exposures.

No. 2. For instantaneous exposures when the sunlight is unusually strong and there are no heavy shadows; such as in views on the seashore, or on the water; also for interior time exposures.

Nos. 3 and 4. For time exposures outdoors in cloudy weather. Not for instantaneous exposures. The time required for time exposures on cloudy days with smallest stop will range from one-half second to five seconds according to the light. The smaller the stop the sharper the picture.

If you use the smallest stop for instantaneous exposures absolute failure will result.

If using the model fitted with the DOUBLE LENS, the stops should be used as follows:

No. 4—For instantaneous exposures on *slightly* cloudy days.

No. 8—For *all ordinary instantaneous exposures* when the sun shines.

No. 16—For instantaneous exposures when the sunlight is unusually strong and there are no heavy shadows; such as in views on the seashore or on the water, also for interior time exposures.

Nos. 32 and 64—For interiors. *Never for instantaneous exposures.*

No. 128 (which is indicated by a dot)—May also be used for time exposures outdoors in cloudy weather. *Never for instantaneous exposures.* The time required for time exposures on cloudy days with stop 128 will range from 1-5 second to 5 seconds, according to the light. The smaller the stop the sharper the picture.

Absolute failure will be the result if you use the smallest stop for instantaneous exposures.

SECTION IV.

FLASH LIGHT PICTURES.

By the introduction of Eastman Flash Sheets, picture taking at night has been wonderfully simplified. A package of flash sheets, a piece of cardboard, a pin and a match complete the list of essential extras, although a Kodak Flash Sheet Holder is a great convenience.

With flash sheets, no lamp is necessary, there is a minimum of smoke and they are far safer than any other self-burning flash medium, besides giving a softer light that is less trying to the eyes.

Many interiors can be taken with the flash sheets that are impracticable by daylight, either by reason of a lack of illumination or there are windows in a direct line of view which

cannot be darkened sufficiently to prevent the blurring of the picture.

Evening parties, groups around a dinner or card table or single portraits may be readily made by the use of our flash sheets, thus enabling the amateur to obtain souvenirs of many occasions which, but for the flash light, would be quite beyond the range of the art.

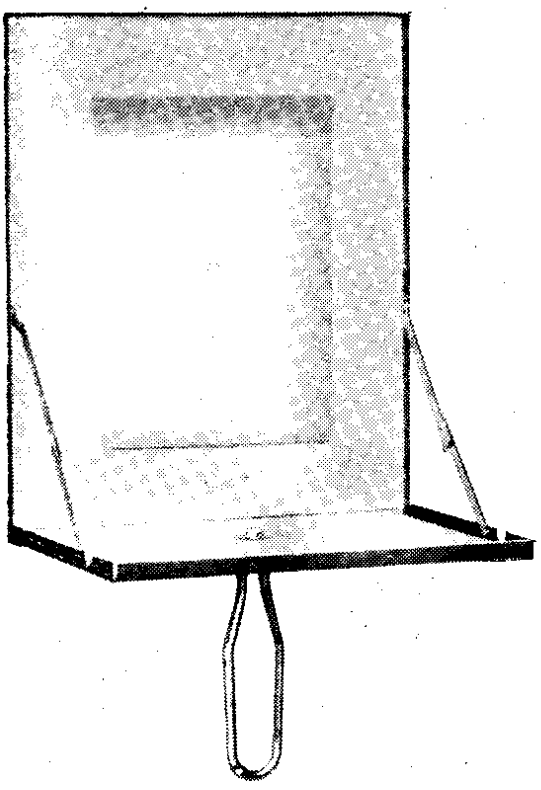
PREPARATION FOR THE FLASH—The camera should be prepared for time exposure, as directed on pages 13 and 16 of this manual (except that stop No. 1 in the model with *single lens,* or No. 8 if with the *double lens,* must be used), and placed on some level support where it will take in the view desired.

Pin a flash sheet by one corner to a piece of cardboard which has previously been fixed in a perpendicular position. If the cardboard is white it will act as a reflector and increase the strength of the flash.

The flash sheet should *always* be placed two feet behind and two or three feet to one side of the camera. If placed in front, or on a line with front of Kodak, the flash would strike the lens and blur the picture. It should be placed at one side as well as behind, so as to throw a shadow and give a little relief in the lighting. The flash should be at the same height or a little higher than the camera. The

support upon which the flash is to be made should not project far enough in front of it to cast a shadow in front of the Kodak. An extra piece of cardboard a foot square placed under the flash sheet will prevent any sparks from the flash doing damage. However, by using the Kodak Flash Sheet Holder, all these contingencies are taken care of, and we strongly advise its use.

THE KODAK FLASH SHEET HOLDER.



This holder may be held in the hand *always between you and the flash sheet.* Or it may be used on any Kodak tripod, being provided with a socket for this purpose. The sheet is placed in position in the center of the larger pan over the round opening which has a raised saw-tooth edge extending half way around it. Press with the thumb on the sheet, so slight break

is made and a portion of the sheet projects partially through the opening. Then to insure the sheet being more securely fastened, press around the notched edge, forcing this portion of flash sheet firmly into position on the pan.

Then to set off the flash, merely insert a lighted match, from behind, through the round opening.

Having the Kodak and the flash sheets both in position and all being in readiness, open the camera shutter, stand at arm's length and touch a match from behind through the round opening in the center.

NOTE: If you are not using the **Kodak** Flash Sheet Holder, place the match in a split stick at least two feet long.

There will be a bright flash which will impress the picture on the sensitive film. Then close the shutter and turn a fresh film into place with the key, ready for another picture.

THE FLASH SHEET.

The size of the sheet required to light a room varies with the distance of the object farthest from the camera, and the color of the walls and hangings.

For	10	ft.	distance	and	light	walls	and hangings,	use 1 No. 1 Sheet
"	10	"	"	"	dark	"	"	" 1 No. 2 Sheet
"	15	"	"	"	light	"	"	" 1 No. 2 Sheet
"	15	"	"	"	dark	"	"	" 1 No. 3 Sheet

NOTE; Never use more than one sheet at a time in the **Kodak** Flash Sheet Holder.

To Make a Portrait—Place the sitter in a chair partly facing the Kodak (which should be located slightly higher than an ordinary table) and turn the face slightly towards the instrument, having the eyes centered on an object at the same level with the lens. The proper distance from the camera to the subject can be ascertained by looking at the image in the finder. For a three quarter picture this will be from 6 to 8 feet, and for a full figure, from 8 to 10 feet. The flash should be on the side of the Kodak away from the face, that is, the sitter should not face it. The flash should not be higher than the head of the sitter.

For using Portrait Attachment see page 32.

To Make a Group—Arrange the chairs in the form of an arc, facing the Kodak, so that each chair will be exactly the same distance from the camera. Half the persons composing the group should be seated and the rest should stand behind the chairs. If the group is large, any number of chairs may be used, but none of the subjects should be seated on the floor, as is sometimes seen in large pictures, because the perspective would be too violent.

Backgrounds—In making single portraits or groups, care should be taken to have a suitable background against which the figures will

show in relief; a light background is better than a dark one, and often a single figure or two will show up well against a lace curtain. For larger groups a medium light background will be suitable.

The *finder* on the camera will aid the operator in composing the groups so as to get the best effect. In order to make the image visible in the finder the room will have to be well lighted with ordinary lamplight, which may be left on while the picture is being made, provided none of the lights are placed so that they show in the finder.

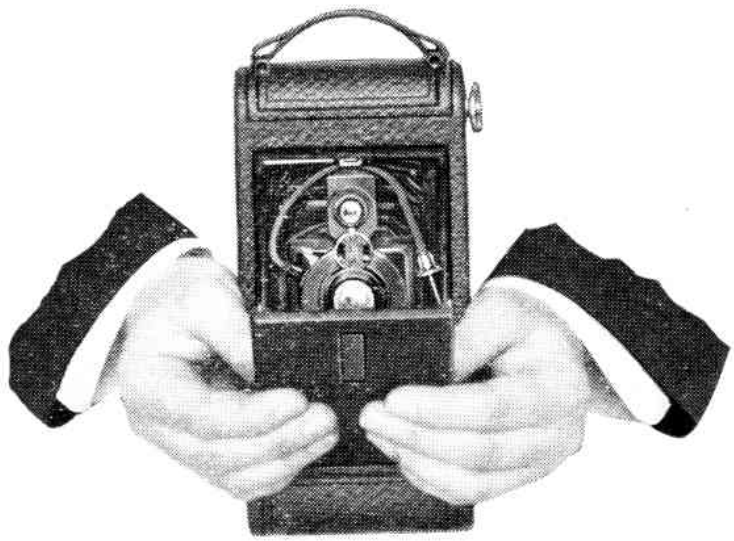
Eastman Flash Sheets burn more slowly than flash powders, producing a much softer light and are, therefore far preferable in portrait work; the subject, however, should be warned not to move, as the picture is not taken *instantaneously,* about one second being required to burn one sheet.

EASTMAN FLASH CARTRIDGES.

Eastman Flash Cartridges may be substituted for the sheets if desired. We recommend the sheets, however, as more convenient, cheaper and capable of producing the best results. The cartridges are only superior when absolutely *instantaneous* work is essential.

CLOSING THE KODAK.

When through using the Kodak, fold the bellows by reversing the operation shown in Fig. II., page 19, and press down on arm locks on each side of bed as shown below. The bed will now close readily.



CAUTION.

Before closing the bed of the camera be careful to note that the finder is in the upright position and that the front board has been pushed back to the limit of motion.

If it is in proper position it will not interfere with the bed in closing.

PART III.

REMOVING THE FILM.

No dark-room is required for changing the spools in the Kodak Junior. The operation should, however, be performed in a subdued light.

I. When the last section of film has been exposed, turn the key about 5 half turns.

II. Provide an extra spool of film to fit this camera, and take a position by a table as far as possible from any window.

III. Remove the back from the Kodak as before described, page 5.

IV Holding the paper taut, so as to wind tightly, turn the key until the paper is all on the reel. Fig. I.

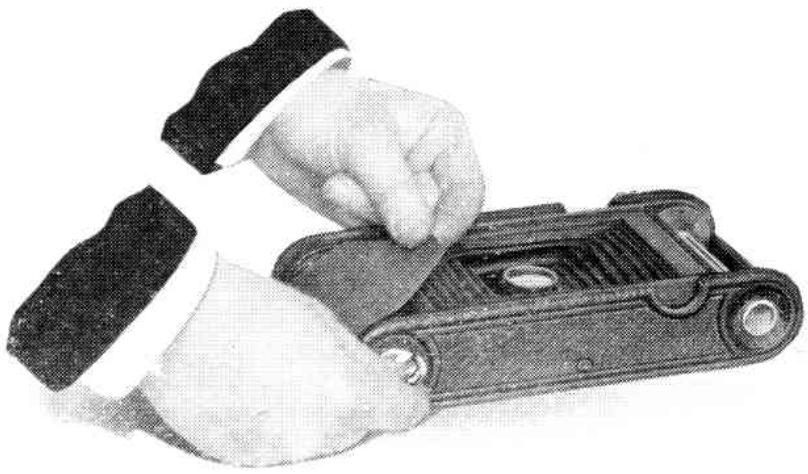


FIG. I.

V. Hold ends of duplex paper and sticker together to prevent paper from loosening on reel.

NOTE: If sticker folds under roll, raise it up with the point of a lead pencil.

VI. Pull out spool pin and winding key, and lift out roll of film as shown in Fig. II.

VII. Fold over half-inch at end of duplex paper (so as to make subsequent breaking of the seal easy), and then seal with sticker.

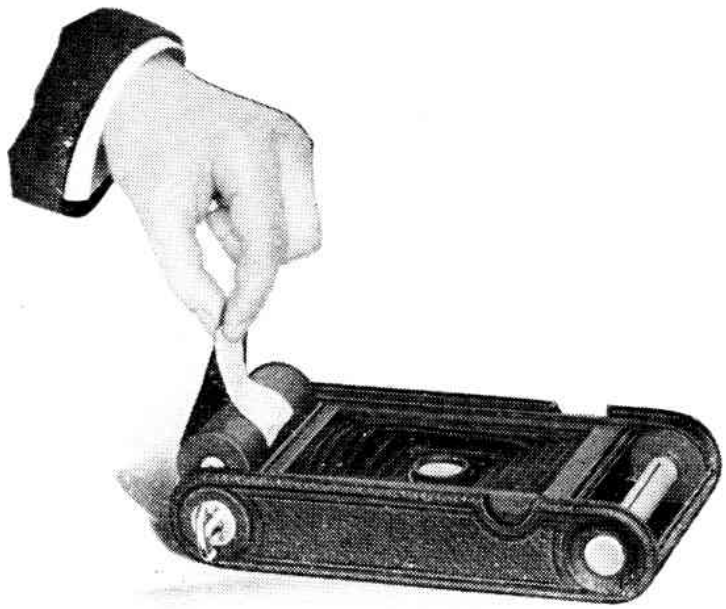


FIG. II.

Removing the Cartridge of Exposed Film.

VIII. Wrap up exposed film immediately to prevent the possibility of light being admitted.

IX. Now take out the empty spool by drawing out the center pins which hold it in place.

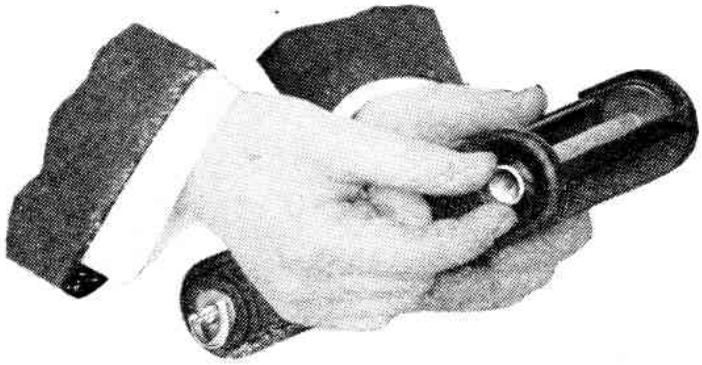


FIG. III.

Pulling out Center Pins to remove Empty Spool.

X. Slip this spool into place at the winding side of camera (this will form a new reel),

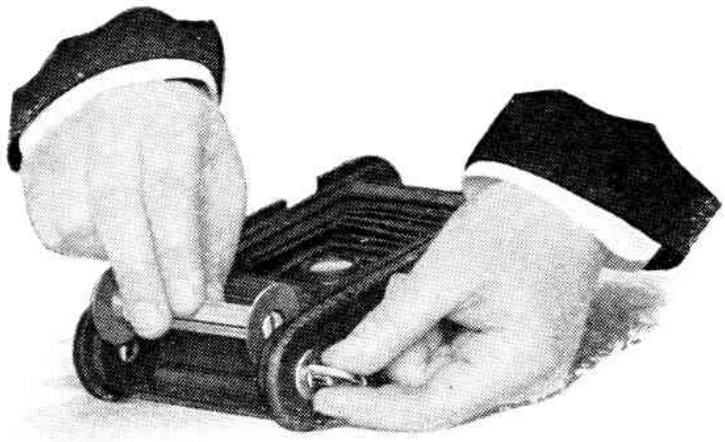


FIG. IV.

Pulling out Key to admit New Reel.

pulling out the key in so doing, as shown in Fig. IV., and fitting the web which is attached to key into the slot in the end of spool. Now

push the axis pin in the opposite end of spool until it is fixed in position by the embossed stop.

XI. Load as described in Part I., page 5.

The roll of exposures can now be mailed to us for finishing (see price list), or you can do the developing and printing yourself.

NOTE: In mailing us film for development do not fail to mark the package plainly with your name and address, and write us a letter of advice with remittance.

CINCH MARKS.

If the film and paper loosen up a trifle when taken from the camera, many amateurs are likely to take the cartridge in the hand and wind it as closely as possible, cinching it tightly with a twisting motion. There's nothing more likely to injure the negative than this tight drawing of the film, as it abrades the surface, making fine parallel scratches running lengthwise of the film, which, in some cases, will ruin the negative. *Do not "cinch" the cartridge.* It simply needs to be wound tightly enough so that the duplex paper keeps inside the flanges.

DIMMED FINDERS AND HOW TO MAKE THEM BRIGHT AGAIN.

For some cause which is not thoroughly understood, glass will sometimes "sweat" to

such an extent as to cover it with a sort of film, which, of course, makes it very dull, whether it be used as a lens or mirror.

Whatever the cause, the result is the occasional dimming of finders and lenses. With finders, the trouble is sometimes in the mirror, which necessitates wiping it by means of a soft cotton cloth. To clean the mirror in the finder on the No. 1A Kodak Junior, wind the end of a handkerchief around the end of a lead pencil and pass between lens and mirror.

KEEP DUST OUT OF THE CAMERA.

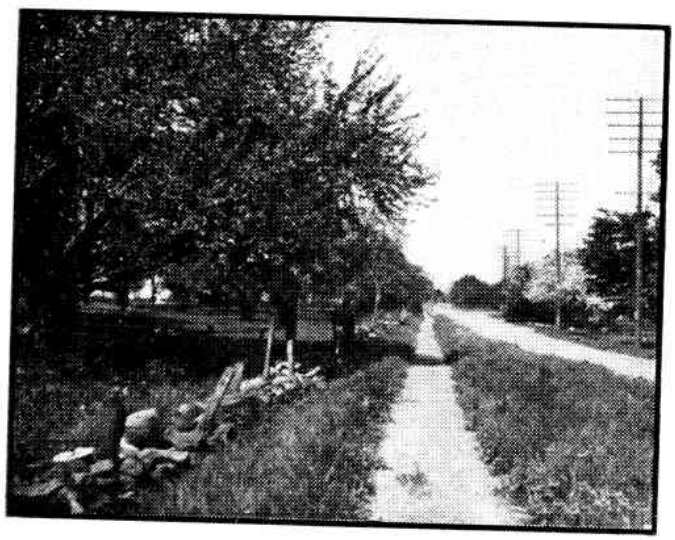
Defective negatives are often caused by particles of dust which have collected on the inside of the camera and settle upon the film in particles that produce small dark spots upon the prints.

It is, therefore, well to wipe out the inside of camera and bellows occasionally, with a slightly damp cloth. In Summer weather, or after the camera has remained idle for any length of time, this needs special attention.

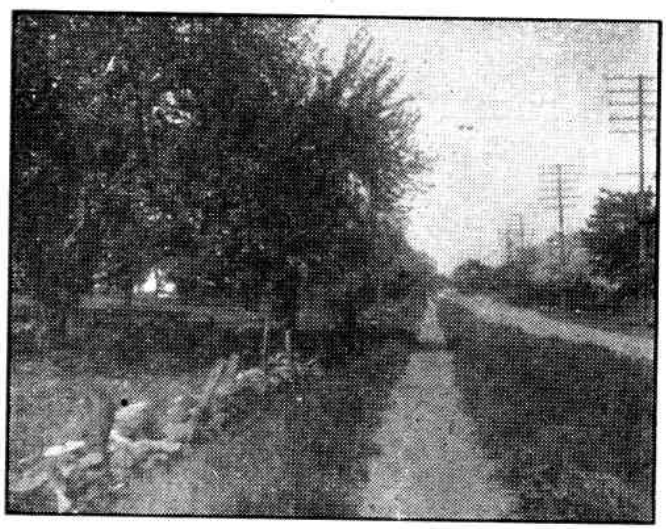
CLEAN LENSES.

Dirty or dusty lenses are frequently the cause for photographic failures. These pictures illustrate this point clearly. The sharp, full timed picture at the top was taken with the lens clean and in good order. To produce the effect shown in the picture at the bottom, the operator lightly touched the face of the lens with his thumb, which was slightly damp with perspiration.

Lenses should be frequently examined by looking *through* them, and if found to be dirty, should be wiped, both front and back, with a clean, soft linen handkerchief. In summer weather this needs special attention. Large spots of dust or dirt on the lens will cause defects in the picture, while if the lens is evenly covered with a film of dust, dirt or moisture, the effect will be to cut off a great deal of light and make the picture undertimed.



CLEAN LENS.



LENS SLIGHTLY DIRTY.

PART IV.

DEVELOPING.

There is no necessity of working in a dark-room or waiting until night to develop film. It can be done in daylight at any time and place. And the daylight method of developing film gives better results than the dark-room way.

Film may be developed in daylight by the Kodak Film Tank method. Detailed directions for developing will be found in the manual which accompanies the goods. The operation is given briefly in the following pages.

We recommend the Kodak Film Tank method particularly for its simpleness, and the uniformly good negatives which it gives.

DEVELOPING WITH THE KODAK FILM TANK.

For use with No. 1A Kodak Junior, provide a 2½ inch Kodak Film Tank.

The Kodak Film Tank consists of a wooden box, a light-proof apron, a "transferring reel,"

NOTE: Avoirdupois weight is the standard used in compounding photographic formulæ.

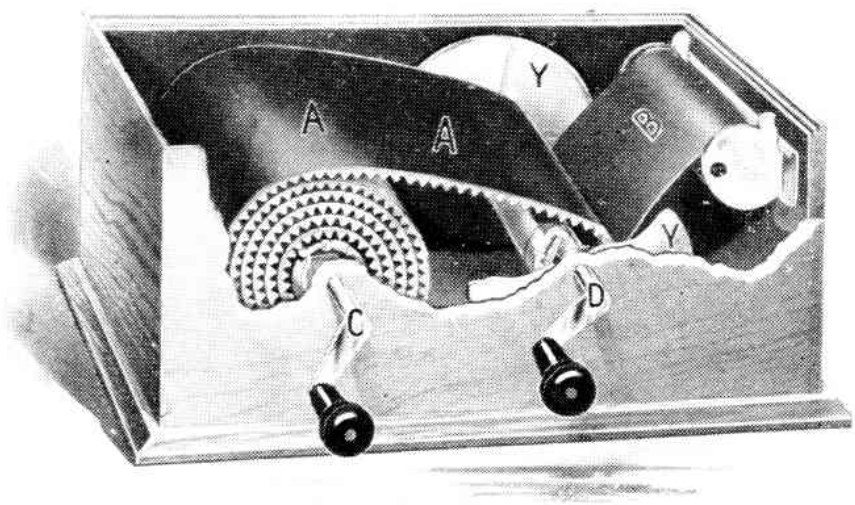


FIG. I.

a metal "solution cup" in which the film is developed, and a hooked rod for removing film from solution. There is also a dummy film cartridge with which one should experiment before using an exposed cartridge.

1. Take everything out of the box. Take apron and Transferring Reel out of solution cup.

2. Insert the axles marked C and D in the cut, in the holes in front of box. The front will be toward you when the spool carrier in end of box is at your right.

3. The axle "C" must be pushed through the hollow spindle which will be found loose in the box. The two lugs on this spindle are to engage the hooks at end of apron. The axle "D" must be pushed through the hollow rod of

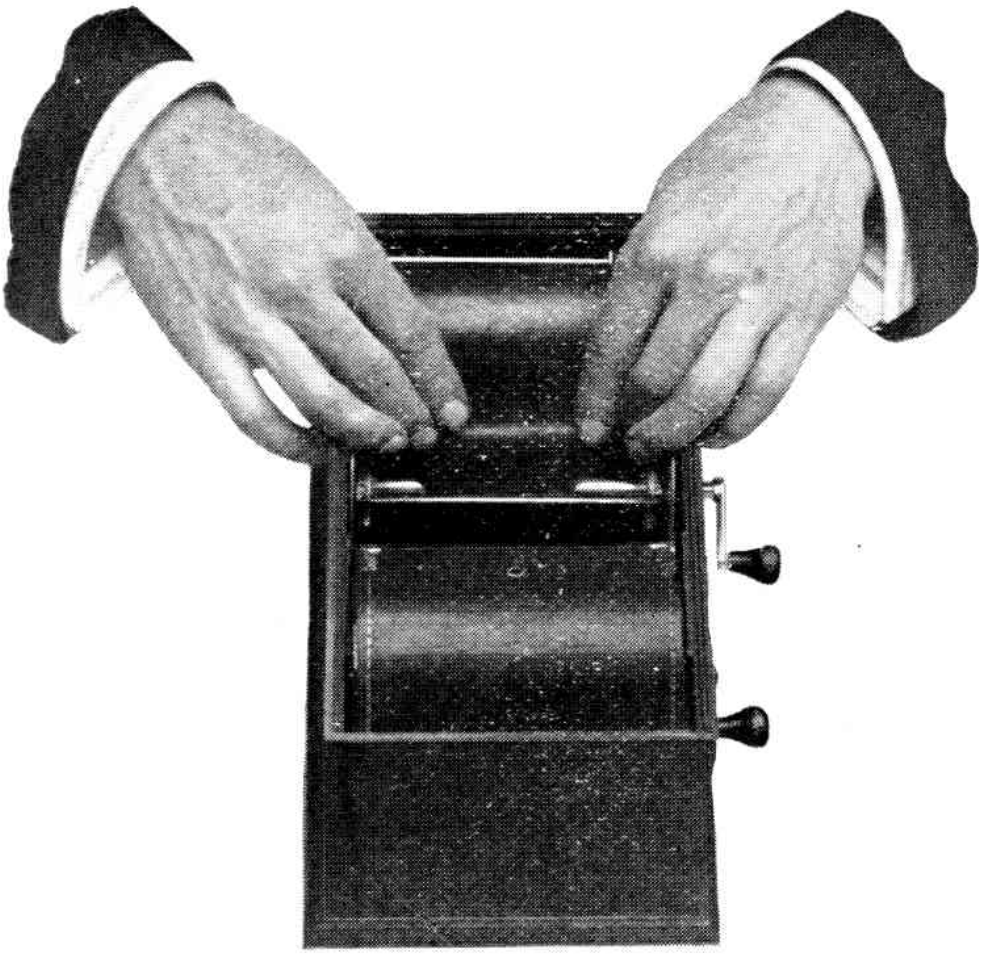


FIG. 11

the Transferring Reel to hold reel in position, as indicated in the illustration. The flanges at each end of the Transferring Reel are marked "Y" in the illustration.

4. Attach one end of the apron to spindle through which axle "C" passes by means of the

metal hooks which are to be engaged with the lugs on the spindle. The corrugated side of the rubber bands is to be beneath the apron when it is attached. Turn to left on axle "C" and wind entire apron on to spindle, maintaining a slight tension on apron in so doing by resting one hand on it.

5. Insert film cartridge in spool carrier and close up the movable arm tight against end of spool. Have the duplex paper ("B" in Fig. 1) lead from the top.

IMPORTANT.

Film to be used in the Kodak Film Tank must be fastened to the duplex paper at both ends. All films are fastened at one end at our factory. For instructions on how to fasten the other end, see Film Tank Manual.

6. Break the sticker that holds down the end of duplex paper, thread the paper underneath the wire guard on transferring reel through which axle "D" passes (Fig. II), and turn axle slowly to right until the word "stop" appears on duplex paper.

7. Now hook apron to lugs on axle "D" in precisely the same manner that you hooked the opposite end to axle "C," except that axle "D" turns to the right.

8. Turn handle half a revolution so that apron becomes firmly attached, and put on cover of box. Turn axle "D" slowly and steadily until duplex paper, film and apron are rolled up together on transferring reel. As soon as this is completed the handle will turn very freely.

9. Prepare developing solution in solution cup according to directions in Kodak Film Tank Manual.

10. Remove cover from box and take hold of the duplex paper which projects beyond the end of the apron. Then wind axle "D" until the duplex paper becomes taut.

11. *Draw out axle "D", holding apron and duplex paper with the other hand to keep end of apron and paper from loosening. Remove entire Transferring Reel, containing apron, duplex paper and film (which is freed by pulling out axle "D") and slip a small rubber band around the apron tightly so that there will be no possibility of its unwinding.*

NOTE: In removing reel do not squeeze the apron, as by doing so there will be a tendency for it to buckle.

12. Insert the Transferring Reel (containing apron, duplex paper and film) in the previously prepared developer immediately.

The operation of removing reel from box can be done in the light of an ordinary room, but for safety it is well that the light should not be too bright.

Using the Solution Cup.

13. Having filled solution cup, lower Transferring Reel into cup with end containing cross bar up. (Fig. III.) Let reel slide down slowly.

FIG. III.

The total length of time for development is 20 minutes.

Note—Immediately after lowering reel into solution cup, catch it with the wire hook and move gently up and down two or three times, but not allowing reel to come above surface of developing solution. This is to expel air bubbles.

FIG. IV.

Allow development to proceed for about two minutes with cover of solution cup off; then place the cover on the cup (Fig. IV.), putting lugs on cover into grooves and tighten cover down by turning it to right.

Now, turn the entire cup end for end and place in a tray or saucer to catch any slight leak from the cup. At the end of three minutes again reverse the cup, and thereafter reverse every

three minutes until the time of development (20 minutes) has elapsed. Turning the solution cup allows the developer to act evenly and adds brilliancy and snap to the negatives.

14. The wire hook is to be used for lifting the reel out of the cup. Hook to the cross bar on one end of reel. When the end of reel containing cross bar is at the bottom of cup, the hook is just long enough to catch the cross bar.

15. When developing is completed, pour out developer and fill cup with clear, cold water, and pour off. Repeat three times. Then remove Transferring Reel, separate film from duplex paper, and place immediately in the Fixing Bath which should be in readiness, prepared in accordance with directions on page 61.

NOTE: When removing cover of solution cup, place cup in palm of hand so as to obtain a firm grip on bottom of can. Then grip cover with other hand and turn slowly to left, when cover will loosen readily.

The film may be separated from duplex paper in the subdued light of an ordinary room, if the developer is thoroughly washed out.

The operation of separating film and duplex paper should be done over a bowl, bath tub, or sink.

If the Film Tank is not to be used again immediately, the apron and tank should be washed and wiped dry. The apron must always be perfectly dry when film is rolled up in same.

Keep apron wound on Transferring Reel when not in use. Never leave apron soaking in water.

Time and Temperature for Tank Development.

It sometimes happens that the amateur is not able to obtain or maintain the standard or normal temperature of 65 degrees Fahr. when using the Kodak Tank and the Kodak Tank Developer Powders. In such cases the following table will be found of value:

Temperature			Time One Powder			Time Two Powders		
70	Degrees		15	Minutes		8	Minutes	
69	"		16	"				
68	"		17	"		9	"	
67	"		18	"				
66	"		19	"				
65	"	NORMAL	20	"	NORMAL	10	"	NORMAL
64	"		21	"				
63	"		22	"				
62	"		23	"		11	"	
61	"		24	"				
60	"		25	"				
59	"		26	"		12	"	
58	"		27	"				
57	"		28	"				
56	"		29	"		13	"	
55	"		30	"				
54	"		31	"				
53	"		32	"		14	"	
52	"		33	"				
51	"		34	"				
50	"		35	"		15	"	
49	"		36	"				
48	"		37	"				
47	"		38	"		16	"	
46	"		39	"				
45	"		40	"		17	"	

Temperature of developer must not exceed 70 degrees Fahr., as above that point there is danger of the film frilling. 45 degrees Fahr. is the lowest temperature at which the developing powders can be dissolved, and even at this temperature the powder must be finely crushed and added slowly to the water.

It is best to use the normal temperature (65 degrees) when possible, as the use of a developer that is colder than normal has a slight tendency to increase the contrast in a negative, while the use of a developer warmer than normal slightly flattens the negatives.

Developing Several Rolls of Film at Once.

Several rolls of film may be developed at the same time if the operator wishes. To do this it is necessary to have a "Duplicating Outfit" consisting of 1 Solution Cup, 1 Transferring Reel and 1 Apron for each additional roll of film to be developed. The extra rolls of film may then be wound onto Transferring Reels as previously described and immersed in the Solution Cups.

DEVELOPING IN THE DARK ROOM.

For greatest economy provide an Eastman A B C Developing and Printing Outfit which is suitable for 4 x 5 or any smaller size films.

A B C Developing Outfit.

The Outfit Contains:

1 Kodak Candle Lamp,	$ .25
4 Developing Trays.	.40
1 4 Oz. Graduate,	.15
1 4 x 5 Printing Frame,	.25
1 4 x 5 Glass for same,	.05
1 Stirring Rod,	.05
1 Box (5 tubes) Eastman Special Developing Powders,	.25
½ Pound Kodak Acid Fixing Powder,	.15
2 Doz. Sheets 4 x 5 Velox Paper,	.50
1 2-Oz. Bottle Nepera Solution,	.10
1 Package Bromide Potassium,	.05
1 Instruction Book,	.10
	$2.30

Price complete, neatly packed, $1.50.
This outfit cannot be shipped by mail.

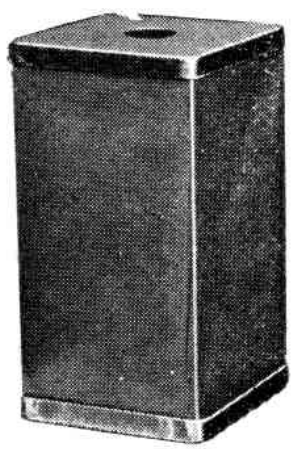
Also provide a pair of shears, a pitcher of cold water (preferably ice water), a pail for slops, and a *dark-room* having a shelf or table.

By a dark-room is meant one that is wholly dark—not a ray of light in it. Such a room can easily be secured at night almost anywhere. The reason a dark-room is required is that the film is extremely sensitive to white light, either daylight or lamplight, *and would be spoiled if exposed to it*, even for a fraction of a second.

Having provided such a room or closet, where when the door is closed, no ray of light can be seen:

Set up on the table or shelf the Kodak Candle Lamp.

The lamp gives a subdued red light which will not injure the film unless it is held too close to it. Set the lamp on the table at least eighteen inches from the operator. Never use a yellow light with N. C. film, or fog will be the result.



The Lamp.

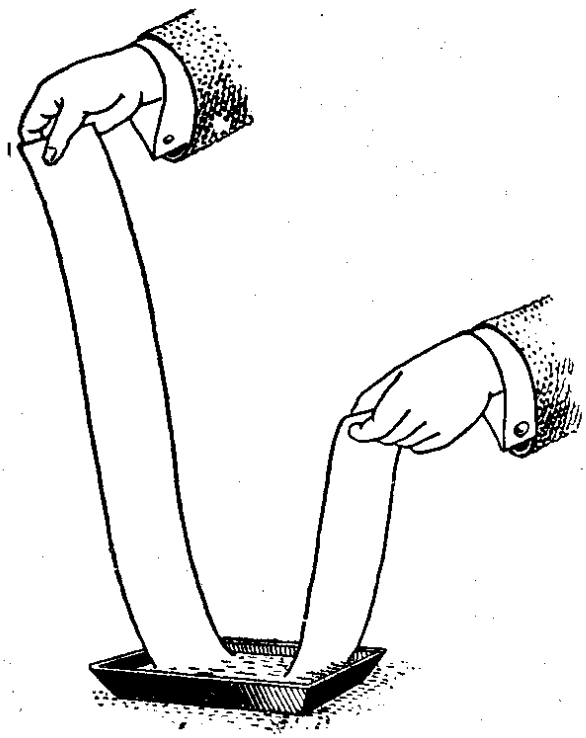
1. Fill one of the trays nearly full of water (first tray).

2. Open one of the developer powders, then put the contents (two chemicals) into graduate and fill it up to the 4-ounce mark with water. Stir until dissolved with the wooden stirring rod and pour into second tray.

3. To develop, unroll the film and detach the entire strip from the duplex paper.

4. Pass the film through the tray of clean, cold water as shown in the cut, holding one end in each hand. Pass through the water several times, that there may be no bubbles remaining on the film. When it is thoroughly wet, with no air bubbles, it is ready for development.

5. Now pass the film through the developer in the same manner as described for wetting it and shown in cut. Keep it constantly in motion and in about one minute the high lights will begin to darken, and you will readily be able to distinguish the unexposed sections between the negatives, and in about two minutes will be able to distinguish objects in the picture. Complete development in the strip, giving sufficient length of development to bring out what detail you can in the thinnest negatives. There is no harm in having your negatives of different density. This can be set right in the printing. The difference



in density does not affect the difference in contrast.

Keep the strip which is being developed constantly in motion, allowing the developer to act 5 to 10 minutes. The progress of development may be watched by holding the negatives up to the lamp from time to time.

When developing Eastman N. C. Film, use a red lamp and take care not to hold the film close to the lamp for any length of time. This film is very rapid and is orthochromatic, therefore liable to fog unless handled very carefully.

6. After completing development, transfer to the third tray, and rinse two or three times with clear, cold water, and transfer to fixing bath.

NOTE: If preferred the negatives may be cut apart and fixed separately.

Fixing.

Provide a box of Kodak Acid Fixing powder and prepare the fixing bath as per directions on the package. Put this into a tray (fourth tray of an Eastman developing outfit) or washbowl. When the powder has thoroughly dissolved, add to the solution as much of the Acidifier, which you will find in a small box inside the

large one, as directions call for. As soon as this has dissolved, the Fixing Bath is ready for use. Any quantity of the bath may be prepared in the above proportions.

Pass the film face down (the face is the dull side) through the fixing solution, holding one end in each hand. Do this three or four times and then place one end of the film in the tray still face down and lower the strip into the solution in folds, (If the negatives have been cut apart, immerse them singly.) Gently press the film where the folds occur, not tightly enough to crack it, down into the solution a few times during the course of fixing. This insures the fixing solution reaching every part of the film. Allow the film to remain in the solution two or three minutes after it has cleared or the milky appearance has disappeared. Then remove for washing.

N. C. Film must always be fixed in an acid bath. There is nothing superior to the Kodak Acid Fixing Bath, but the following formula may be used if desired:

Acid Hypo Fixing Bath.

Water,	64 ozs.
Hypo,	16 ozs.

When thoroughly dissolved, add 4 ozs. Velox Liquid Hardener, or the following hardening

solution, dissolving the chemicals separately, and in the order named:

Water,	5 ozs.
E. K. Co. Sulphite of Soda,	1 oz.
Acetic Acid (28%).	3 ozs.
Powdered Alum,	1 oz.

If preferred, 1 oz Citric Acid can be substituted for Acetic.

This bath may be made up at any time in advance, and may be used so long as it retains its strength or is not sufficiently discolored by developer carried into it to stain the negatives.

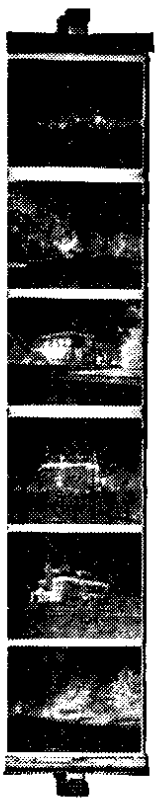
NOTE: If you are using an Eastman A B C developing outfit the fixing solution must only be used in tray No. 4, and the negatives, after fixing, must not be put in either No. 1 or No. 2 trays. Neither must any of the fixing solution be allowed to touch the films through the agency of the fingers or otherwise, until they are ready to go into the fixing bath, otherwise they will be spotted so as to be useless.

Washing.

There are several ways of washing film. It may be placed in tray or wash bowl of cold water and left to soak for five minutes each in five changes of cold water, moving about occasionally to insure the water acting evenly upon it, or it may be given, say two changes as above and then left for an hour in a bowl with a very gentle stream of water running in and out.

If negatives have been cut apart they should not be allowed to mat together, but should be separated a part of the time in order that they wash thoroughly.

Drying N. C. Film Negatives.



Drying with Clips.

When thoroughly washed, snap an Eastman Film Developing Clip on each end of the strip and hang it up to dry, or pin it up. Be sure, however, that it swings clear of the wall, so that there will be no possibility of either side of the film coming in contact with the latter. In drying, after tank development, N. C. Film should be cut into strips of *not more* than six exposures in length.

But in tray development, when the film has been cut up, pin by one corner to the edge of a shelf, or hang the negatives on a stretched string by means of a bent pin, running the pin through the corner of film to the head, then hooking it over the string.

DEFECTIVE NEGATIVES.

By following closely the foregoing directions, the novice can make seventy-five per cent. or upwards of good negatives. Some-

times, however, the directions are not followed, and failures result.

To forewarn the camerist is to forearm him, and we therefore describe the common causes of failure.

Over-Development.

Over-development may be caused by a mistake in leaving film in the developer too long; by using solutions too warm or by those who mix their own developer in getting the developing agent too strong.

In this case the negative is very strong and intense by transmitted light and requires a very long time to print. The remedy is to reduce by use of Eastman Reducer or the following method:

Reducer.

First soak negative 20 minutes in water, then immerse in

Water, ...	6 ounces
Hypo.	½ ounce
Ferricyanide Potassium (saturated solution), poison, ...	20 drops

Rock tray gently back and forth until negative has been reduced to the desired density, then wash 10 minutes in running water or in four changes of water.

Negatives may be reduced locally by applying the above solution to the dense parts with

a camel's hair brush, rinsing off the reducer with clear water occasionally to prevent its running onto the parts of the negative that do not require reducing.

Under-Development.

An under-developed negative differs from an under-exposed one, in that it is apt to be thin and full of detail, instead of harsh and lacking in detail.

This defect would be caused by a mistake in removing film from the developer too soon, by using solutions too cold or by an error in compounding chemicals. It is obvious that neither of these defects will occur in Tank Development if instructions are properly followed.

Intensification by Re-Development.

There are a number of different processes for intensifying under-developed negatives; the most common being by means of Bichloride of Mercury, and Sodium Sulphite or Ammonia.

This method, though simple to use, has its disadvantages, as it builds up the highlights out of proportion to the weaker portions of the negative, and also, unless carefully handled is apt to produce iridescent stains or granular markings that are impossible to remove.

While the method of intensification by re-development is only comparatively new, the now common use of Velox and Royal Re-developer for Sepia tones on Velox and Bromide prints will make this the most effective means of intensification.

Velox or Royal Re-Developer may be used in exactly the same manner as for producing Sepia tones on developing paper.

Negatives intensified by re-development are built up evenly, without undue contrast and without the chance of staining.

The advantage of being able to use the chemicals for two different purposes (Sepia toning prints or intensifying negatives) is obvious, the result in either case being all that could be desired.

PART V.

PRINTING ON VELOX PAPER.

Provide:

2 dozen sheets 2½ x 4¼ Velox Paper.
1 3¼ x 5½ Printing Frame and Glass.
1 Bottle Nepera Solution.

Eastman N. C. film negatives yield beautiful, soft black and white effects when printed on Velox developing-out paper.

Manipulation:

Velox prints may be successfully made, using daylight for exposure. Select a north window, if possible, as the light from this direction will be more uniform. *Owing to its sensitiveness the paper should be handled in subdued light; otherwise it will be liable to fog.* Proper precautions should be taken to pull down the window shades and darken the room sufficiently during manipulation. If the light is too strong for printing it should be subdued or diffused by the use of several thicknesses of white tissue paper. Owing to the varying intensity of daylight uniform results are not as

certain as when using artificial light. In the following instructions for manipulating Velox, it must be understood that artificial light, preferably gas with a Welsbach burner, will be the light used. A kerosene lamp fitted with a round burner (known as Rochester burner), may be used, but owing to the decidedly yellow light this affords, a considerably longer exposure will be necessary than when using a Welsbach light.

The comparative exposures with Velox using various sources of light is as follows:

Size of Negative	Distance from Light	Welsbach burner	32 C. P. Elec. or 6 ft. Gas Burner	16 C. P. Elec. or 4 ft. Gas Burner	Average Oil Lamp
2½ x 4¼ or Smaller	7 Inches	10 Sec.	20 Sec.	30 Sec.	40 Sec.

Having provided a suitable light and a convenient place to work, arrange three trays before you on your work table in this order:

1 Oz. Nepera Solution 4 Ozs. Water 1	Clear Water 2	X Towel	Kodak Acid Fixing Bath as directed on page 61. 3

Proper temperature is important, and for best results the developer should be 70 degrees Fahr. and the fixing bath and wash water 50 degrees Fahr. If the developer exceeds 70 degrees, the prints are liable to fog and the emulsion soften. If too cold, chemical action is retarded, resulting in flat weak prints.

Printing.

Velox may be safely manipulated ten feet from the ordinary gas flame.

Having everything in readiness, open the printing frame, and lay the negative, back down, upon the glass (the back is the shiny side). Place upon the negative a sheet of Velox paper, face down.

The paper curls slightly, the face or sensitive side being concave; an absolute test is to bite the corner of the sheet; the sensitive side will adhere to the teeth.

The paper not used must be kept covered in its envelope.

Place the printing frame the correct distance from the artificial light used, holding the frame away from the burner a distance equal to the diagonal of the negative. See exposure table, page 69.

We suggest, before making the first exposure, the cutting of a piece of Velox paper

into strips about an inch wide, and placing one of them over an important part of the negative, make the exposure, using your best judgment as to the distance from the light and the time of printing. Develop it, and if not satisfactory try another strip, varying the time as indicated by the first result. When the desired effect is secured you can make any number of prints from the same negative, and if the time of exposure, distance from light, as well as the time of developing are identical all the prints should be equally good. By comparing your other negatives with the one you have tested, you will be able to make a fairly accurate estimate of exposure required by any negative.

After taking the exposed piece of paper from the printing frame, in a safe place previously selected, it is ready for development. The dry print should be immersed face up in the developer (Tray No. 1) and quickly and evenly covered with the solution. Regular Velox should be developed not to exceed twenty seconds. Special Velox, about twice as long. No exact time can be given, as the strength of developer used would make a difference in the time.

As soon as the image has reached the desired depth, remove from the developer to the sec-

ond tray and rinse for a moment, turning the print several times, then place it in the fixing bath (Tray No. 3), keeping the print moving for a few seconds, the same as was done when rinsing, so as to give even and thorough fixing, preventing stains and other troubles. Leave the print in this solution until thoroughly fixed; this will take about fifteen minutes. When fixed, remove from the fixing bath and wash thoroughly for about an hour in running water, then dry. After drying, prints may be trimmed and mounted.

Do not use a fixing bath that has been used for fixing film.

You should be systematic in working, remembering that cleanliness is essential in photography. Care must be taken to prevent the Hypo fixing bath in any way getting into the tray containing the developer. Have a clean towel when beginning the work, and wipe your hands each time after you have handled prints in fixing bath.

Details.

CLEAN DISHES; CLEAN HANDS. The faintest trace of Hypo will spoil the prints if it gets into contact with them before the proper time. Great care should therefore be used to have both hands and trays clean.

DEVELOPER once used should not be carried over and used the next day or subsequently.

Don't.

Don't use a tray for developing which has previously been used for hypo solution, pyro-developer or final washing.

Don't use an old fixing solution; it is liable to cause trouble.

Difficulties, their Cause and Remedy.

VEILED WHITES: Caused by forcing development; fogged paper.

REMEDY: Give more time, screen light. Also caused when image flashes up in developer by too much exposure, in which case give less time.

MUDDY SHADOWS: Caused by developer being used for too many prints. Remedy, use fresh developer.

CONTRASTY PRINTS: Caused by insufficient time or negative too harsh. Remedy, give more time; make softer negatives.

FLAT PRINTS: Caused by over-timing or negatives flat. Remedy, give less time in first instance, and if trouble is with negatives, give negatives less time; develop further.

STAINS: Caused by forcing development, or chemically dirty dishes or hands, insufficient fixing, foreign chemicals. Remedy, do not allow chemicals other than those given in formulae to come in contact with paper; use fresh fixing bath; keep prints in constant motion the entire 15 minutes they remain in fixing bath, and if due to forcing development, give more time in printing.

ROUND, WHITE SPOTS: Caused by air bells which form on face of prints when developer is first flowed on. Remedy, use more developer, break air bells with finger.

COLORING VELOX PRINTS.

The various surfaces of Velox are particularly well adapted for coloring, and prints may be made extremely interesting through the many beautiful effects obtained by the use of Velox Transparent Water Color Stamps. No experience is necessary when using these colors and any amateur can secure excellent results as full directions accompany each set of stamps.

Put up in book form, they will be found most convenient. Each book contains twelve colors, arranged in perforated leaflets, making twenty-four stamps of each color.

The stamps will also be found most desir-

able for the coloring of Bromide enlargements, lantern slides, etc., and in fact for all work where perfect blending and transparency of color is required. See price list.

EASTMAN KODAK CO.,
Rochester, N. Y.

PART VI.

MOUNTING.

The most satisfactory method for mounting prints is by the use of the Kodak Dry Mounting Tissue, as by the use of this tissue the print lies perfectly flat in absolute contact even on the thinnest mount and absolutely without curl.

The tissue comes in flat sheets, dry not sticky, and easy to handle, and the tissue being water-proof protects the print from any impurities in the mount stock.

For multiple mounting and folders the tissue is ideal.

The process of mounting is as follows:

Lay the print on its face and tack to the back a piece of the tissue of the same size as the print by applying the point of a hot flatiron to small spots at opposite ends.

Turn the print face up and trim the print and tissue to the desired size. Place in proper position on mount and cover print with a piece of smooth paper and press the whole surface with a hot flatiron.

Press, don't rub.

The iron should be just hot enough to siss when touched with the wet finger. If the iron is too hot the tissue will stick to the mount and not to the print; if too cold the tissue will stick to the print and not to the mount.

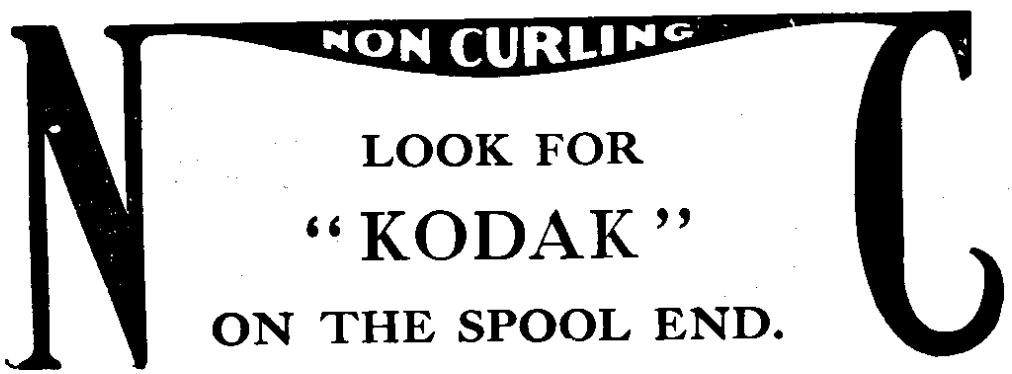
Remedy: Lower or raise the temperature of the iron and apply again.

When mounting with paste, lay the wet print face down on a sheet of glass and squeegee off all the surplus water, then brush over the back with thin starch paste. Lay the print on the mount. Cover the print with a clean piece of blotting paper and press into contact with squeegee or rubber print roller.

EASTMAN KODAK COMPANY,
Rochester, N. Y.

Load your Kodak with Kodak Film.

Look for this trade mark on the box :



Be Sure to Use Pure Chemicals.

To get the best negatives from your films—to get the best prints from your negatives—it is imperative that the chemicals which you use be absolutely pure.

For all our film and papers we furnish powders and solutions mixed in just the proper proportions, and compounded from the purest chemicals, rigidly tested in our own laboratories.

But we go even further than this. For those who prefer to mix their own solutions by formula, we have prepared a line of carefully tested standard photographic chemicals.

Don't mar good films and plates and good paper with inferior chemicals.

This seal stands for the highest purity. Be sure it is on the package before purchasing.

EASTMAN KODAK CO.,
Rochester, N. Y.

FOR BETTER PICTURES.

We want all the users of our cameras to make good pictures. To help them secure such pictures we not only publish this manual, but for their further aid in photography, we publish a little magazine—"KODAKERY"—which will be sent monthly, free for one year, to every purchaser of one of our amateur cameras. We propose to make it both elemental and entertaining, full of practical hints and illustrations of how to get more out of photography. The purchaser of the camera that this manual accompanies, is entitled to "KODAKERY" for one year from date of such purchase, without charge, provided this blank is filled out and sent to us within thirty days of the purchase of said camera from a dealer in photographic goods.

TEAR OFF HERE

"KODAKERY"

To THE EASTMAN KODAK CO.,
Rochester, N. Y.

In accordance with your offer, please place my name on the mailing list for "KODAKERY" (with the understanding that there is to be no cost to me) I having purchased a

_____
(Kind of Camera.)

from _____
(Name of Dealer.)

on _____
(Date here.)

Write name and address plainly.

_____

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N. B. This magazine will be sent for one year only on above offer. After that the subscription price will be 50 cents per annum.—E. K. Co.

Form No. 327-14.

Blank

The Kodak Correspondence College

A course which will increase your photographic pleasures by helping you to make better pictures.

Tuition, Two Dollars, which includes a handsome cloth bound copy, library edition, of the School Text Book,

"HOW TO MAKE GOOD PICTURES"

Application for Membership in the Kodak Correspondence College.

EASTMAN KODAK CO.,
Rochester, N. Y.
K. C. C. Dept.

Gentlemen: I am the owner of a (name camera and size)

.....

and wish to be enrolled as a member of "The Kodak Correspondence College."

I therefore enclose herewith { *Draft* / *P. O. Money Order* / *Express Money Order* } *for two dollars for which please send me a volume of "How to Make Good Pictures," library edition, and a certificate of membership, entitling me to a full course in "The Kodak Correspondence College."*

(Name) .....

(Street and No.) .....

(City) ..... *(State)* .....

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.....

PRICE LIST.

No. 1A Kodak Junior, Meniscus Achromatic Lens, fitted with Kodak Ball Bearing Shutter, for pictures 2½x4¼,	$ 9.00
No. 1A Kodak Junior, R. R. Lens, fitted with Kodak Ball Bearing Shutter, for pictures 2½x4¼, - - - - - -	11.00
Black Sole Leather Carrying Case, with strap, - - - - - - - - - -	1.50
Kodak Portrait Attachment No. 3, -	.50
Kodak Color Screen No. 3, for use with No. 1A Kodak Junior, - - - - -	.75
Kodak Autotime Scale, for use with No. 1A Kodak Junior, equipped with Achromatic or R. R. Lens and Ball Bearing Shutter, - - - - - -	1.00
N. C. Film Cartridge, No. 116, 12 exposures, 2½x4¼, - - - - - -	.50
Do., 6 exposures, - - - - - - -	.25
Kodak Film Tank, 2½ inch, - - -	3.50
Duplicating Outfit for same, - - -	1.75
*Kodak Tank Developer Powders for 2½ or 3½ inch Tank, per pkg. ½ doz.,	.20
*Kodak Acid Fixing Powder, per 1 lb. package, - - - - - - - - -	.25
Do., ½ pound package, - - - - -	.15
Do., ¼ pound package, - - - - -	.10
*Eastman Hydrochinon Developer Powders, (do not stain the fingers), per doz. pairs, - - - - - - - - -	.50
Do., per ½ doz. pairs, - - - - -	.25

*Eastman Pyro Developer Powders (for dark room development), per doz. pairs,	$ .50
Do., per ½ doz. pairs,	.25
*Eastman Hydrochinon, Eikonogen, Pyro and Special Developer Powders in sealed tubes, per box of 5 tubes,	.25
*Eastman Reducer, per pkg. of 5 tubes,	.25
*Royal Re-Developer, per pkg. of 6 tubes,	.75
Glass Stirring Rod Thermometer,	.60
Eastman Printing Mask No. 4, for use with 2½ x 4¼ negatives, each,	.06
Velox Paper, per doz. 2½ x 4¼,	.15
Velox Transparent Water Color Stamps complete booklet of 12 colors,	.25
Velox Transparent Water Color Stamp Outfit, consisting of Artist's Mixing Palette, three special Camel's Hair Brushes, and one book of Velox Transparent Water Color Stamps, (12 colors),	.75
*Nepera Solution (for developing Velox) 4 oz. bottle,	.20
Solio Paper, per pkg. 2 doz. 2½ x 4¼,	.20
*Combined Toning and Fixing Solution for Solio, per 8 ounce bottle,	.50
Do., 4 oz. bottle (in mailing case, including postage, $ .50),	.30
*Eastman Flash Sheets, No. 1, per pkg. ½ doz.,	.25
Do., No. 2, per pkg. ½ doz.	.40
Do., No. 3, per pkg. ½ doz.,	.60

Kodak Flash Sheet Holder, - - -	$ 1.00
Kodak Dry Mounting Tissue, 2½ x 4¼, 3 doz. sheets, - - - - - -	.10
Eastman Film Developing Clips (nickeled) 3½ in., per pair, - - - -	.25
Kodak Film Clips, (wooden), 5 inch per pair, - - - - - - - - -	.15
Eastman Folding Head Tripod, maple,	3.50
Kodak Metal Tripod, No. 0, - - -	1.60
Do., No. 1, - - - - - - - - -	2.50
Do., No. 2, - - - - - - - - -	3.25
Leather Carrying Case for Kodak Metal Tripod Nos. 0, 1 or 2, - - - -	1.50
Leatherette Carrying Case for the No. 0 Kodak Metal Tripod, - - - -	.75
Eastman Standard Tripod, automatic locking, - - - - - - - -	1.75
Kodak Dark Room Lamp, No. 2, ⅝ in. wick, - - - - - - - - -	1.00
Eastman Film Negative Album, to hold 100 2½ x 4¼ negatives, - - - -	.75
Eastman Photo Blotter Book, for blotting and drying prints, - - - -	.25
Kodak Trimming Board No. 2, capacity 7 x 7 inches, - - - - -	.60
Bevplane Mounts, 2½ x 4¼, per 100, -	.80
Do., per 50, - - - - - - - -	.40
Arena Album, 50 Black or Sepia Leaves, size 7 x 10, - - - - - - - -	1.50
Forum Album, 25 Black and Sepia Leaves, size 7 x 10, - - - - - -	.50
Kodak Print Roller, Double 6 in., - -	.50

Flexo Print Roller, Single, 4 in., - -	$ .15
Developing, printing and mounting, on Velox 2½ x 4¼, per roll of 12 exposures, - - - - - - - - -	1.50
Do., unmounted, - - - - - - - -	1.38
Developing only, per roll of 12, - -	.70
Developing, printing and mounting, on Velox, per roll of 6 exposures, - -	.75
Do., unmounted, - - - - - - - -	.69
Developing only, per roll of 6, - -	.35
Printing and mounting only, on Velox, each, - - - - - - - - - -	.08
Do., prints unmounted, each, - - -	.07
8 x 10 Bromide Enlargements, mounted on cards, - - - - - - - -	.75
Do., 10 x 12, - - - - - - - -	1.00
Do., 11 x 14, - - - - - - - -	1.25

No Orders Executed for Less Than 25c.

On enlargement orders if in our opinion, the print will be improved by double mounting, we will do so at an additional charge of 10 cents, or triple mounted at 15 cents.

*Prices subject to change without notice.

EASTMAN KODAK COMPANY,
Rochester, N. Y.

Pin to a Card and Touch with a Match.

That's all there is to using EASTMAN FLASH SHEETS

They burn more slowly than ordinary flash powders, giving a softer light and consequently a more natural expression to the eyes

Clean, convenient, a minimum of smoke.

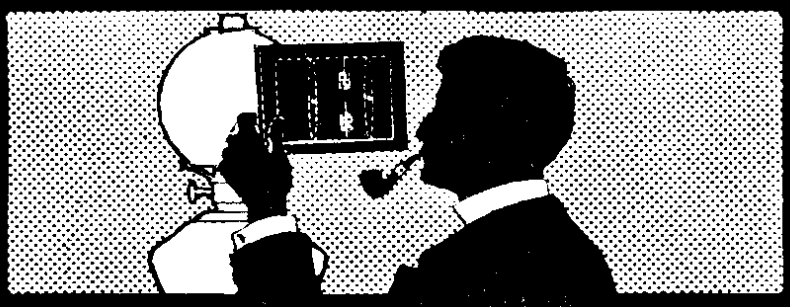
Price per package of 1-2 dozen sheets

*No. 1, - - - - -	$ .25
*No. 2, - - - - -	.40
*No. 3, - - - - -	.60
Kodak Flash Sheet Holder,	1.00

*Prices subject to change without notice.

EASTMAN KODAK CO.,
Rochester, N. Y.

For sale by all Dealers.



Prints by Gaslight

ROYAL VELOX

A paper with all the Velox simplicity but coated on a mellow toned stock that adds breadth and softness to the picture.

When sepia toned, with Velox Re-Developer, Royal Velox has the delicacy and charm of an old etching.

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