

PICTURE TAKING
WITH THE No. 2
FLEXO KODAK. ..



EASTMAN KODAK CO.

ROCHESTER, N. Y.

PRICE TEN CENTS.

KODAK

Trade Mark, 1888.

EASTMAN KODAK COMPANY,

ROCHESTER, N. Y.

MANUFACTURERS OF

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

TRADE MARKS REG. U. S. PAT. OFF.

June, 1912.

INSTRUCTIONS

FOR USING THE

No. 2 FLEXO KODAK.

PATENTED :

Dec. 1, 1891. Sept. 25, 1894. Jan. 12, 1897. April 11, 1899. Nov. 6, 1900.

Other Patents Applied For.



PUBLISHED BY THE

EASTMAN KODAK COMPANY

ROCHESTER, N. Y.

BEFORE LOADING.

Before taking any pictures with the Flexo Kodak 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 photographic 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.

ORDER FILM BY NUMBER

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

101

is the number for film for this camera (No. 2 Flexo Kodak). 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 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.

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LOADING THE CAMERA.

The film for the Flexo Kodak is furnished in light-proof rolls 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.



THE FILM.
No. 101.

TO LOAD.



Fig. 1.

I. Take a position at a table as far as possible from any window and pull down catch at top of the upper hole (the finder opening) in front of Kodak. See Fig. 1.

II. Drop down the front of Kodak to the position shown in Fig. 2. This unlocks the sides (the sides are hinged to the back) and they may now be removed, with the back, preparatory to threading up the film.

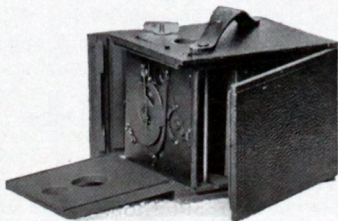


Fig. 2.



Fig. 3.

IV. Now insert the cartridge in the recess at the front left hand corner of Kodak, being sure to get the "*top*" of spool at the *top of Kodak*—each spool is marked on the end. To insert the spool simply fit the axis of spool in the two slots in which it is to travel as in Fig. 4, and it will readily drop into place.



Fig. 5.

The key is to be turned only far enough to bind the paper firmly on the reel; if turned too far the film on cartridge will be exposed to the light and ruined.

VI. Replace the back and sides on Kodak as shown in Fig. 7, making sure that the top is at the top. (The left side-cover has a tension spring for bearing



Fig. 4.

V. Remove the gummed slip that holds down the end of the duplex paper, pull out the paper; pass it over the aluminum rollers at back and thread into slot in reel as shown in Fig. 5. Be sure that the paper draws straight and true; then give one or two turns on the key, keeping the duplex paper taut with the right hand as shown in Fig. 6.



Fig. 6.



Fig. 7.

against film on the inside. Simply remember that this spring must always be on left side of Kodak and there will be no confusion in putting on cover.)

VII. Hold the sides together as in Fig. 8 and close front board. This locks sides into position.



Fig. 8.

VIII. The roll of film in the Kodak 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 in the little red celluloid window at



Fig. 9

the back of the camera. When 15 to 18 turns have been given, a hand pointing toward the figure 1 will appear, then turn key slowly until figure 1 appears before the window. Fig. 9.

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

PART II.

MAKING THE EXPOSURE.

Section I.—Instantaneous Exposures.

("Snap Shots.")



Fig. 1.

The shutter is always set, and is operated for snap shots by pushing the spring alternately to right or left. (See Fig. 1.)

If the lever stands at the right hand side of slot simply push it to the left and *vice versa*.

If the spring should be pushed the wrong way, the shutter would simply remain unmoved, and no "click" would be heard, thus indicating that the spring should be pushed in the opposite direction.

To take instantaneous pictures the object should 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.

USE THE LARGEST STOP.

Snap Shots can only be made when the largest stop is in the lens. If a smaller stop be used the light will be so much reduced that it will not sufficiently impress the image on the film and failure will result. In making snap shots both of the slides shown in Fig. 2 should be pushed down to the limit of motion. Slide A controls time and instantaneous exposures. For snap shots this slide must be down.

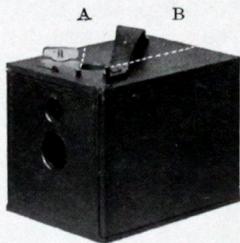


Fig. 2.

Slide B controls the stops of which there are three. When it is clear down the largest stop is in place. This is the one to use for all snap shots; except where the sunlight is *unusually* strong, and there are no heavy shadows, such as views on the water or in tropical or semi-tropical climates, when the middle stop may be used.

The smallest stop must never be used for snap shots or absolute failure will result.

Aim the camera at the object to be photographed and locate the image in the finder, which is alongside the key. The finder shows the scope of view and is a fac-simile of what the picture will be. Hold the camera steady—hold it level as shown in Fig. 3 and *push the lever.*

This makes the exposure.

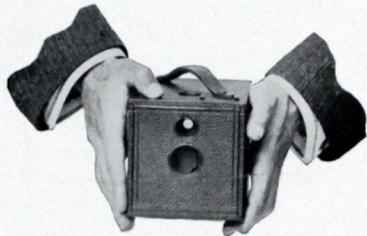


Fig. 3.

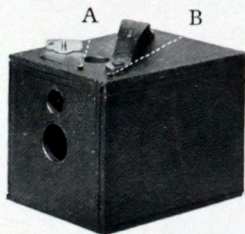


Fig. 4.

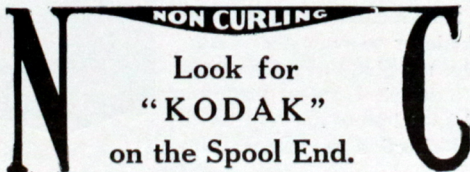
For Snap Shots the slides must both be down as shown in Fig. 4.

Turn a new film into position: Turn the key slowly to the left until the next number appears before the window. The index hand appears only before No. 1. Three or four turns will be sufficient to accomplish this.

Repeat the foregoing operations for each picture.

Load your Kodak with Kodak Film.

Look for this Trade Mark on the Box.



*Section 2.***TIME EXPOSURES INDOORS.***1. Place the Kodak in Position.*

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

The diagram shows the proper position for the Kodak.

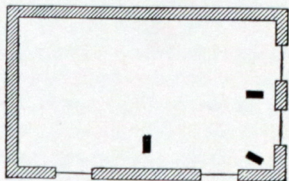


Diagram showing position of Kodak.

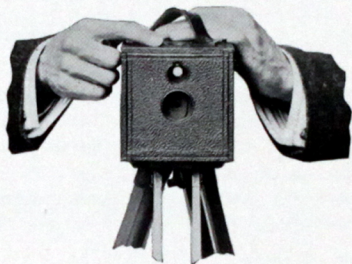


Fig. 1.

some firm support, like a table or tripod, and pull out the time slide (A) near finder as shown in Figure 2, steady the Kodak with one hand and push the lever to open the shutter, (see Fig. 1); give the proper time, (using a watch if more than two seconds), and press the lever in the opposite direction to close the shut-

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 the range of the Kodak.

To make a time exposure, place the Kodak on

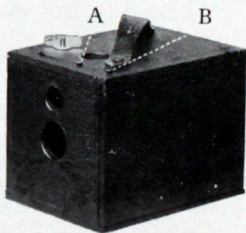


Fig. 2.

ter. (If preferred the shutter may be closed by pushing down lever A instead of giving the second pressure to the exposure lever.)

NOTE: It will be seen that when the time slide is pulled out, the shutter strikes as it passes the lens, stopping it half way across with the opening over the lens.

Try this a few times, before winding the film into position, to become accustomed to the operation.

Turn a new film into position as described before. (See page 9.)

For interiors the following table is a good guide :

Time Needed for Interior Exposures.

This table is for the largest stop. When the second stop is used add one-half more time ; when the smallest stop is used give four times the time of the table :

White walls and more than one window :

bright sun outside, 2 seconds ;
hazy sun, 5 seconds ;
cloudy bright, 10 seconds ;
cloudy dull, 20 seconds ;

White walls and only one window :

bright sun outside, 3 seconds ;
hazy sun, 8 seconds ;
cloudy bright, 15 seconds ;
cloudy dull, 30 seconds ;

Medium colored walls and hangings and more than one window

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

Medium colored walls and hangings, and only one window

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

Dark colored walls and hangings, and more than one window :

bright sun outside, 10 seconds ;
hazy sun, 20 seconds ;
cloudy bright, 40 seconds ;
cloudy dull, 1 minute, 20 seconds.

Dark colored walls and hangings, and only one window :

bright sun outside, 20 seconds ;
hazy sun, 40 seconds ;
cloudy bright, 1 minute, 20 seconds ;
cloudy dull, 2 minutes, 40 seconds.

The foregoing is calculated for rooms whose windows get the direct light from the sky and for hours, from 3 hours after sunrise until 3 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 light, and turn the face slightly toward the camera, (which should be at the height of an ordinary table). Center the image in the finder. For a three-quarter figure the camera should be from 6 to 8 feet, and for a full figure from 8 to 10 feet from the subject. The background should form a contrast with the sitter.

KODAK PORTRAIT ATTACHMENT.

By the use of the Kodak Portrait Attachment this instrument may be used with the sitter at a distance of only $3\frac{1}{2}$ feet, thus enabling the Kodaker to obtain large head and shoulder pictures equaling in size those of the ordinary mantello photograph.

The attachment is simply an extra lens fitted in lens opening in front board, and in no way affects the operation of the lens except to change the focus. Price, 50 cents. Be sure and specify what instrument the attachment is to be used with when ordering.

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 exposure must be much shorter.

WITH SUNSHINE—The shutter can hardly be opened and closed quickly enough to avoid over exposure.

WITH LIGHT CLOUDS—From $\frac{1}{2}$ to 1 second will be sufficient.

WITH HEAVY CLOUDS—From 2 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.

STOPS.

The stops should be used as follows.

I. THE LARGEST—For *all ordinary instantaneous exposures* when the sun shines.

2-3. THE MIDDLE—For instantaneous exposures when the sunlight is unusually strong and there are no heavy shadows, such as in views on the sea-shore, or on the water, or in tropical or semi-tropical climates; also for interior time exposures, the time for which is given in the table on pages 11 and 12.

I-4. THE SMALLEST—For time exposures out doors in cloudy weather. *Never for instantaneous exposures.* The time required for time exposures on cloudy days with smallest stop will range from $\frac{1}{2}$ second to 5 seconds, according to the light. The smaller the stop the sharper the picture.

When setting the stops always see that the one to be used is *brought to the center of the lens* where it catches.

Absolute failure will result if the smallest stop is used for snap shots.

Section 3.

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 an Eastman 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 because 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 flashlight, would be quite beyond the range of the art.

PREPARATION FOR THE FLASH.—The camera should be prepared for time exposures as directed on page 10 of this manual (except that the largest stop 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 Eastman Flash Sheet Holder, all these contingencies are taken care of, and we strongly advise its use.

THE EASTMAN FLASH SHEET HOLDER.



This holder may be safely 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 held by a spring finger, in such position that its lower corner projects part way across the circular opening in the holder, as shown in the illustration.

Then to set off the flash, merely touch a match to the corner of the sheet from behind through this opening.

TAKING THE PICTURE.

Having the Kodak and 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 to the lower corner of the flash sheet.

NOTE—If you are not using the Eastman 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 push the lever to close the shutter and turn a fresh film into place with the key, ready for another picture.

THE FLASH SHEET.

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

When two or more sheets are to be used they should be pinned to the cardboard, one above the other, the corners only very slightly over-lapping.

TABLE.

For	10 feet	distance	and	light	walls	and	hangings	use	1	No.	1	sheet.	
"	10	"	"	"	dark	"	"	"	"	1	No.	2	"
"	15	"	"	"	light	"	"	"	"	1	No.	2	"
"	15	"	"	"	dark	"	"	"	"	1	No.	3	"

NOTE—Never use more than one sheet at a time in the Eastman Flash Sheet Holder.

TO MAKE A PORTRAIT.—Place the sitter in a chair partly facing the Kodak (which should be at the height of an ordinary table) and turn the face slightly towards the Kodak. 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. For using the Portrait Attachment, see page 12.

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.

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 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 wall 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, safer, cheaper and capable of producing the best results. The cartridges are only superior where absolutely *instantaneous* work is essential.

PART III.

REMOVING THE FILM.

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

I. When the last film has been exposed, turn the key about 15 half turns or until the letter "S" appears before the red window.

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

III. Open the Kodak and remove sides and back as described on page 5.

IV. Holding the paper taut, so as to wind tightly, turn the key until the paper is all on the reel. See Fig. 1.

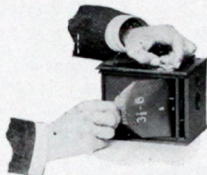


Fig. 1.

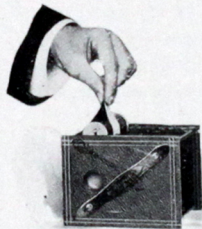


Fig. 3.

V. Hold the reel tightly with one hand to prevent the paper from loosening. Then loosen the key by turning to the right and pull it out. See Fig. 2.

VI. Turn Kodak over, bring end of duplex paper and sticker together when the roll may be lifted out as shown in Fig. 3.



Fig. 2.

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

Do not lose the ratchet wheel which is attached to end of spool, as it will be needed in forming new winding reel.

VII. Wrap up exposed roll immediately to prevent the light from injuring the film.

VIII. Lift out the empty spool from the recess on the left hand side of Kodak (Fig. 4) and remove the metal rod which runs through it.



Fig. 5.

IX. Now fit the brass ratchet wheel to the end of this spool (Fig. 5) inserting the two lugs into slotted end of spool.

NOTE: One end of the spool has three pin holes in it, the opposite end is slotted. The pin holes are for use with other Kodaks and are not in any way used in the Flexo.

X. Fit the spool and ratchet in winding side of Kodak (Fig. 6) with ratchet wheel at bottom, insert key and turn to left until it is seated in place. This forms the new reel.

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.



Fig. 4.



Fig. 6.

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.

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 methods of developing film give 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 operations are 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.

Provide a 3½ inch Film Tank for use with No. 2 Flexo.

The Kodak Film Tank consists of a wooden box, a light-proof apron, a "transferring reel," 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. The various parts of the outfit come packed in the box itself.

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

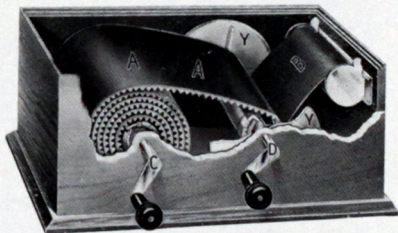


Fig. 1.

cut, in the holes in the 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 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.

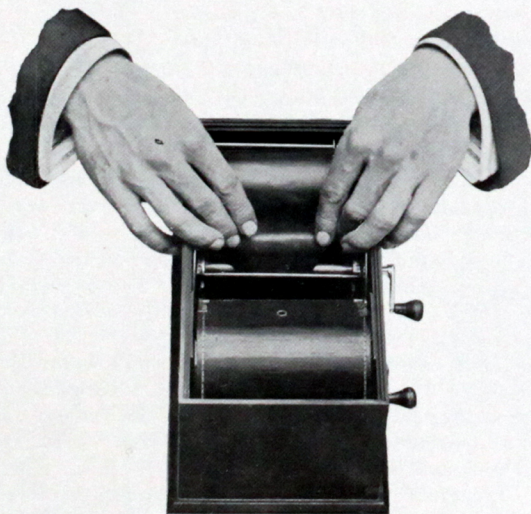


Fig. 2

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 wire guard on transferring reel through which axle "D" passes (Fig 2) 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 draw out axle "D" holding apron and duplex paper with other hand to keep end of apron from loosening.

11. Remove entire Transferring Reel (now containing apron, duplex paper and film), which is freed by pulling out axle "D" and insert immediately in the previously prepared developer.

In removing reel do not squeeze the apron, but hold it loosely or slip a rubber band about it to keep from unrolling.

USING THE SOLUTION CUP.

12. Having filled Solution Cup, lower Transferring Reel into cup, with the end containing cross bar *up*. (Fig. 3). Let reel slide down slowly so solution will not overflow. 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.

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. 3.

The total length of time for development is twenty minutes. Allow development to proceed for about two minutes with the cover of the solution cup off, then place the cover on the cup (Fig. 4), putting lugs in cover into grooves and tighten cover down by turning it to right.

Now turn 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.

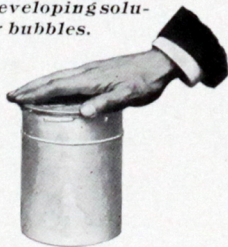


Fig. 4.



Fig. 5.

13. The wire hook is to be used for lifting the reel out of the cup, (Fig. 5). Hook on to the cross bar in 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.

14. When development is completed pour out developer and fill cup with clear cold water and pour off three times to wash the film. 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 29.

The film may be separated from duplex paper in 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.

Before developing another roll of film, be sure and wipe the apron thoroughly.

If the Tank Developer is not to be used again immediately, the apron and tank should be washed and wiped dry.

Keep apron wound on Transferring Reel when not in use. Never leave apron soaking in water. The apron will dry very rapidly if immersed for a moment in very hot water.

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 one Solution Cup, one Transferring Reel and one Apron for each additional roll of film to be developed. The extra rolls of film may then be wound on to Transferring Reels as previously described and immersed in the Solution Cups.

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 resulting negatives.

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

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 films 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's on the package before purchasing.

EASTMAN KODAK CO.,

Rochester, N. Y.

DEVELOPING IN DARK-ROOM.

Provide an Eastman Bulls-Eye Developing and Printing Outfit.



This outfit contains paper and chemicals for 12 pictures, and can be used with any camera for films or plates up to and including $3\frac{1}{2} \times 3\frac{1}{2}$. The simplest, cheapest and best outfit for the beginner.

1 Kodak Candle Lamp, . . .	\$.25	1 Dozen Sheets, $3\frac{1}{2} \times 3\frac{1}{2}$	
4 Developing Trays, . . .	.40	Velox Paper, . . .	\$.15
1 4-oz Graduate, . . .	.15	1 Bottle Nepera Solution, . .	.10
1 $3\frac{1}{2} \times 3\frac{1}{2}$ Printing Frame, .	.25	1 Package of Bromide of	
1 $3\frac{1}{2} \times 3\frac{1}{2}$ Glass for same, .	.05	Potassium, . . . .	.05
1 Stirring Rod, . . . .	.05	Directions, . . . .	.10
$\frac{1}{4}$ Dozen Eastman Special			<u>\$1.80</u>
Developing Powders, . .	.15		
$\frac{1}{4}$ Pound Kodak Acid Fix-			
ing Powder, . . . .	.10		

* *Price, complete. neatly packed, \$1.25*

* This outfit cannot be sent 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.



The Lamp.

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.

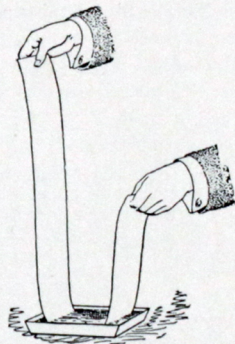
Having provided such a room or closet, where, when the door is closed, no ray of light can be seen :

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 close to it. Set the lamp on the table at least eighteen inches from the operator.

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 the graduate and fill it up to top ring with cold 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 the 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 process of development may be watched by holding the negatives up to the lamp from time to time.

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

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

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

FIXING.

Provide a box of Kodak Acid Fixing Powder and prepare a fixing bath as per directions on the package. Put this into a tray (fourth tray of an Eastman developing outfit) or wash bowl. 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 in 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 :

Water,	-	-	-	-	-	-	-	-	-	16 ounces.
Hypsulphite of Soda,	-	-	-	-	-	-	-	-	-	4 ounces.
Sulphite of Soda (desiccated),	-	-	-	-	-	-	-	-	-	$\frac{1}{4}$ ounce.

When fully dissolved add the following hardener :

Powdered Alum,	-	-	-	-	-	-	-	-	$\frac{1}{8}$ ounce.
Citric Acid,	-	-	-	-	-	-	-	-	$\frac{1}{8}$ ounce.

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 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 film, through the agency of the fingers or otherwise, until they are ready to go into the fixing bath, otherwise they will be spotted or blackened so as to be useless.



Drying with
Clips.

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 are washed separately they should be kept moving about most of the time in order that they wash thoroughly.

DRYING N. C. FILM NEGATIVES.

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, N. C. Film should be cut up into strips of *not more* than six exposures in length. If 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. Sometimes, 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.

UNDER-EXPOSURE.

Caused by making snap-shots indoors or in the shade, or when the light is weak, late in the day, or by closing the shutter too soon on time exposures.

OVER-EXPOSURE.

Caused by too much light; negatives develop evenly, shadows almost as fast as highlights.

OVER-DEVELOPMENT.

Over development may be caused by a mistake in leaving film in the developer too long ; by using solution 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 the use of Eastman Reducer or the following method :

REDUCER.

First soak negative 20 minutes in water, then immerse in :

Water,	-	-	-	-	-	-	-	-	-	6 ounces.
Hyposulphite of Soda,	-	-	-	-	-	-	-	-	-	½ ounce.
Ferri-Cyanide Potassium (saturated solution)	-	-	-	-	-	-	-	-	-	20 drops.

Rock tray gently back and forth until negative has been reduced to the desired density, then wash ten 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 on to 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. If the development is carried on as before directed, this defect is not liable to occur.

This defect would be caused by a mistake in removing film from developer too soon, by using solution 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.

Eastman N. C. film negatives yield beautiful, soft black and white effects when printed on the Regular Velvet Velox developing out paper furnished with the Bulls-Eye outfit.

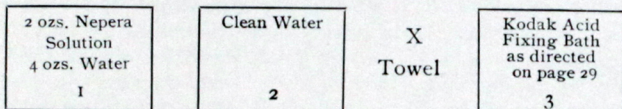
MANIPULATION.

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 exposure 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
4 x 5 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 :



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 of the Bulls-Eye Outfit and lay the negative back down upon the glass—(the back is the shiny side). Place upon the negative a sheet of the 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 34.

We suggest that 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 fifteen 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 second tray and rinse for a moment, turning the print several times, then place it in the acid 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 Hyposulphite of Soda 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 overtiming 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 formulas to come in contact with paper; use fresh fixing;

keep prints in constant motion the entire 15 minutes they remain in fixing, and if due to forcing development give more time in printing.

ROUND, WHITE SPOTS: Caused by air bells which form on face of print when developer is first flowed on.

Remedy. Use more developer, break air bells with finger.

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 top was taken with the lens clean and in good order. To produce the effect shown in the picture at bottom, the operator lightly touched the face of the lens with his thumb, which was slightly damp with perspiration.



Clean Lens.



Lens Slightly Dirty.

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. It is well also to occasionally wipe out the inside of camera with a slightly damp cloth. 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 under-timed.

PART VI.

MOUNTING.

The most satisfactory method for mounting prints is by the use of 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 by applying the point of a hot flatiron to small spots at opposite ends.

Turn the print face up and trim print and tissue to the desired size. Place print in proper position on mount and cover 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 hiss 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, then 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.

PRICE LIST.

No. 2 Flexo Kodak, for $3\frac{1}{2} \times 3\frac{1}{2}$ pictures,	\$5 00
N. C. Film Cartridge, 12 exposure, $3\frac{1}{2} \times 3\frac{1}{2}$,	60
Do., 6 exposures,	30
Do., Double-Two Cartridge, 4 exposures,	20
Black Sole Leather Carrying Case,	1 25
Kodak Film Tank, $3\frac{1}{2}$ inch,	5 00
Duplicating Outfit for same,	2 50
Kodak Tank Developer Powders for $3\frac{1}{2}$ inch Tank, per	
$\frac{1}{2}$ doz.,	20
Kodak Acid Fixing Powder, per lb.,	25
Do., $\frac{1}{2}$ lb.,	15
Do., $\frac{1}{4}$ lb.,	10
Kodak Metal Tripod, No. 0,	1 60
Do., No. 1,	2 50
Do., No. 2,	3 25
Carrying Case for above,	1 50
Bulls-Eye Tripod, folds in two sections,	1 50
Bulls-Eye Developing and Printing Outfit, including	
Velox Paper, etc., for 12 prints,	1 25
Velox Paper, $3\frac{1}{2} \times 3\frac{1}{2}$, per doz.,	15
Nepera Solution, 4 oz. bottle,	20
Solio Paper, $3\frac{1}{2} \times 3\frac{1}{2}$, per pkg. 2 doz.,	20
Combined Toning and Fixing Solution for Solio, per 8	
oz. bottle,	50
Do., 4 oz. bottle (in mailing case including postage \$.50)	30
Eastman Hydrochinon Developer Powders, per doz.	
pairs, (do not stain the fingers),	50
Do., per $\frac{1}{2}$ doz. pairs,	25
Eastman Pyro Developer Powders, per doz. pairs. . . .	50
Do., per $\frac{1}{2}$ doz. pairs,	25

Eastman Hydrochinon, Eikonogen, Pyro, and Special Developer Powders, in hermetically sealed glass tubes, per box of 5 tubes,	\$ 25
Bromide of Potassium, per ounce bottle, . . . . .	.12
Glass Stirring Rod Thermometer,	60
Eastman Reducer, per pkg. 5 tubes,	25
Royal Re-Developer, per pkg. 6 tubes,	75
Bevplane Mounts, per 100,	80
Do., per 50,	40
Eastman Indexed Negative Album, to hold 100 $3\frac{1}{2} \times 3\frac{1}{2}$ film negatives,	75
Eastman Kodak Dark-Room Lamp, No. 2, $\frac{5}{8}$ -in. wick, I	00
Kodak Trimming Board, No. 1. 5 inch,	40
Transparent Trimming Gauge for above,	20
Eastman No. 1 Flash Sheets, per package $\frac{1}{2}$ dozen,	25
“ No. 2 “ “ “ “ “ “ “	40
“ No. 3 “ “ “ “ “ “ “	60
Eastman Flash Sheet Holder, I	00
Kodak Dry Mounting Tissue, $3\frac{1}{2} \times 3\frac{1}{2}$, 3 doz. sheets,	10
Kodak Portrait Attachment, for use with No. 2 Flexo Kodak,	50
Eastman Film Developing Clips, $3\frac{1}{2}$ inch, per pair, (nickeled),	25
Kodak Film Clips, (wooden), 5 inch, per pair,	15
The Forum Album, 25 Black or Sepia leaves, size $5\frac{1}{2} \times 7$,	35
Do., 7×10 ,	50
Developing, printing and mounting on Velox, $3\frac{1}{2} \times 3\frac{1}{2}$, per roll of 12 exposures, I	50
Do., unmounted, I	38
Developing, printing and mounting on Velox, $3\frac{1}{2} \times 3\frac{1}{2}$, per roll of 6 exposures,	75
Do., Unmounted,	69
Developing only, $3\frac{1}{2} \times 3\frac{1}{2}$, per roll of 12 exposures,	70
Do., per roll of 6 exposures,	35

Printing only, unmounted on Velox,	. . . . \$	07
Do., mounted,	. . . . .	08

No orders executed for less than 25 cents.

8 x 10 Bromide Enlargements, mounted on card, . . . 75

10 x 12 Bromide Enlargements, mounted on card, . . . 1 00

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

EASTMAN KODAK CO.,
Rochester, N. Y.

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 $\left\{ \begin{array}{l} \textit{Draft} \\ \textit{P. O. Money Order} \\ \textit{Express Money Order} \end{array} \right\}$ *for two dollars, for which*
please send me a volume of "The Modern Way in Picture Making" and a certificate
of membership entitling me to a full course in "The Kodak Correspondence College."

(Name)..... *(Street and No.)*.....

(City) *(State)*

TEAR OFF HERE.

The Kodak Correspondence College

A Course Which Will Increase Your
Photographic Pleasure by Helping
You to make Better Pictures.

Tuition two dollars which includes a handsome
cloth bound copy of the School Text Book.

**“THE MODERN WAY
IN PICTURE MAKING”**

PRINTS DO NOT CURL

WHEN MOUNTED WITH

Kodak Dry Mounting Tissue



Just the Tissue and a Flatiron

Dry Mounting Tissue is incomparable for album work. The leaves lie flat with perfect adhesion.

EASTMAN KODAK CO.,

Rochester, N. Y.

All Dealers.

*"IF IT ISN'T AN EASTMAN,
IT ISN'T A KODAK."*