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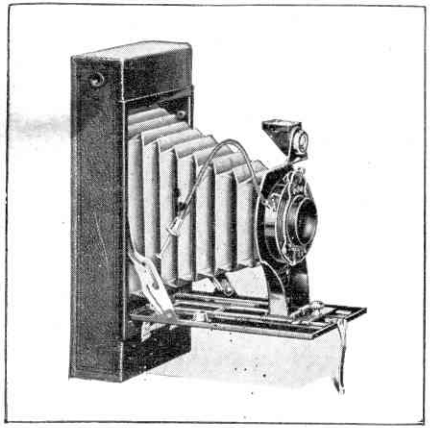

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ORDER FILM BY NUMBER

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

A-130

is the number for film for this camera (No. 2-C Folding Autographic Brownie). The number appears on the carton and on the cartridge, and on the Autographic door which is located on back of Camera.

NOTICE

Autographic film can be used in old style Brownies, old style film can be used in Autographic Brownies, but to get *Autographic results* Autographic film must be used in an Autographic Brownie.

Before Loading

BEFORE taking any pictures with the No. 2-C Folding Autographic Brownie Camera 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 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 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 red paper wound tightly around the film to prevent the admission of light.

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CONTENTS

PART I

Loading the Camera

THE film for the No. 2-C Folding Autographic Brownie Camera, 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 red paper taut on the spool, otherwise it may slip and loosen sufficiently to fog the film.

The Film
No. A-130

The Autographic Film Cartridge is made with a thin red instead of the familiar thick red and black (duplex) paper, the thin red paper is not light proof in itself. Between it and the film is inserted a strip of tissue. This tissue serves two purposes: To supplement the red paper in light proofing the cartridge, and to permit the recording, by light, of the writing upon the film.

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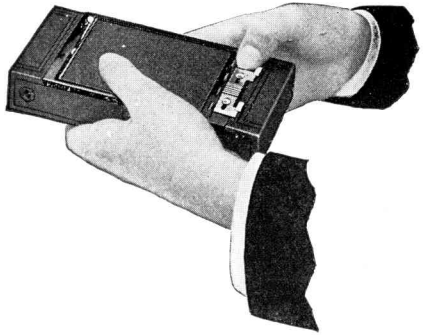

FIG. 1

1. To load camera, take a position at a table where the daylight is somewhat subdued and remove front of camera by pushing metal lock to the left, Fig. 1. Grasp the front of camera by the two metal edges and lift it upwards, first lifting that end on which the lock is fastened, and remove entirely that part of the camera. Fig. 2. The camera is now ready for loading.

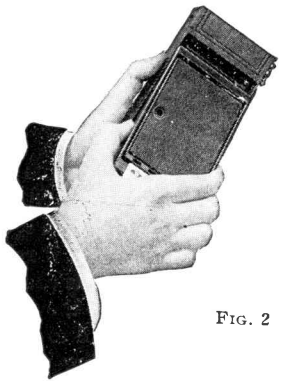

FIG. 2

2. At each end of the camera will be seen a recess for holding the film spools.

As sent out from the factory, there is one empty spool at the winding end of the camera, and the fresh cartridge is to be inserted in the opposite end.

The empty spool, which is used as the reel, must now be removed. This may be done by first pulling out the winding key to limit of motion, which will release the spool, and it can then be readily removed. Fig. 3.

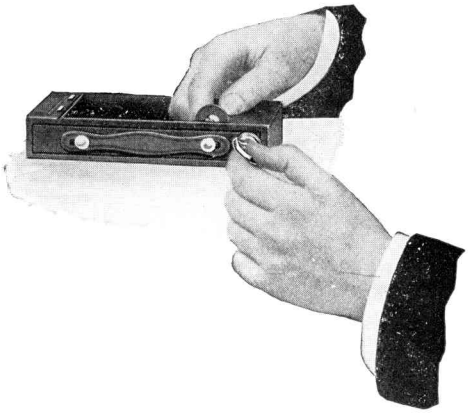

FIG. 3

3. Remove the gummed slip that holds the end of red paper, from the cartridge, and thread tapered end of red paper into the slot of the empty spool, *so that the slit in the end of spool will be at the top, while at the same time the slit*

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at end of full spool will be at the bottom of the cartridge. Then give the empty spool three or four turns, or until the black lines on outside of paper are reached, at the same time being careful that the paper draws straight and true. See Fig. 4.

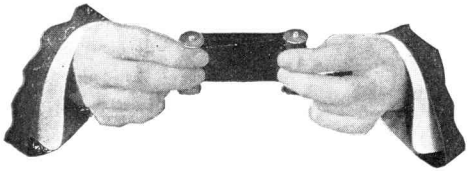

FIG. 4

4. The camera may now be loaded by first unrolling about four inches of the red paper and then placing the two spools into the film pockets at each end of the instrument. Fig. 5.

Important

Be sure and get the top of spool at top of camera (each spool is marked, the word "top"

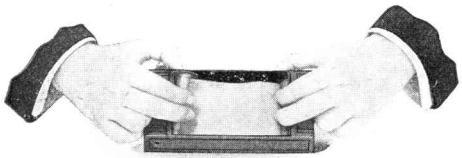

FIG. 5

being printed on the red paper at the end) when inserting, otherwise your film will come on the

wrong side of red paper when reeled off and total failure will result.

5. After spools have been placed into the pockets, push both as far back as possible in order that the tension spring may hold them securely in place, creating sufficient drag to draw the film taut, and afford perfect register of the focal plane.

Turn winding key at top of camera toward the front, until the web on the key engages in slit in top of spool. Fig. 6.


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FIG. 6

Caution

If you turn off too much of the red paper before the camera is closed, the film will be uncovered and ruined.

6. The camera is now to be closed, reversing the operation shown in Figs. 1 and 2. When replacing front of camera after it is loaded, first insert the end opposite the lock, the edge of box should be in the metal groove at end of front,

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then drop the end on which the lock is fastened down into place. Make sure that the metal lock is fastened securely.

Throughout the foregoing operations, from the time the gummed slip is cut on the fresh roll of film until the back of camera is closed, keep the red paper wound tightly on the roll. If it is allowed to loosen, light will be admitted and the film fogged.

7. The roll of film in the camera is covered with red 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 window at the back of the camera. When ten to twelve turns have been given, a black index hand will appear before the little red window. This hand is a warning that you are approaching Fig. 1. Then turn the key very slowly until Fig. 1 appears before the red window. Fig. 7.

NOTE—It is advisable to press in on the winding key while turning it, so that it will not separate from the spool and thus cause the film to loosen.

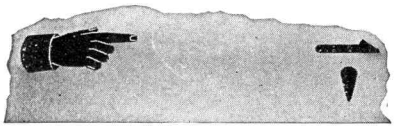


FIG. 7

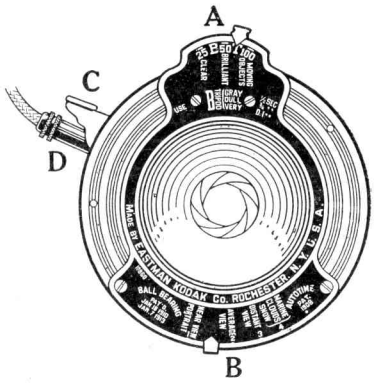
The film is now in position for taking the first picture.

PART II

The general instructions in this No. 2-C Folding Autographic Brownie manual apply equally well to the camera, whether fitted with SINGLE or DOUBLE LENS.

The only difference lies in the timing of 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. 2-C Folding Autographic Brownie, either time or instantaneous, be sure of four things:

FIRST—That the shutter is set properly.

(For time, instantaneous or bulb exposures as desired).

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

THIRD—That the camera is focused.

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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.

Avoid making too sharp a bend in the cable release, as by doing so it will be liable to kink.

SECTION I

Operating the Shutter

Perfect familiarity with the shutter is essential to successful picture taking with any camera.

As the shutter on the No. 2-C Folding Autographic Brownie is equipped with the Autotime Scale, the following directions should be carefully read and the shutter operated several times before threading the film up for use.

Directions for Using the Autotime Scale in Connection with the No. 2-C Folding Autographic Brownie

This shutter is always set. To make an exposure simply place the indicator A at the point desired (for kind of exposure) and press push pin or push down on lever C.

Indicator A at "T" sets for time exposure.

Press the push pin. This opens the shutter. Time exposure by a watch. Again press the push pin. This closes the shutter. Great care should be taken not to jar the camera.

Indicator at "B" makes bulb exposure, the shutter remaining open as long as the push pin

is pressed in or the release C held down, and closing when it is released.

Indicator at 25, 50 or 100 gives speed of approximately 1-25, 1-50 and 1-100 of a second.

Kind of Light

TOP SCALE

II. FOR INSTANTANEOUS EXPOSURES—Set indicator A according to the kind of light, Brilliant or Clear.

MOVING OBJECTS—Set the indicator at "100" for all rapidly moving objects.

BRILLIANT—Or intense sunshine. Use *only* when sunshine is clear and intense and is shining directly on the principal part of the picture or where part of subject is in shadow.

CLEAR—This is used for all ordinary sunshine and also for intense sunshine, when it is *not* shining directly on principal part of picture.

GRAY, ½ second—Hazy or dull sunshine, best judged by the shadow cast by the sun which would be called "half shadow"—a distinct shadow but not as strong as with "brilliant" or "clear."

DULL, ¼ second—Where a very faint shadow is barely visible.

VERY DULL, 1 second—Sky completely overcast—no shadow of any kind visible.

In order to judge the above divisions of "Time" accurately, in using this shutter, the method most easily acquired is by counting. By counting "one, two, three, four" rapidly, the

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count will be completed in practically one second. It follows then that by counting one—two, or one—two—three, or 1, 2, 3, 4 with equal rapidity, the lengths of "Time" will correspond with ½ and ¾ and 1 second, using the "Bulb" as directed.

With very little practice the operator will be able to put the pressure on the "Bulb" *at the time of beginning the count, and instantly releasing it simultaneously with the end of the count.*

NOTE—With "moving objects," "brilliant" or "clear" the camera may be held in the hand. For "gray" "dull" or "very dull" the camera should be placed on a tripod or set on some steady support and the indicator set at "T" or "B," as the judgment of the operator may direct.

Kind of Picture

BOTTOM SCALE

III. Set indicator "B" according to kind of picture.

MARINE, CLOUDS OR SNOW—Use this division for pictures where either one of these subjects is the *principal* subject in the picture.

MARINE—When view is nearly all water, with ships or yachts at a long distance.

EXCEPTION—Marine or distant views may be taken at open lens and instantaneous when conditions require it, such as from decks of moving vessels when the light is poor.

SNOW—Distant snow scene only.

CLOUDS—Refers to no other subjects.

DISTANT VIEW—For landscapes, mountain views, etc., where the whole view is removed

some distance, or in other words, a general view without a *principal* object in the foreground.

AVERAGE VIEW—A general landscape *with a principal object in the foreground*, the general landscape being in the nature of a background to the principal object.

NEAR VIEW PORTRAIT—All views less than one hundred feet distance and for general portraiture.

But when the sun is shining and the subject is under a porch or trees where no sky is visible overhead, set the lower pointer at Portrait and use "Gray" for time.

When the subject is on the shady side of a building with good reflected light set the lower pointer at Portrait and use "Clear" for time.

On the Camera equipped with the R. R. Lens there is another division:

SHADOW-MOVING OBJECTS—Use for all moving objects, also for near views while the principal object does not receive the direct light of the sun or sky. Use also for near objects of general red, green, brown or black color.

NOTE—Expose always for the principal subject in the picture which you wish to bring out,

General

IV. Moving objects require the use of moving objects and near view-portrait or shadow-moving objects.

Ordinary moving objects, such as people walking, street traffic, etc., can be taken with "brilliant" or "clear."

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In case it is desirable to cut down the aperture in order to gain the full depth of the focus of your lens it is only necessary to move the indicator "B" to "distant view" or "clouds" and increase the time of exposure, as called for by the diminished aperture. You will then secure the same resultant exposure, with the increased definition desired. The reverse of this is also true, and by this means any aperture or speed can be used within the limits of proper exposure.

In cities where the light is modified by high buildings, use slightly larger aperture than indicated.

The markings are for summer at midday. During winter or for morning or afternoon use next larger aperture than one indicated.

SECTION 2

If preferred the following instructions may be used. Refer to cut on page 11.

Instructions when your Camera is fitted with SINGLE LENS (Achromatic).

(If fitted with DOUBLE LENS disregard and follow instructions on page 18).

"*Snap Shots*"

For all Ordinary Instantaneous Exposures.

FIRST—Set the indicator A at 25, 50 or 100, according to the time of instantaneous exposure desired. This adjusts the shutter for instantaneous exposures of 1-25, 1-50 and 1-100 of a second.

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

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

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.

Press push pin on cable release with a firm, quick movement, at the same time be sure to hold the Camera 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. 1, 2, 3 or 4. See instructions for use of stops, page 39.

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 Exposures

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

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

SECOND—Set the indicator B controlling the stops, at No. 1, 2, 3 or 4.

See instructions for use of stops, page 39.

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—Never oil shutter. In case of accident, return Camera to your dealer or to us for repairs.

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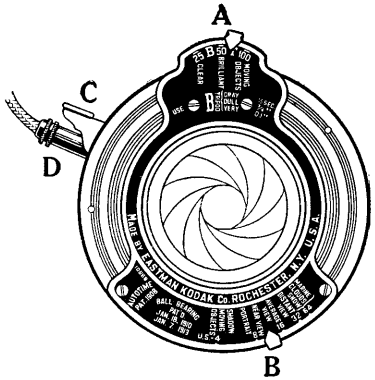
Instructions for the use of the No. 2-C Folding Autographic Brownie, when equipped with DOUBLE LENS (Rapid Rectilinear).



"Snap Shots"

For all Ordinary Instantaneous Exposures.

FIRST—Set the indicator A at 25, 50 or 100, according to the time of instantaneous exposure desired. This adjusts the shutter for instantaneous exposures of 1-25, 1-50 and 1-100 of a second.

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

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

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 exposure in very dull light.

Press push-pin on cable release with a firm, quick movement, at the same time be sure to hold the Camera 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. 4, 8, 16, 32 or 64.

See instructions for use of stops page 39.

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 Exposures

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

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

SECOND—Set the indicator B controlling the stops at No. 4, 8, 16, 32 or 64.

See instructions for use of stops, page 39.

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.

SECTION 3

Instantaneous Exposures

("Snap Shots.")

In taking instantaneous exposures, the object should be in the broad, open sunlight, but the camera should not. The sun should be behind

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the back or over the shoulder of the operator. If it shines directly into the lens it will blur and fog the picture.

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.*

Focus on the Subject

1. Pull up the lever on front of camera, located at the winding end. Fig. 1. This unlocks the bed of camera. Then pull lever forward and push down the bed of camera to the limit of motion.

NOTE—Make sure that lever on front of the Camera bed is pushed down, as unless this is done the front of Camera cannot be drawn out to the slot marked for six feet.

2. Grasp the round post on slide plate to pull out the front.

3. At the front of camera bed and at one side you will see a scale with slots marked 6, 8, 10, 15, 25 and 100 feet. This is for focusing the camera. Except when photographing at a distance of 15 feet or less, it is not necessary to estimate the

distance with any more than approximate accuracy, 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

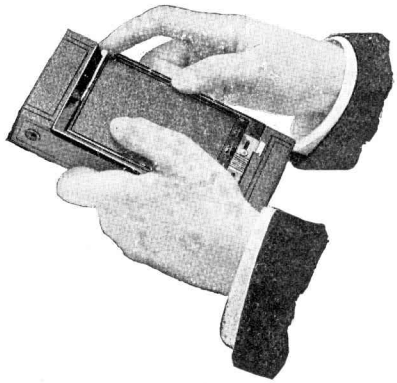

FIG. 1. Opening the front.

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 the portrait attachment. See page 37.

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Extending the Front

Now extend 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. (Fig. 2).

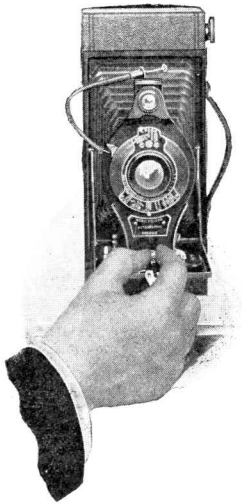

FIG. 2. Extending the Front

The catch or locking device is on the left side at the bottom of front board, and to set the focus, press the lever, then pull out front of camera to the slot marked for the distance desired, 6, 8, 10, 15, 25 or 100 feet.

How to Use the No. 2-C Folding Autographic Brownie 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 camera 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, of small size (equipped with short focus lenses) the lens is unmovable, 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.

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Making the Exposure

Aim the camera at the object to be photographed and locate the image in the finder, which is placed just above the shutter.

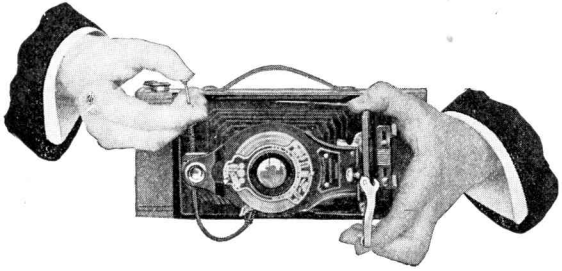

FIG. 3

The finder shows the scope of view and gives a fac-simile of what the picture will be. Hold the camera steady—hold it level as shown in Fig. 3, and press the push-pin. This makes the exposure.

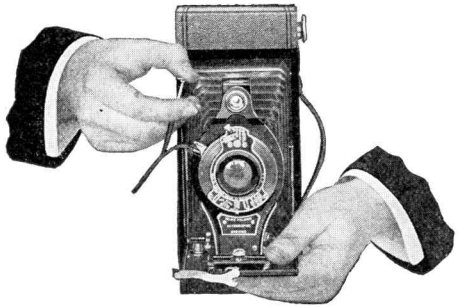

FIG. 4

For a vertical exposure the camera must be held on its end. Fig. 4. Reverse the finder so that it will be correct for vertical exposures. The finder gives the scope of view and shows a fac-simile of the picture as it will appear, but on a reduced scale. Any object that does not show in the finder will not show in the picture.

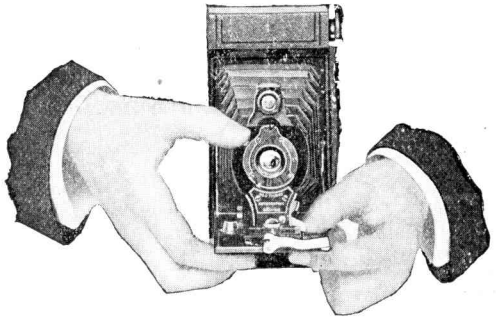

FIG. 5

It will be noticed that the top of the finder is notched as shown in Fig. 6. This is done so that the one finder will correctly show the view included when the camera is held in either horizontal or vertical position. As the picture taken with the No. 2-C Folding Autographic Brownie 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.

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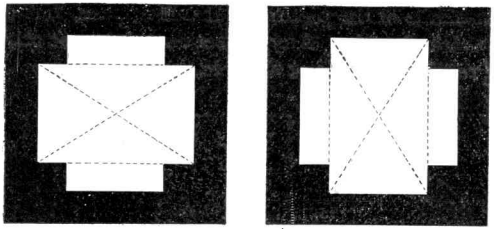
Remember, that only the view indicated in the dotted lines will show in the picture.

Fig. 5 shows how to hold the camera when making exposures without the use of the cable



VIEW INCLUDED WHEN MAKING A HORIZONTAL PICTURE.

VIEW INCLUDED WHEN MAKING A VERTICAL PICTURE.

FIG. 6

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

Hold it Level

The camera must be held level.

If the operator attempts to photograph a tall building while standing near it, by pointing the camera upward (thinking thereby to center it) the result will be similar to Fig. 7.

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.

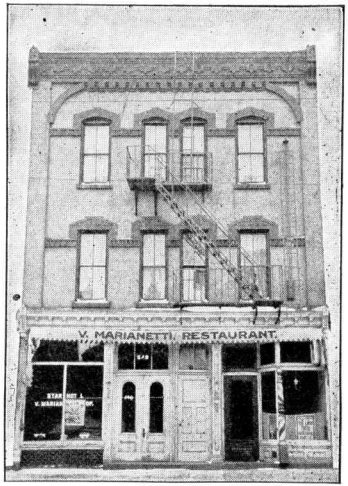


FIG. 7

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

The Autographic Feature

The Autographic Brownie has a spring door on the back covering a narrow slot through which the writing is done upon the red paper. The slot is provided with an automatic safety spring border which operates when the door is open to press the papers into contact with back of the film, thus securing the sharp printing of

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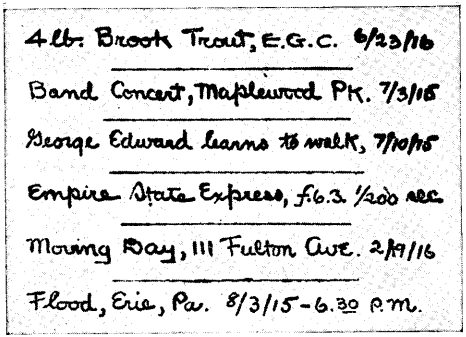

AN AUTOGRAPHIC NEGATIVE.

the image of the writing and preventing the diffusion of light around the edges of the slot. This

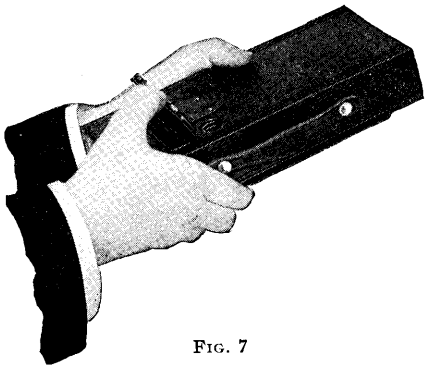

FIG. 7

slot is located so that normally the writing comes between the exposures.

The Autographic Record as a Guide

Many amateurs have distinctly improved the quality of their work by making notes, at the time of exposure, of the prevailing conditions. As: Bright light, 1-50 sec., stop No. 8, which, by the way, can be easily abbreviated to: B, 1-50, 8. By keeping such records the amateur can quickly find the causes of failure, if any. By comparing negatives and records he will soon get a line on his errors and when he knows what his errors are, he can easily rectify them. It is obvious that the best way to make these records is autographically—*on the film, at the time.*

The Operation

After the picture is taken, lift up the spring door on back of Camera with thumb (Fig. 7). Use the stylus, or a smooth pointed pencil, held in as upright a position as is convenient, and write on

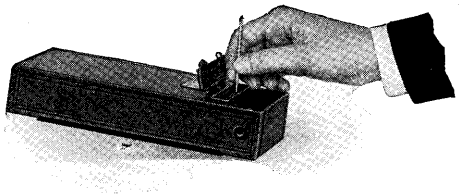

FIG. 8
Position of pencil (or stylus) when writing record data on Autographic Film Cartridge used in Autographic Brownie.

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the strip of exposed red paper any memorandum desired, such as the title of the picture, the date, or details in regard to the exposure, light, stops, etc., (Fig. 8).

To get a clear impression, press firmly on both up and down strokes. *While writing or afterwards the sun should not be allowed to shine upon the paper.* The action of the pencil or stylus so affects the tissue as to permit the light to record the writing upon the film. After finishing the writing the door should be left open for the printing, in accordance with the following table:

(*Expose to the sky, but not to the sun.*)

	OUT OF DOORS	INDOORS CLOSE TO WINDOW
BRILLIANT LIGHT	2 to 5 Seconds	5 to 7 Seconds
DULL LIGHT	5 to 10 Seconds	10 to 15 Seconds

INCANDESCENT LIGHT, distance 2 inches, 30 to 60 seconds.

WELSBACH LIGHT, distance 6 inches, 30 to 60 seconds.

1. Close the door before winding a new film into place.

2. CAUTION. In order to locate the writing accurately in the space between the negatives it is important that the film should be turned so that the exposure number centers perfectly in the red window of the Brownie.

If a pencil be used, the point must be dry and it must not be of the "indelible" variety.

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. 9.

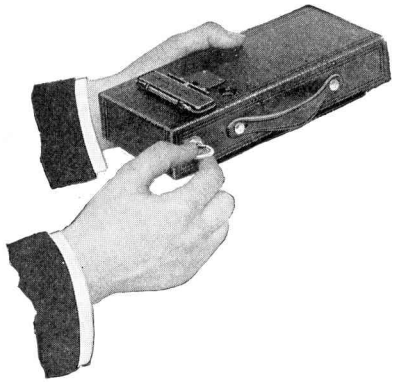

FIG. 9

Repeat the foregoing operation for each picture.

IMPORTANT—When you have used the last exposure (No. 2, 6 or 10), on your roll of film and have made the autographic record of it in accordance with the foregoing directions, turn the winding key of the Brownie until a letter (A) appears in the center of the window in the back of the Camera. Raise the spring-door and write your name on the red paper, expose it to the sky the same as was done when making the exposure records, then close the spring-door and finish winding film and red paper for removal from the Camera. Your film is now ready to send to your

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finisher, and when developed will be readily identified by the autographic copy of your name which you wrote on the red paper.

SECTION 3

Time Exposures — Interiors

1. Place the camera in position on a tripod or some other firm support.

Set camera in such a position that the finder will embrace the view desired. The diagram shows the proper position for the camera. It should not be pointed directly at a window as the glare of light will blur the picture. If all the

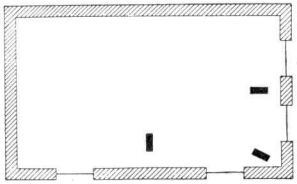

Diagram showing positions of Camera

windows cannot be avoided, pull down the shades of such as come within the range of the camera.

Fig. 1 shows the Camera in position for a vertical exposure. The Camera is also provided with tripod sockets and may be used on a tripod.

When it is desired to make a horizontal time exposure without the use of a tripod, pull down the same lever at front of bed of Camera, that

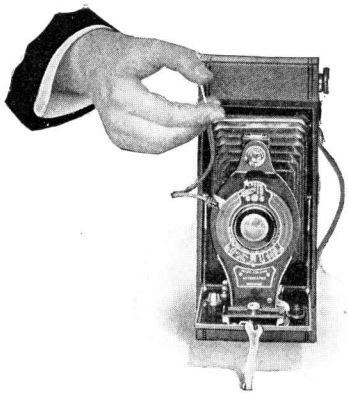

FIG. 1

was used for the support when taking a vertical exposure, as shown in Fig. 2.

Adjust the shutter for a time exposure, as described on pages 17 and 19.

All being in readiness, press the push-pin or push down on release C, once to open and again to close the shutter. Time the exposure by a watch.

Another Method

Another way of making short-time exposures which has much to recommend it is as follows:

Hold the palm of the hand before the front of the Camera, so as to cover the lens and exclude all light (See Fig. 3). Press the push-pin or push

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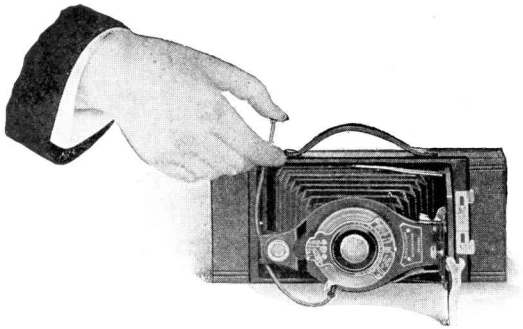

FIG. 2

down release C to open the shutter; remove the hand and give the proper exposure; replace the hand in front of the lens and again press the push-pin or push down on release C to close shutter.

Some experienced amateurs prefer this method, as it practically does away with all danger of jarring the instrument during exposure, and thus blurring the picture.

TURN THE KEY.

After making the autographic record, turn a new film into position, as described before (See page 31).

The camera 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.

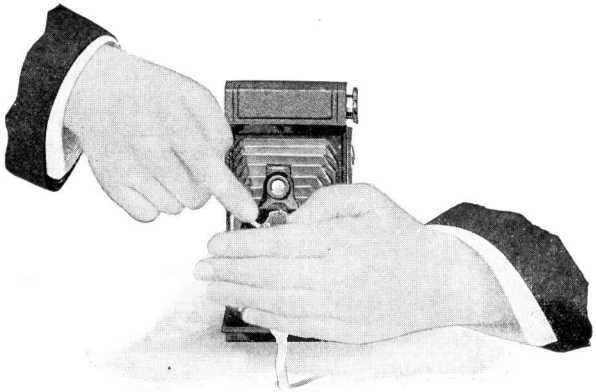

FIG. 3

Time Needed for Interior Exposures

The following table gives the time of the exposure required under varying conditions of light for the Camera 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

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with the *double lens*, the time given in the table is with stop No. 16 in the lens. If stop No. 8 is used give only one-half the time; if stop No. 64 is used, give four times the time of the table. The smaller the stop the sharper the picture The No. 2 or the No. 16 gives 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 calculated 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 Camera (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 Camera should be 8 feet from the figure. The background should form a contrast 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.

Use Kodak Portrait Attachment No. 5 on the No. 2-C Folding Autographic Brownie, when fitted with either the Single or Double Lens.

By means of the Portrait Attachment large head and shoulders portraits of various sizes may be obtained. With the Attachment in position

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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 the 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 Camera 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 17 and 19

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 out doors in cloudy weather. Not for instantaneous exposures. The time required for time exposures on cloudy days, with smallest stop, will range from ½ second to 5 seconds, according to the light. The smaller the stop the sharper the picture.

If you use the smallest stop for instantaneous exposure 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, the time for which is given in the table on page 36.

No. 32—For interiors. *Never for instantaneous exposures.*

No. 64—For time exposures outdoors in cloudy weather. *Never for instantaneous exposures.* The time required for

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time exposures on cloudy days with smallest stop 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.

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 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 32 of this manual (except that the largest

(No. 1) stop 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 Camera 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 Camera. 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

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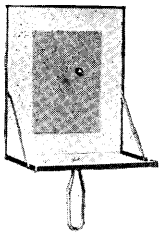

in position in the center of the larger pan over the round opening which has a raised saw-tooth edge extending half way around it. Press with thumb on the sheet, so a slight break is made and a portion of the sheet projects partially through the opening. Then to insure the sheet being more securely fastened, press around the notched edge, forcing this portion of the 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.

Taking the Picture

Having the Camera and the flash sheet 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 opening in the center of the holder.

NOTE—If you are not using the Kodak Flash Sheet Holder place the match in a split stick at least 2 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 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.

TABLE

For ten feet distance and light walls and hangings, use one No. 1 sheet.

For ten feet distance and dark walls and hangings, use one No. 2 sheet.

For fifteen feet distance and light walls and hangings, use one No. 2 sheet.

For fifteen feet distance and dark walls and hangings, use one 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 Camera (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.

For using Portrait Attachment, see page 37.

The flash should be on the side of the camera 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 Camera 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

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

Closing the Camera

1. To disengage front from lock on focusing scale so that it may be pushed back, press in with finger on catch which is located just above the focusing scale.

2. Keep catch pressed and slide back front a short distance. The catch may then be released and front pushed back into the camera box. Reverse the operation as shown in Fig. 2, page 22.

3. Close front by pressing down on arm locks on each side of bed as shown in Fig. 1. The bed will now close readily.

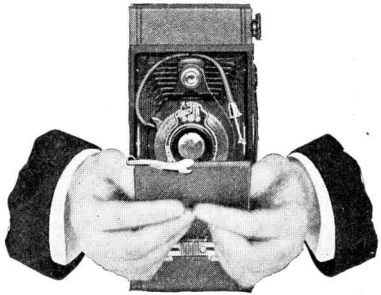

FIG. 1

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PART III

Removing the Film

No dark room is required in changing the spools in the Brownie Camera.

The operation can be performed in the open air but to avoid all liability of fogging the edges of the film it had best be performed in a subdued light.

1. When the last film has been exposed and the autographic record of your name has been made according to instructions on page 31 give the key a dozen extra turns. This covers the film with red paper again.

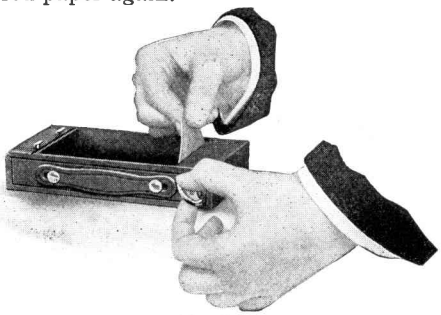

FIG. 1
Showing how red paper leaves reel

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

3. Remove front of Camera as described on page 6.

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

5. Hold ends of red paper and sticker together, to prevent paper from loosening on reel. If sticker folds under reel when wound pull it up with the point of a lead pencil.

6. Pull out winding key, and lift out roll of film as shown in Fig. 2.

FIG. 2

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

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

9. Now remove empty spool and load as described in Part 1.

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

IMPORTANT

Autographic Film should be developed as promptly as possible after exposure.

The quality of the image on all sensitized products is retained by immediate development after exposure.

"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 red paper keeps inside the flanges.

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.

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 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.

The preparation of an Autographic Film Cartridge for development and the method of developing it in the Kodak Film Tank is precisely the same as for the regular N. C. film cartridge.

Developing with a Kodak Film Tank

For use with No. 2-C Folding Autographic Brownie provide a 3½ inch Kodak Film Tank.

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.

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NOTE—Avoirdupois weight is the standard used in compounding Photographic formulae.

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

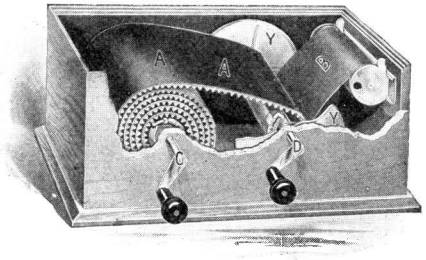

Fig. I

2. Insert the axles marked C and D in the cut, in the holes in the front of box. The front will be towards 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.

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 (Fig. 2.) The corrugated

side of the rubber bands is to be beneath the apron when it is attached. Turn to the left on

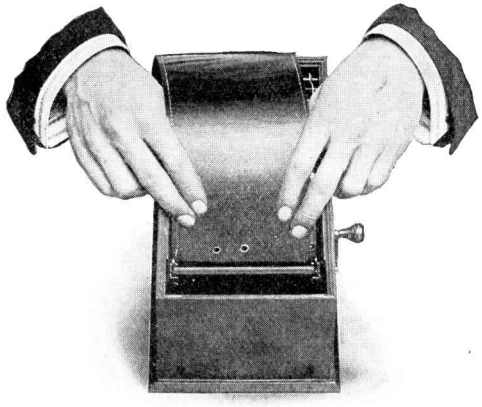

FIG. 2

axle "C" and wind entire apron on to spindle, maintaining a slight tension on apron in so doing by resting one hand on it.

Important

Preparing the Cartridge

Film to be used in the Kodak Film Tank must be fastened to the red paper at both ends. All films are fastened at one end at our factory. The operation can be accomplished in the following manner:

Just before you are ready to develop (holding spool with the unprinted side of the red paper

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up) unroll the red paper carefully until you uncover the piece of gummed paper which is fastened to end of film and is to be used as a means of fastening film to red paper. Moisten the gummed side of sticker evenly for about an inch across the end and stick it down to red paper, rubbing thoroughly to secure perfect adhesion. Wind end of red paper on spool again and the cartridge is ready to insert in machine.

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

6. Thread the red paper underneath wire guard on transferring reel through which axle "D" passes and turn axle slowly to the right until the word "stop" appears on red 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 red paper, film and apron are rolled up together on transferring reel. As soon as this is completed the handle will turn very freely.

While turning axle "D" to the right, keep pressure on axle "C" in the opposite direction. This will act as a brake and will keep the apron, film and red paper taut and in the correct position.

9. Prepare developing solution in solution cup as follows: Put three or four ounces of lukewarm water into solution cup, open one of the Kodak Tank Developer Powders and dissolve in it the contents of the large package, containing the Sulphite and Carbonate of Sodas. Fill the cup with cold water to the embossed ring—not to the top. Now dissolve the contents of the small package containing the Pyro in this solution and the developer will be ready. The temperature of the developer should be between 60 and 65 degrees Fahr.

If some of the contents of the small package sticks to the paper, dip the paper into the solution to remove.

The developer must always be mixed fresh and used for only one roll of film.

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

NOTE—Where the film is so short that the red paper does not extend, the above instructions are not necessary.

11. *Draw out axle "D," holding apron and red paper with other hand to keep end of apron and paper from loosening. Remove entire Transferring Reel, containing apron, red 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.

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12. Insert the Transferring Reel (containing apron, red 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. 3). Let reel slide down slowly. 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.

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.

Then place the cover on the cup (Fig. 4), putting lugs on cover into grooves and tighten cover down by turning it to right.

FIG. 3

Now turn entire cup end for end and place it 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 developing is completed.

Turning the solution cup allows the developer to act evenly and adds brilliancy and snap to the negatives.

The developer reaches all parts of the film immediately.

FIG 4

14. 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.

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

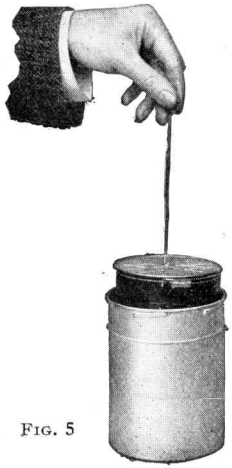

FIG. 5

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.

Then remove transferring reel, separate film from the tissue and red paper and place immediately in the Fixing Bath which should be in readiness, prepared in accordance with directions on page 62.

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

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The operation of separating film and red paper should be done over a bowl, bathtub, or sink.

If the Tank is not to be used again immediately the apron and tank should be washed and wiped dry. The apron will dry almost instantly if immersed for a moment in hot water.

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

Important

When cutting apart exposures made on Autographic Film, after development, always leave the writing next to the foreground of the adjoining negative in the case of vertical pictures, or at the left hand of the negative when looked at from the back, (the back is the shiny side), right side up, in the case of horizontal pictures.

The result is a negative bearing a facsimile of the memorandum written upon the back of the red paper, developed on its margin or face as the case may be. For it is obvious that by winding the film the width of a line the writing may be made to appear in the foreground of a vertical picture (of course the lower line must be written first) or on the left hand side of a horizontal picture.

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 onto Transferring Reels as previously described and immersed in the Solution Cup.

Load Your Camera with Kodak Film
Look for this trade mark on the box

EASTMAN
Autographic
N C

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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 Kodak Tank 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°) 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.

Developing in the Dark-room

Provide an Eastman A B C Developing and Printing Outfit which is suitable for **4 x 5** or any smaller films.

A B C Developing Outfit

The Outfit Contains:

1 Kodak Candle Lamp	$ .25
4 Developing Trays	.40
1 4-oz. Graduate	.15
1 4x5 Printing Frame	.25
1 4x5 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 Dozen Sheets 4x5 Velox Paper	.40
1 2-oz. Bottle Nepera Solution for Velox	.10
1 Package Potassium Bromide	.10
	$2.15

Price, complete (including Instruction Book), neatly packed, $1.50.

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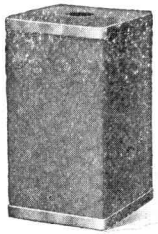
Also provide a pair of shears, a pitcher of cold water, (preferably ice water), a pail for slops, and a dark room having a shelf or table.

By a dark room is meant one that is wholly dark—not a ray of light in it. Such a room can be easily 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 lamp light, and would be spoiled if exposed to it even for a fraction of a second.



The Lamp

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).

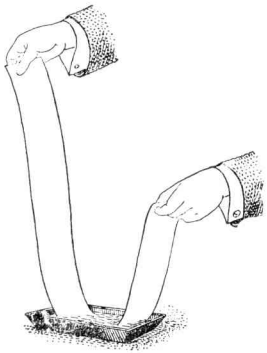
2. Open one of the developer powders, then put the contents (two chemicals) into graduate and fill it up to the four ounce mark with cold water. Stir until dissolved, with the wooden stirring rod, and pour into the second tray.

3. To develop, unroll the film and detach the entire strip from the red 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 the development may be watched by holding the negative up to the lamp from time to time.

When developing the Film, use a red lamp and take care not to hold the film close to the lamp for any length

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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.

NOTE—If preferred, the negatives may be cut apart and fixed separately. Instructions for cutting apart Autographic Film will be found on page 56.

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 is the dull side) through the fixing solution as shown in cut on page 61, 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 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.

Film must always be fixed in an acid bath. There is nothing superior to the Kodak Acid Fixing Bath, but the formula on page 74 may be used if desired.

Note.—If you are using an 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. When negatives have been separated they should be moved about part of the time in order that they wash thoroughly.

Drying 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, how-

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Drying with Clips

ever, 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, the Film should be cut up into strips of *not more* than six exposures in length. Instructions for cutting apart Autographic Film will be found on page 56.

But in tray development when the films have been cut up separately, 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 the film to the head, then hooking it over the string.

PART V

Printing

The Use of Autographic Negatives

Autographic Negative.

It is not a part of the Autographic plan that the record be made to appear upon the print, but such record may be reproduced in the print itself or omitted as desired. Of course if the record appears within the negative proper it will show on the print, if the print is full size. The illustration on this page will show how the record will appear on the negative.

The "Autographic Record Strip" (Page 28) is printed merely to suggest a few of the thousand

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and one ways in which autographic records may be used to add value to your negatives.

Printing on Velox Paper

Provide:

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

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, 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 Mazda lamp.

The comparative exposures with Special Velox from an average negative using various sources of light are approximately as follows:

NOTE—When using Regular or Contrast Velox increase the exposure.

Size of Negative	Distance from Light	60 Watt Mazda	40 Watt Mazda	25 Watt Mazda	Welsbach Burner (Gas)	Average Oil Lamp
31-4x5 1-2 4 x 5 and Smaller	10 in.	4 Sec.	6 Sec.	12 Sec.	16 Sec.	50 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	·	Clean Water 2	X	Towel	Kodak Acid Fixing Bath as directed on page 62 3

NOTE—Do not allow the direct rays of light used for printing to strike tray No. 1, which is used for the developer. Place a piece of red or orange colored paper between the light and tray No. 1, so as to obtain a subdued and safe light. By doing so you will avoid fogging the paper during development.

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 A. B. C. outfit and lay the

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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 67.

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

*The strips of gummed paper which are included with the Outfit are to be used for fastening the negative in place on the glass of the printing frame, or to attach the negative to a mask, so as to prevent it from slipping, which would cause a dark streak to appear between the edge of the picture and the white margin.

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 and Contrast Velox should be developed not to exceed 20 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 films.

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 begin-

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ing 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 trays and hands 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 formulae to come in contact with paper; 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.

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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 being water proof protects the print from any impurities in the mount stock. 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 to size desired, then place in proper position on mount and cover the 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 the ordinary paste, prints should be mounted wet. After the prints have been trimmed to correct size, immerse in clean water for a few moments, then place in a pile face down on a sheet of clean glass and squeegee

off all surplus moisture, apply the paste with a bristle brush, working the paste in thoroughly, then lift the print by the opposite corners, turn it over and place it in proper position on the mount.

Cover with a sheet of clean blotting paper and press into contact with squeegee or rubber print roller.

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 desirable 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.

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PART VII

Formulae

Developer for 3½-inch Kodak Film Tank. Use the following for twenty minute development:

Pyro ..... 22 grains
E. K. Co. Sulphite of Soda, desiccated..... 44 grains
E. K. Co. Carbonate of Soda, desiccated 44 grains

Dissolve the chemicals as per instructions on page 53.

Temperature of Developer 65° Fahr. This is very important.

Acid Fixing Bath

Film must always be fixed in an Acid Fixing Bath.

There is nothing superior to the Kodak Acid Fixing Powders, but the following formula may be used if desired:

Acid Hypo Fixing Bath

Water.....64 ozs.
Hypo .....16 ozs.

When thoroughly dissolved, add 4 ounces 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 be used so long as it retains its strength, or is not sufficiently discolored by developer carried into it to stain the negatives.

If the time of development and temperature of developer has been correct and the exposure within the latitude of the film good negatives must result, but if error has been made in development the cause and remedy will be found in the following:

Over-Development

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

Reducer

First, soak the negatives 20 minutes in water, then immerse in:

Water..... 6 Ozs.
Hypo ..... ½ Oz.
Potassium Ferricyanide (saturated solution)
Poison ..... 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.

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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

This defect would be caused by a mistake in removing film from the 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.

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.

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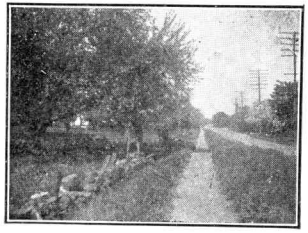
Clean Lenses

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

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 undertimed.



DIRTY LENS

PRICE LIST

No. 2-C Folding Autographic Brownie Camera, Meniscus Achromatic Lens, fitted with Kodak Ball Bearing Shutter and Autotime Scale, capacity 10 exposures, 2⅞ x 4⅞, not loaded	$ 9 00
Do., fitted with R. R. Lens	11 00
Carrying case for same	1 00
Kodak Portrait Attachment No. 5 for use with No. 2-C Folding Autographic Brownie Camera	50
Kodak Color Filter, No. 5	1 00
Kodak Sky Filter, No. 5	1 00
Autographic Film Cartridge, No. A-130, 10 exposures, 2⅞ x 4⅞	60
Do., 6 exposures	35
Do., 2 exposures	15
Kodak Film Tank, 3½-inch	5 50
Duplicating Outfit for same	2 75
Kodak Tank Developer Powders for 2½ or 3½ inch Tank, per pkg. ½ doz.	20
Kodak Acid Fixing Powder, 1 lb. pkg.	25
Do., ½ lb. pkg.	15
Do., ¼ lb. pkg.	10
Velox Paper, per dozen 3¼ x 5½	15
Velox Transparent Water Color Stamps	25

NOTE—Prices subject to change without notice.

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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 ounce bottle	28
Eastman Reducer, pkg., 5 tubes	25
Velox Re-developer, per 4 oz. pkg.	50
Solio Paper, 3¼x5½, per pkg., 2 dozen	25
Combined Toning and Fixing Solution for Solio, per 8 ounce bottle	50
Do., 4 ounce bottle	30

Packed in mailing case, postpaid, 20c additional

Eastman Hydrochinon, Pyro, Eikonogen and Special Developer Powders, in sealed glass tubes, per box of five tubes	25
Eastman Pyro Developer Powders, per ½ doz.	25
Glass Stirring Rod Thermometer	75
Kodak Dark Room Lamp, No. 2, ⅝ inch wick	1 00
Eastman Flash Sheets, No. 1 per package ½ dozen	35
Do., No. 2 per package of ½ doz.	56
Do., No. 3 per package of ½ doz.	84
Kodak Flash Sheet Holder	1 00
Eastman Film Developing Clips, (nickel) 3½ inch, per pair	25
Kodak Developing Clips, (wooden), 5 inch, per pair	15

NOTE—Prices subject to change without notice.

Kodak Junior Film Clips, each	$ 12
Kodak Trimming Board, 5 inch	40
Transparent Trimming Gauge for above	20
No. 0, Kodak Metal Tripod	2 25
Leatherette Carrying Case for above Tripod	75
Kodak Metal Tripod, No. 1	3 25
Do., No. 2	4 00
Leather Carrying Case for Kodak Metal Tripod Nos. 0, 1 or 2	1 75
Bulls-Eye Tripod	1 50
Flexo Tripod	90
Eastman Film Negative Album, to hold 100 2⅞ x 4⅞ negatives	1 00
Kodak Dry Mounting Tissue, 3 doz. package, 2⅞ x 4⅞	08
Eastman Photo Blotter Book for blotting and drying prints	40
Agrippa Album, Flexible Loose-leaf, 50 Black Linen Finish Leaves, size 7 x 11	1 70
The Forum Album, 25 Black or Sepia leaves, size 7 x 10	55
Kodak Print Roller, double, 6 inch.	50
Flexo Print Roller, single, 4 inch	20
Developing, Printing and Mounting on Velox, 2⅞ x 4⅞, per roll of 10 exposures	1 50
Do., unmounted, per roll of 10	1 40
Developing only,	80
Developing, Printing and Mounting, on Velox, per roll of 6 exposures,	90
Do., unmounted	84

NOTE—Prices subject to change without notice.

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Developing only, per roll of 6 . . .	$ 50
Printing and mounting only, on Velox, 2⅞ x 4⅞, each	10
Do., prints unmounted, each . . .	09
8 x 10 Bromide Enlargements, mounted on card	75
Do., 10x12	1 00
Do., 11x14	1 25

No orders executed for less than 25 cents

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.

NOTE—Prices subject to change without notice.

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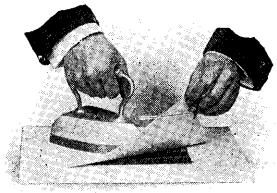

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