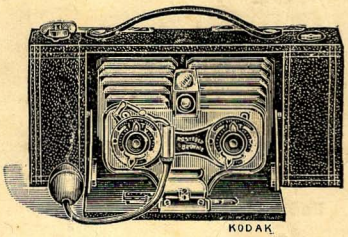
Picture Taking

with the

No. 2 Stereo Brownie Kodak.



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Before Loading.

BEFORE taking any pictures with the No. 2 Stereo Brownie Kodak read the following instructions carefully, and make yourself perfectly familiar with the instrument, taking especial care to understand the operation of the shutter. Work it for both time and instantaneous exposures several times before connecting 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. Until it has been developed and washed, the film must never be exposed to white light (this includes gas light, lamp light, etc.), or it will be ruined. Throughout all the operations of loading and unloading, therefore, be extremely careful to keep the black paper wound tightly around the film to prevent the admission of light.

KODAK, Limited.

CONTENTS.

PART I

Loading the Camera.

The film for the No. 2 Stereo Brownie Kodak 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 black paper taut on the spool, otherwise it may slip and loosen sufficiently to fog the film.

The Film.

1. To load the camera, take a position at a table where the daylight is somewhat subdued, and open the back of the camera by pushing on the metal slide locks, as shown in Fig. 1. The back of the camera will loosen, and may be allowed to drop down.

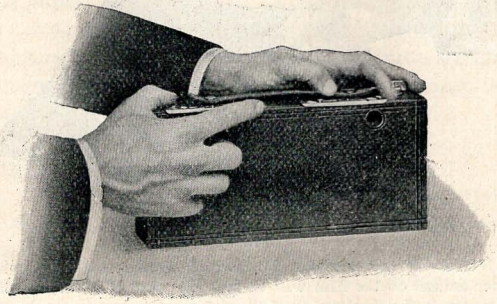


Fig. 1.

2. The camera having been opened, an empty spool having a slit in it will be seen in the winding end of the camera. This forms the reel upon which the film is wound after exposure. The full spool is to be

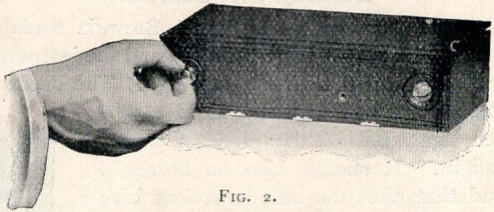


FIG. 2.

placed in the recess at the opposite end of the camera To accomplish this, turn the little cam levers at each end of the recess, thus drawing out the pins upon which the spool revolves (*see* Fig. 2).

3. Drop the film cartridge into this recess as shown in Fig. 3, taking care that the top of the spool is at the top of the camera. Each cartridge is marked on the end.

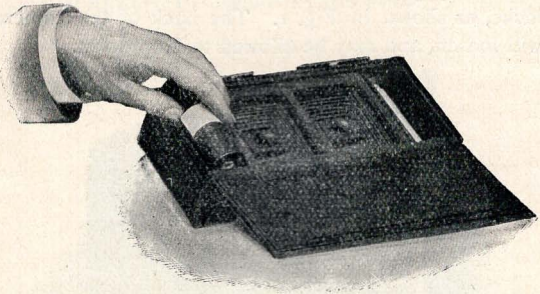


FIG. 3.

NOTE.—If the cartridge be inserted wrong end up, the black paper instead of the film will be brought next the lens, resulting, of course, in the absolute loss of the pictures.

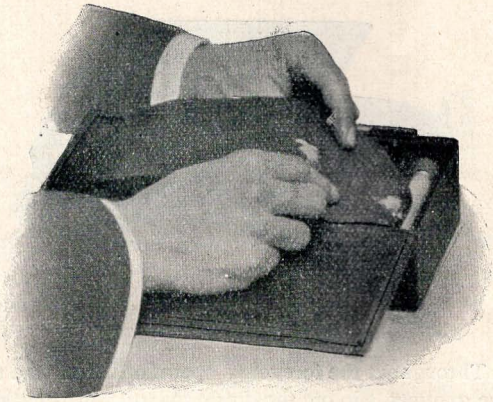


FIG. 4.

4. Turn the two cam levers back until they are held in position by the embossed stops. It will be noted that this engages the axis pins with the spool which is to revolve upon them.

5. Cut the gummed slip that holds the end of the black paper; pass the paper over the two rollers and into the slit in the reel, as shown in Fig. 4.

Be careful in so doing that the paper draws straight and true, and give the spool two or three turns (to the left from the key end). Fig. 5.

Caution.

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

6. The camera is now to be closed, reversing the operations shown in Fig. 1.

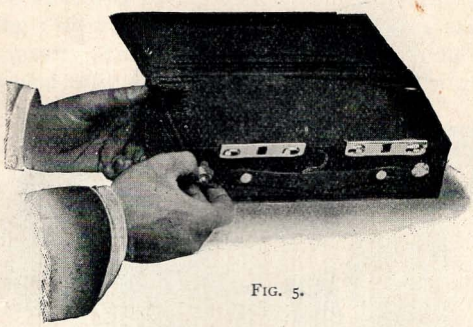


FIG. 5.

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

7. The roll of film in the camera is covered with black paper, and this must be reeled off before a picture can be taken. Turn the key slowly to the left and watch the little red celluloid window at the back of the camera. When fifteen to eighteen turns have been given, the figure 1 will be visible through the window. Fig. 6.

FIG. 6.

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

PART II.

Making the Exposures.

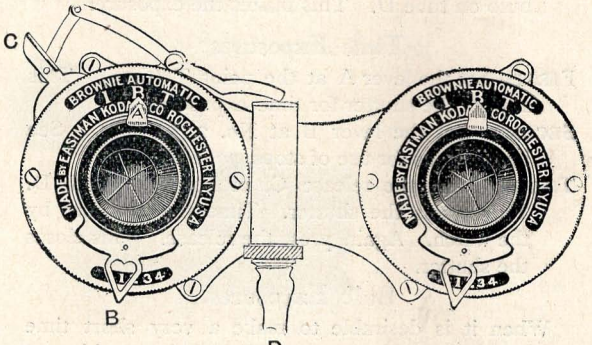
Before making an exposure with the No. 2 Stereo Brownie Kodak, either time or instantaneous, be sure of four things :—

FIRST—That the shutters are adjusted 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 focussed.

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



Right Left

B

SECTION I.

Operating the Shutter.

The No. 2 Stereo Brownie is equipped with twin shutters. The several adjustments, however, are operated by the levers and pointers on the *right hand* shutter alone. (The right hand shutter is the one carrying the trigger and bulb release.) The following directions should be carefully followed and the shutters operated several times before connecting up the film.

"Snap Shots."

For all ordinary Instantaneous Exposures.

FIRST—Set the lever A at the point "I." (In the illustration it is set at "B.") This adjusts the shutter for instantaneous exposures.

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

THIRD—Press down the release C, or compress the bulb on tube D. This makes the exposure.

Time Exposures.

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

SECOND—Set the lever B at No. 2, 3, or 4. See instructions for use of stops, page 19.

THIRD—Press the release C, or compress bulb D. This opens the shutter. Time the exposure by the watch. Again press the release. This closes the shutter.

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

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

THIRD—Press the lever to open the shutter, and release it to close the shutter, or operate with rubber bulb. This makes the exposure. The shutter will remain open as long as the lever is under pressure.

Do not oil any part of the shutter.

In case of accident return the shutter to your dealer or to us for repairs.

SECTION 2.

Instantaneous Exposures—"Snap Shots."

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

To Focus on the Subject.

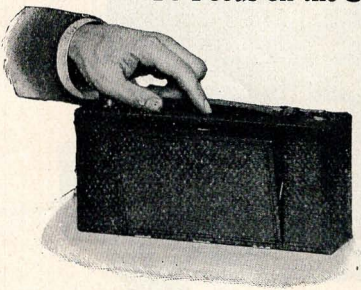


FIG. 1.—Opening the Front.

1. Press the concealed button as shown in Fig. 1, and push down the bed of the camera to the limit of motion.

2. Grasp the bottom of the front board and pull out the front.

3. At the front of the camera bed, and on the side opposite the finder, you will see a scale with slots marked 8, 20, and 100 feet. Fig. 2. This is for focussing the camera. Before extending the bellows set the catch A in the slot corresponding to the distance of the principal object to be photographed.

FIG. 2.

The catch is set by downward pressure and movement right or left. It is not necessary to estimate the distance with any more than approximate accuracy; for instance, if the focus be set at 20 feet (the usual distance for ordinary street work) the sharpest part of the picture will be the objects at that distance from

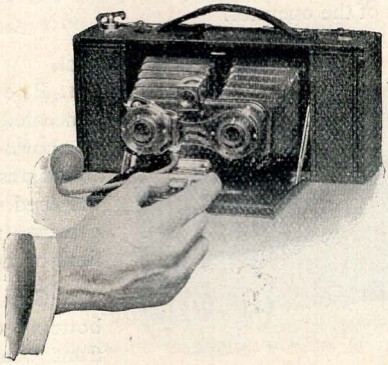


FIG. 3.—Extending the front.

the camera, but everything from 12 to 50 feet will be in good focus. For general street work the focus may be kept at 20 feet, but when the principal object is nearer or farther away, the focus should be moved accordingly. For distant views set the focus at 100 feet.

Extending the Front.

Now extend the front of the camera to the limit of motion (Fig. 3). This sets the focus for the distance at which you have placed the catch on the scale. A click will be heard when the front locks.

Making the Exposure.

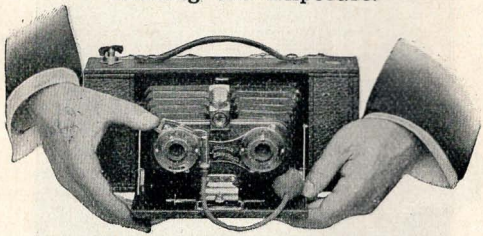


FIG. 4.—Pressing Snap-Shot Lever.

Direct the camera towards the object to be photographed, and locate the image in the finder.

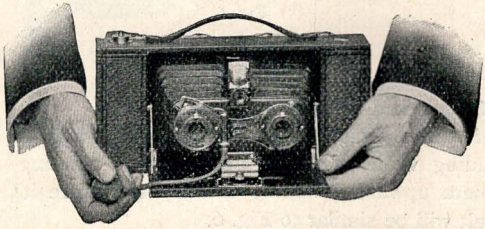


FIG. 5.—Making Snap-Shot with Bulb.

The finder shows the scope of the view and gives a fac-simile of the picture. Hold the camera steady —keeping it level as shown in Fig. 4, and push the lever or press the bulb, Fig. 5. (This makes the exposure.)

Fig. 6.

Hold it Level.

The camera must be held level.

If the operator attempt to photograph a tall building while standing near it, by pointing the camera upward (thinking thereby to centre it), the result will be similar to Fig. 6.

In this case the Kodak was pointed too high. This building should have been taken from the middle storey window of the building opposite.

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

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

TURN A NEW SECTION OF FILM INTO POSITION: Turn the key in the top of the camera slowly to the left until the next number is visible through the red window. Three or four turns will be sufficient to accomplish this. See Fig. 7.

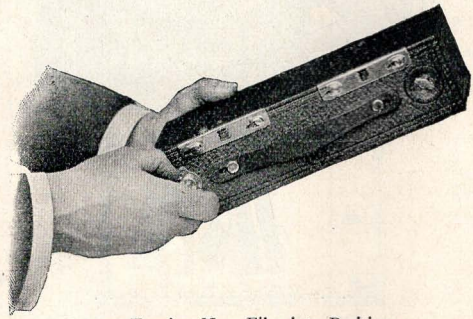


FIG. 7—Turning New Film into Position.

Repeat the foregoing operations for each picture.

SECTION 3.

Time Exposures—Interiors.

1. Put the camera in position on a tripod or some firm support (Fig. 8).

Set the camera in such a position that the finder will embrace the view desired. The diagram (p. 17) shows

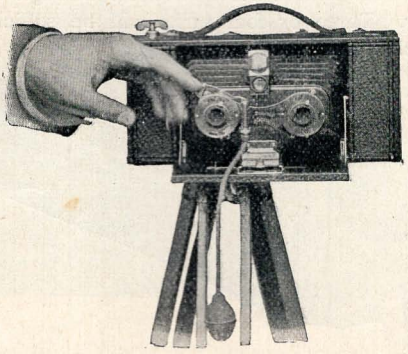


FIG. 8.—Making a Time Exposure.

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

Make the exposure with the shutter as described.

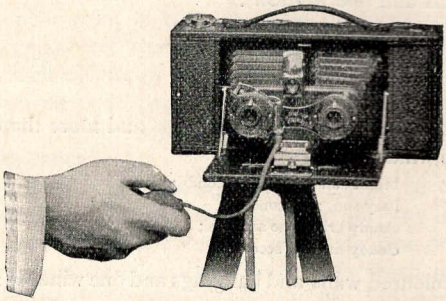


FIG. 9.—Time-exposure with Bulb.

Time Needed for Interior Exposures.

This table is for the largest stop. When the No. 2 stop is used double the time ; when the No. 3 stop is used give four times the time indicated by the table ; when the No. 4 is used give 8 times the time given in the table.

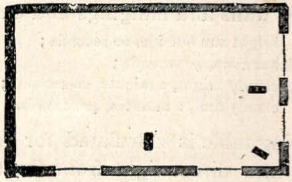


Diagram Showing the Position of the Camera.

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 one window :

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

Medium-coloured 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-coloured walls and hangings and one window :

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

Dark coloured 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-coloured walls and hangings and 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 table 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.

By means of Kodak Portrait Attachments, used with the No. 2 Stereo Brownie Kodak, head and shoulder pictures of increased size may be obtained.

With the Kodak Portrait Attachments in position, one in front of each lens, and the focus set at 8 feet, the subject should be placed 3 feet from the lens. With the focus set at 20 feet the subject should be placed 3½ feet away. With the focus set at 100 feet the subject will be in focus placed at 4 to 5 feet distance.

The attachment is simply an extra lens slipped on over the regular lens, and in no way affects the operation of the camera, except to change the focus. Two portrait attachments, one for each lens, will of course be necessary with the No. 2 Stereo Brownie. (See Price List, p. 48.) Be sure and specify the camera with which the attachment is to be used when ordering.

Time Exposures in the Open Air.

When the stop No. 4 is before 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 1 to 2 seconds will be sufficient.

WITH HEAVY CLOUDS—From 4 to 10 seconds will be required.

The above is calculated for hours from three hours after sunrise until three hours before sunset 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 indicate the proper exposure.

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.

Stops.

The stops should be used as follows :—

No. 1. For all ordinary instantaneous exposures.

No. 2. For instantaneous exposures when the sunlight is unusally strong and there are no heavy shadows—such as views on the seashore, in extremely high, dry climates, on the water, or in tropical or semi-tropical climates ; also for interior time exposures.

Nos. 3 and 4. For time exposures outdoors in cloudy weather. Not for instantaneous exposures. The time required for time exposures on cloudy days with the smallest stop will range from $\frac{1}{2}$-second to 10 seconds, according to the light. The smaller the stop the sharper the picture.

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

Flashlight Pictures.

By the introduction of Kodak Flash Cartridges, picture-taking at night has been wonderfully simplified. A Kodak Flash Cartridge, a piece of cardboard, and a match are all that is necessary.

With flash cartridges no lamp is necessary, and there is a minimum of smoke.

Many interiors can be taken with the flash cartridges that are impracticable by daylight, either by reason of

a lack of illumination or because there are windows in the 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 these flash cartridges, 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 exposure (except that the largest stop must be used) and placed on some level support where it will take in the view desired.

Uncork a flashlight cartridge and pour whatever quantity of powder may be necessary in a ridge upon a metal tray, piece of cardboard, or dish. At one end of the ridge stick a piece of the touch-paper, of which a packet is supplied with the cartridges. Ignite the end of the touch-paper, and the flash will follow in a few seconds. A white cardboard reflector placed behind the powder will increase the illumination.

The flashlight should always be placed two feet behind and two or three feet to one side of the Kodak. If placed in front or on a line with front of the Kodak, the flash will strike the lenses 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 flashlight should be at the same height as, 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.

2. Keep the lever pressed, and slide back the front a short distance with the forefinger, Fig. 10. The lever may then be released and the front pushed back into the camera box.

FIG. 11.

3. Press down on the arm locks on each side of the base as shown in Fig. 11. The base will then close readily.

PART III.

Removing the Film.

No dark room is required in changing the spools in the No. 2 Stereo Brownie Kodak.

The operation can be performed in the open air, but to avoid all possibility of fogging the edges of the film it should be performed in a subdued light.

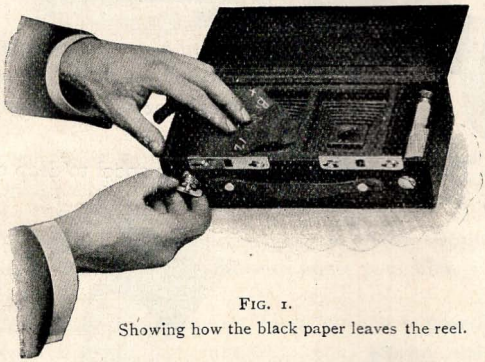


FIG. 1.
Showing how the black paper leaves the reel.

1. When the last section of the film has been exposed give the key about a dozen extra turns. This covers the film with the black paper.

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

3. Open the back as described in Part I. Wind up all the black paper and stick down the loose end with

the gummed slip of paper which will be found on the empty spool. Pull out the winding key to disengage the spool (Fig. 2), and turn the cam lever at the other end.

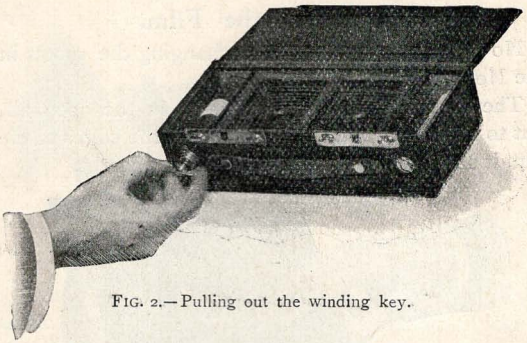


FIG. 2.—Pulling out the winding key.

4. Turn the camera, and allow the spool to drop out (Fig. 3).

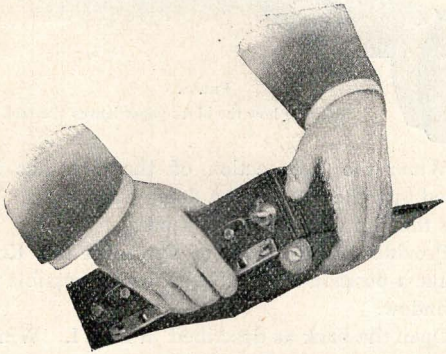


FIG. 3.—Dropping the Spool.

5. Now take the empty spool from the recess on the left side of the camera, and transfer it to the winding side, placing the empty spool with the slotted end toward the key.

6. Load as described in Part I.

The exposed roll can now be sent to us for finishing, or you can do the developing and printing yourself.

DON'T

Don't ignore a single point in this Manual. Read it from cover to cover. It will save you many mistakes.

Don't make snap shots with the small stop before the lens.

Don't make snap shots indoors, on shady verandas or on dark days. You will only waste your film.

Don't forget that the film must not be exposed to white light (daylight, lamplight, etc.) for an instant until after it has been developed and washed.

Don't leave the Kodak lying in the sun.

PART IV.

Developing.

Much has been learned about development in the past year or two, and the conclusion has been reached that once the film or plate has been placed in the developer the only control we have over the quality of the negative is the length of time that the developing agent is allowed to act upon the sensitive surface. It is also true that within the limits of excessive under and over exposure the same length of time in development gives the best results. Of course, this will vary somewhat with the strength and temperature of the developer, but it is dependent upon these conditions, and not upon exposure. If the developer be of such strength and temperature that a correctly exposed film requires six minutes' development, a film which has been over or under exposed will require the same length of time in the developer—if over-exposed to build up contrast, if under-exposed because longer development would bring out no more detail and would only produce too much contrast.

For the best results in development we advise the use of the Kodak Tank Developing Machine. There is no longer any necessity for working in a dark room or waiting until evening to develop the film.

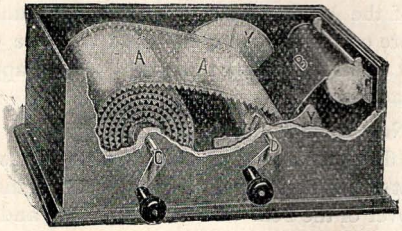
You can do your developing in daylight at any time and in any place. And more important than the ease and convenience of developing your films in this way is the fact that you will have better results than you can get by hand development. The danger of fog and uneven development is entirely eliminated.

Film may be developed in daylight in two ways—by the Kodak Tank Developer method or with the Kodak Developing Machine. Detailed directions for developing by either method will be found in the manuals which accompany the machines. The operations are briefly described in the following pages.

We recommend the Kodak Tank Developer method particularly for its simplicity and the uniformly good negatives which it gives.

Developing with the Kodak Tank Developer.

The Kodak Tank Developing Machine consists of a wooden box, a red celluloid band or apron, A, a flanged



reel, Y, two winding cranks, C, D, and a cylindrical metal tank in which the film is developed.

1. The cranks C and D must be inserted in the holes in the front of the box, the front being towards you when the spool carrier at the end of the box is to your right. Crank C must be passed through the hollow spindle. Crank D must be passed through the hub of the flanged reel Y.

2. One end of the apron is attached to the spindle through which crank C passes, by engaging the metal hooks with the lugs on the spindle. The rubber corrugations must be downward. Turn to the left on crank C, and wind the entire apron upon the spindle.

3. Insert the exposed film cartridge in the adjustable spool carrier to the right of the box in such a manner that the black paper B will lead downward from the top of the spool.

4. Film to be used in the Kodak Tank Developing Machine must be fastened to the black paper at both ends. All films are fastened at one end at our factory. For instructions how to fasten the other end see Tank Developer Manual.

5. Break the gummed paper that holds down the end of the black paper, pass the paper underneath the wire on the flanged reel Y, and turn the crank D slowly to the right until the word "stop" appears on the black paper.

6. Now hook the free end of the apron to the lugs on the flanged reel, and turn handle D half a revolution, so that the apron becomes firmly attached, and replace the cover of the box. Then turn slowly and steadily until the black paper, the film, and the apron are rolled up together on the reel.

7. Now remove the flanged reel (containing the apron, the black paper, and the film), and insert it in the tank in which the developer has been poured. The removal of the reel from the box can be done in the light of an ordinary room, but the light should not be too bright.

8. The developer reaches all parts of the film immediately, but the reel should be lifted a little two or three times to expel air bubbles, taking care, however, not to raise any part of the reel above the surface of the solution..

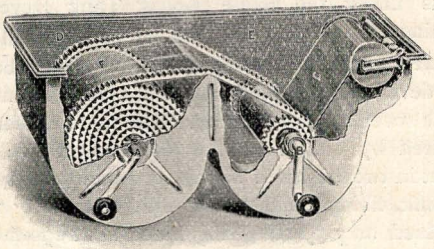
9. The developer we recommend is that supplied by us under the name Kodak Tank Developing Machine Powders. **On no account should the ordinary Kodak Developing Machine Powders be used.** The developing powders are made in different sizes for the several tank machines. The solution should be prepared by dissolving the contents of the large packet in two or three ounces of lukewarm water in the tank, filling up the tank with cold water to the embossed or projecting ring which will be found near the top of the tank, and then adding and dissolving the contents of the smaller packet. Very cold developer should not be used. The solution should be freshly mixed, and should be used once only.

10. Development should be allowed to proceed for twenty minutes. The time may be reduced to ten minutes by doubling the strength of the solution.

11. After two minutes' developing take out the reel, and put it back again upside down. After six or seven minutes repeat this inversion, and after 14 or 15 minutes reverse once more. A wire hook is supplied with the outfit for lifting the reel out of the tank.

12. When development is complete pour out the developer, fill the tank with clear cold water, and pour off, repeating the operation three times to wash the film. Then remove the flanged reel, separate the film from the black paper, and place it immediately in the fixing bath, which should be in readiness in a separate dish or tray (see p. 38).

Developing in the Kodak Developing Machine.



Kodak Developing Machine.

The Kodak Developing Machine is simple to use, but the film must be kept in motion during development.

After removal from the camera the cartridge of exposed film is inserted in the Kodak Developing Machine so that the black paper will lead from the top as shown in the figure, the transparent apron (F-F) having first been wound upon crank "A." The gummed paper which holds down the end of the black paper is then broken, the paper pulled out, and the end attached to crank "B" by slipping it under the wire guard. Crank "B" is now turned to the right until the word "stop" appears on the top of the cartridge. The end of the apron (F-F) is hooked to crank "B," the developer is poured into compartment "E," and the lid of the machine put on. The operator now turns the handle to the right slowly and steadily until the time of development, about six minutes, has expired. The film (G) winds up inside the apron, but with the face quite clear of it, thus allowing free action of the developer. The cover is then removed from the machine and the developer poured off. The machine is now filled with clean water, the cover replaced and the handle turned a few times ; the water is poured off and the operation repeated. This washes the developer from the film, which is now removed from the machine by taking hold of either the apron or the end of the black paper and pulling it out of the machine, the film being grasped when it appears and pulled free from the black paper. The film is now placed in a tray of fixing solution, prepared according to directions on page 38.

Developing in the Dark Room.

Provide the following articles :

1 Dark Room Lamp.

4 5×7 Developing Trays.

1 4-ounce Graduated Measure.

1 package of Kodak Developer Powders.

1 pound of Kodak Acid Hypo.

Also provide a pair of scissors, a pitcher of cold water, a pail for waste, and a dark room having a shelf or table.

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

Having provided such a room where, when the door is closed, no ray of light can be seen, set upon the table or shelf the dark room lamp.

The lamp gives a subdued red light, which will not injure the film unless it be held close to it.

Set the lamp on the table at least eighteen inches from, and with the side toward, the operator.

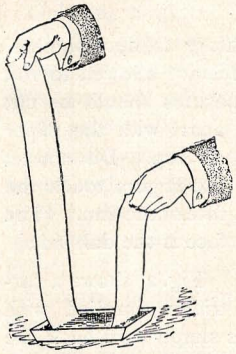
1. Fill one of the trays (first tray) nearly full of water.

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

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

4. Pass the film through the tray of clean cold water as shown in the figure, 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. 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 the development of the strip, giving sufficient length of development to bring out what detail you can in the thinnest negatives. There is no harm in having your negatives of different density. This can be set right in the printing. The difference in density does not affect the difference in contrast.



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

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

6. After completing development, transfer the film to the third tray, rinse two or three times with clear cold water, and fix as described on p. 38.

Another Way.

We advise the foregoing method of development. If desired, however, the negatives may be cut apart before development is commenced by the following method.

(*a*). Unroll the film and cut the exposures apart as shown in Fig. 1.

In unrolling the film preparatory to development, care must be taken that the end is not allowed to roll up over the paper. The exposures should be cut apart with the paper on top. Do not let the fingers touch the face of the film. (The face is the dull side.)

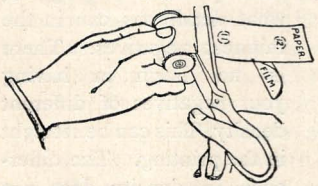


FIG. 1.—The Right Way.

Fig. 2 shows a cartridge unrolled with the film on top. To correct this simply turn back the film as indicated by the dotted lines, thus bringing the film under the paper.

(*b*). Put the exposures into the first tray one by one face down ; put them in edgewise to avoid air bells and immerse them fully.

Cover the tray with a piece of brown paper to keep out the light from the lamp.

(*c*). Take one of the exposures from the water and immerse it face down in the tray of developer (second tray). Rock it to and fro to prevent streaks and air bubbles ; in about one minute the film will begin to darken in spots, representing the lights of the picture, and in about two minutes the operator will be able to distinguish objects in the picture.

(*d*). Transfer the developed film to the third tray, and rinse two or three times with water, leaving it to soak while the next film is being developed.

Note.—A dozen negatives can be developed one after another in one portion of the developer ; then it should be thrown away and a fresh portion mixed.

Only one negative should be developed at a time until the operator becomes expert : then he can manage three or four in the tray at one time, and the developer will answer for twenty-four films before being exhausted.

As each successive negative is developed it should be put with the preceding negatives in the washing tray and the water changed twice, to prevent the developer remaining in the films from staining them.

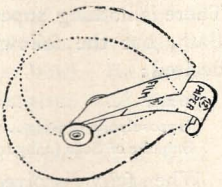


FIG. 2.—The Wrong Way.

From this stage the treatment of negatives is the same, whether they have been developed singly or in the strip, or in the Kodak Tank Developer or Kodak Developing Machine.

Fixing.

Provide some Kodak Acid Hypo and prepare an acid fixing bath, which is desirable, by dissolving 1 oz. of the Acid Hypo (see Price List, p. 48) in 8 ozs. of water. As soon as the hypo 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 the figure on page 35, 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, but not tightly enough to crack it, so that the fixing solution reaches 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 should 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
Hyposulphite of Soda	4 ounces
Sulphite of Soda (anhydrous)	80 grains

When fully dissolved add the following hardener:

Powdered Alum..	½-ounce
Citric Acid	½-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 so much discoloured by the developer carried into it as to stain the negatives.

NOTE.—If you are using trays 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 or blackened so as to be useless.

Washing.

There are several ways of washing film. It may be placed in a tray or bowl of cold water and left to soak for five minutes in each of 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. (See also particulars of the Helix Washer, p. 3 of cover.)

Drying with Clips.

Drying N. C. Film Negatives.

When thoroughly washed, remove the surplus water from the negatives with a squeegee or soft, damp cloth, or draw the strip first one side up, and then the other, across the smooth edge of a porcelain or enamelled bath or china bowl. Be sure to remove all surplus moisture and "tear-drops" before hanging up to dry.

Having removed the surplus water, affix a Kodak Film Clip to each end of the strip and hang it up to dry. 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 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 75 per cent., or upwards, of good negatives. Sometimes, however, the directions are not followed, and failures result.

To forewarn is to forearm, 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 lenses too soon on time exposure.

Under-exposure is evidenced by slowness in the appearance of the image in development and the absence of detail in the shadows. In under-exposure the sky appears black in development, while the rest of the negative remains white, with no detail.

Over-Exposure.

Caused by too much light.

The negative develops evenly, the shadows almost as fast as the high lights. If a negative be known to be over-exposed before development has begun, it can be overcome by the addition of bromide of potassium to the developer before development begins. After the

bromide has been added to the developer it should not be used for another negative unless it is known to have been over-exposed.

If care be taken to properly time the exposures the above difficulty will be avoided.

Over-Development.

Caused by leaving the negative too long in the developer or by using the developer too warm.

In this case the negative is very strong and intense by transmitted light, and requires a very long time to print. The remedy is obvious, but the negatives may be improved by reducing them in the following manner :

Reducer.

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

Water	6 ounces.
Sodium Hyposulphite	¼-ounce.
Potassium Ferri-Cyanide (saturated solution) ..	20 drops.

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

Negatives may be reduced locally by applying the above solution to the dense parts with a camel hair brush, rinsing off the reducer with clear water occasionally to prevent its running into the parts of the negative that do not require reducing.

Under-Development.

Caused by removing the film from the developer too soon.

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 be carried on as before directed, this defect is not likely to occur.

If a mistake has been made in developing, and the negative does not appear strong enough (this can be judged only by experience), the negative can be improved by intensification.

Intensification.—Lay the film in an empty tray and pour over it sufficient intensifier to fully cover it; allow it to act until the film is of one even colour and then pour the intensifier back into the bottle and wash the film in four or five changes of water for fifteen minutes.

Intensifier may be purchased already prepared or the amateur may prepare it himself by the following formula:

Intensifier.

No. 1, 75 Gr. Bichloride of Mercury (corrosive sublimate) Poison .. .. 5 oz. Water.
No. 2, 112 Gr. Iodide of Potassium .. .. 2½ ,, ,,
No. 3, 150 Gr. Hyposulphite of Soda.. .. 2½ ,, ,,

Dissolve separately and combine No. 1 with No. 2 and the resulting mixture with No. 3.

Fog.

Caused by white light in the dark room, or by holding the film too long in the lamplight. Even the

light from the lamp will fog the film after a time.

Fog causes the film to blacken all over soon after the developer is applied, and if the fog is considerable, it obliterates the image entirely.

Spots, Streaks, etc.

Air bells on the film in the developer or fixing bath are liable to cause spots ; and streaks are caused by allowing the film to remain uncovered in part by the various solutions while in them.

White, milky spots on transparent film are evidence that the negative has not been properly fixed, and the negative should be put back into the fixing bath and then re-washed.

DON'T.

Don't blame your chemicals or outfit if you do not get perfect negatives from the first cartridge. Follow instructions carefully and you are bound to succeed.

Don't try every new developer your friends recommend. Master one before experimenting with others.

Don't let hypo get out of its place—the fixing tray.

Don't put away your trays without washing.

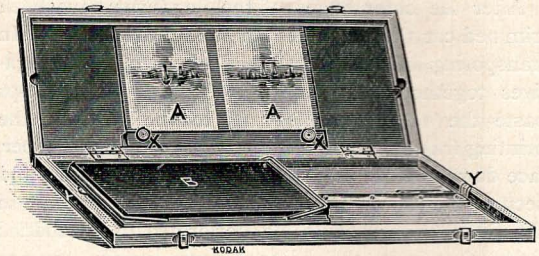
PART V.

Printing.

In making stereoscopic photographs the aim is to convey the idea of perspective. This is accomplished by transposing the pictures taken in the Stereo Brownie and blending the transposed pictures into one by viewing them through an instrument called the stereoscope. The effect of perspective is thus produced just as when one looks at the subject itself with the eyes.

It is necessary that the pictures be transposed on account of their having been taken upside down in the camera. The transposing may be done either with the negatives or the prints themselves.

The most convenient way of making stereoscopic prints is by means of the special Stereo Brownie Printing Frame (see page 45). When this frame is employed neither the negatives nor the prints need be cut apart. The necessary transposition is accomplished by first printing from one negative, then sliding the paper, which is clasped to a movable support, across the frame so that the left hand negative may be printed on the same paper to the right of the first print. This makes the transposition, and the prints will be exactly the proper distance apart for perfect stereoscopic effect. Full directions for using the Stereo Brownie Printing Frame will be found in the leaflet accompanying it.



If an ordinary printing frame be used, the negatives must be cut apart and transposed.

To transpose for printing by dividing the negatives proceed as follows:—Lay the cutting guide which accompanies the Stereo Brownie on the face of the right-hand negative so as to leave a small margin for trimming on the right-hand edge. Note some well-defined object in the middle distance which is intersected by the inner straight edge, AA. Now transfer the guide to the left-hand negative so that the line AA intersects the same object at the same point. If margins of the negatives remain on both left and right sides of the guide-mask, cut off the margin on the left. Now place the guide on the right hand negative once more at identically the same spot as before, and cut off the margin from the right-hand end. It must be remembered that the centres from which you work must be at such a point as will allow slight trimming at each side of the mask. If the first point tried does not give this result, try another. There is a common centre. Keep the mask parallel with the bottom of the film, to insure vertical lines when cutting.

After the outer edges of the negatives have been trimmed cut the negatives apart and transpose. In transposing bring the trimmed edges of both negatives together, both face up. With gummed slips paste the negatives, face up, to the glass of the printing frame. On these lay a piece of Solio paper, face down, replace the back of the printing frame, and secure the springs. The operation of putting in the Solio paper should be performed in a subdued light—that is in an ordinary room as far away as possible from any window. The unused paper should be kept in a drawer away from the light.

The back of the printing frame is hinged to permit the inspection of the print, one section at a time, without destroying its register with the negatives.

The printing frame, when filled as directed, should be laid glass side up in the strongest light obtainable (sunlight preferred) until the light passing through the negatives to the sensitive paper has reproduced the picture upon it. The progress of printing may be examined from time to time by removing the frame from the strong light and opening one part of the hinged back, keeping the other fastened to prevent the paper from shifting. The printing should be continued until the print is a little darker than the shade desired in the finished picture.

Place the print without previous washing in the following combined toning and fixing bath :

4 oz. Eastman's Solio Toning Solution.
8 oz. cold Water.

Pour the toning solution into one of the trays and immerse the prints one after another in the toning bath. Five or six prints can be toned together if they

be kept in motion and prevented from lying in contact. Turn the prints face down, and then face up, and repeat all the time they are toning. The prints will begin to change colour almost immediately—from reddish brown to reddish yellow, then brown to purple. The change will be gradual from one shade to another, and the toning should be stopped when the print reaches the shade desired.

Twelve ounces of the diluted toning solution will tone two dozen prints ; after that a new solution should be made as before.

When the proper shade has been attained in the toning bath, the prints should be transferred for five minutes to the following salt solution to stop the toning :

Salt, 1 oz. Water, 32 ozs.

Then transfer the prints to the washing tray and wash one hour in running water, or in 16 changes of water.

The prints can then be laid out and dried between blotting papers. When dry, the prints are ready to be trimmed for mounting.

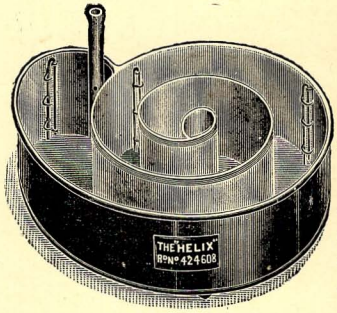
In trimming the prints choose a base line that cuts a certain point in the foreground of each print, and trim along that line. The top should then be trimmed parallel with the base line. Trim enough from the outside ends so that each print will be exactly the width of the cutting guide.

Now cut the prints apart and mount exactly a quarter of an inch apart on Stereo mounts.

PRICE LIST.

	£	s.	d.
The No. 2 STEREO BROWNIE KODAK, with fully illustrated Manual of Instruction	2	10	0
Kodak N.C. Film Cartridge for 10 Stereo exposures	0	3	0
,, ,, ,, ,, 6 ,, ,, ...	0	1	9
,, ,, ,, ,, 4 ,, ,, ("Double-two" spool)	0	1	2
No. 2 Stereo Daylight Outfit. *Contents*:—1 5-in. Tank Developer, 6 pairs of Developing Powders, ½ lb. Acid Hypo, "Aristo" Self-Toning Paper, 1-lb. Hypo, 1 dozen Mounts, 1 bottle Mountant, 1 4 in. Roller Squeegee, 1 Special Cutting Mask, 2 Trays, 1 Printing Frame and Glass, 1 Walnut Stereoscope. Complete in box	1	15	6
Leather carrying case for Kodak	0	6	6
Kodak Tank Developer, 5-in.	1	5	0
Duplicating Outfit for same (Tank, Reel and Apron).. ..	0	12	6
Developer Powders for 5-in. Tank, per half dozen	0	1	6
Kodak Developing Machine. Style E	1	13	0
Developing Powders for Style E machine, per half dozen ..	0	1	6
Kodak Acid Hypo, per ½ lb., *6d.*; per lb.	0	1	0
Kodak Film Developing Clips, 3½-inch, per pair	0	2	0
Stereo Brownie Printing Frame	0	6	6
Kodak 7×5 Printing Frame	0	1	2
Solio P.O.P., per packet	0	1	0
Solio Toning and Fixing Solution (combined) 6-oz. bottle ..	0	0	9
Dekko (gaslight), glossy only, per packet	0	1	0
Nikko, per packet	0	0	9
Kodak Photo Paste, per tube	0	1	0
Stereo Brownie Portrait Attachments, per pair...	0	3	0
Flashlight Cartridges, per half dozen, *3s. 6d.*; per dozen ..	0	6	0
"Bull's-Eye" Tripod, folds in two sections	0	8	6
"Feather" Tripod, ,, four ,, ...	0	16	6
Trays for Developing, &c., each	0	0	9
Negative Albums (indexed)	0	2	6
Mounts, best quality, bevelled edges, plate marked, in Brown, Green and Grey, per dozen, *8d.*; per 100 ..	0	4	9
Stereoscope for viewing Stereo Brownie prints, with focussing adjustment and velvet rim to hood	0	2	6
Table Stand for holding Stereoscope	0	1	0
Developing and Printing Stereo Brownie spools :—			
Developing only, six double negatives..	0	2	6
Unmounted prints, six double pictures	0	2	3
Mounted prints, six double pictures	0	3	3

The Helix Roll Film Washer.



See that your films are thoroughly washed.

The strip of film is attached to a clip at one end and passed through the coils of the tank.

Water is admitted through the pipe on the outer edge, and is discharged, after passing along the whole length of the film, through a central outlet.

The contaminated water thus flows perpetually through and out of the tank.

There is nothing so

THOROUGH & EXPEDITIOUS.

The Helix Washer is made in various sizes for the different widths of spool, and the prices range from

5/6 to 10/6.

Of all Dealers and

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If it isn't
an
EASTMAN
it isn't
A
KODAK