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Voigtländer

and it is difficult for some people to see ft. The Magnifier overcomes this trouble. By putting the Magnifier on top of the finder four times magnification is obtained.

This Magnifier is so small that it can be carried in the vest pocket. The fitting is quite simple and slip son top of the finder.

When ordering, mention "Voigtländer Finder Magnifier" and camera size.

A Last Word

We all realise that every film spool contains six possible pictures. The art consists in knowing how to produce them. If you know when and why to use the full aperture and when to stop down, when to expose for a longer or shorter time, you will get many more good negatives from a spool of film than people who just press the button and think the camera will look after everything. It is of course beyond the scope of these instructions to offer a general guide to photography, but, as we want every user of a Voigtländer camera to obtain the best from his instrument, we recommend you to study an elementary text book of amateur photography. You will be amply repaid for the slight trouble by the excellence of the pictures you take.

The Voigtländer Rollfilm Camera takes any make of roll-film, but for the best results

you should
always use

Satrap

ROLL-FILMS

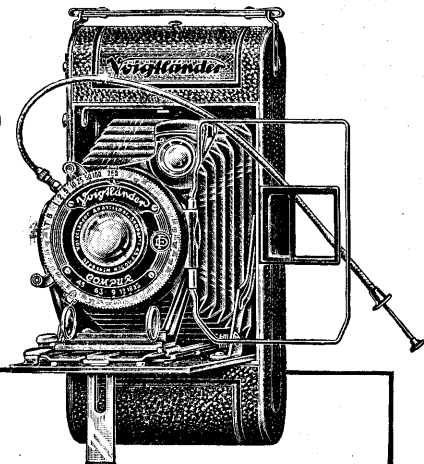
Voigtländer

Rollfilm

3 × 2 in.

3¹/₄ × 2¹/₄ in.

4¹/₄ × 2¹/₂ in.



Instructions for use

Voigtländer & Sohn

Abtiengesellschaft

Optical and fine-mechanical works

Braunschweig

Preliminary Note

Every Voigtländer camera is made to last for years provided — and this is a point to be noted — that it is handled with reasonable care. In his own interest therefore, the user should carefully study the instructions for the manipulation of his instrument. If, however, he works the various movements in a random manner without following our directions, it is easy to cause damage to apparatus of such refined construction, and the repair of any damage will naturally cost time and money. Therefore make it a rule to exercise care.

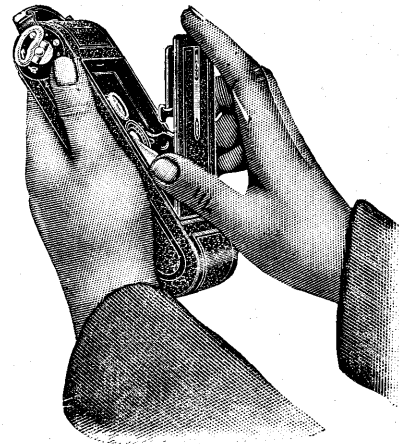


fig. 1.

To Open the Camera for use

Take the camera in the left hand (fig. 1) so that the thumb rests on the release button 1 (fig. 2). Press the release button, and the base-board by the spring action of the struts 8 (fig. 2) will swing outwards. Then with

the right hand lower the base-board to its correct position, which is at right angles to the camera body, when the struts will engage with a click.

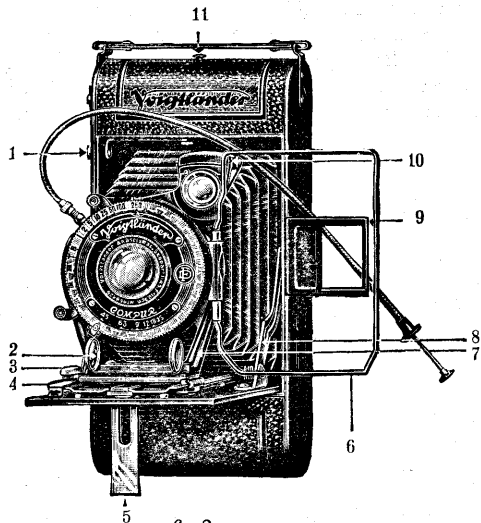


fig. 2.

The U front 7 is pulled out next. Two finger grips No. 2 are provided. Pull the front out by these finger grips until it is stopped by the screw placed on the right hand side of the baseboard, viewed from the front. Take particular care in doing this, otherwise the pictures will not be sharp, owing to the lens being out of place. Let go the two grips; the camera is now in focus for "infinity" (∞).

Focussing for near Objects

To focus the camera for near objects, press down the ribbed button 3 (fig. 2), and while pressing, move it forward to whatever distance mark on the scale 4 is desired. Then release the pressure, and it will remain in position.

Iris Diaphragm

The iris diaphragm plays an important part in sharp focussing. It is operated by the lever 14 (figs. 3, 4, 5a and 5b) attached to the shutter and allows the aperture of the lens to be reduced as required. With the Embezet and Ibsor shutters and also with the Compur shutter fig. 5b the lever 14 shows the apertures (i. e. stops) on a scale, whilst with the Compur shutter fig. 5a the aperture is indicated by a pointer 17 moving on the upper edge of the shutter.

The chief purpose of the stop is to extend the depth of focus, which question is dealt with at greater length in the section "Depth of Focus". A second use of the stop, but one seldom needed, is for stopping down in very bright light so as to avoid over-exposure of the plate. This is done if the speed of the shutter is not sufficient to cut down the exposure to the required time. By stopping down to obtain greater depth of focus, a longer exposure is always required, so that in many cases there are limits to the extent to which this can be done.

Depth of Focus

The lenses fitted to our cameras are designed to give at full aperture a picture (sharp to the edges) of an object lying in the plane which is focussed on. But when it is required to obtain sharp definition, in the one negative, of objects at different distances from the camera, the "depth of focus" needs to extend over a number of planes in the object space and so the lens must be stopped down. This applies to all lenses.

Depth of Focus Table for $f = 3\frac{1}{4}"$ (8.3 cm)

Focusing Distance	f / 4.5	f / 5.6	f / 8	f / 11	f / 16	f / 22
∞	49'7" - ∞	39'9" - ∞	27'10" - ∞	20'3" - ∞	13'11" - ∞	10'2" - ∞
30'	18'9" - 75'5"	17'2" - 120"	14'6" - ∞	12'2" - ∞	9'7" - ∞	7'8" - ∞
15'	11'7" - 21'5"	10'11" - 23'10"	9'10" - 31'10"	8'8" - 55"	7'3" - ∞	6'1" - ∞
10'	8'4" - 12'6"	8' - 13'3"	7'5" - 15'5"	6'9" - 19'3"	5'11" - 33'4"	5'1" - ∞
7'	6'2" - 8'1"	6' - 8'5"	5'8" - 9'2"	5'3" - 10'6"	4'9" - 13'7"	4'2" - 20'10"
5'	4'7" - 5'6"	4'6" - 5'8"	4'3" - 6'	4'1" - 6'6"	3'9" - 7'7"	3'5" - 9'5"
4'	3'9" - 4'4"	3'8" - 4'5"	3'6" - 4'7"	3'5" - 4'11"	3'2" - 5'6"	2'11" - 6'4"
3'	2'10" - 3'2"	2'10" - 3'3"	2'9" - 3'4"	2'8" - 3'6"	2'6" - 3'9"	2'4" - 4'1"

$f = 3\frac{1}{2}"$ (9 cm)

Focusing Distance	f / 6.3	f / 8	f / 11	f / 16	f / 22
∞	41'8" - ∞	32'10" - ∞	23'10" - ∞	16'5" - ∞	11'11" - ∞
30'	17'6" - 105"	15'9" - ∞	13'4" - ∞	10'8" - ∞	8'7" - ∞
15'	11'1" - 23'2"	10'4" - 27'3"	9'3" - 39"	7'11" - 145"	6'9" - ∞
10'	8'1" - 13'1"	7'9" - 14'3"	7'1" - 16'11"	6'4" - 24'6"	5'6" - 54"
7'	6' - 8'4"	5'10" - 8'9"	5'5" - 9'9"	5' - 11'10"	4'6" - 16"
5'	4'6" - 5'8"	4'4" - 5'10"	4'2" - 6'3"	3'11" - 7"	3'7" - 8'3"
4'	3'8" - 4'5"	3'7" - 4'6"	3'6" - 4'9"	3'3" - 5'2"	3'1" - 5'10"
3'	2'10" - 3'2"	2'9" - 3'3"	2'8" - 3'5"	2'7" - 3'7"	2'5" - 3'11"

Depth of Focus Table for $f = 4\frac{1}{8}"$ (10.5 cm)

Focusing Distance	f / 4.5	f / 5.6	f / 6.3	f / 8	f / 11	f / 16	f / 22
∞	79'9" - ∞	64'1" - ∞	56'10" - ∞	44'11" - ∞	32'8" - ∞	22'5" - ∞	16'4" - ∞
25'	19'1" - 36'3"	18'1" - 40'10"	17'5" - 44'2"	16'2" - 55'7"	14'3" - 101'8"	11'11" - ∞	11' - ∞
12'	10'5" - 14'1"	10'2" - 14'8"	9'11" - 15'1"	9'6" - 16'2"	8'10" - 18'8"	7'11" - 25"	7' - 42'1"
8'	7'4" - 8'10"	7'2" - 9'1"	7'1" - 9'3"	6'10" - 9'8"	6'6" - 10'3"	6' - 12'11"	5'5" - 15'1"
6'	5'7" - 6'5"	5'6" - 6'7"	5'5" - 6'8"	5'4" - 6'10"	5'1" - 7'3"	4'9" - 8'	4'5" - 9'2"
5'	4'9" - 5'4"	4'8" - 5'5"	4'7" - 5'5"	4'6" - 5'7"	4'4" - 5'10"	4'2" - 6'4"	3'11" - 7"
4'	3'10" - 4'2"	3'9" - 4'3"	3'9" - 4'3"	3'8" - 4'4"	3'7" - 4'6"	3'5" - 4'9"	3'3" - 5'2"

$f = 4\frac{1}{2}"$ (11.4 cm)

Focusing Distance	f / 4.5	f / 5.6	f / 8	f / 11	f / 16	f / 22
∞	93' - ∞	75' - ∞	52'6" - ∞	38'2" - ∞	26'3" - ∞	19'1" - ∞
25'	19'9" - 34"	18'10" - 37'3"	17' - 47'1"	15'2" - 70'6"	12'11" - 400"	10'11" - ∞
12'	10'8" - 13'8"	10'5" - 14'2"	9'10" - 15'5"	9'2" - 17'3"	8'4" - 21'6"	7'6" - 30'8"
8'	7'5" - 8'8"	7'3" - 8'11"	7' - 9'4"	6'8" - 10'	6'2" - 11'3"	5'8" - 13'4"
6'	5'8" - 6'5"	5'7" - 6'6"	5'5" - 6'9"	5'3" - 7'	4'11" - 7'8"	4'8" - 8'6"
5'	4'9" - 5'3"	4'8" - 5'4"	4'7" - 5'6"	4'5" - 5'8"	4'3" - 6'1"	4' - 6'7"
4'	3'10" - 4'2"	3'10" - 4'2"	3'9" - 4'4"	3'8" - 4'5"	3'6" - 4'8"	3'4" - 4'11"

Depth of Focus Table for $f = 4\frac{3}{4}$ " (12 cm)

Focusing Distance	f/6.3	f/8	f/11	f/16	f/22
∞	74' — ∞	58'2" — ∞	42'4" — ∞	29'2" — ∞	21'2" — ∞
25'	18'9" — 37'6"	17'7" — 43'4"	15'10" — 59'8"	13'6" — 160'	11'7" — ∞
12'	10'4" — 14'3"	10' — 15'	9'5" — 16'6"	8'7" — 20'	7'9" — 26'7"
8'	7'3" — 8'11"	7'1" — 9'2"	6'9" — 9'9"	6'4" — 10'10"	5'11" — 12'6"
6'	5'7" — 6'6"	5'6" — 6'8"	5'4" — 6'11"	5' — 7'5"	4'9" — 8'2"
5'	4'9" — 5'4"	4'8" — 5'5"	4'6" — 5'7"	4'4" — 5'11"	4'1" — 6'5"
4'	3'10" — 4'2"	3'9" — 4'3"	3'8" — 4'4"	3'7" — 4'7"	3'5" — 4'10"

Depth of Focus Table for $f = 5\frac{5}{16}$ " (13.5 cm)

Focusing Distance	f/4.5	f/5.6	f/6.3	f/8	f/11	f/16	f/22
∞	130'10" — ∞	105' — ∞	93'4" — ∞	73'9" — ∞	53'9" — ∞	36'10" — ∞	26'9" — ∞
30'	24'5" — 38'9"	23'5" — 41'9"	22'9" — 43'9"	21'5" — 50'2"	19'4" — 67'1"	16'8" — 152'6"	14'3" — ∞
15'	13'6" — 16'11"	13'2" — 17'5"	12'11" — 17'10"	12'6" — 18'9"	11'9" — 20'8"	10'9" — 24'10"	9'8" — 33'
10'	9'4" — 10'10"	9'2" — 11'	9'1" — 11'1"	8'10" — 11'6"	8'6" — 12'2"	7'11" — 13'6"	7'4" — 15'7"
8'	7'7" — 8'6"	7'5" — 8'7"	7'5" — 8'8"	7'3" — 8'11"	7' — 9'4"	6'8" — 10'1"	6'3" — 11'2"
6'	5'9" — 6'3"	5'8" — 6'4"	5'8" — 6'5"	5'7" — 6'16"	5'5" — 6'8"	5'3" — 7'1"	5' — 7'7"
5'	4'10" — 5'2"	4'9" — 5'3"	4'9" — 5'3"	4'8" — 5'4"	4'7" — 5'6"	4'5" — 5'8"	4'3" — 6'
4'	3'11" — 4'1"	3'10" — 4'2"	3'10" — 4'2"	3'10" — 4'2"	3'9" — 4'3"	3'8" — 4'5"	3'6" — 4'7"

When focussing on a given distance each lens aperture corresponds with a certain range of depth of focus, which becomes greater as the lens is stopped down. The aim of the photographer is to adjust the stop and the distance focussed on so that as much as possible of the subject falls within this range (or region) of depth of focus.

It is a matter of fact that, when stopping down, the depth of focus extends far less towards the camera than towards the extreme distance. For this reason focussing is done, at the outset, on objects which are relatively near. This applies also when there is little scope for stopping down on account of the light or movement of the subject, since an unsharp foreground conflicts with the natural sensation experienced by our eyes, which are accustomed to perceive a near object more clearly than one a long way off.

The accompanying tables show approximately the distribution of depth of focus: they give the depth of focus (in feet and inches) when focussing on various distances and using various stops.

Shutters

The camera can be supplied with either of the three shutters, Embezet, Ibsor (except 3 × 2 size), or Compur.

Embezet Shutter (fig. 3)

Snap Exposures: The Embezet shutter is an automatically working shutter and does not need setting before each exposure. The release is worked by pressing lever 12 or the wire release which is fitted into 13 (fig. 3). The speed is regulated by means of a speed dial 15, and, as shown by the markings, instantaneous exposures can be given from $\frac{1}{25}$ up to $\frac{1}{100}$ second. It is only necessary to set to the desired speed on the dial by turning it round. This done, the release lever 12 or the wire release fitted into 13 is worked and the exposure made.

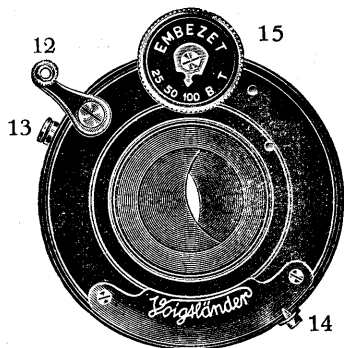


fig. 3.

Time Exposures: Turn dial 15 to the right until letter *T* is opposite the pointer on the dial. The first action of the finger release (lever) 12 or wire release opens the shutter; a second pressure closes it again. The letter *B* signifies short time exposures, and by first adjusting the dial 15 and then pressing down either finger release 12 or wire release the shutter opens and remains thus for such time as the pressure is exercised.

Ibsor Shutter (fig. 4, not fitted to 3 x 2 size)

Snap Exposures: The Ibsor shutter is an automatically acting shutter requiring no setting. To release, press down finger release 12 (fig. 4) or operate wire release fitted into 13. Speed is regulated by dial 15, and according to the speed markings instantaneous exposures from 1 second up $\frac{1}{125}$ second are possible; it is only necessary to turn round speed dial and to arrange the desired speed. This done, press finger on lever 12 or operate wire release.

Time Exposures: Turn dial to the left or right till letter *T* appears opposite the stationary pointer. The first action of the finder or wire release opens the shutter;

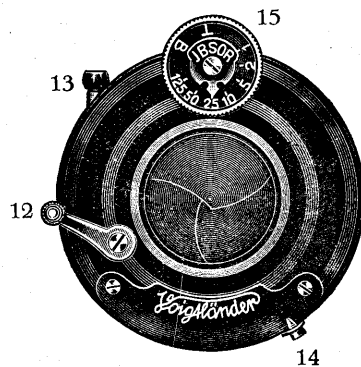


fig. 4.

the second like movement shuts it again. Letter *B* stands for short time exposure. By adjusting dial 15 at *B* and pressing finger 12 or wire release, the shutter opens and remains open for such time as the pressure is exercised.

Compur-Shutter B (fig. 5)



fig. 5.

Key to the Working Parts

The shutter is set (i. e. wound) by the trigger *a* and released by the trigger *b*. The flexible cable release is screwed in at *c*. The shutter is set to the various speeds by turning the ring *d*. The pointer *e* is for adjusting the lens aperture. The button *f*, with arrow engraved on it, is an adjustment for the self-timing mechanism. By moving *f* in the direction of the arrow, after setting the trigger *a*, this latter is released for a second operation, which sets the self-timer.

Time Exposures

For these the shutter is everset: there is no need to operate the trigger *a*. For time exposures of considerable length, the ring *d* is turned so as to being the letter *T* opposite the index mark. The shutter then opens on pressing the flexible cable release screwed in at *c*, or the trigger *b*, and remains open until pressing a second time. This is the method to use when setting the shutter open for focussing on the ground glass.

For shorter time exposures — over 1 sec. to a few seconds — the letter *B* is turned to the mark. By pressing at *b* or *c* the shutter opens, and remains open until pressure is relaxed.

Instantaneous Exposures

If the picture is to be focussed on the ground glass, the ring *d* is turned to *T*. This allows the shutter to open when pressing either release. The ring *d* is then turned to the desired instantaneous speed, the shutter thereby automatically closing. The shutter can now be set (wound) by moving the trigger *a* in the direction of the arrow. As for time exposures, the exposure is given by pressure (once only) at *b* or *c*.

The Self-timer

To take one's own portrait or include oneself in a group or landscape, the shutter is first set with the trigger *a* as already described. The button *f* is then moved along the rim in the direction of the arrow, and the trigger *a* can now be operated again to set the self-timer. When thus set, the shutter is released in the usual way by pressing the trigger *b* in the direction of the arrow, or operating the flexible cable release at *c*. But the shutter does not operate until the expiration of about 12 sec., then giving the exposure for which it has been set. The interval of 12 sec. permits the operator to take his place in the group, or get ready. Following the exposure, the shutter returns to the condition for ordinary use, so that the special adjustment described above must be made for each exposure with the self-timer.

The self-timer may be used for all the marked instantaneous speeds except the highest ($\frac{1}{250}$ or $\frac{1}{200}$ sec.).

The self-timer is not embodied in the 3" x 2" camera.

Exposure

The right exposure, which is the most essential factor in photography, depends on three points:

1. Aperture of the iris diaphragm.
2. Speed of the plate.
3. Value of the actinic light.

We supply with each camera an exposure calculator, with which the exposure may be quickly and easily ascertained.

Finders

The Voigtländer Rollfilm camera is fitted with two different kinds of finders which are used as follows:

Direct-vision Finder: This consists of a wire-frame 6 (fig. 2) attached to the right-hand side of the lens-front (viewed from the front) and an eye-piece 9 placed

on the right-hand long side of the camera-back. When not in use, the wire-frame encloses the lens panel. It is brought into the working position by turning it outwards through an angle of 180° and is then held in position by springs. The eye-piece has likewise a spring hinge, and for use, is turned up parallel with the wire-frame. (In the case of the 3×2 Rollfilm the eye-piece slides into the back body of the camera. For use, it is drawn out until it clicks distinctly in position.) In order to include the correct part of the subject, the eye must be placed so that the outlines of the frame coincide with the mask of the eye-piece.

The direct-vision finder shows the boundaries of the picture with great accuracy. The only case in which it does not do so is that of very near objects, owing to the unavoidable greater difference between the positions of lens and finder relatively to the subject. A further advantage is that the camera is used at the eye level, thereby conducing to better perspective in most cases. For these reasons it is well to use the direct-vision finder whenever possible.

Brilliant Finder. When taking pictures at the level of the chest, the brilliant finder 10 (fig. 2) is used, in the normal position for upright pictures, and, after turning through a right angle, for oblong pictures. The picture is viewed from the normal viewing distance of about 10 inches, taking care to place the eye directly above the centre of the finder. The mask on the top of the finder is specially designed to show both the upright and oblong pictures.

The quite small but bright picture in the finder can be magnified three or four times by fitting on a Finder Magnifier (see „Useful Accessories” at end of this booklet). Before closing the camera the brilliant finder must always be in its normal position (for upright-pictures), otherwise the camera will be damaged when closing it.

A little advice on how to hold the camera

The proper field of the hand-camera is in making instantaneous exposures of living subjects and thus featuring them in unconstrained naturalness. Such interesting subjects are constantly met with when going about but are rendered in pictures only when exposures are made without a lot of consideration. Obviously some aptitude and, especially, a certain amount of practice are called for. It is therefore well to become thoroughly familiar with the method of working when making the exposures in the hand.—With the camera opened and focussed on the correct distance, take up a firm position since any slight wobble of the camera during the exposure will result in pictures with doubled outlines. When taking upright pictures, the base-board is held with the left hand, the thumb on top and the four fingers underneath, whilst for oblong pictures the tip of the thumb is allowed to rest on the upper edge of the base-board and the four fingers on the lower edge. When working with the direct-vision finder, extra security is obtained by pressing the back of the camera against the head. In the case of an upright picture the view is then seen through the sight with the left eye, the right eye being covered by the camera. When using the brilliant finder, the camera is held at the level of the chest, the back being supported against the body.

The right hand is then at liberty for focussing and operation of the shutter. The best way to expose is with a flexible cable held in a wide curve, but the shutter must always be released carefully—never with a jerk. If one stands perfectly still and holds the breath whilst making the exposure, $\frac{1}{25}$ of a second may easily be given with the camera held in the hand. Exposures for longer times will not be successful unless the camera is firmly placed on a post, back of a chair, the knee or other solid support. For setting up the camera (for upright pictures) on a level

surface such as a table, support the base-board by the foot 5 (fig. 2) which folds flat when not in use.

For subjects which allow time for preparation beforehand and which require longer exposures, a firm tripod should be used whenever possible. Focussing and the selection of the subject may then be carefully done; the camera is thus steady and firm during the exposure, and also there is less likelihood to omit attention to details than when using the camera in the hand. For use on a tripod, the camera is provided with two bushes for the tripod screw, one for upright and the other for oblong pictures. When first screwing to the tripod, make certain that the tripod screw is not too long for the bush, otherwise the thread is easily damaged. If the screw on the tripod is too long it must be shortened or a little packing fitted.

Important Notice. Closing the Camera

Before closing the camera. Every part of the camera has to be in its normal position.

1. See that the BRILLIANT FINDER IS IN POSITION as used for vertical pictures.
2. See that the FRAME FINDER IS IN ITS RESTING PLACE.
3. See that the RADIAL LEVER IS RIGHT HOME on the infinity mark.
4. See that the U FRONT IS RIGHT HOME IN THE BODY of the camera.

It is advisable to push the front home gently to allow the air to escape from the bellows. If the folds of the bellows should by accident become blown out first put them right.

Proceed now to press the two struts downwards, and the base-board can be closed. (In the 3×2 size the struts should be pressed towards each other.) — The brilliant finder collapses automatically.

These operations should be performed carefully in succession and not hastily.

Loading the camera

Loading, as this operation is briefly termed, may be done by daylight, as the film itself is protected against harmful action of light by several layers of opaque paper. Nevertheless it is of course well not to load the film in direct sunlight, but at any rate in the shadow of one's body.

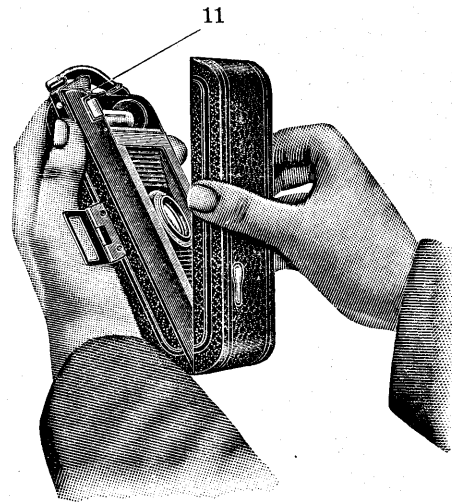


fig. 6.

To open the film chambers, i.e. the back part of the camera, take it in the left hand so that the base-board (closed) rests on the palm of the hand, the red window on the other side being in view. Then, with the $3\frac{1}{4} \times 2\frac{1}{4}$ and $4\frac{1}{4} \times 2\frac{1}{2}$ sizes, lift the eye-piece of the frame finder, otherwise it might cause damage to the leather finish of the camera back.

On the top end of the camera just under the carrying strap will be seen a little locking bolt 11 (fig. 6). Slide this along in the direction of the arrow, i. e. towards you, with the first finger of the left hand. The back cover of the camera, which is hinged at the lower end, can now be turned down, as shown in fig. 6.

Now lay the camera in front of you with the open back cover on the left (fig. 7), loading being most readily done in this way. After a time you can do this with the camera laid on the hand instead of a firm support. —

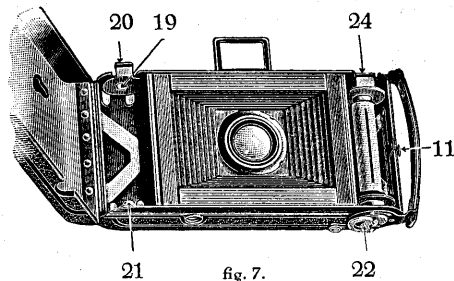


fig. 7.

We now have the two film chambers in view, one on the left and the other on the right. The new film spool is placed in the left-hand one, and the empty core of a similar spool in the right-hand one. It is best to insert the empty core first (a new camera already contains one) by sliding the clip 24 out from the camera and putting in the empty spool so that the stub fitted to the inner part of the winding key 22 fits exactly in the slot cut in the stem of the spool. Now slide the clip 24 back into place, slightly raising the empty spool so that the round stub on the clip fits into the hollow wooden core. Now turn the empty spool slightly with the winding key, so that the longer slit in the wooden core comes into view.

The full spool of unexposed film is placed in the left-hand chamber in the same way, except that the operation is much simpler, as both the pivots (19 and 21) are round. The only item to note — but a most important one — is to lay in the spool so that the taper end of the red wrapping paper points to the right when it is seen on the upper side of the spool.

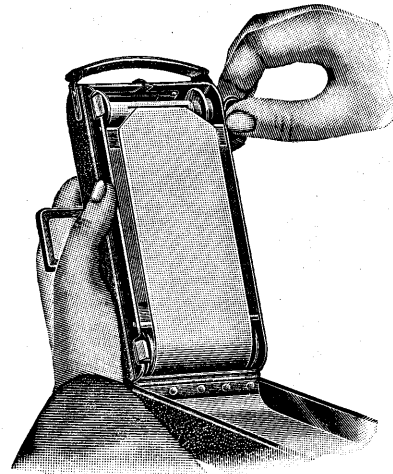


fig. 8.

Now, with the finger nail, tear off the white gummed strip encircling the new spool and draw the end of the red paper band to the right as far as the empty spool, slip it into the wider slit of the empty spool (fig. 8) and wind it round the latter by giving about a half-turn to the winding key. In doing this, take special care not to let the paper band get askew on the spool; the two edges should be exactly evenly placed, otherwise the film will

wind crookedly. Now close the back of the camera again carefully by pressing the two halves of the camera together and, when this has been done, turn the winding key slowly until you see, in the red window in the camera back, first a hand, then some dots and then the figure 1.

The camera is now ready for the first exposure. For the second and further exposures the winding key is



fig. 9.

turned so that the Nos 2 to 6 successively come into view at the window.

It is very annoying to find, on development, that two exposures have come on top of each other on the same section of film. As a safeguard against the loss of two possibly irreplaceable subjects, make it a rule to wind on the film immediately after each exposure. Also, it is scarcely necessary to point out that, when the camera is

loaded, the shutter should be opened only for the purpose of taking a picture; any accidental exposure will spoil a section of film.

The figure 6 having appeared in the window and an exposure having been made, the whole film has been exposed. Now turn on the winding key until the end of the red paper band is seen to pass by under the red window, whereupon the camera may be unloaded.

Unloading the Camera

The winding key is turned until the window is clear, i.e. until the paper band has been wound off. It is impossible to over-wind when doing this. Now open the camera back, as already described under "Loading the Camera". Next, hold the outer coils of the red paper in place with the fingers of the left hand and give a few turns of the winding key with the right hand until the paper is wound fairly firmly. The paper should not be wound too tightly, because the film may become marked by the friction of one coil on another. Now remove the spool (fig. 9) in the same way as when putting it in (see "Loading the camera"), but holding the paper band firmly so that the spool cannot become unrolled. Now secure the spool with the gummed strip provided for the purpose on the end of the band. All this may be done in daylight, but of course, whenever avoidable, not in direct sunlight, but in the shadow of the body.

When packing the exposed film, it is best (presuming that a fresh spool is being inserted) to wrap it in the paper of the new spool and to put it in the carton of the latter. To prevent confusion between exposed and unexposed films, part of the package of the former should be marked in pencil.

The new empty spool in the lower chamber of the camera is now removed and inserted in the upper chamber as already directed under "Loading".

Sundry Hints

In time the instrument will accumulate dust which naturally will adhere to the lens. This is easily removed with a clean handkerchief which has already been through the wash and has no dressing in it.

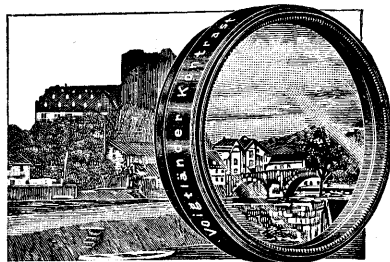
In colder climates the change of temperature between outdoor and indoor is considerable and very often results in the steaming of the lens. It is best then to wait until the moisture has apparently disappeared from the lens and then proceed to wipe lightly with the handkerchief.

In very bad cases it may happen that also the inner surfaces of the lenses may collect moisture. Then carefully unscrew the two halves of the lens from the shutter. On no account must any attempt be made to unscrew the separate parts of the front and rear lens elements, for it is beyond the skill of even an experienced amateur to put them together again so perfectly as to restore their original optical quality. Anyone who tries the experiment in disregard of this caution will discover to his chagrin the extreme precision with which the assemblage of a lens of this kind is done.

Very often dust collects between the folds of the bellows. A good camel hair brush will remove all this dirt. This is best done by turning up the camera back, opening the shutter, unscrewing the lens cells and then applying the brush to the inside of the bellows. By blowing at the same time through the open shutter the dust is readily dislodged especially if the outside of the bellows be simultaneously tapped gently with the finger.

Useful Accessories

The following accessories are not absolutely necessary, but will greatly improve the final results.



Yellow Filters

Many amateur photographs are unpleasing on account of such defects as bad skies, black flowers in a meadow

scene, grey fruit blossoms against a white sky, glaringly white eyes or pronounced freckles in a portrait.

If you would obtain the natural effects of clouds, flowers and landscapes you must use an orthochromatic plate or film. The same applies to getting good renderings of blue eyes, blond hair and coloured clothing and to subduing the appearance of freckles. But in using such plate or film it is indispensable to employ a good yellow filter on the lens.

Voigtländer Yellow Filters fitting exactly any Voigtländer lens are supplied in two grades. For ordinary exposures use the Alpha Filter (2×); for more pronounced effect, the Beta Filter (5×). When ordering please state: Camera (Rollfilm 3"×2", 3¹/₄"×2¹/₄" or 4¹/₄"×2¹/₂"'); lens "Voigtar", "Skopar", or "Heliar", and density "Alpha" or "Beta" whichever is required.



Finder Magnifier

The picture in the Brilliant finder is necessarily rather small