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Leitz

Leica Camera Model IIIa

for single (still) pictures on standard cinematograph film strips

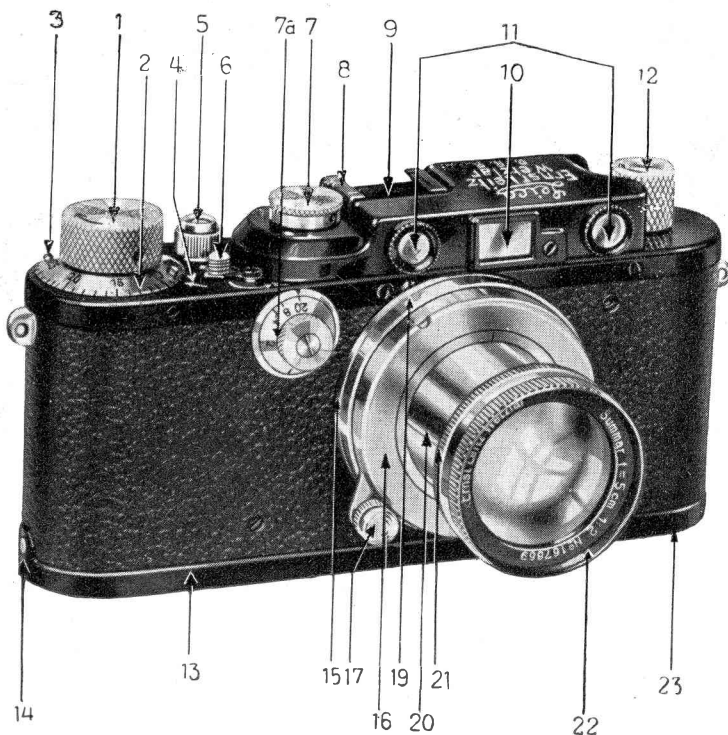


Fig. 1

1. The external parts of the Leica Camera

1. Winding knob for simultaneous winding of film and setting of shutter.
2. Counting disc, automatically recording the number of exposures.

3. One of the two lugs by means of which the counting disc is turned anti-clockwise and against the direction of the arrow on the winding knob for zero setting.
4. Counting Arrow, indicating the number of photographs taken.
5. Press Button, to which may be screwed a Wire Release (after the milled protective ring has been removed).
6. Reversing Lever for engaging (towards A) and disengaging (towards R) the automatic coupling of film advance and shutter mechanism before and after exposures have been made (before re-winding film).
7. Shutter-speed Dial, for adjustment of speed required (to be set after winding of shutter) — See (1).
- 7a. Adjusting dial for the slow instantaneous speeds from $1-\frac{1}{8}$ sec.
8. Index Arrow, for figures of Speed Dial (7).
9. Clip, to hold Universal View-finder, etc.
10. View-finder showing size of image.
11. The two Object Glasses of the Range Finder, the mechanism of which is interconnected with the focusing mount of the lens.
12. Back-winding Knob (extensible) to wind the film back into spool chamber after exposure.
13. Camera Lid.
14. Pin over which the camera lid is hooked at one end. (See also 23.)
15. Lens changing flange for interchange of Leica lenses of various focal lengths.
16. Distance Scale. (Not visible.)
17. Lens focusing lever with catch for infinity, actuating the adjustment of range finder and focusing of lens simultaneously (index not visible in illustration).
19. Depth of focus collar. (Scale not visible, see Fig. 41.)
20. Tubular Socket of Lens, to be pulled out for photographing, when the lens is locked in a bayonet catch by turning it to the right (clockwise).
21. Ring or lever with index line for adjusting aperture.
22. Front of lens mount.
23. Swivel (not visible) for opening and closing camera lid (see Fig. 2).

2. Opening the Leica Camera

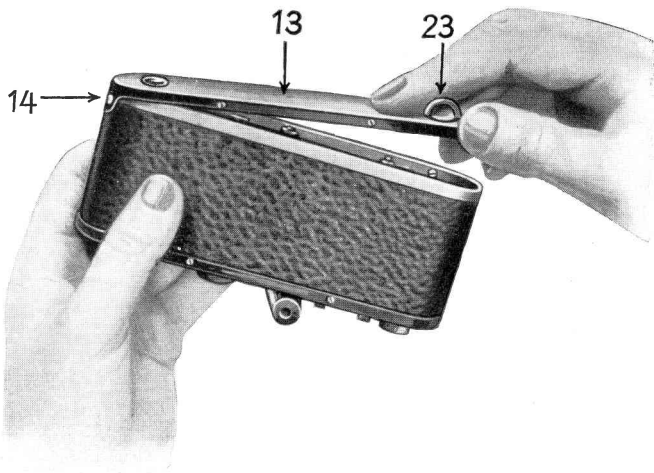


Fig. 2

Turn the camera upside down and open lid **13** by raising swivel **23** and turning same from "closed" to "open" as far as it will go. Lift lid and then unhook at pin **14**.

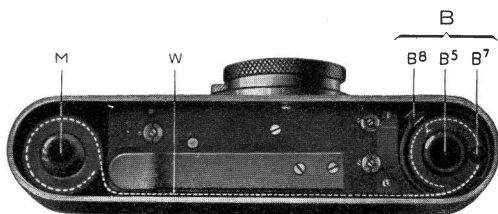


Fig. 3

The interior then presents the appearance as shown in Fig. 3. Now withdraw the spool chamber **B** by the milled knob

B. The Leica Spool Chamber Model B

1. Its Components

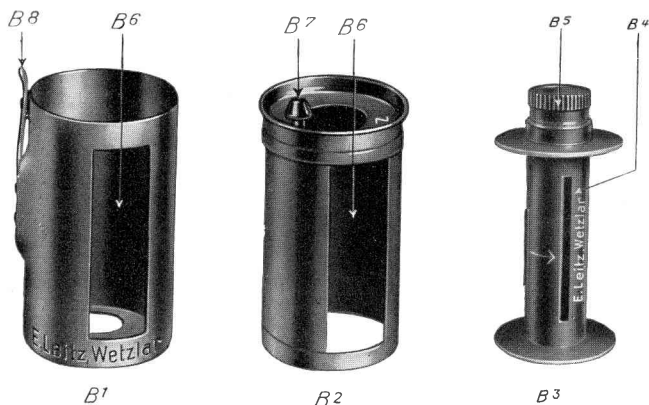
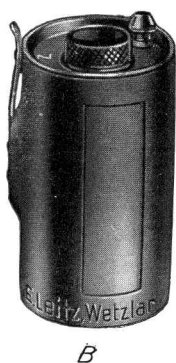


Fig. 4 and 5



- B = Complete Spool Chamber Model B
- B¹ = Outer Shell
- B² = Inner Shell
- B³ = Centre Spool
- B⁴ = Slot of Centre Spool
- B⁵ = Milled Knob of Centre Spool
- B⁶ = Slots of Spool Chamber
- B⁷ = Knob of Spool Chamber
- B⁸ = Safety Spring

The Leica Chamber Model B is of cylindrical form and consists of three components: the Outer shell B¹, the Inner shell B², and the centre spool B³.

The guide-groove on the inner shell and the pin inside the outer shell (opposite the safety spring, which is not visible in illustration) make the opening and closing of the chamber mechanical.

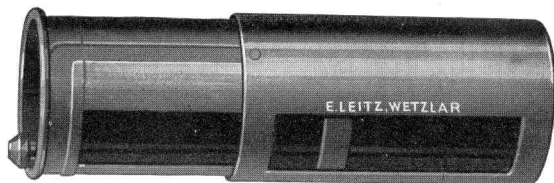


Fig. 6. Leica Spool Chamber Model B open

As will be seen in the illustration, Fig. 6, the guide-groove first runs along the inner shell and then terminates in a semi-circle at the upper rim of the shell. The guide-pin of the outer shell then constrains the inner shell to be moved along the slot in the required manner, thus:

1. Introduce the inner shell with spool in the outer shell until its rim comes to a stop, **the slot openings being then one above the other;**
2. **Turn inner shell to the left (anti-clockwise)** up to the limit stop, when the safety spring will then engage.

Again, the chamber **can only be opened** by first slightly lifting the safety spring, turning the inner shell to the right (clockwise), and then withdrawing it, i.e. by going through the same process in exactly the reverse order. (See Fig. 7.)

2. Loading Spool Chamber Model B by subdued daylight

(Daylight loading film spools)



Fig. 7. How the spool chamber B should be opened

1. Open Spool Chamber. To this end release with the index finger of the left hand the safety spring **B**⁸ by pulling it backwards (Fig. 7) and turn the inner shell with the right hand at the knob towards the right (clockwise), to the end of the movement. Then withdraw inner shell.
2. Remove the centre spool from the inner shell and keep it as it is only required for darkroom loading.

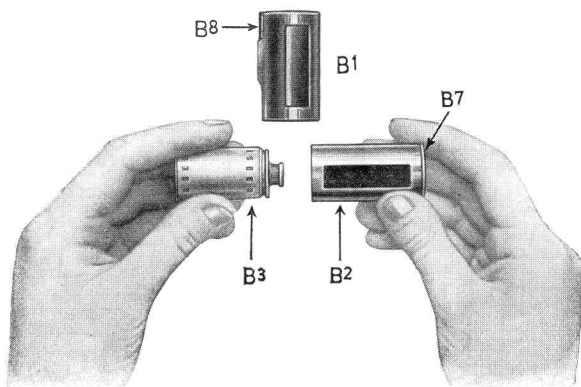


Fig. 8

3. Insert daylight loading film spool into the inner shell with the milled knob first, and so that the seal lies in the slot.

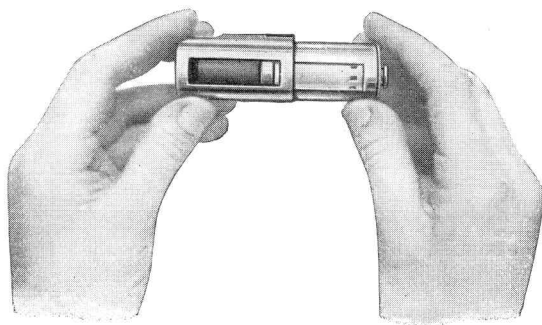


Fig. 9

4. Put both together into the outer shell, the two slots superimposing; break seal and withdraw paper strip and the beginning of the film to about 2 inches through the open slot of the chamber.

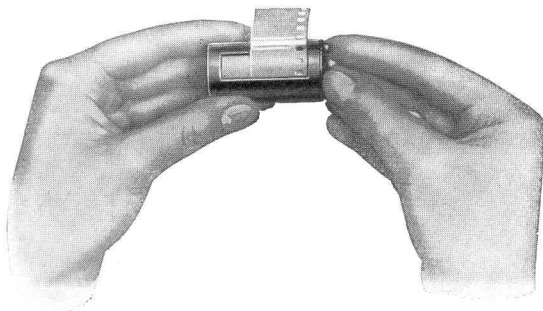


Fig. 10

5. Close spool chamber by giving the inner shell half a turn to the left, when the safety spring will engage at the mark **Z**; now withdraw the paper strip only, holding the film so that it does not come out together with the paper.
6. If the loaded chamber is not to be used in the camera immediately, it should be kept in the aluminium container so that it is not exposed to daylight too long. With highly sensitive Leica films the projecting beginning of the film conducts the light into the spool chamber and thus causes fogging. This is not the case with backed films or films having an intermediate layer against halo. For this reason we particularly commend these brands.

Daylight loading Leica films are supplied by Mimosa and Gevaert, each spool containing a film strip $5\frac{1}{4}$ ft. long, sufficient for 36 exposures of the Leica size 24×36 mm. Re Agfa and Perutz Leica cartridges see below.

Loading of camera, exposures and unloading of camera, see pages 15—19.

3. The Leica cartridges

for daylight loading and unloading

The Leica spool chamber Model B may be loaded into the camera in daylight and may also be removed in daylight, but the film cannot be taken out of the spool chamber

in daylight, so that in special circumstances one may need a larger number of spool chambers in order to avoid unloading them in the darkroom.

In such cases, the Leica cartridges of Messrs. Agfa, Gevaert, Hauff, Kodak and Perutz provide a satisfactory solution. These firms supply their films in special Leica cartridges for daylight loading. The cartridge is used once only and is opened in the darkroom for developing the film.

The loading of the Leica cartridges into the camera, and also the unloading, is done in the same way as a loaded spool chamber Model B. For further details see pages 15—19.

Please note. Leica cameras which are not yet equipped with the lock V² (see Fig. 11) must have this part fitted if the Leica cartridges are to be used.

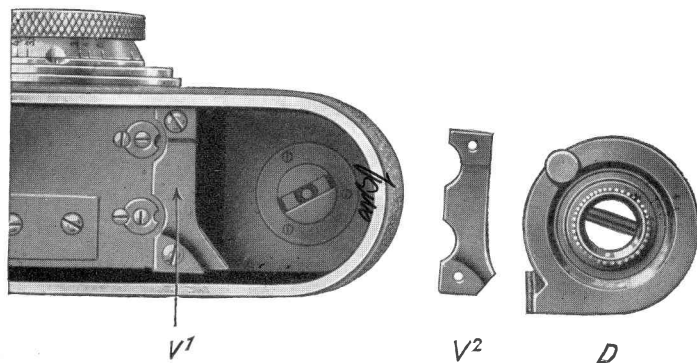


Fig. 11

To enable Leica cartridges to be used also in earlier models of the camera, the lock V¹ as shown in Fig. 11 must, by loosening the two screws which hold it, be exchanged for a new V² lock of somewhat different form. This is quite an easy matter. The new lock is supplied free of charge. After changing the lock, not only Leica cartridges, but also all other Leica spool chambers may be used in the camera.

4. Loading of Film Chamber Model B in the darkroom

(In this case darkroom loading film spools are used)



Fig. 12

How the spool chamber Model B should be opened

1. Open spool chamber. To this end release with the index finger of the left hand the safety spring **B**⁸ by pulling it backwards (Fig. 12) and turn the inner shell with the right hand at the knob towards the right (clockwise) to the end of the movement. Then withdraw inner shell.
2. Remove the centre spool from the inner shell. Take the wrapping off the film.

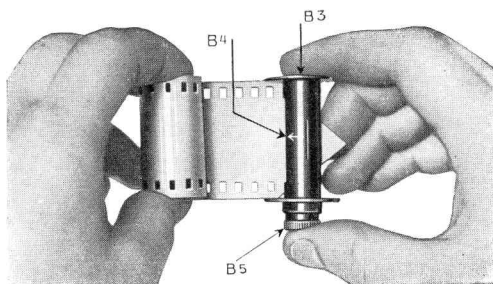


Fig. 13

3. Thread the short tapered end of the film in the slot **B⁴** of the centre spool **B³** (emulsion side next to the arrow) in the direction of the arrow.
4. Wind film on centre spool moderately tight, emulsion side inward, and if possible use hand film winder or mechanical winder. Take care that emulsion is not touched.

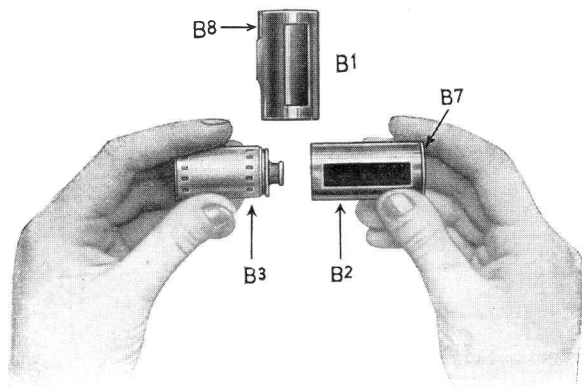


Fig. 14

5. Introduce film spool into the inner shell, milled knob first, the beginning of the film lying in the slot.

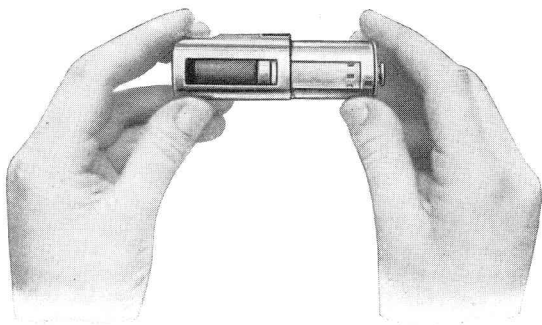


Fig. 15

6. Put both together into the outer shell, superimposing the two slots. Pull out the beginning of the film about 2 inches through the open slots.

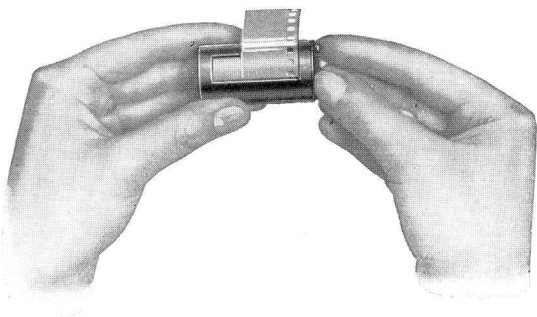


Fig 16

7. Close spool chamber by giving the inner shell half a turn to the left until the safety spring engages at **Z**.
8. Pull out the beginning of the film about 2 to 3 inches from the closed spool chamber, so that it does not slip back.
9. If the loaded chamber is not immediately inserted into the camera it should be kept in the aluminium container after the projecting piece has been wound around the chamber.

C. Loading of the Camera in subdued daylight

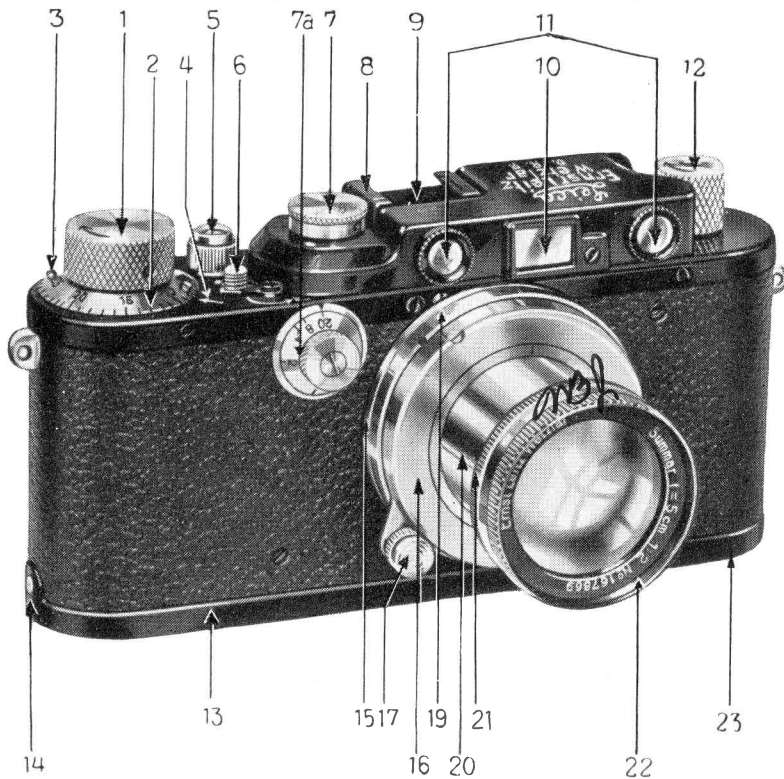


Fig. 17

Note. The loading of the camera should be done in subdued daylight and the slot of the chamber should be covered up as well as possible. The chamber should not be exposed to daylight longer than is absolutely necessary for loading.

1. Set the reversing lever **6** from **R** to **A**.
2. Wind the knob **1** once and release press button **5**.

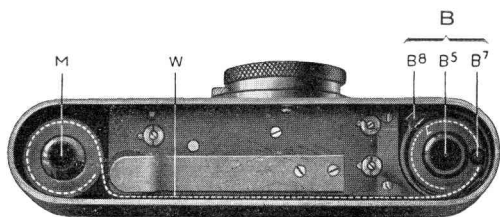


Fig. 18

3. The camera having been already opened as per Fig. 2 and the withdrawn spool chamber loaded, now withdraw also the receiving spool **M** (counter spool).

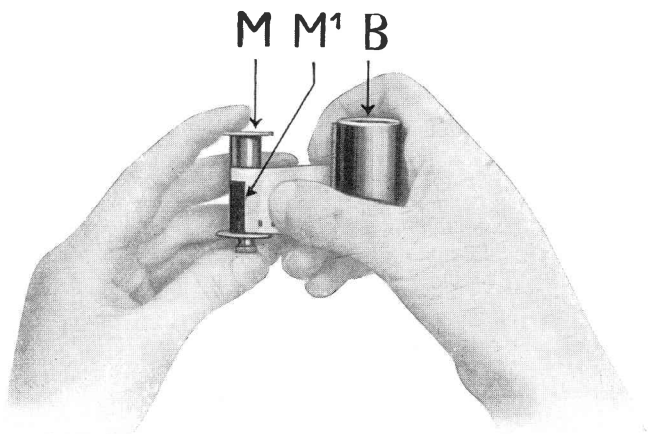


Fig. 19

4. Hold receiving spool **M** with left hand and the loaded chamber **B** in the right, as shown in Fig. 19. Clamp the beginning of the film (**emulsion side outwards**) under the spring **M¹** of the receiving spool. (The perforated edge of the film should lie right against the flange with knob.) Do not, however, wind film on. The tapering of the film should begin close to the slot of the chamber.

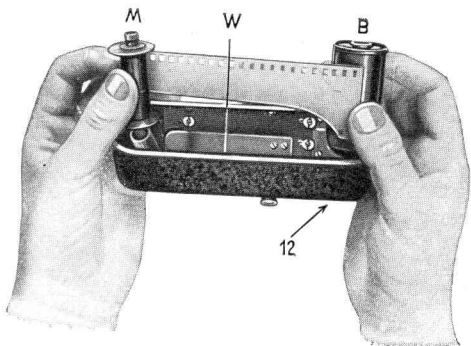


Fig. 20

(Please also refer to Fig. 18 showing correct position of film by a dotted line)

5. Place the opened camera in front of you with the lens away from you. Hold spool chamber in the right hand and the receiving spool in the left hand, and introduce the film into



Fig. 21

the slit *W* with the tapered side downwards. (If the spool chamber does not drop right down, give a small turn to back-winding knob **12**.) Turn back-winding knob gently in the direction of arrow until the film becomes quite taut.

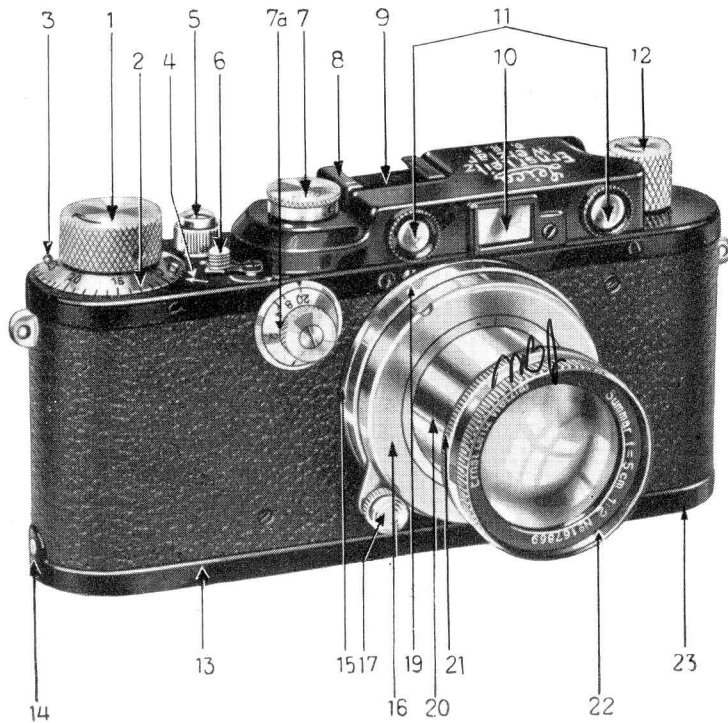


Fig. 22

6. Hook camera lid **13** (swivel **23** set to "open") over pin **14**. Close lid and
7. Turn swivel **23** right over to "closed".
8. Wind knob **1** once and release press button. Repeat this once more. (This in order to dispose of the useless tapered beginning of film.)
9. Turn counting disc **2** by means of the two lugs **3** towards the left (i. e. against the direction of the arrow of the winding knob **1**) to **0** position.

D. Taking the Photograph

1. Pull out lens, and turn it to the right (clockwise) so as to lock it in the bayonet catch.
2. Adjust iris diaphragm by means of lever or ring **21** (Fig. 22).
3. Wind knob **1** in direction of arrow right to stop.
4. See that shutter speed is correct or set it by lifting the speed dial **7**, at the same time turning it so that the required figure lies against the index arrow **8**. Let go knob which will then settle in position. At **Z** the shutter remains open as long as the button is pressed down.
- 4a. See further remarks page 28 re Leica Model III and IIIa.
5. Sight the object through range finder **11**, turning focusing lever **17** or the lens mount **22** until the two images coincide (fuse into one). Use view-finder **10** to view the whole field and gently (not jerkily) release press button **5**. When photographing rapidly moving objects the range finder should be used as view-finder.

E. Unloading of Camera in subdued daylight

1. Release once again press button **5** (whether knob **1** is wound or not).
2. Set reversing lever **6** from **A** to **R**.
3. Pull out back-winding knob **12** and turn in direction of arrow until a resistance is felt and wind over this resistance. (This means that the end of the film comes off the spring of the receiving spool.) Give about two more turns (the film is now all wound back into the spool chamber).
4. Turn swivel **23** of camera lid **13** towards the left from "closed" to "open" and remove camera lid.
5. Pull out spool chamber by means of the milled knob and keep in aluminium container for developing.
6. The removing of the film from the spool chamber must only be done in the darkroom, as described under B 4, 1. The inner spool with the film is then removed and the film wound off.

F. The "Standard" Leica Camera

The foregoing instructions for the Leica camera Model IIIa apply to the "Standard" Leica also, except where reference is made to the rangefinder and the adjusting dial for the slow speeds.



Fig. 23

speed dial, to push forward the right-hand end of the rangefinder (see Fig. 24), and after the adjustment has been made to return it to its original position as far as the stop.

Now look through the rangefinder and turn the dial until the two images which are visible therein coincide. Read the distance figure, then adjust the index line of the lens focusing mount to this figure, whereupon the exposure may be made.

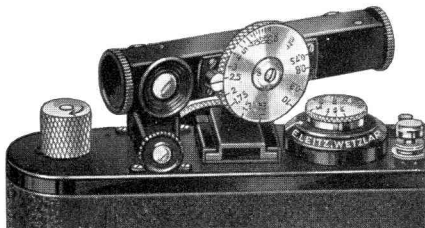


Fig. 24

in the case of portraits). Then approach or retire from the object until the two images which are visible in the finder coincide.

It should be mentioned that the rangefinder may also be used in a vertical position. To do this remove the holder from the clamp and insert in the latter the flange which is on the eyepiece side.

In the "Standard" Leica, the rangefinder is not coupled with the lens.

In the clamp which will be found near the viewfinder of the "Standard" Leica, a special small holder is inserted, in which the short-base rangefinder is fixed horizontally by means of a pin.

When it is desired to adjust the time of exposure it is only necessary, in order to obtain access to the

For shorter distances proceed in the following manner.

Adjust the index of the rangefinder as well as the lens mount right away to the desired distance (for instance, 6 ft.

G. Some additional hints on the use of the Leica

Leitz Trimming Template

enables the film to be correctly shaped, and its use also results in the saving of film. It is only required if film is cut from a long length, or when the exposed part of a film has been cut off, and the rest is to be reloaded into the camera.

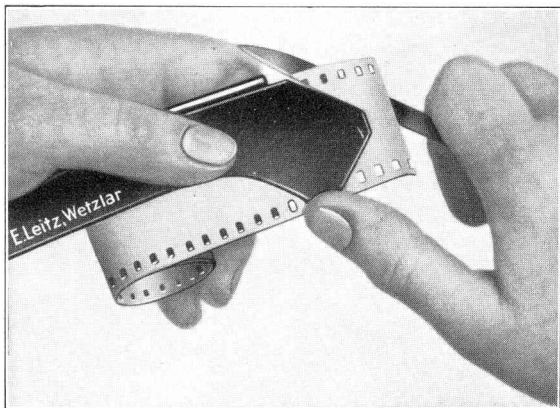


Fig. 25.

Film Trimming Template
(Trimming the film for the centre spool)

When using cut lengths of films as supplied by various firms, special trimming is not necessary. On the other hand, when film strips are cut as required from a long length, care must be taken that the two ends of the film are correctly trimmed, as this is absolutely necessary for the satisfactory working of the film winding mechanism in the camera. For this purpose it is advisable to use our new Trimming Template, which also means a saving in film as compared with earlier models.

At the beginning of the roll of film make the wedge-shaped cut for the centre spool and measure off the required length of film. At the end of this make the curved cut for the receiving

spool. When doing this there is made at the same time the correct cut for the receiving spool on the remaining film on the roll. It is therefore not necessary, as was the case with our previous Trimming Templates, to trim the next length of film taken from the roll, so that in this way about 4 ins. of film are saved on every strip.

The manipulation of the Trimming Template is as follows:

To trim the film for the centre spool, unfold the Trimming Template and insert the film, emulsion side underneath, sideways into the narrow slot of the lower plate, so that the end of the film projects slightly beyond the end of the Template. Then close the Template and cut the film along it (see Fig. below).

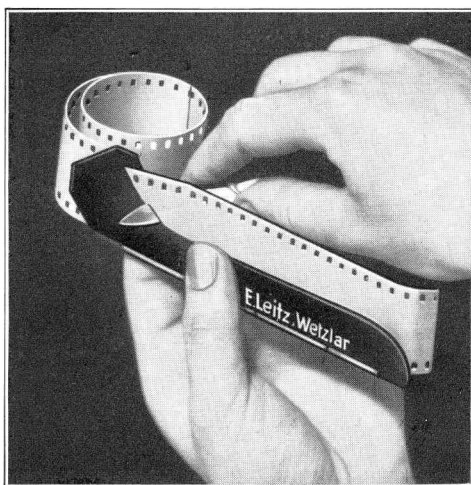


Fig. 26. Trimming Template
(Trimming the film for the receiving spool)

Except for the end which lies on the lower plate of the Template, the film remains untouched in the hollow of the hand. The end intended for the receiving spool is placed in the unfolded Template, care being taken to see that the emulsion side of the film is again underneath, and that a small piece projects beyond the end of the Template. The two pins in the Template must engage in two perforations. Then cut along

the curve of the closed Template with a sharp knife (see Fig. 26). When handling the film it must be held only by the edge and any touching of the emulsion must be avoided.

The next piece of film is now ready trimmed for the receiving spool, so that only the cut for the centre spool has to be made at the other end.

Note. Careless trimming of the film leads to trouble in the film winding mechanism, so that the perforations are torn and small pieces of film get into and jam the mechanism. As the film winding mechanism is coupled with the shutter, this is likewise affected. The damage can only be remedied by a careful cleaning of the camera mechanism. This entails expense, which can be avoided if the film is correctly trimmed by means of our Trimming Template.

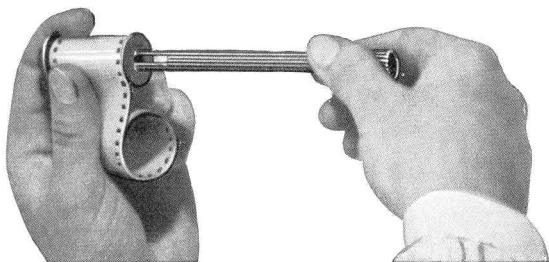


Fig. 27. Hand Film Winder

Spooling the film. Winding of the film on to the centre spool is made easier by a special metal **Hand Winder**. As shown in Fig. 27, the winder is inserted into the spool, on that side which contains the little cross-pin fitting the slit in the Winder.

The **Mechanical Winder** (Fig. 28) serves the same purpose. This little device is best attached to the edge of a table in the darkroom. To use it, first withdraw the handle of the Winder to its fullest extent, then slip out the spring pressure roll. Now insert the centre spool, with the head of the spool opposite to the handle. When the handle is again inserted as far as possible, it engages in the centre spool, which turns with it. The spring pressure roll is adjustable in the direction of the spool axis, so that it can be slipped into the various spools (the "Standard" Leica, Models II, III and IIIa have the same size of spool, while that of the Leica 250 is different in accordance with its film capacity of 33 ft. As regards the Leica 250, see page 31). The beginning of the film is now

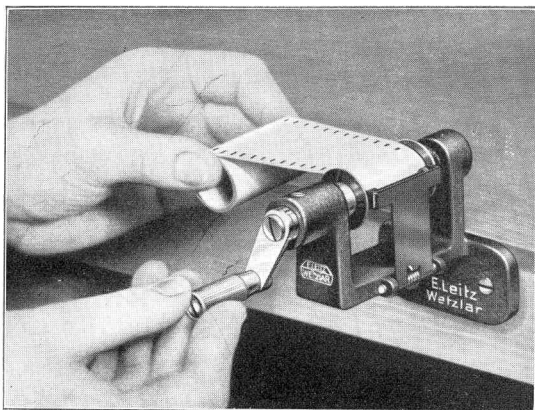


Fig. 28. Mechanical Winder

fixed as instructed in the slit of the centre spool. On turning the handle the film winds itself on to the spool, the spring pressure roll ensuring a uniformly tight winding.

When winding the film on and off care must be taken that no great pressure is put on the film and that the film edges are not squeezed when drawn through the hand. In the former case fogging may easily occur; in the latter so-called "lightenings", i. e. fogging through electric discharges, which extends from the edge of the film into the picture as dark zig-zag lines.

Winding of film in the Leica. The advance of the film from picture to picture is obtained simply by turning the winding knob (Fig. 1, No. 1) right round to the stop, without having to watch a film window as with other roll film cameras.

The evidence that the film is advancing properly is the rotation of the back-winding knob 12 against the direction of the arrow, which must be given particular attention when commencing to photograph. If the back-winding knob, even after several turns of the knob, does not rotate, the reversing lever 6 must be set from A to R, the back-winding knob pulled out (see Fig. 29) and turned in the direction of the arrow, so that the beginning of the film is wound back into the chamber. Then the spool chamber should be taken out and the film inserted again correctly. If these very important points are correctly followed, no difficulties will be experienced.

It will be observed that the release button revolves when the film is being wound back. At the moment when this button ceases to revolve there remains only a small piece of film projecting from the spool chamber. If one continues to wind back, the whole film disappears into the chamber. This will, of course, not be done if the film is to be replaced in the camera, which would not be possible if the beginning of the film did not project from the film chamber.

The setting of the focal plane shutter, which is self-capping, is done by winding the knob 1 (Fig. 1) in the direction of the arrow **right up to the stop**. The Film is than simultaneously wound on by the correct amount for the next picture.

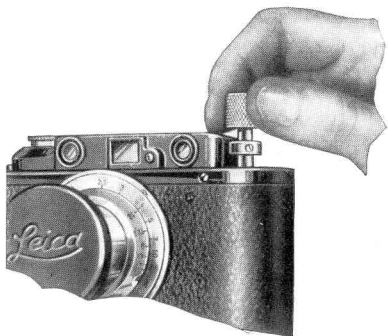


Fig. 29. Extensible back-winding knob

Adjustment of the shutter speeds of the Leica Model II and "Standard" Leica. This is done with the shutter wound. The shutter speed dial 7 (Fig. 1) shows the exposure figures, which are fractions of a second (for instance, $20 = 1/20$ second; $Z = \text{Time}$). The dial 7 is lifted and turned so that the index arrow 8 points to the required speed, when it is let go. It is advisable to get used to working with the speeds from $1/30$ to $1/60$ second and to regulate the intensity by means of the iris diaphragm. The short speeds, i. e. $1/200$ and $1/500$ second, are only required for sports scenes in favourable lighting, and then mostly with full open aperture. For time exposures, which of course cannot be made with the camera in the hand, a short wire release is used, which screws on to the press button 5 after the protective ring has been unscrewed. If the focal plane shutter is adjusted to Z, it remains open as long as the button 5 or the wire release is pressed down. The camera is equipped with a normal screw thread for fixing to any tripod.

The shutter speed adjustment of the Leica Model III.
Besides the shutter speed dial 7 as on the Leica Model II (see Fig. 1), the Model III has a second and small dial 7a on the front of the camera near the lens, which can conveniently be read from above.

If the dial 7a is adjusted to 20 ($\frac{1}{20}$), the speeds $\frac{1}{20}$ to $\frac{1}{500}$ on the dial 7 may be adjusted as hitherto, namely: First wind the focal plane shutter by turning the winding knob 1 right round to the stop; lift the dial 7 and turn until the index points to the required speed. The exposure can now be made by pressing the button 5 (or the wire release screwed to it).

If the slow speeds $\frac{1}{8}$, $\frac{1}{4}$, $\frac{1}{2}$, 1 second are to be used, the speed dial 7 remains set at 20 (engraved "20 — 1"), while the dial 7a is set to the speed required. The exposure is then made in the usual way.

If it is desired to change from a long exposure to a short one, it is only necessary to adjust the dial 7 accordingly, the position of the dial 7a being of no consequence. *Only at $\frac{1}{20}$ must both knobs be set at 20.*

The dial 7a further bears the mark "T". If set to this mark (the dial 7 being set to $\frac{1}{20}$) and the shutter wound, the shutter opens on release and remains open. To close it, do not press the release button again, but merely turn the dial 7a back a little (say to 1 or a little further) when the shutter will close immediately.

If the dial 7 is set to Z and the dial 7a to $\frac{1}{20}$, the shutter remains open so long as one presses on the release button.

The dial 7a can be turned either way and is limited by stops. The dial 7a can be set before or after adjusting the speed dial 7.

It should be mentioned that all the intermediate speeds between $\frac{1}{8}$, $\frac{1}{4}$, $\frac{1}{2}$ and 1 second can be set these values being proportionate to the placing of the scale (i. e. $\frac{3}{4}$ sec. being half way between $\frac{1}{2}$ and 1).

The engraved exposure times, however, may be accurately set by means of notches. With the Leica Model IIIa, the rapid speed dial 7 is scaled up to $\frac{1}{1000}$ sec. When setting this speed, the dial 7 does not slip in quite so much as with the other speeds.

The release of the press button 5 must be done gently by resting the middle joint of the index finger on the edge of the camera and using the first joint as a lever to press the button. The protective ring facilitates this. Releasing from the back would result in jerking. With slow speeds the risk of jerking can be minimized by placing the thumb under the bottomplate of the camera as a support.

The wire release. For time exposures our screw-on wire release with fixing screw should be used, which may also be used for instantaneous exposures. When unscrewing this release from the press button, it is advisable to hold the speed dial so as to prevent the shutter from being set accidentally. Should this occur, either partly or entirely, it is only necessary to set the shutter fully by turning the winding knob (always right up to the stop).

With the Leica Models II, III and IIIa the **rangefinder** (together with the viewfinder) is placed horizontally between the shutter speed dial and the back-winding knob. It is automatically coupled with the helical focusing mount of the lens so that the adjustment of the rangefinder and the focusing of the lens are simultaneous. By this the "ever-readiness" of the Leica has been still further increased.

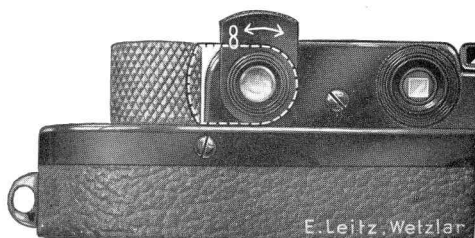


Fig. 30

Correct focus is obtained when the two images appearing in the rangefinder (which never disappear from the field of view, as can happen with a large-base rangefinder) fuse into one (coincidence principle).

In order to increase the ease of measuring still further, the viewing aperture of the rangefinder of the Model III and IIIa Leica is fitted with a magnifying telescope system with a magnification of about 1.5 times. The subjective field of view is therefore increased by about one half, and this considerably facilitates exact and rapid focusing. The eyepiece is adjustable by turning the milled mount, so that everyone can focus near or distant objects to the greatest possible sharpness. Swung up, it is used for distances up to $3\frac{1}{4}$ ft., swung down, for infinity, and set midway, for distances from about 4 ft. to 15 ft.

Steady hold. For slow exposures in the hand it is strongly advised to rest the elbows or at least to lean the body against some support in order to avoid shaking. As the slow speeds are preferably used for near objects, $\frac{1}{8}$ and $\frac{1}{4}$ sec. will give surprisingly good results with the free hand, also $\frac{1}{2}$ sec. with a very steady hand; for 1 sec. however, a support or tripod is necessary.

For convenient focusing, the following procedure should be followed:

For horizontal photographs:



Fig 31

Rest camera against cheek, keeping both elbows close to the body — the right hand clasping the camera — the right index finger ready on press button — the left index finger on the button of the focusing lever — the left thumb supporting the camera on the side,

For upright photographs:



Fig. 32

First Method. Hold camera in right hand from underneath — right thumb stretched over winding knob and resting on press button, thumb must not touch speed dial — right elbow against body — operate focusing lever with index or middle finger of left hand whilst left thumb steadies camera against forehead.

The method as set out above obviates shaking with utmost certainty. Obviously, the thumb must release the press button gently. To hold the camera in this way is particularly convenient when wearing a hat with a broad brim.

Second Method. This method is also greatly favoured by many.



Fig. 32a

Right hand on top — right index finger on press button — left index finger actuating focusing lever — left thumb supporting camera.

The viewfinder is fitted in the middle of the rangefinder housing. It is a direct-vision finder, and is to be held close to the eye. The field of view gives the exact size of the photographic image at 9—12 ft.; at infinity rather more is on the negative, and at 3—6 ft. rather less. This normal viewfinder is intended for use with the standard lens “Elmar” F/3.5, 5 cm. also the “Hektor” F/2.5, 5 cm and the “Summar” F/2, 5 cm. Lenses of other focal length require the use of our Universal Viewfinder, which is slipped into the clip on top of the camera. For particulars of Universal Viewfinders see page 45.

H. Leica 250

As shown in the illustration, this model differs in form from the Model IIIa only by reason of the larger film chambers.

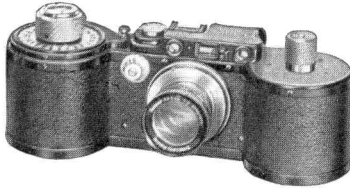


Fig. 33

Each chamber holds a piece of film of 33 ft. length, which is sufficient for rather more than 250 pictures.

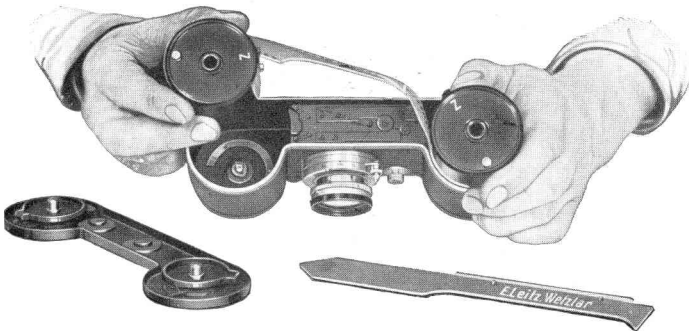


Fig. 34

The manipulation differs from that of the Model IIIa only in the following points:

Loading the film chambers: As the Leica 250 has a film chamber at both ends, two knobs are provided for locking the base cover plate, which must first of all be opened.

One of the chambers is loaded with film in the darkroom in the usual way, and the projecting piece of film is trimmed with a special template, which conforms with the length of the film track in the camera. The beginning of the film is now fastened under the spring of the second spool chamber, the long uncut edge of the film against the spool disc with knob. This chamber also is then closed in the usual way. The two closed chambers are now placed in the camera, so that the film slips in the narrow guide slots (see Fig. 34). Care must be taken that the knob on the underside of each film chamber snaps into position, by gently turning the chamber. This is easily effected, because the screws which hold the spring closing the chamber have specially high heads, which compel one to insert the chambers in approximately the right position. The base cover plate can only be closed if the two film chambers are correctly placed. When the two locks are closed, the two chambers open together. Finally, the film is tightened by gently turning the back winding knob as well as the milled disc on top of the winding knob in the direction of the arrow.

The film is not wound back after exposure, as this would be too inconvenient on account of the length of the film.

The spool chambers may be changed in a dull light.

If it is desired to take out a piece of film which is not entirely exposed, before opening the base cover plate the film must be slackened a little by turning the above mentioned milled disc in the opposite direction to the arrow. After removing the cover, both chambers may then be taken out or the film may be cut with the cutting knife supplied and the winding-on spool only, which contains the exposed piece of film, taken out.

It should be observed that when fastening the film in the chamber, the end should not be doubled over, as otherwise the film cannot come out of the chamber after exposure. Has this been done accidentally, before opening the camera the film must be loosened in the manner described above and both chambers are then removed and the fastened end of the film released.

I. Accessories for single exposures

1. A special accessory for single exposures

with dark slide and focusing screen

The device consists of a black lacquered light metal body, in the back of which is the focusing screen or darkslide, the Leica lens being screwed in in front. One of the well known

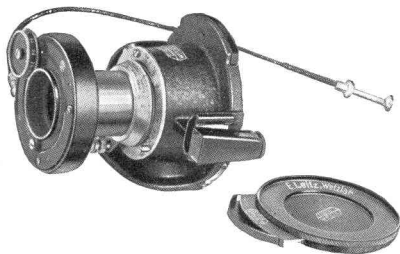


Fig. 35a

Leica viewfinders can be fitted on top; on the side and underneath the housing bushes are provided for upright or horizontal pictures on a tripod.

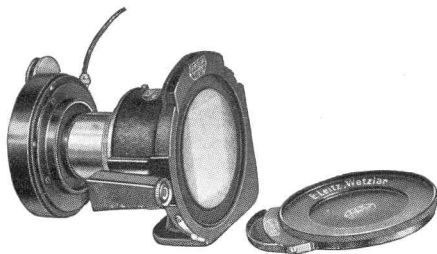


Fig. 35b

The body of the device does not contain a shutter. An Ibsor shutter is provided which is fitted on to the lens and which allows of instantaneous exposures from $1\text{--}1/125$ sec. and time exposures.

This shutter can be supplied in two sizes. The smaller one fits the lenses "Leitz-Elmar" F/3.5, 3.5 cm. (wide angle),

“Leitz-Elmar” F/3.5, 5 cm. (standard) and “Leitz-Elmar” F/6.3, 10.5 cm. The larger one fits all lenses except the “Leitz-Elmar” 13.5 cm., “Leitz-Hektor” 7.3 cm. and 13.5 cm. “Leitz-Thambar” 9 cm. and “Leitz-Telyt” 20 cm. For photomicrographs in conjunction with our Micro Attachment, the shutter is not used, as this attachment contains a shutter. The codeword for the device with the small Ibsor shutter is “Oleyo”, that for the device with the large shutter “Oligo”.

Only screw-in filters can be used with this device.

The manipulation of the device is simple in the extreme. After removing the cover plate of the darkslide in the darkroom, it is loaded with a piece of film of standard width and about 40 mm. long, cut from a roll of standard cinematograph film (or from a film in a Leica film chamber). The width of the slide is exactly 40 mm., and can therefore be used as a guide for the length of the piece of film to be cut. The cover plate is then pressed back into position, care being taken to see that the film in the slide is not pinched. The slide is then ready for use.

Before making the exposure, the focusing screen is placed in the groove in the slide, where it is held by a spring, and the lens is screwed in in front. The subject is posed and focused on the ground glass. The diaphragm is then set to the desired aperture and the shutter slipped on.

To make the exposure, the darkslide is inserted in place of the focusing screen. By simultaneously pressing gently on the catch, both parts can be inserted or removed conveniently and without shaking. If the placing of the object has been disturbed through incorrect manipulation, a glance through the finder is sufficient to put this right. The sheath of the slide must of course be drawn before the exposure.

2. The single film holder

Even simpler and cheaper, though less universal in use, than the special device described above is the Single Film Holder “Fhkoo” for the Leica. This comprises a simple metal frame with two slots, by means of which a piece of film 8 cm. long is held. This piece of film can only be inserted in the holder in the darkroom and the placing of the holder in the Leica must likewise be done there.