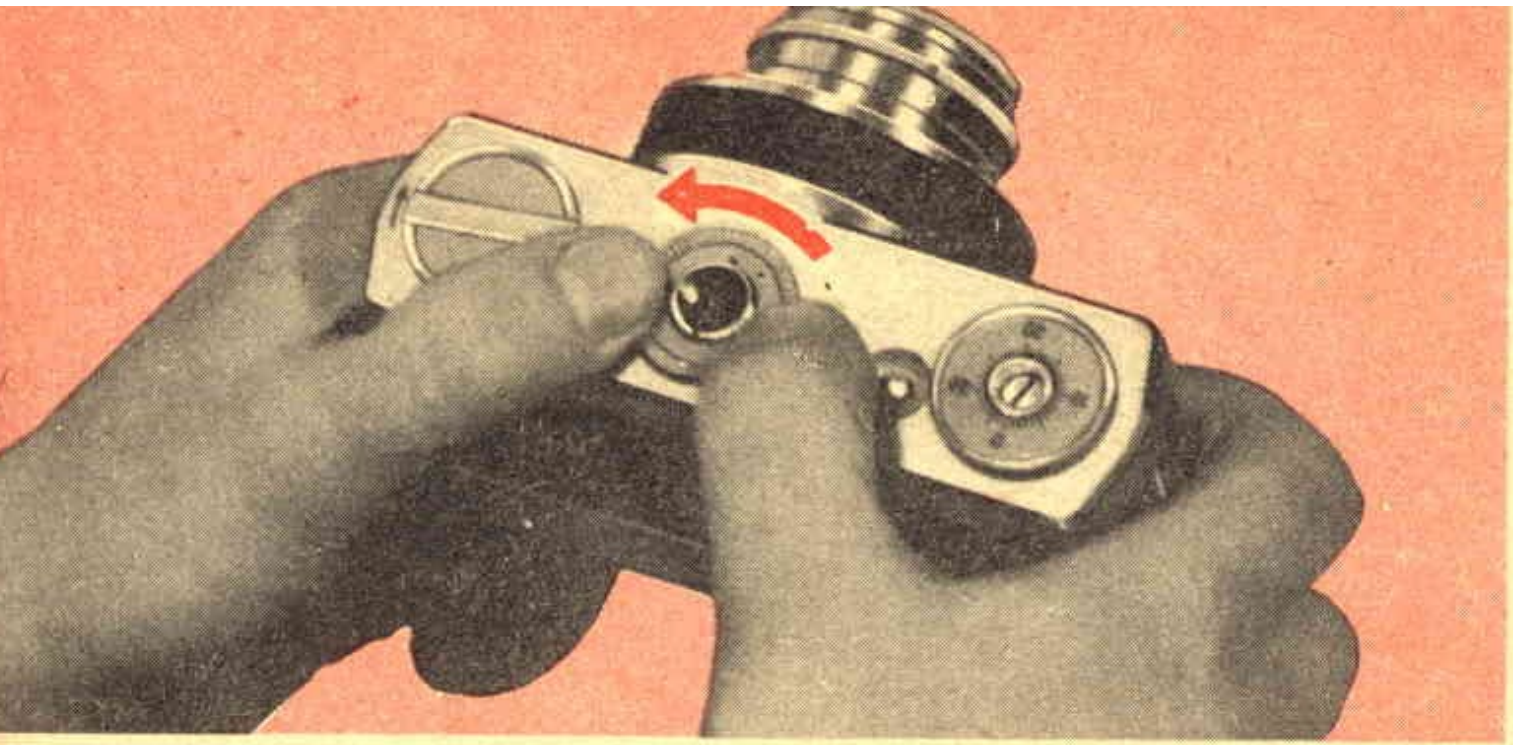
WERRA

WERRA 1–4 · WERRAMAT · WERRAMATIC



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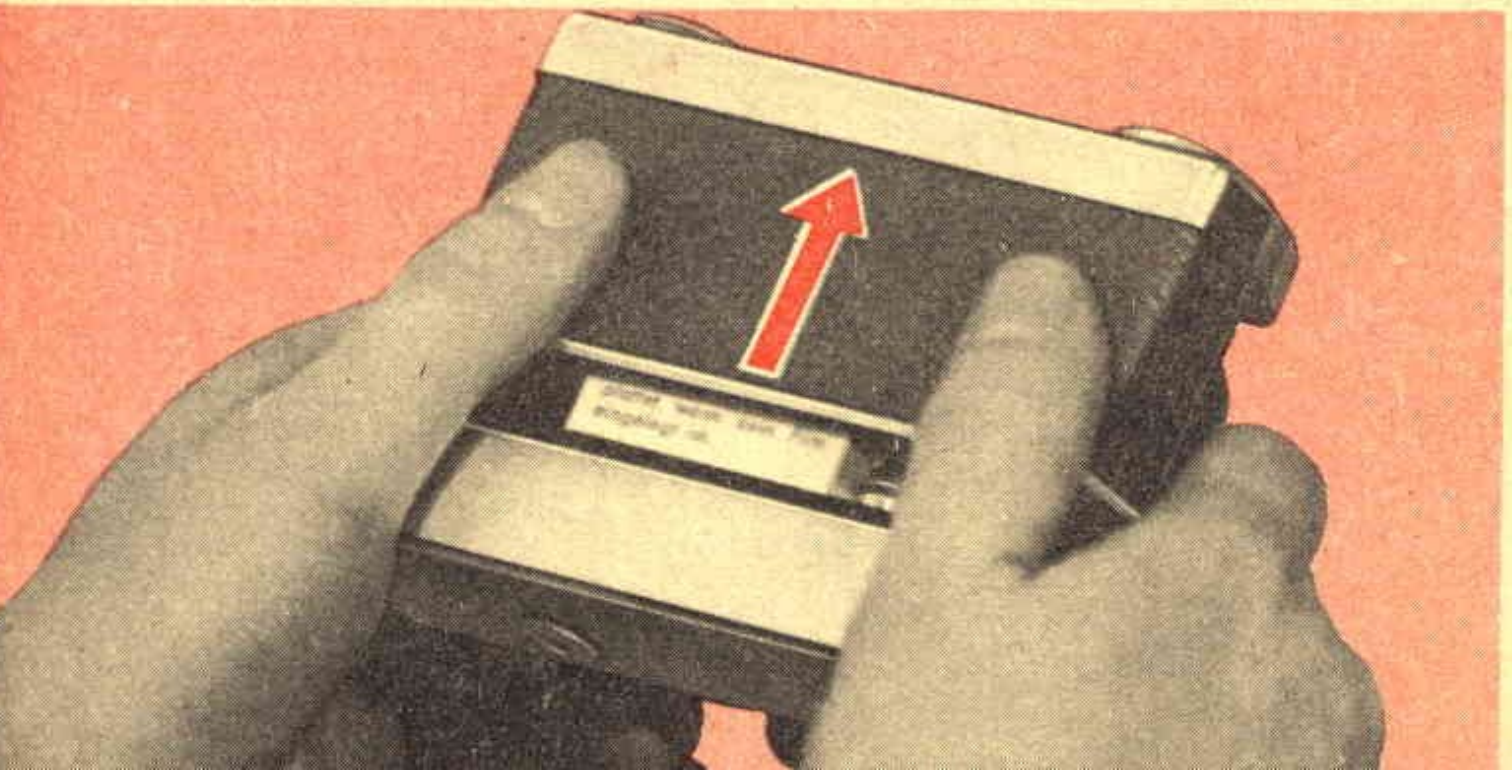

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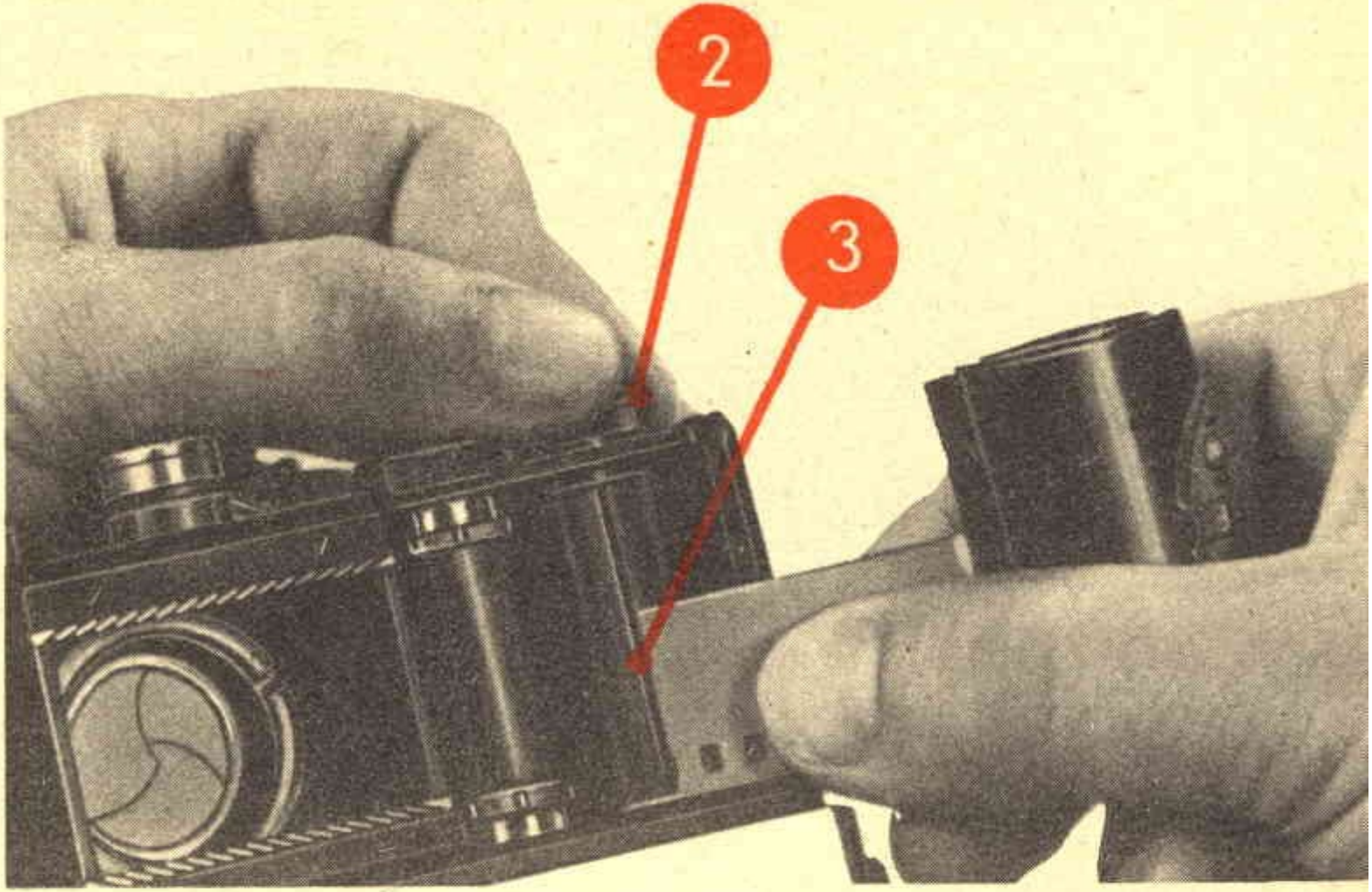
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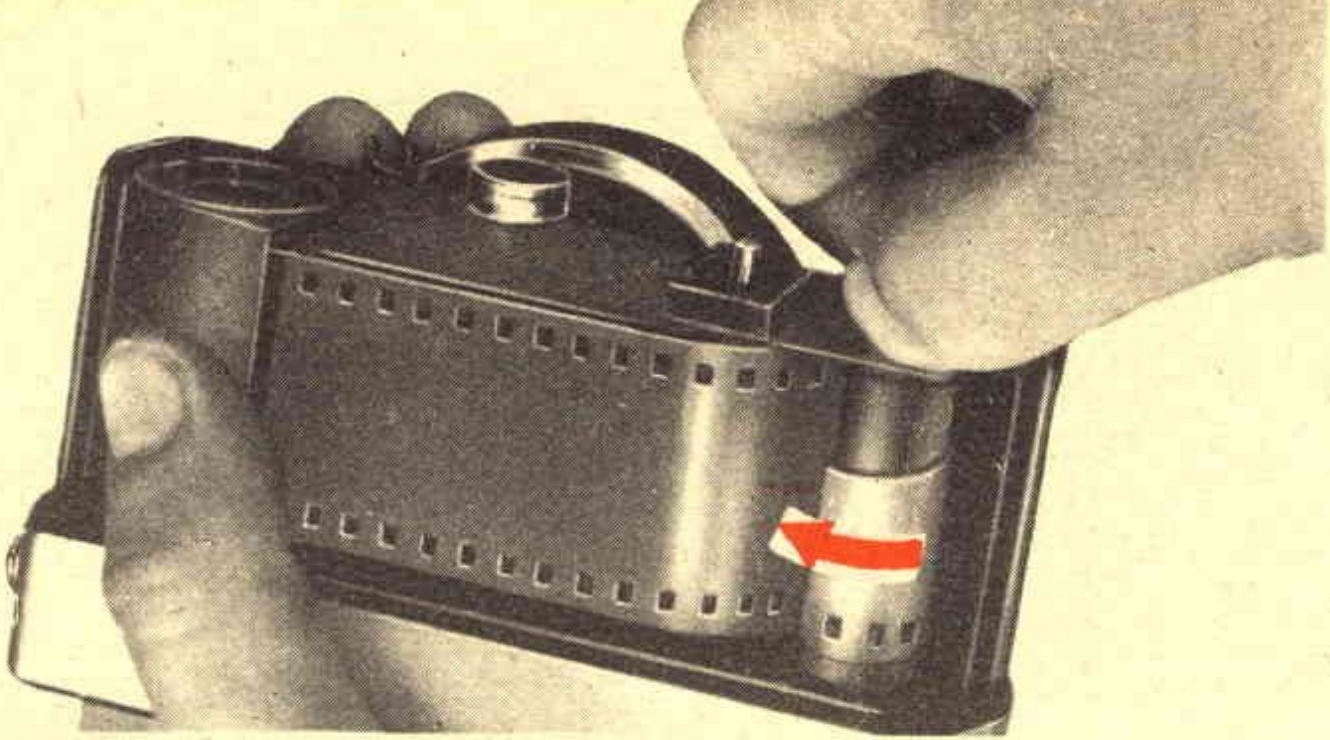

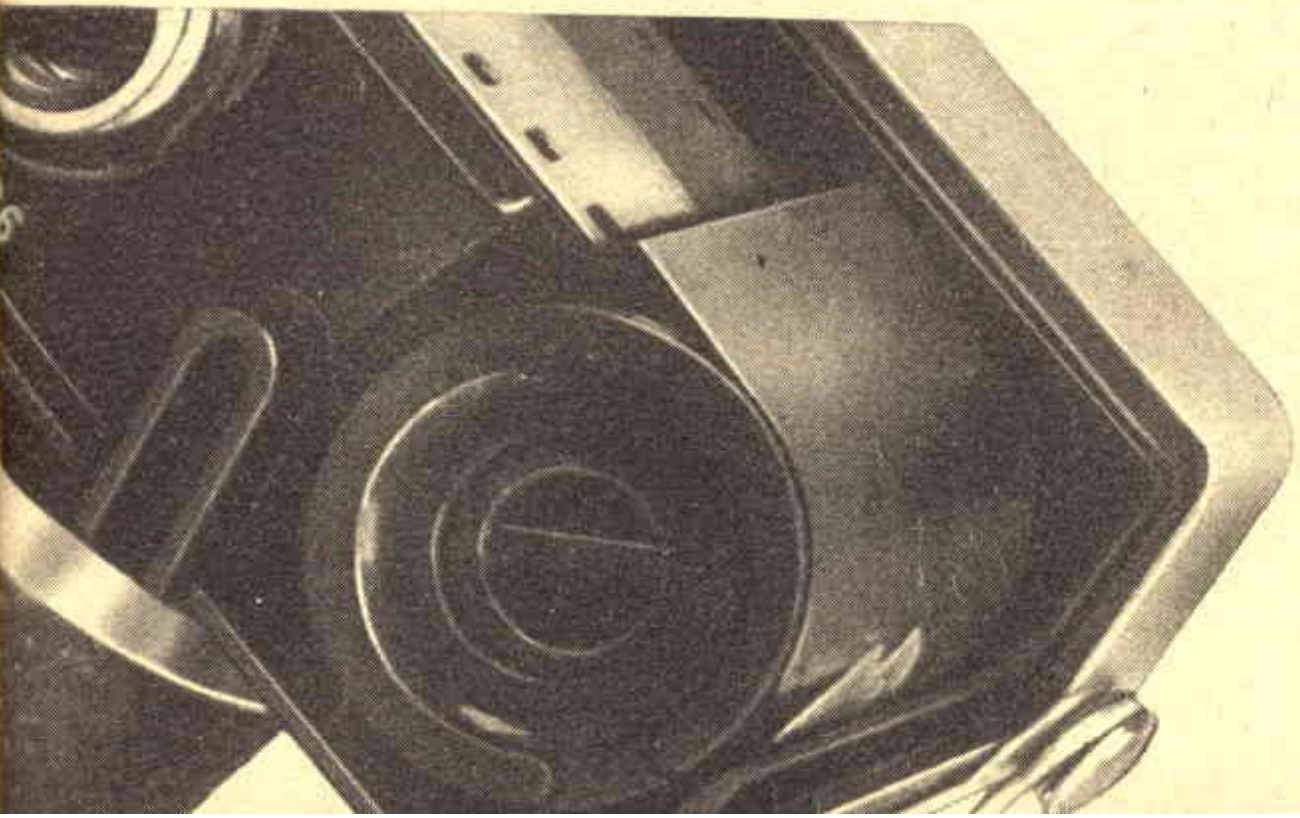

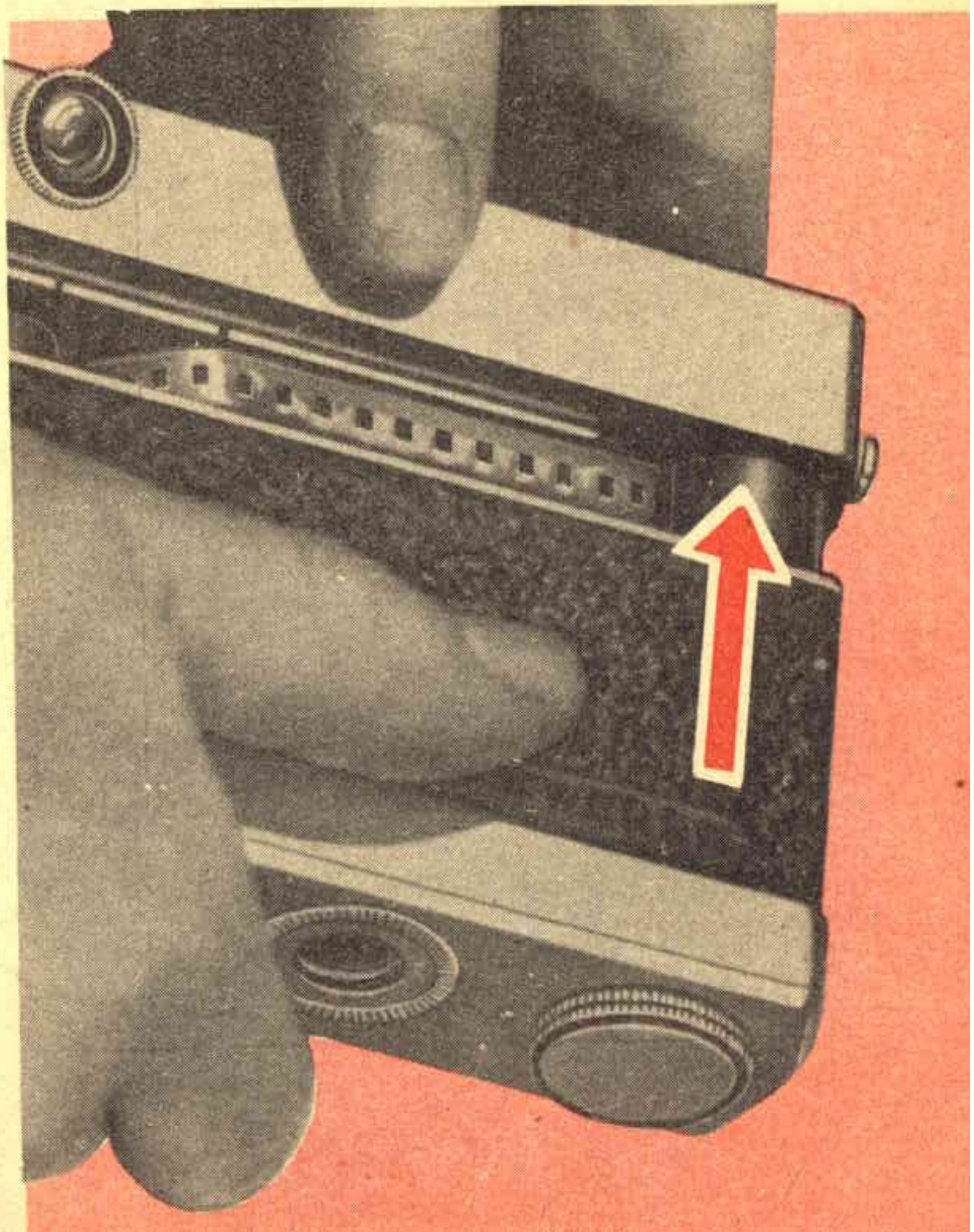

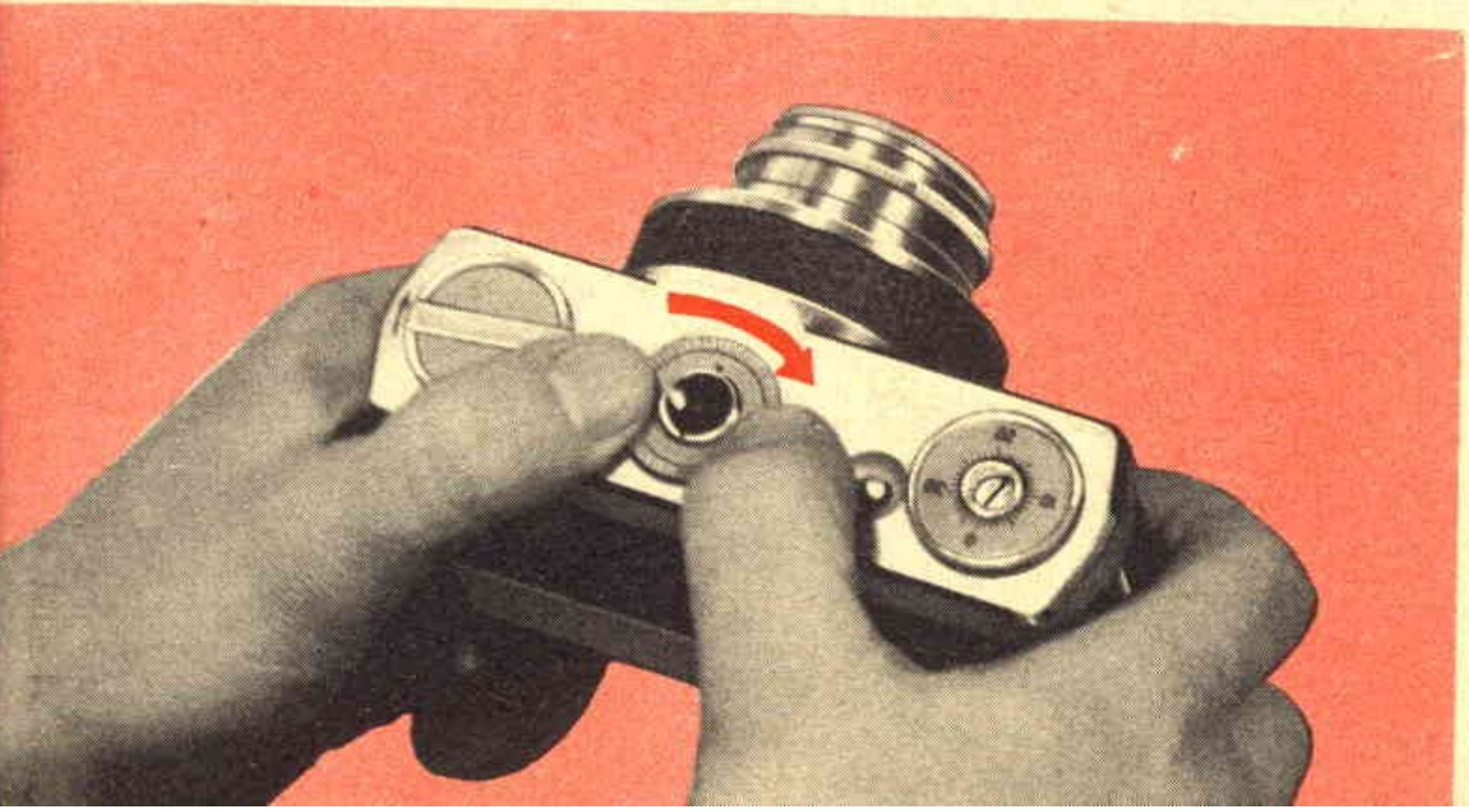

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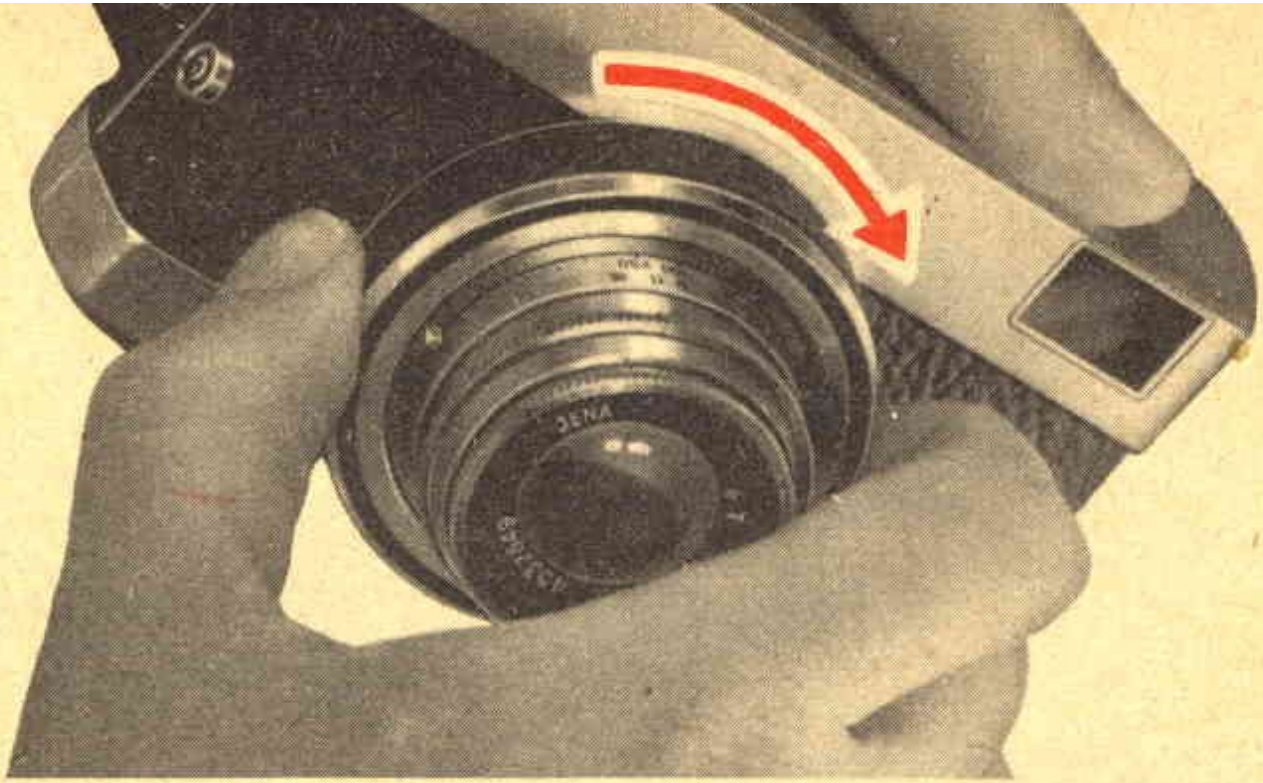
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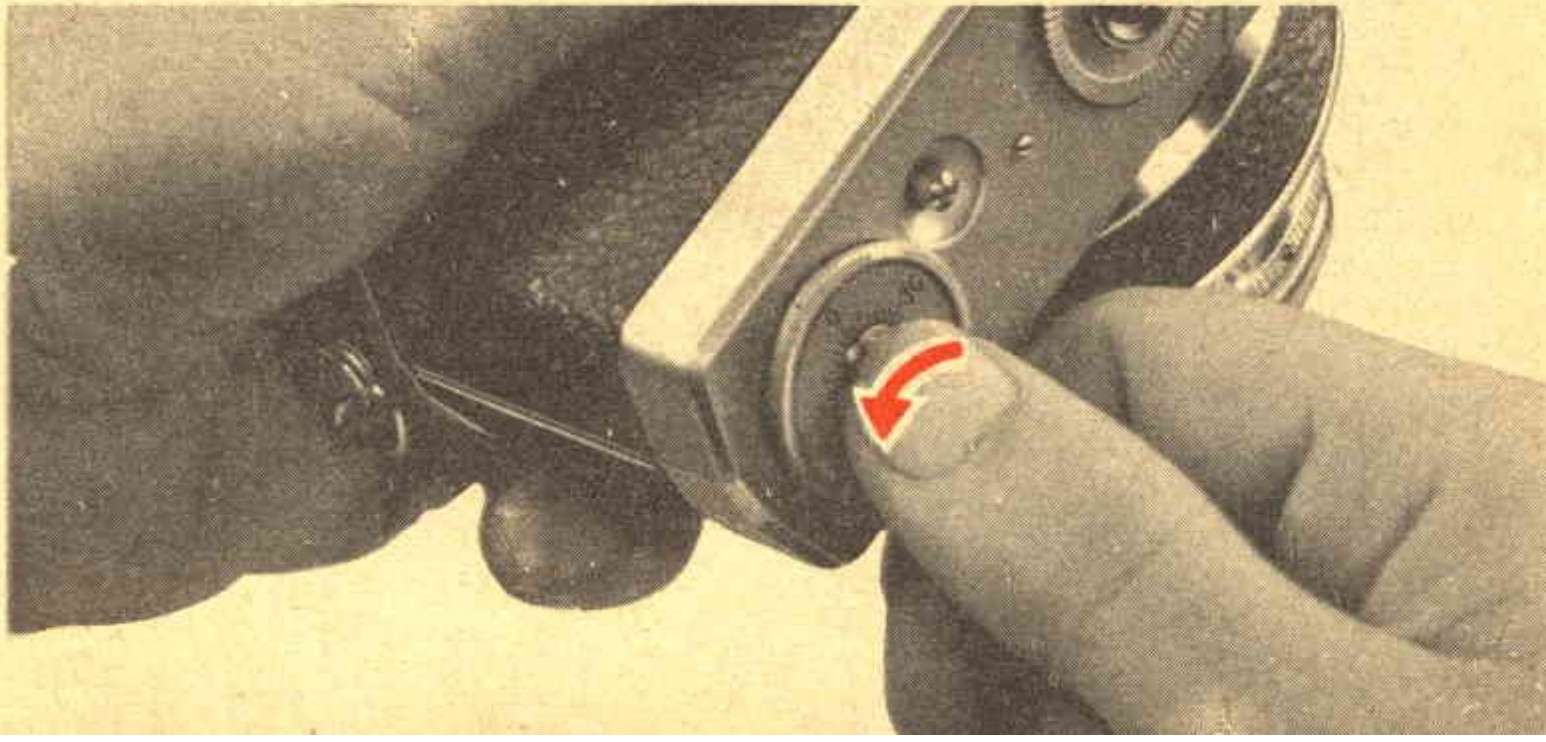

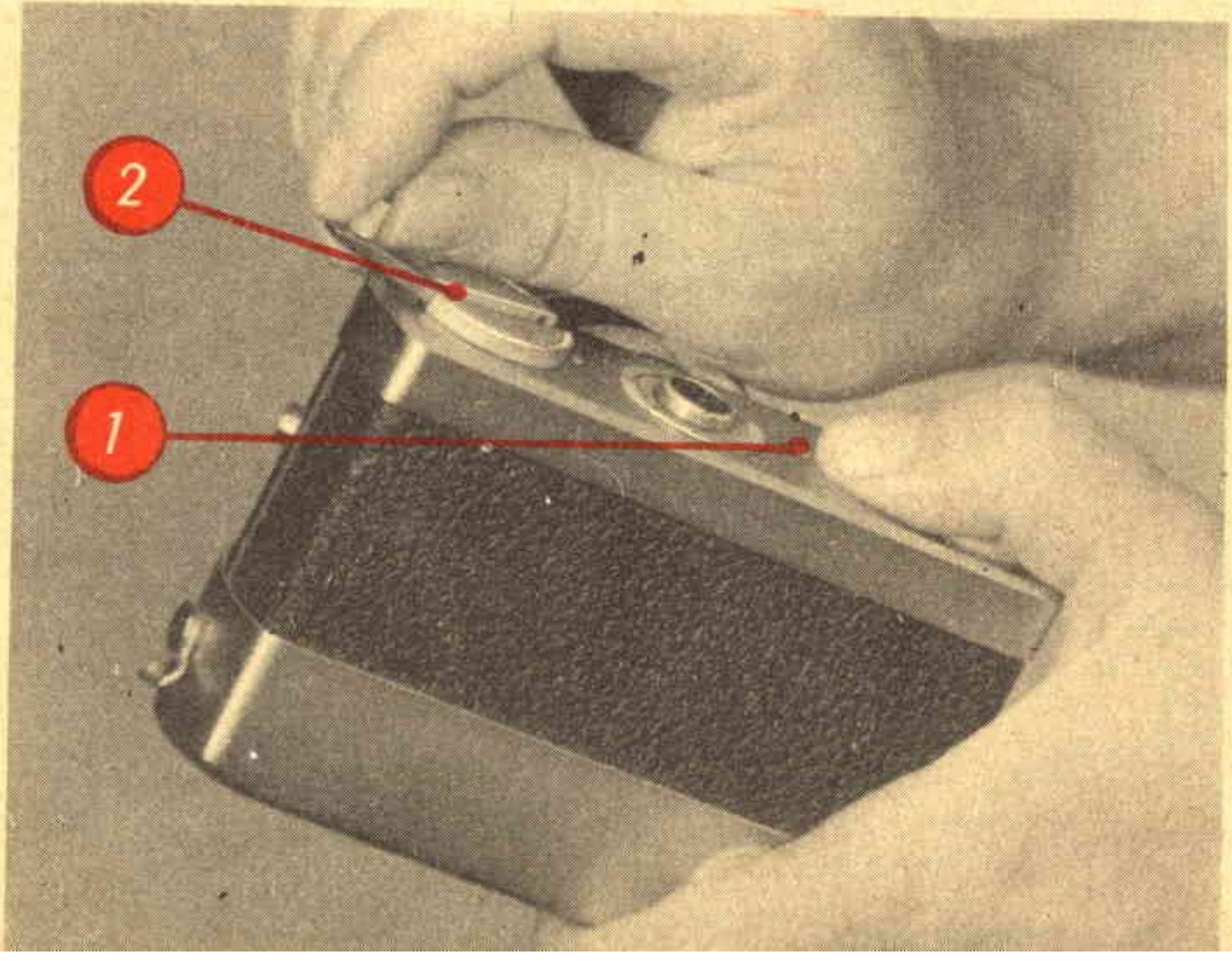
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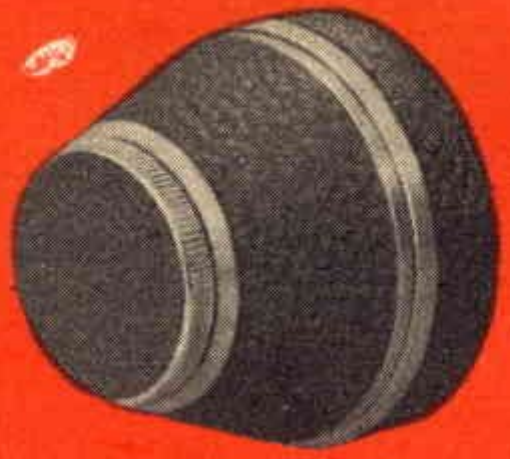

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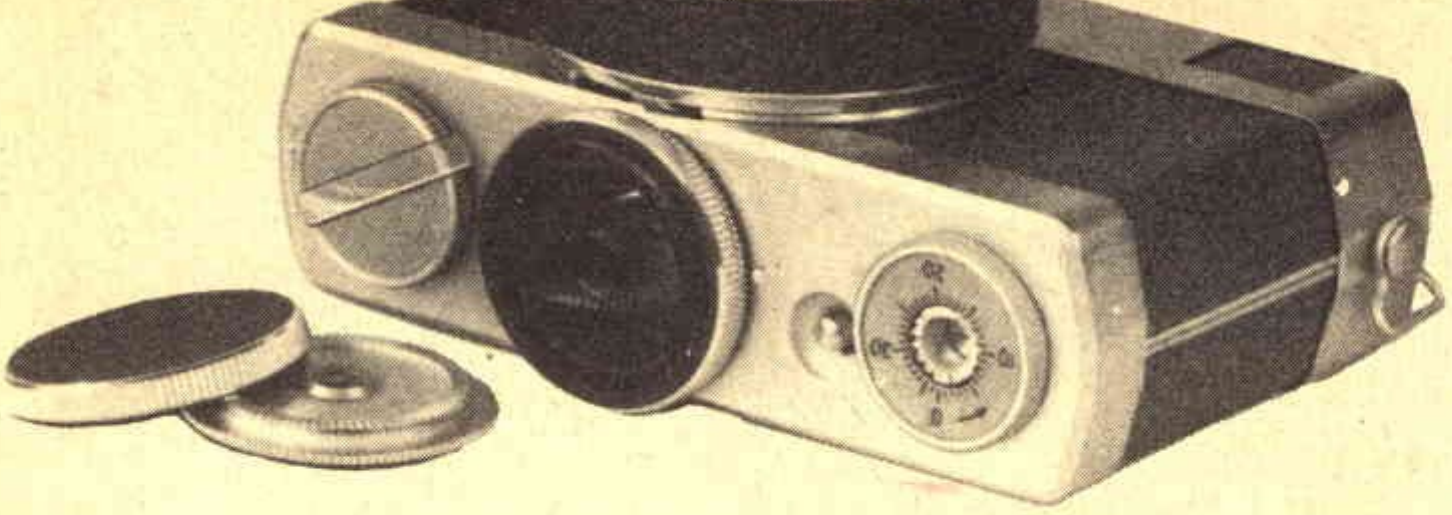

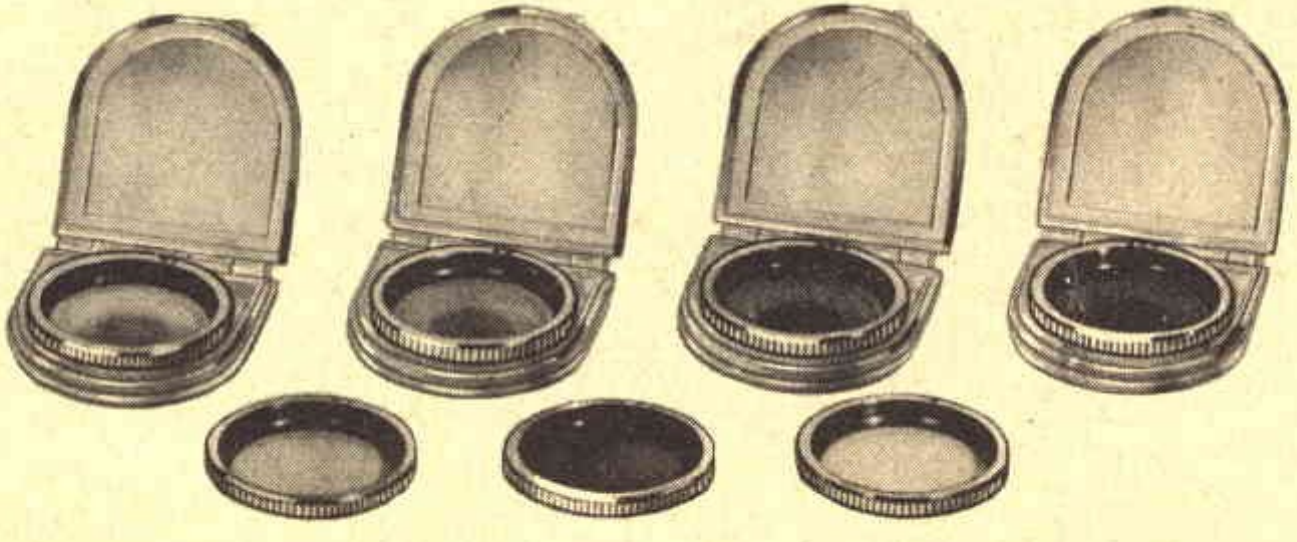

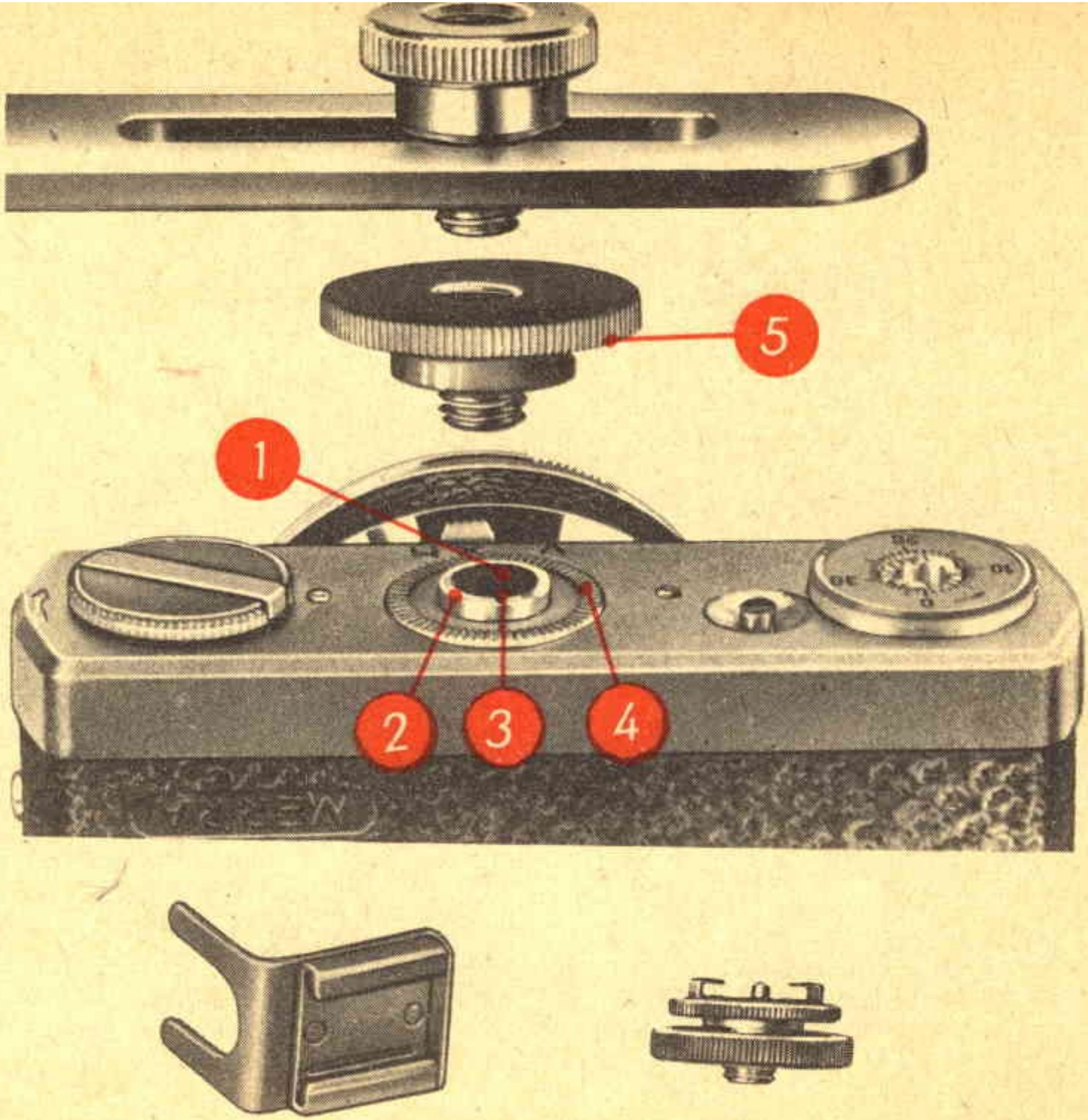
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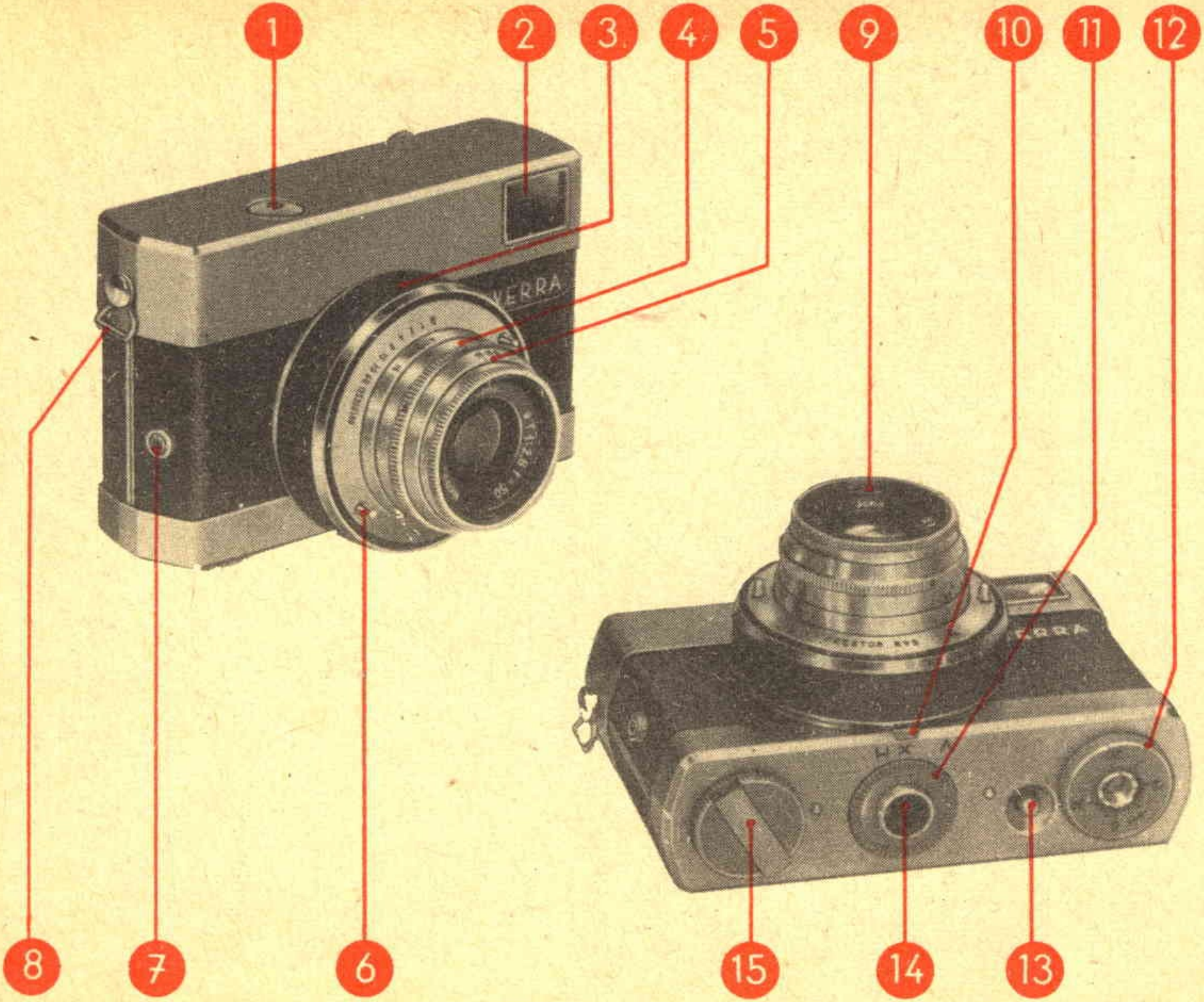
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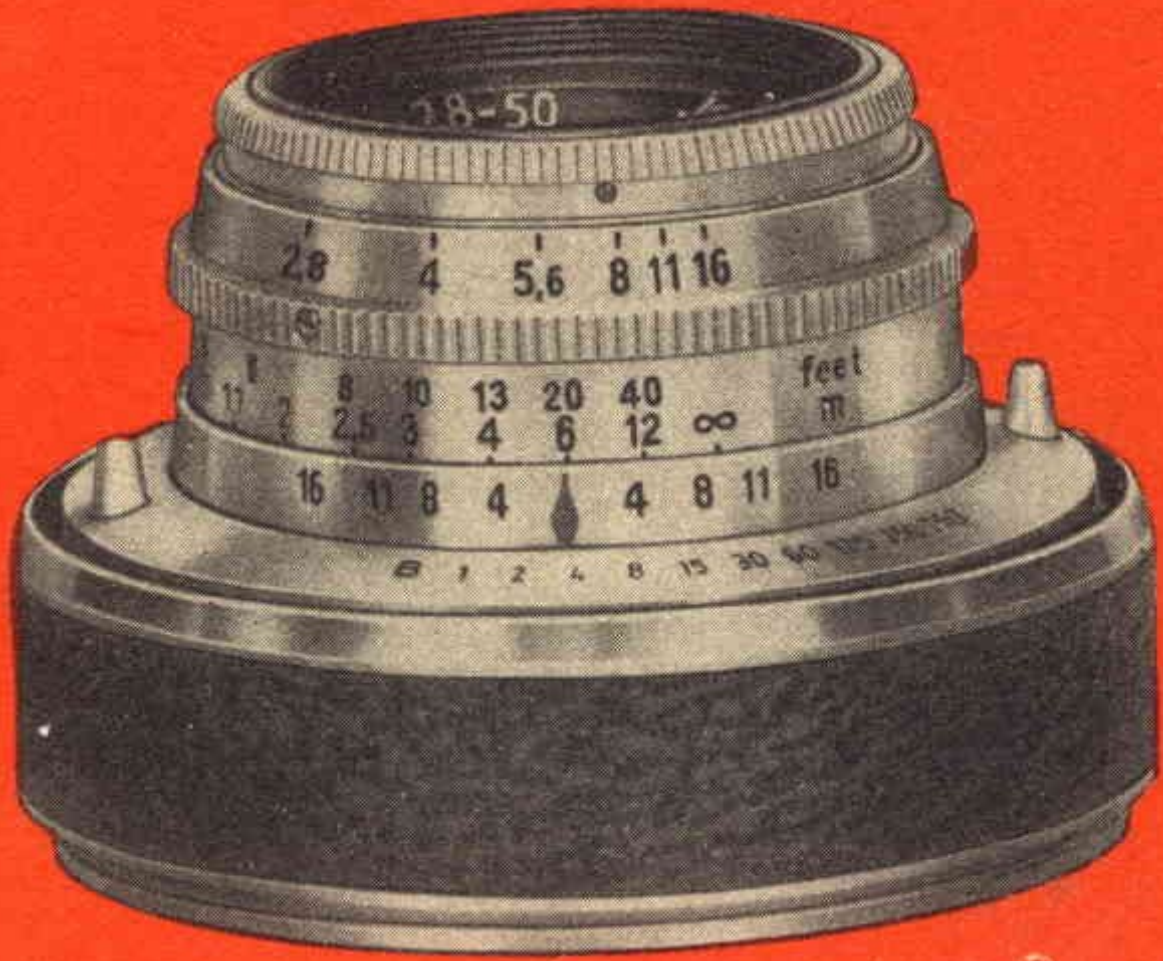
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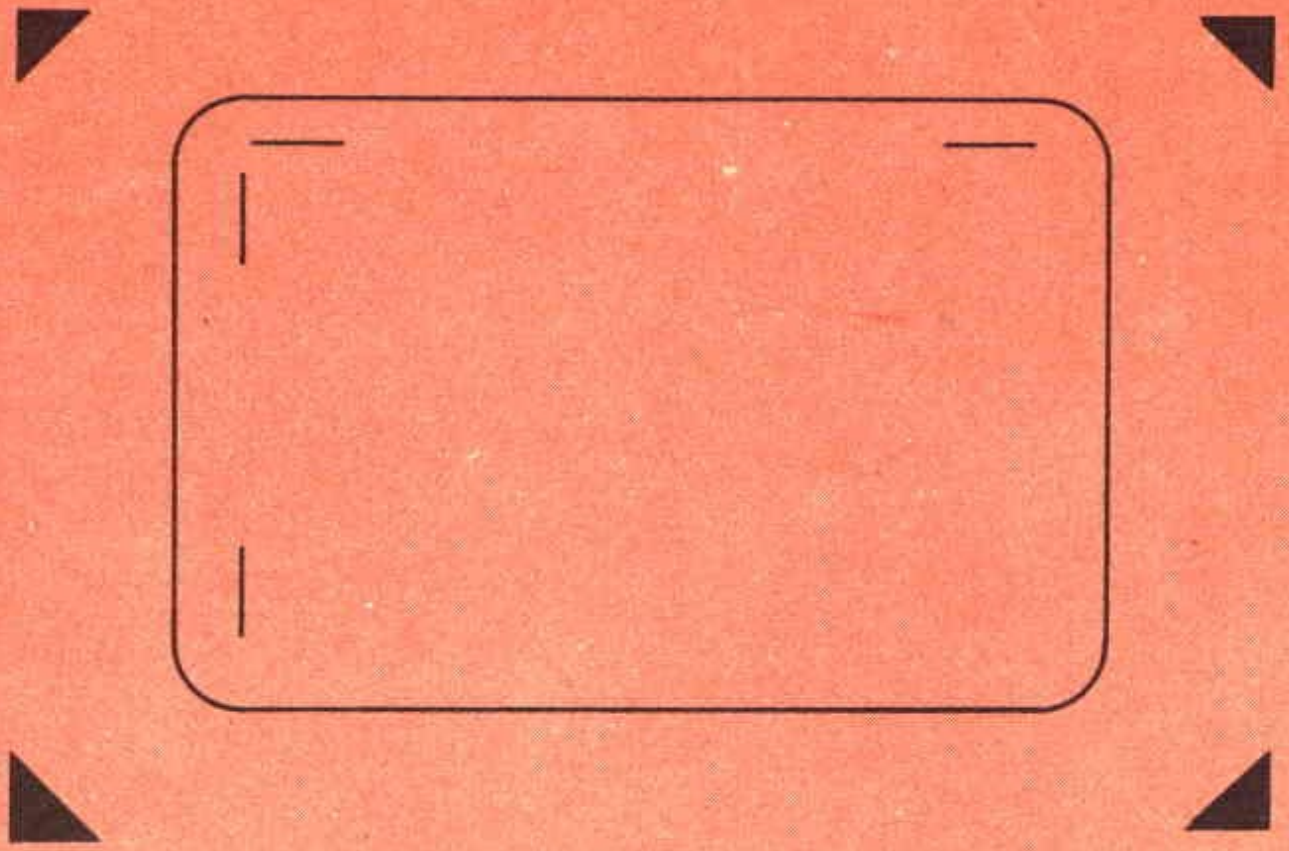

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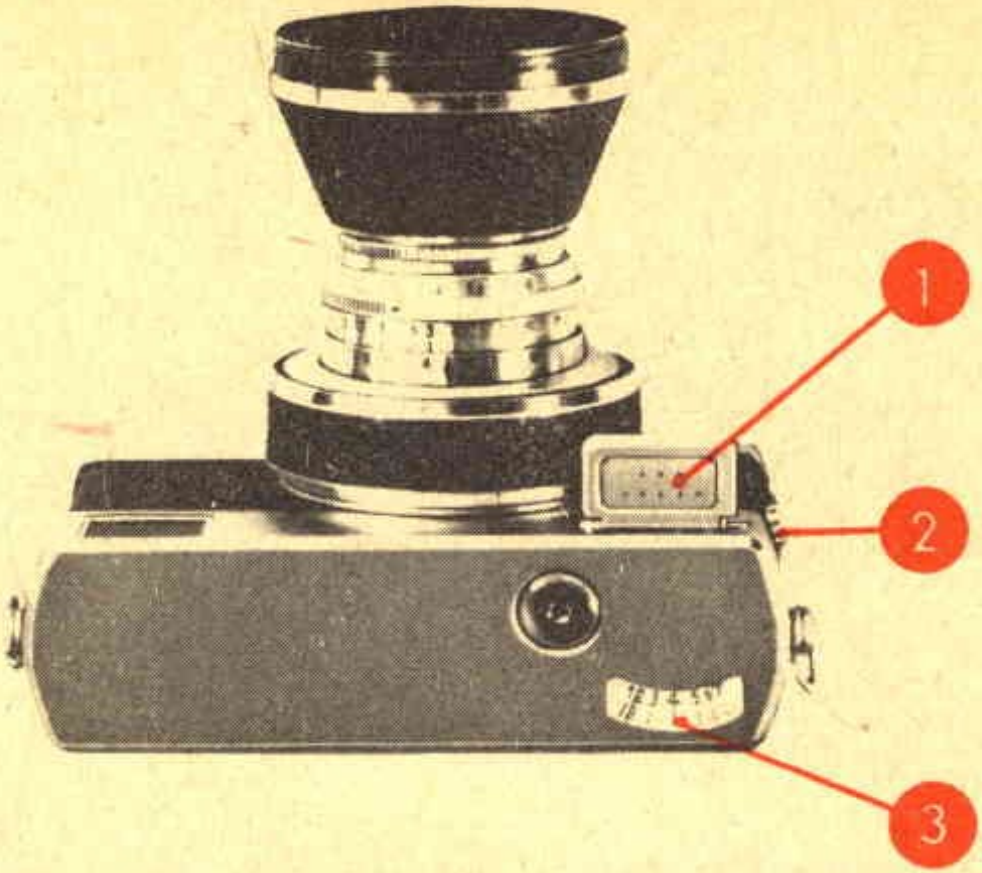

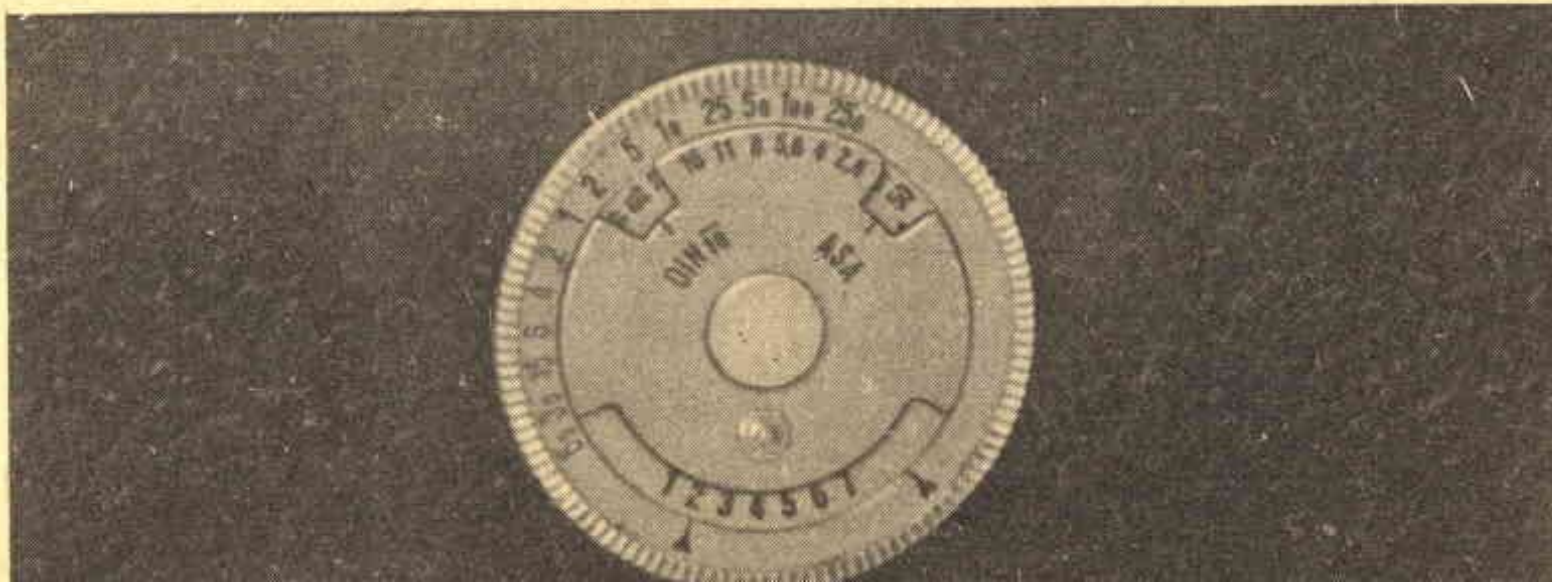

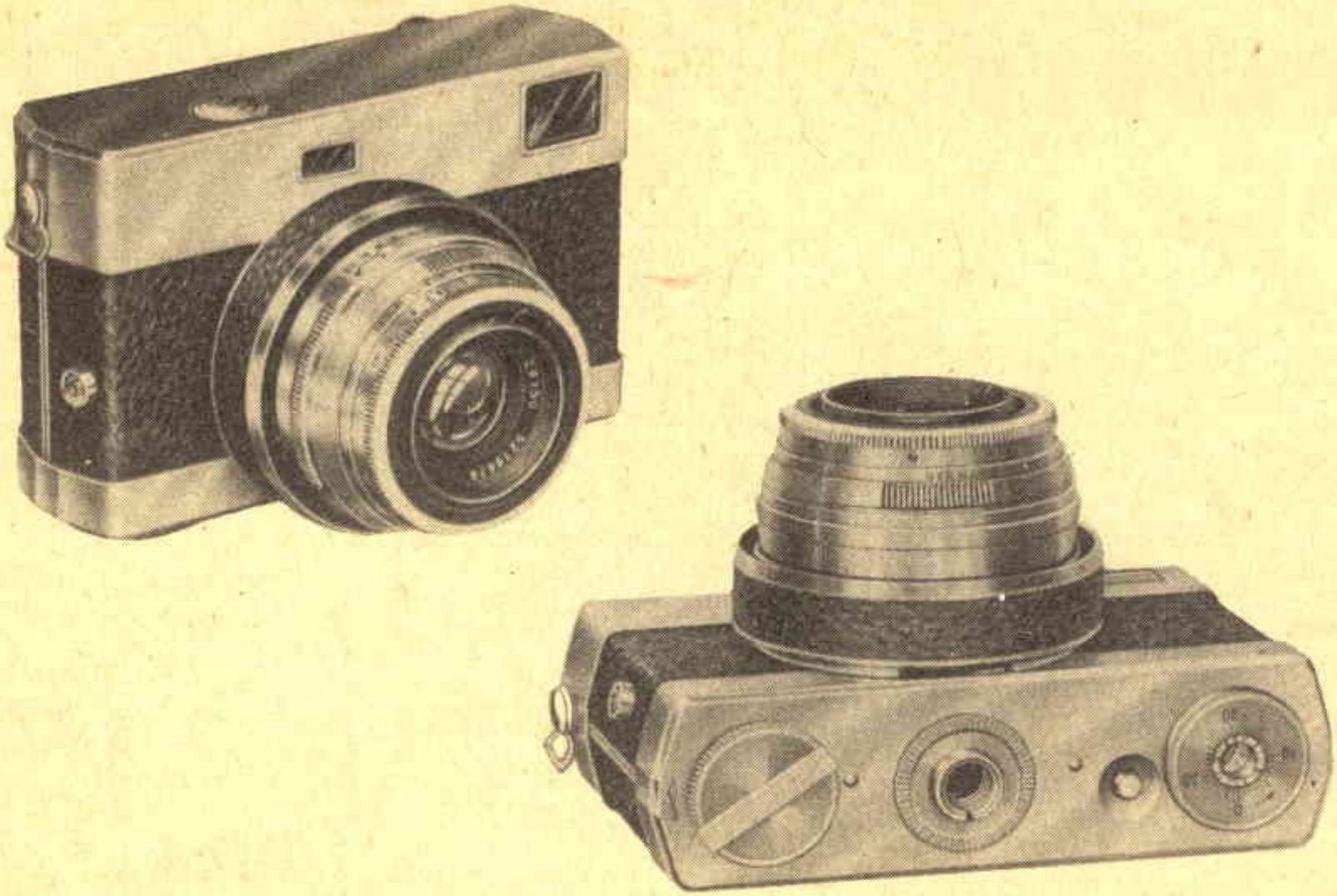

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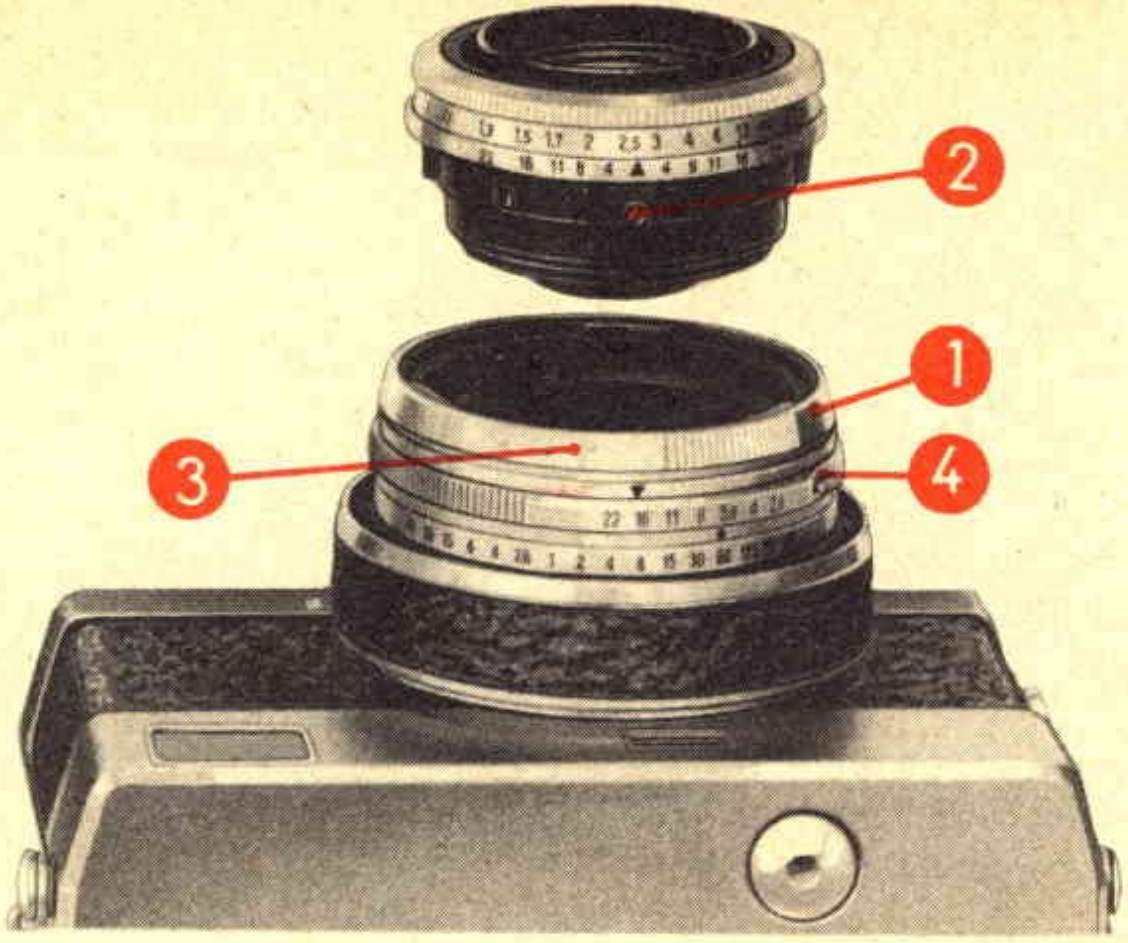
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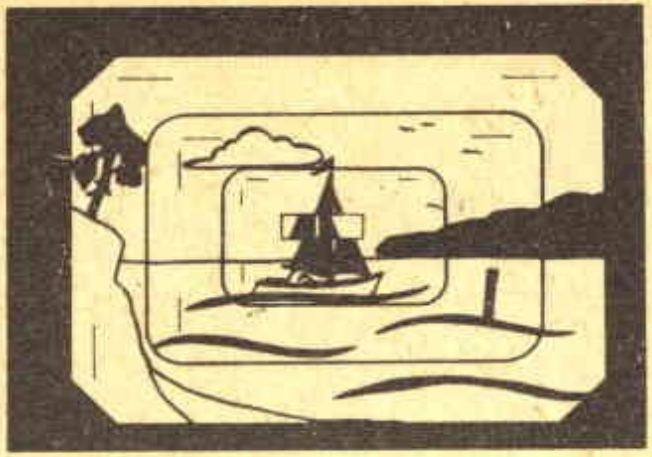

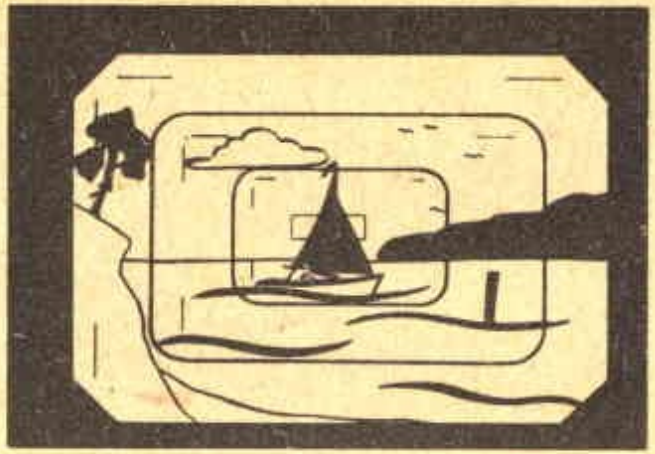

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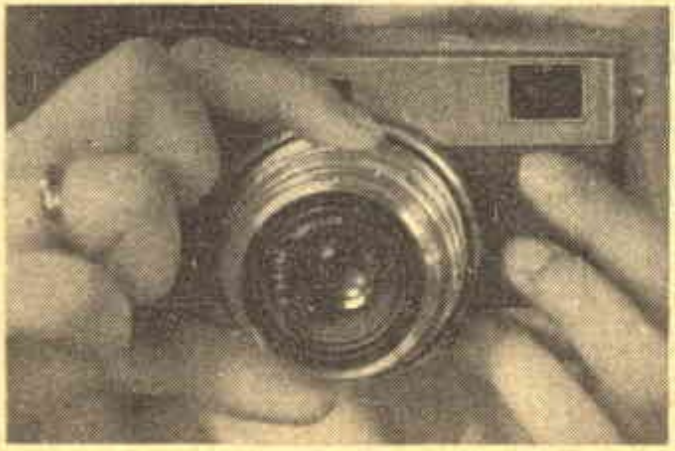

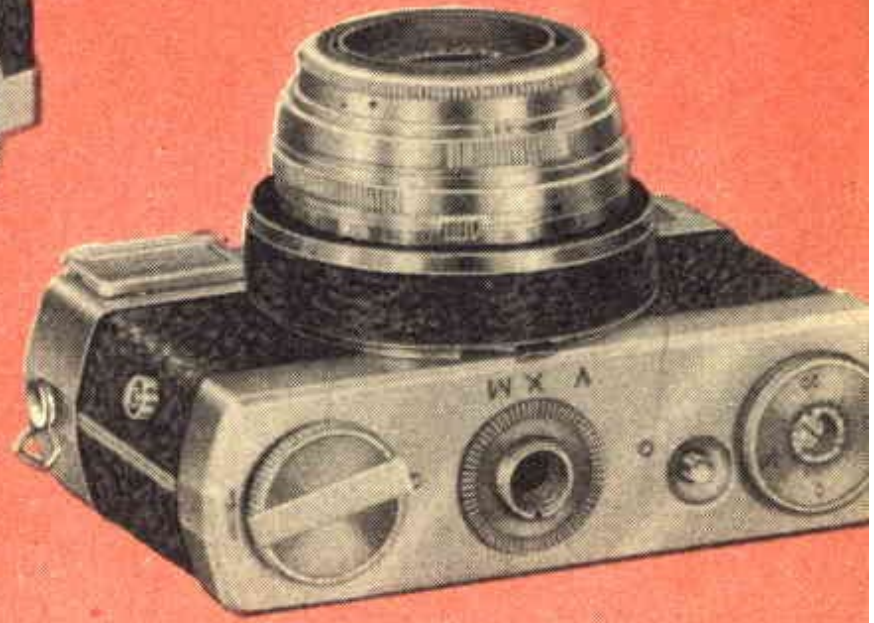

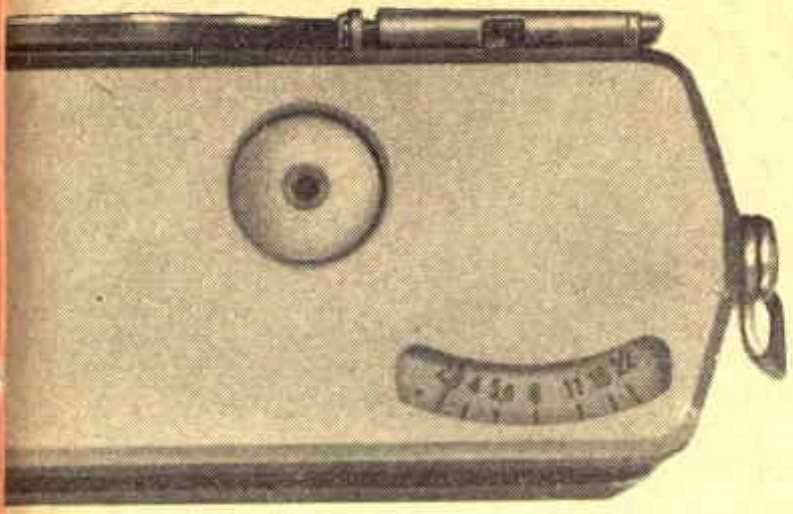

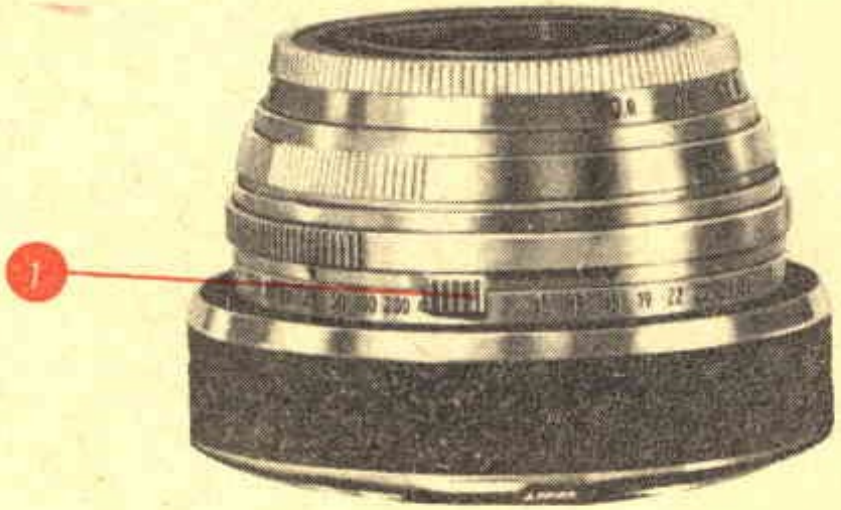
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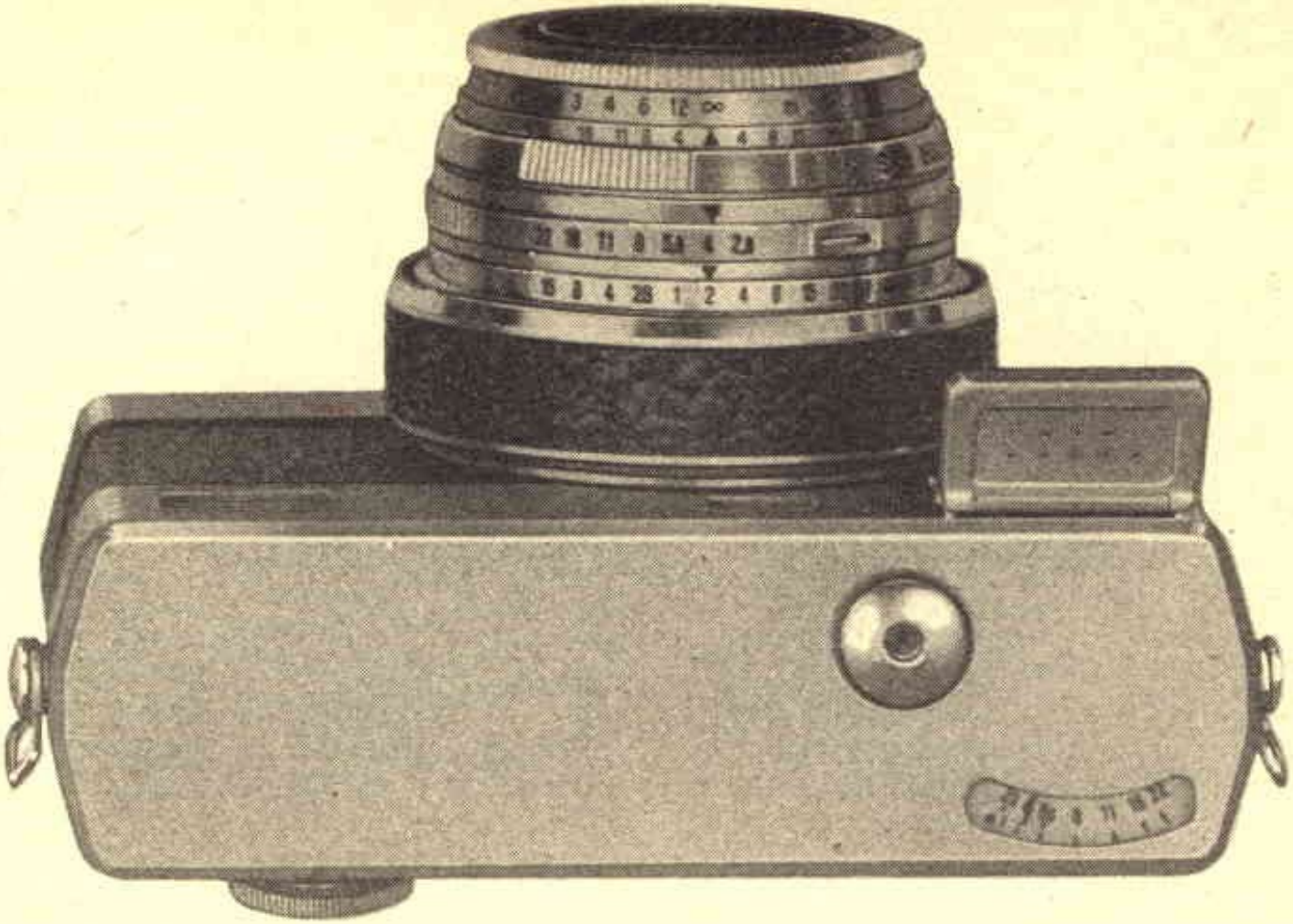

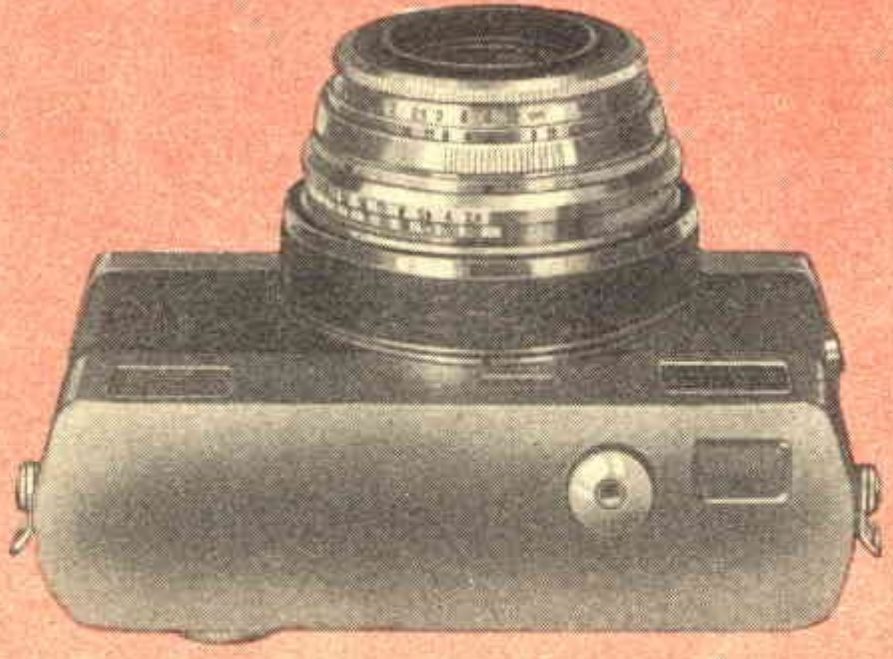

WERRAMATIC

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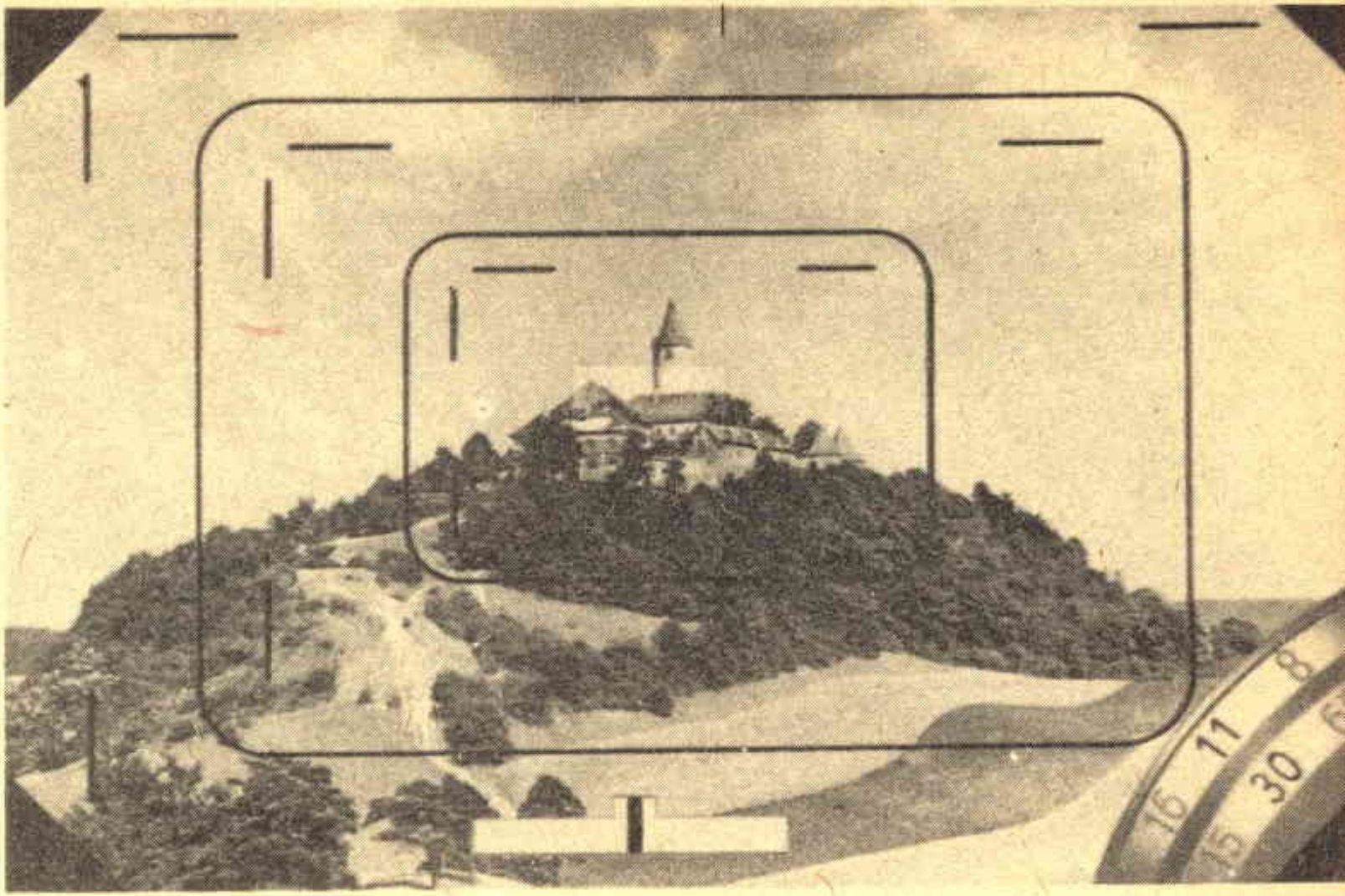
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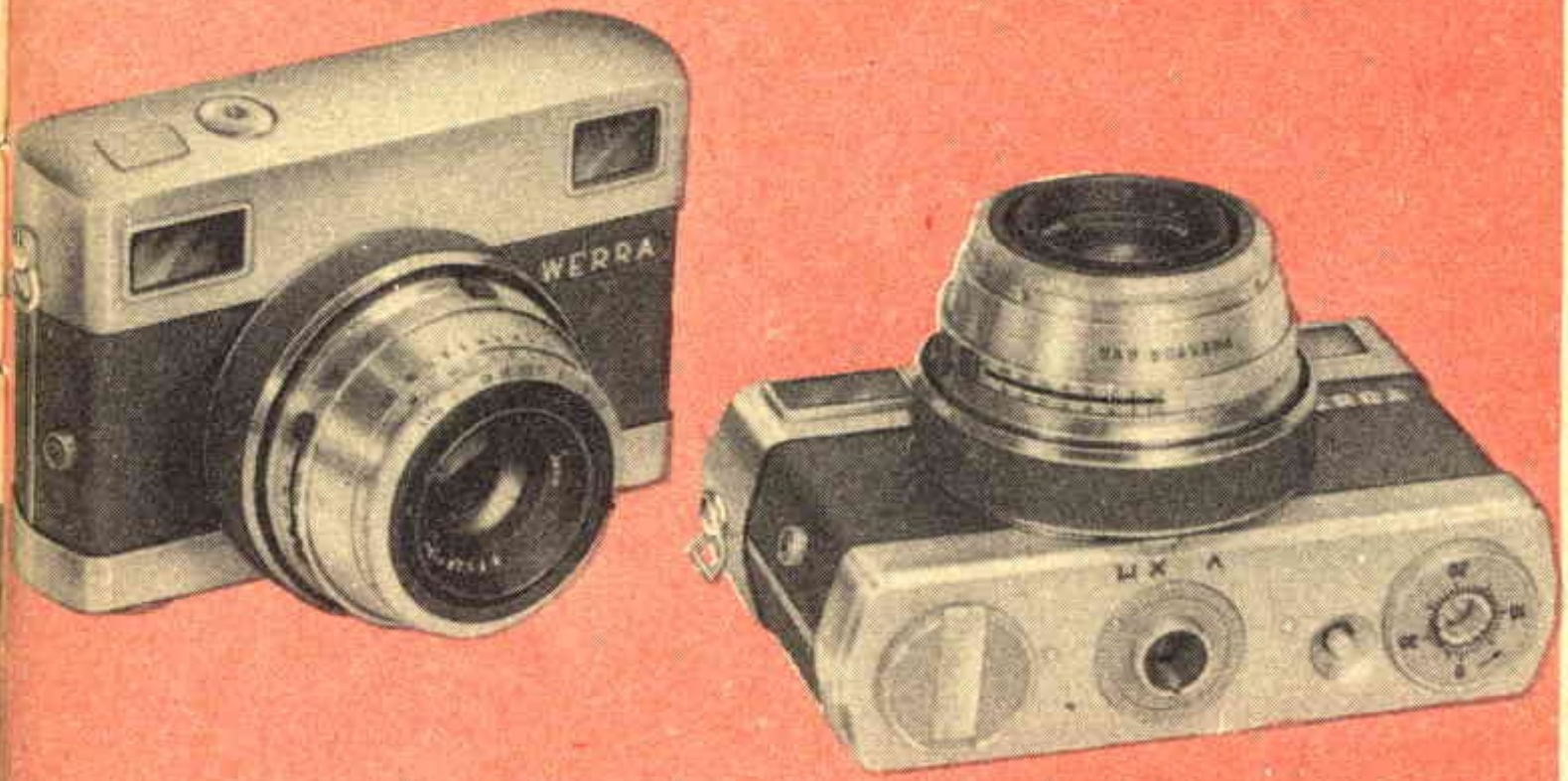
WERRAMAT



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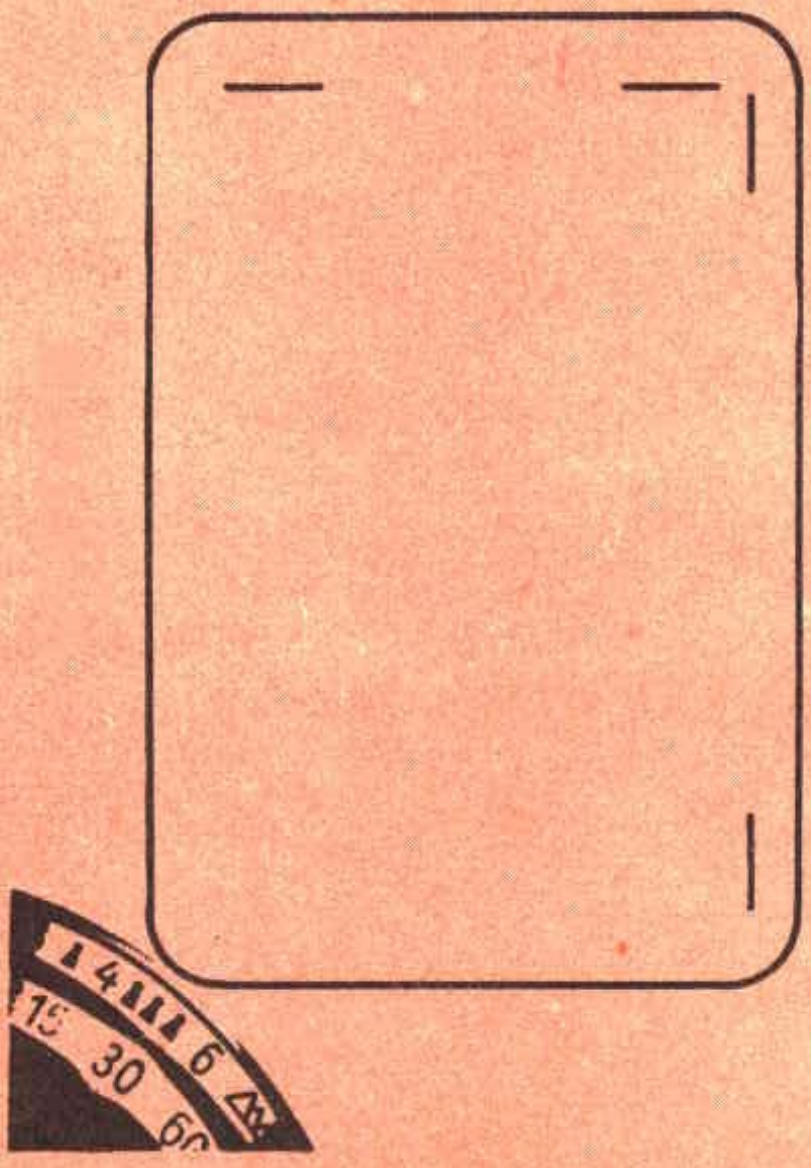

INSTRUCTIONS FOR USE

WERRA 1-4

WERRA mat

WERRA matic

INTRODUCTION

We should like to congratulate you on acquiring the WERRA 35 mm camera. At the same time, we would like to make a request.

Please give as much attention to this instruction booklet as to your WERRA. Work your way carefully through the instructions before you take your first picture – even if you already know something about photography, you should still learn how to use your camera with the help of the instructions. It is only by a thorough study of the instructions that you can be sure of avoiding failure and annoyance. You will then begin to value and love the WERRA for its many fine features and high performance.

May we wish you much pleasure and every succes!

Unlocking the camera back

Turn the knurled ring of the camera back lock 180° to the left, pressing firmly with both thumbs. The index point on the knurled ring and the index mark on the tripod bush should then be opposite each other.

Removing the camera back

Slide out the back with both thumbs in the direction of the arrow until it can be easily lifted off. Then remove the protective cardboard inside.

Loading the camera

1. Turn the take-up spool in a clockwise direction, using the knurled ring (2) to do so, until the curved end of the film retainer (3) is uppermost. Holding the knurled ring, insert the film leader, protruding out of the film cassette, into the film retainer: the emulsion side (light coloured) then faces out.
2. Lay the film cassette in the spool chamber, making sure that the edge of the film lies against the camera body.
3. By turning the knurled ring of the take-up spool, wind the film about twice round the take-up spool (with the emulsion side out). The teeth of the sprocket drum must engage the perforations in the film.

5, 6 **Replacing and sliding on the camera back**

Check that the slit in the cassette (where the film emerges from the cassette) is in contact with the film gate. Press the film lightly against the runners and replace the camera back in such a manner that the pressure plate on the interior of the back rests partly on the film. The back must fit easily into the side grooves. Slide the camera back up in the direction of the arrow. If there is any resistance, turn the rewind crank on the rewind knob slightly (see also "Rewinding the film").

7 **Locking the camera back**

Pressing firmly with both thumbs, turn the knurled ring of the back lock to the right until it clicks into position. The index point on the knurled ring and the index mark on the tripod bush must then coincide.

Check that the camera back is correctly secured.

8 **Tensioning the shutter and winding on the film**

Turn the winding collar to the right until it reaches a definite stop. This tensions the shutter and advances the film one frame. The shutter can now be released by depressing the button (1). Never use force to depress the release button: nor must it be depressed while the shutter is being tensioned.

Before winding on again, the shutter must be released: moreover, before releasing again, the winding collar must be turned as far as it will go. If force is used, the shutter and camera may be damaged.

A double and blank exposure prevention device is incorporated.

When the film has been inserted and the camera back replaced and secured, but before the first exposure can be made, the film must be wound on two frames by twice tensioning the shutter (the film being wound on at the same time of course) and twice releasing the shutter. The film leader, exposed while being inserted, is thus advanced beyond the film gate.

Setting the exposure counter

Before making the first exposure, turn the knurled disc in the centre of the exposure counter in an anti-clockwise direction, until the index mark coincides with the "O" on the counter disc. Every time the film is advanced, the index mark moves on one interval, so that the number of exposures already made on the film can be found at any time.

If the winding collar is operated when there is no film in the camera, the index mark may move on several intervals on the counter disc. However, once a film has been inserted, this is no longer possible.

24 Adjustment of the viewfinder image to suit those with defective eyesight

By adjusting the eyepiece lens (Figure 24), the finder image can be adjusted within a range of ± 2 dioptres to suit persons with defective eyesight.

Summary

1. Release the camera back lock.
2. Remove the camera back.
3. Insert the film.
4. Replace the camera back.
5. Secure the camera back by means of the lock.
6. Wind on the film two frames by tensioning the shutter twice and releasing twice.
7. Set the exposure counter.
8. When necessary, adjust the viewfinder image for defective vision.

10 Rewinding the film

If the film in the camera cannot be further wound on by turning the winding collar, it has been completely exposed (usually after the 36th exposure). It must then be rewound. To do this, hold the camera with its base upwards and depress the rewind button (1), keeping it depressed

until the entire film has been rewound. Raise the rewind crank on the rewind knob and turn in the direction of the arrow, until the resistance to winding suddenly ceases. The film has then been rewound into the cassette.

Now fold back the rewind crank and after removing the camera back, take out the film.

Use of the protective cap

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a) as cover and protection for the standard lens

b) without front cover: when used in this way, unintentional alteration of the setting of the standard lens is avoided, e.g. when a series of pictures is being taken or when the snapshot setting is being used

c) as lens hood for the standard lens.

Note

When screwing on the lens hood for use as protective cap, the distance setting must not be less than 6 metres (20 feet), otherwise jamming may be caused, in consequence of the long focusing movement of the lens. For the same reason, any filters fitted to the lens should be removed before the protective cap is fitted. If filters are to be used

when the protective cap is in position, they must be screwed onto the thread of the cap provided for the front cover.

12 The universal tripod screw

To change over from $^3/_8$" to $^1/_4$" thread, a universal tripod screw, fitting into the tripod bush of the WERRA, is available, for use when the camera is mounted on a tripod. This is also provided with an M 30.5 × 0.5 thread to which the front cover of the protective cap and any filters not in use can be screwed when exposures are being made without a tripod.

13 Filters

Yellow, green (or yellow-green), orange and red filters are manufactured for the WERRA. Filters for use with the standard lens have an internal and external thread of M 30.5 × 0.5, so that they can be used in conjunction with the lens hood. For use with the alternative lenses for the WERRA 3, 4 and WERRAmatic – i.e. the f 2.8/35 mm. Flektogon and the f 4/100 mm. Cardinar, filters with an M 58 × 0.75 thread must be used, together with M 49/M 58 or 51/M 58 intermediate rings.

Conversion filters

We supply two types, the thread in each case being M 30.5 × 0.5:

CB–13/3.5: blue, for exposures on daylight-type reversal colour film in artificial light. The multiplication factor is 3.5.

CR + 1.6/1: slightly reddish-brown, to eliminate blue cast when colour photographs are being made around mid-day. No alternation in exposure is necessary.

Code:

C = Colour, B = Blue, R = Red
— 13 = minus 13 decamireds
+ 1.6 = plus 1.6 decamired.

Shutter

The WERRA is equipped with a central (blade-type) shutter, which, depending on the camera model, is either a Vebur or a Prestor RVS shutter.

The Vebur shutter

This shutter permits exposure times that include B (bulb exposure) and range from 1 to $^1/_{250}$ second. It has an X contact for flash photography. With electronic flash, any shutter speed can be used: with flash bulbs, however, only the speeds B and 1 – $^1/_{25}$ second may be used.

14a The Prestor RVS Shutter

This shutter has speeds from 1 to $^1/_{750}$ second and B. It is fully synchronised and is fitted with a delayed-action release (self-timer). When exposures are made without flash or the delayed-action release it is immaterial whether the synchronising lever is set to X or M.

The X contact (3) permits synchronisation of electronic flash and flash bulbs. All shutter speeds may be used in conjunction with electronic flash: however, when flash bulbs are employed, only the speeds 1 – $^1/_{30}$ second and B, depending on the type of bulb, may be used.

The M contact (2) ist provided for use with certain flash bulbs. In this case shutter speeds from $^1/_{25}$ to $^1/_{750}$ second may be employed, depending on the type of flash bulb.

The instructions supplied with electronic flash equipment and flash bulbs should be referred to in every case.

When the delayed-action release is employed, the synchronising lever should be set opposite the letter V (4). When the winding collar has been operated in the usual way and the release button has been depressed, the shutter functions automatically after an interval of 6 to 8 seconds. The delayed-action device can be employed for flash photographs, under the conditions given for the use of the X contact. The

synchronising lever can be set to the V position either before or after the shutter is tensioned. Similarly, the lever can be set before the shutter is released without its action being affected.

While the delayed-action device is operating, the synchronising lever must under no circumstances be re-set. Once the shutter has operated, the synchronising lever should be returned to the X or M positions, unless more exposures with the delayed-action are to be made immediately.

We cannot accept liability for damage caused by non-adherence to these instructions.

Flash adaptor 14a

An adaptor (5) is available for use with flash units attached to the tripod bush of the WERRA by means of a bar. Before the flash bar is secured, the adaptor ist screwed into the tripod bush of the camera. Jamming of the rewind knob by the flash bar and consequent obstruction of the film transport mechanism is thus prevented.

Accessory shoe for flash guns 14b,c

Two types of accessory shoe are available. The first type is screwed either into the tripod bush of the WERRA, or, when an adaptor for the

Twin-WERRA is being used, into the bush in the side of the adaptor. The second type is secured in place by unscrewing the viewfinder eyepiece a trifle and clamping the shoe in between.

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WERRA 1

Try to memorise as accurately as possible the names of the parts, as they are of great importance in quickly becoming familiar with your WERRA.

1. Release button with screw-socket for wire release
2. Viewfinder
3. Winding collar for shutter and film feed
4. Distance-scale collar
5. Diaphragm setting collar
6. Shutter speed adjustment
7. Flash contact
8. Loops for carrying strap
9. Screw-thread taking lens hood and filter
10. Synchro-lever for "M" and "X" synchronisation (flashlight photography) and for delayed-action release "V"
11. Locking device with knurled ring for camera back
12. Frame counting dial

13. Push-pin for film rewind
14. Tripod bush
15. Rewind knob with folding crank

a) The lens

The WERRA 1 is fitted with the world-famous four-element f 2.8/50 mm Tessar. The figures indicate that it has a maximum relative aperture of f 2.8 and a focal length of 50 mm. It is outstandingly suitable for black-and-white and colour photography. The front knurled ring on the lens serves for setting the diaphragm aperture (the red dot is set opposite the aperture figure).

The estimated distance from the subject is set on the rear knurled ring, the distance (in metres or feet) being set opposite the red index mark.

b) Shutter speed setting

The shutter speed is set by means of the ring fitted with turning lugs (the red dot is set opposite the exposure reading).

c) Diaphragm and depth of field

The diaphragm aperture is as important as the shutter speed. By setting the diaphragm to the lowest figure (in the case of the standard lens, 2.8), the maximum amount of light is allowed to pass through the lens to the film. A large light incidence (i.e. a large

amount of light passing through the lens to the film) permits the use of short exposures. With the same subject and the same illumination, every decrease in the diaphragm aperture (i.e. higher aperture readings) requires an increase in the exposure time. The diaphragm aperture determines the depth of field: a large aperture gives restricted depth of field and a small aperture gives extended depth of field.

The depth of focus range is read off the ring next to the distance-setting ring, using the diaphragm numbers 4, 8, 11 or 16 on both sides of the red index mark.

Example 1

Lens with distances given in metres

When the lens is set to a distance of 6 metres and an aperture of f 8, the depth of field extends from 3.5 metres to infinity.

When the lens is set to a distance of 1.5 metre and an aperture of f 16, the depth of field extends from 1.1 to 2.5 metres.

Example 2

Lens with distances given in feet

When the lens is set to a distance of 20 feet and an aperture of f 8, the depth of field extends from about 11 feet to infinity.

When the lens is set to a distance of 4 feet and an aperture of f 16, the depth of field extends from about 3 to 6 feet.

d) Three-point setting (snapshot setting)

This is obtained by setting the red marks opposite the red figures (in the case of the Vebur shutter, aperture f 8, distance 6 metres (20 feet), shutter speed $^1/_{50}$ second: in the case of the Prestor RVS shutter, aperture f 8, distance 6 metres (20 feet), shutter speed $^1/_{60}$ second). This setting may be used in sunny or very slightly overcast weather from May to September with black-and-white film of speed 17° DIN (40 ASA). If film with a speed of 21° DIN (100 ASA) is used, the shutter speed is $^1/_{100}$ second with the Vebur shutter and $^1/_{125}$ second with the Prestor RVS shutter.

Viewfinder

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The viewfinder is of the large-image prismatic type. It incorporates markings with which allowance can be made for parallax. When the distance between camera and subject is over 1.7 metre (5 feet 6 inches), the image produced by the lens on the film is indicated by the black frame. For close-ups, that is to say, photographs where the distance is between 0.9 and 1.7 metres (3 feet and 5 feet 6 inches), the viewfinder area within the broken lines is to be used.

Summary of the essential points when taking a photograph

1. Unscrew the protective cap and remove the front cover.
2. Screw the protective cap onto the lens as a lens hood.
3. Turn the winding collar as far as it will go.
4. Estimate the distance and set this on the lens.
5. Select the aperture.
6. Set the shutter speed.
7. Make sure when necessary that the depth of field is correct.
8. When using the three-point (snapshot) setting, note the point b in Figure 11 and point d in Figure 16.
9. Release the shutter.

WERRA 2

The WERRA 2 differs from the WERRA 1 solely in possessing a built-in photoelectric exposure meter.

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Photo-electric exposure meter
This has two measuring ranges

First measuring range: in poor light conditions, when the flap is closed, the needle does not move. Open the flap (1) by pressing the hinge pin (2) protruding slightly at the side.

Second measuring range: when the light is good, the needle moves even when the flap is closed. A green mark is visible on top of the flap axis.

On the rear of the WERRA 2 is situated an exposure calculator.

19

This has the same values as the exposure meter scale DIN and ASA film speed values, aperture values, and shutter speeds and in addition one green and one black mark. When a film is being inserted, its speed must first be set on the inside disc by turning the latter. (The German standard classification is DIN, the American is ASA.)

Prior to exposure, the camera is held pointing towards the subject to be photographed. The value indicated by the exposure meter is then transferred to the exposure calculator: if the first measuring range is being employed (i.e in poor light, the flap being raised), the black index mark is set to the indicated value: if the second measuring range is being employed (i.e. in favourable light conditions, the flap being closed), the green index mark is set to the indicated value. The exposure time and diaphragm aperture figures are then set on the shutter speed ring (6, Figure 15) and the aperture ring (5).

Summary

1. Unscrew the protective cap and remove the front cover.
2. Screw the protective cap onto the lens as a lens hood.
3. Turn the winding collar as far as it will go.
4. Estimate the distance and set this on the lens.
5. Set the film speed (in DIN or ASA) on the exposure calculator.
6. Hold the camera pointing in the direction of the subject to be photographed and read the value shown on the exposure meter scale.
7. Transfer the value shown to the calculator.
8. Read the exposure time and diaphragm aperture.
9. Set the exposure time on the shutter and the diaphragm aperture on the lens.
10. Make sure when necessary that the depth of field is correct.
11. When the three-point snapshot setting is being used, bear in mind the point b contained in Figure 11 and item d in Figure 16.
12. Release the shutter.

WERRA 3

20

The WERRA 3 is provided with interchangeable lens and a coupled split-image rangefinder. There is no built-in photo-electric exposure meter.

Interchangeable lenses

21

The following interchangeable lenses are available for the WERRA 3:

a	b	c
f 2.8/50 mm Tessar Standard lens	f 2.8/35 mm Flektogon Wide-angle lens	f 4/100 mm Cardinar Telephoto lens

Removing and fitting the interchangeable lenses

22

1. To remove: the lock securing the lens is released by turning the retaining collar to the left as far as it will go; the lens can then be removed.

2. To fit: by turning to the left, check whether the retaining collar is turned as far to the left as it will go. Both grooves are then opposite each other. Insert the lens in such a way that the screw (2) is introduced into the groove (3). By turning the retaining collar to the right, the lens is secured on the camera.

While pressing the coupling key (4), turn the diaphragm aperture ring once to the right and once to the left or vice versa. This ensures that the diaphragm of the lens is properly engaged.

23

The construction of the lens is shown in Figure 23. The diaphragm aperture ring and shutter speed ring are coupled: they can however be operated separately by pressing the coupling key.

25
a and b

When focusing by means of the rangefinder, the small rectangular section in the middle of the viewfinder image is used. The front knurled ring on the standard f 2.8/50 mm lens or the black ring on the f 2.8/35 mm wide-angle lens or the f 4/100 mm. telephoto lens is turned by the thumb and index finger until the small rectangular area in the centre of the viewfinder image forms an integral part of the whole image (Figures 25 a and b). For photographs in vertical format, horizontal lines of the object should be used for focusing, and for photographs in horizontal format, vertical lines should be used.

The field of view

The field of view of the various focal lengths is outlined by frames visible in the viewfinder. The entire field is covered by the f 2.8/35 mm. Flektogon wide-angle lens, while the outer and inner frames show the

image produced by the f 2.8/50 mm. standard lens and the f 4/100 mm. Cardinar telephoto lens respectively.

Do not obstruct the rangefinder window with the hand, as shown in Figure 25 c: grasp the lens controls from below, using the thumb and index finger.

25
c and d

The split-image rangefinder is effective with the standard and wide-angle lens over distances from 0.8 to approximately 30 metres (2 feet 8 inches to 100 feet) and with the telephoto lens from 1.5 to approximately 50 metres (4 feet 11 inches to 165 feet). The fact that with subjects beyond 30 or 50 metres (100 or 165 feet) the split images cannot be made to coincide is unimportant in practice and is explained by the fact that the lenses when focused on the distances quoted are in the "infinity" position.

Setting the film speed

It is customary to record the speed of the film in the camera on the film type indicator. When looking at the base of the camera, a small pointer, concentric with the diaphragm and shutter speed ring, is visible. This pointer may be turned to the DIN or ASA speed of the film in the camera, and it should be set immediately after loading the film into the

camera. The speed of the film in the camera can thus be ascertained at any time.

Summary

1. Fit the lens.
2. Turn the diaphragm ring once to the left and once to the right (or vice versa), at the same time pressing the coupling key.
3. Turn the winding collar.
4. By means of the eyepiece lens, adjust the viewfinder image until it is sharp.
5. Focus by means of the split-image rangefinder.
6. Observe the picture area for the different lenses.
7. Set the diaphragm aperture and shutter speed.
8. Release.

26 **WERRA 4**

The WERRA 4 differs from the WERRA 3 solely in possessing a built-in photoelectric exposure meter.

27 **The photo-electric exposure meter**

This has two ranges, as in the case of the WERRA 2. It differs from that

in the WERRA 2 only in having different values on the scale. (See explanation to Figure 18.)

Setting the exposure value

28
29

When the film has been loaded, the film speed (DIN or ASA) should be set on the underside of the lens mount by shifting the small knurled lever (1, Figure 28). The aperture figure indicated on the exposure meter scale (Figure 27) should now be found on the diaphragm ring. (1, Figure 29). The diaphragm ring is now turned until the figure indicated is opposite the green or black index triangle (to do this, the coupling key is pressed in). Half-intervals indicated on the scale can also be transferred. As in the case of the WERRA 2, the exposure meter has two measuring ranges (see also page 17). The values corresponding with the rear red index triangle are used for the exposure: that is, following Figure 29, an aperture of f 11 for a shutter speed of $^1/_{15}$ second. However, all the other aperture and shutter speed values lying opposite each other can be set against the red index triangle. But do not under any circumstances press the coupling key.

If the aperture figure indicated on the scale cannot be set opposite the green or black mark, the aperture ring should be uncoupled by

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