

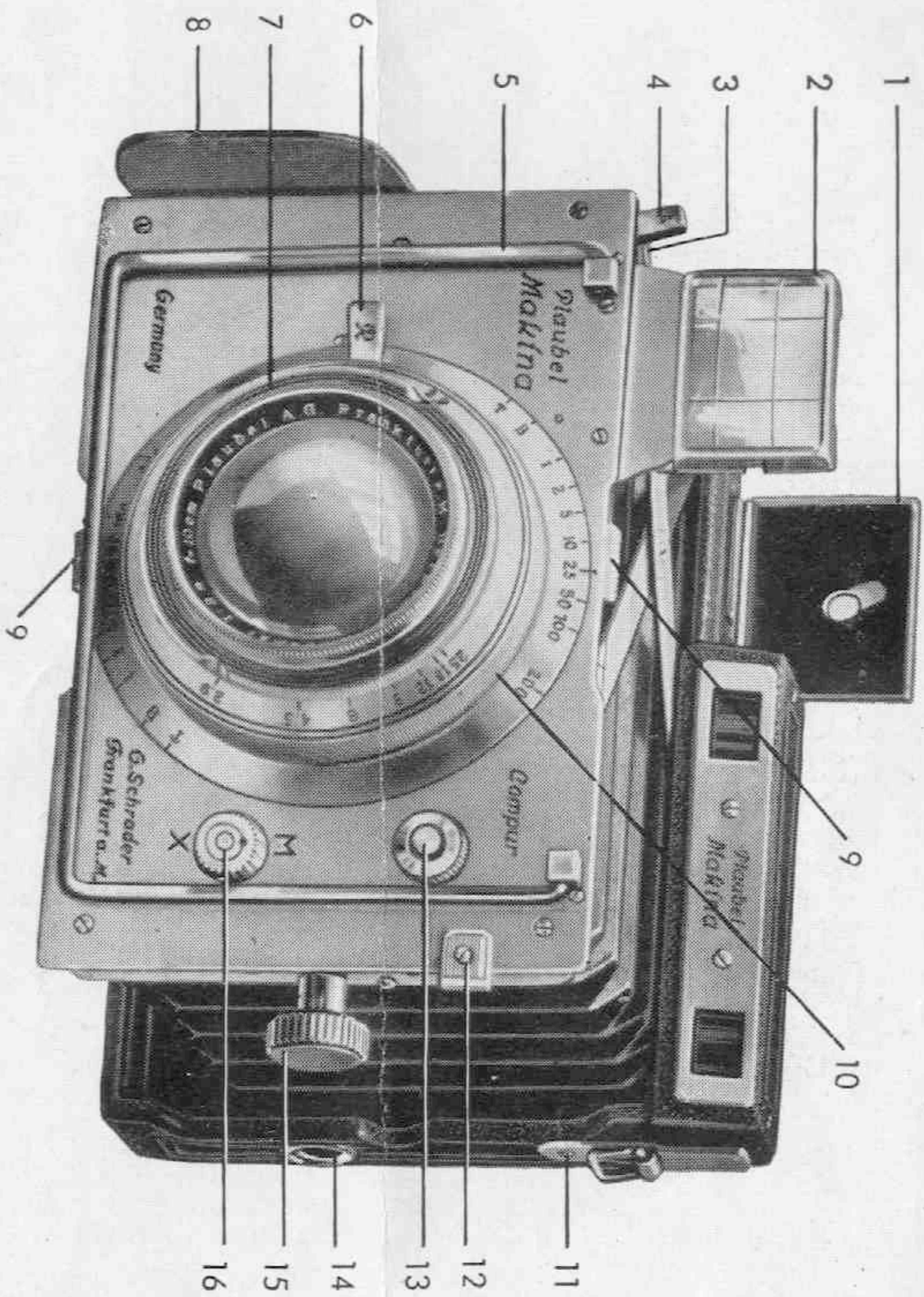
Directions for use of the

***Makina***

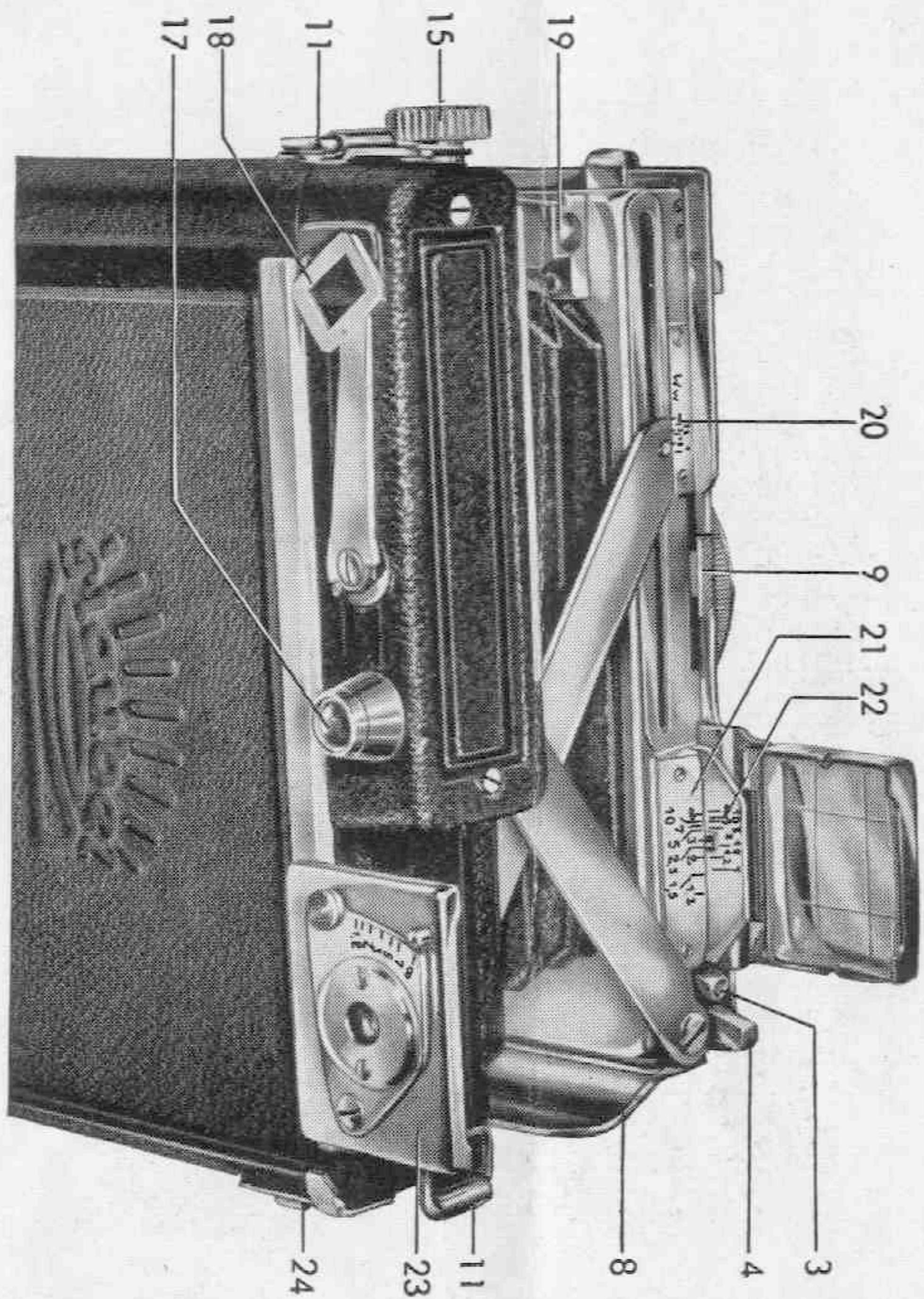


Feinmechanik und Optik  
Frankfurt am Main · Gräbstraße 66











- 1) Optical viewfinder-back
- 2) Optical viewfinder-front
- 3) Thread for cable-release
- 4) Release knob
- 5) Frame-finder
- 6) Ring for setting the exposure times
- 7) Ring for setting the stops (diaphragm)
- 8) Holding support
- 9) Grip to disengage the lazy tongs
- 10) Quick-change lens mount
- 11) Eyelets for shoulder strap
- 12) Lever for tensioning the Compur shutter
- 13) Stopper
- 14) Tripod bush
- 15) Focusing knob
- 16) Knob for setting M and X
- 17) Eyepiece of range-finder
- 18) Sight for frame-finder
- 19) Mounting piece for flash-equipment
- 20) Scale for Wide-angle Orthar 6.8/7.3
- 21) Scale for Anticomars 10 cm
- 22) Scale for Anticomars 10 cm when the focale-plane attachment is used
- 23) Optical viewfinder back with parallax compensation
- 24) Lock for plate holders.



### **To open the Makina**

Hold the camera by its long side with the left hand and draw the front forward with thumb and middle finger of the right hand until the struts snap in audibly. Make sure that both the struts really click in so that the front is parallel to the back.

The Makina has snap-in positions, one for the shorter and the other for the longer extension. The short extension must be used when the Rapid-Wide angle - Orthar is employed, while the longer extension fits the Anticomar and the Tele Makinar. Make sure you have the correct extension for the lens you use. The rangefinder is designed for the longer extension and does not work with the wide-angle lens and the Tele-Makinar.

### **To close the camera**

If camera has been set for near objects, turn indicator back to infinity. With the thumb and middle finger of right hand press the ribbed metal grips (9) on each side and push front back; first close Newton finder on the front and also the protecting cover with the lens on the back.

### **How to hold the Makina**

Span holding grip (8) on camera front with **right** hand (thumb behind, index finger on the release knob, the other fingers in front) while the left hand holds camera with thumb and index finger by the focusing knob. At the same time press camera slightly against forehead. By this means the camera can easily be held quite steady and is always ready for action.

### **Focusing**

On the left hand side of camera front is the focusing screw (15) by which the crossed struts are moved with the distance indicator over the scale (21) on right side of camera front. This scale gives the distance in meters or feet. The focusing knob is on the left side. As the



camera is held with the right hand the focusing knob can be turned even just before the exposure (the right index finger on the release knob) and the distance setting may be changed at the last instant (an important feature when children at play or animals have to be photographed).

Between the „infinity“ mark and the 30 feet mark a special dot indicates the „hyperfocal distance“ (near-distance dot) upon which the lens (at apertures between  $f: 5,6$  and  $f: 11$ ) should be focused to give the greatest depth-of-field possible. All objects from about half the hyperfocal distance to infinity will be sharp, that is, especially in the middleground which is important for most of the pictures.

### **The coupled range-finder**

The range-finder of the Plaubel Makina is based upon the „coincidence principle“, i. e. it contains 2 mirrors, one rigid and one adjustable, the latter of which is moved by the focusing device of the camera. When looking through the eye-piece of the range-finder you will see a rectangular image of yellowish colour and a small, round picture of white colour. By turning the focusing screw (on left side of the camera front) the lazy tong struts of the camera adjust simultaneously the front plate and the movable mirror, so that the circular white picture moves over the yellowish one; when both pictures coincide the picture is correctly focused and absolutely sharp.

For using the range-finder, first pull out the Makina until both struts snap in position. Now pull out the nickled telescopic eye-piece of the range-finder and look through it. When the camera is set for „infinity“, you will see that both pictures of the range-finder coincide for distant objects, whereas near objects will show 2 different pictures, side by side. By turning the focusing screw until both pictures coincide, you will get the correct distance and definition. Please



always keep in mind that the „sine qua non“ of all range-finders is to look straight through the eye-piece, not obliquely (sideways).

For objects in motion the range-finder may also be used as a direct finder (though the angle of view is only about 1/3 of the whole angle of the picture shown on the plate or film), as in most cases instantaneous photos require only the main object focused. First set the Compur shutter to the exposure.

The range-finder of the Makina is coupled only to the Anticomars 1 : 2,9/10 cm and 1 : 4,2/10 cm, but not to the Tele-Makinar 1 : 4,8 and the Wide-angle Orthar 1 : 6,8. It is possible, however, to use the range-finder for these lenses also by measuring the distance and setting the distance found by using the metre-or foot-scale that is placed at the front of the Makina below the optical viewfinder. See particulars given with the various lenses and supplementary lenses.

**Important!** We wish to emphasize that all coupled range-finders are instruments of the highest precision and therefore sensitive to rough handling. The camera should be carefully handled and any hard knocks should be avoided. The nickel-plated holding screws should under no circumstances be touched, unscrewed or adjusted! If the range-finder or the coupling should be damaged the camera must be returned to the factory.

### **The Compur-Shutters of the Makina**

The Makina cameras II, IIS and III are equipped with the **Compur I** - shutter. The Makina IIIR has the new **Rapid Compur I** shutter.

The setting of the exposure time required is done by rotating the wide, bright rotary ring (6) surrounding the lens. To simplify the setting it has a setting mark on top as well as below. The values given are fractions of a second (e. g. 25 = 1/25 second) and the



exposure time indicated is obtained when the locating mark with the figure coincides with the white or black dot on the front-panel. When set to 1/200 or 1/400 a marked resistance will be felt and a little more force has to be used to turn the ring. This is quite in order as an additional spring is tensioned for these speeds.

Prior to exposure Compur shutters have to be cocked by pressing down the lever (12) on the right side of the camera front until it snaps in. After cocking this lever (12) runs home automatically into its original position.

For long time exposures as well as for the examination of the image on the ground glass screen, the shutter must be set to „T“. When the release lever (4) or the cable release is pressed home the shutter opens and stays open until a second squeeze of lever (4) closes it. The setting „B“ for short time exposures is different in that the shutter opens when the release lever (4) is pressed and closes the moment the pressure ceases. When set to „T“ or „B“ **the shutter must not be cocked** or it will be damaged!

### **Delayed action release (selftimer) for Makina II and II S.**

Set shutter to the desired speed from 1 second to 1/100 second. It is important to note that the selftimer cannot be used without damage to the shutter when the latter is set to 1/200, T or B.

Push lever S down, now press with the finger on knob V and then press down with lever S a second time. Then trigger A is pressed down either with the finger or the cable release. After a delay of about 10-12 seconds the shutter will be released automatically. This delay allows the photographer to appear in the picture himself.

### **Makina III and III R**

The shutters of these two models have no delayed



action release! Otherwise the instructions for use of the Compur Shutter hold true for these cameras too.

**With one important exception concerning only the Makina III R:**

The new Rapid Compur shutter has to be cocked even when set to „T“ and „B“!

**Stop-Adjustment.** – An important feature: The Compur shutter set to 1 – 1/400 second can be opened without rotating the exposure-time setting ring in case you wish to have that famous „last look“ at the focusing screen:

Cock the shutter in the normal way, but hold the cocking lever (12) down thus preventing it from sliding home, press button A and release lever 12. This lever now remains half cocked. Press release lever 4 and the shutter will open and will stay so.

To close the shutter, press lever 12 down again until it snaps in. The button A will then spring back and lever 12 slides back. Prior to the actual exposure the shutter has, of course, to be cocked again.

**The shutter release lever (4)** is placed in the right-hand top corner of the front panel. The shutter is released by a slow, steady pressure with the right index finger. To avoid camera shake it is vitally necessary to **squeeze** the release lever and not to press it with a jerk.

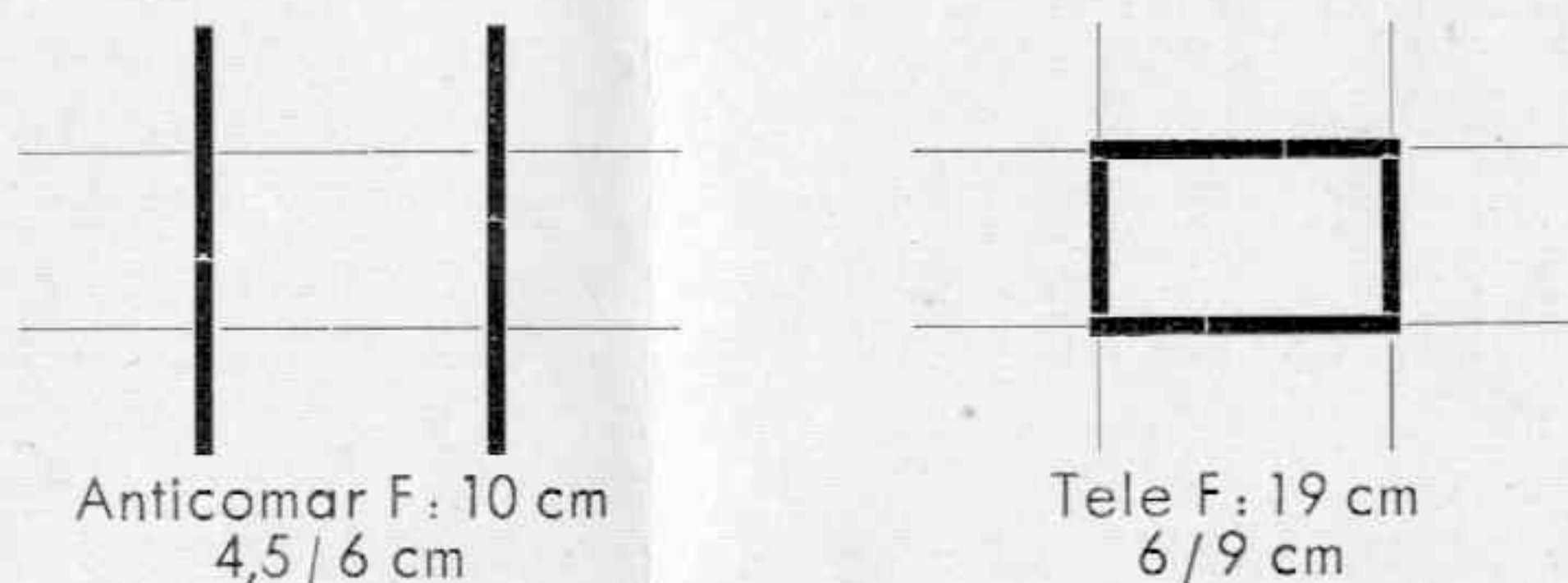
**The cable release** should be screwed into the threaded ferrule (3) at the side of the release lever (4). It is used for time exposures mainly.

**The viewfinder**

The Makina is equipped with a direct vision optical viewfinder, and, furthermore, with a frame-finder (which is always reliable and the most convenient of all). Both viewfinders are eye-level finders which automatically eliminates any lateral parallax.



Within the rectangular white lens of the optical viewfinder the size 4,5 x 6 cm (the full size divided into two halves) is clearly marked to simplify operations, as is the image field of the tele-lens also. The bold lines in the drawing below explain the markings. See also page 12.



**Parallax compensation:** The eyepiece of the optical viewfinder is attached to a revolving sector, which when elevated lowers the visor lens. At the end of the second is a distance scale that allows correct focusing of the image field – especially of close-ups. The revolving sector ensures the compensation for the vertical parallax.

**Cassettes:** The filmpack, roll film, and plate-holders must be inserted into the ground-glass screen frame in the usual way (prior to this remove the nickel-plated holding bar (24)!) )

### Plaubel Plate holders

Above the plush lining of the holder is a small lever which operates a vernier inside the holder; turn this lever up to the right then put the plate into the holder taking it by the thumb and middle finger of the left hand and pressing down the upper edge of the plate with the first finger, then turn the lever down to its closed position when the plate will be firmly fixed.

It is necessary, of course, to press home the plate sufficiently. It must be pushed underneath the supporting flange and not against its edges. Otherwise the plate-holder may be damaged or the plate crack.



The plate-holder should be pulled out of the camera by pressing the holder upward with the thumb of the left hand while pulling it out with the right hand.

**Roll film holders** are available for the sizes 6 x 9 cm (2 1/4 x 3 1/4 ins); 6 x 6 cm (2 1/4 x 2 1/4 ins) or 24 x 36 mm. As usual the 120 spool gives eight negatives 2 1/4 x 3 1/4 ins., eleven to twelve negatives 2 1/4 x 2 1/4 ins. and 16 negatives 4,5 x 6 cm (1 3/4 x 2 1/4 ins.) The 24 x 36 mm film holder is used with the normal miniature film cartridge for 36 exposures. Carefully study the instructions for use of rollfilm holders.

**Filmpacks:** The single film sheets in filmpacks are never completely flat like a glass plate. The distance of the various sheets from the front of the pack differs greatly with the various makes, and in some filmpacks the single sheets curve outwards, in others inwards.

To ensure a sufficient definition the lens should be stopped down to at least 1 : 5,6 and smaller.

Filmpacks must be handled with the utmost care, only the **narrow sides** should be touched. Pressure on the back or the safety sheet at the front will cause light to penetrate the pack before it is inserted into its holder. Filmpack holders should never be loaded in sunshine, always in the shadow.

The camera should not be opened when the shutter of the darkslide is pulled out. Although the Makina is fitted with efficient air ducts, suction of the bellows is unavoidable and makes the films curve when the dark-slide is open.

**The tripod plate** should be used when exposures have to be made from a tripod. The camera should be fixed to the plate with both its tripod bushes. The camera can then be screwed to the tripod in horizontal or vertical position by means of the tripod bushes in the tripod plate.



## *The Optical Outfit*

**In the Makina with rapid-change-mount** the laminae of the Compur shutter are behind the lens.

The lens is a complete unit in a precision rapid-change-mount. The insertion or removal of the lens is done by a short rotation to the left or the right by gripping the lens mount at the wide milled edge just above the front plate. Do not use force when screwing in the lens! The rapid-change-mount ensures the lens having always its correct position mechanically as well as optically. It does not matter whether the stop-numbers engraved on the barrel are in a different place from that before the last removal. Each lens has its own iris-diaphragm which can be set to the stop-number by rotating the ring (7) until the notch coincides with the stop required.

**The Anticomar 1 : 2,9/10 cm** is an ideal lens for spontaneous work, especially for pictorial work in landscape and portrait photography. Where a gradation of subtle grey tones, a soft definition and a certain „plasticity“ is required this lens is unsurpassed.

**The Anticomar 1 : 4,2/10 cm** is a lens yielding the highest possible definition and contrast and is the objective for the photographer of every-day task, news, machines, architectural details and reproductions. It is the lens of the press-photographer and the traveller.

**The Tele-Makinar 1 : 4,8, f - 19 cm (7 1/4 ins.)**

To mark the **different image areas** covered by the Tele-lens the white lens of the optical viewfinder shows the engraving mentioned on page 10 under „Viewfinder“. The changing and the removal of the Tele-Makinar S does not differ from that of the Anticomar. On the front-panel of the Makina you will find a red triangle, and another red mark is on the diaphragm-



ring of the Tele-Makinar. In order to enable the photographer to read the stop-numbers from above it is recommended that the two red markings on ring and front-panel should coincide when the Tele-Makinar is inserted. However, should it be screwed in differently, no harm will be done. The Tele-Makinar as well as the Anticomar have their own iris-diaphragm that can be set in the usual way. On top of the lens barrel, stop numbers are engraved, and above them are placed the distances in metres or feet. These two scales together form a convenient depth-of-field-ring giving the correct depth of field for every aperture. The Tele-Makinar S employs the same catch spring as the Anticomar. It is semi - automatically coupled to the range-finder, which means that the distance is measured with the range-finder and then read off from the Anticomar-scale. The focusing device of the camera remains unaltered, but the distance measured is set on the Tele-Makinar, which has its own distance setting in its helical mount. For instance: The subject is 9 feet away from the camera. Measuring with the range-finder results in the Anticomar scale showing a distance of 9 feet. Now the Tele-Makinar 1 : 4,8/19 cm by virtue of its helical mount is also set to 9 feet, **without altering the distance setting of the camera.**

### **The Rapid Wide-angle-Orthar 1 : 6,8, f : 7,3 cm (2 3/4 ins.)**

Owing to its short focal length a special catch spring for the lazy tongs of the camera is necessary (20). The Rapid Wide-angle-Orthar has its own iris-diaphragm and must be interchanged like the other rapid change-lens.

**The correct image area** is found either by focusing on the groundglass screen or by using a small slip-on cap with lens for the optical viewfinder. This cap is slipped on the viewfinder in such a way that the lens of the cap points toward the subject to be photographed. The Rapid Wide-angle Orthar is not coupled



to the range-finder, but the latter can be used by measuring the correct distance between subject and camera. Then the lazy tongs are made to engage the catch spring provided for the wide-angle lens and the distance measured then transferred to the helical mount's distance setting. In this way good, rapid work can be done without using the focusing screen.

## *Supplementary lenses for close-ups*

The supplementary lenses shorten the focal length and, also, the distance between camera and object. This results in a magnification of the image scale, so these lenses are mainly employed for the taking of small objects, for making reproductions of prints and pictures and for photographing small objects in their natural sizes. The focusing is done with the micrometer focusing drive of the Makina after the distance between camera and object has been established. When the Tele-Makinar is employed together with supplementary lenses the focusing mount of this lens can also be used. The stop-numbers of the original lenses (Anticomar, wide-angle lens, Tele Makinar) can be employed without alteration, as the equivalent focal lengths of the various lens-combinations will always be reset to the original focus length when close-ups are made.

When supplementary lenses are used it is advisable to stop down considerably to ensure a good definition at the edges. For the combination 1-7 and 11, about  $f:8$  should be chosen, while for the other combinations the lens should be stopped down to about  $f:11$  or  $f:16$  (see table).

All our supplementary lenses have a thread for screw-in filters so that the combination lens and supplementary lens plus filter is always possible.

With **lens T 1,5** (especially suitable for flowers, still



life, portraits) photographs can be made at a distance of about 65 cm (2 ft 2") when the Anticomar is employed. The distance will be about 115 cm (46 ins.) when the Tele-Makinar is used instead. When taking portraits with Anticomar and T 1,5 it must be borne in mind that the distance is rather short and distortions cannot be avoided. Portraits in profile or semi-profile will be better than frontal pictures.

The **lens DIN** can be used for a distance of about 45 cm (16 1/4 ins.)

The **lens R 0,1** is for photographing small objects in their natural sizes. It is not recommended that the Tele-Makinar should be used for this purpose and the lens R 0,1 does not fit the Makinar therefore.

The mounts of the supplementary lenses T 1,5 and Din for the Makina have two threads in order to fit the outer-threads of the Anticomar and the Wide-angle-Orthar as well as the inner thread of the Tele-Makinar 1: 4,8, f - 19 cm. The lens R 0,1 can be screwed only into the inner threads of the Anticomar and the Wide-angle-Orthar.



Nr.	Lens Combination	Camera setting : Anticomar catchspring A Wide-angle catchspring W Tele: catch spring A	Position of the pointer on the equivalent feet- or metre-scale	Approximate distance between object and groundglass screen	Greatest possible expansion of object	Approximate image scale in relation to actual size of object
			m	cm	cm	
1	T1.5 and Anticomar	A	$\infty$ 1.5	121 76	58.0×86.0 36.0×54.0	0.10 0.16
2	T1.5 and Tele-Makinar	A	$\infty$ 2	127 92	26.5×41.0 20.0×29.5	0.21 0.29
3	T1.5 and Wide angle	W	$\infty$ 1	119 64	97.0×14.3 34.0×50.0	0.06 0.17
4	T1.5 and Wide angle	A	$\infty$ 1.5	36 32	14.0×21.0 10.7×15.9	0.41 0.54
5	DIN and Anticomar	A	$\infty$ 1.5	60 49	26.5×39.0 19.3×28.6	0.22 0.30
6	DIN and Wide angle	W	$\infty$ 1	59 44	36.0×54.0 23.0×34.5	0.16 0.25
7	DIN and Wide angle	A	$\infty$ 1.5	30 28	10.7×16.0 8.6×13.0	0.54 0.66
8	R 0.1 and Anticomar	A	$\infty$ 1.5	25 24	6.8×10.1 5.8× 8.6	0.85 1.0
9	R 0.1 and Wide angle	W	$\infty$ 1	23.5 21.5	8.8×13.2 7.1×10.3	0.65 0.82
10	R 0.1 and Wide angle	A	$\infty$ 1.5	21.2 20.5	5.6× 7.8 4.5× 6.6	1.1 1.3
11	Wide angle alone	A	$\infty$ 1.5	41 35	16.6×24.5 13.5×20.0	0.35 0.43



Filter	Subject matter	Filter Factor	Type of negative material	Makina I and II Order No :	Makina IIS and III Order No :
Yellow, light	scenes with violent motion, portraits, landscapes	2	ortho	118	505
Yellow, medium	landscapes, snow	3	ortho	118/1	505/1
Yellow, strong	against the light, colours, still-life, paintings, landscapes and distant views	4	ortho	118/2	505/2
Orange	distant views, reproductions	5	ortho	118/3	505/3
Grreen	landscapes with distant views, against the light, snow, reproductions of paintings	3-4	pan	120	506
Red	distant views, night effects, reproductions	6-8	pan	120/1	506/1
Blue	photographs with artificial light (reducing red), reproductions	1.5	correct pan	120/2	506/2
Ultra-violet	high mountains (over 6000 feet) beaches in sunshine	1	correct pan	120/3	506/3



## *Plaubel filters*

In order to obtain a satisfactory representation of colour in terms of grey tones a good filter is indispensable. We recommend the exclusive use of our Plaubel filters for which flatness and parallelism is guaranteed. They are made of Jena special glass stained in the mass and are in threaded mounts. Screwing the filters on the lens mount is the safest way of ensuring a correct optical fitting with the least loss of definition.

With our Plaubel filters (see the table on page 17) instantaneous exposures are often possible on account of the high speed of the Anticomar. With the „stronger“ filters time exposures should be made and it is useful to stop down the lens to  $f:11$  or  $f:16$  to obtain a sufficient depth of field.

**For our Makina with rapid-change-mount** filters in a special mount are available which allow their employment for all our rapid-change-lenses. The inner thread fits the outer-thread of the Anticomar and Wide-angle Orthar, while the outer thread fits the inner thread of the Tele-Makinar  $1:4,8$ ,  $f = 19$  cm.

## *Sun shade (lens hood)*

The all-metal sun shade with its cylindrical tube (dead-black inside) protects the lens from reflections on the glass surfaces. It can be screwed on the lens either by its outer or inner thread. The Plaubel sunshade allows the insertion of Plaubel filters, supplementary lenses and Duto disks without the removal of the shade from the lens. Pressing down the latch on the tube and hinging off the ring exposes an inner thread in the fastening ring of the sunshade into which the filter or supplementary lens can be screwed. The tube is then swung back and the combination is ready for use.



## **Instructions for using the detachable focalplane shutter unit with the Plaubel Makina camera.**

The focal-plane shutter unit is slid into the rails on the camera back in place of the usual dark slide. On its own back are provided a second set of rails, into which the dark slide, film-pack adapter, roll-film adapter or ground-glass screen can be fitted in the usual way.

Owing to the thickness of the shutter the extension of the bellows has to be altered to restore the correct distance between the lens and the film plane. A special catch spring can be supplied by the factory to serve this purpose. However, the focal plane shutter and the Wide-angle Orthar cannot be employed together on account of the two catch springs that can, of course, not be used simultaneously.

Focusing is done by the special scale provided when the focal-plane shutter is in use. This is usually placed over the top of the focusing scale for the Anticomar lens. In those cameras that have not been designed for use with the Orthar Wide-angle lens, it will be found at the moving end of the lazy-tongs focusing scale. The distance meter should not be used with the focal-plane shutter unit, though it may be used to read the distance of a subject on the normal Anticomar focusing scale, and the mount then altered to read this same distance on the special scale provided. The lazy-tongs must then be moved into the nearer position before exposure.

The alteration of the shutter speed is easily arranged by the plain knob. The latter is pulled out gently from the camera and turned to indicate the desired speed. The knob is then released, care being taken that the peg on its under side engages correctly in the appropriate hole below it. The shutter is released by a brief pressure on the protruding button.

When using the focal-plane shutter unit, it is naturally



essential to be sure that the Compur shutter of the Makina is set to „T“ and open.

### Flash mechanism

The flash mechanism consists of three different parts:

1. Rotary knob 2 and flashcontacts d on the front plate of the camera (Fig. 2)
- 2) Slide c (Fig. 1) to take the flashgun and
- 3) the flashgun (Fig. 3)

The actual flashgun (Fig. 3) consists of:

- A Reflector
  - B Socket for flash bulb
  - C Sockets for two extension flashes
  - D Battery tube to take 3-U2 cells
  - E Support for clamping device
  - F Press button for shutter release via electro-magnet
  - G Cord with three-point plug
  - H Lock nut at lower end of battery tube.
  - I Strap lug.
- 
- a. Press button for stop adjustment
  - b. M and X adjustment
  - c. Slide for flashgun
  - d. Sockets for flash cord

There are two different kinds of flashlight:

- a) with consumable flashbulbs. — The Makina has a built-in electro-magnet which ensures the synchronous opening of the shutter and firing of the bulbs up to 1/400 second. All flashbulbs with a delay of 16 to 19 milliseconds can be fired when the knob b on the front plate is set to „M“. The electro-magnet works only when the shutter is cocked



properly! — Flashbulbs to use: G.E. and Mazda No. 5, 11, 22; Sylvania Press 25, 40, 50; Philips Pf 14, 25, 38, 60.

- b) with electronic flash (strobe-or speedlamp).  
Modern speedlamps work **without** delay! The knob b has, therefore, be set to „X“.

Consumable flashbulbs **without delay** can also be fired with setting „X“ and 1/25 sec. Flashbulbs to use: Philips PFS, G. E. Speed Midget.

### **How to attach the flashgun to the camera.**

Push the flashgun directly over the slide c (Fig. 1) hinge down clamping lever E 1 and fasten it thoroughly. Connect plug G (Fig. 3) with sockets d (Fig. 1 and 2). The electrical release of the synchronised shutter is done by pressing button F (Fig. 3).

The flashgun can be used separately from the camera if required in which case only the flash-cord is connected to the camera.



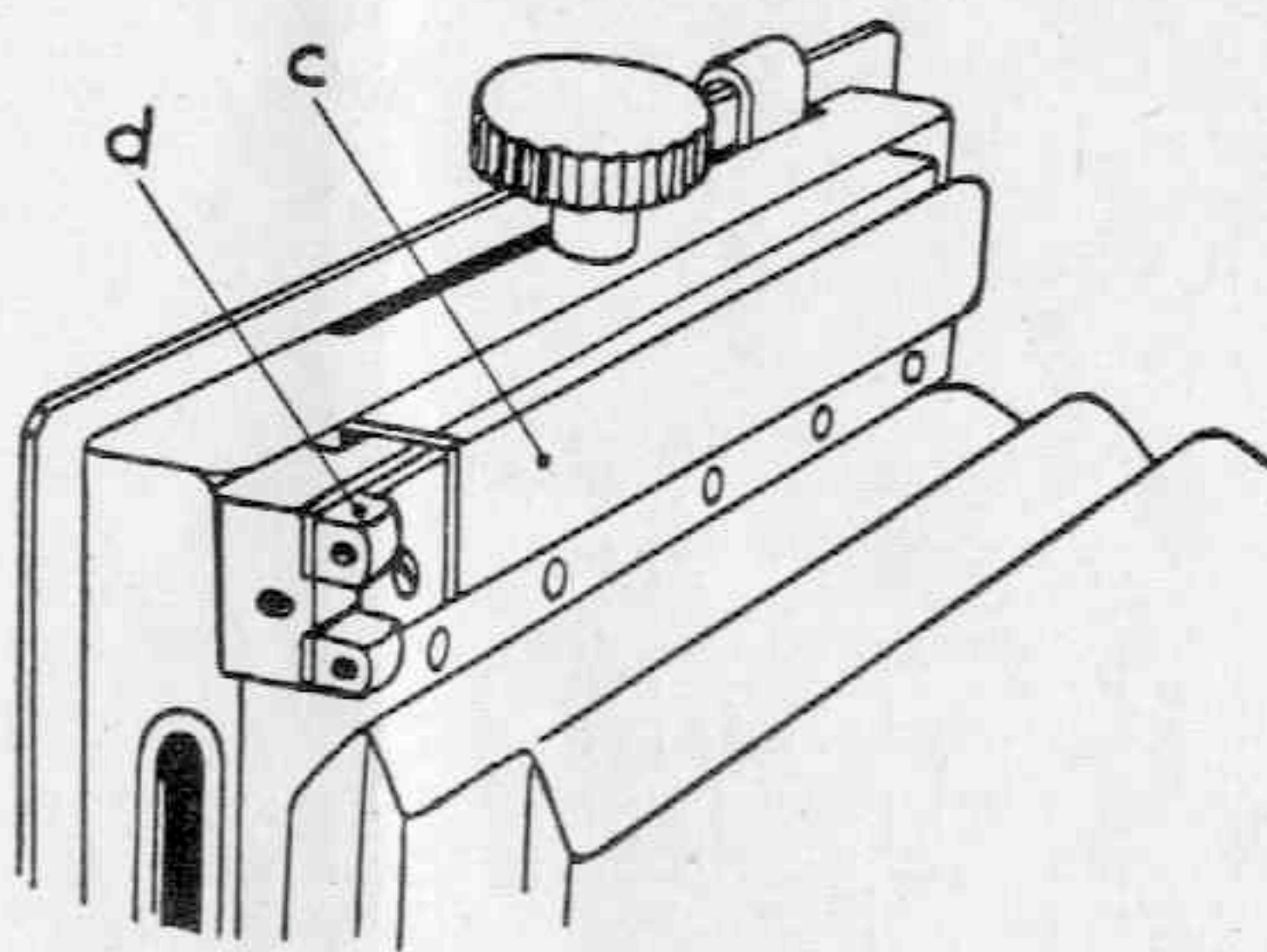


Fig. 1

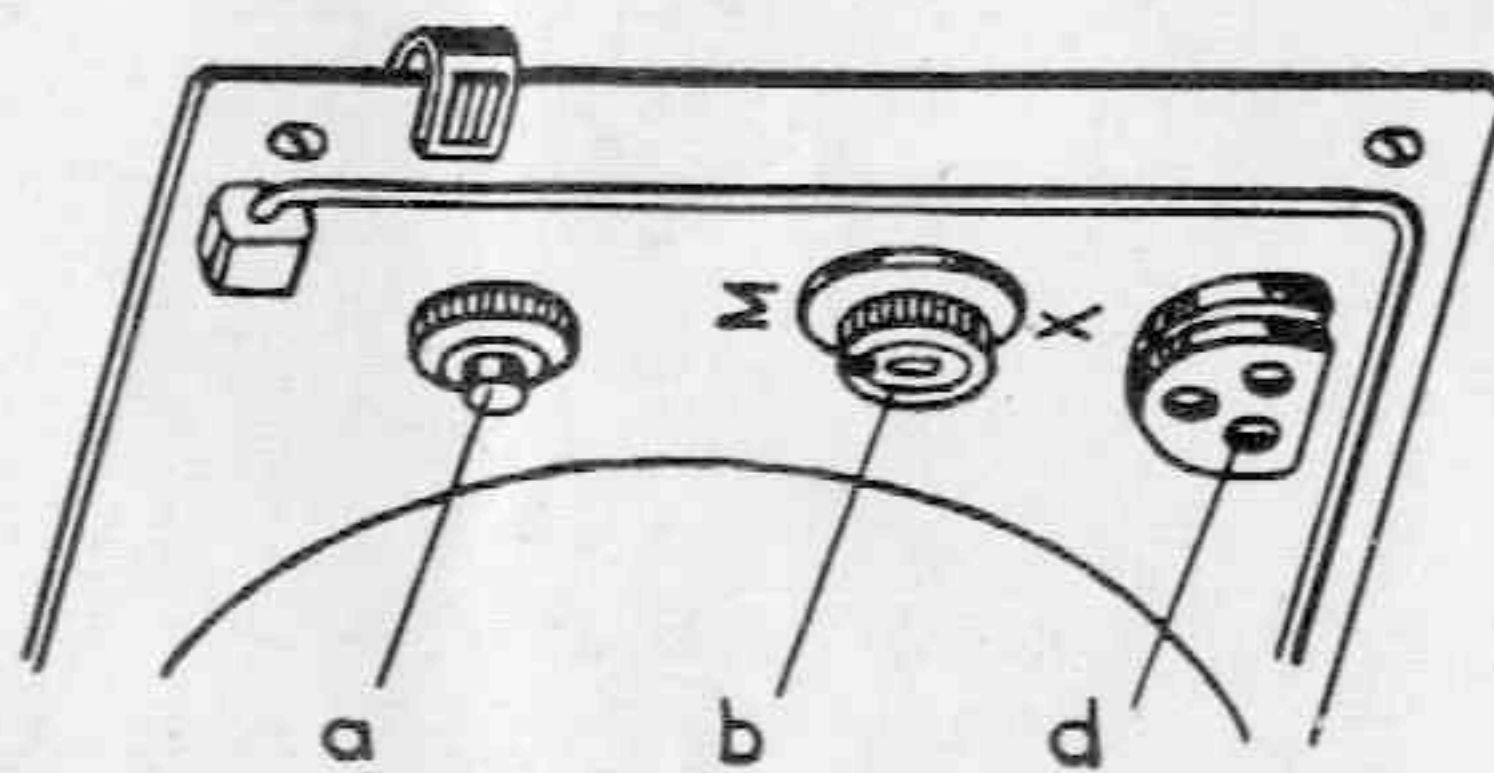


Fig. 2



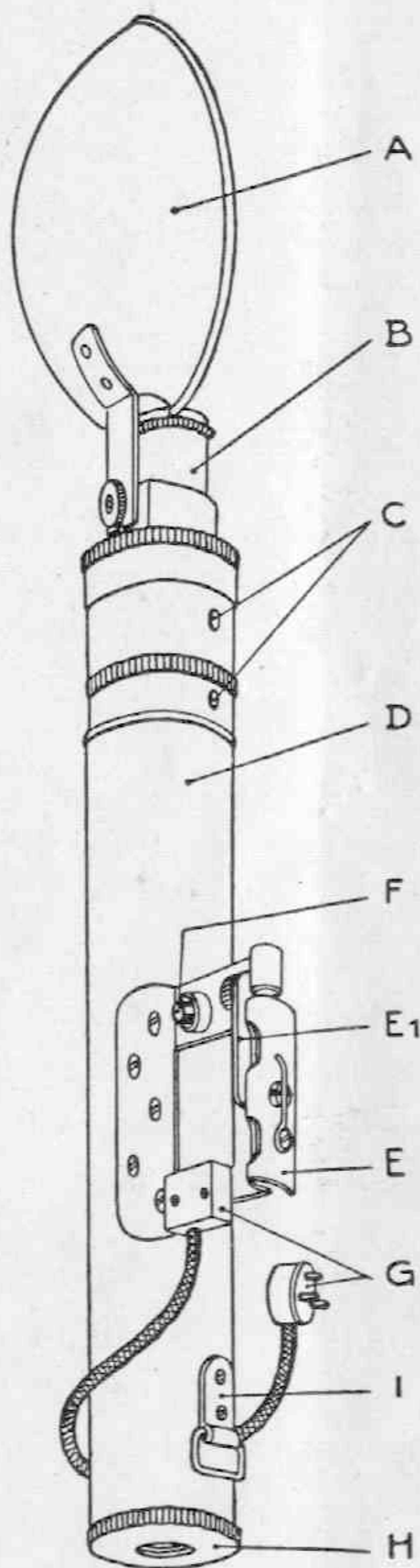


Fig. 3

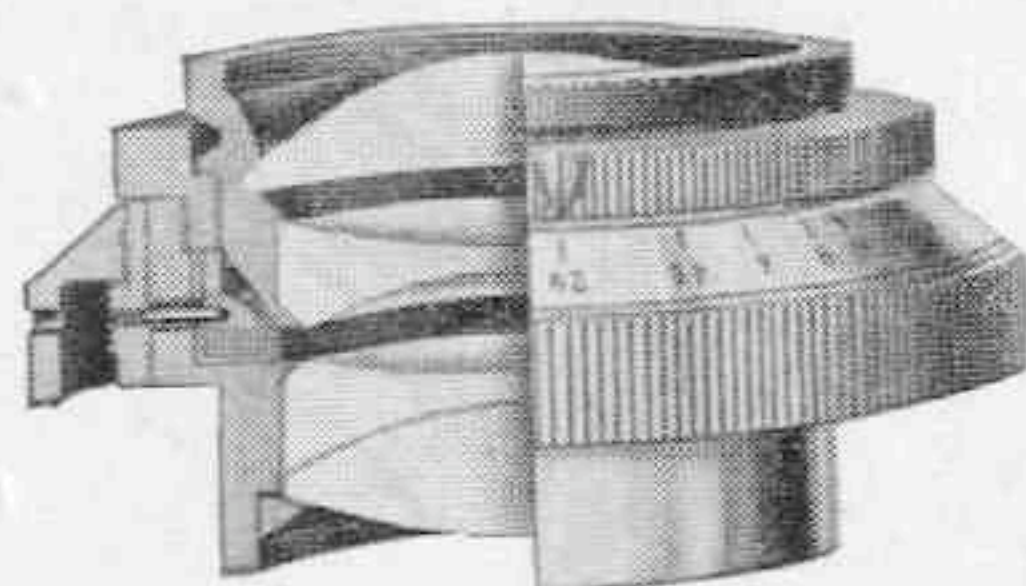


### **Important recommendations:**

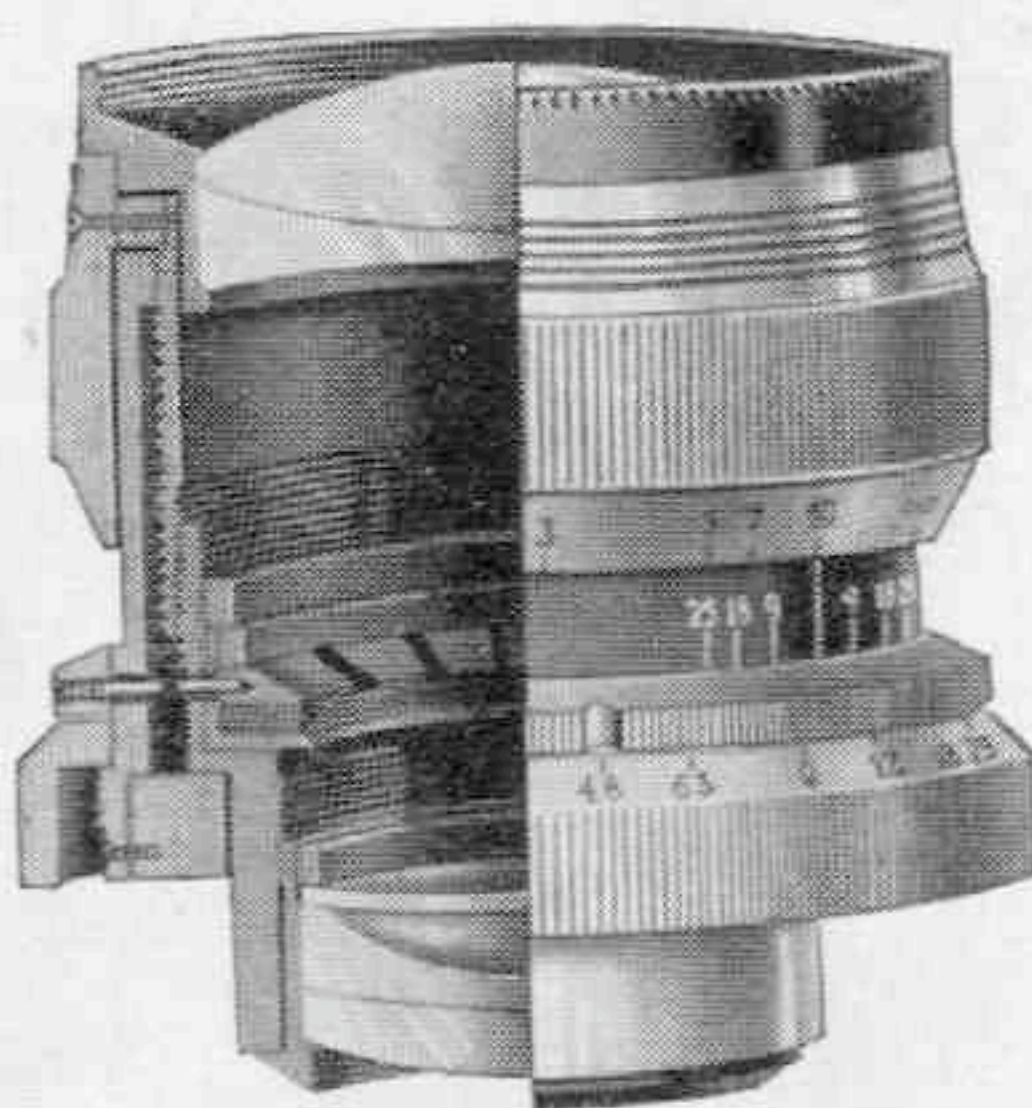
- 1) Prior to firing the flash the shutter must be cocked.
- 2) Keep all electrical contacts scrupulously clean and dry.
- 3) Use fresh U2 batteries only, special flash batteries with at least a current of 3 amps are best.
- 4) Test batteries with 1/400 second as this exposure time requires the highest amount of current. If one single pressure on button F suffices to release the shutter the batteries are in working order.
- 5) The flashgun should be clamped firmly to the camera otherwise the electric connections may not be secure. The clamping screw should be firmly tightened.
- 6) Keep the caps of the flashbulbs dry otherwise they will corrode the contacts in the sockets. To ensure a clean metallic surface insert bulb in socket and rotate it a few times to and fro.
- 7) The socket B fits bulbs with ES-caps. When bulbs with A.S.C.C.-caps must be used an adapter (Order No. BE 1/13) should be employed.
- 8) To protect the lazy-tong mechanism from damage the Makina must be held firmly by the front plate when the flashgun is mounted or dismounted!
- 9) When using flashbulbs make sure to adhere to the instructions for use with regard to guide-numbers, delay and general operation.
- 10) For flashbulbs with a high current consumption or for the firing of more than 2 flashbulbs simultaneously employ 4 batteries and use extension-tube (order No. BE 1/20) for battery – container.



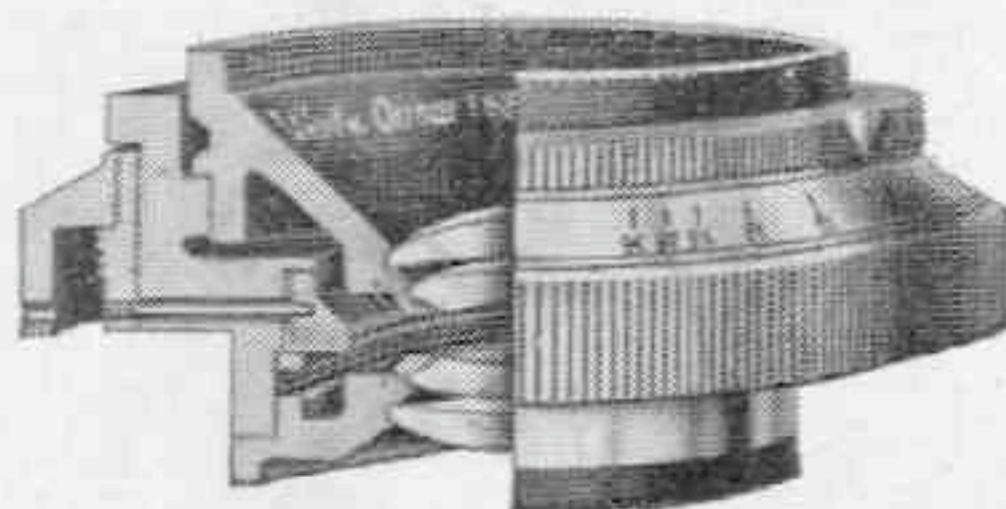
## *Makina-Lenses*



Anticomar 1: 2.9 f: 10 cm.



Tele Makinar 1: 4.8 f: 19 cm.

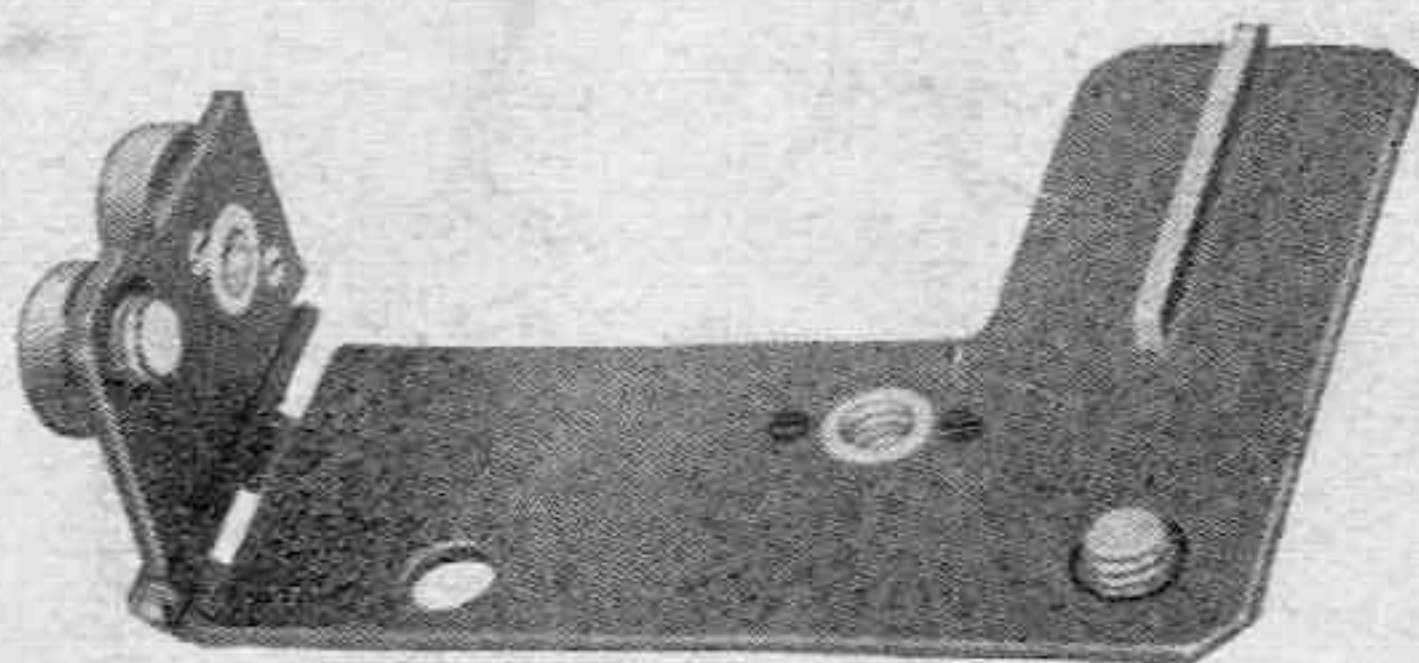


Rapid Wide-angle-Orthar  
1: 6.8 f: 7.3 cm.





Battery capacitor inset



Tripod plate