

Fig. 68 Camera "FED-2"

a - front view, b - rear view

one - release lever, 2 - trigger button, 3 - with inhiro contact, 4 and 17 - belt lugs, 5 - frame counter limb, 6 - crown, 7 - film type indicator, 8 - by pulling button, nine - ring switch, ten - clip frame, eleven - head excerpts
 12 - terminal 13 - shield, 14 - light-separating unit of prisms, 15 - film rewind head, 16 - diopter adjustment leash, eighteen - camera body, 19 - lens, twenty - vnlka, 21 - rangefinder eyepiece, 22 - pressure table 23 - back cover, 24 - per mok, 25 - standard nut, 25 - decorative cover, 27 - screen

noah dog 3. When the shutter is wound, the winding gear rotates in the direction of the arrow drawn on it, and the end of the spring moves the pawl away from the teeth of the winding gear. After the shutter is wound, when the crown is released, the winding gear begins to shift in the opposite direction, and the spring

the gin, mounted on it, immediately starts the dog 3 in the teeth behind the water gear 2 and the reverse rotation is terminated. The reservoir acts very clearly and stops the crown with a shift in the opposite direction within half a division on the frame counter

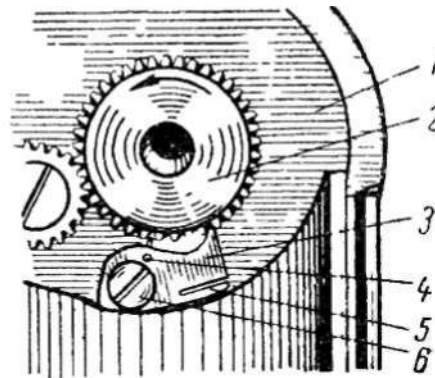


Fig. 69 Braking device

There are times when at the end of the plant the dog 3 situated with its teeth exactly opposite the vertex of one of the teeth of the winding gear, as a result of which the return travel of the winding crown is increased.

the backstop is a cutting shoulder 5, available on the reservoir, by bending and unbending which, they achieve a position where the dog's tooth at the end of the winding will be exactly between the teeth of the winding gear 2.

Film rewind and release shut-off mechanism

mechanism

The shutdown mechanism of the "FED-2" camera is very similar to the analogous mechanism of the "Zorkiy-2s" camera. Before proceeding with disassembly of the shut-off mechanism, the shutter is partially disassembled in order to gain access to the screw 7 (Fig. 70, a). Unscrewing the screw 7 from the sleeve 8 all parts of the shut-off mechanism can be removed. First remove the bushing 10 rewind switch, inside which there is a release button 11. Unscrewing the locking screw 5 in gear 6 and screw 4 on the transport drum 1, of gear 6 you can unscrew the sleeve with the groove 19. Lug bush 2 held in the transport drum by a screw 3, unscrewing which, through the sleeve 8 remove the bushing with a protrusion 2. The spring of the release mechanism remains inside the transport drum, which, if necessary, can also be pushed up and removed through the sleeve 8.

In fig. 70.6 shows the details involved in the operation of the shutdown mechanism, trigger mechanism and film rewind mechanism.

Trigger parts include: trigger button 9 trigger rod 15 and release axle 16 with the release gear *eighteen*. When pressing the shutter button *nine* the trigger rod lowers the trigger axle 16, finger 17 the release gear disengages from the pin 11 on the transporting drum and releases the shutter.

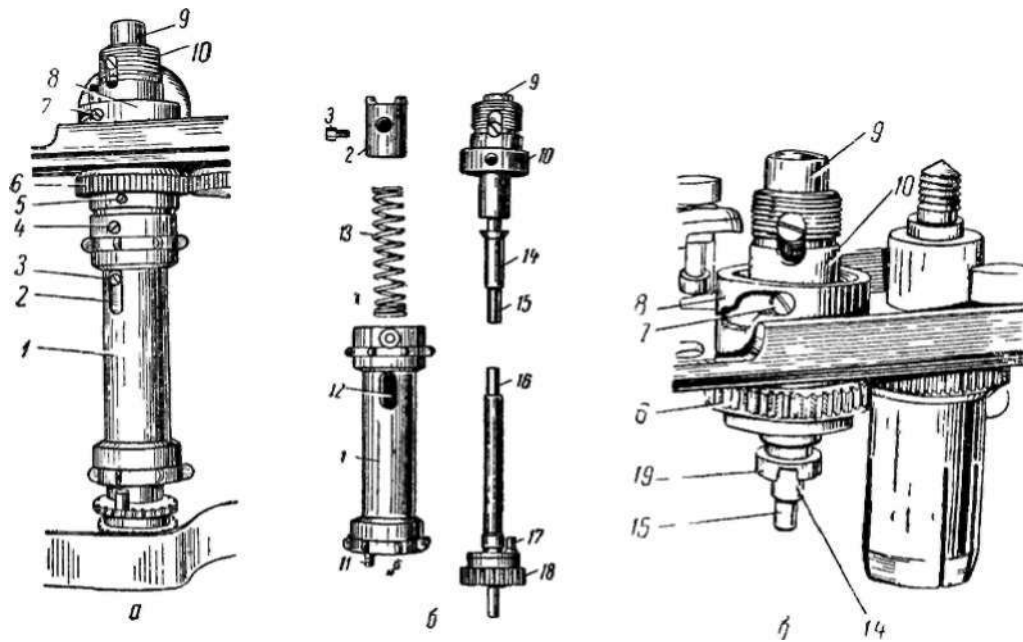


Fig. 70 Design of the shutdown mechanism

a - shutdown mechanism, *b* - details of the shutdown mechanism, *in* - sleeve with groove
 1 - transporting drum, 2 - bushing with a protrusion, 3, 4, 5, 7 - screws, 6 and *eighteen* - six thorns 8 - sleeve, *nine* - trigger button, *ten* - bushing
 12 - hole, 13 - spring, 14 - a tube, 15 - rod, 16 - release axle, 19 - bushing with groove

In order to rewind the film, it is necessary to disconnect the transport drum from the winding and trigger mechanisms. This work is performed by the shutdown mechanism. The operation of the shutdown mechanism can be seen in Fig. 70, *in*.

When the switch ring is turned clockwise, the switch sleeve turns with it *ten* The screw 7 slides along the oblique cut of the sleeve 8 and lowers the sleeve *ten* down, which in turn pushes down the tube 14, inside the groove sleeve 19. A tube 14 pushes down the boss sleeve 2, its protrusions come out of the groove in the bushing 19, and the transport drum is disconnected from the winding mechanism,

It is more convenient to follow the further operation of the shutdown mechanism in Fig. 70.6. When under the action of the tube 14 protruding bushing 2 falls' down, then the spring 13, inside the transport drum *one*, shrinks and the screw 3 moves along the cutout together with the sleeve 12 from top to bottom When the mechanism is turned off

is assembled, then the thin end of the trigger shaft 16 fits into the bore of the boss 2, which, when lowering, presses on the thickened part of the trigger axle 16 and lowers the release gear *eighteen* together with a finger 17, separating the transport drum 1 and the trigger

The shut-off mechanism is assembled in the following sequence. In the stationary sleeve 8 the spring is lowered first 13, and then a bush with a shoulder 2. Holding the sleeve with a long screwdriver 2 sleeve side 8, screw down the screw 3. Installing gear 6

exactly under the sleeve 8, screw the sleeve with the groove into it 19 and secured with a locking screw 5. Conveyor drum *one* under pull up and tighten the screw 4 so that its end fits into the annular groove of the sleeve with a groove 19. After that, a trigger rod is inserted from the side of the sleeve 8 15 with tube 14 and fix the sleeve *ten* screw 7.

The malfunctions of the shutdown mechanism and the trigger mechanism of the FED-2 camera are similar to those of the Zorky-2s camera.

Exposure mechanism and focal plane shutter

The operating principle of the shutter speed mechanism and the curtain shutter of the FED-2 camera does not differ from the analogous units of the Zorky camera. The main difference lies in the rules and methods of disassembly and assembly. Despite the fact that disassembly and assembly of the shutter of the FED-2 camera is more complicated, some design changes made to the shutter significantly reduce these difficulties. These changes, which facilitate the assembly of the valve, primarily include the ability to install the limit gear in the correct position after assembling the valve.

S e r e c a r a n d c a r c a z a n d t i n o r. Before completely disassembling the shutter, it is necessary to remove the self-timer winding lever, remove the brake latch from the body, and also disassemble the shutter speed mechanism by removing the shutter dial and shutter speed lever from the shutter drum axis. To separate the shutter body with the shutter assembly located in it from the camera body, unscrew four screws on the front of the camera body, and two screws on the top of the body.

In fig. 71, and the body of the camera is visible after removing the shutter body from it. The winding mechanism remains on it along with the transporting drum, as well as the drive clutch 3 with a finger 2. The holes on the shutter body are clearly visible *one*,

in which the ends of the axes of the spring rollers of the shutter were located. The shutter body 7 (Fig. 71.6) contains a shutter assembly. Self-timer attached to the shutter body with 3 screws 6. If the defect that required complete disassembly of the shutter can be eliminated after separating the shutter body from the camera body, then

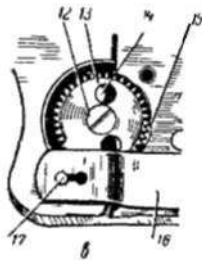
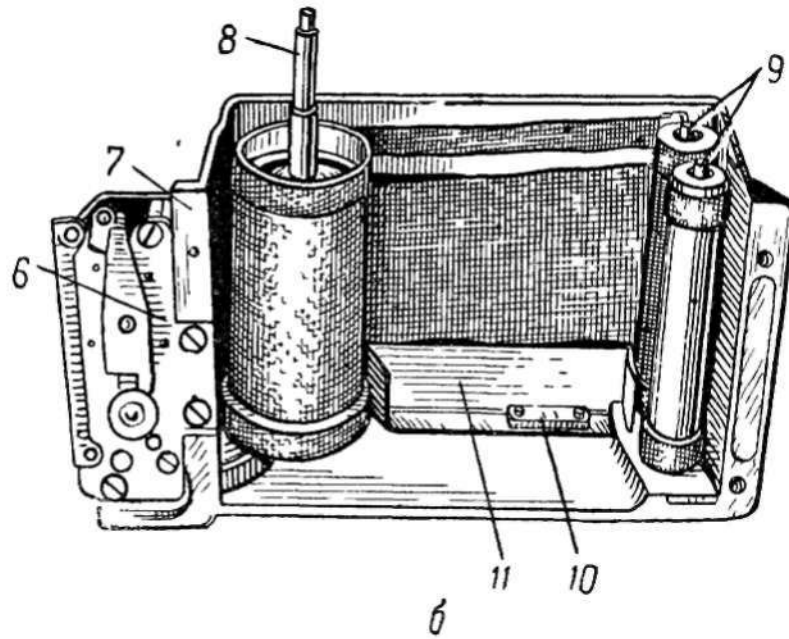
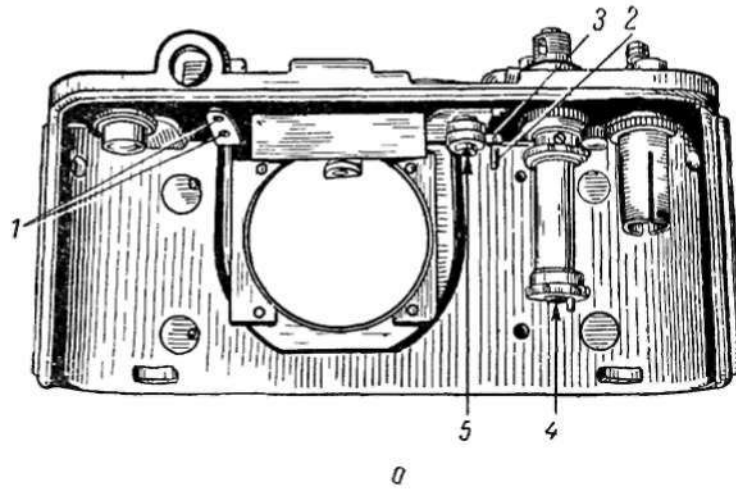


Figure: 71 Shutter disassembly:

a - the body of the camera, b - shutter body with shutter assembly, c - Or relay gear

14 and 5 - holes for axles, 2 - dad, 3 - drive clutch, 6 - self-timer, 7 - shutter body, 8 - nine and 17 - axes, ten - bar, eleven - shield, 12 - screw, 13 and 15 - gears, 14 - stop screw, 16 - trigger spring

further disassembly of the curtain shutter can be omitted. If, for example, it is necessary to replace the lower strap or re-stick the curtains, then further disassembly is carried out in the following order. First, remove the trigger spring 16 with release axle 17, as well as the lower flap 11 and the bar ten, unscrew the two left-handed curly nuts and remove the curtain assembly from the shutter body.

Assemble the curtain shutter in the following order. First, a drum and spring rollers are installed in the valve body. The gear on the shutter drum engages with the limit gear 13 arbitrarily. The axes of the spring rollers are inserted into the holes in the valve body and secured with curly nuts with a left-hand thread. After that, on the groove of the trigger axis 17 put on a descent spring 16 and two screws entering the threaded holes of the bar ten, strengthen the shield 11 and the trigger spring.

The main difficulty in connecting the shutter body to the camera body is that it is necessary to simultaneously hit the ends of the axes nine spring rollers in holes one on the body of the camera, and the axis 8 drum of shutters - into the hole indicated by arrow 5 in the drive clutch 3, and the release axle - into the hole of the transporting drum, marked with an arrow 4

In addition, special care should be taken when assembling the shutter to focus on the finger. 2 drive clutch 3, which should be directed into the hole of the shutter drum Axle ends nine spring rollers easily fall into the holes 1 of the camera body by themselves. 2 drive clutch 3 correctly entered the hole of the drum, then further assembly of the shutter is not particularly difficult. Having connected the shutter body to the camera body with four screws on the front side of the camera and two on the side of the upper body cover, proceed to the installation of the correct engagement between the limiting gear and the shutter drum gear.

In fig. 71, e limit gear is visible 13, in the hole of which the stop screw is visible 14, limiting its rotation and stopping the bolt in the extreme wound and deflated positions. Screw 12 is the axis of the limit gear 13

In fig. 71.c also shows several teeth of gear / 5, mounted on the drum of the shutters, which mesh with the limiting gear 13.

To change the engagement between the limit gear 13 and gears 15 of the roller shutter, it is enough to unscrew the screw 12 and pulling back the gear 13 to the side, turn the gear in the desired direction 15 by the end of the axis protruding from the opposite side of the door 8. Installing and securing with a screw 12 gear 13, re-check the correctness of the engagement of the gears according to the position of the brake cam in the cutout of the brake latch. Further assembly of the shutter is carried out in the usual manner and does not cause any difficulties.

Self-timer

The self-timer of the FED-2 camera does not differ from the self-timer of the Zorkiy-2s camera. The mounting and interaction of the auto release with the shutter is also fully consistent. The main difference is only that in many cases the correction of the self-timer in the FED-2 camera is connected with the complete disassembly of the camera.

If the self-timer malfunctions are caused by a malfunction of the parts that are visible from the side of the rear removable cover of the photo device, then in most cases they can be corrected by repeatedly taking the shutter. If the deceleration mechanism breaks down or if the self-timer disengaging mechanism malfunctions, a complete disassembly of the shutter is required. Self-timer malfunctions and related malfunctions of the camera are discussed in detail when describing the self-timer of the Zorkiy-2s camera.

Synchro device

The synchro device of the FED-2 camera is extremely simple. It consists of a contact plate *nine* (fig. 72) fixed to insulator 7. Brake latch *ten* at the moment of full opening

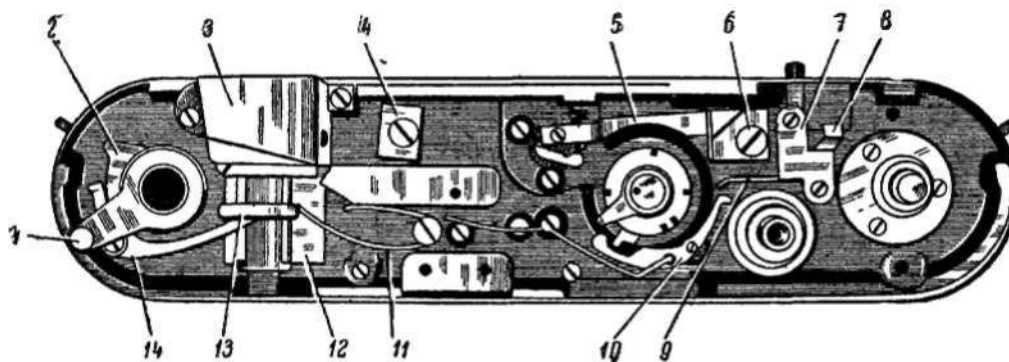


Figure: 72. Synchro device and rangefinder:

one - diopter leash tips, 2 - eccentric; 3 - shield; 4 - diaphragm;
5 - lever with a prism; 6 - screw, 7 - insulator, 8 and *nine* - contact plates;
ten - brake latch; *eleven* - spring; 12 - guides; 13 - frame with lens;
14 - lever arm

shutter (at a shutter speed of $1/25$ sec) touches the contact plate *nine* and ensures the closure of the circuit. When installing the rangefinder shield, the spring end 8 This plate connects to the insulated center pin of the socket. The synchro device almost never fails, and its correction does not cause difficulties.

Viewfinder - Rangefinder

The viewfinder-rangefinder device can be seen in Fig. 72. Viewfinder-Rangefinder camera "FED-2" has a base of 67 mm and is mounted directly on the camera body. The light separating unit is pressed against the body with a shield 3 and is reinforced with two screws. Lever 5 with movable prism is secured with a screw 6, passing through the base of the prism. There is a diaphragm between the light separating unit and the movable prism 4, fixed with a screw on the camera body. From the location of the diaphragms we 4 the correct location of the "light spot" in the rangefinder's field of view depends. Viewfinder diopter adjustment - distance measure is carried out by moving the frame with the lens 13 relative to the lens enclosed in the eyepiece barrel. Frame with lens 13

moves along the guides 12 and is under the action of a spring eleven - on the one hand, and under the action of a lever 14 - with another. This lever rests against the eccentric 2, fortified on vodka one. When you rotate the 1 diopter adjustment, the frame with the lens moves accordingly. 13, which changes the optical power of the viewfinder within +2 diopter. Sometimes the lead 1 diopter adjustment is poorly fixed in a given position. To correct this deficiency, you need to strengthen the coil spring located under the eccentric 2 on the film rewind handle sleeve. The principle of operation and adjustment of the rangefinder is described in detail in the description of the Zorky camera (see "Rangefinder").

Lens

Camera "FED-2" completed lens "Indu-old-26m ", which has the following technical characteries:

Focal length, <i>mm</i>	. . . . .	52.4
Relative hole	. . . . .	.1: 2.8
Image angle, <i>hail</i>	. . . . .	.45
Working segment, <i>mm</i>	. . . . .	28.8 + 0.02
Resolution and lines per 1 <i>mm</i> :		
in the center of the field	. . . . .	.28
at the edges of the field	. . . . .	.16

The objective lens unit is secured in a worm-gear mount with a clamping nut and a locking screw located under the metric ring.

The FED-2 camera is fitted with interchangeable lenses intended for the Zorkiy camera. (Fitting interchangeable lenses, see the description of the "Sharp" camera, "Adjusting interchangeable lenses").

6. CAMERA "ZARYA"

The Zarya camera is a simplified version of the FED-2 camera. There is no rangefinder in Zarya, and focus is measured according to the meter scale of the lens. Due to the lack of a rangefinder in the camera, the appearance of the top shield has been changed. The lens barrel has also been slightly modified. The body of the camera, back cover, shutter mechanisms and synchro system remained unchanged.

Due to the change in the shape of the shield, the order of disassembly has changed. To (remove the upper shield, unscrew the three screws around the edge of the upper shield, remove the switch ring, shutter speed crown, crown and unscrew the rewind knob counterclockwise. There is another screw holding the upper shield under the frame counter dial. the shield is removed together with the terminal and the viewfinder mounted inside the shield.

The viewfinder design is very primitive and needs no explanation. All other operations for further disassembly and repair correspond to similar operations performed during disassembly and repair of the FED-2 camera.