ZEISS IKON

Ikoflex Ib

Ikoflex Ic

Ikoflex Favorit

SERVICE MANUAL

Instructions for the repair of Ikoflex I b and Ikoflex I c

Catalogue No. 856/16 according to drawing C 543 (ill.1)
Catalogue No. 886/16 according to drawing C 546 (ill.2)

Novar lens f/3.5 Tessar lens f/3.5 Prontor SVS shutter 00 344 b

A. General notes

The following notes deal with some groups of elements and components, which are to a certain degree exposed to damage by dropping or shock, incorrect handling or natural wear and tear. The ways to repair or exchange them are described and the measures explained to adjust correctly them once again. In some cases the mutual support of certain components are explained.

The choice of the examples is made so that the repairs which may occur are described. Furthermore, these notes contain all the particulars necessary for the exchange of any component by a skilled mechanic.

The various components mentioned in these instructions are, for the greater part, available from our works. It is recommended, therefore, to study the list of our spare parts before starting making of new components by yourselves.

B. Instructions for the exchange of components

1. Construction of the viewfinder C 544 Grz 15 (light hood) of Ikoflex I b

Ill. 3. (The figures in brackets apply to the viewfinder of the Ikoflex I c described under 2.)

The viewfinder is built up on a special casting C 544/171 (C 545/171), which is fixed to the camera body by means of three screws C 515/146. After unscrewing these screws the whole group of components can be lifted and removed. The flaps are inter-connected with each other by guiding pins and slots so that they cannot be moved any other way.

Ill. 4 u.5 If they must be removed the screw C 544/196 for the bearing plate C 544/195 (C 545/227), which is accessible through a hole in the casting, must be unscrewed and the two axles C 544/201 of the rear flap C 544/200

removed by pressing them outwards. Now the axle C 544/177 (C 545/209) for the lid of the finder cap C 544/176 (C 545/208) should be bored free at the rivet joint and pressed out sideways. When doing this take care of the two springs C 544/178 (C 545/211) which are released by this operation.

The front plate C 544/180 (C 545/212 can be removed only by unrivetting the hinges of the magnifier C 544/185, which also will release the spring C 544/186.

The magnifier with its mount C 544/193 can be removed from the magnifier holder C 544/193 by pressing from below against the mount. In order to remove also the holding spring C 544/194 for the magnifier mount, the retaining lug on the sliding plate C 544/206 should be bent open slightly. If the magnifier holder C 544/192 and the finder flap C 544/188 must be removed the axle C 544/189 should be bored free and pressed out sideways, which will release the spring C 544/190 of the magnifier holder. The magnifier holder and the finder flap with the stiffening plate riveted to it (C 544/207) can then be pulled out.

Ill. 6 & 7

The frame C 544/173 with the Ikoflex name plate C 534/148 can be removed after loosening the front ends of the lateral leather strips and unscrewing the screws C 515/67 beneath them.

To remove the Fresnel lens Fl 015/1 and the ground-glass screen C 544/13 the two retaining springs C 544/209 should be pressed down one after the other until they can be tilted inwards. The stiffening plate, which will now be loose (C 544/210), should be removed. Now the Fresnel lens and the ground-glass screen can be removed. When inserting them once again note that they are inserted into the lens holder C 544/208 in the correct way: first the ground-glass screen with the matt surface on top then the Fresnel lens with the grooved surface downwards so that the matt surface of the screen and the grooved surface of the lens touch each other. After unscrewing the 4 screws C 544/211 the lens holder C 544/208 can be removed.

To remove the locking knob C 544/202 (C 545/234) the Bz-disc 543/102, which is accessible when the lens holder is removed, should be

pressed sideways until the knob can be pulled outwards. This will also release the flat spring C 544/203 (coil spring C 545/243).

2. Construction of the viewfinder C 545 Grz 7 of the Ikoflex I c with built-in photo-electric exposure meter.

Here once again the casting C 545/171 can be removed after unscrewing the three screws C 515/146.

Dismantling the light hood with the magnifier holder is done in the same way as with the Ikoflex I b. The ground-glass screen, the Fresnel lens and the lens holder should not be removed! If repairs are necessary in these or other components of the exposure meter, the complete viewfinder head should be sent to our works.

3. Mirror

Ill. 8 When the viewfinder head is removed the mirror C 544/17 is accessible. To remove it the retaining plates C 544/46 should be unscrewed. The silvered surface of the mirror is extremely sensitive to contact of any kind. Hard or scratching materials should never be used for cleaning and unnecessary wiping should be avoided, The best thing to do is to dust it with a very soft and clean brush, to breath on it and to polish it cautiously with a frequently washed soft rag.

4. Shutter release lock, key knob, film counter

When one or the other of these components does not work properly the

Ill. 9 right hand side wall C 543/231 of the camera must be removed. To do this the leather cover has to be removed at the places visible in illustration 9 until the three retaining screws C 515/27 are accessible and can be unscrewed in the same way as the two other screws C 515/146.

Ill. 10 Now unscrew the screw C 544/123 on the key knob C 544/119 and lift out the key knob with the film type indicator disc C 544/121 and the retaining disc C 544/120 from the key bolt C 544/109. Take care that you do not lose the matching ring C 544/124 which is now loose between the exposed jacket of the locking spring and the key knob.

Now the side wall can be lifted up and the connecting wires be loosened from the socket.

Ill. 11 The now visible mechanism serves the following purposes:

a) it prevents operation of the release knob until the film, after an exposure, is advanced.

b) it locks the film advance as soon as a new frame of the film is in the film gate.

c) it counts the exposures made and shows the correct number of the frame in taking position.

d) it disengages the film advance lock when 12 exposures have been made and the whole film can be wound up.

The mode of operation is as follows:

Ill. 11,12, 13 The camera is supposed to be ready for the first exposure, in the window in the right side wall the number "1" is visible and the shutter is tensioned. In this case the release grip C 544/502a can be unfolded and pressed home without hinderance or a cable release can be screwed into the bush C 544/493 and the exposure made with it. This pressure causes the actual release C 543/345 with its lug to travel a short way and to move the release lever C 543/338 against the spring C 544/318. When depressing the release the release pin C 544/321 of the release lever touches a butting face on the locking lever C 544/305. By turning the locking lever against the spring C 544/316 the pin C 544/307 on the lever will lift the locking notch C 544/482 against the spring C 544/485 from its mesh with the locking wheel C 534/99 which is on the key bolt C 544/109.

A little later the shoulder on the right end of the locking lever will sink beneath the plane of motion of the stopping lever C 534/339, which, due to the effect of the spring C 530/330, snaps in and will no longer release the locking lever from the position at which it has arrived. By the previous turning of the locking lever the supporting lug placed on it has been removed from its notch in the ratchet wheel C 543/297.

A further rotation in the same direction is possible until the front surface of the locking lever lies on the outer rim of the ratchet wheel C 543/297 and thus stops the motion of the release. (Whilst the release was moved the shutter has been released, but this of no importance to this description). In the locking lever

yet another pin C 530/274a has been riveted, which protrudes to the rear and in its initial position temporarily prevents the movement of the safety catch C 530/327 by means of the pressure of spring C 530/331. The downward motion of the pin caused by the turning of the locking lever permits the safety catch to move along a short way until it rests against the backward-bent surface of the release lever C 543/338. If after exposure the release grip returns to its initial position the safety catch will fall beneath the backwards bent surface of the release lever and will prevent any movement of the release lever and the whole release mechanism, thus avoiding a double exposure. To make another exposure the film has to be advanced first.

If, for this purpose, the key knob is turned, the ratchet wheel C 534/297 will turn with it by means of the cogwheels C 534/97 - C 534/320 and C 534/319 - C 530/292 being in gear with it. In one of its notches one tooth of the pawl C 543/283 is engaged. When the ratchet wheel is turned this tooth will be pressed out and the pawl will be turned against the swivel spring C 543/286. The oblique front surface of the ratchet wheel will thren run against the raised angle of the stopping lever C 534/339 and force it from its mesh with the locking lever C 544/305. This lever will fall back and, with its supporting lug, will first rest on the surface of the ratchet wheel in order to engage the next notch simultaneously with the pawl C 543/283. This will release the locking lug C 544/482 which now engages the locking wheel on the axle of the key knob and prevents any further turning of the key knob. Furthermore, the pin C 530/274a on the stopping lever will force the safety catch C 530/327 from its locking position and thus free the release lever C 543/338 for a new release. When the ratchet wheel was turned from one notch to another one the numbered ring C 543/300 participated in the rotation causing the figure of the next film-frame to appear in the window.

The operation described is repeated until the twelfth frame of the 120 film is exposed. When the key knob is now turned on a pin C 534/303 of the ratchet wheel will touch a cam-plate C 530/284, which is riveted on the pawl C 543/283 and turn the pawl a little further in a clockwise direction. The check lever C 530/334 with its hook-shaped recess under the tension of the spring C 530/330 will then slide over the surface of

the pawl (which is slightly bent backwards) and keep it in the position attained. When the key knob is turned on the pawl can no longer engage the notches of the ratchet wheel and fulfil its functions. At the same time one shoulder of the pawl prevents the stopping lever from meshing with the ratchet wheel. This makes it possible to turn the key knob for any period desired in order to wind up the exposed film.

In order to restore the readiness for action of the locking mechanism the toothed adjusting knob C 530/305 must be depressed and turned to the left. This will cause a keeper pin C 530/306 (which is fixed to the adjusting knob) to touch one arm of the check lever C 530/334 and to press it sideways thus releasing the backwards-bent surface of the pawl C 543/283. This is done just in time for the stopping lever and pawl to engage the next free notch of the ratchet wheel which corresponds to the number "1" in the frame counter window. In order to make possible the turning of the adjusting knob without moving the film key a locking escapement C 543 Grz 4 is arranged beneath the cogwheel C 534/300 which is fixed to the ratchet wheel. This makes the uncoupling from the cogwheel C 530/292 (being driven by the key knob) possible.

There are complaints sometimes that the twelfth exposure does not completely fill the frame. Although this is not a failure of the camera mechanism its occurrance should be explained:

A safe advance of an unperforated roll film from one frame to the next is possible only if the film is wound tightly when it is advanced. There is a definite interrelation between the diameter of the windings and the turning of the winding knob in order to advance the film by exactly one frame. The angle of rotation will be smaller the larger the diameter of the windings. For this reason the advance of the film from No.1 to No.2 needs considerably more turns than that from No.11 to No.12. As described above, the locking of the key knob is brought about by a ratchet wheel which participates in the turning. The distance between its notches is not the same throughout but takes into account the

interrelation between the diameter of the windings and the turning of the key. This distance is wide at the beginning and considerably narrower towards the end. Since the increase in diameter does not only depend on the length of the film and the backing paper but to a considerable degree also on the thickness of both the film and the paper, the notches have been carefully tested with all branded films on the market. It is, nevertheless, possible that films may be used with considerable deviations from the standard on which the distances between the notches are based. This then will cause either too small or too wide distances between the frames and partial exposures of the last frame. This failure will not occur when well-known branded films are used exclusively. There is no possibility of repairing this disadvantage on the camera.

The frame counter and locking mechanism can be made accessible in the following way:

First release the shutter repeatedly until No.12 appears in the window, then turn the key knob several times as though to wind up an exposed film.

Ill. 10 After removing the screw C 544/123, which retains the key knob, the film type indicator disc C 544/121, the retaining disc C 544/120, the key head C 544/119 and the adjusting disc C 544/124 can be pulled off. In a later model the screw C 544/121b, which retains the key knob, is covered by a leather disc. After removing this leather disc and the screw the retaining ring C 544/120 b, the film type indicator disc C 544/121b, the key knob C 544/119 and the adjusting disc C 544/124 can be pulled off. The key knob is secured against rotation by a hole on the key bolt C 544/109. This hole is shaped in accordance with the flatted retaining cylinder. If the 3 screws C 544/118, visible in the bottom flange of the jacket C 544/114, are removed the whole film key C 543/Grz 8 can be pulled out of the camera body. At the same time the cogwheel C 534/320, which is in mesh with it, and the pinion C 534/319 must be pulled off from its axle. This is possible only when the counter mechanism is in idling position.

Ill. 12

To exchange the locking spring C 534/94 the jacket for locking spring C 544/114 should be pulled off. The locking spring will remain in its

jacket. When re-inserting the ring disc C 534/105 should be placed on the key bolt and then the spring. The radially bent-in end of the spring should be guided into the axial notch of the key bolt C 544/109. The cogwheel C 534/97, which drives the counting mechanism, and the locking wheel C 534/99 with an intermediate disc C 544/106 should be riveted to the carrier bushing C 534/96 and secured against rotation by the axial pin C 534/102.

The carrier bushing, after knocking out the radial pin C 515/224, can be pulled off from the cylindrical shoulder of the key bolt, but attention should be paid to the catch C 544/110. Then the release slide C 543/323 (C 543 Tml) must be removed. For this purpose the shutter must be tensioned. The spring C 543/325 of the release slide should be pulled off from its bolt, the adjusting nut C 544/360 on the release loosened and the adjusting screw C 544/497 unscrewed. Now the retaining components of the counting mechanism must be loosened. The screw C 543/485 should be removed, also the disc C 544/486. Pull off the spring C 544/485 and unscrew retaining bolt C 544/484. Then remove the retaining bolt C 544/478, the cylinder screw C 530/279 and the toothed disc C 543/279a. The counting mechanism C 543/Grz. 11 can now be taken out. Then the lower guiding screw C 544/506 for the release slide should be unscrewed. Take away the washer C 544/508 with the guiding plate C 544/505 and remove also the upper guiding screw C 544/506 with the disc C 515/44b. Now the release slide can be pulled out to the left. The bush C 544/493 for the cable release can be pulled out in an upward direction after unscrewing the screw C 544/495 and removing the stopping angle C 544/494. Now the release C 543/345 can also be removed.

Ill. 11,12

When the counting mechanism C 543/Grz 11 has been taken out the removable components are easily accessible. The locking escapement C 543/Grz 4 can be removed as a whole when the slotted nut on the back C 530/282 has been twisted off. Usually it will be sufficient to leave the axle C 530/281 for the escapement in the baseboard of the counting mechanism C 543/258 and to dismantle the escapement.

Ill. 13,14 15

For this purpose the screw C 530/280 must be unscrewed. Then the upper part of the locking escapement C 543 Tm 4 (C 530/296 with riveted

ratchet wheel and cogwheel 534/300) can be pulled off. This will release the 3 rollers C 530/294 which will fall out. Take note also of the springs C 530/295, which are arranged in tangential bore holes in the lower part of the locking escapement C 530/291. The cogwheel C 530/292 is screwed to the lower part. When reassembling the device the cogwheel C 530/292 should be unscrewed and the lower part pushed into the upper part with the ratchet wheel and cogwheel. Then the springs C 530/295 should be pushed into the lower part and pressed deeply into it by means of a fine needle so that the rollers can be inserted into the reamed spots in the lower part.

In order to remove the adjusting knob C 530/305, the screw C 530/307, visible on the back of the baseboard of the counting mechanism, must be unscrewed. Then the adjusting knob C 530/305 with the riveted pin C 530/306 and the compression spring C 530/304 can be pulled off. After unscrewing the nut C 530/303 the **cogwheel** C 543/301 can also be removed. When reassembling care should be taken to give the adjusting knob its correct adjustment in relation to the locking escapement. For this purpose the ratchet wheel should be adjusted so that the lug of the stopping lever is opposite the first notch, then, by turning the check lever to the left and thus lifting it from the pawl, the lug should be made to snap into the first notch. Now the cogwheel C 543/301 is placed so that the pin C 530/306 within the adjusting knob lies on the left side by side with the downward protruding lug of the straight arm of the check lever, which means that it just passes this lug when the adjusting knob is turned to the left. The numbered ring should be adjusted so that the figure "1" is exactly in the window in the right side wall when the stopping lever lies in the first notch of the ratchet wheel.

Re-assembling the counting mechanism is the exact reversal of the dismantling. When inserting the film key it should be noted that the correct position is secured by an irregular arrangement of the cylinder screws C 544/118.

Ill. 11,12

5. Releasing the shutter

The release of the shutter is operated by depressing the release grip C 544/502a or pressing the cable release screwed into the thread of the

release bush C 544/493. As mentioned above, this pressure on the release grip operates the counting mechanism at the same time. The bush for the cable release consists of a jacket-like cylindrically turned portion of the release C 543/345, the flattened portion of which is guided by a bar of the camera body. Into this flattened portion a nut thread is cut from below, into which the adjusting screw C 544/497 with the lock nut C 544/360 is screwed. The release slide C 543/323 is guided by the front and side wall of the camera body. Through the upper oblong hole in the slide the screw C 544/506 is inserted, a washer C 515/44b put on the threaded pin and the whole screwed into the front wall of the body.

Beneath the lower end of the slide the guiding plate C 544/505 is placed on the contact surface on the side wall of the body, the washer C 544/508 put on the screw C 544 506 and then the screw with the disc passed through the oblong hole of the slide and through the guiding plate and finally screwed in the side wall of the body. The release slide, on its upper end, has a slotted lug which is bent at right angles. The slot engages an annular groove in the adjustment screw C 544/497 and thus connects the slide to the release C 543/345. The release grip C 544/502a is fixed to the slide by means of the pin C 544/504 and will be kept in a folded or unfolded position by the spring C 544/500, which is riveted to the slide. When folded the grip C 544/502a is housed in a recess on the rim of the front wall of the body and in this case the release is in its rest position. The recess is dimensioned so that the shutter will not be released even if pressure is exerted on the grip in its rest position. To release the shutter the grip has to be unfolded. Another arm fixed to the release slide transfers the movement of the slide to the shutter by means of several angles. It engages the fork-shaped lug of the shutter release ring C 533/58, the bent angle of which touches the release lever of the shutter and releases it.

Ill. 20 A spring C 543/325 pushed on a screw C 543/325a, which is screwed into the side wall, engages the slot of the arm (bent backwards) on the release slide and guides the slide with all its components back to its initial position.

Ill. 11,12

The release lever can be moved only when the shutter is tensioned. It is, therefore, only possible to depress the release knob when the film is advanced and, combined with this operation, the shutter tensioned.

The components connected to the shutter release can be dismantled as follows:

The removal of the release slide C 543/323 has already been described. If the bush for the cable release C 544/493 and the release C 543/345 must be removed, too, the viewfinder assembly has to be removed first
Ill. 8 according to paragraph 1. Then the stopping angle C 544/494 is accessible. When the angle has been removed the cable release bush and the release can be removed easily.

If the damage caused to the shutter release is found to be in the shutter itself, the latter must also be dismantled. For this purpose the
Ill. 16,17 front lens mount and the diaphragm knob C 543/373 must be unscrewed. The two screws C 533/341 in the lettered ring C 543/364 should be unscrewed and this ring as well as the diaphragm ring C 543/6 beneath it removed. Then the ornamental ring C 533/345 which is screwed to the mount of the finder lens should be removed. Now the cap board of the shutter C 543/342 can be removed. The soldering sleeve C 533/346 and the insulating disc C 534/512 should now be pulled off from the shutter C 543/1. After removing the retaining ring C 534/62 (which is visible inside the camera) the shutter can be pulled out towards the front. The intermediate ring C 533/48 and the adjusting rings C 515/48 a should be pulled off. Since
Ill. 18,19 these rings are used to adjust the focal length of the lens in relation to the camera they must be returned carefully when re-assembling. If the lens or the adjusting rings have been altered in some way or other focusing will be out of adjustment and paragraph 8 should then be studied.

6. Flash connection

When the right-hand wall of the body has been removed according to paragraph 4, the flash connection will be accessible. In order to remove it
Ill. 11 the leather on the lower left-hand corner must be removed a little further.
Ill. 8 & 20 This will make visible four lugs which are bent into four corresponding recesses of the side wall. When these lugs are bent upwards the small tin pot can be pulled out. It is conductively connected to the lens panel via

the contact disc C 530/385 by means of a yellow wire. This wire is fixed to the lens panel by a screw with a washer. The second white or red wire should be clamped beneath the nut C 534/508 of the flash connection and led through the holes in the body, the lens panel and the front plate. With the soldering sleeve C 533/346 it is then slipped on the contact pin of the shutter. This wire must be sufficiently well insulated from all parts of the camera and the body-pole of the shutter that an A.C. voltage of 220 volts at 150 cycles does not cause a flash-over.

7. Focusing (extension) mechanism

a) Ikoflex Ib

Ill. 21,22 After removing the leather covering C 544/658 from the focusing knob C 544/255 on the left side wall of the camera, the screw C 544/261 can be unscrewed and the knob removed. Then should be removed: the separator C 544/269, the spring C 544/260, the depth of field ring C 544/258 with the rivet C 544/259 and the spacer C 544/268. Now follows the removal of the spool retaining knobs C 543/Grz 6 and the loosening of the leather covering C 544/656 of the side wall as shown in illustration 21 in order to make accessible the five screws C 515/27, which should then be unscrewed. The side wall C 544/525 can now be taken off so that all components concerning focusing are accessible. First the screw C 543/223 in the sliding block C 544/249 should be slightly loosened. The two capstan screws C 515/219 should be unscrewed by approx. 3 to 4 threads. After unscrewing the cylinder or hexagonal screw C 544/264 (accessible from the inside inside of the camera) the washer C 515/229 and the saddle spring C 515/228 are removed and the sector C 544/242 with the axle C 544/241 pulled out outwards from its bearing in the camera body. Now the sliding block C 544/249 can be pulled off from its axle C 544/253. Within the sliding block besides the above-mentioned 3 screws there are 3 springs C 515/219a, 2 pressure discs C 544/257 and the two friction discs C 515/219b. Then the tightly mounted lever C 544/245 on the connecting tube C 515/213 should be removed by depressing

Ill. 23,24

Ill. 18

the slightly loosened screw 515/217 until the lever snaps off from the tube. In order to do this, the counting mechanism on the right hand side of the camera should have been dismantled as described before. The connecting tube C 515/213 can now be pulled out from the right-hand side of the camera together with the riveted second lever C 544/245. After removing the connecting tube the lens panel can be pulled out towards the front.

Ill. 25

Ill. 23-26 The eccentrically bored adjusting disc C 515/234 on the left side of the camera forms the adjustable stop of the sector C 544/242 for the "infinity" position of the lens panel. The re-assembling of the focusing mechanism is the exact reversal of the dismantling. The friction discs C 515/219b, the pressure discs C 544/257 and the springs C 515/219a are inserted into the sliding block but the capstan screws C 515/219 should be screwed in only by about 1 thread only. Then the sliding block is pushed on to its axle C 544/253, which is in the lever C 544/245. Now the axle with the sector should be guided into its bearing so that the rim of the sector engages the groove in the sliding block. After fixing the sector axle inside the camera the capstan screws should be tightened until the play between sector and sliding block is eliminated. In this position they must be secured against rotation by tightening the screw C 543/223.

b) Ikoflex Ic with exposure meter

Ill.22 left half In order to remove the focusing knob C 546/274 the threaded ring C 545/290 should be unscrewed and the diaphragm scale C 546/288 as well as the spring washer C 545/287 removed. By turning the shutter speed scale C 546/281 beyond its stop two countersunk screws C 545/284 become accessible. They should be unscrewed. The shutter speed scale together with the film-speed scale C 545/282 can then be lifted off. Now the exposure value scale C 546/286 and the spring loaded disc C 545/279 can be removed.

Further dismantling can be performed in the same way as with the Ikoflex Ib, beginning with the accessible screw C 544/261 and the removal of the focusing knob C 546/274.

8. Taking lens and finder lens

The shutter with the taking lens should be dismantled according to the description in paragraph 5. The finder lens can be unscrewed from the finder

tube flange after unscrewing the grub screw C 543/366 in the counter-ring C 533/245 and loosening the counter-ring by approx. 1/2 thread. The focal lengths of both lenses must be almost exactly equal. This is achieved by comparing the focal lengths of both lenses and combining those pairs of a comparision table which are almost identical. For this purpose a note has been made on the diaphragm setting ring. One of the figures given there, a figure around 75, indicates the actual focal length measured, while the other, smaller one denotes the amount of extension necessary for the taking lens, that is to say, the distance between the seating area of the shutter and the focal plane. The finder lens has the focal length actually measured on its outer jacket.

If a spare lens with a coinciding focal length is not available, the other lens must be dismantled also in order to read off its actual focal length. If need be, both lenses must be exchanged for an exactly matching pair.

The pairing table for the Novar lens f/3.5,75 mm (taking lens) and the Teronar lens f/3.5,75 mm (finder lens) is shown on the following page.

Taking lens	Finder lens
74,3	74,0 74,8
74,4	74,0 74,9
74,5	74,0 75,0
74,6	74,1 75,1
74,7	74,2 75,2
74,8	74,3 75,3
74,9	74,4 75,4
75,0	74,5 75,5
75,1	74,6 75,6
75,2	74,7 75,6
75,3	74,8 75,6

First the taking lens should be reassembled. This necessitates paying careful attention to the length of extension necessary which is determined by the adjusting rings and the intermediate ring beneath it. The adjusting rings C 515/48a are available in various thicknesses. The intermediate ring C 533/48 is 1.5 mm thick and is used only when the length of extension is more than 69.0. By means of an adequate combination of intermediate and adjusting rings it will be possible to compensate for deviations from the real value of 67.2 mm. Attention must be paid to the fact that the shutter retaining ring C 534/62 inside the camera should have a total length of 14.2 when the intermediate ring C 533/48 is used, while its total length must not exceed 12.9 when the intermediate ring is omitted, that is to say, for extensions below 69.1.

Example 1: Extension of the exchanged lens 68.5, by subtraction 68.5 - 67.2 mm = 1.3. Since the intermediate ring is not used for extensions below 69.1, the adjusting rings must have a thickness of together 1.3 and the short retaining ring be employed.

Example 2: Extension 69.3, subtract. 69.3 - 67.2 = 2.1. Since the intermediate ring 1.5 mm thick has to be used, further compensation must be obtained by using an adjusting ring of 0.6 mm thickness. This calls for a retaining ring C 534/62 of 14.2 mm length.

However, these notes give an indication only how it should be done. A careful test of the lens and the focusing device will always be necessary. If suitable means are not available a ground-glass screen can be used which must be attached to the actual focal plane of the camera. This lies about 0.16 mm behind the guiding rails of the film channel (in the direction of the incident light), that is to say, inside the channel formed by the guiding rails and guiding rollers on one side and the pressure plate on the other side, which is supported by the projections of the cast body. For testing, the camera should be focused on "infinity", that is to say, on a subject at infinite distance, which should be at least 75 metres. The definition should then be examined, if the image on the ground-glass screen is not absolutely sharp, the definition can possibly be improved by using adjusting rings of a different thickness.

The adjustment of the finder lens should be done by focusing on the same distant subject and in this case the definition of the image in the built-in ground-glass screen of the viewfinder should be examined. The lens should be screwed into the flanged tube until the finder image focused on infinity by the focusing knob C 544/255 is sharp. In this position it must be secured by tightening the counter-ring C 533/245 against the flanged tube and tightening the grub screw C 543/366.

Instruction for the repair of Ikoflex Favorit

Catalogue No.887. 16 according to drawing C 545

Tessar f/3.5,75 mm lens in Synchro Compur Shutter MXV/CR00

Figs. 1 - 2

General Notes

The following notes deal with some groups of elements and components, which are to a certain degree exposed to damage by dropping or shock, incorrect handling or natural wear and tear. These instructions deal particularly with those groups of components which are different from those used in the Ikoflex I b and I c.

Groups of components which are identical with those of the Ikoflex I b or Ic have been omitted. It should, however, be especially mentioned that the pairing table for the Novar and Teronar, listed in the instructions for repairing the Ikoflex Ib and Ic, apply also to the Ikoflex Favorit with the Tessar and Teronar.

Figs.3,4,5.

Viewfinder with exposure meter C 545 Grz 7

The viewfinder is built up on a special casting C 545 No.171, which is fixed to the camera body by means of three screws C 515/146. After unscrewing these screws the whole group of components can be lifted and removed. The flaps forming the light hood are inter-connected with each other by guiding pins and slots so that they cannot be moved any other way. If they must be removed the rear flap C 544.200 can be pulled outwards after pushing out the two axles C 544.201. To remove the lid of the finder cap C 545.208 the screw C 544.196, which is accessible through a hole in the casting, must be unscrewed, the bearing plate C 545.227 folded back and then the axle for the lid of the finder cap C 545.209 removed by pressing it outwards. When doing this take care of the two springs for the finder cap C 245.211, which are released by this operation. The front plate C 545.212 with the stop spring C 544.182 and the rivet C 544.183 can be removed only by unriveting the

hinge of the magnifier C 544.182. The magnifier together with its mount C 544.193 and C 544.16 can be removed from the magnifier holder C 544.192 by pressing from below against the mount. In order to remove also the holding spring C 544.194 for the magnifier mount, the retaining lug on the sliding plate C 544.206 should be bent open slightly. If the magnifier holder C 544.192 and the finder flap C 544.188 must be removed, the magnifier hinge C 544.185 and the spring C 544.186 must be unriveted. Then the axle C 544.189 for the magnifier hinge should be pressed out sideways, which will release the spring C 544.190 of the magnifier holder. The magnifier holder and the finder flap together with the stiffening plate C 544.207 riveted to it can now be pulled out.

Fig.6

The Mirror

When the viewfinder head is removed the mirror C 544.17 is easily accessible. In order to remove it, the retaining plates C 544.46 should be unscrewed. The silvered surface of the mirror is extremely sensitive to contact of any kind. Hard or scratching materials should never be used for cleaning. The best thing to do is to dust it with a very soft and absolutely clean brush, breath on it and then polish it with a frequently-washed soft rag, using the utmost caution.

The mechanism of the camera serves the following purposes:

a) It stops the film automatically when the camera is loaded
b) it releases the shutter
c) it acts as a double exposure prevention device
d) releases the film transport mechanism, advances the film and stops it at the correct position
e) it counts the exposures made
f) it retensions the shutter
g) it prepares the shutter for being released
h) it disengages the film advance lock when 12 exposures have been made
i) it uncouples the frame counter and makes possible its return to the initial position
k) it couples and uncouples the interlocking device when the camera is loaded.

Since not all the components of the mechanism are accessible in individual groups, the dismantling must be described according to the sequence of their accessibility.

Fig.7

Removing the key knob C 544.119

After removing the small leather disc C 544.657 and unscrewing the screw C 544.123, the retaining ring C 544.120 b, the film type indicator disc C 545.293 together with the riveted knobs C 544.122, the key knob C 544. 119 and the adjusting ring C 544.124 can be pulled off.

Removing the right-hand side wall C 544.518

After removing the leather covering C 544.654 from the places shown in fig.8, the countersunk screws C 515.27 beneath it and the oval-headed countersunk screws visible beside the film key C 515.146 should be unscrewed and the side wall removed.

Fig.9

The method of operation of the mechanism of the Ikoflex Favorit

Before dismantling the mechanism, the operation of the camera and of its mechanism must be described.

A roll of unexposed film should be inserted into the lower spool chamber a. Then thread the beginning of the backing paper in the slot of the empty spool in chamber b and tighten it by several turns of the film key c. By closing the camera back and locking d the pressure plate f connected to it is pressed firmly on the supporting rails g and the upper film slide roller h protrudes so that it presses the backing paper firmly on the small, circular measuring spot i of the pressure plate. When the sliding roller protrudes, the frame counter jumps from its end position to its starting position at the same time. Now the backing paper is wound on to the taking-up spool in chamber b by frequently turning the film key c until the splice of the film on the paper has reached the upper film sliding roller h. The appearance of this thickening of paper and film between the pressure plate f - i and the sliding roller h causes the coupling of the frame counter mechanism to the rotation of the key knob and (fig.10) the turning of the

interlocking device, which after turning a short distance causes the locking lever C 545.305 to snap into the notch 1. The necessary rotation of the key knob is calculated so that the splice of the film strip has left the film gate when the figure "1" appears in the window on the side wall. The snapping-in of the locking lever into the first notch of the ratchet wheel causes a special locking lug C 544.482 to engage the locking wheel mounted on the film key and thus prevents the film from advancing further. At the same time the pin at the right-hand end of the locking lever has swung outwards and to the right the safety lever which serves as a release lock so that the release lever C 544.502 a can be depressed in order to expose frame No.1. When this is done the release grip C 544.496 turns the release lever C 544.319, the pin C 544.321 of which rests on the sliding surface of the locking lever and then turns it so that its lug leaves the notch of the ratchet wheel and the blocking lever C 544.328 slips behind one shoulder of the locking lever. Immediately before this movement of the blocking lever the shutter is released by means of a suitable lever mechanism. The travel of the release grip is limited by the locking lever, the right-hand end of which rests on the ratchet wheel and prevents any further movement of the release grip.

When the release grip is depressed the locking lever is carried together with it and a pin mounted on this lever will free the safety lever which, in turn, then rests on the depressed release lever. When, after exposure, the release grip C 544.502 a is released, the spring fixed to the release lever will pull up the latter once again and this will cause the safety lever to snap in and prevent further operation of the release grip (double exposure prevention device). However, the locking lever, which has been freed from the ratchet wheel by the release of the shutter, also frees the locking lug C 544.482 which is engaged to the locking wheel of the film key. This makes it possible to turn the film wind knob in order to advance the exposed frame of the film. With this rotation the ratchet wheel forces the pawl out of its notch and the right-hand end of the pawl C 544.310 shifts the blocking lever C 544.328 from the shoulder of the locking lever C 545.305. The locking lever then turns to the left

and with its left lug rests on the outer rim of the ratchet wheel until it can engage the next notch together with the pawl. By turning the ratchet wheel the frame counter disc C 544.351, which is fixed to it, can also be turned until the next frame number has appeared underneath the window.

When the release grip C 544.499 is depressed, the device for cocking the shutter will be coupled to the key knob before the shutter has been released. Prior to the beginning of the shutter release the cocking lever C 544.459 lies under the strong pull of a coiled spring which is fixed to a cam disc C 544.437 (on the lens panel) and attempts to turn it to its lowest position. The lug of the turnable pawl C 544.439, fixed to the cam disc, rests on the release pawl C 544.452 and is thus forced out of the notch of the coupling wheel C 544.446 by overcoming the resistance of the flat spring C 544.443 until it rests firmly on the fixed stopping pin C 544.440. This causes the cam disc to be disengaged from the key knob thus preventing it from turning. When the release slide moves downwards it will pull the release pawl C 544.452 from under the carrier pawl so that the cocking lever can turn the disc to its lowest position. Now the flat spring C 544.443 can place the carrier pawl in the coupling wheel and thus couple the cam disc to the key knob once again. The gear ratio of the cogwheels C 544.366,/426a and /430 from the key knob to the cam disc is calculated so that the uncoupling of the cocking device is done by the running-up of the pawl C 544.439 on to the release pawl before the film advance has been finished by locking the film key. After exposure of the 12th frame the film advance must be started in the usual way. While the pawl is forced from the ratchet wheel a wedge fixed to the cogwheel of the frame counter moves beneath a spring loaded lug on the coupling lever which will snap in behind the wedge. Immediately after this, the gap in the cogwheel of the ratchet arrives in front of the tooth-wheel drive so that the ratchet wheel can no longer be turned by means of the key knob. When the position is reached the retaining spring C 544.357 engages a notch positioned on the rim of the frame counter disc. The film key can now be turned **until the exposed film spool is wound up completely without influencing the frame counter.**

After removing the exposed film, the camera back, will disengage the coupling when the camera is closed,no matter whether the camera is loaded

with a fresh film or left empty. This is done by the spring-loaded lug on the coupling lever which pulls the ratchet wheel into its initial position after overcoming the locking device described. In this initial position it is fixed by a second locking device.

Thus the entire mechanism has arrived at its intitial position.

The camera back

fig.11.

The correct position of the film pressure plate C 544.155 fixed to the camera back C 544.131 has a decisive influence on the automatic adjustment of the frame counter when the splice of the film strip has reached the critical point. Attention should be paid, therefore, to ensure that the camera back is securely locked to the camera body and the film pressure plate rests firmly and under the full pressure of its flat springs on the supporting surfaces beside the film guides. The locking catch C 544.145 in its folded and unfolded position should be retained by the locking spring C 544.147. The catch C 544.151 should turn easily in its position in the camera back, its length should be adjusted (by suitably chosen washers C 544.148) so that it cannot be canted. The pressure plate on its guiding pins C 544.141 should slide easily without angling off. Its movement is limited by the stop screws C 544.158, after removing the back from the camera body.

To remove the back from the camera body the axle C 515.112 should be pulled out sideways.

Removing the shutter cap and the front plate

fig.12.

After focusing the camera to 1 metre the leather covering of the side walls of the front plate C 544.66 should be removed. Near the adjusting wheels for aperture and shutter speeds opening will then be found, at the bottoms of which grub screws C 544.70 will be visible.

After loosening these grub screws by two to three full turns the shutter cap together with the adjusting wheels C 544.551 can be pulled off towards the front. Now the retaining ring C 534.501 on the flash contact

nipple should be unscrewed and the three countersunk screws C 515.67 underneath the leather covering C 544.651 on the front surface of the front plate also screwed out (fig.13). After unhooking the return spring C 544.77 (with the sliding lug C 544.78 attached to it) from the clamping ring C 544.74, the front plate C 544.66 together with its ornamental frame C 544.71 can be lifted off and the intermediate piece C 544.474 unhooked from the cocking lever (figs.15 and 17).

Removing the film key and the intermediate wheel.

By opening and closing the camera back the frame counter mechanism will be uncoupled from the film advance mechanism. The screw C 544.367 holding the intermediate drive C 544.Tm 37 can then be unscrewed. Note: left-hand thread! (figs.10 and 14).

After loosening the screws C 544.118 retaining the film key the shell for the locking spring C 544.114 together with the inserted locking spring C 534.94 can be pulled off and the washer, C 544.115.if any.and the ring plate C 534.105, which is slipped over the key bolt C 544.109 b, removed. Now the shell for the key C 544.116 together with the key bolt in it and the intermediate wheel C 544 Tm 37 can also be pulled out and the cover plate C 544.117 removed. After knocking out the pin C 544.224 the carrier C 544.110 can be removed and the carrier bushing C 534.96, together with the cogwheel riveted to it, the intermediate disc C 544.106, the locking wheel C 534.99 and the anti-torsion pin C 534.102, can be pulled off from the key bolt C 544.109 b.

figs.10 and 15

Dismantling the entire mechanism should be executed according to the accessibility of the individual components. After twisting off the retaining Benzing disc C 544.455 the release pawl C 544.452 should be removed together with its bushing C 534.382 and the spring 544.454. Now the screw C 534.404, which fixes the cocking cam, should be uncrewed, the compensating disc C 544.447 removed and the pinion C 544.435 together with the slipped-on carrier wheel C 544.446, the cam disc C 544.437 with all components riveted to it and the intermediate layer C 534.372 should be lifted off. After unscrewing the retaining bolt C 544.478 and removing(figs.10 and 16)

Supplement to page 7

"Removing the film key and the intermediate wheel."

After refixing the film winding key the existing slot between the lower part of the left edge of the cover plate C 544.117 and the camera body shall be thoroughly filled with a putty from the outside to guarantee complete lighttightness.

the spring plate C 544.479, the release slide C 544.505 should be removed. Remove also the guiding screw C 544.506 and the guiding plate C 544.505. Loosen the adjusting nut C 544.360 and unscrew completely the adjusting screw C 544.497 from the release C 544.496. The release slide C 544.499 together with the release grip C 544.502 a can now be tilted out. In order to remove the release C 544.496, which is still in the camera, the screw C 544.495 positioned beneath the viewfinder head should be unscrewed, the stopping angle C 544.494 removed and the bush for the cable release C 544.493 pulled out in an upward direction, which will finally free the release C 544.496. In order to remove the adjustment slide C 544.468 together with the cocking lever C 544.449 (figs.10 and 15) - which is rotatably riveted to it - the following components must be removed first: the screw C 544.470, the disc C 544.471, the spring for the tripping lever C 544.422, the eccentric bushing C 544.472 which is retained by the cylinder screw C 544.473 and the disc C 544.471. The stopping spring C 544.357a should be removed after unscrewing the screws C 544.358 and lifting off the studded discs C 544.361. Now the base plate C 544.301 together with the rest of the components should be taken from the camera body. For this purpose the countersunk screw C 544.487 in the left-hand top-corner should be un- (figs.18,19 and 20)

screwed and the disc C 544.486 as well as the stopping notch spring C 544.485, taken off and the holding bolt C 544.484 unscrewed. After unscrewing the countersunk screw C 544.378 from the coupling lever C 544.369, the eccentric disc C 544.377 can be removed. When the nut C 544.372 is unscrewed the axle bolt C 544.371 can be pulled inwards into the upper spool chamber. Then the screw C 530.279 on the lower edge of the base plate should be unscrewed and the spring plate C 544.479 removed. After unscrewing the screw C 544.399 in the centre of the left edge and lifting the spring C 544.398, the disc C 544.397 and the spring C 544.395, the base plate C 544.301 and the stopping notch C 544.482 together with its axle C 544.481 and the washer C 544.483 can be removed.

After unscrewing the screw C 530.278 the pawl C 544.310 together with the bushing C 544.306, the riveted pin C 544.312a and the spring

C 543.286 as well as the intermediate layer C 544.309, the locking lever C 545.305 with its bushing C 544.306, the pins C 544.307 and C 530.274a and the locking spring C 544.316 should be removed.

After forcing off the Benzing disc C 544.322, the release lever C 544.319 with the riveted bushing C 544.320 and the release pin C 544.321 together with the spring C 544.318 can be taken off. Now unscrew the screw C 544.396 and remove the adjusting ring C 544.393, the release trigger C 544.392 and the axle bushing C 544.390. It will then be possible to remove also the coupling lever C 544.369 together with coupling wheel C 544.374, which is riveted to the axle C 544.375, the release plate C 544.405, which is fixed to the coupling wheel by means of the screw C 544.383 and the washer C 544.382, as well as the pins C 544.376 and C 544.380.

Fig.21.

To dismantle the engaging and disengaging levers, the disengaging slide C 544.405 must be made accessible by unscrewing the screw C 544.413 and removing the disc C 544.411. When the screw C 544.421 is unscrewed the engaging lever C 544.417 and the disengaging lever C 544.408 together with all the components fixed to them should be lifted from the base plate. If further dismantling of these levers and their components is necessary, this can be done without further instructions.

fig.20

The lower intermediate wheel C 544.430 is held on its axle C 544.424, which, in turn, is riveted to the base plate, by means of the screw C 544.431 (Note: left-hand thread!). The frame counter can be pulled off from its axle C 544.335 after unscrewing the countersunk screw C 544.347 (left-hand thread), removing the ring nut C 544.337 and the toothed disc C 544.336.

If the frame counter must be dismantled completely, the countersunk screws C 544.353 positioned in the oblong holes of the figure ring C 544.351 should be unscrewed and the figure ring lifted off. This will make accessible the three countersunk screws C 544.350 which connect the jumper ring C 544.341 to the ratchet wheel C 544.341. The ratchet wheel C 544.341 the lower part of the counter mechanism C 544.338 and cogwheel C 544.339 together with the riveted adjusting wedge C 544.340 are connected with each other by means of three countersunk screws C 544.344 and a cylinder pin C 544.343.

In order to remove the safety and blocking levers from the back of the base plate, the ring nut C 544.331 should be turned off and the spring C 544.330, the safety lever C 544.329 and the intermediate disc C 544.332 removed. After removing the spring C 530.330 from the base plate and the blocking lever C 544.328 the latter can be pulled off from its axle C 544.327. (figs.22,23 and 24).

Dismantling the upper film sliding roller

figs. 25 and 26

For this purpose the viewfinder head and the retaining plates for the mirror C 544.46 must be removed. Beneath these retaining plates are grub screws C 544.516 which are screwed in tightly in order to prevent light from penetrating into the camera body. When these grub screws are removed the retaining screws C 515.27 for the upper film sliding roller support C 544.31 can be unscrewed by means of a screwdriver inserted into one of these threaded holes. After lifting out the sliding roller C 544.33 from its bearings, the bearing C 544.34 a with the riveted transmission bushing C 544.35 and the spacer tube C 544.370 can be pulled out from the camera body. (fig.19).

figs.27 and 29

The viewfinder lens can be unscrewed easily, after removing the shutter cap and loosening the counter ring C 534.245. In order to dismantle the between-lens shutter the retaining ring C 534.62 inside the camera should be unscrewed after the shutter cap has been removed. The shutter can then

Figs.27 and 31

be pulled out towards the front. The inserted intermediate ring C 533.48 and further intermediate rings C 534.61 should be handled with the greatest care and returned to their initial position in the correct sequence when assembling the camera.

Dismantling the focusing mechanism

fig.28.

The focusing knob on the left side of the camera should be removed first. For this purpose unscrew the threaded ring C 545.290 and the f/number

scale C 545.288 as well as the spring-loaded ring C 545.287. By turning the light-value (exposure value) scale C 545.281 by means of the focusing pin C 545.280 beyond the stop (lift a little at 1/8 sec.) two counter sunk screws C 545.284 will become accessible. Unscrew these screws; now the light value scale together with the film speed scale C 546.282, the scale rivet C 545.283 and the leather covering C 545.291 can be lifted off. Then the light value scale C 546.286 and the spring plate C 545.279 can be taken away.

fig.29.

Now unscrew the screw C 544.269 and remove the focusing knob C 546.274, the intermediate layer C 544.261, the spring C 544.260, the depth-of-field ring C 544.258 with the rivet C 544.259 a and the spacer C 544.268. After removing the spool holder knobs C 543 Grz 6, loosen the leather covering C 544.656 at the six places shown in fig.29 and unscrew the now visible screws C 515.27. Then the side wall C 544.525 can be removed and this will make acessible all the components of the focusing mechanism.

figs.30,31 and 32.

First loosen slightly the screw C 544.254 in the stone C 544.249 and unscrew the two capstan screws C 515.219 by three to four threads. After unscrewing the cylinder or hexagon screw C 544.264 (which is accessible from the interior of the camera body), remove the washer C 515.229 and the saddle-shaped spring C 515.228 and pull the sector C 544.242 together with the axle C 544.241 outwards from its bearing in the camera body. Now the stone C 544.249 can be lifted from its axle C 544.253. In it are, beside the 3 screws mentioned above, 2 springs C 515.219a, two thrust washers C 544.257 and the two friction discs C 515.219b. Then the lever C 544.245 tightly fixed to the connecting tube C 515.213 should be removed by pressing the slightly loosened screw C 515.217 until the lever jumps from the tube. To do this, however, the base plate for the mechanism on the right-hand side of the camera must have been dismantled already as described above.

fig.34.

The connecting tube C 515.213 can now be pulled out from the right-hand side of the camera together with the second lever C 544.245, which is riveted to the right-hand end of the tube.

fig.33

The eccentrically-bored adjusting disc C 515.234 on the left side of the camera forms the adjustable stop for the sector C 544.242, that is to say, for the "infinity" setting of the lens panel. Assembling this mechanism should be done in the reverse sequence.

fig.32.

The friction discs C 515.219b, the thrust washers C 544.257 and the springs C 515.219a are inserted into the stone C 544.249 and the capstan screws C 515.219 screwed in, but by no more than about 1 thread. Then the stone is slipped on its axle C 544.253 which is in the lever C 544.245. Now the axle with the sector is inserted into its bearing bushing so that the edge of the sector engages the notch of the stone. After fixing the sector axle in the interior of the camera the capstan screws are tightened so that there is no play between the stone and the sector. In this position they are secured against twisting by tightening the screw C 544.254.

The lens panel

After dismantling the connecting tube C 515.213 the lens panel can be pulled out towards the front of the camera body. The components for the shutter release mounted on it should be removed in the following way:

figs.16 and 17.

First, the connection between the release rod C 544.88 and the shutter lever C 544.91 should be loosened by forcing off the Benzing disc C 544.90. Then remove the Benzing disc C 544.87 from the link C 544.82 and the washer C 544.86 in order to lift out the link including the screwed on release rod. Then the Benzing disc C 544.97 should be removed from the shutter lever and also the washer C 544.86 . Next, the shutter lever C 544.91 together with the riveted bushing C 544.92, the slipped on spring C 544.93 and the riveted release spring C 544.98 can be pulled off from its axle. The locking ring C 544.74 is guided through the guide ring C 544.73, which is flanged into the lens panel, and held there and cannot be removed. At the lower right-hand corner of the lens panel the contact housing C 534.502 for flash connections with the

pressed in contact components is riveted to the panel. The following components can be removed if necessary: the nut C 534.508, the connecting wire C 544.609 with the soldering tag C 544.610, the countersunk screw C 544.611, the washer C 534.515 and the insulating disc C 534.507 (fig.35).

The shutter cap

figs.36 and 37

From the dismantled shutter cap C 544.551 first remove the Benzing discs C 544.579 and 544.583 on either of the adjusting wheels and set the diaphragm at about f/22. Now the adjusting wheels C 544.578 and C 544.581 with the pressed on adjusting knobs can be pulled off from their axles. The components surrounding the taking lens should then be removed. Hold tight the holding ring C 544.560 tightly and unscrew the large counter ring C 544.575, which will make possible the removal of the adjusting lever for the diaphragm C 544.570, together with the screwed-on adjusting cam C 544.587, the intermediate layer C 544.569, the shutter speed setting ring C 544.562 together with the screwed-on setting cheek C 544.585 and the large spacer ring C 544.561.

Hold tight the indexring C 544.565 on the opening for the viewfinder lens and turn off the screw ring C 544.574 and remove the spacing wheel for the diaphragm C 544.572. The stopping spring C 544.573 beneath it has two Z -shaped lugs, which are bent upwards and lie opposite to each other. These lugs should pass through the recesses in the spacing wheel for the diaphragm and penetrate into the recesses on the rim of the index ring so that these three components cannot be twisted against each other when the shutter cap is assembled. Furthermore, the stopping spring has a barrel-shaped depression, which is directed downwards and at right angles to the above-mentioned two lugs. This depression is resiliently engaged in the radially splined spacing wheel for shutter speeds C 544.567. This device ensures the complementary movement of the aperture and shutter speed setting whilst maintaining the suitable light value setting. When the stopping spring is removed the spacing wheel for the shutter speeds can be taken off. The light value ring C 544.563 is inserted into the guiding tube C 544.554, which is flanged into the cap. Two lugs of the light value ring protrude into the recesses of the spacing wheel for the

shutter speeds so that any rotation of this wheel is transferred to the light value ring. Other components within the cap are riveted to it and serve as adjustable stops for the shutter speeds when the setting of 1 second is reached. Only the spring C 544.595 can be removed and exchanged if need be.

When assembling the shutter cap in the reverse sequence, care should be taken to adjust the components 562-567 and 570 - 572 so that the same teeth and gaps engage each other as before dismantling. For this purpose one tooth and the corresponding gap are marked.

Dismantling the camera back

fig.11.

After unscrewing the screw C 544.152 on the inner side of the back near the locking bar, the locking bar C 544.151 can be removed. From the outside of the back the pawl C 544.144 together with the locking bar grip C 544.145 can be pulled out. This makes accessible the locking bar spring C 544.147, which can now be removed together with the washer C 544.148 beneath it. If the locking bar grip C 544.145 must be removed, the leather disc C 544.664 must be removed also and the two axles C 544.146 knocked out outwards.

The film pressure plate can be taken off after removing the two screws C 544.158. All other components are riveted to the back and cannot be removed.

Exchanging the viewfinder lens or the taking lens

Both lenses must have almost identical focal lengths. This can be achieved by assigning viewfinder and taking lenses according to a pairing table. For this purpose the aperture setting ring of the shutter bears two figures, one around 75 indicates the focal length measured, the other slightly smaller one denotes the necessary length of extension of the taking lens, that is to say the distance between the seating area of the shutter and the focal plane. The viewfinder lens has its measured focal length engraved on its outer jacket.

If a spare lens with exactly the same focal length is not available the other lens has to be removed in order to enable the operator to read off the actual focal length. If need be both lenses must be exchanged for a matching pair.

The following is a pairing list for the Tessar f/3.5,75 mm (taking lens) and the Teronar f/3.5,75 mm (viewfinder lens):

Taking lens	Viewfinder lens
74,3	74,0 74,8
74,4	74,0 74,9
74,5	74,0 75,0
74,6	74,1 75,1
74,7	74,2 75,2
74,8	74,3 75,3
74,9	74,4 75,4
75,0	74,5 75,5
75,1	74,6 75,6
75,2	74,7 75,6
75,3	74,8 75,6

The taking lens should be re-assembled first. The length of the extension necessary must be ascertained, since it must be arrived at by adjusting and intermediate rings, which are placed beneath it. The adjusting rings C 534.61 are available in various thicknesses. The intermediate ring C 533.48 is 1.5 mm thick and should be used only when the length of extension is more than 69.0. By means of an adequate combination of intermediate and adjusting rings it will be possible to compensate for deviations from the real value of 67.2 mm. Attention must be paid to the fact that the shutter retaining ring 534/62 inside the camera should have a total length of 14.2 mm when the intermediate ring C 533.48 is used, while its total length should not exceed 12.9 mm when the intermediate ring is omitted, that is to say, for extensions below 69.1.

Example 1: Extension of the spare lens 68.5, by subtraction 68.5 - 67.2 = 1.3. Since the intermediate ring is not used for extensions below 69.1, the adjusting rings must have a total thickness of together 1.3 and the short retaining ring employed.

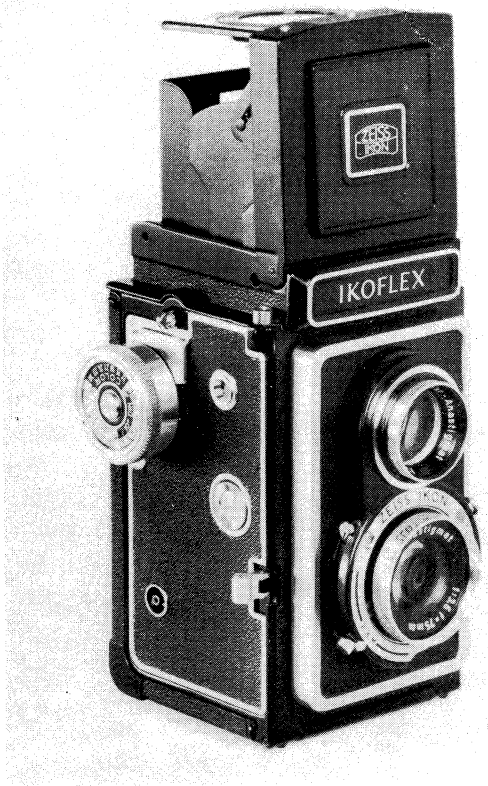
Example 2: Extension 69.3, subtract 69.3 - 67.2 = 2.1 Since the intermediate ring 1.5 mm thick must be used, further compensation must be obtained by using an adjusting ring of 0.6 mm thickness. This calls for a retaining ring C 534.62 of 14.2 mm length.

However, these notes give only an indication how the operation should be done. A very careful test of the lens and the focusing device will always be necessary. If suitable means are not available a ground-glass screen can be used which must be attached to the actual focal plane of the camera. This lies about 0.16 mm behind the guiding rails of the film channel (in the direction of the incident light), that is to say, inside the channel formed by the guiding rails and guiding rollers on one side and the pressure plate on the other side, which is supported by the projecting supports of the cast body.

For testing, the camera should be focused to "infinity", that is, on a subject at infinite distance, which should be at least 75 metres. The definition rendered by the lens should then be examined; if the image on the ground-glass screen is not absolutely sharp, the definition can possibly be improved by using adjusting rings of a different thickness.

The adjustment of the viewfinder lens should be done by focusing on the same distant subject and in this case the definition of the image in the built-in ground-glass screen of the viewfinder should be examined. The lens should be screwed into the flanged tube until the finder image focused on infinity by the focusing knob C 546.274 is sharp. In this position it must be secured by tightening the counter-ring C 534.245 against the flanged tube.

Ikoflex Ib / Ic



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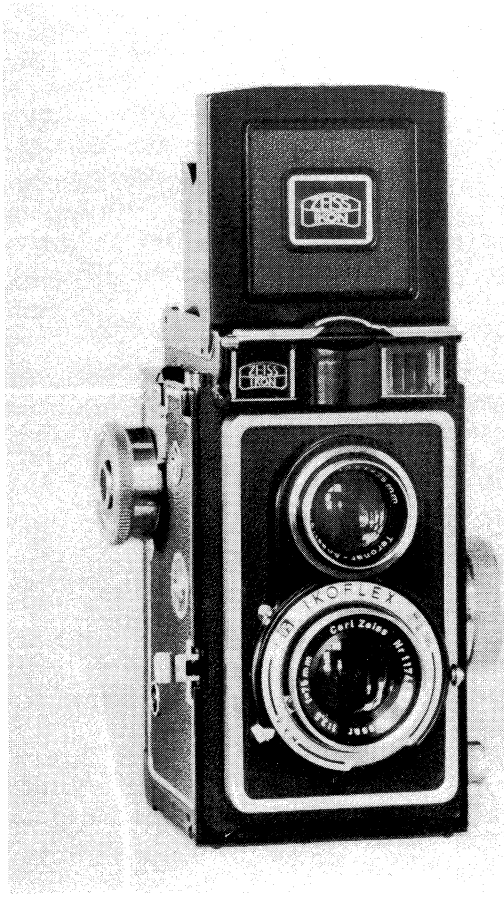

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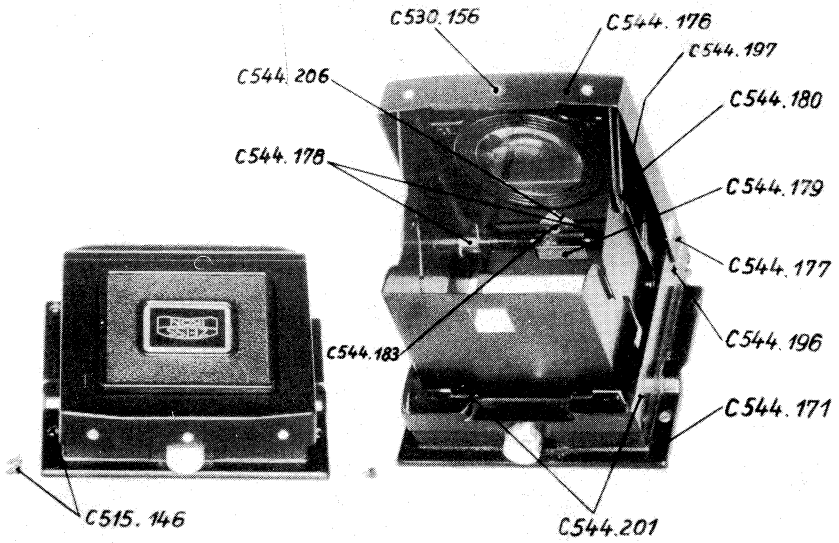
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C544.176
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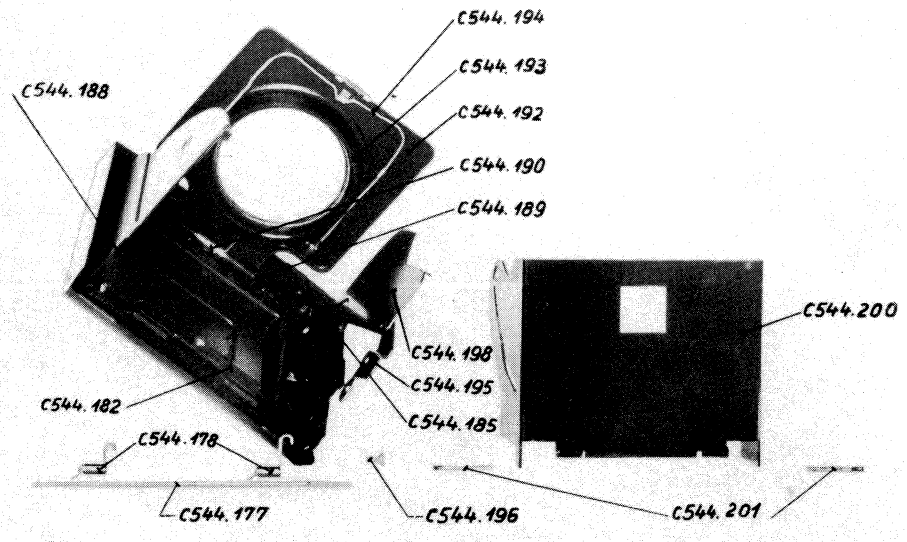
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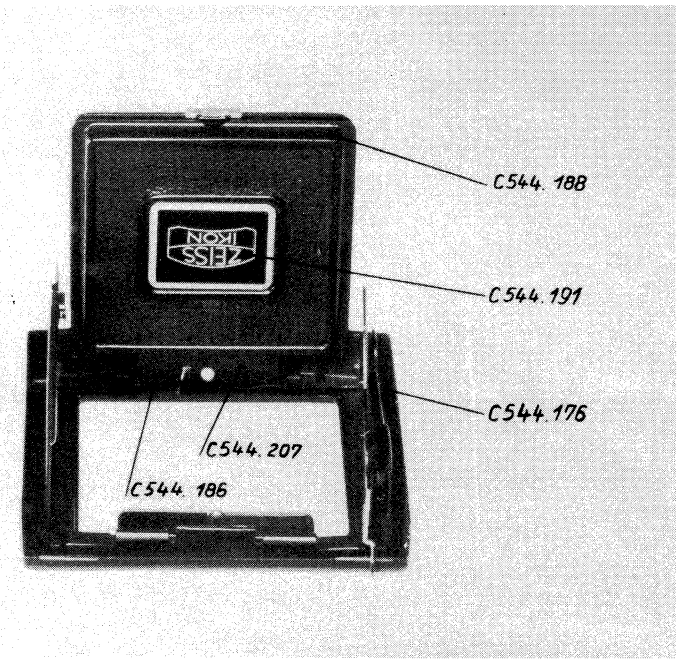
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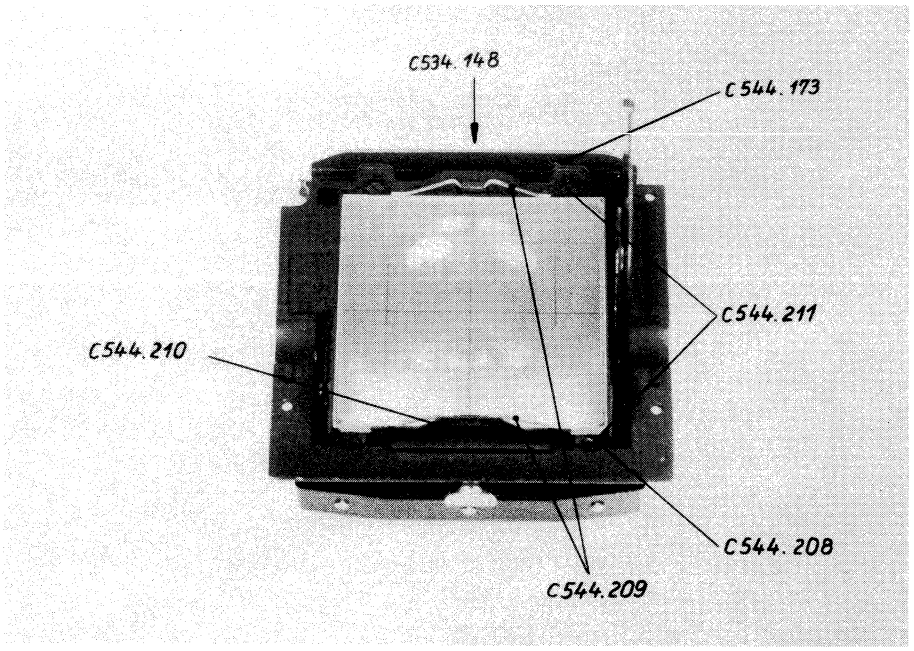
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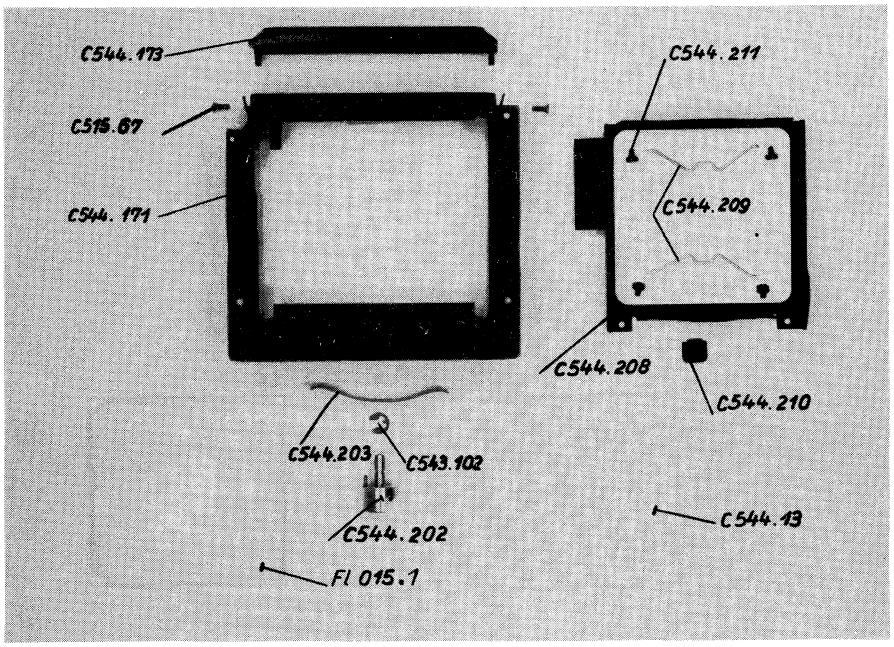
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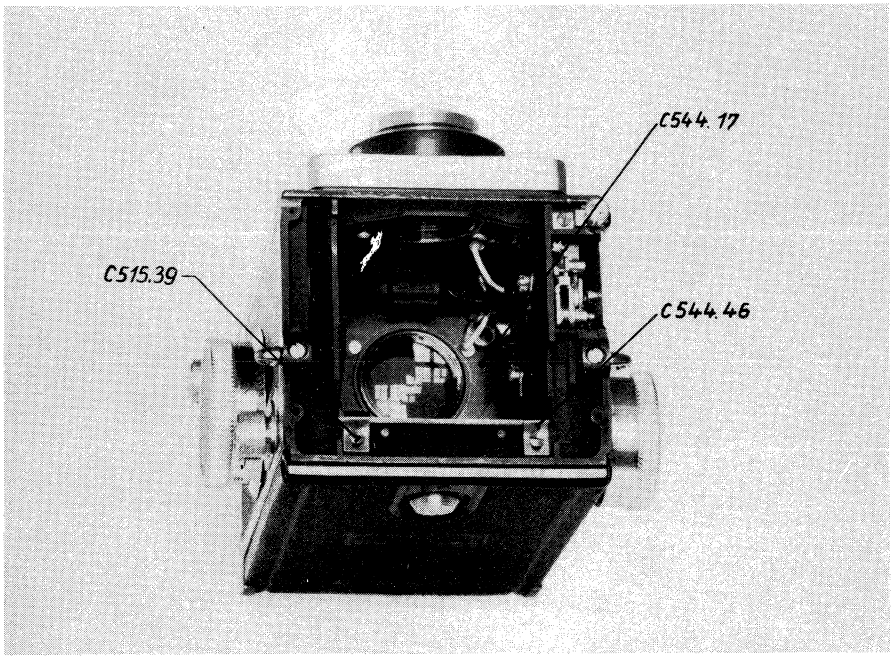
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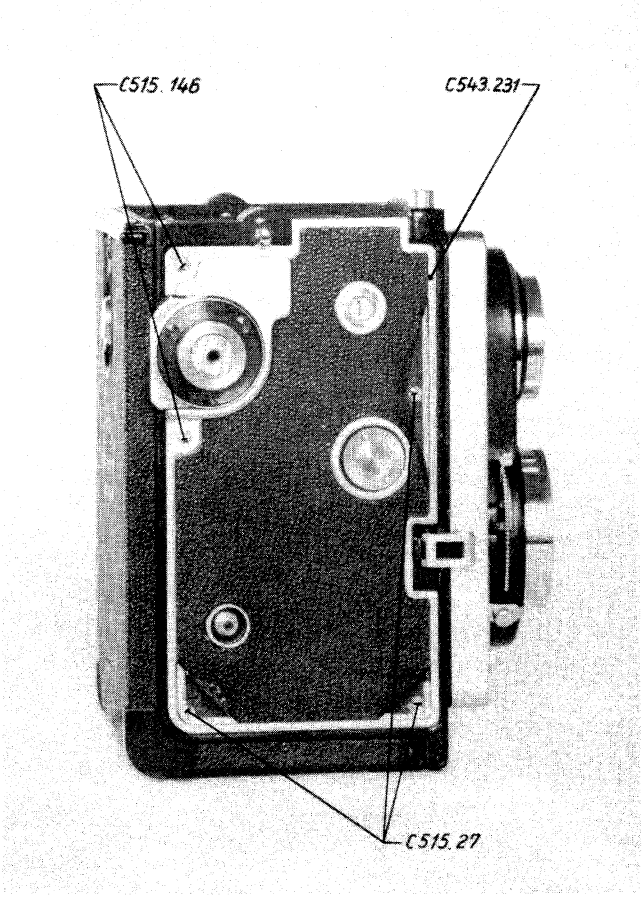

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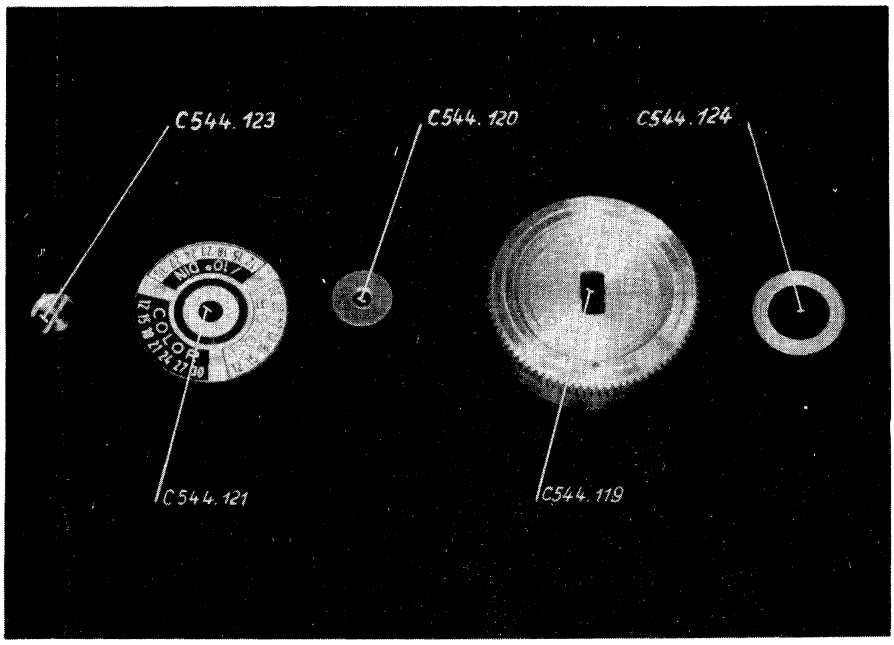

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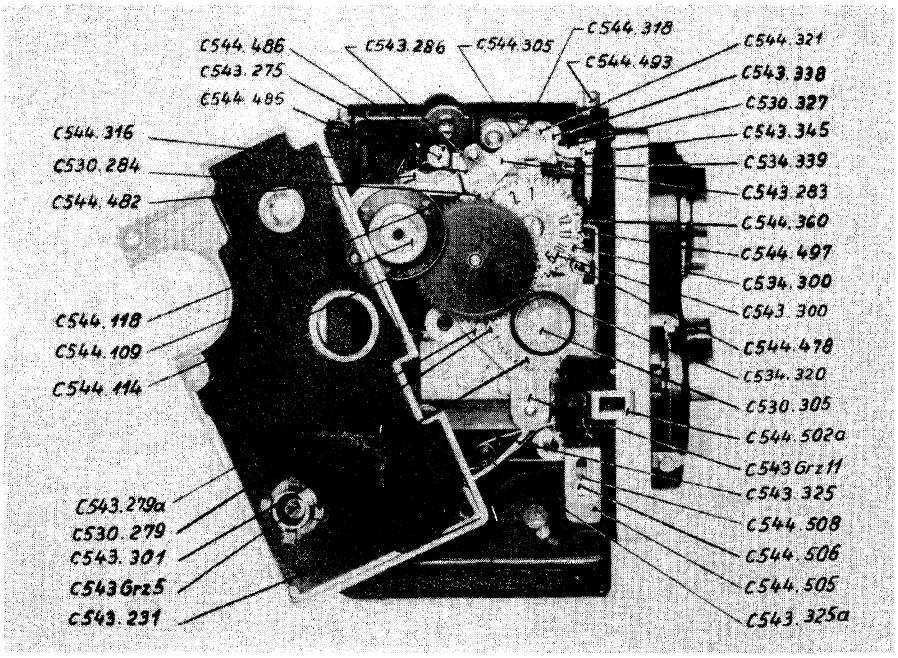

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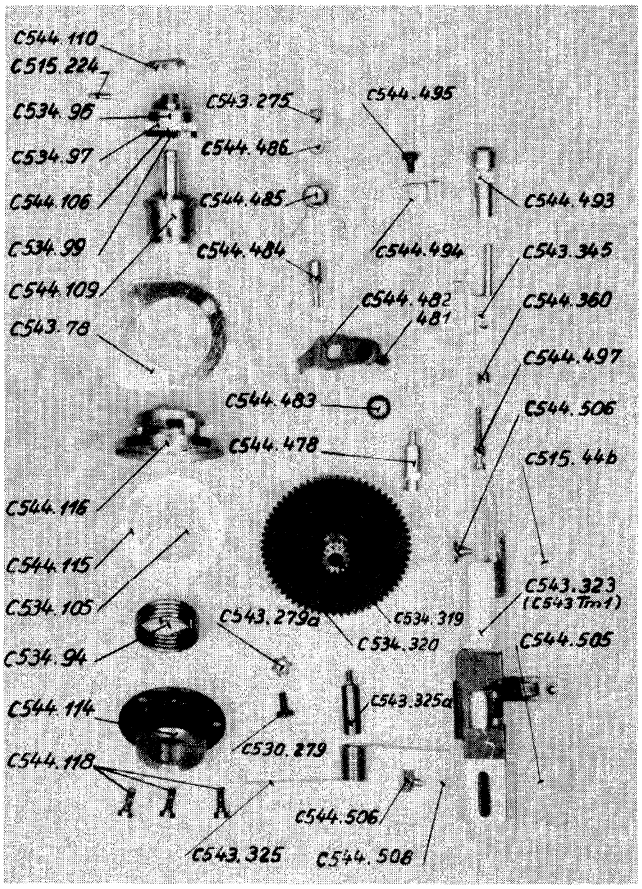

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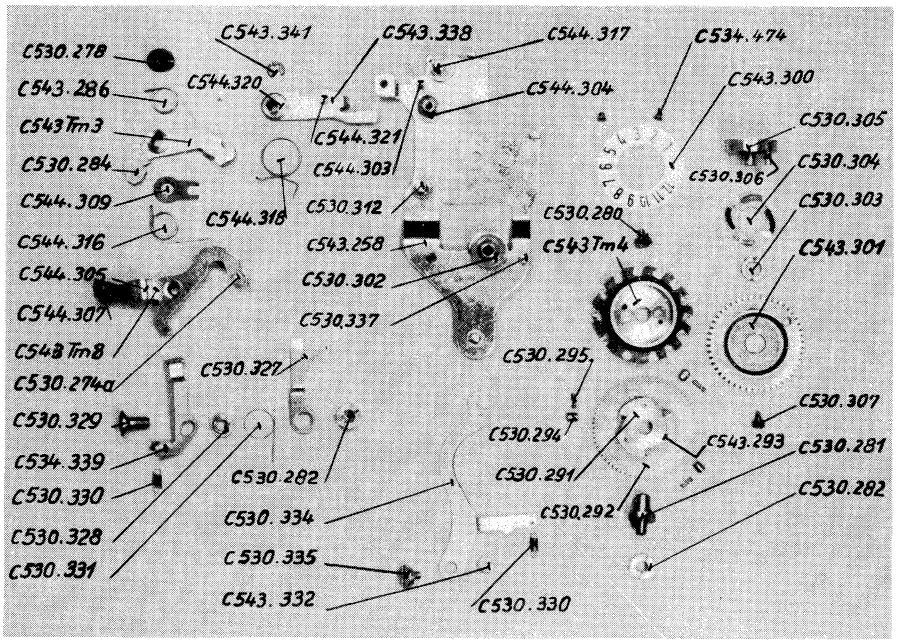

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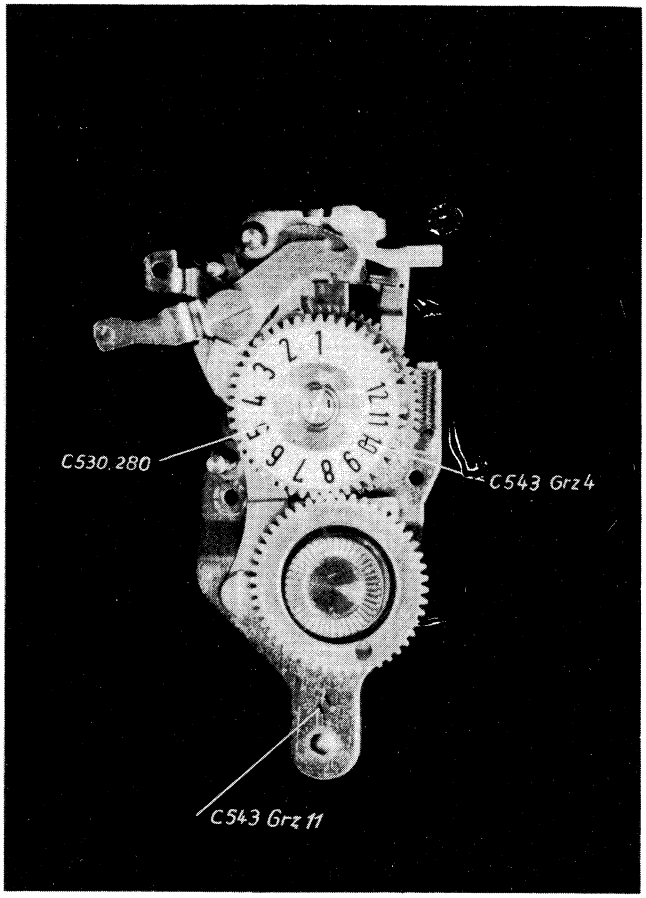

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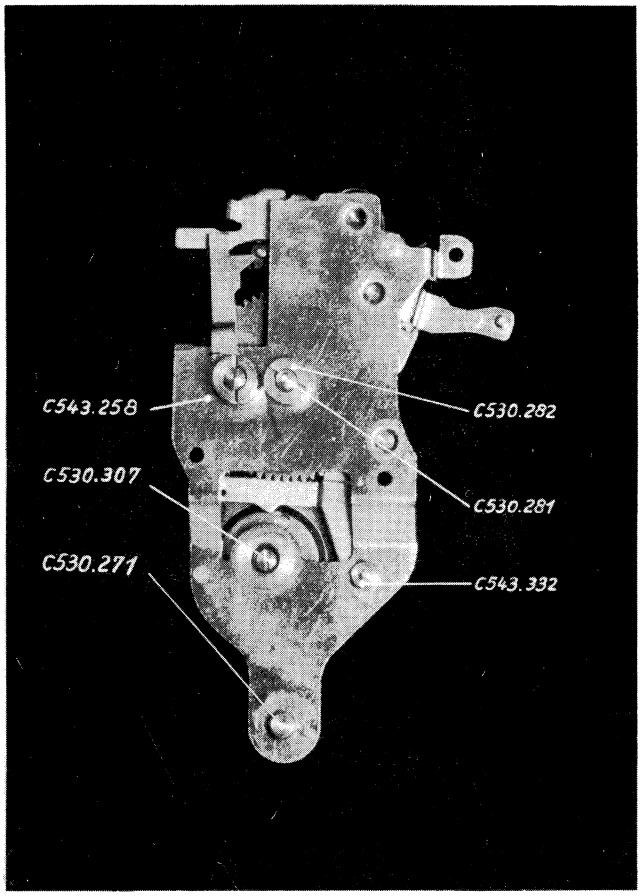

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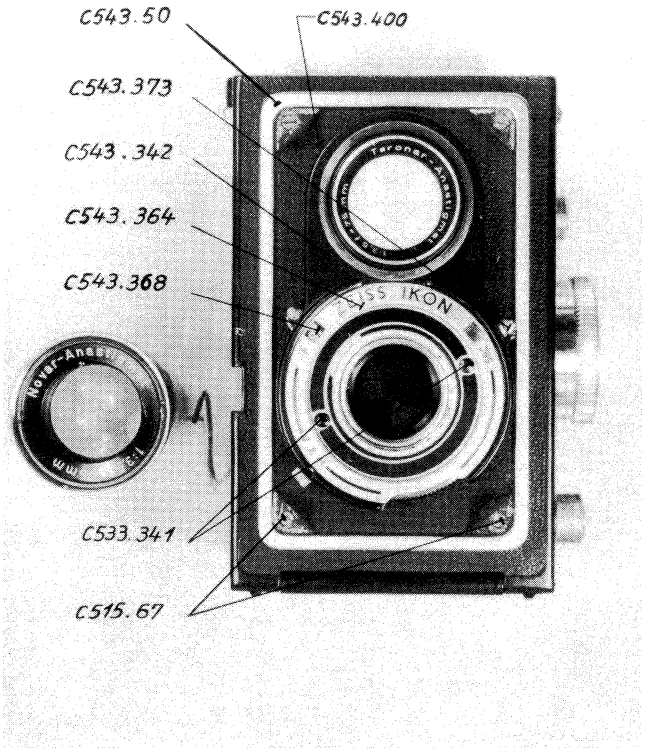

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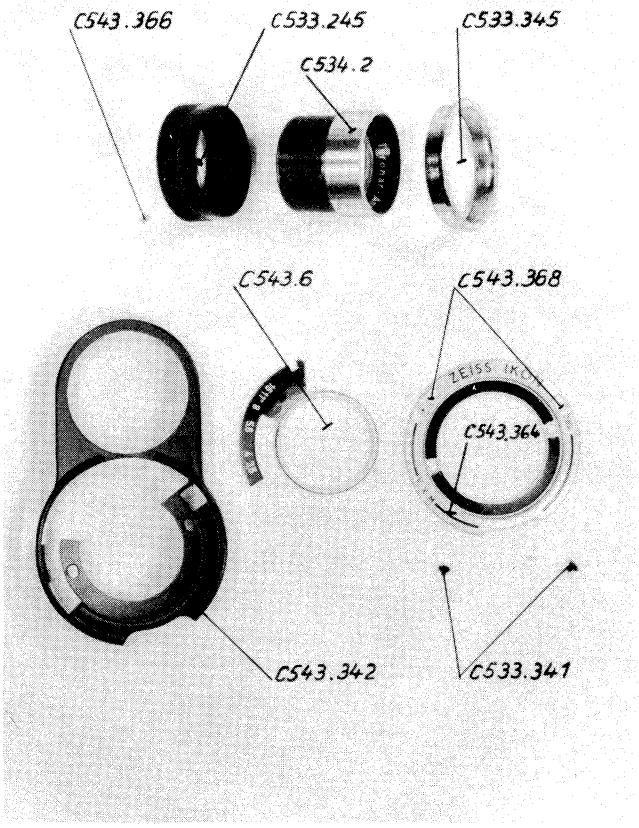

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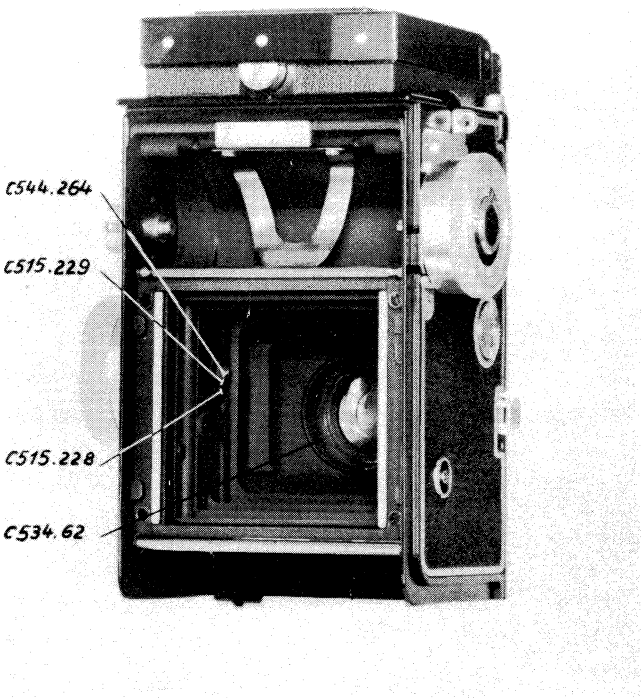

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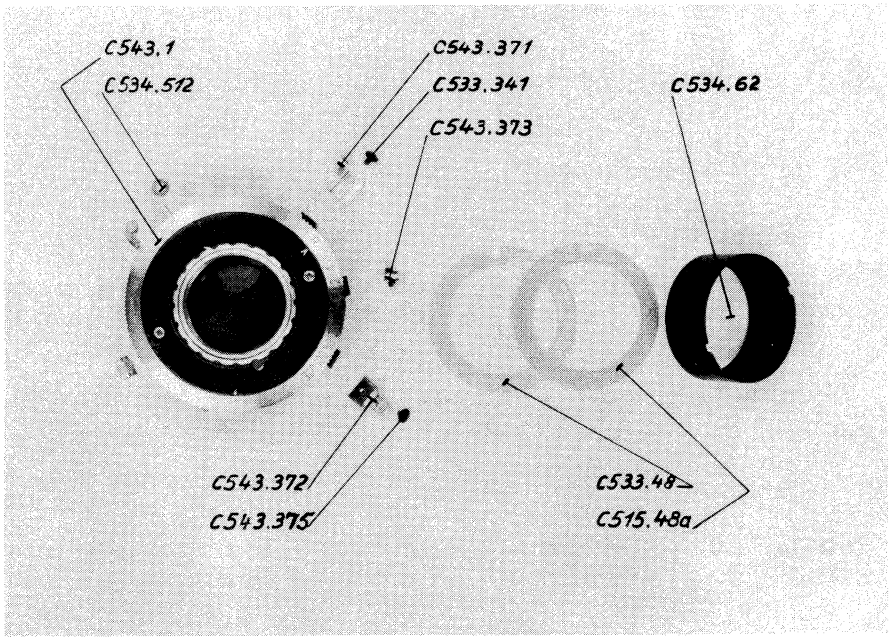

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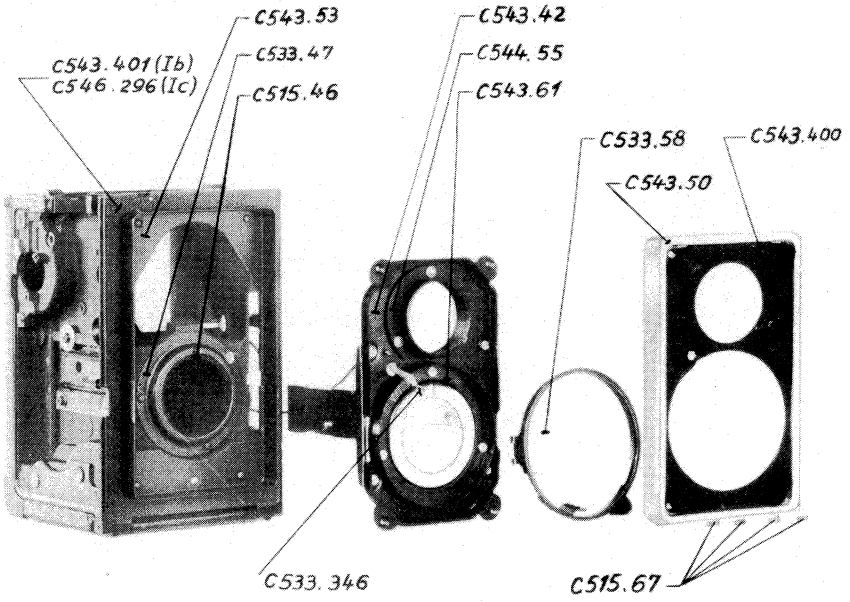

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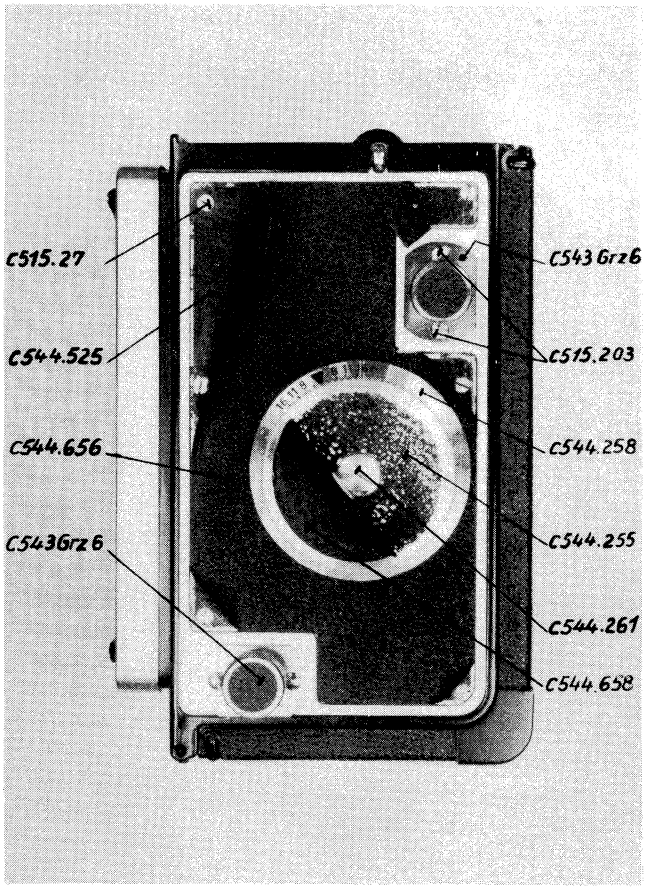

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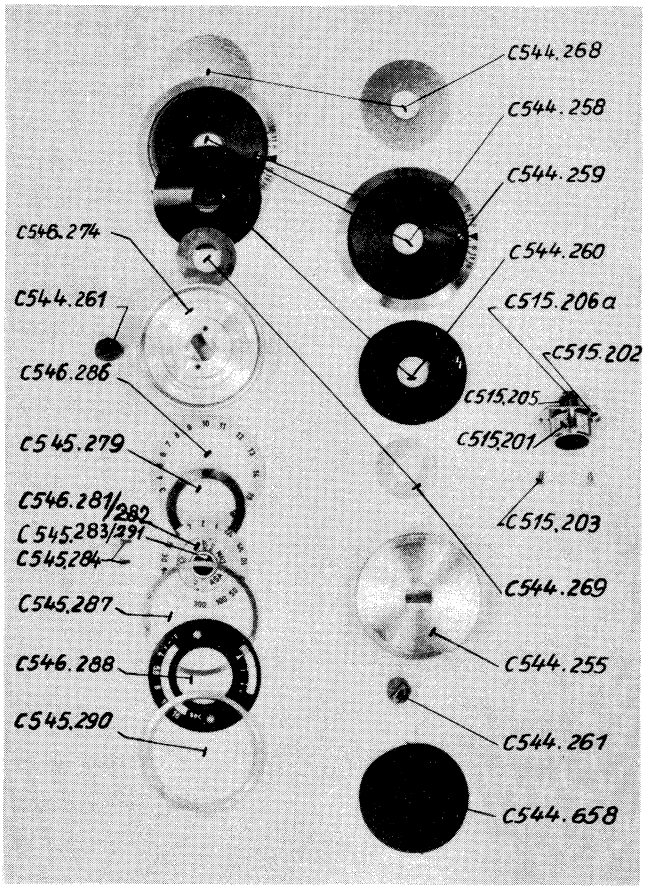

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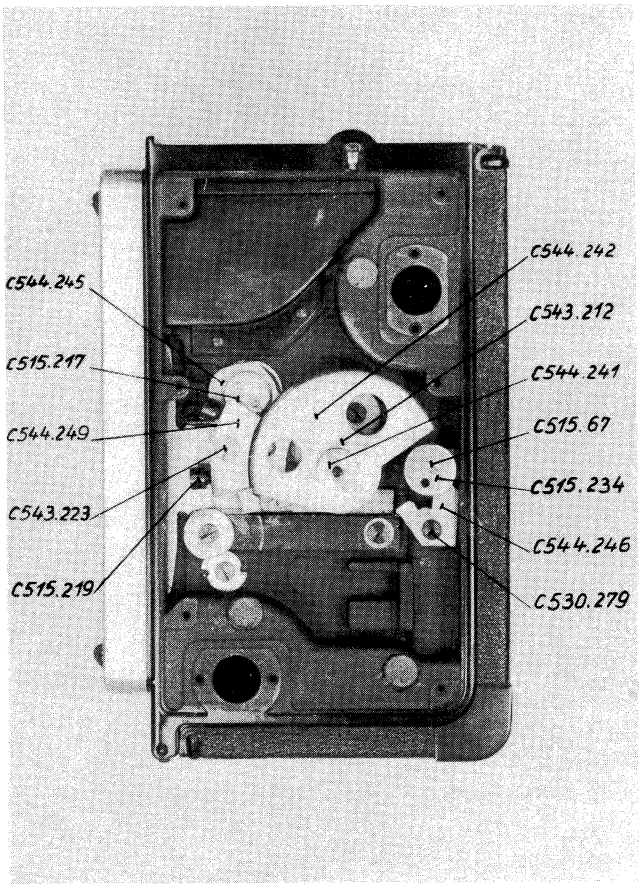

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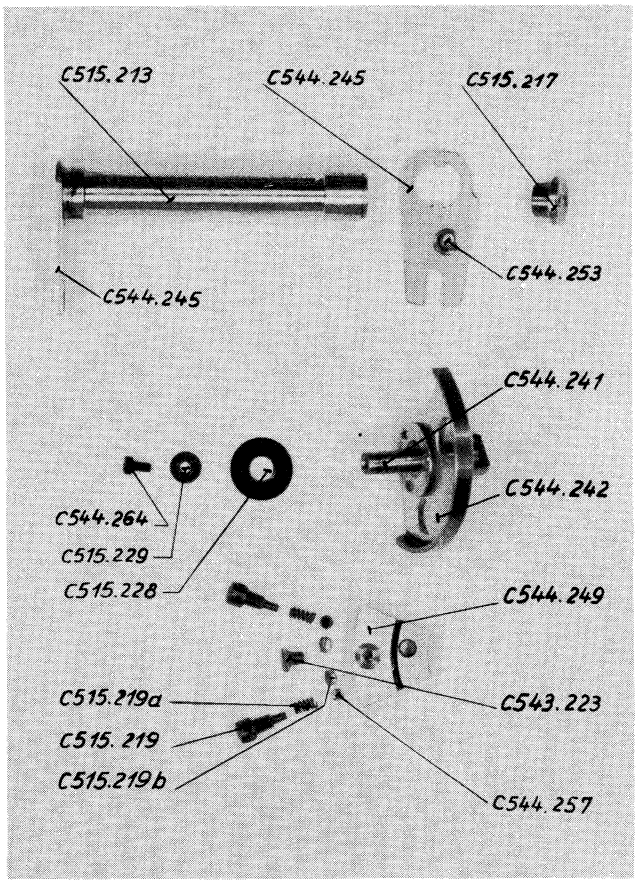

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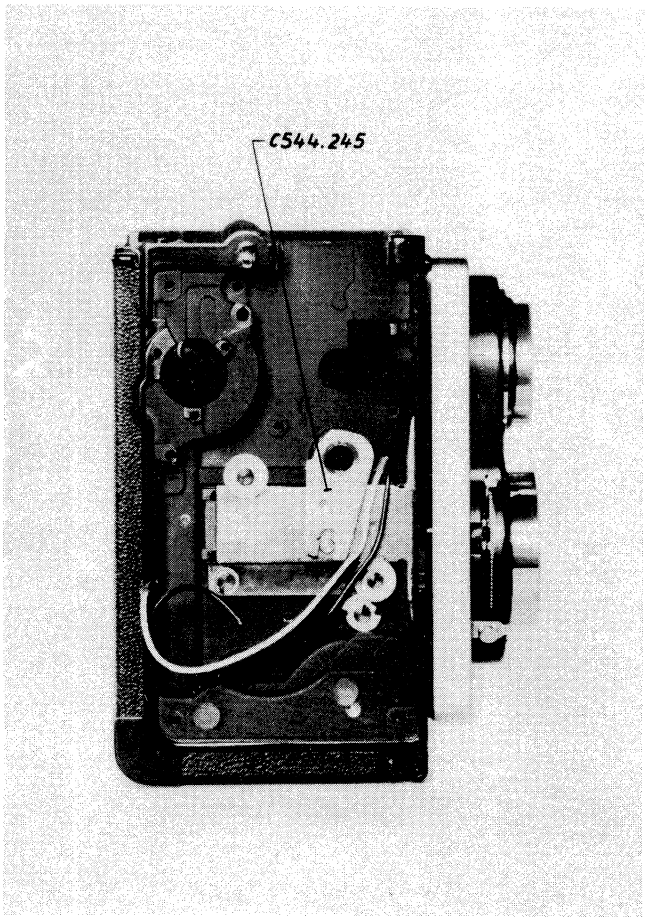

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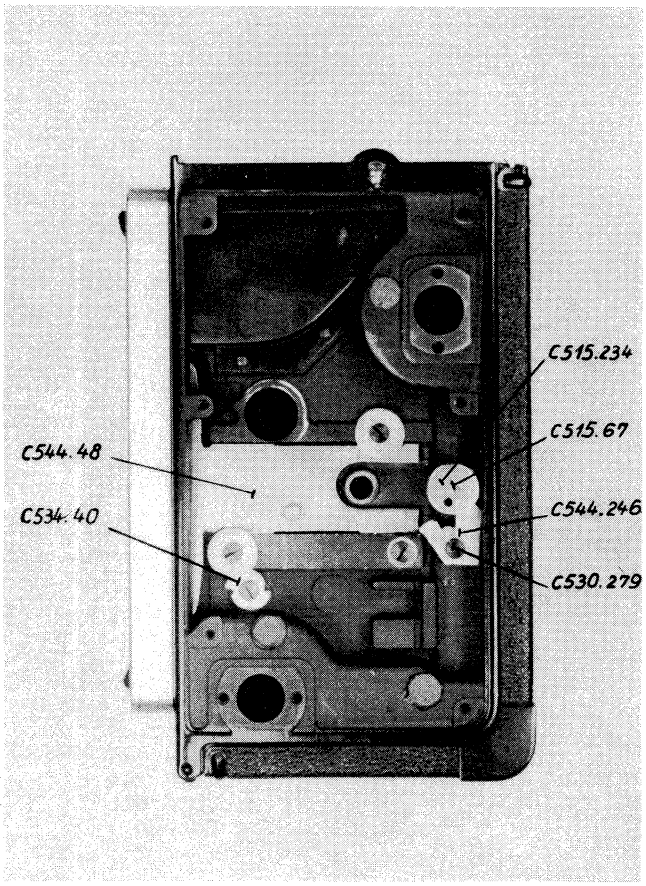

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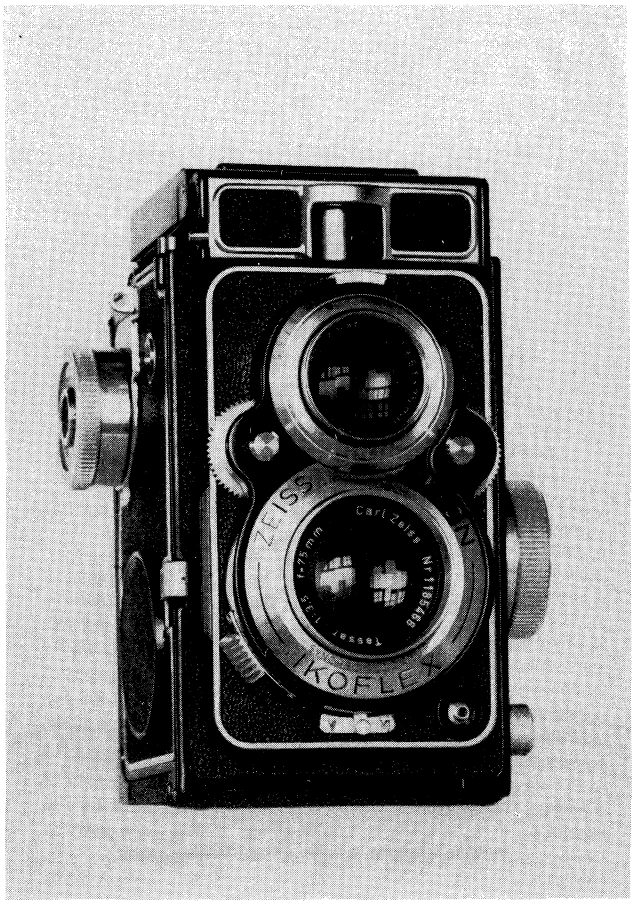

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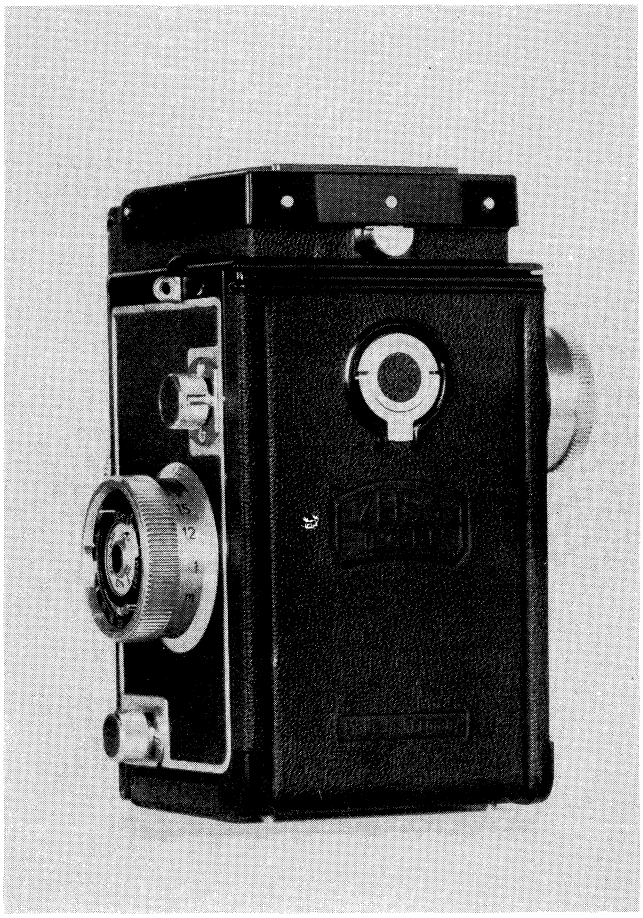

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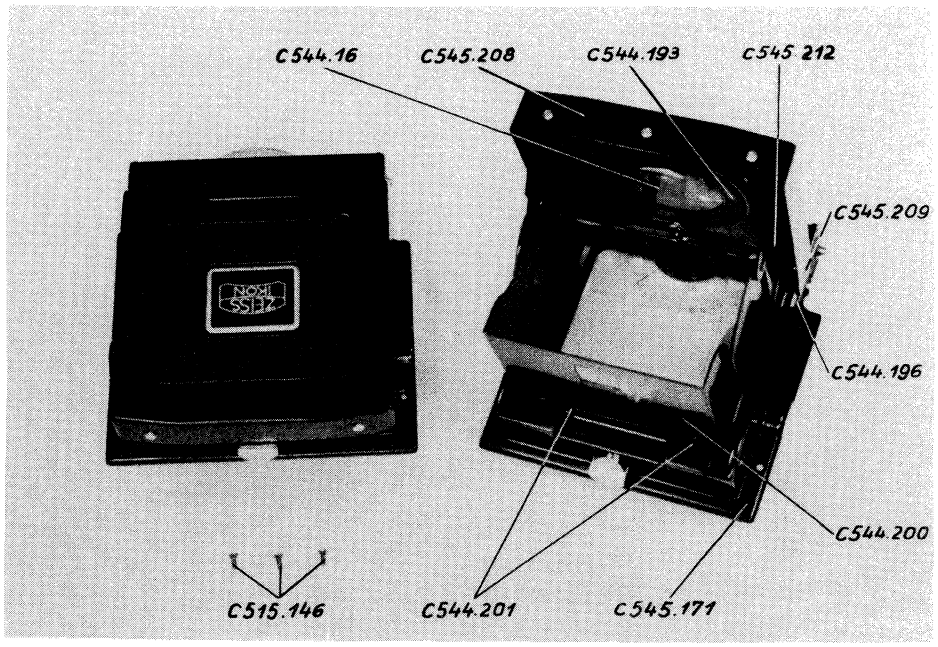
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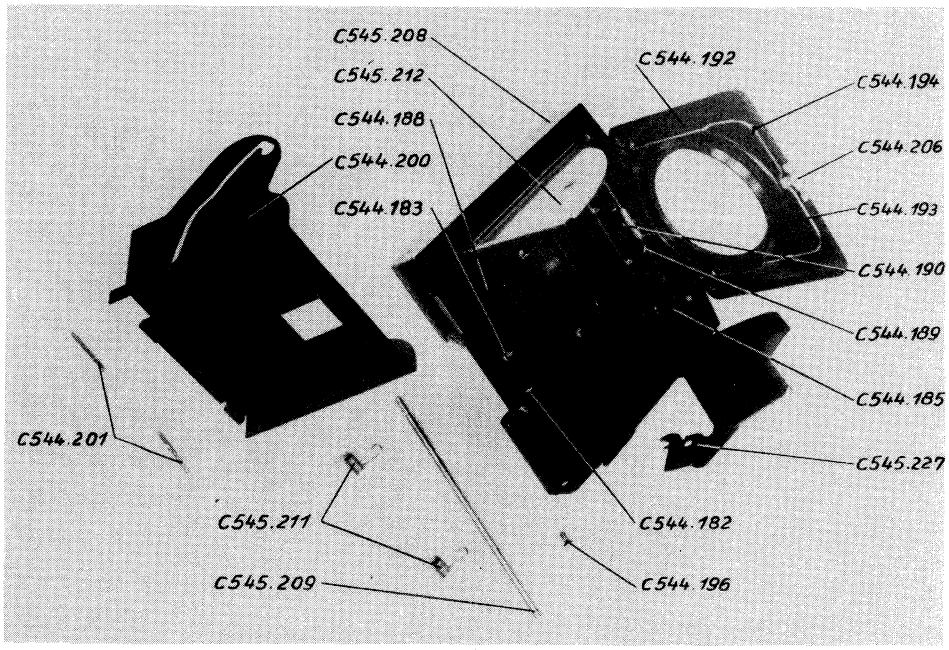
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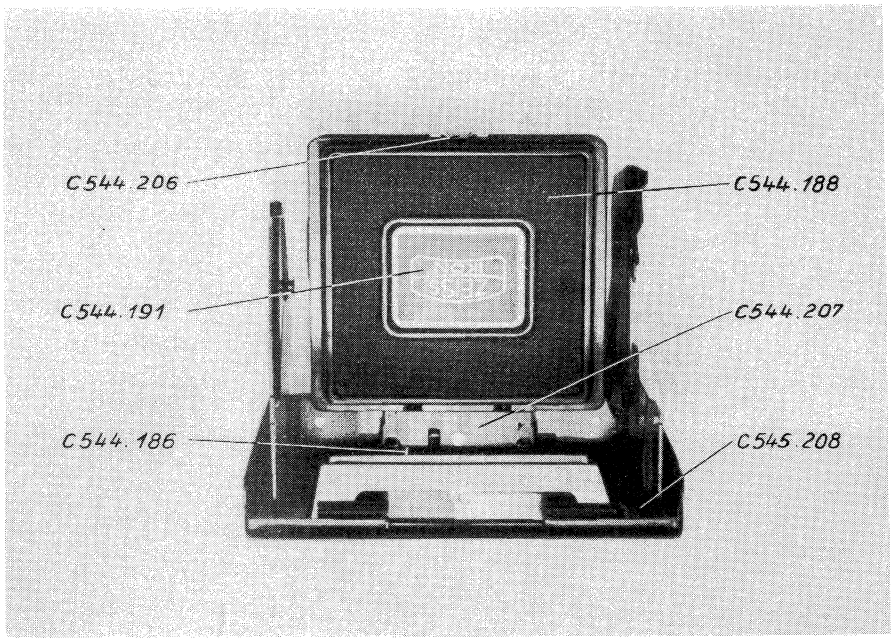
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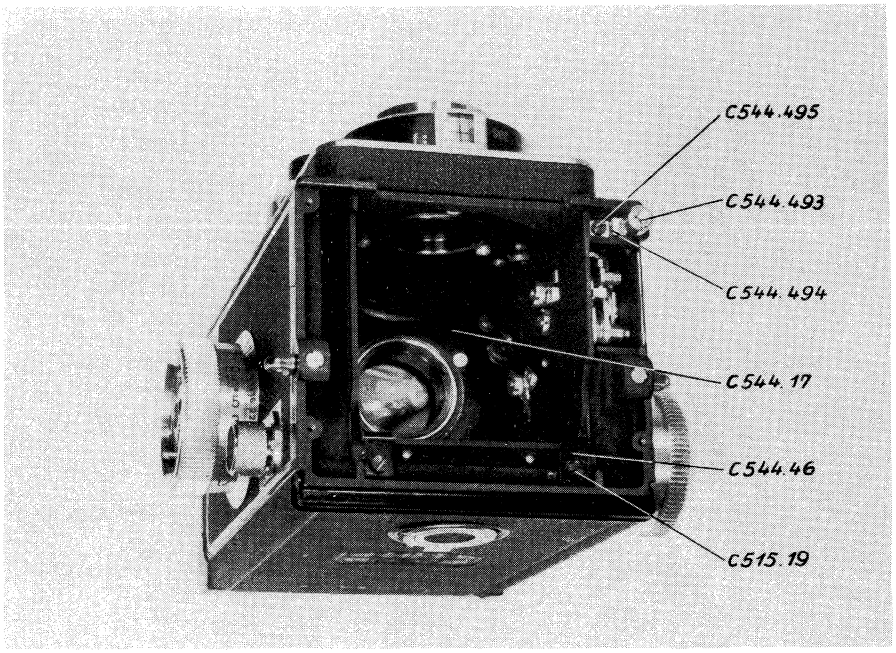
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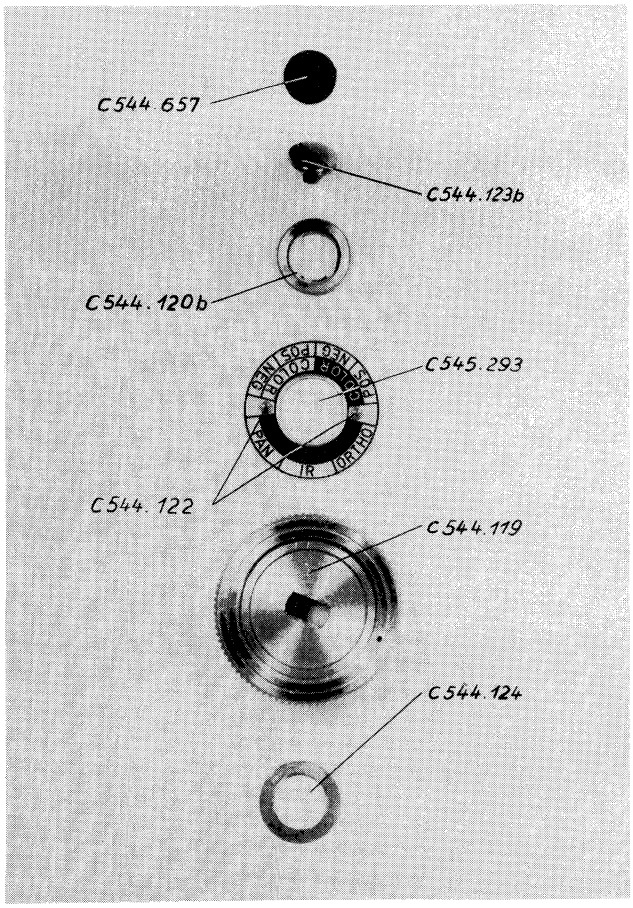

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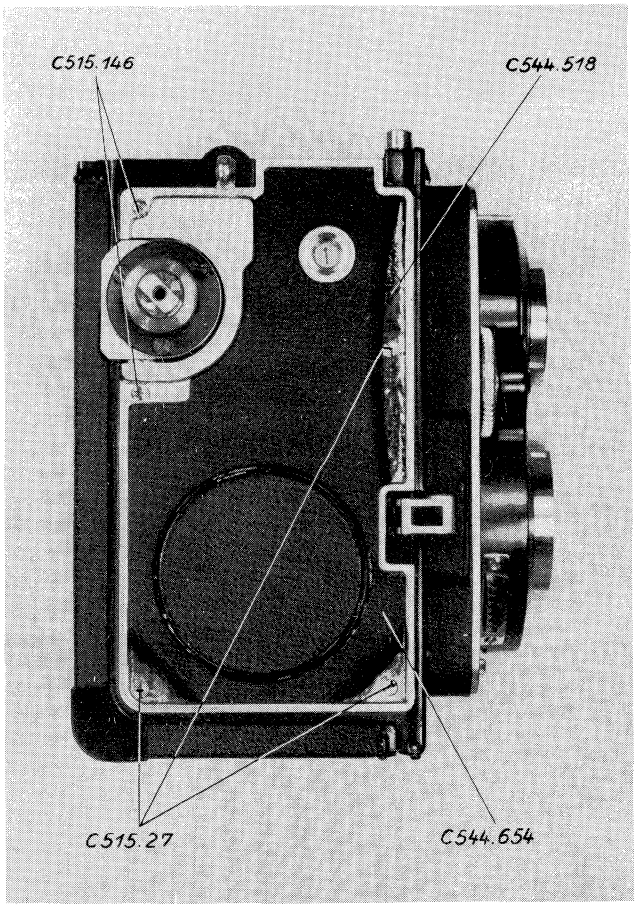

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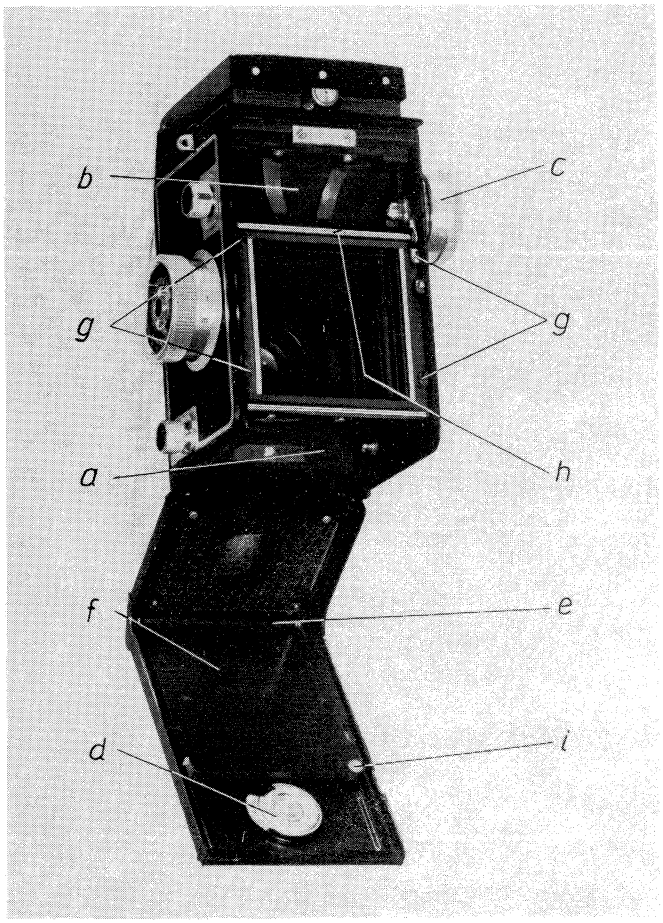

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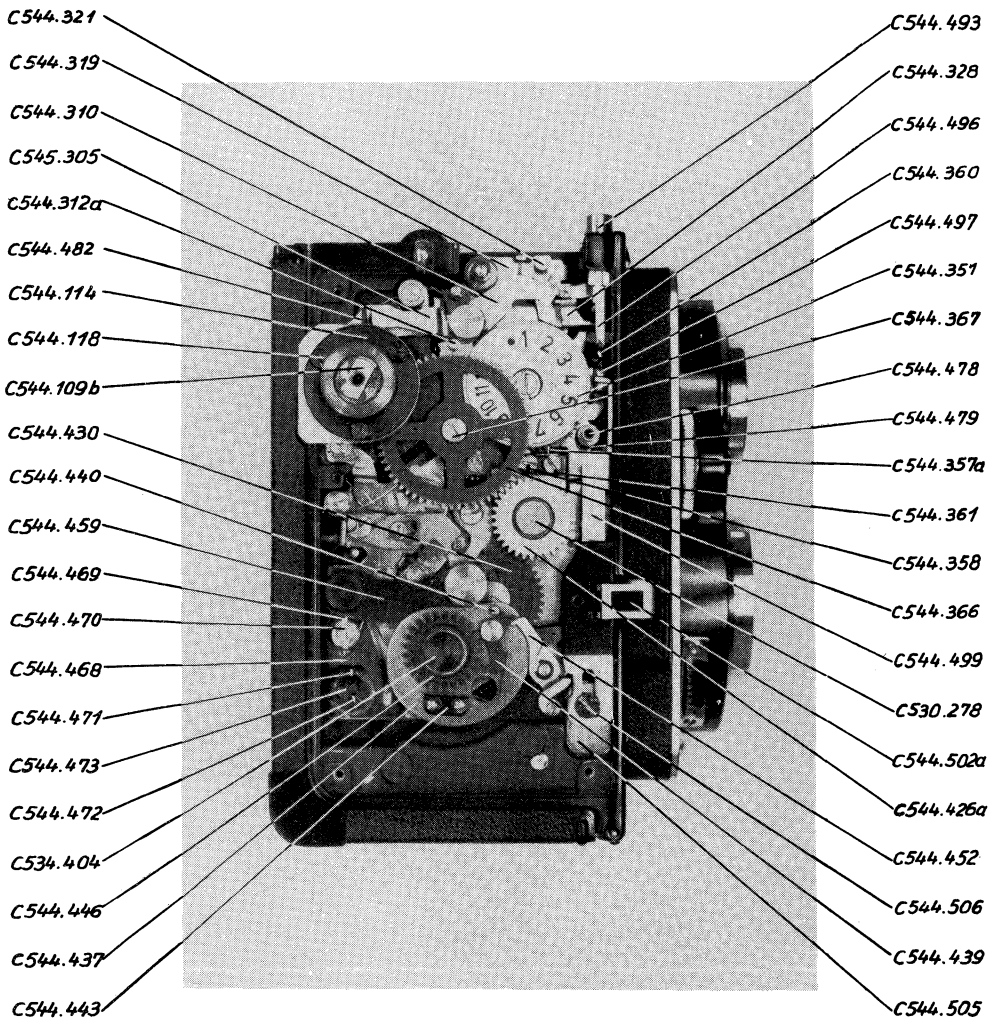
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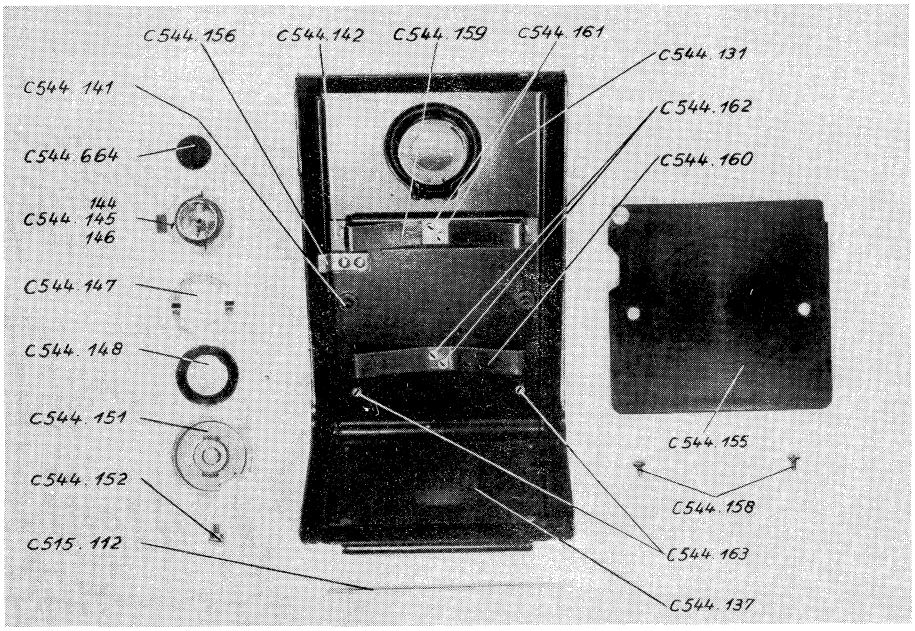

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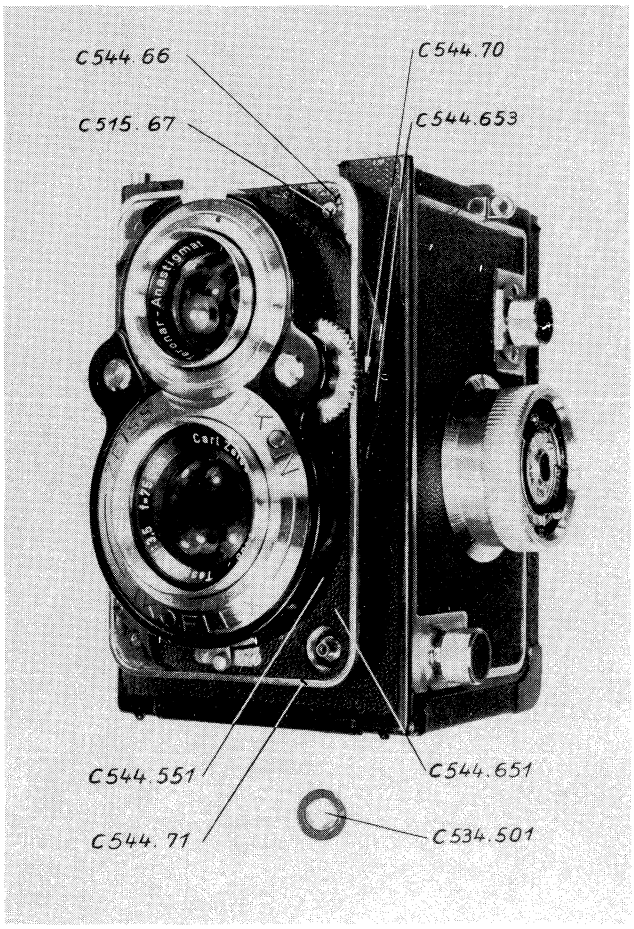

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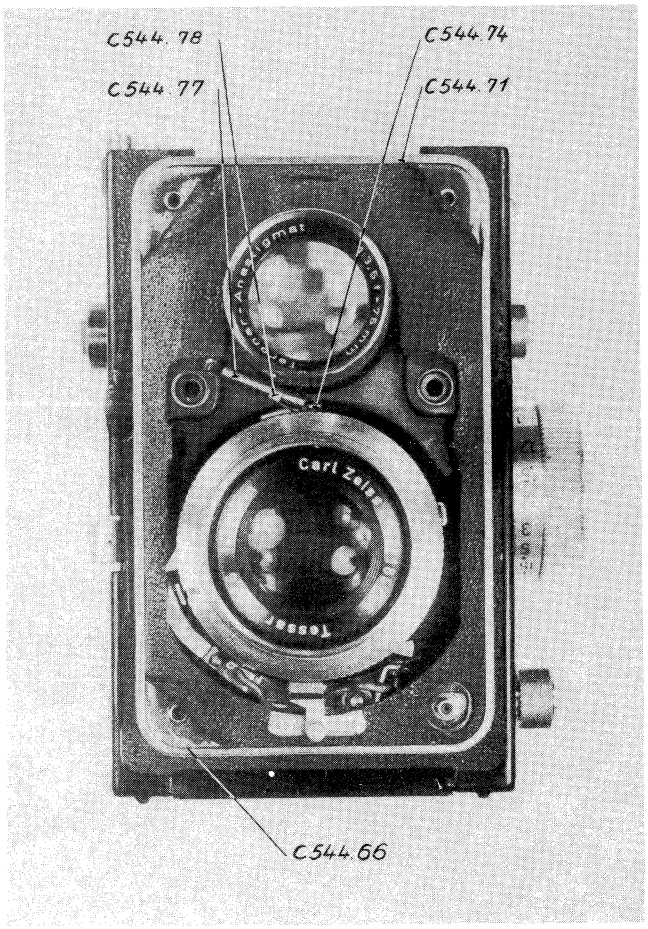

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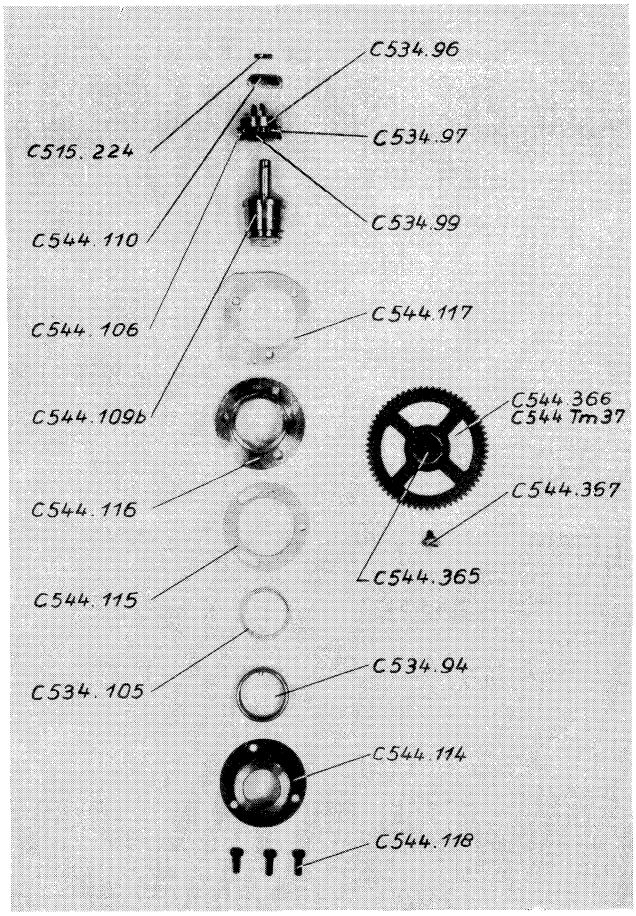

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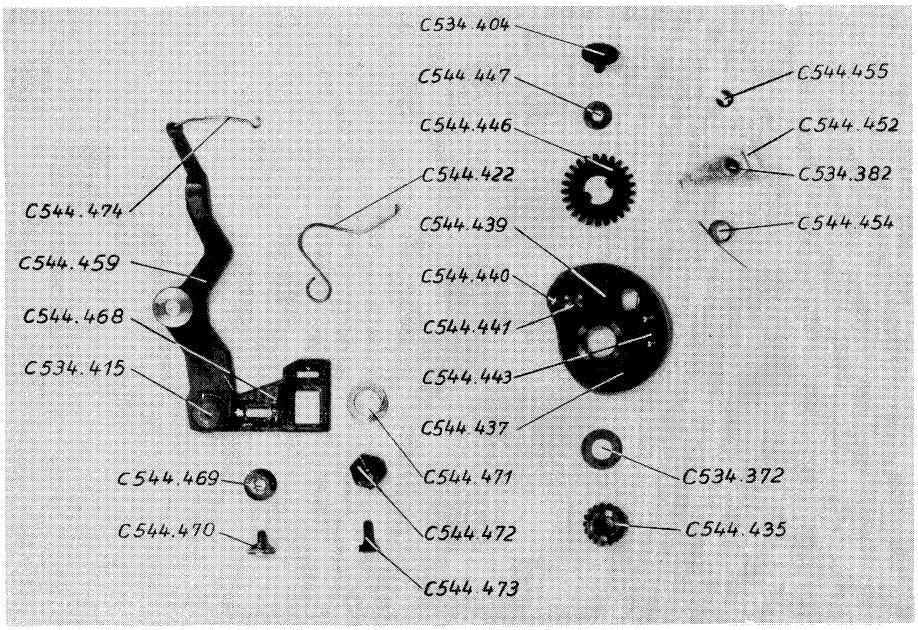

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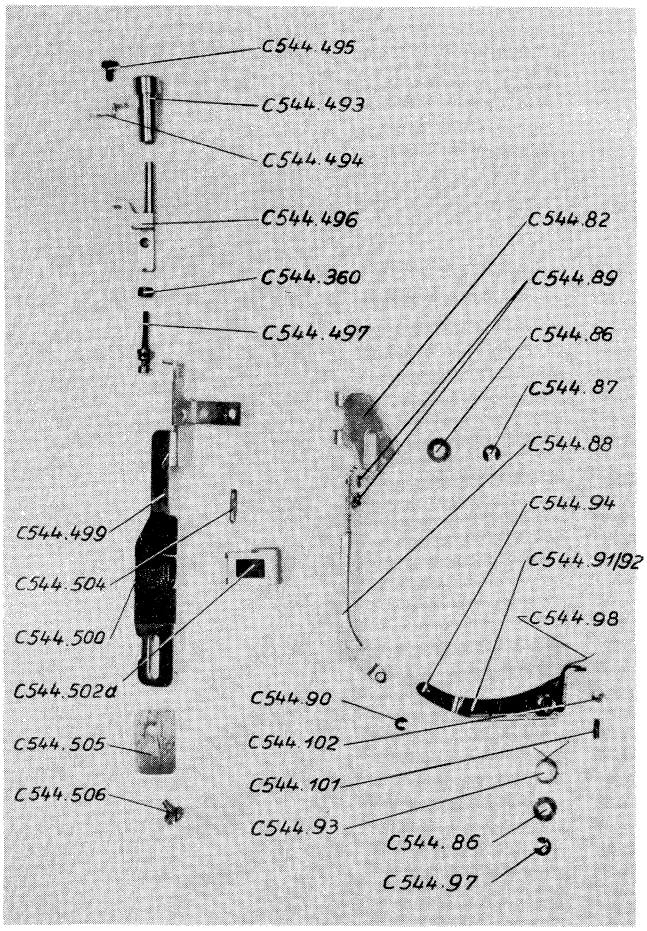

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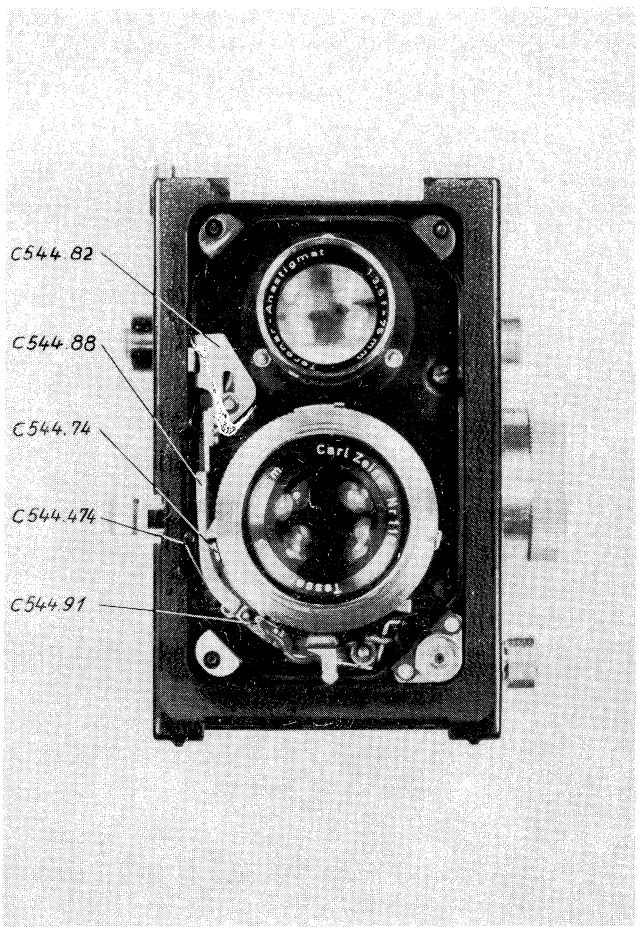

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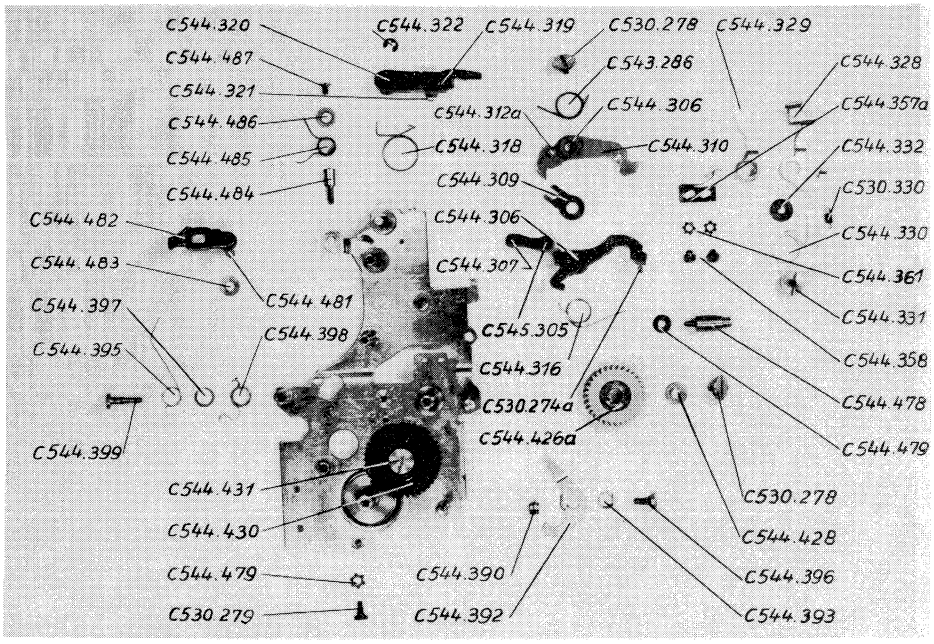

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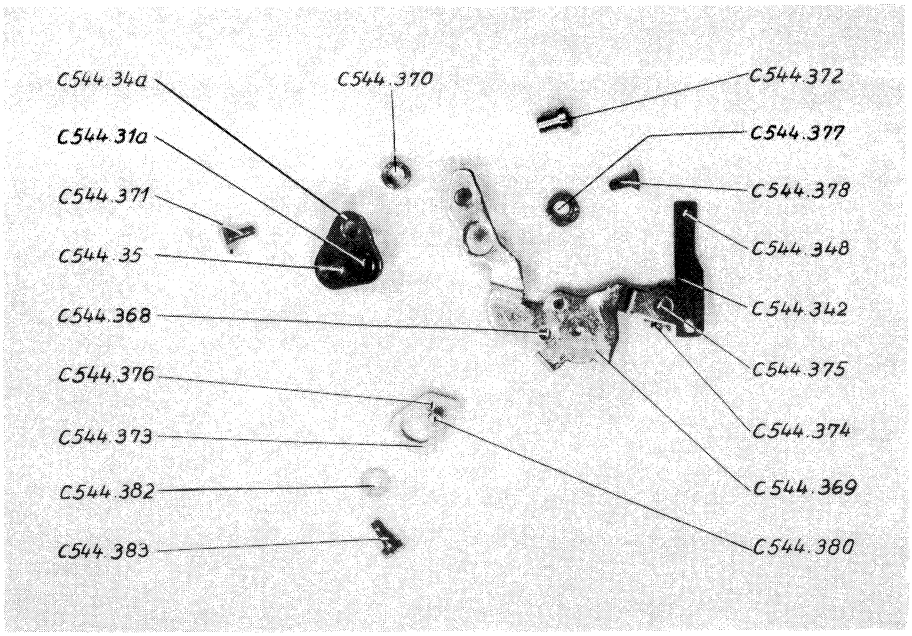

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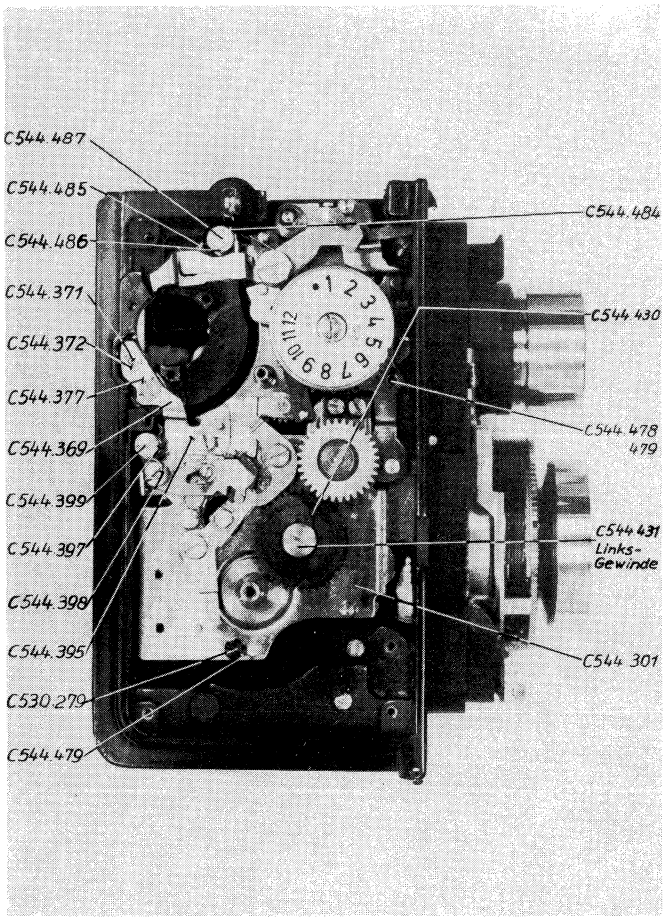

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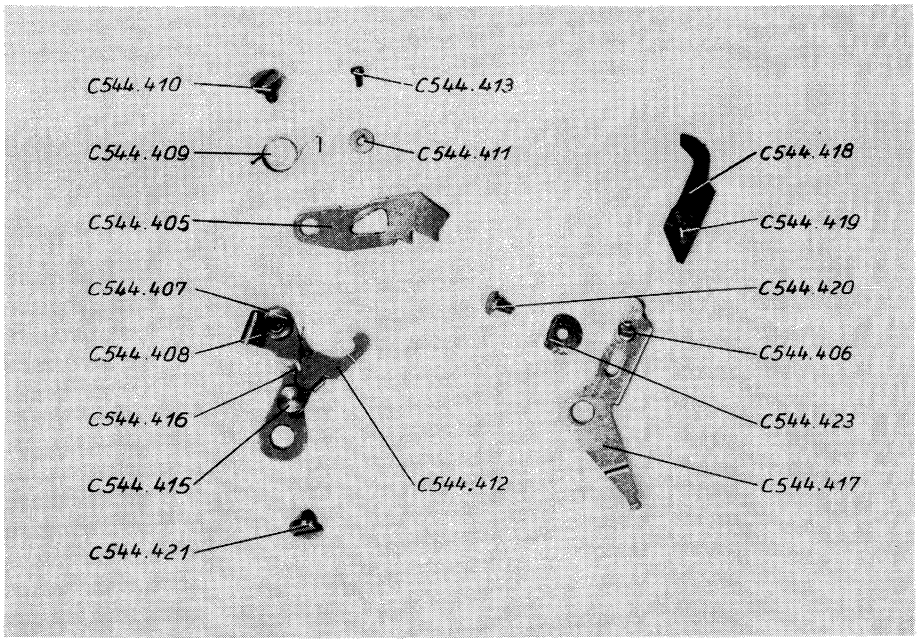

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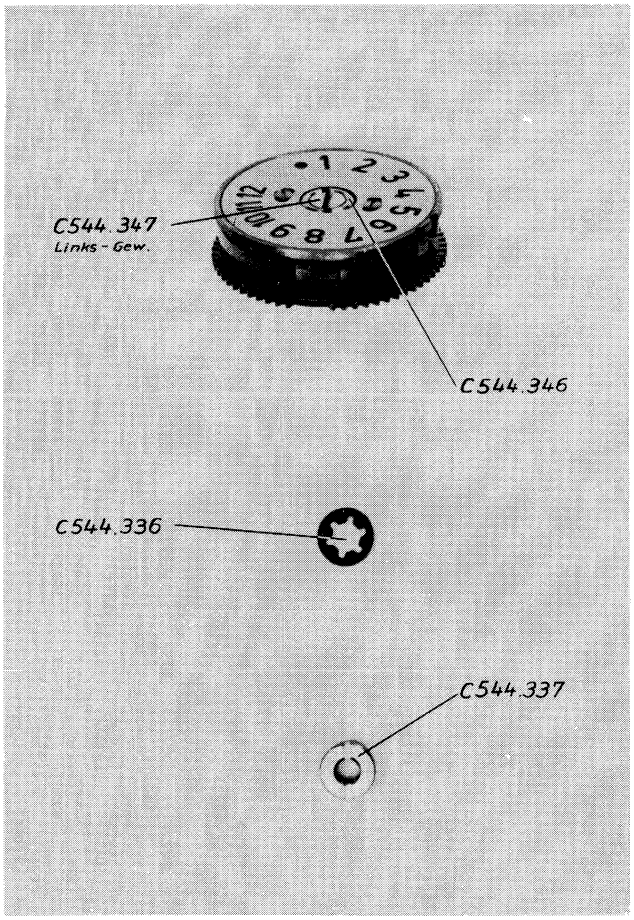

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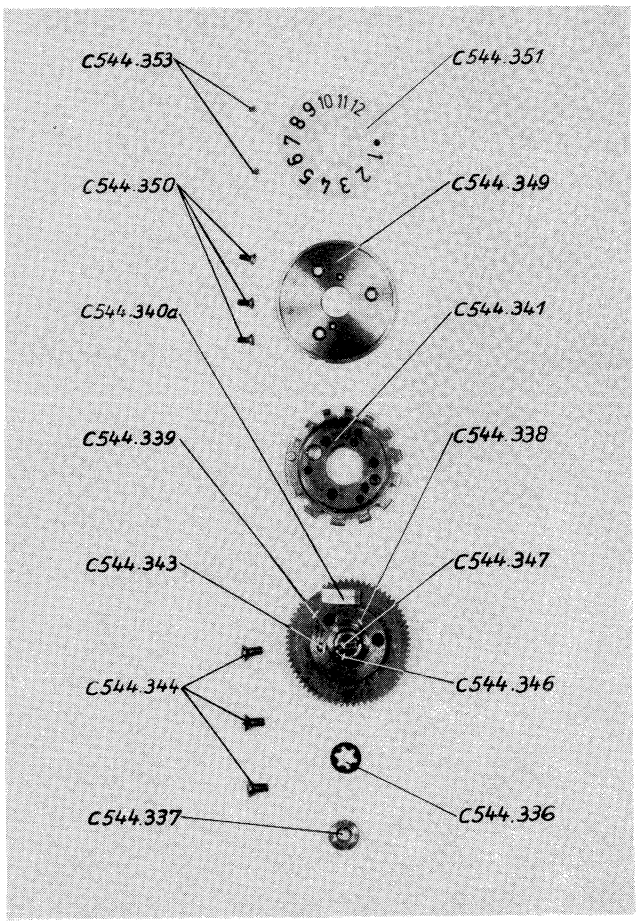

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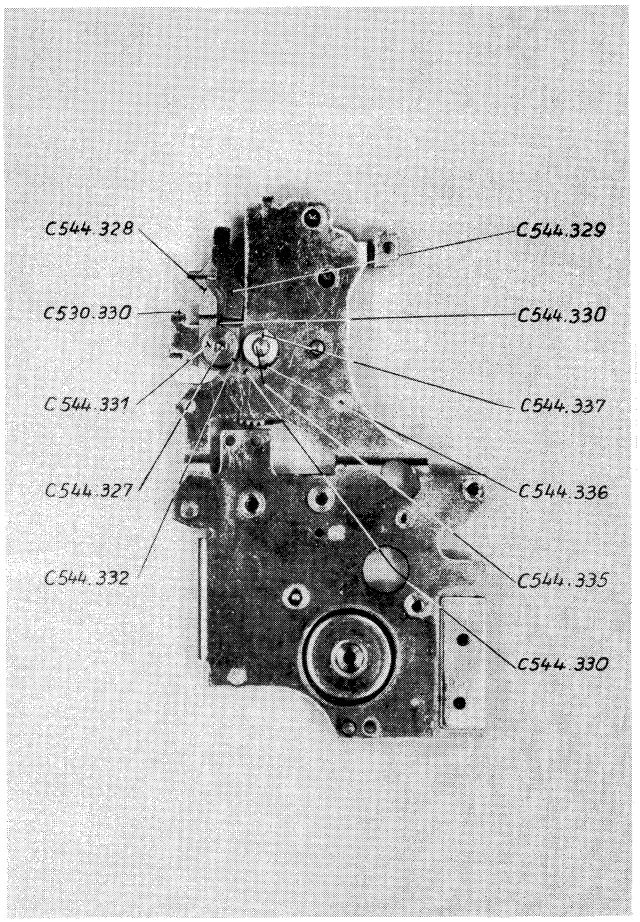

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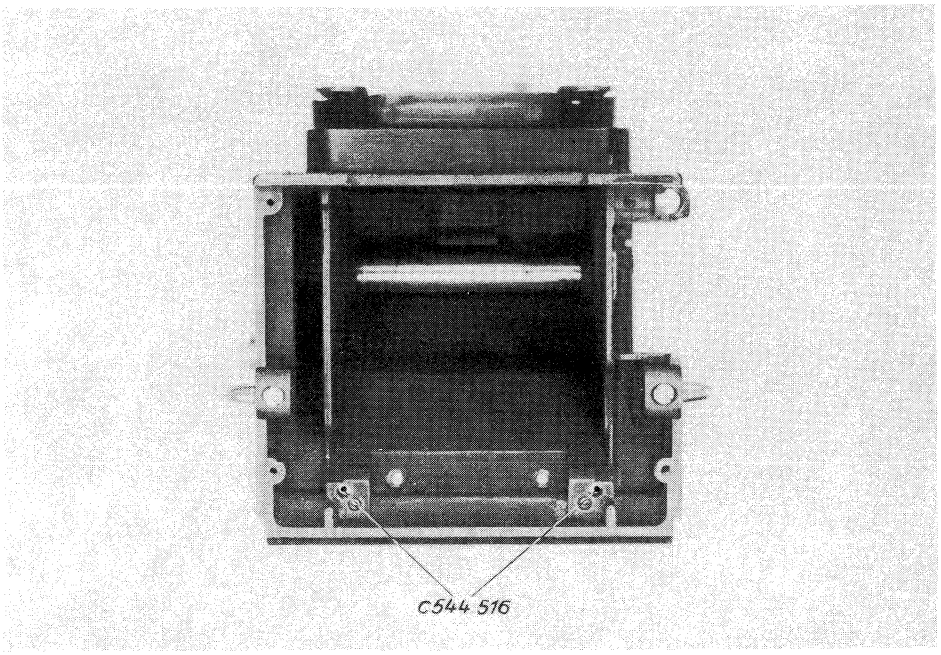

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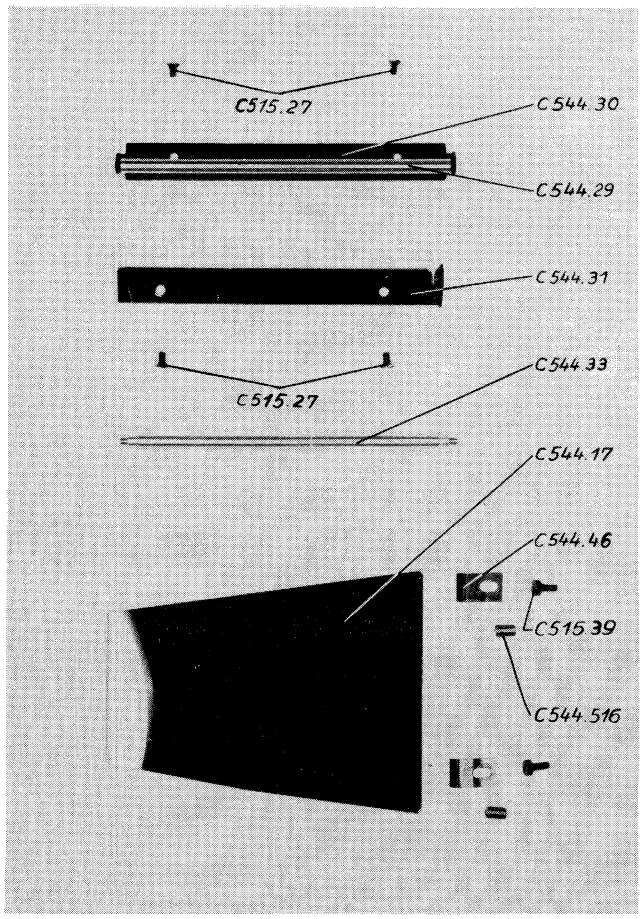

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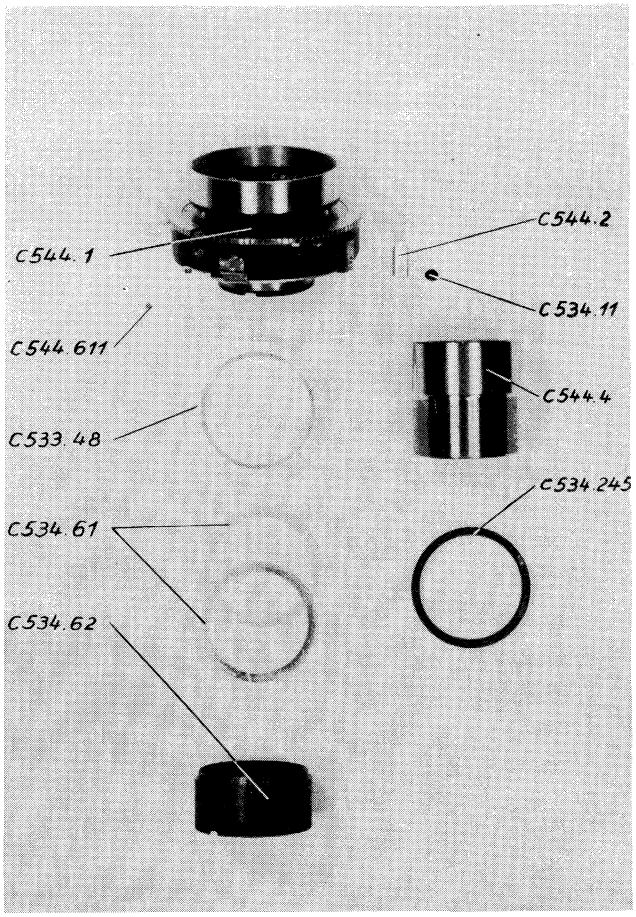

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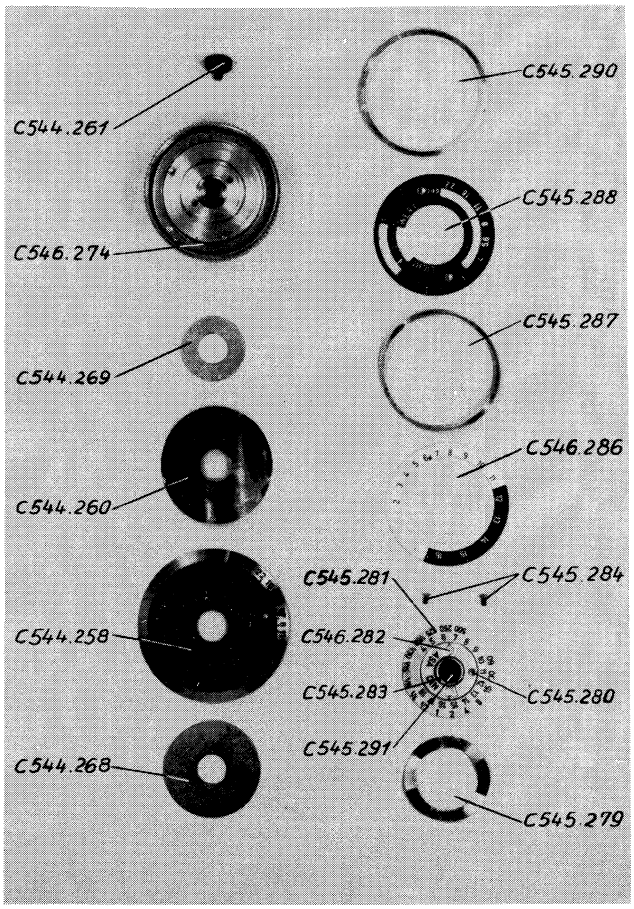

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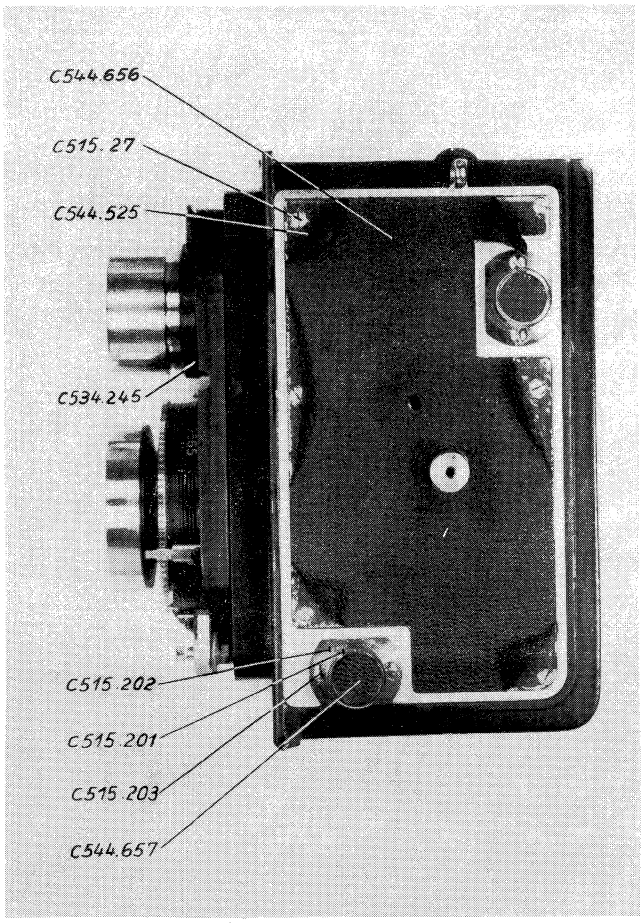

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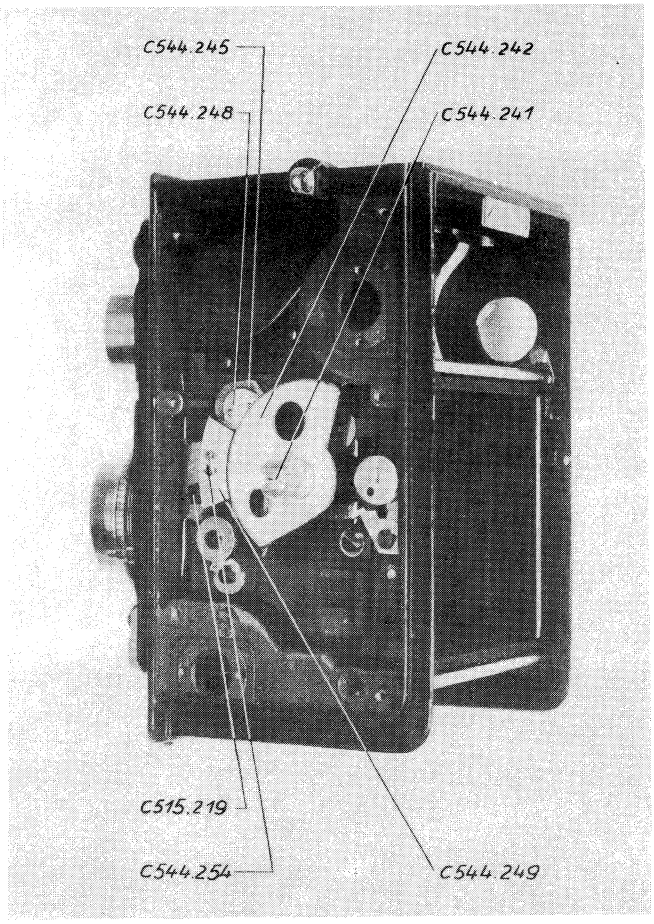

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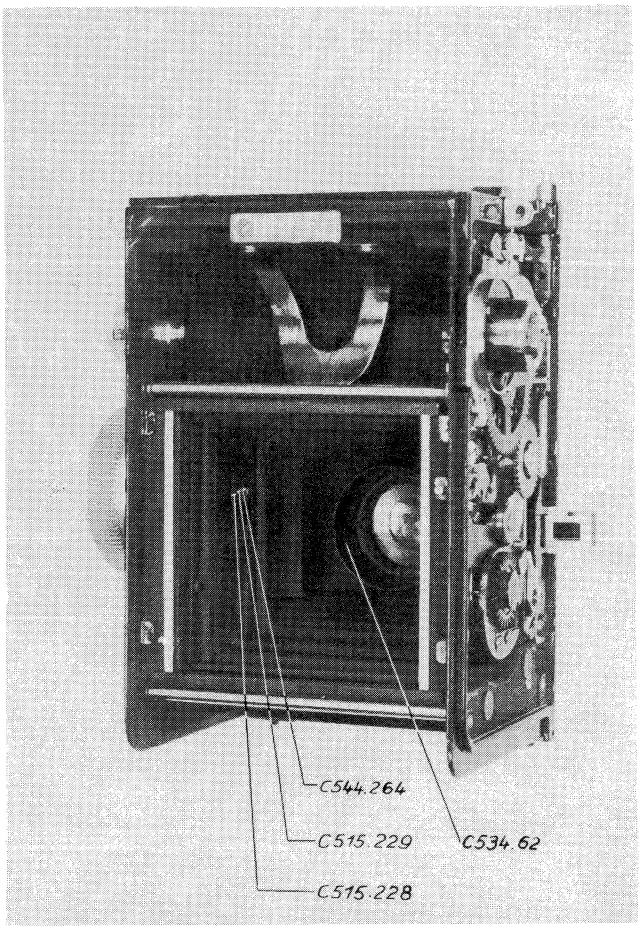

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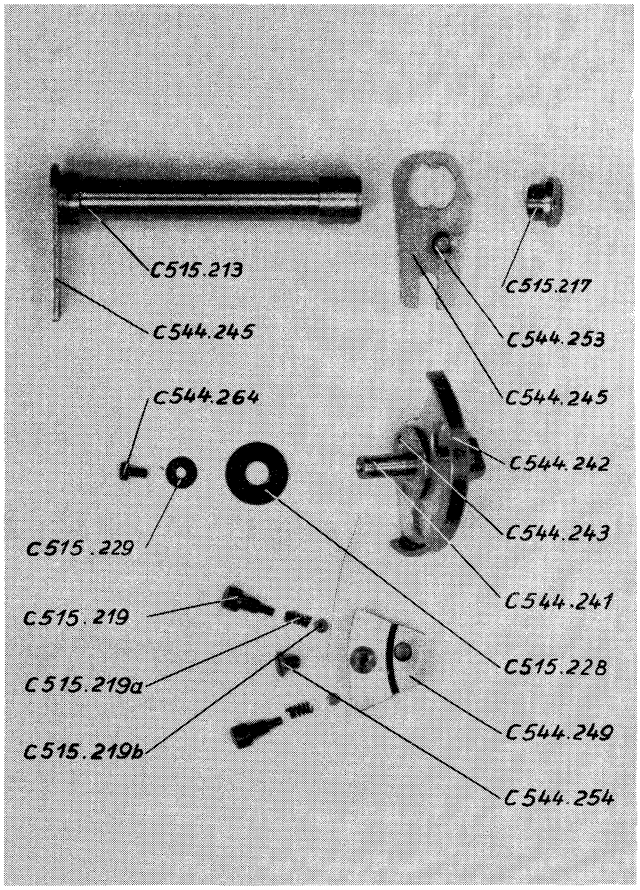

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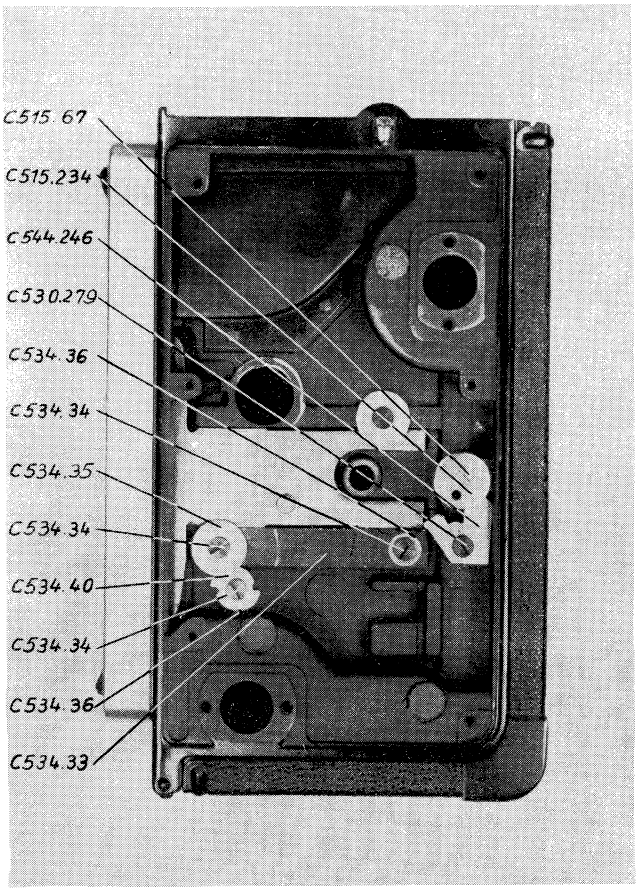

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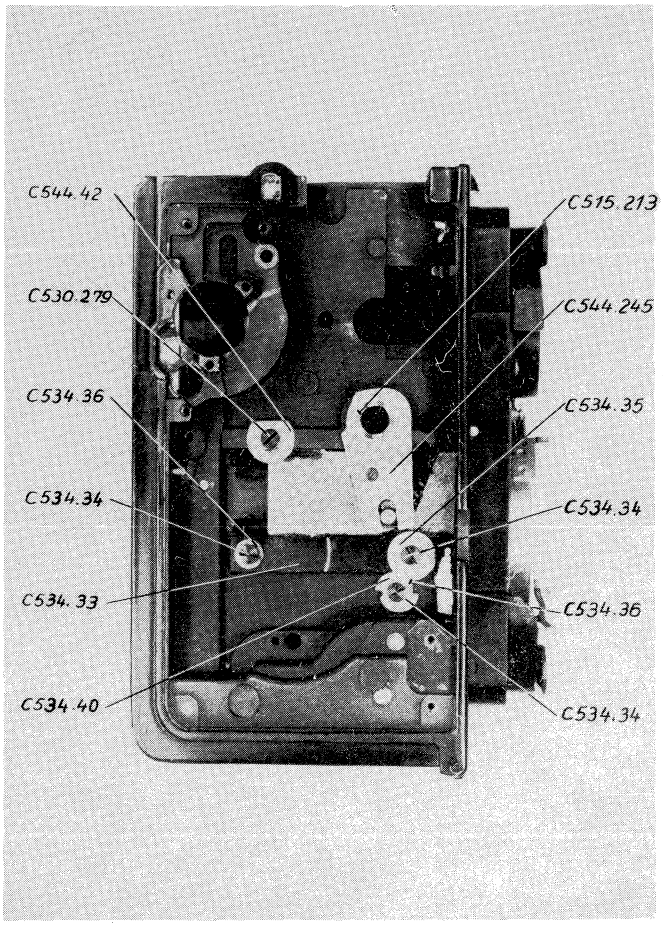

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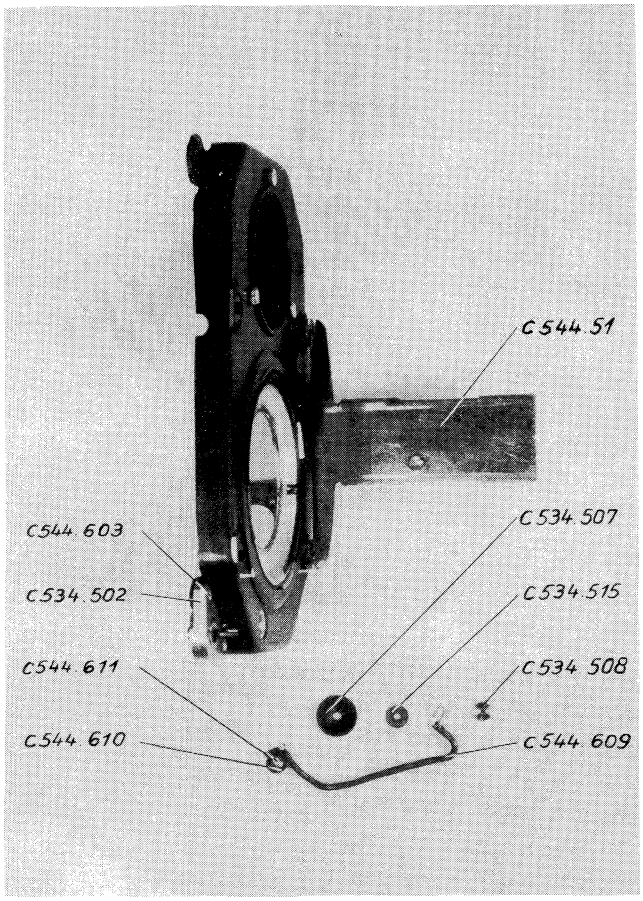

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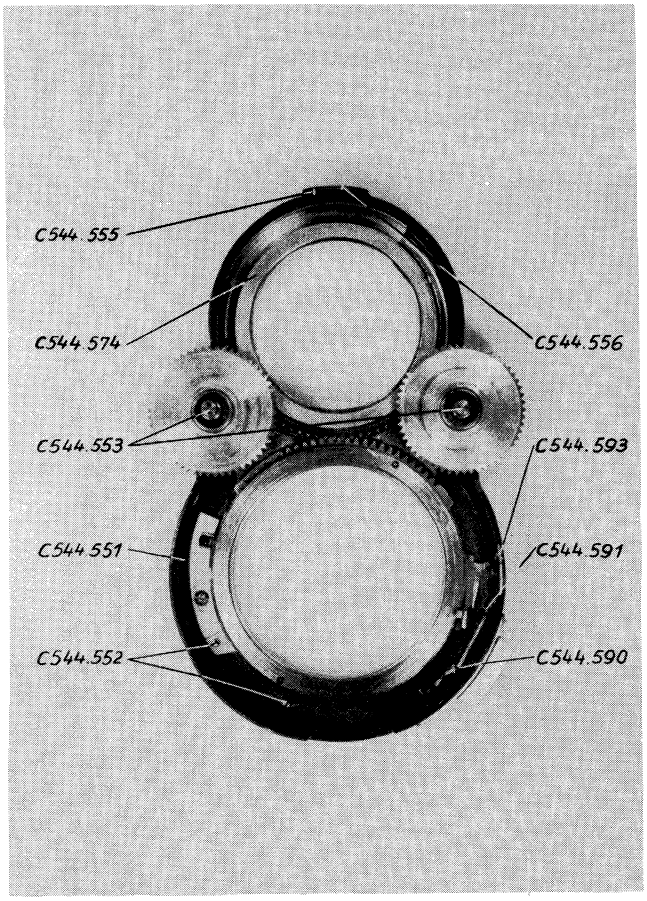

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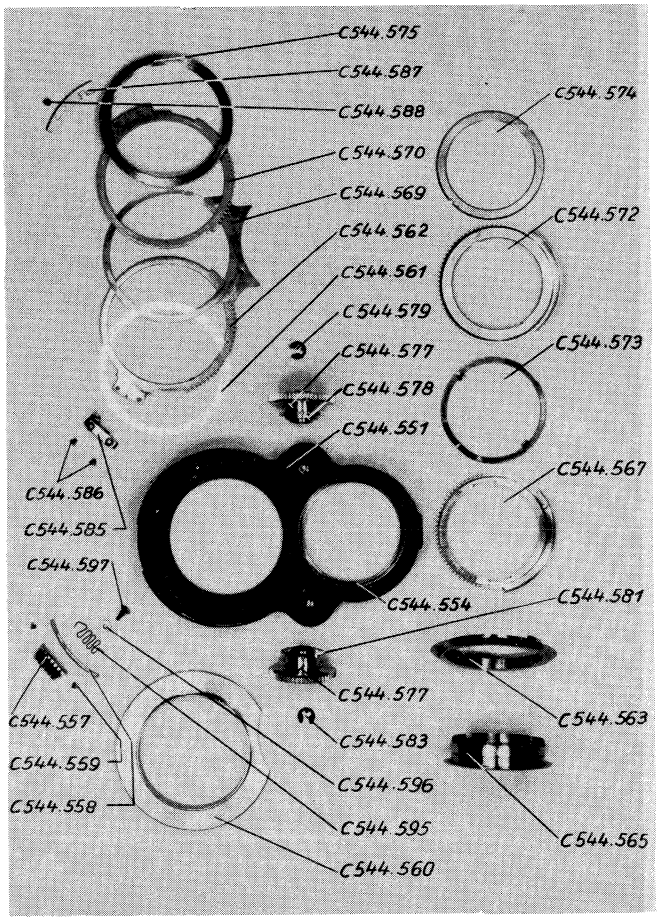

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