Zenza BRONICA®

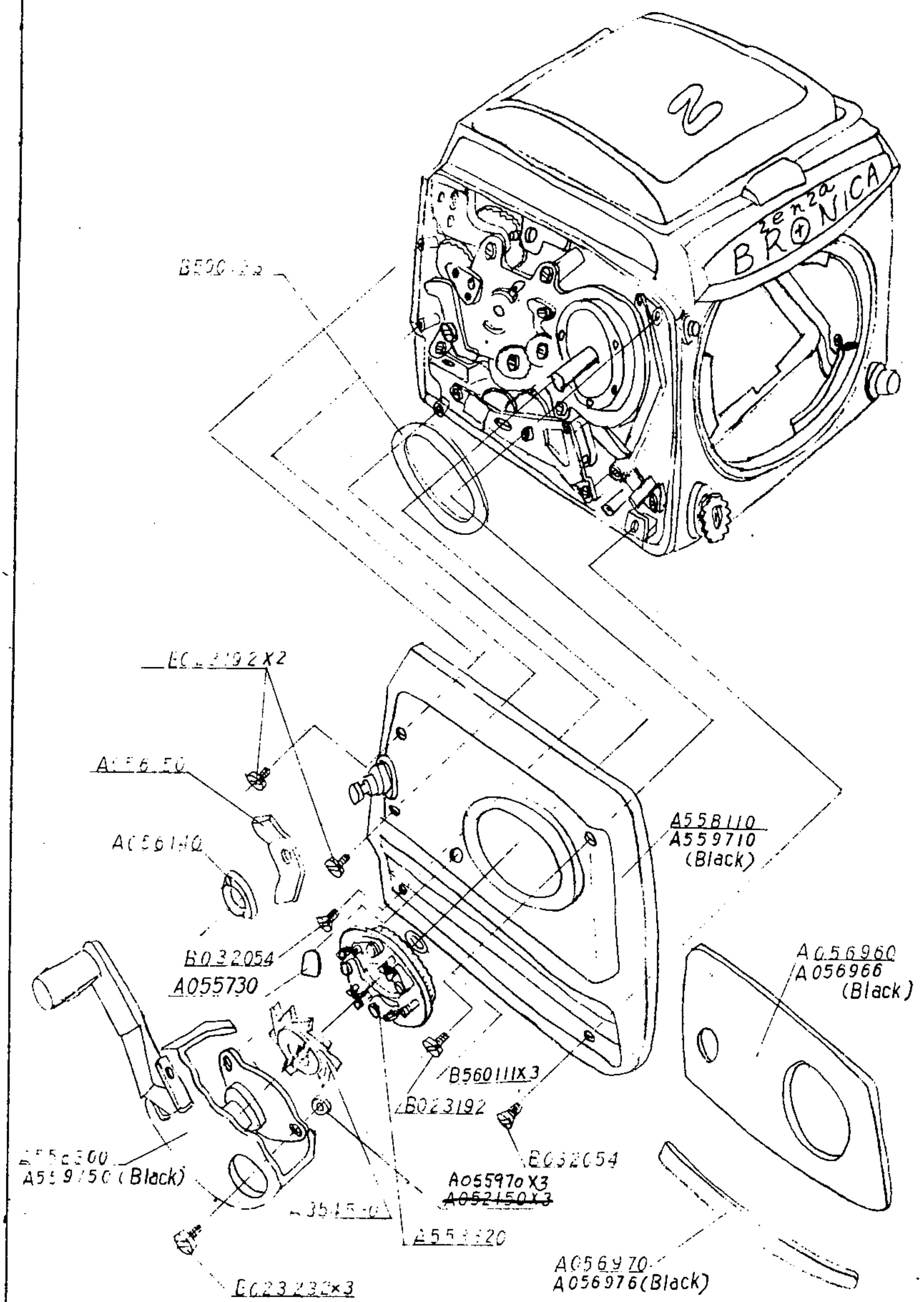
S-2, C

REPAIR MANUAL

TOOL·PARTS LIST

BRONICA CO., LTD.

I N D E X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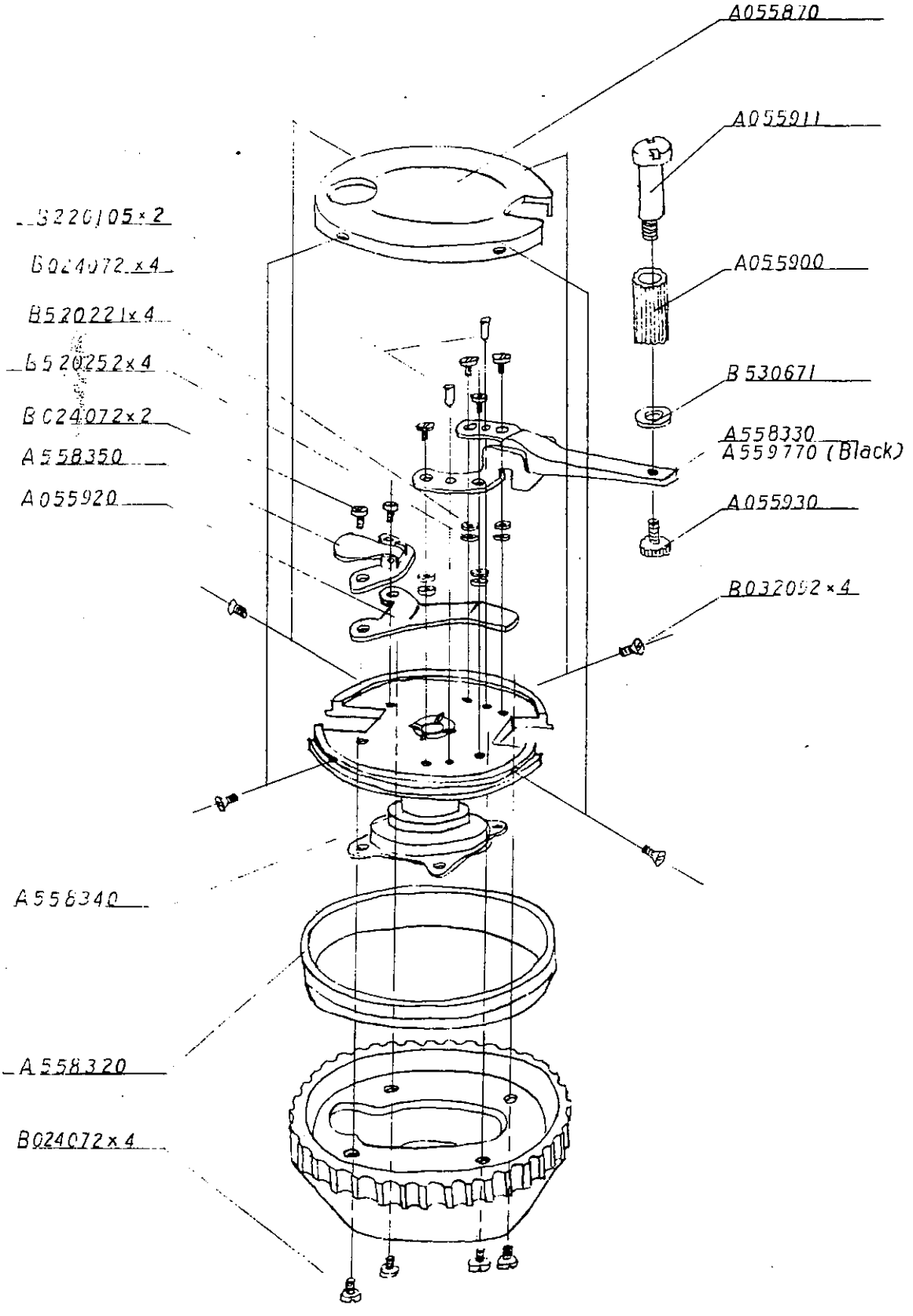
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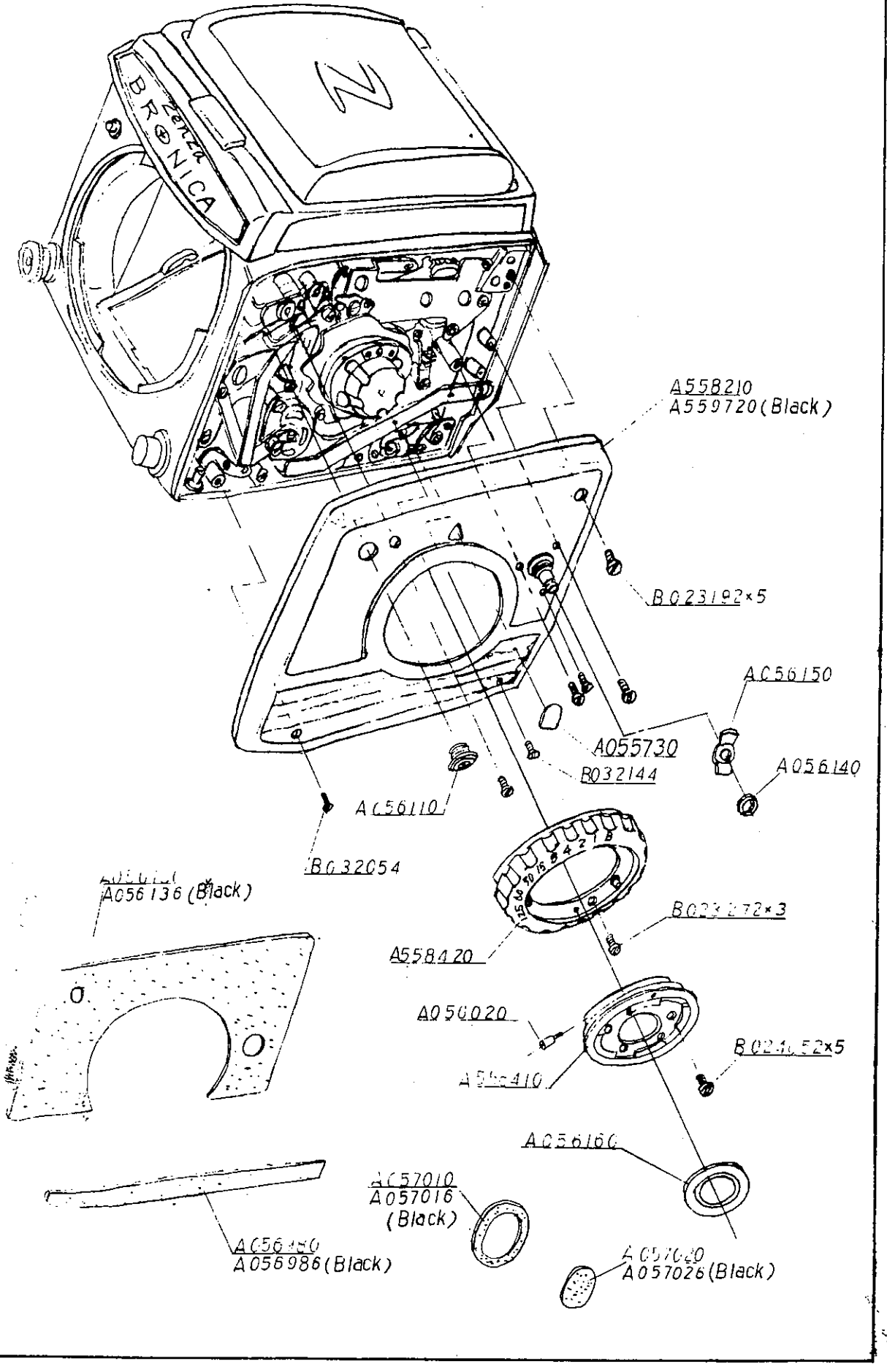
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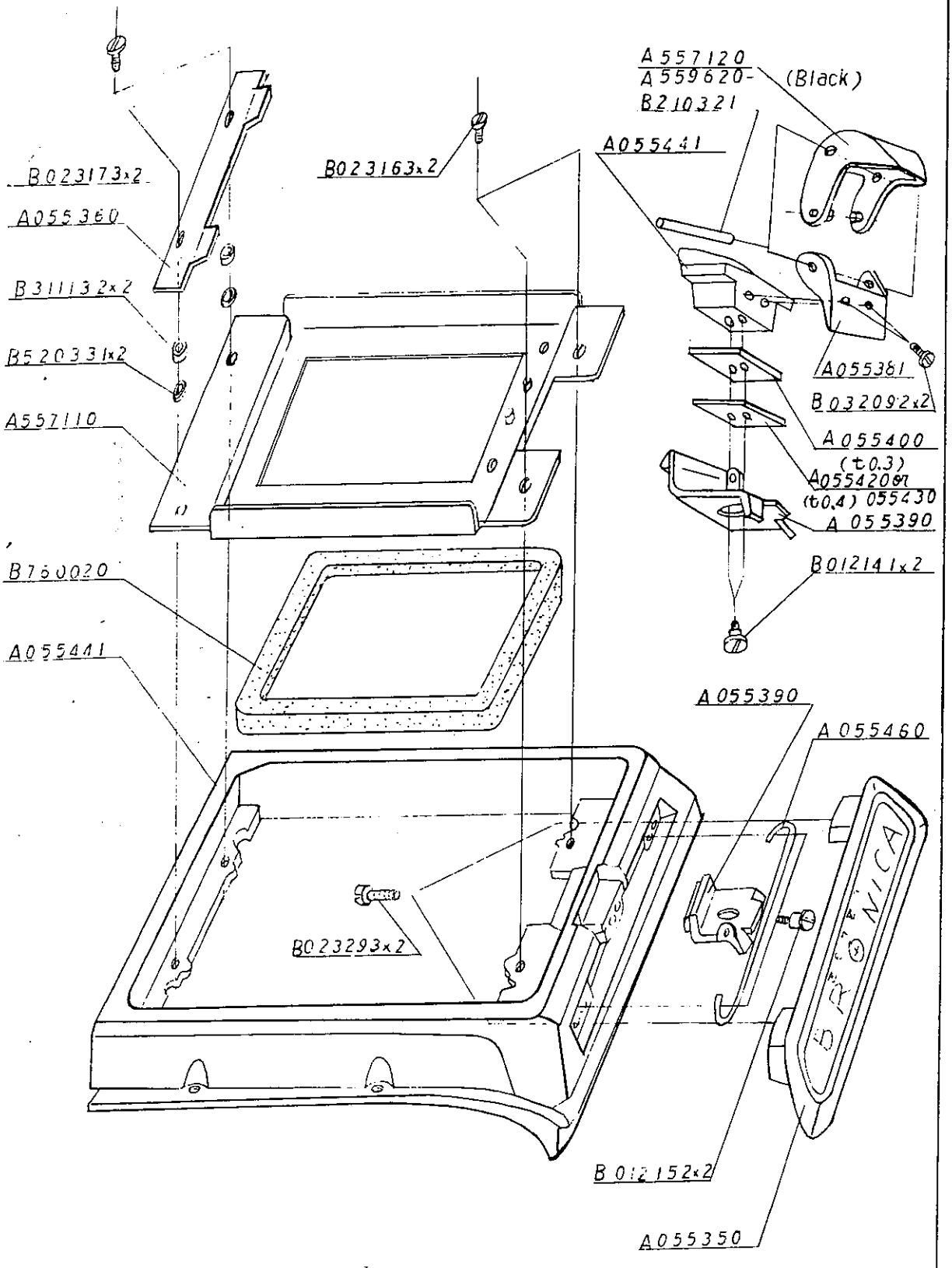
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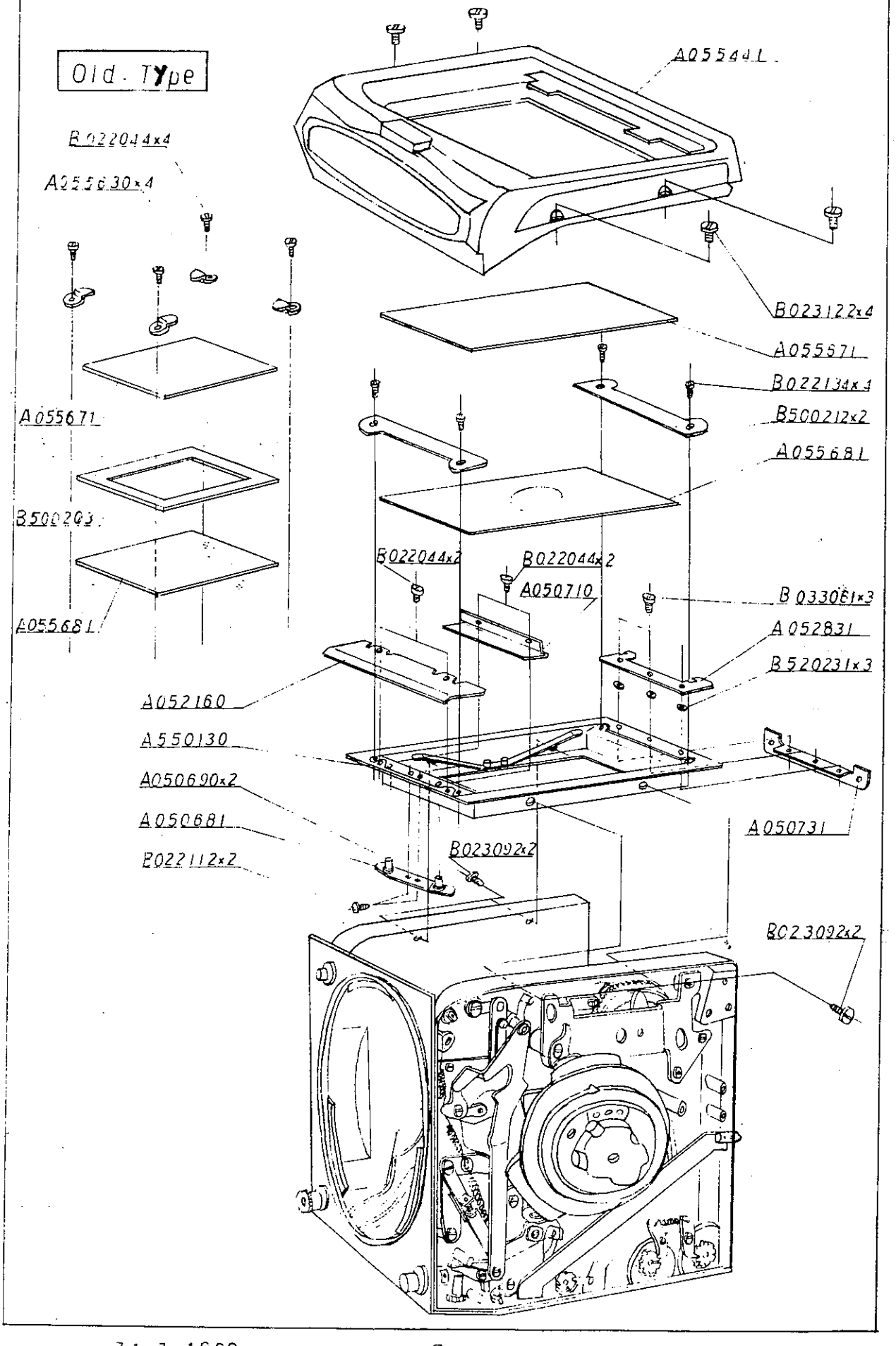
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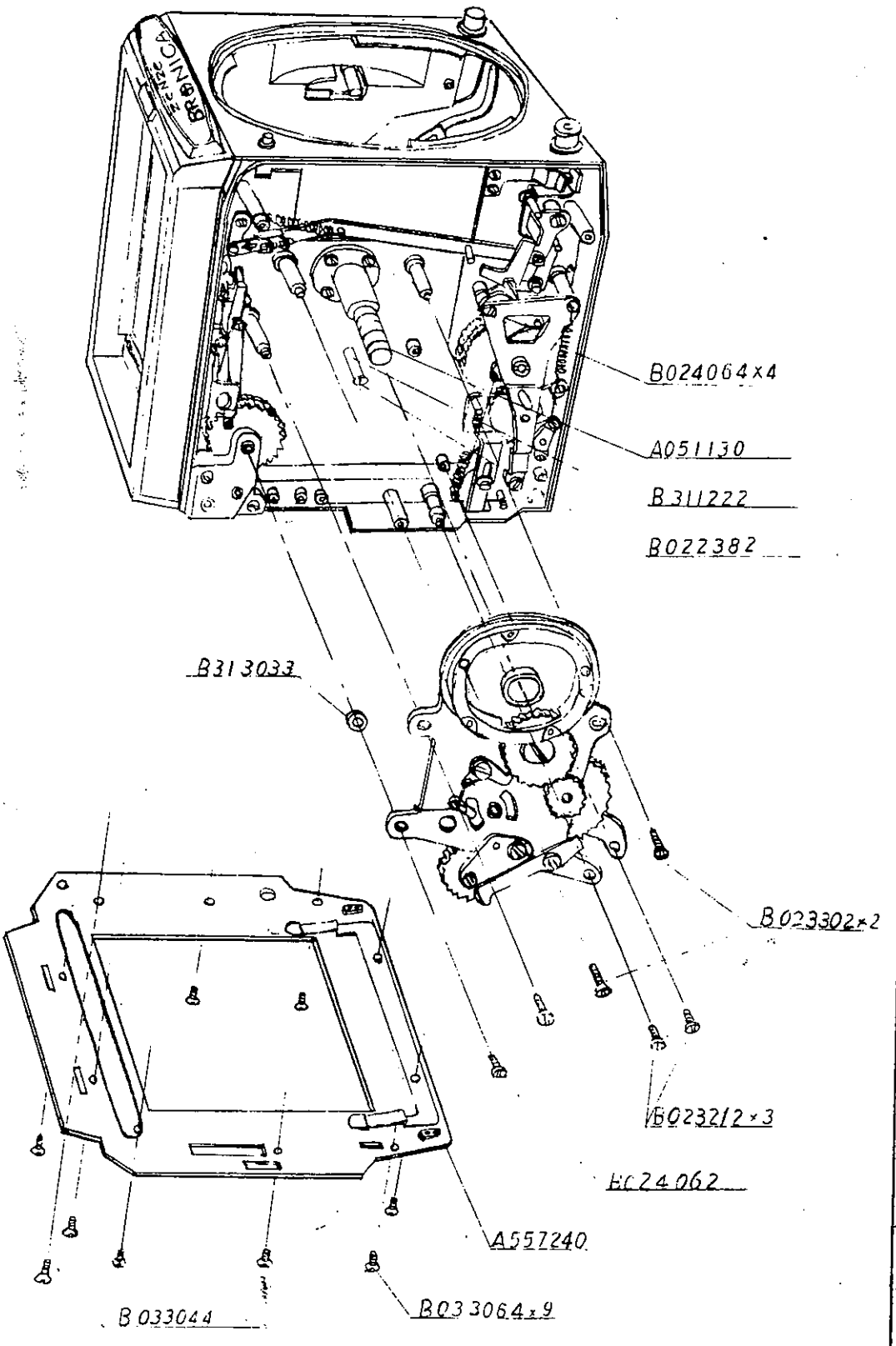
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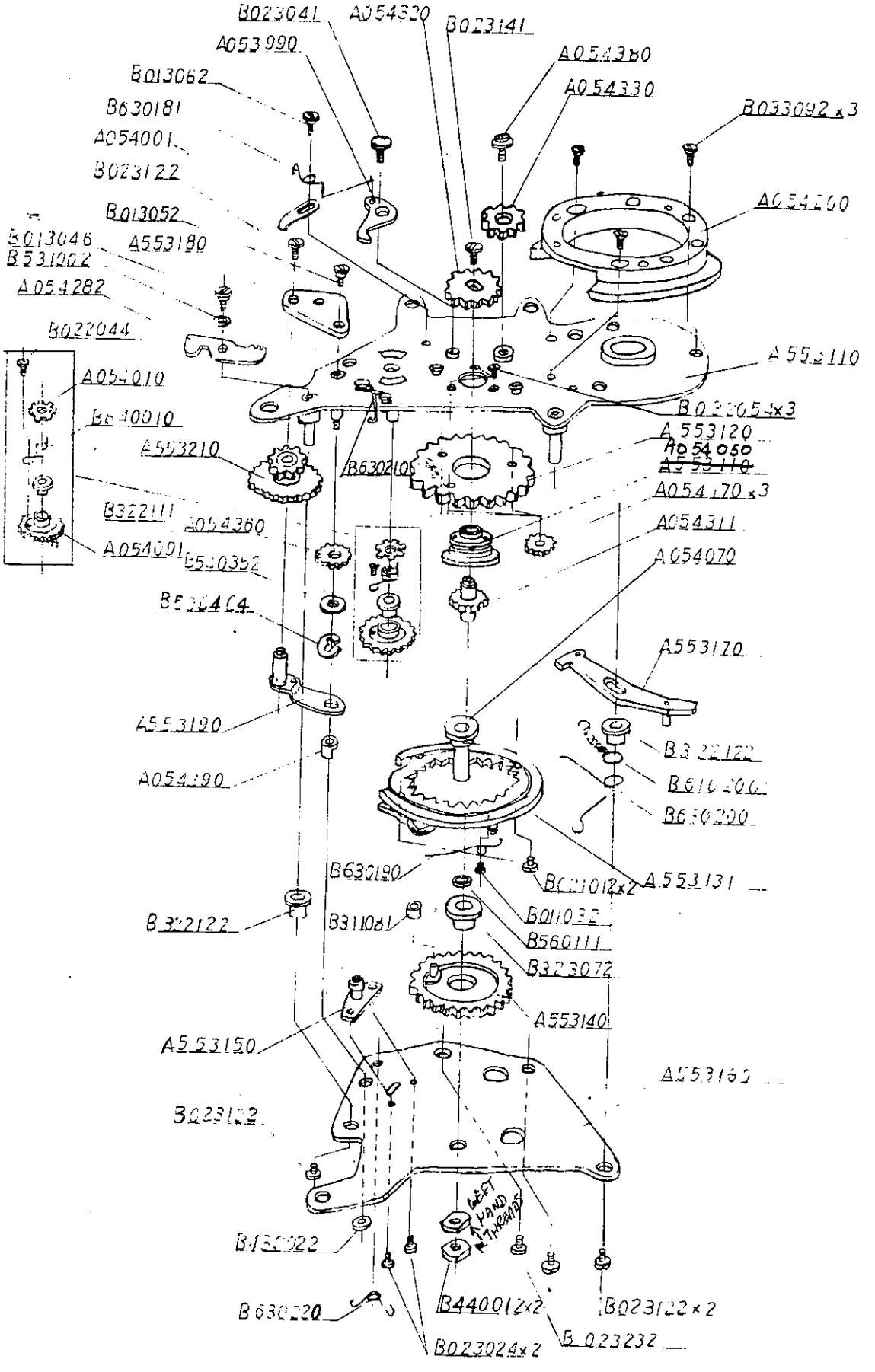
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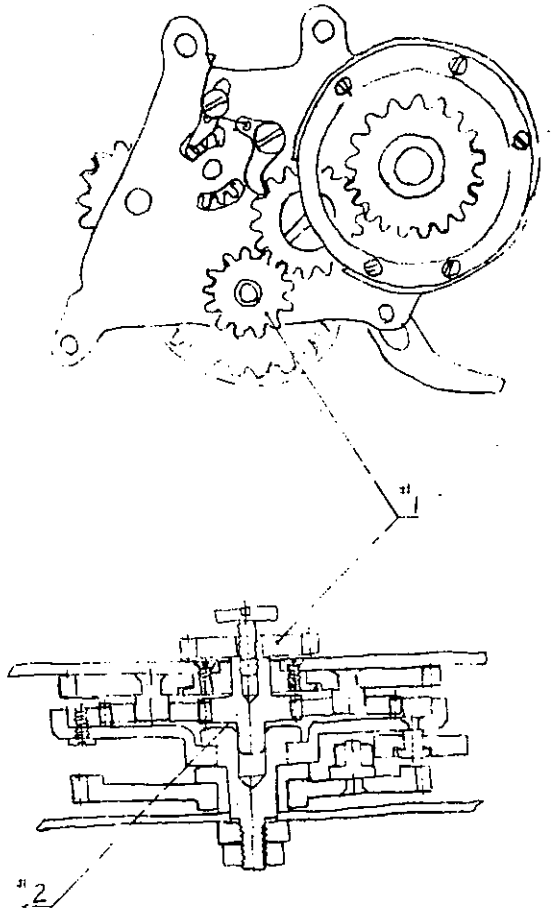
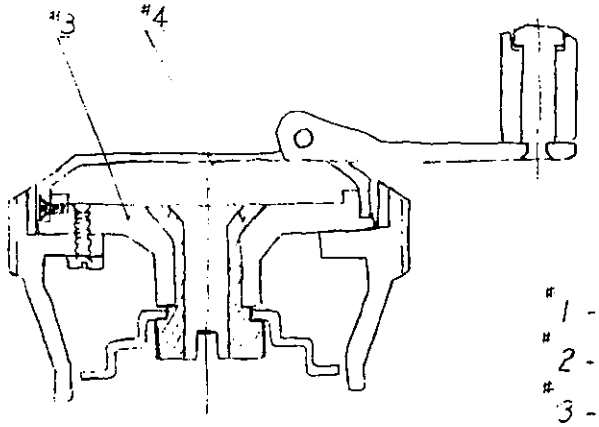




A054320 (S2)

#1 ----A070840 (C)

#2 -----A054310

#3 -----A055810

#4 -----A055830

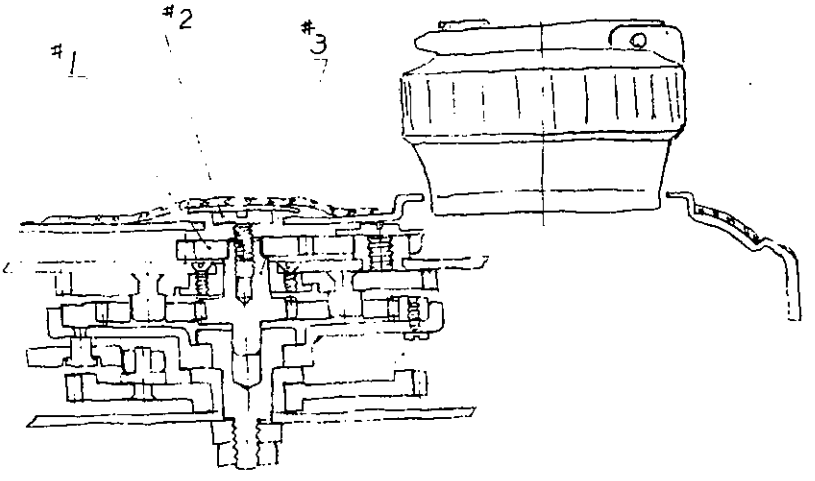
Malfunction: Film wind crank-handle turns freely.
Film wind crank-handle turns too lightly and there is no sign of shutter charging or film advance.

Method of checking:

Remove the right side-cover plate and manipulate the film wind crank-handle.

1. Only the three outer gears rotate and other gears fail to turn. (Model C only)
2. The entire gear assembly fails to rotate or turns intermittently.

Cause:	Method of repair:
1. Rotation is not conveyed to Gear #2 due to breakdown of Gear #1.	1. Replace Gear #1 and Gear #2.
2. Rotation is not conveyed to the gear assembly due to loosening of the caulking of Winding Wheel #3 and Winding Pin Bearing #4.	2. Re-caulk or replace parts.



#1 ---- A054320
#2 ----- B023141
#3 ----- A054310

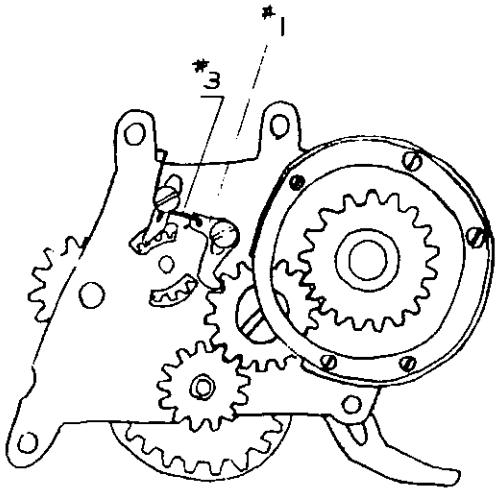
Malfunction: Swelling on a part of the right side-cover plate.

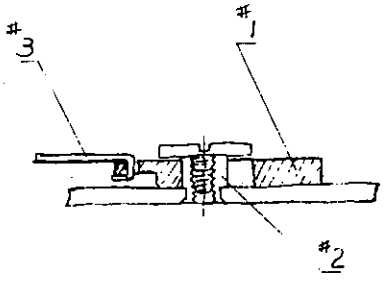
Cause:

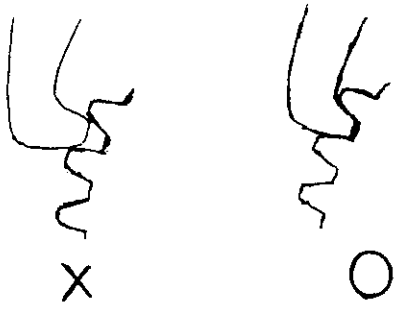
Screw #2 for fixing Gear #1 in position became loose through contact with the inner surface of the side-cover plate during rotation and pushes out the side-cover plate.

Method of repair:

1. After applying bonding agent to prevent loosening, tighten Screw #2 securely.
2. Replace Gear #3 and Screw #2 with improved parts featuring left-motion screw thread.







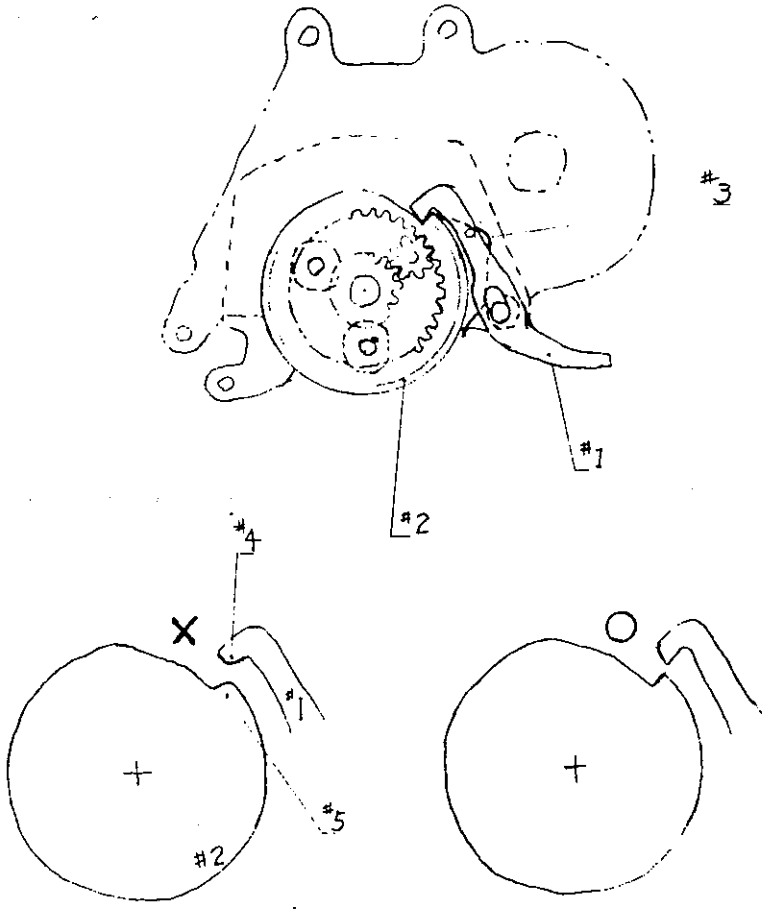
#1 ---- A053990
#2 ---- A553110
#3 ---- B630180

Malfunction: Film wind crank-handle tends to recoil when grip is release in the course of shutter charging.

Method of checking:

Film wind ratchet fails to function properly.

Cause:	Method of repair:
1. Caulking of Stud #2 of Film Wind Ratchet #1 has become loose.	1. Re-caulk the stud.
2. Poor function of Spring #3.	2. After checking the function of Film Wind Ratchet #1, adjust Spring #3 so that it provides greater recoiling power.
3. Deterioration of the shape of Film Wind Ratchet #1.	3. Re-form the tip with a whetstone or replace Film Wind Ratchet.



#1 ---- ~~A573170~~ A553170

#2 --- A553131

#3 --- B630200

Malfunction: Film wind crank-handle does not come to a stop after shutter charging and therefore shutter release button fails to operate.

Method of checking:

Winding Stopper Lever #1 fails to catch Winding Stopper Ring #2.

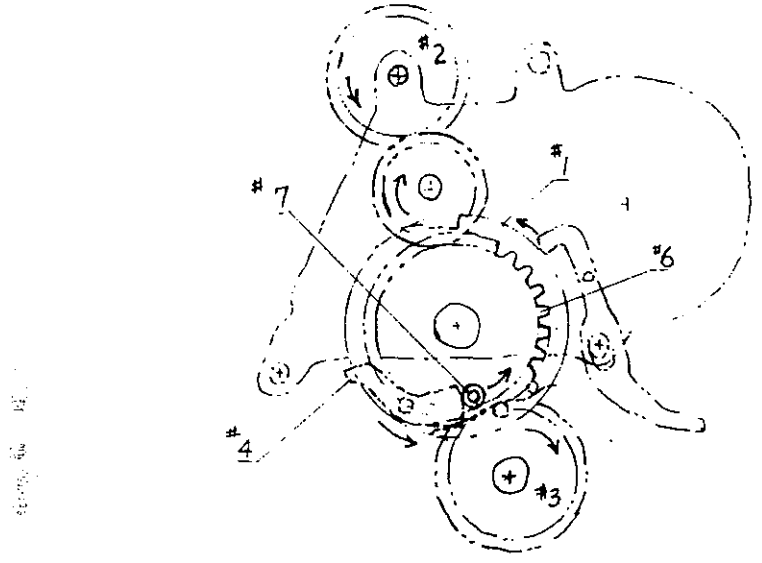
Cause:

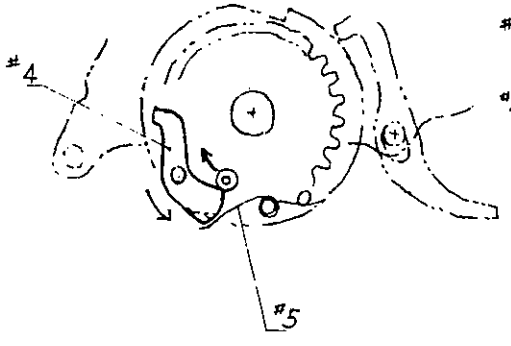
1. Spring #3 pressing Stopper Lever #1 is too weak.
2. Hook Section #4 of Stopper Lever #1 is bent and is liable to slip off the catch.

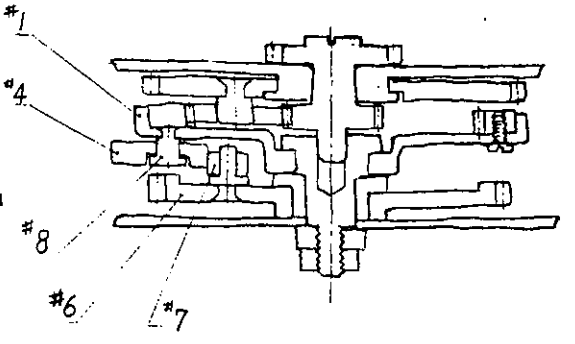
Method of repair:

1. Adjust Spring #3 so that it produces sufficient recoiling power.
2. Re-form Hook Section #4 of Stopper Lever #1 and Catch #5 of Stopper Ring.

#1 stopper ring
#5 catch
#4 stopper lever







#1 ---- A553131
#4 ---- A553131
#5 ---- B630190
#7 --- B311261
#8 --- A553131

Malfunction: Film wind crank-handle rotates freely.
Shutter fails to function even when shutter release button is depressed, and film wind crank-handle still turns without any resistance.

Method of checking:

Remove right side-cover plate and, after releasing the shutter, give film wind crank-handle a turn. (With Model C, set the film side in this case to fully wound state.)

Although Winding Stopper Ring #1 rotates, Shutter Charging Gear #2 and Mirror Charging Gear #3 fail to turn and film wind crank-handle comes to a stop.

Cause:	Method of repair:
1. Spring #5 of Winder Advancing Claw #4 is disengaged and Advancing Claw #4 fails to convey the rotation to Shutter-Mirror Charging Gear #6 and Winding Roller #7.	1. Replace the spring.
2. Caulking of Stud #8 of Advancing Claw #4 and Winding Stopper Ring #1 has become loose.	2. Replace the stud.

#1 -- A551120
#2 -- A054090
#3 -- B023024×2
#4 -- A553140
#5 -- A550610

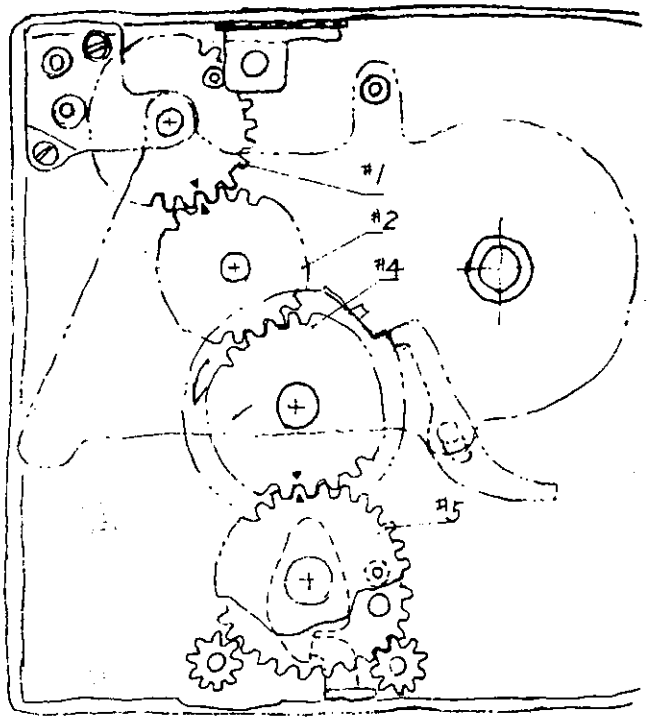


Fig. 1

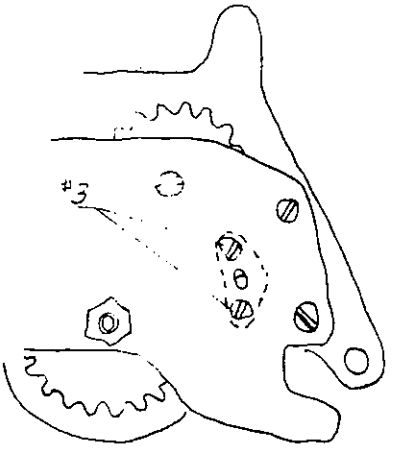


Fig. 2

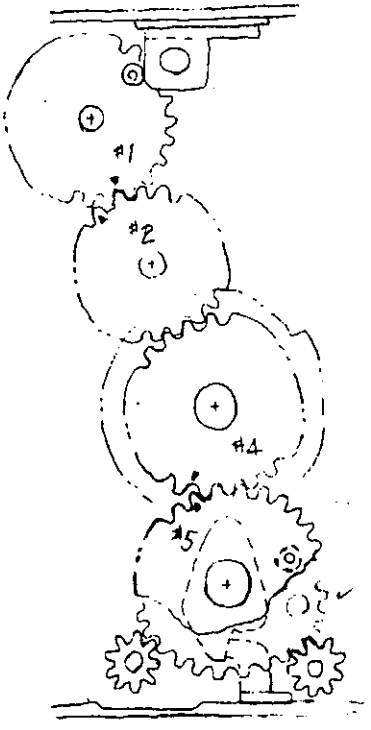


Fig. 3

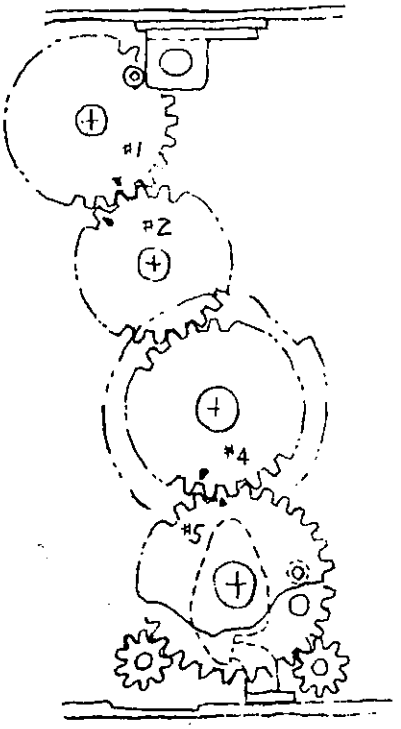


Fig. 4

Malfunction: A big rattling noise is produced immediately after shutter charging, and both mirror and shutter fail to operate.
(When the shutter curtain is in a released state.)

Method of checking:

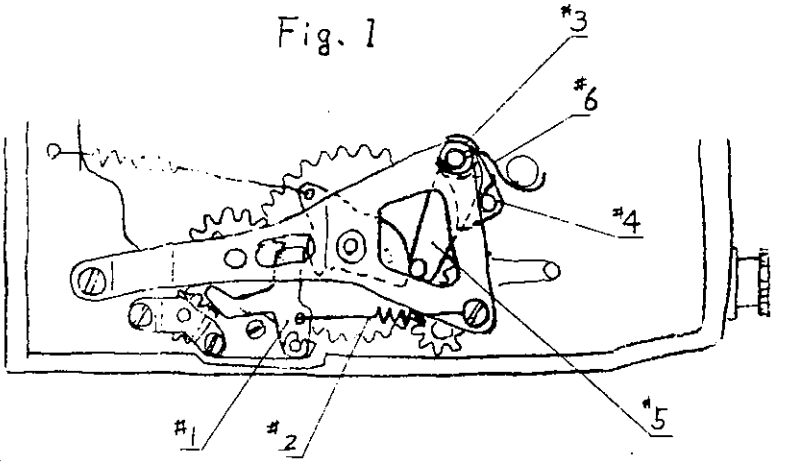
1. The extent of rotation effected through manipulation of the film wind crank-handle is quite sufficient on the mirror side but is insufficient on the shutter side.
2. The extent of rotation is insufficient on both the mirror and shutter sides.

Cause:	Method of repair:
1. The teeth of Intermediate Shutter Charging Gear #2 and Shutter Charging Gear #1 of the Winding Block are not properly engaged.	1. Demount the Winding Block and tighten Screws #3 fixing Winding Release Roller Stud from the rear, if they are found to be loose. (Fig. 2) Advance SM Charging Gear #4 by one tooth in a clockwise motion and M Charging Gear also by one tooth in a counter-clockwise motion; then, mount the Winding Block seeing to it that the teeth are engaged properly. (Figs. 1 to 3)
2. SM Charging Gear #4 and M Charging Gear #5, as well as Intermediate S Charging Gear #2 are not engaged properly.	2. Demount the Winding Block and tighten Screws #3 on the rear. (Fig. 2) After shifting SM Charging Gear #4 by one tooth in a clockwise motion, mount the Winding Block seeing to it that the gears are properly engaged. (Figs. 1 to 4)

#1 ----A051680
#2 ----B610140
#3 ----B410022
#4 ----A550680
#5 ----A550650
#6 ----B630320

#4 Winder advance claw
#6 mirror charger
#7 Wind roller

Fig. 1



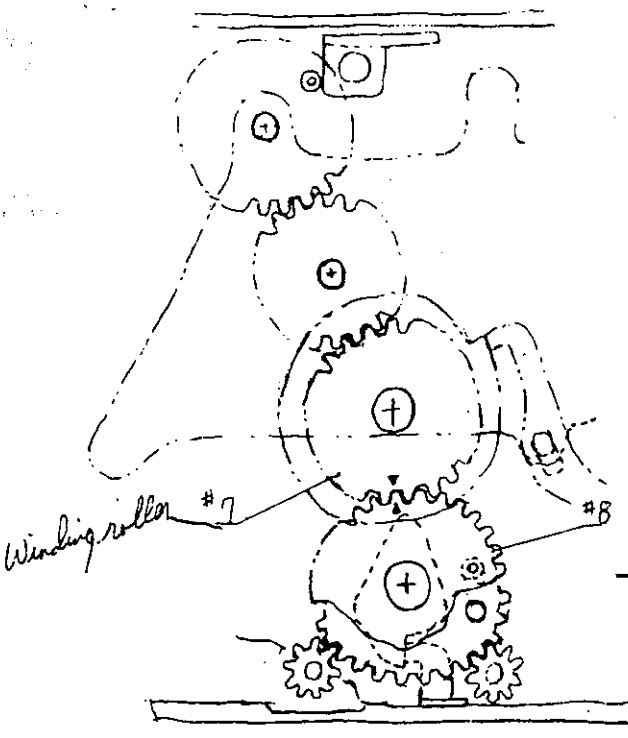


Fig. 2

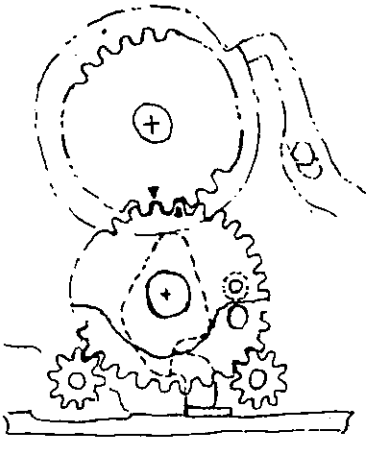


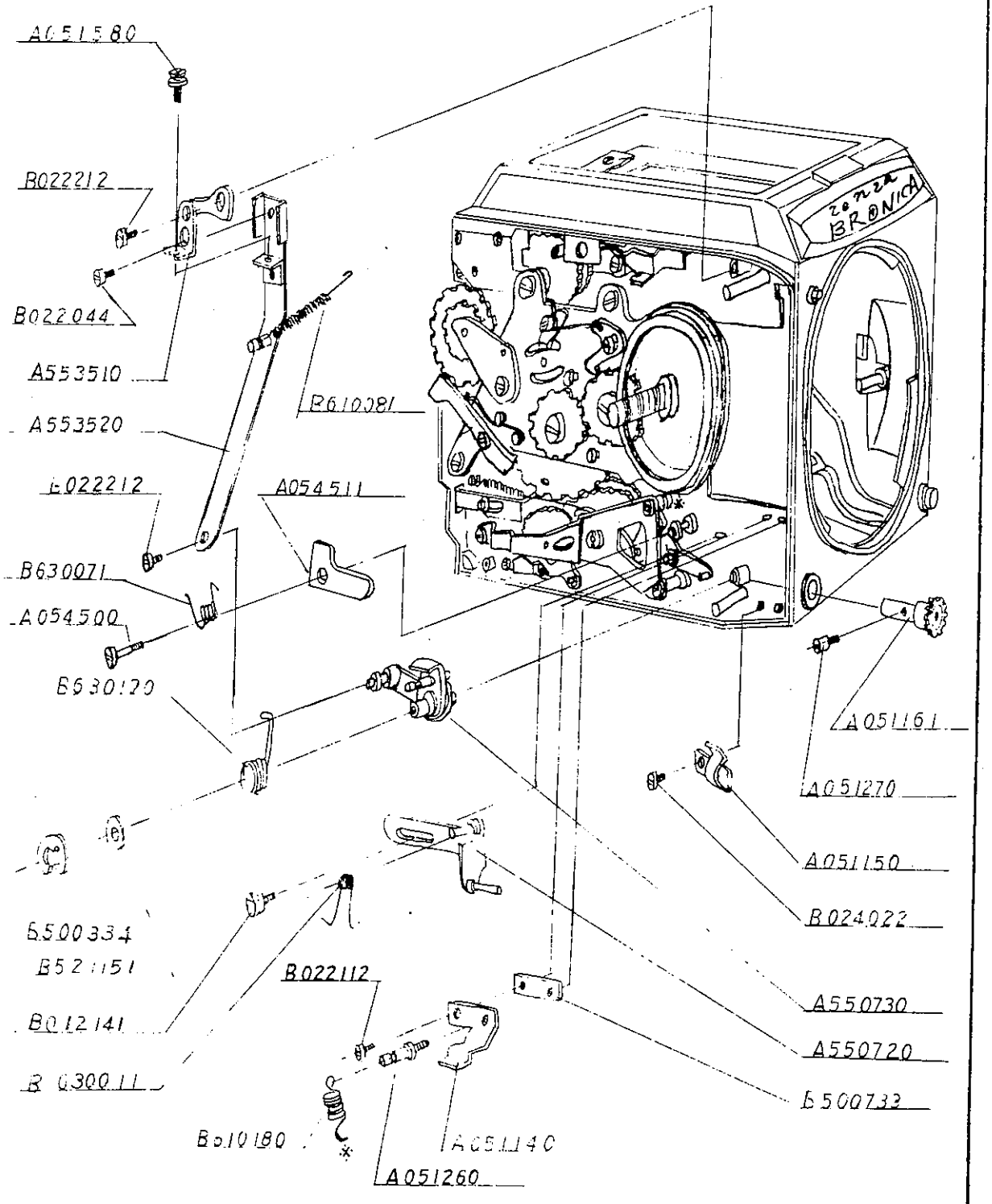
Fig. 3

Malfunction: A big rattling noise is produced immediately after shutter charging, and both mirror and shutter fail to operate.
(When the shutter curtain is in a charged state.)

Method of checking:

1. Hook #4 of Mirror Return Gear fails to catch and instantly returns to its original position.
2. The extent of rotation effected through manipulation of the film wind crank-handle is sufficient on the shutter side but insufficient on the mirror side.

Cause:	Method of repair:
1. a. Shutter Return Release Lever #1 fails to function properly.	1. a. Make adjustment to assure proper function. Check Spring #2.
b. Hook #4 and Hook Release Lever #5 fail to function properly due to loosening of Screw #3.	b. Check the function and tighten the screw securely.
c. Spring #6 of Hook #4 is disengaged. (Fig. 1)	c. Hook the spring in place and apply bonding agent on its tip.
2. Gear #7 and Mirror Charging Gear #8 of the Winding Block are not engaged properly.	2. Shift Mirror Charging Gear #8 by one tooth in a clockwise motion and engage the teeth properly with Gear #7 at that position. (Figs. 2 and 3)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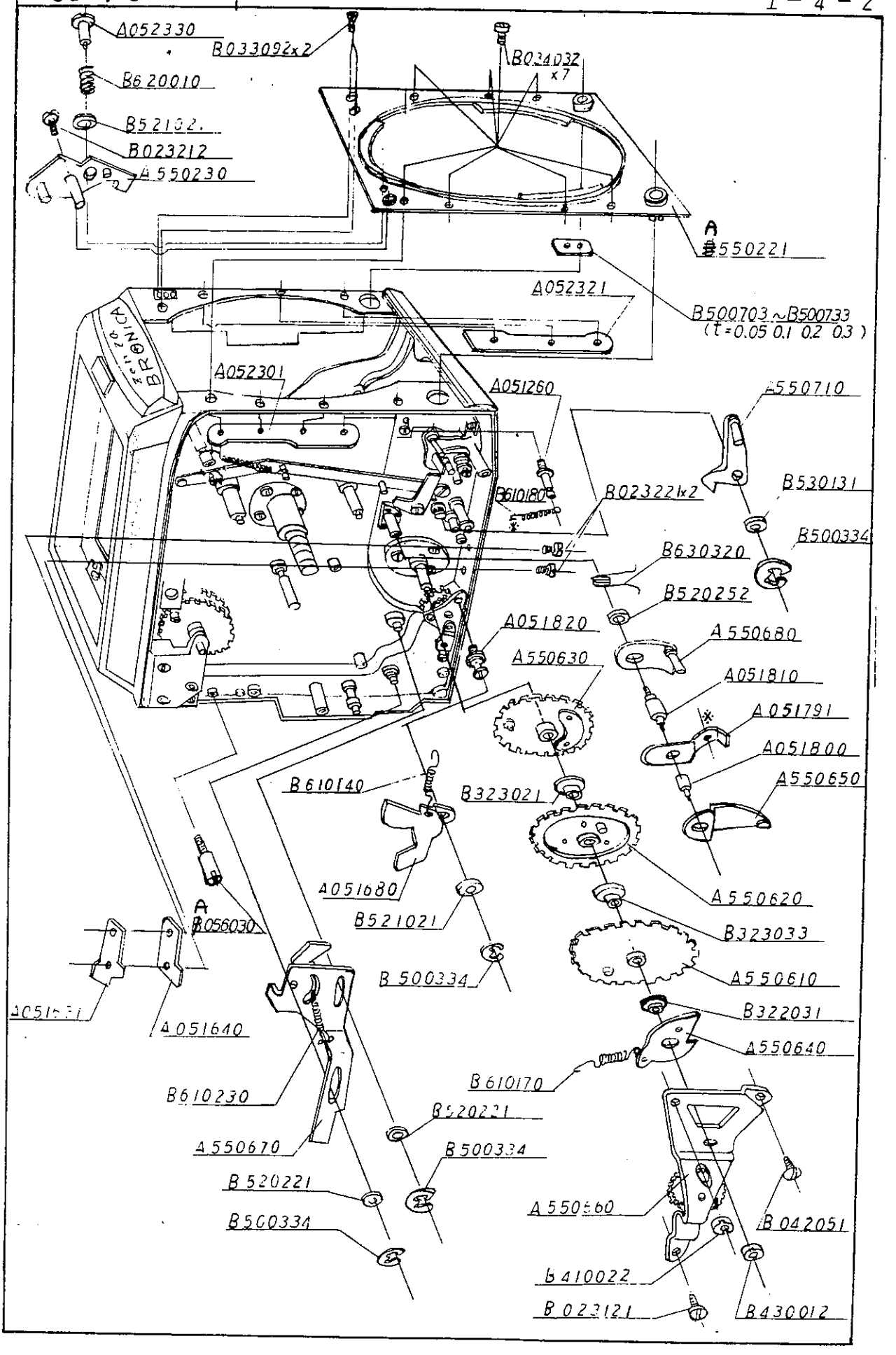
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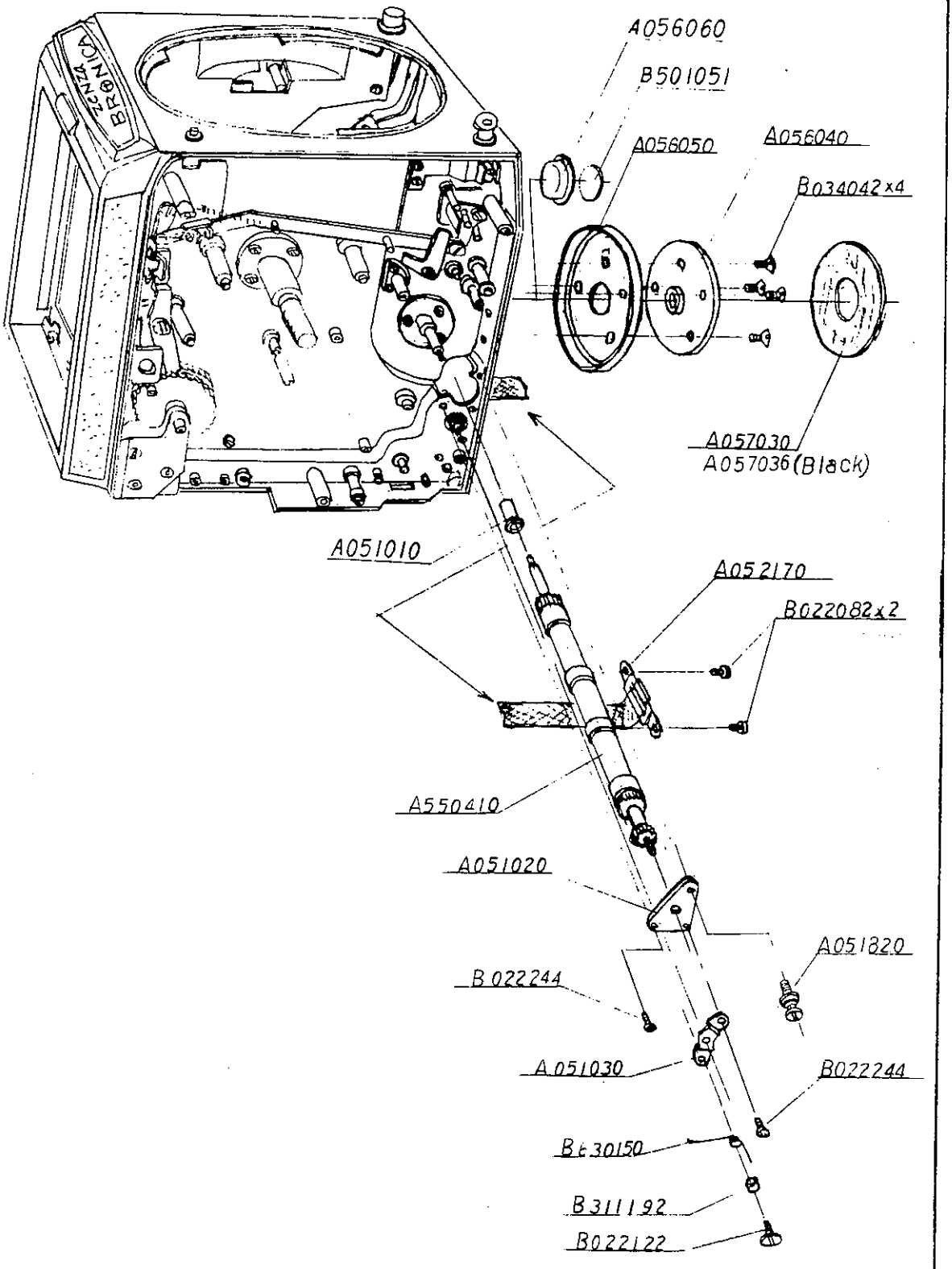
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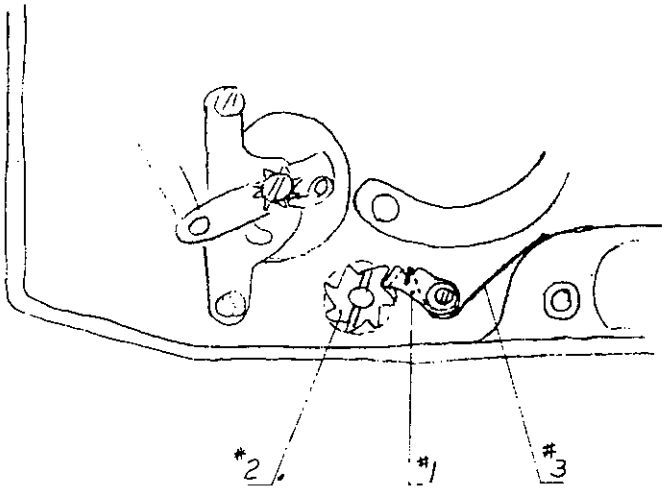


#1 - - - - A050570
#2 - - - - - A050860
#3 - - - - B630060

Malfunction: Delay in mirror return.

Method of checking:

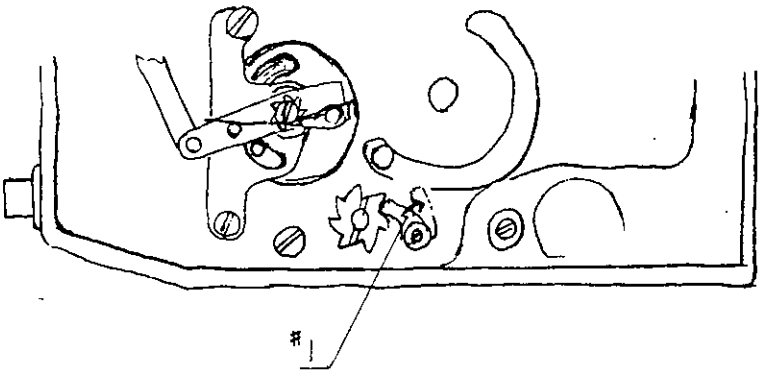
1. The tension of the spring for mirror return is weak.

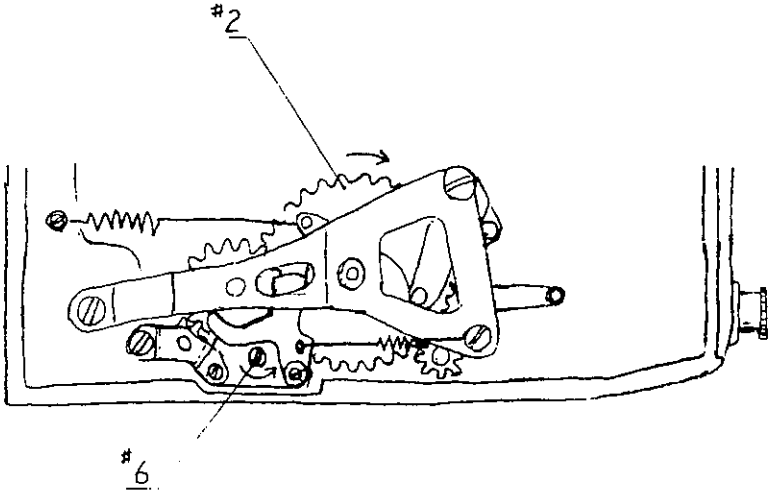
Cause:

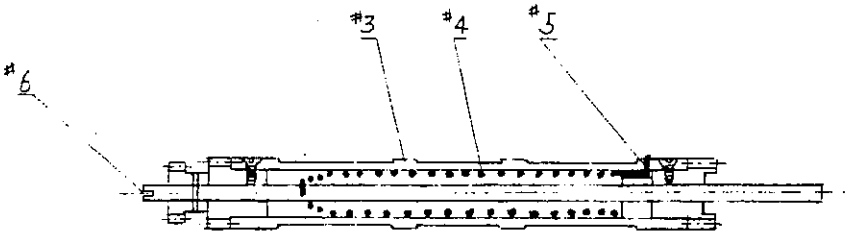
1. Stopper #1 which sets the spring for mirror return is disengaged from Spring Gear #2, thus weakening the tension.

Method of repair:

1. Adjust Spring #3 so that it will not slip off Stopper #1 and set spring for mirror return. (Turn Gear #2 about 2.5 revolutions in a counter-clockwise motion.)







#3
#4
#5
#6
} A 550410

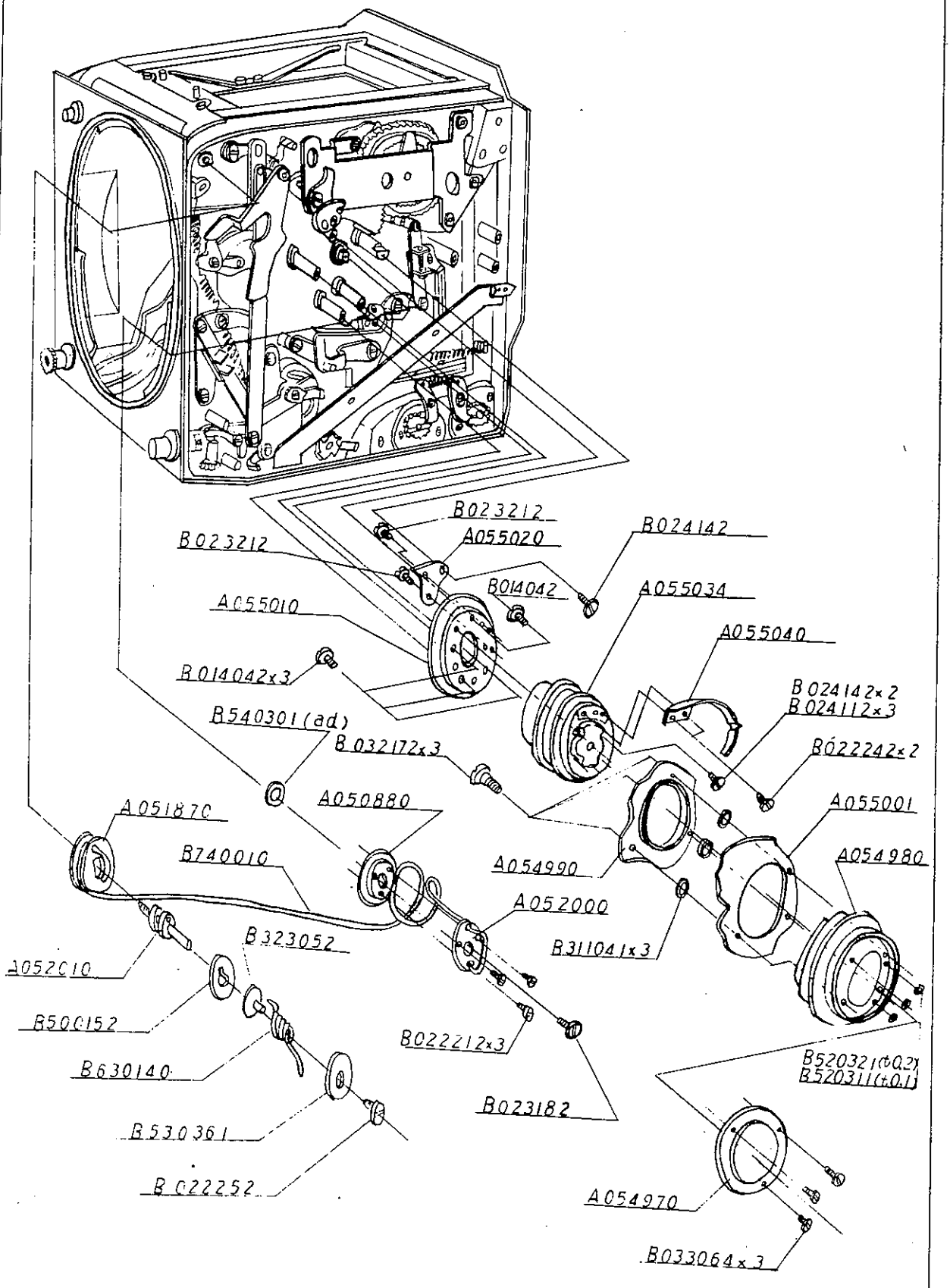
Models S2 and C

Malfunction: Mirror fails to function even when shutter release button is depressed.

Method of checking:

Demount the winding block and, after setting the tension of the spring for mirror return to zero (by disengaging Stopper #1 on the left side of the body), turn Mirror Charging Gear #2 manually in a clockwise motion. In this case, no resistance giving evidence of spring winding will be felt.

Cause:	Method of repair:
Spring #4 for mirror flip-down within Mirror Motive Drum #3 is broken or its Hook Section #5 slipped off its mount on Drum #3.	Replace Mirror Motive Drum Block.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B323052
A052010
B500152
B022212×3
B630140
B520321(±0.2)
B520311(±0.1)
B023182
B530361
B022252
A054970
B033064×3

31. 3. 1969

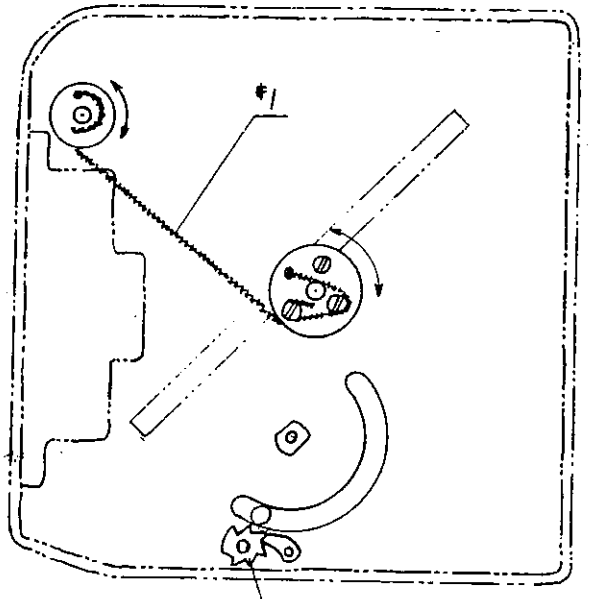


Fig 1

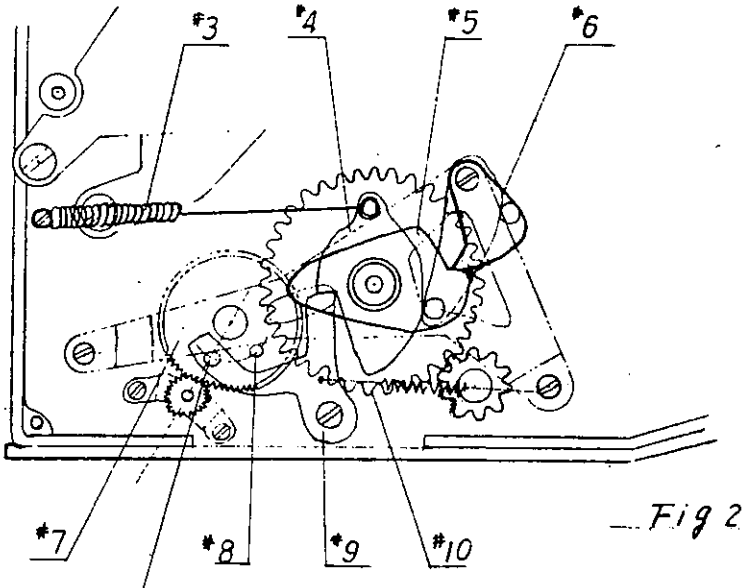


Fig 2

*8' 後巻が下りた時のピンの位置

Malfunction: Mirror fails to return from flip-down position.

Method of checking:

1. Mirror remains at flip-down position but returns to viewing position when pushed up manually.
2. Mirror remains at flip-down position and fails to move even when pushed manually.

Cause	
1. (1) Disengagement or disruption of the Mirror Operation Cord #1.	1. (1) In case of disruption of the cord, thread both ends as shown in the figure and adjust the length so that the mirror returns precisely to viewing position.
(2) Disengagement or disruption of the Mirror Cord.	(2) Refer to Section 10-1.
(3) Disruption of the Mirror Return Spring.	(3) Turn #2 given in Fig. 1 in a counter-clockwise motion. If no resistance is felt, it signifies disruption of the spring, necessitating replacement. Normal spring tension is obtained by turning #2 three and a half revolutions in a clockwise motion.
2. Mirror Return System Pawl #6 fails to disengage from the Return Gear Stopper #5.	
(1) The rear curtain fails to close completely. Cam #4 fails to disengage from Stopper #9 because of improper engagement of Gear #7.	(1) In case of improper engagement of Gear #7, adjust its pin positions at #8' when the rear curtain closes completely.
(2) Disengagement or disruption of the Spring #3 hooked to Cam #4.	(2) In case of disengagment, hook the spring so that it will not disengage. In case of disruption, replace spring.
(3) Gear fails to rotate smoothly due to accumulation of dust or foreign particles.	

Parts Nos.

#1	B 40010	#7	A550600
2	AC50880	8	A550660
3	B60170	9	A051680
4	A550640	10	A051651
5	A550621		
6	A550650		

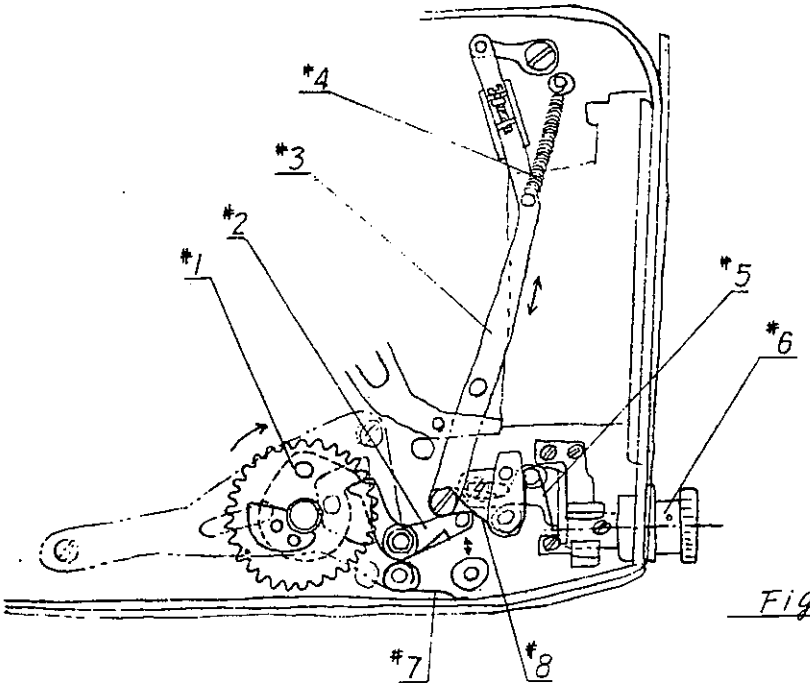


Fig 1

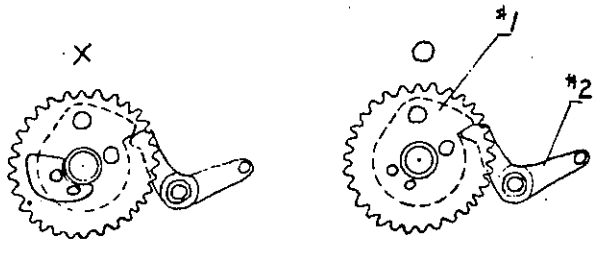


Fig 2

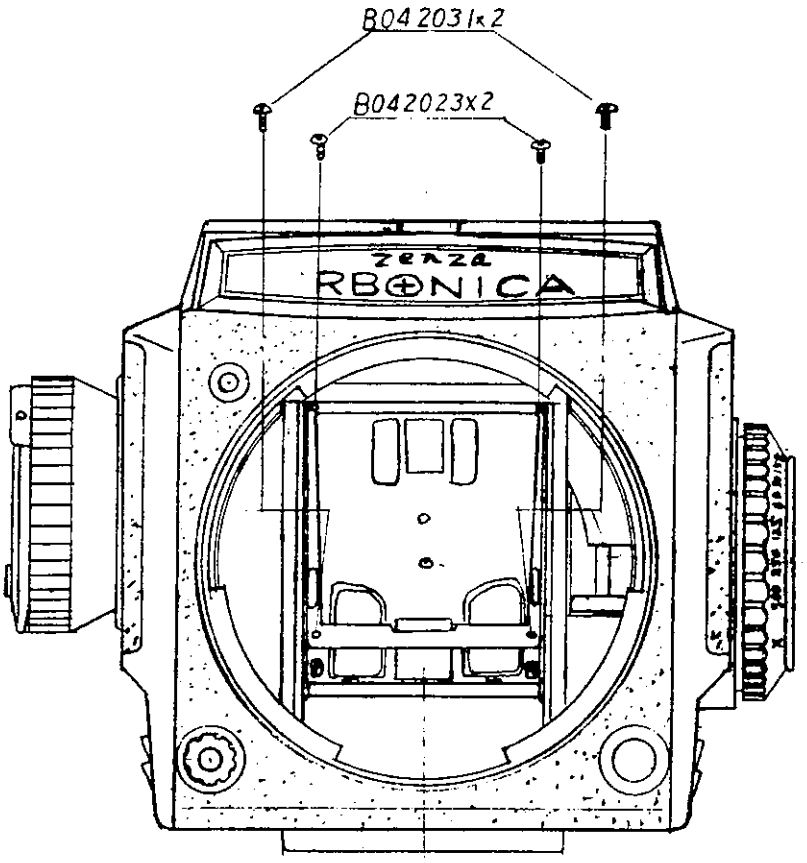
Malfunction: Mirror begins to flip down as soon as the film advance knob is manipulated and shutter trips when film wind is completed.

Method of checking: Pawl #2 which retains the mirror from flipping down fails to engage Stopper #1 of the gear (See Fig. 1).

Cause	Method of repair:
1. Shutter Button #6 fails to return properly.	1. In case of disengagement of Spring #5, hook it securely so that the shutter button returns properly.
2. Release Lever #3 fails to return properly.	2. Either adjust the pivot section so as enable smooth movement of the lever or increase the tension of Spring #4.
3. Abrasion of or damage to the hook section.	3. In case of abraded or damaged hook section, make replacement (Fig. 2).
4. Pawl #2 fails to return properly.	4. Make adjustment to assure smooth movement of Pawl #2 and Spring #7.

Parts Nos.

#1	A550621	#5	B630011
2	A550710	6	A05116
3	A553520	7	B630130
4	B610081	8	B630120 (S2 only)



Short

A055660

Long

SC1527R
set screw
B042023x2

fig. 1

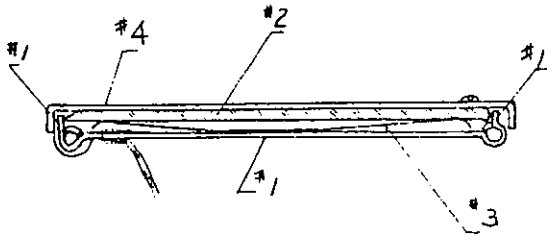
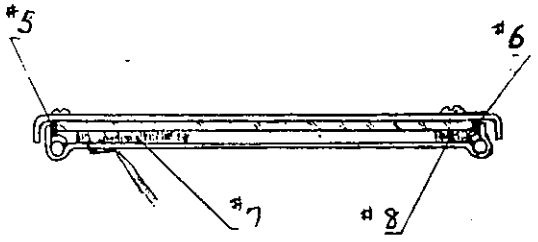


fig. 2



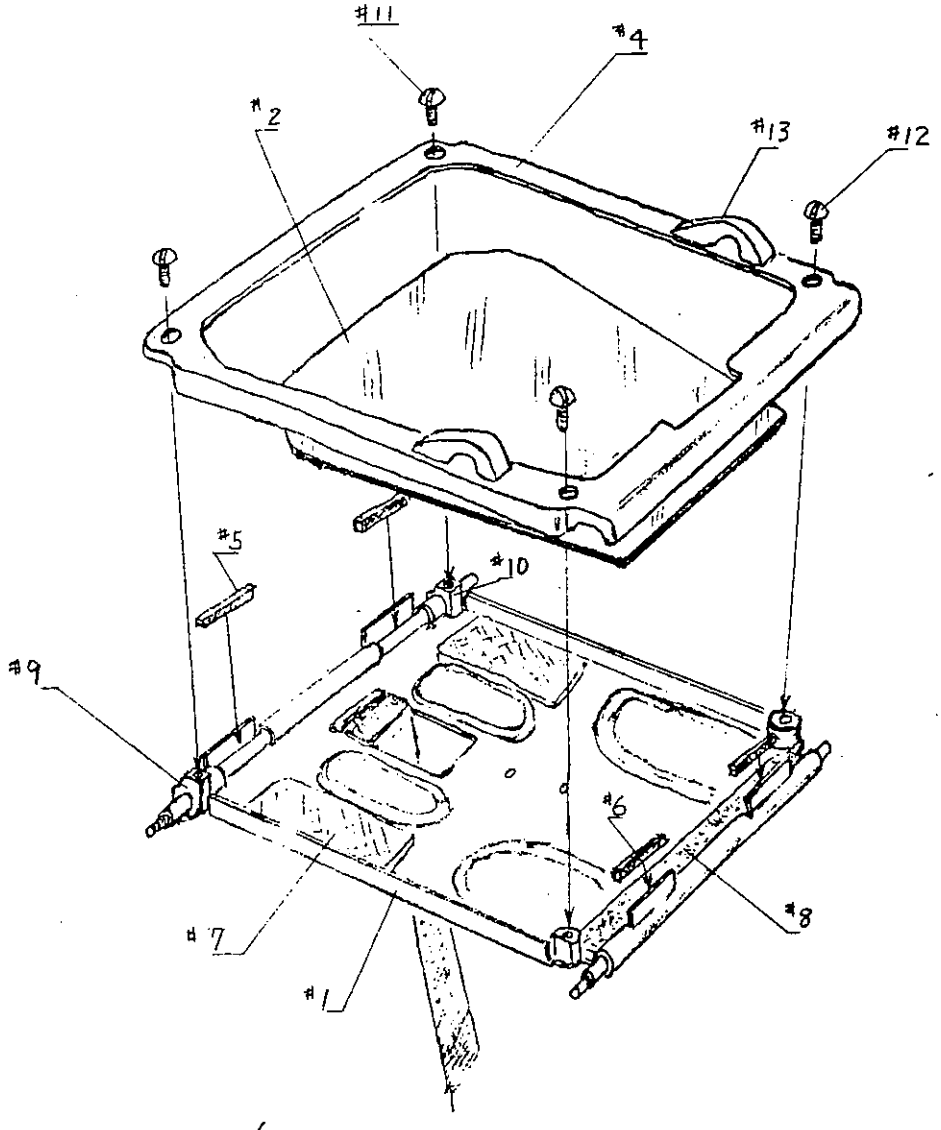


fig. 3

Malfunction: Breakage of mirror or mirror frame

Method of checking: Breakage of a portion of the mirror, puling off of the mirror surface, or breakage of the upper section of the mirror frame.
Breakage of the mirror is attributed to gap between Fringe #1 of the Support Plate and Mirror #2. Each time the mirror flip up and down, it shifts and comes in contact with the fringe, causing breakage at points where it is most susceptible to damage (Fig. 1).

Cause:

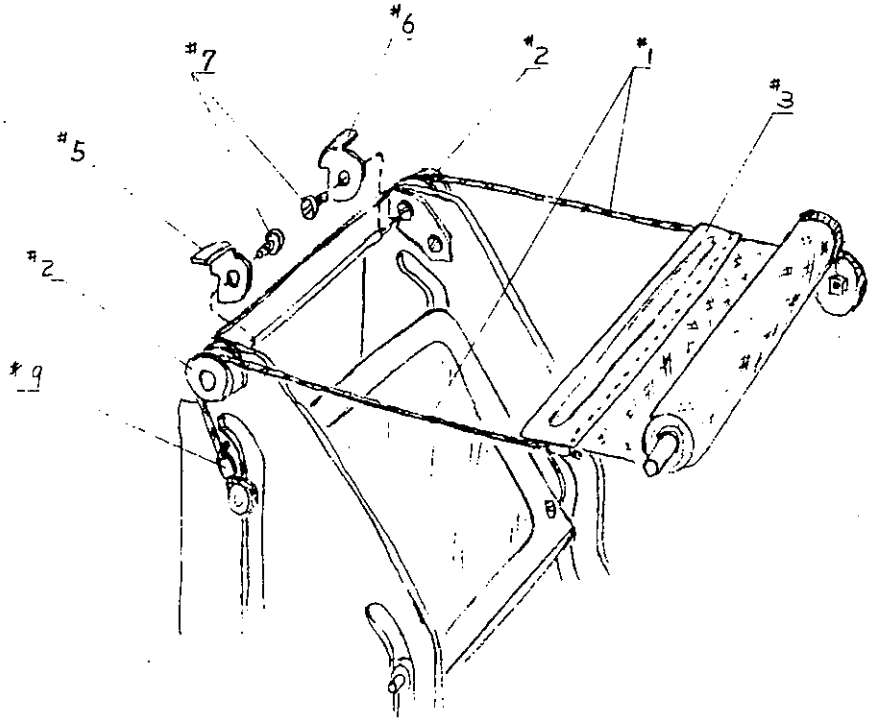
1. Excessive gap between Fringe #1 of the Support Plate and Mirror #2.
2. Mirror frame does not provide required durability.

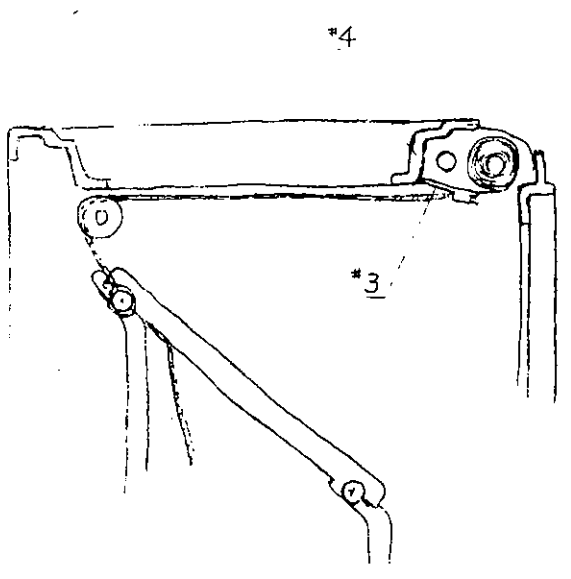
Method of repair:

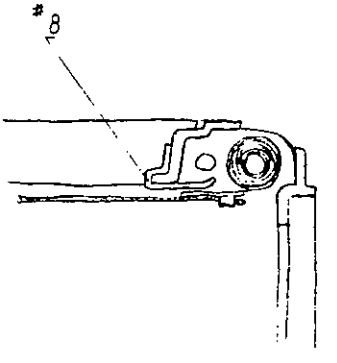
1. Glue a rubber sheet measuring 0.5mm in thickness on the surface of #1. Replace Spring #3 with Moltprene #7 and #8 (Fig. 2).
2. Make replacement of Support Plate #1, Mirror Frame #4 and Mirror #2 with equivalent new type parts (Fig. 3).

#1 ..... A550310
2 ..... A055660

4 ..... A052060
5 ..... A052131×2
6 ..... A052140×2
7 ..... B760090×2
8 ..... B760100
9 ..... A052110
10 ..... A052120
11 ..... B042023×2
12 ..... B042031×2
13 ..... A052100×2







#1 ----B740010x2	#6----A052030
#2 ----A051920x2	#7----~~#~~022164x2
#3 ----A550320	#8----A050710
#5 ----A052020	#9----A051970x2

Malfunction: Mirror stops movement midway during operation.

Method of checking:

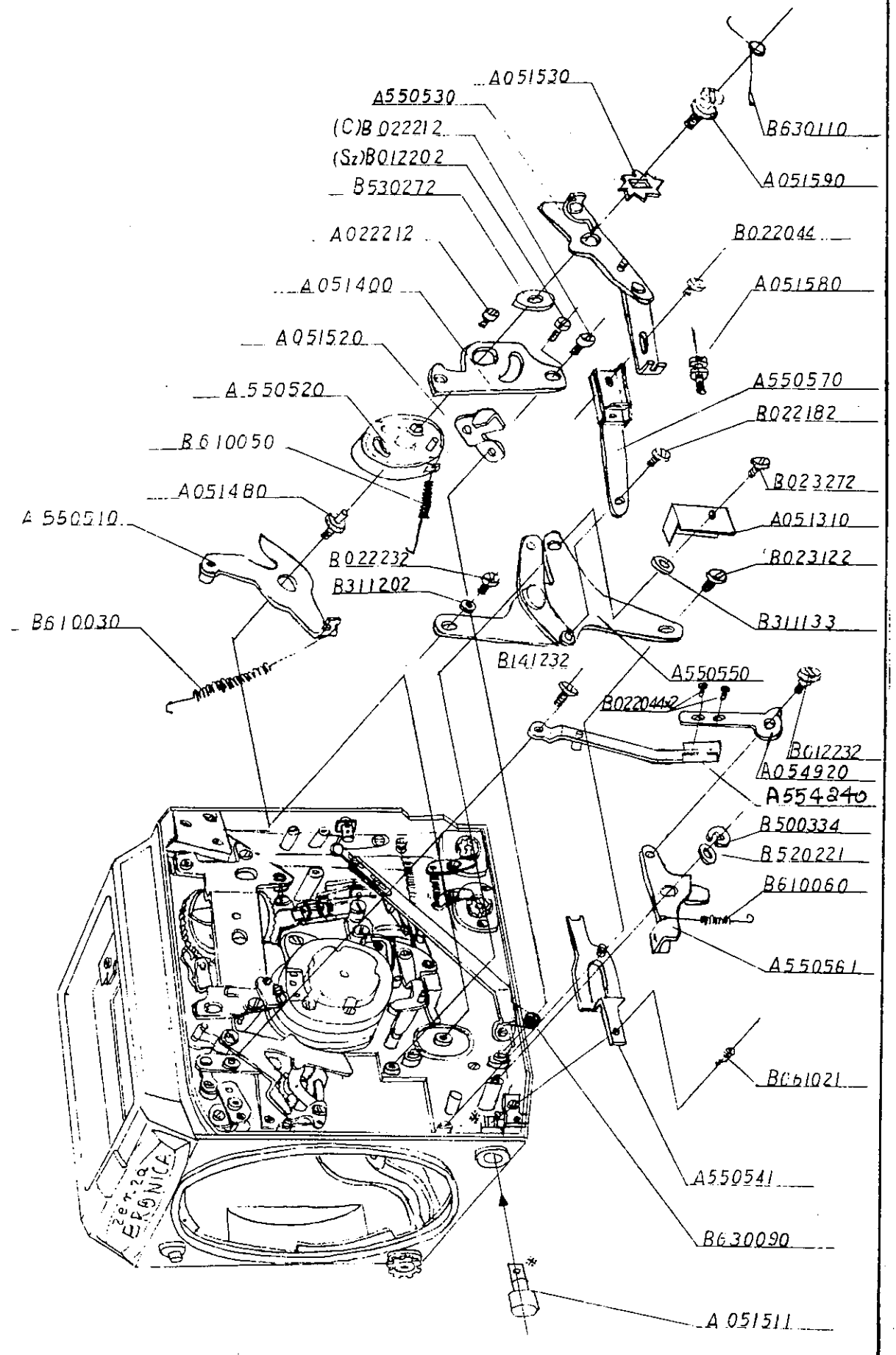
1. Mirror Operation Cords #1 on the left and right within the body have slipped off Guide Rollers #2.
2. When the mirror moves slightly downward, Light Cut-off Plate #3 jams against Frame #4 on the upper section of the body.

Cause:

1. The cords slacken during operation and slip off the guide rollers.

Method of repair:

1. Fix Cord Guides #5 and #6 from the inner side of the body with the aid of Screws #7.
2. Glue Guide Plate #8 with bonding agent on the inside of Frame #4.


A051530
A550530
(C)B022212
(S2)B012202
B530272
A022212
A051400
A051520
A550520
B610050
A051480
A550510
B022232
B311202
B610030
B141232
B630110
A051590
B022044
A051580
A550570
B022182
B023272
A051310
B023122
B311133
A550550
B022044-2
B012232
A054920
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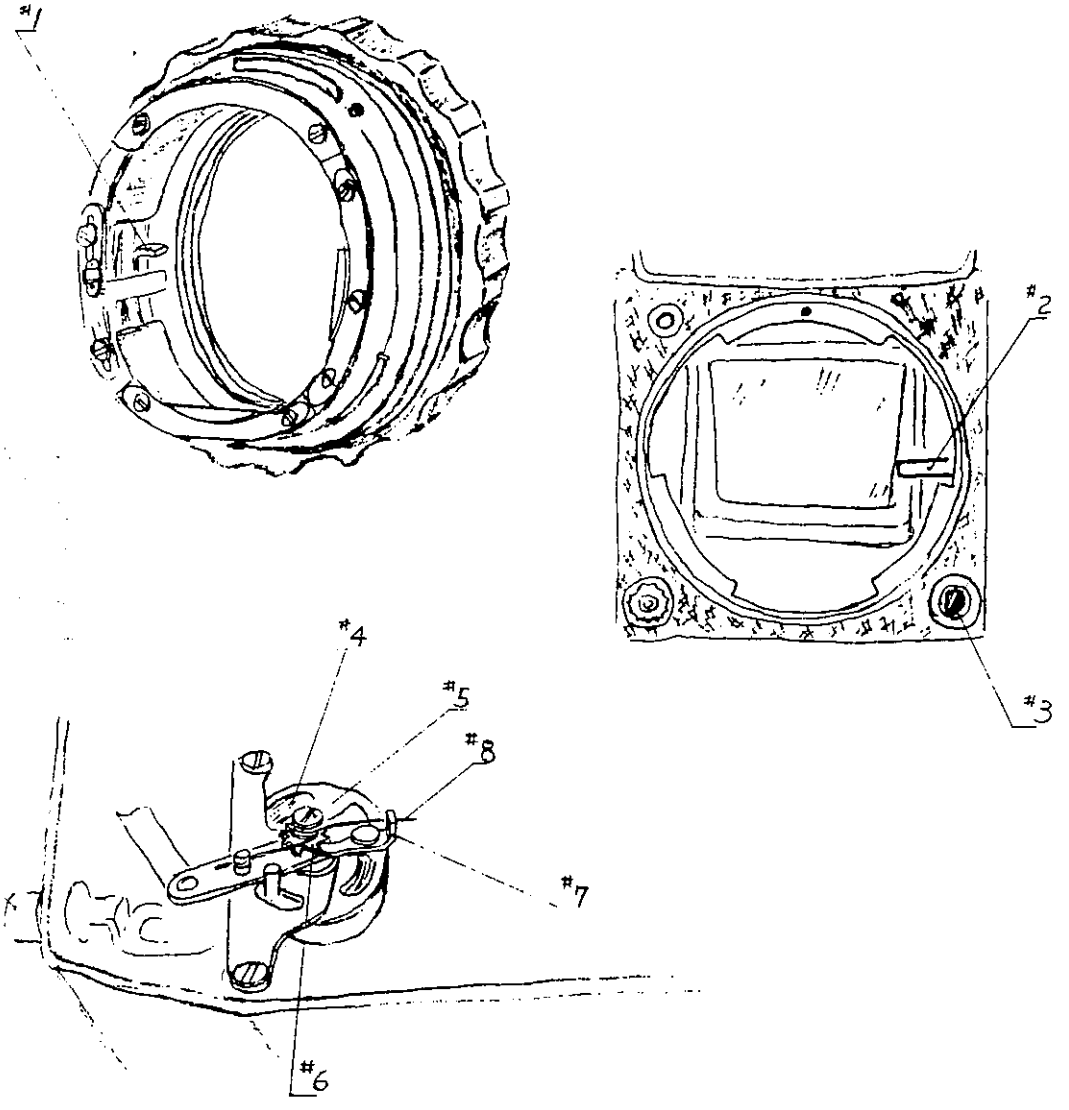
A550541
B630090
A051511



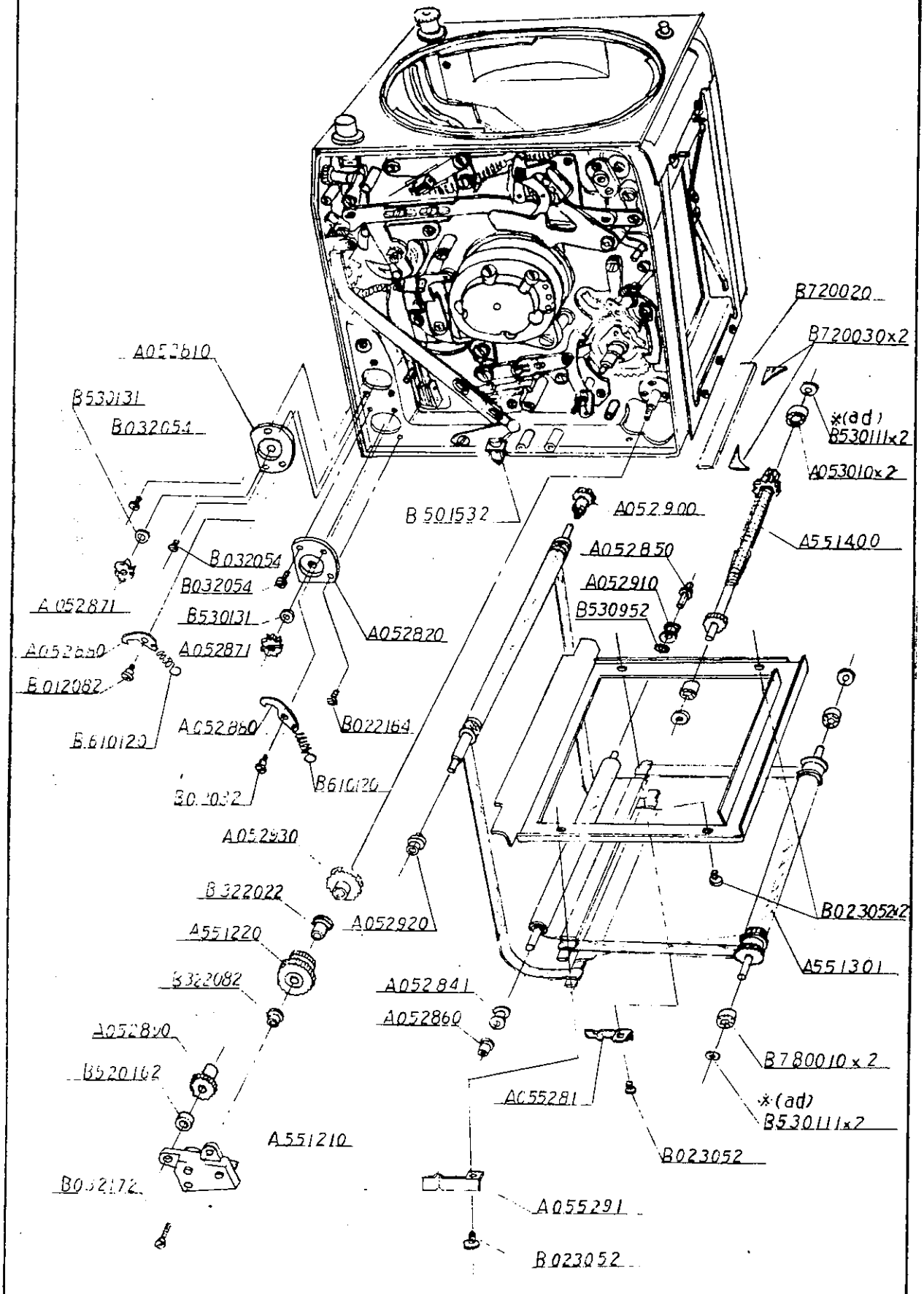
#1 --- A056301
#4 --- A550520
#5 ---- A051590
#6 ----- A051530
#7 ----- A550530
#8 -----B630110

Malfunction: Iris diaphragm of the lens fails to operate, although mirror and shutter function properly.

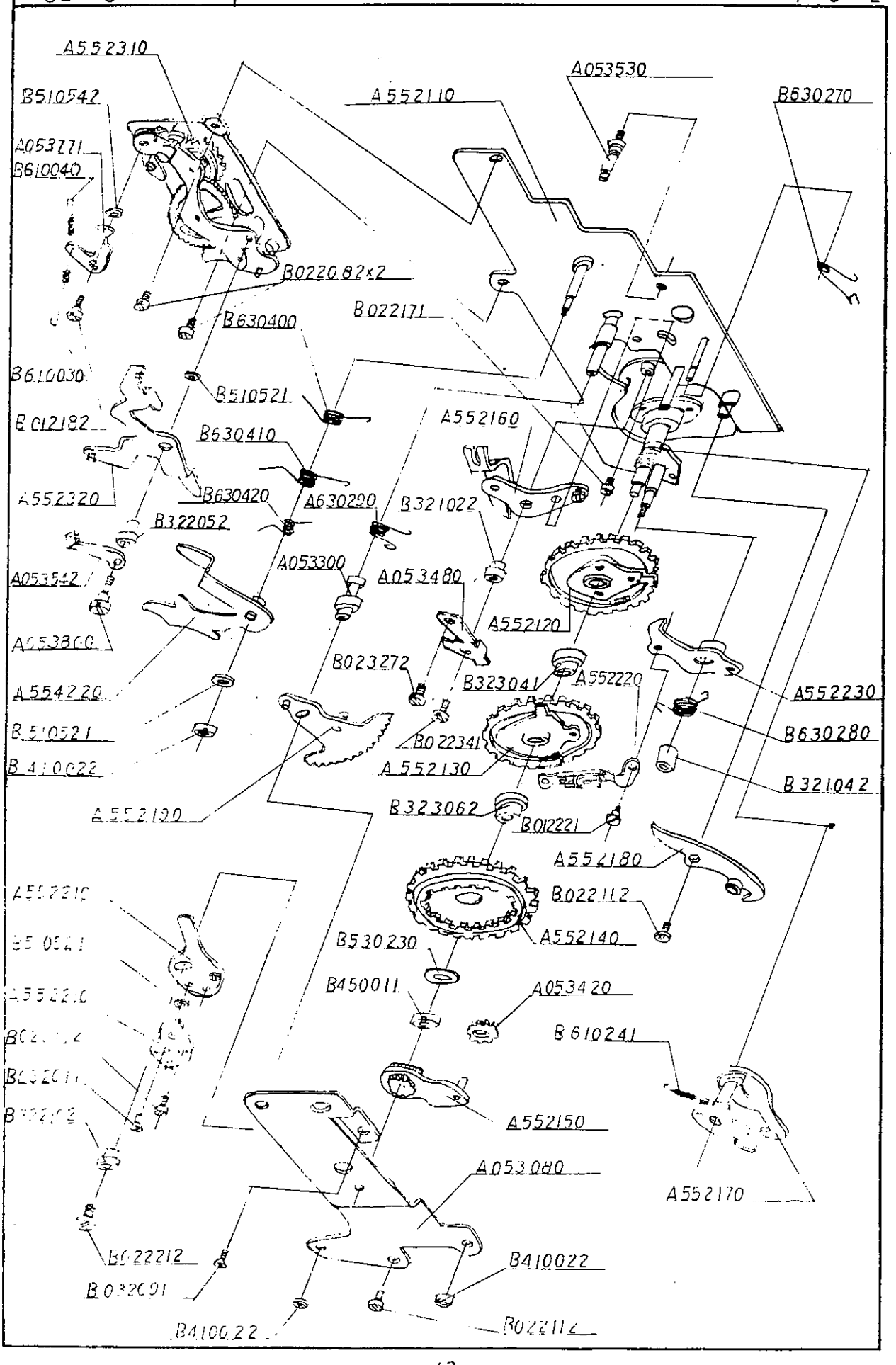
Method of checking: Demount the helicoid unit.

1. Check whether or not there is a diaphragm lever #1 within the helicoid unit.
2. In case the helicoid unit is equipped with Diaphragm Lever #1, push Diaphragm Coupling Pin #2 jutting out within the body with your fingertip and press Diaphragm Preview Button #3. If nothing is felt on the finger pushing the Diaphragm Coupling Pin, Spring #4 for diaphragm operation is out of order.
3. When Screw #5 is turned in a clockwise motion in order to set the tension for diaphragm operation, and when the spring does not wind and the screw turns freely, it means that Spring #4 is cut.
4. If in this case the spring winds properly, it means that the tension of the spring is always at zero due to the fact that Stopper #7 is disengaged from Gear #6.

Cause:	Method of repair:
1. Deformation of Diaphragm Lever.	1. Replace with new, improved parts. Make sure the parts of the lever demounted are not left within the body.
3. Poor quality and tempering of the spring.	3. Replace the spring.
4. Deformation of the setting stopper or disengaging of Spring #8.	4. Re-form the setting stopper or the shape of the tip of the spring.



※(ad) ---- adjustable.


A552310
B510542
A053771
B610040
B022082×2
B630400
B022171
A053530
A552110
B630270
B610030
B510521
B012182
B630410
A552160
A552320
B630420
A630290
B321022
B322052
A053300
A053480
A053542
A552120
A053860
B023272
B323041
A552220
A552230
A554220
B510521
B410022
B022341
B630280
A552130
B321042
A552100
B323062
B012221
A552180
B022112
A552140
B530230
B450011
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A552170
B022212
B032091
B410022
B410022
B022112

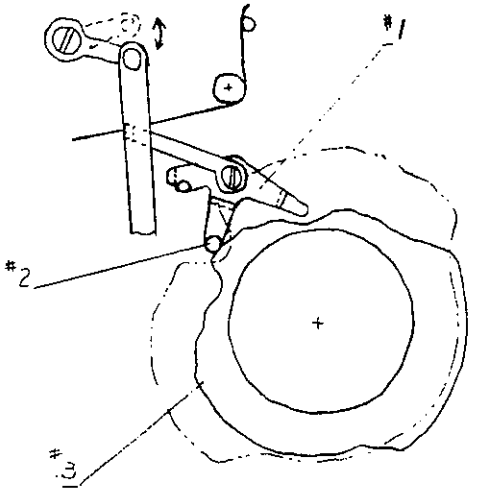


Fig. 1

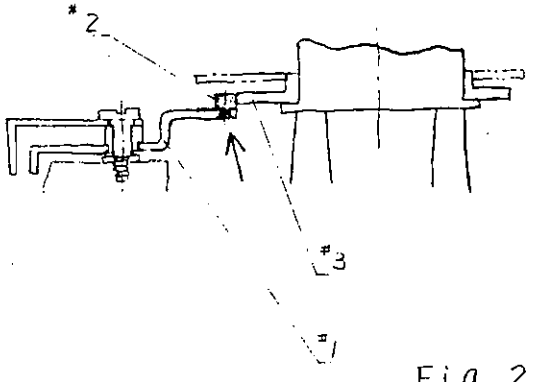


Fig. 2

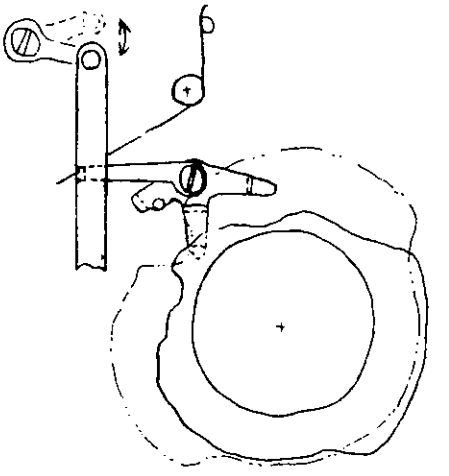


Fig. 3

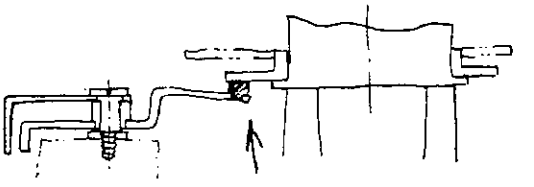


Fig. 4

#1 ----- A552320
#2 ----- A552320
#3 ----- A054990

Malfunction: Shutter fails to operate at the set speed. When adjusted to high speed, it operates at slow speed and even at slow speed, it does not function accurately.

Method of checking:

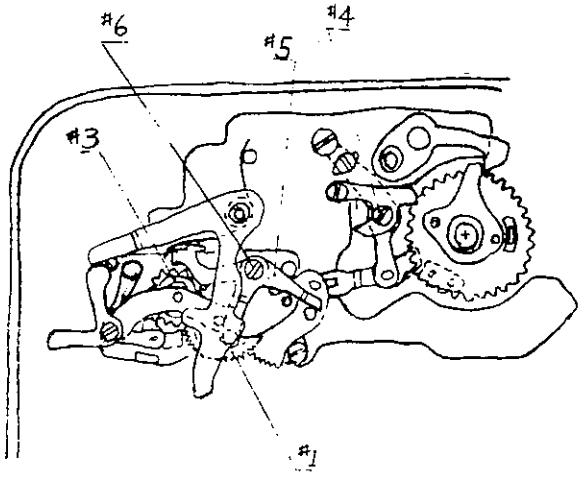
Pin #2 on the tip of Slow Speed Switching Lever #1 fails to align properly with Slow Speed Cam #3 and slips under the cam. (Figs. 3 and 4)

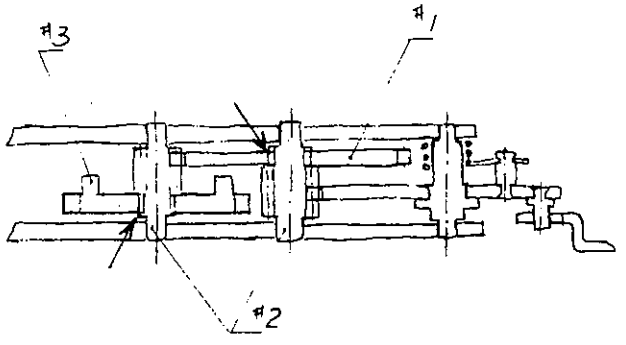
Cause:

1. Unalignment of Slow Speed Switching Lever #1.

Method of repair:

1. Adjust the lever so that it comes into alignment.





*4 ----- B022341

*6 ----- A053800

Slow Governor---- A552300

Malfunction: Shutter fails to operate accurately at slow speeds.

Method of checking:

1. In case th sound signifying the operation of the shutter at speed setting of 1 second is unsteady, it indicates a malfunction of the slow speed governor.
2. Loosening of the screws fixing the levers in the slow speed mechanism.

Cause:	Method of repair:
1. Loosening of caulking of Second Gear #1 and Pinion #2 or Pinion #2 and Gear #3.	1. Replace the slow speed governor.
2. a. Loosening of Fixing Screw #4 of Slow Speed Regulating Plate. b. Malfunction of Slow Speed Switching Lever #5.	2. a. Replace the fixing screw with a long screw and tighten it securely. b. Check Fixing Screw #6 and Spring.

Caution: If the shutter is charged without mounting the slow speed cam, it will cause a breakdown in the slow speed governor.

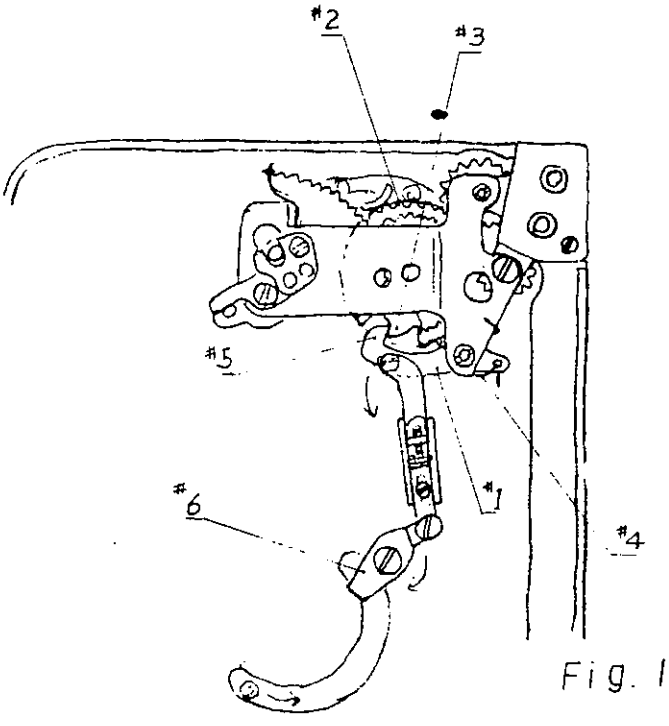


Fig. 1

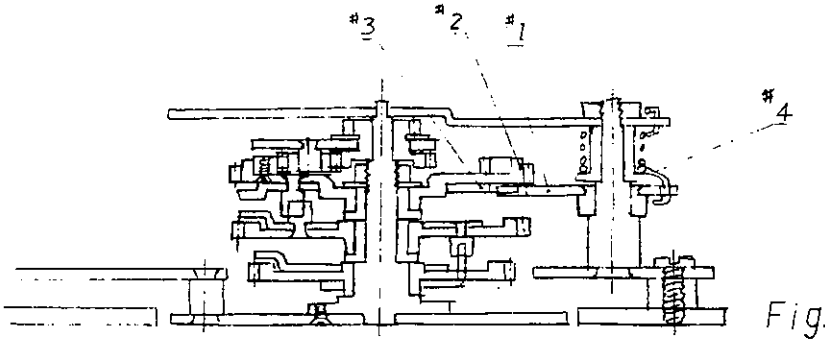


Fig. 2

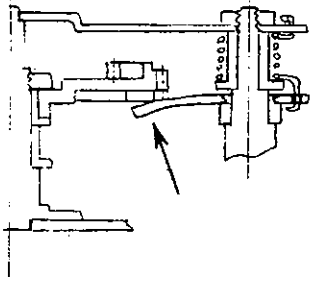


Fig. 3

#1 ---- A552230
#4 ---- B630280
#6 ---- A550160

Malfunction: Shutter operates simultaneously with shutter charging (This can be determined most readily when the shutter speed is set at 1 second), and is followed by a big rattling sound.

Method of checking:

Although the mirror and shutter are charged properly, S Hook #1 which retains the shutter at charged position fails to catch Lug #3 of Main Shutter Activation Gear #2 and triggers the shutter. In this case, the 2nd curtain releases the spring for mirror return. Because the mechanism for mirror return functions despite the fact that the mirror is not flipped down, the gears rotate at an extremely high rate of speed and produce a big sound when they come to a stop.

Caution: When the camera is in this state, do not manipulate the shutter charging mechanism repeatedly over a number of times.

Cause:	Method of repair:
1. Disengagement of Spring #4 of S Hook #1.	1. Adjust the tip of the spring to provide against disengagement.
2. Tip #5 of S Hook #1 is bent in the direction of the shaft.	2. Adjust the tip to proper shape.
3. Malfunction of all parts from S Starting Lever #6 to S Hook.	3. Make adjustment to assure smooth function.

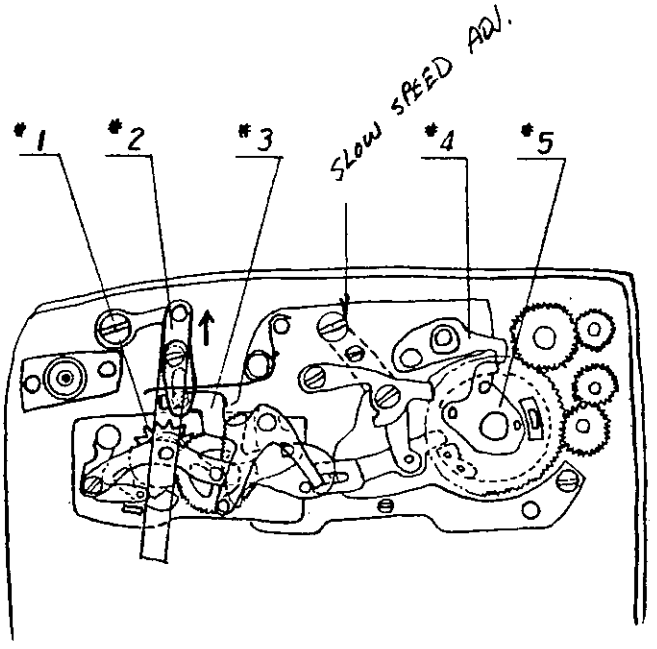


Fig 1

Fig 2

Malfunction: Rear Curtain fails to close at Bulb setting.

Method of checking:

1. Curtain closes when shutter dial is moved to another setting.
   a. Closes with a whirring sound when set to 1 sec.
   b. Fails to close until the dial is turned to 1/60 sec.
2. Curtain fails to close even when shutter dial is manipulated.

Cause:	Method of repair:
1. a. Rotation of Toothed Wheel #1 is impeded by Slow Shutter Switch Lever #3 because Release Lever #2 fails to reset all the way in the direction of the arrow.	1. a. Mend Release Lever #2 if twisted or make other necessary adjustments to assure smooth function.
b. Malfunction of slow speed governor.	b. Replace governor.
2. Rear Curtain Hook #4 engages Stopper #5 (See Fig. 2).	2. Replace either Rear Curtain Hook #4 or Gear Stopper #5, whichever is found to show traces of abrasion.

Parts Nos.

#1 ..... A552310
2 ..... A554240
3 ..... A552320
4 ..... A552170
5 ..... A552120

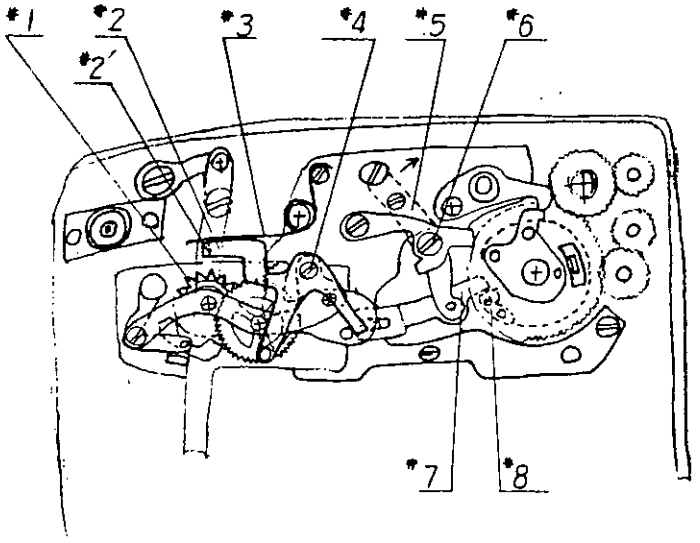


Fig. 1

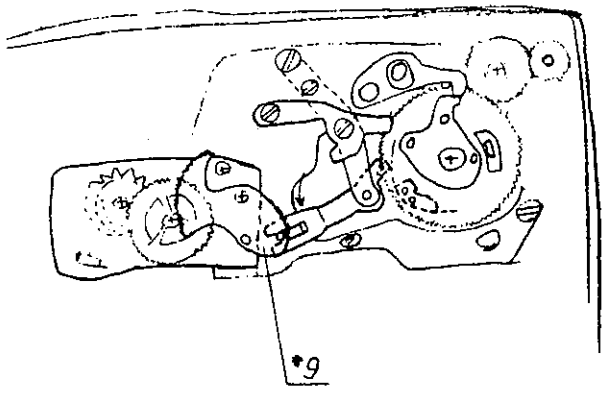


Fig 2

Malfunction: At Bulb setting rear curtain closes before pressure on shutter button is released.

Method of checking:

1. Shutter functions properly at slow speeds (1 - 1/30 sec.) but rear curtain fails to remain open at Bulb setting.

2. Shutter fails to function at slow speeds (1 - 1/30 sec.) (but works normally at 1/60 sec. or faster speeds).

Cause:

1. Tip #2' of Lever #2 fails to engage Toothed Wheel #1.

2. Governor Claw #7 fails to come into contact with Stopper #8 of the rear curtain gear (See Fig. 2).

Method of repair:

1. If Spring #3 is found to be disengaged, set it properly into position.
If Lever #2 is found to have shifted out of its normal position due to loosening of Nut #4, tighten nut securely.

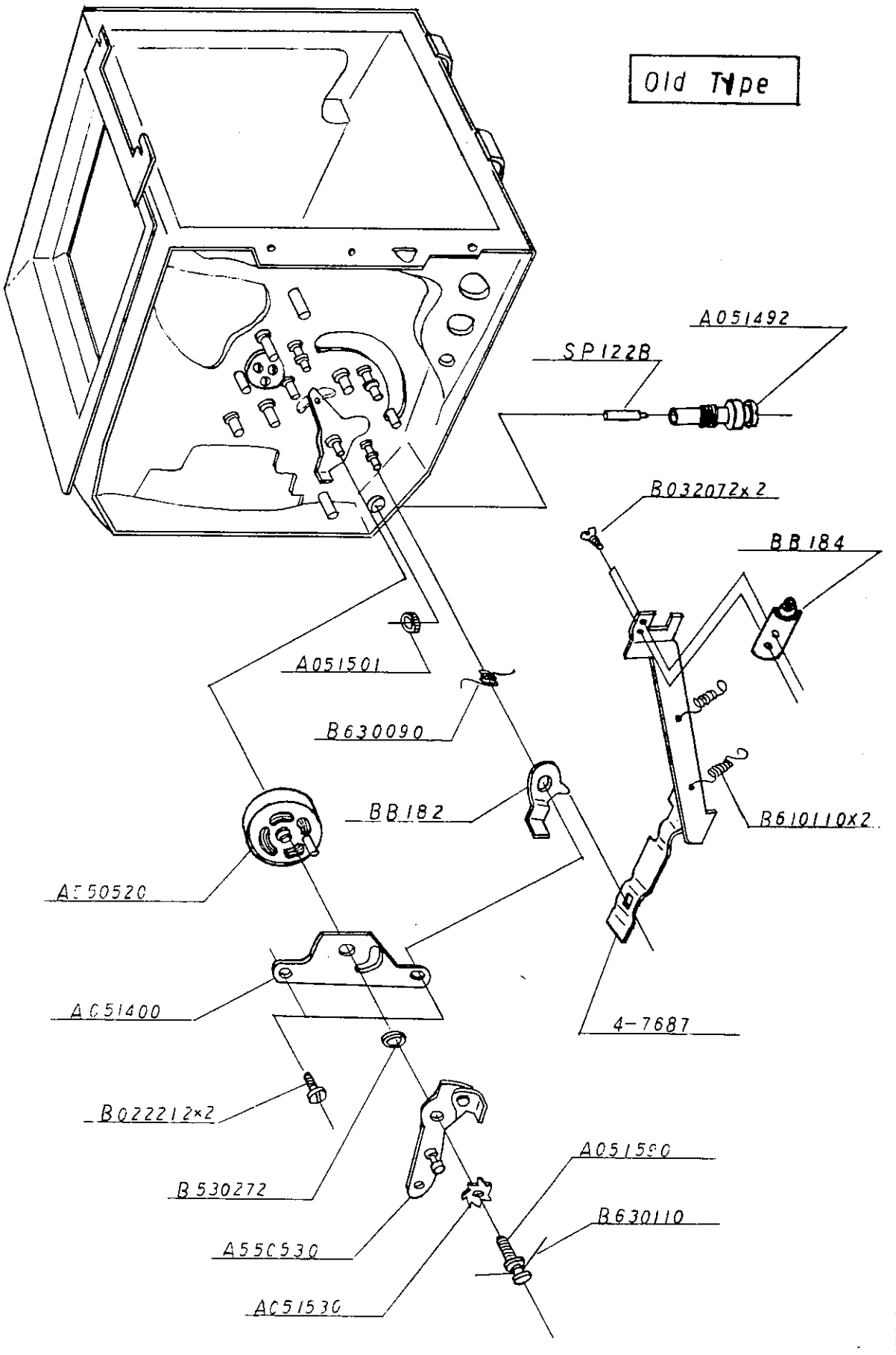
2. (1) Increase Gear No. 1 #9 of the governor fails to return to its original position after rotating in a clockwise notion, clean off dust or other foreign particles to permit smooth function.

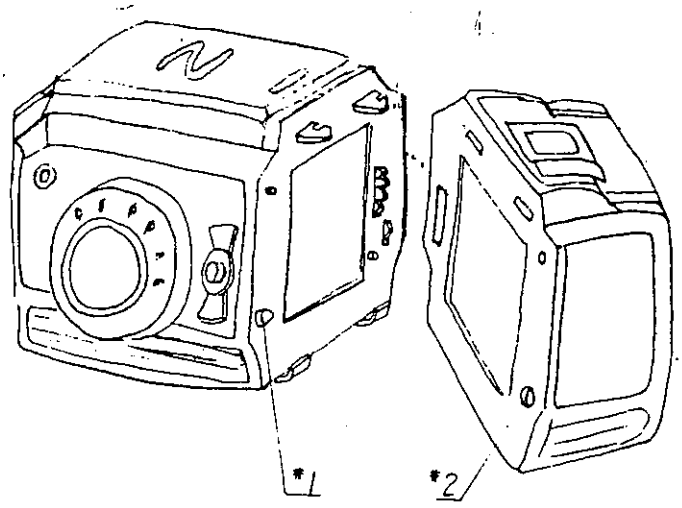
(2) Tighten Screw #6 if found to be loose. If Slow Speed Adjustment Lever #5 Shifts beyond its normal range of operation in the direction of the arrow, Governor Claw #7 will fail to engage Stopper #8.
In this case, the shutter will not function at the specified speed.

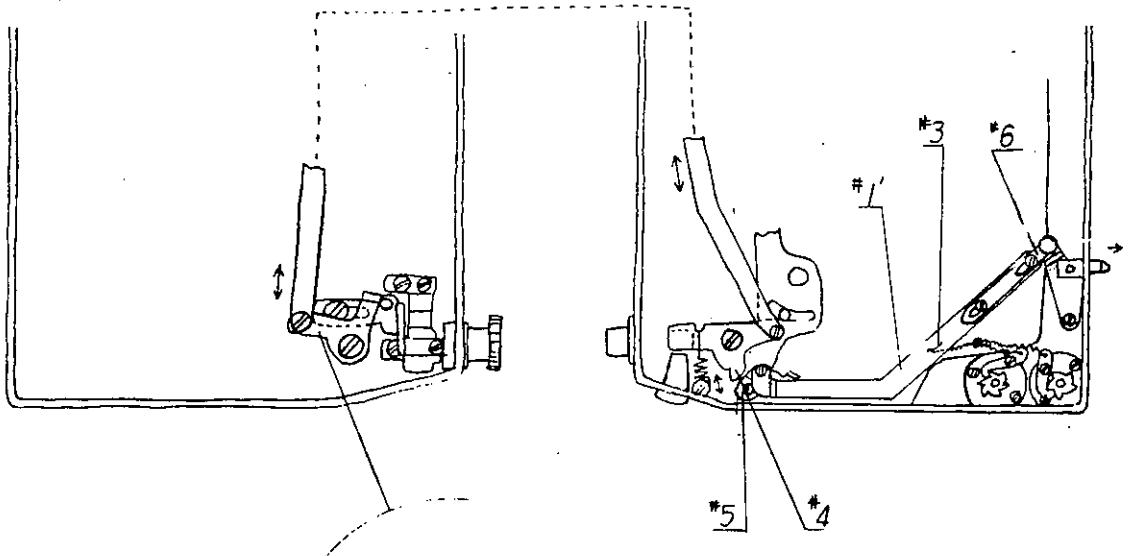
Caution: The slow speed governor will be damaged if the shutter is charged without installing the slow speed cam.

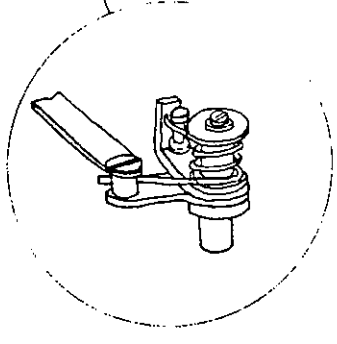
Parts Nos.

#1 ..... A552310
2 ..... A552320
3 ..... B030401
4 ..... {B022352} {B311172}
5 ..... A552160
#6 ..... B022341
7 ..... A552160
8 ..... A552120
9 ..... A552310


Old Type
A051492
SP122B
B032072x2
BB184
A051501
B630090
BB182
B610110X2
AC50520
AC51400
4-7687
B022212x2
B530272
A051590
B630110
A550530
AC51530







New type

Malfunction: Shutter fails to trip even when dark slide is drawn out.
- Shutter button fails to operate (old model).
- Shutter button can be depressed but shutter fails to trip (new model).

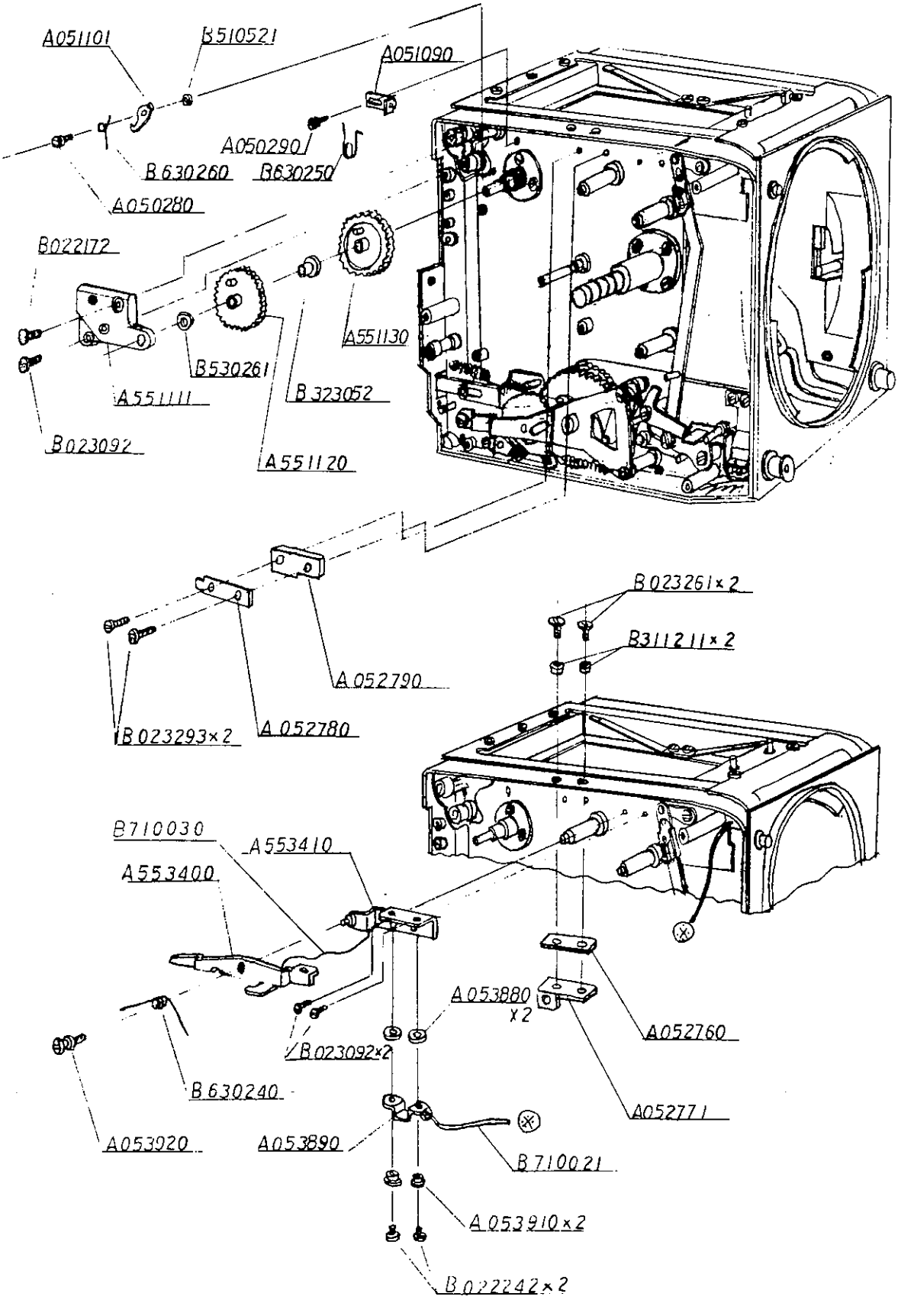
Method of checking: Detach film back and check shutter release. (In normal condition, Pin #1 juts out about 2mm when film back is detached.)

1. Shutter trips.
2. Shutter fails to trip.

Cause:	Method of repair:
Shutter fails to trip because Lever #4 engages Stopper #5.	1. Clean off dust and other foreign particles from Hole #2 to enable proper seating.
1. Pin #1 fails to seat properly in Hole #2 of Film Back.	
2. Weak tension or disengagement of Spring #3.	2. Regulate Spring #3 so that Lever #1 of Pin #1 functions smoothly. (When the film back is attached to the body and the dark slide inserted all the way in, #5 should engage #4. When the dark slide is pulled out, #5 should disengage from #4.)

Parts Nos.

#1 .....A055101
1' A055080
3 .....B610110
5 .....A051520
6 .....A554620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A050290
B630260
B630250
A050280
B022172
A551130
B530261
B323052
A551111
B023092
A551120
B023261×2
B311211×2
A052790
B023293×2
A052780
B710030
A553410
A553400
A053880
×2
A052760
B023092×2
B630240
A052771
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B710021
A053910×2
B022242×2

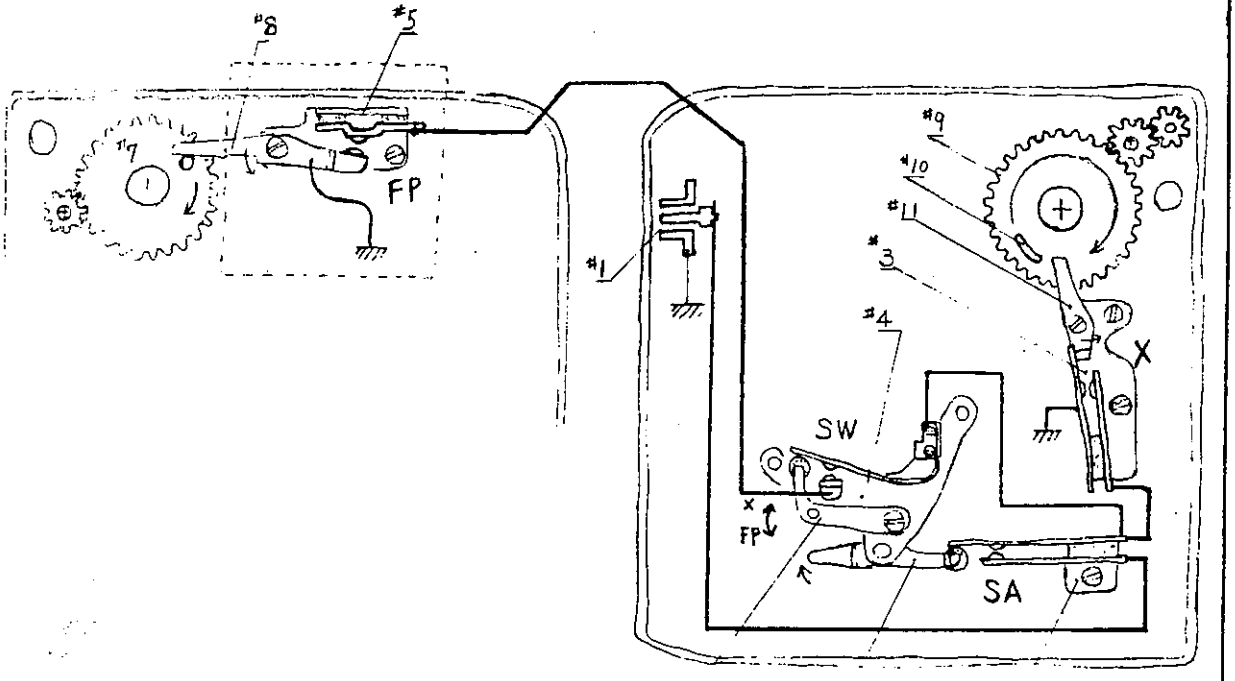
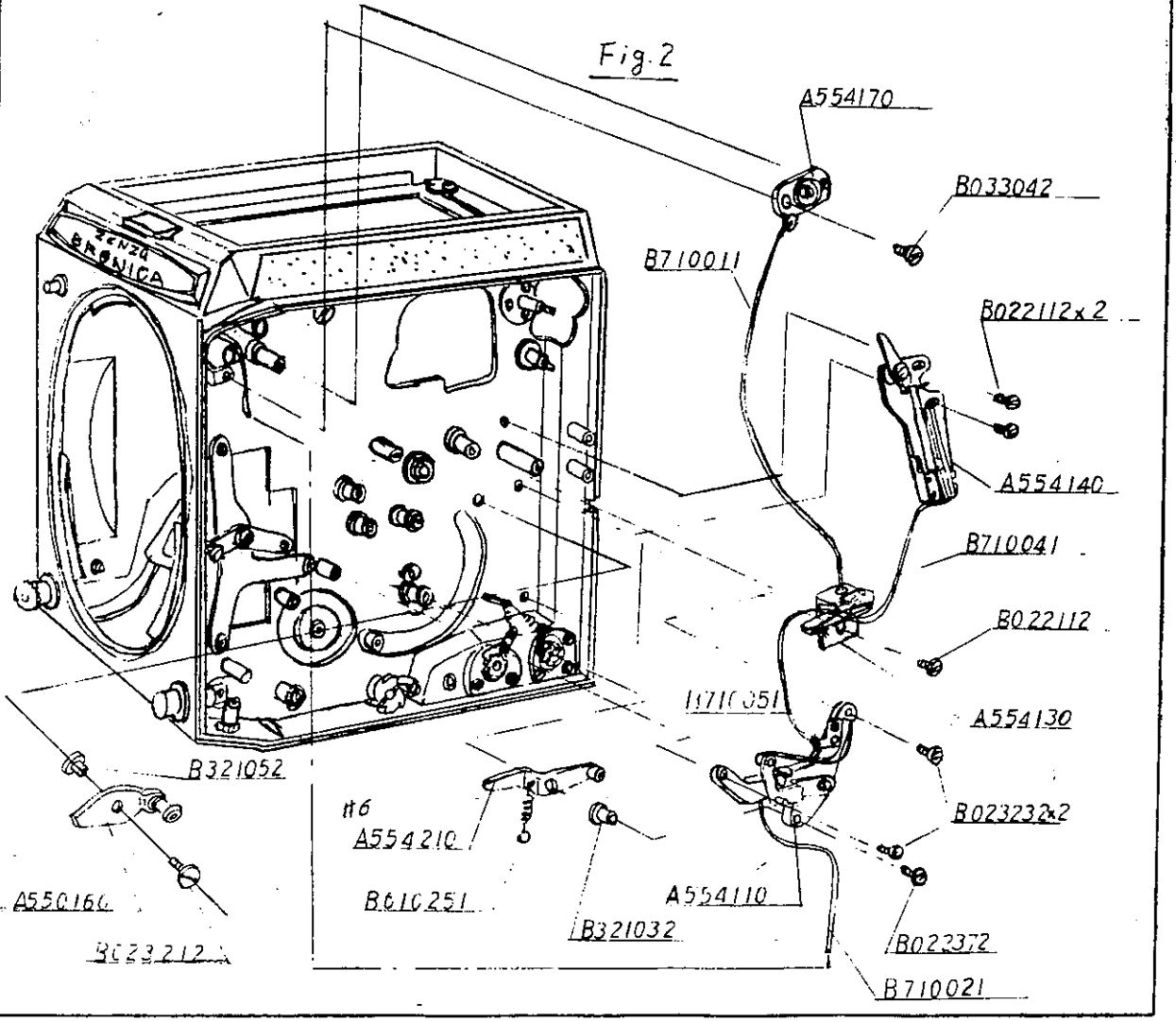


Fig.1

#12 #6 #2

Fig.2



Parts indicated in Fig. 1 are:

#1 ..... Flash Terminal
#2 ..... Safety Contact which activates the circuit only at the time of exposure.
#3 ..... X Contact which switches in at the moment the front shutter screen opens fully.
#4 ..... Switching Contact which cuts off the FP circuit at slow shutter settings.
#5 ..... FP Contact which switches in simultaneously with the function of shutter.

When the shutter button is depressed and the mirror begins to flip down, Lever #6 functions to switch in the Safety Contact SA. As soon as the Shutter Timing Gear #7 begins to rotate, Lever #8 functions to switch in the FP Contact. Then, When the Main Shutter Screen Gear #9 starts to rotate, the front screen operates and, when it opens fully, Stub #10 hooks Lever #11 to switch in the X Contact.

After the shutter operation is completed and the mirror returns to viewing position, Lever #6 resets to its original position and the Safety Contact SA is cut off.

At shutter settings of 1/30 to 1/1000 sec., the cam featured on the shutter dial pushes Lever #12 to switch in the Switching Contact SW for activating the FP circuit. At settings of 1 to 1/15 sec., B and X, the Switching Contact SW is disconnected to switch off the FP circuit and activate the X circuit.

Shutter Settings	Flash Contact
B, 1, 2, 4, 8, 15	X
30, 60, 125, 250, 500, 1000	FP
X	X

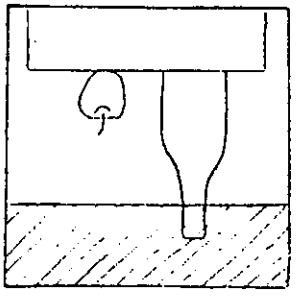


fig. 1

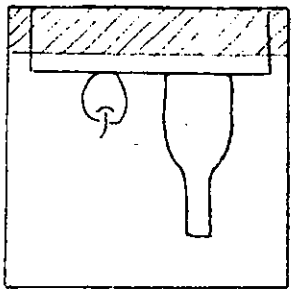


fig. 2

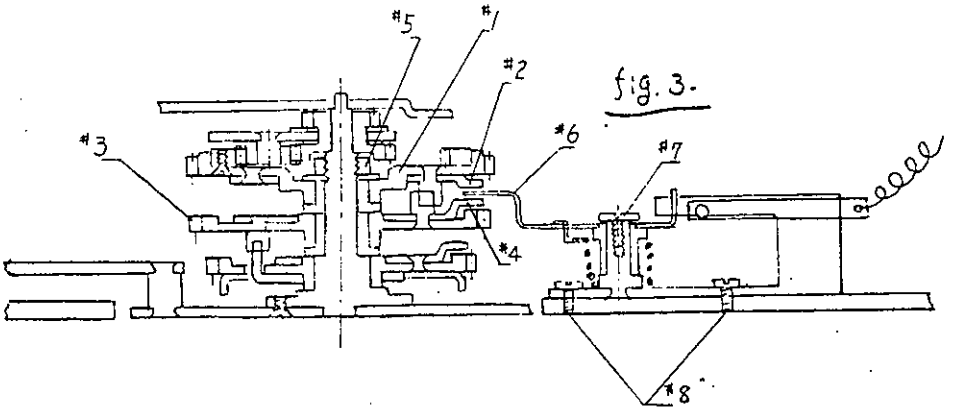


fig. 3.

fig. 4

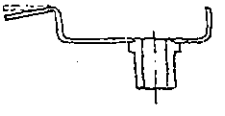


fig. 5

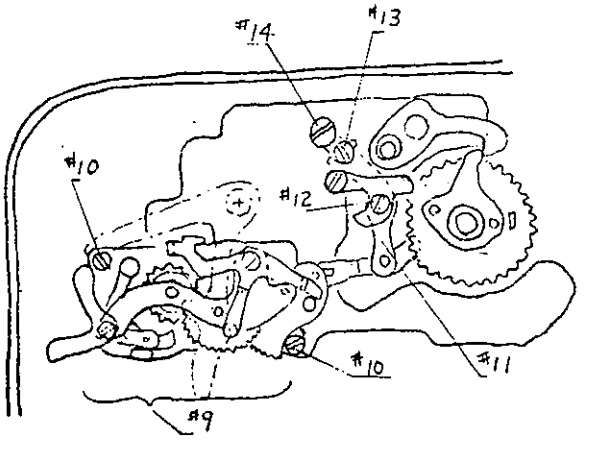


fig. 6.

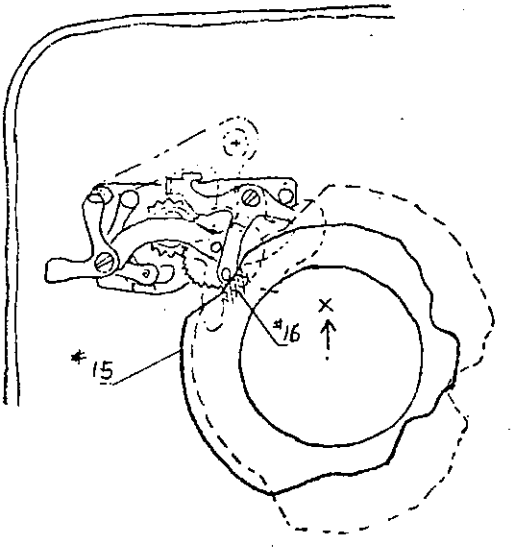


fig. 7

Malfunction: Shutter fails to synchronize with electronic flash when adjusted to "X" setting.

Method of checking:

1. The lower portion of the image on the film plane (or, in other words, the upper part of the picture) is blacked out (Fig. 1). Synchronizer switches in before the front curtain opens all the way.

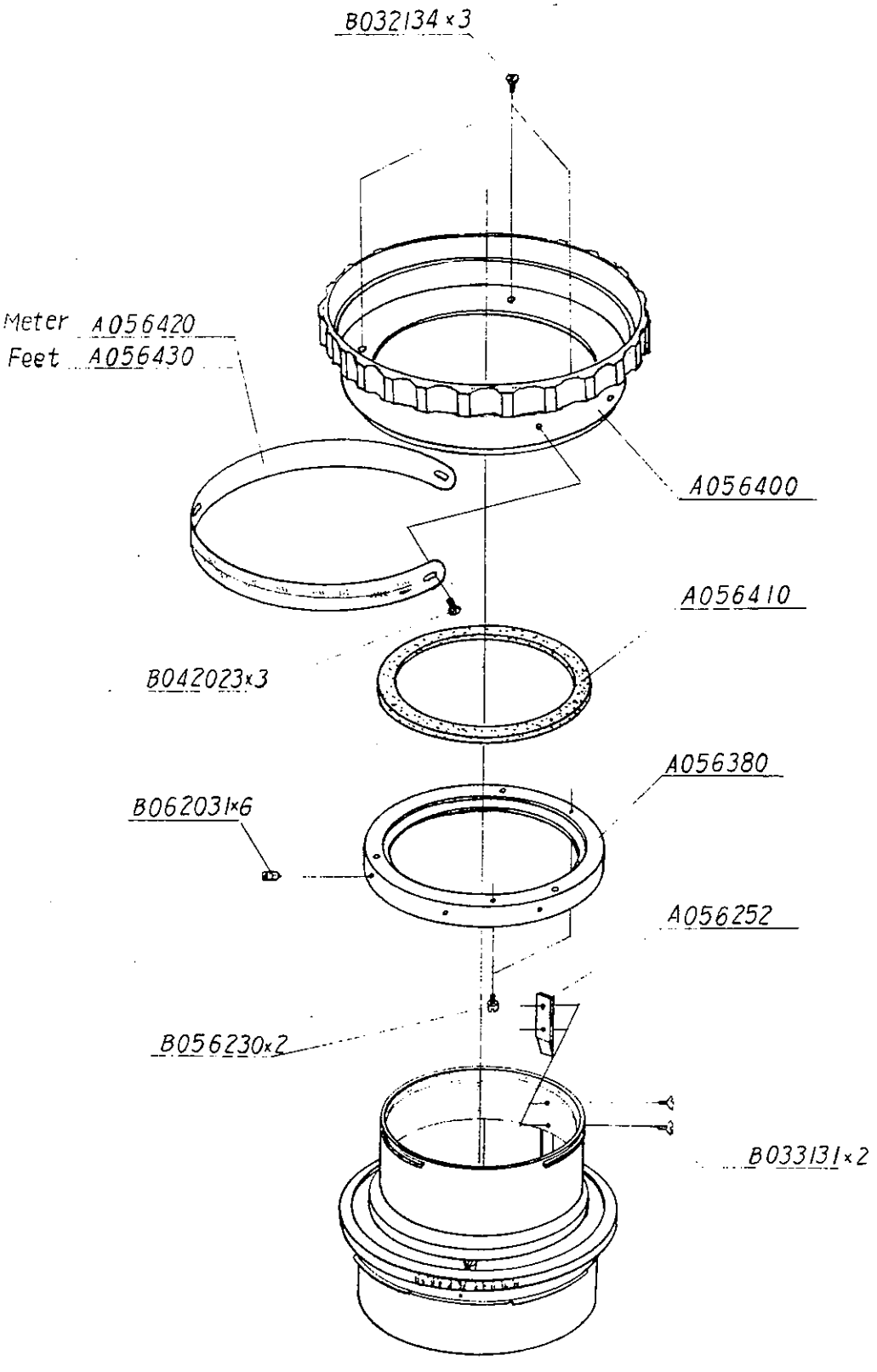
2. The upper portion of the image on the film plane (or, in other words, the lower part of the picture) is blacked out (Fig. 2). The shutter speed at X setting which is normally between 1/40 and 1/50 sec. has been increase to approximately 1/60 sec. and therefore the rear curtain begins to close before the synchronizer is switched.

Tighten Main Shutter Shaft Nut #5, "X" Operation Lever Setscrew #7 and "X" Terminal Fixing Screw #8, if they are found to be loose (Fig. 3).

Cause:	Method of repair:
1. a. Stub #2 on Main Shutter Timing Gear #1 comes into contact with "X" Operation Lever #6.	1. a. Mend flexure of Lever #6 (Fig. 4).
b. Stub #4 on Main Front Curtain Gear #3 comes into contact with Lever #6 (See Fig. 3).	b. Mend flexure of Lever #6 (Fig. 5).
2. a. Shutter fails to function at specified speed at slow settings due to loosening of Fixing Screw #10 of Slow Governor Unit #9 (See Fig. 6).	2. a. Tighten screw and check shutter function at slow speed.
Loosening of Pivot Screw #12 of Slow Speed Fine Adjustment Lever #11 (See Fig. 6).	b. Tighten screw and check shutter function at slow speeds. #14 is Slow Speed Fine Adjustment Screw.
c. Shutter speed at "X" setting is adjusted to approximately 1/60 sec.	c. Slightly file off Slow Speed cam #15 at section marked by "X" on Fig. 7.

Parts Nos.

#5 ..... B450011	#12 ..... B022341
6 ..... A554180	13 ..... B022171
	15 ..... A054990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Meter A056420
Feet A056430
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A056410
B042023×3
A056380
B062031×6
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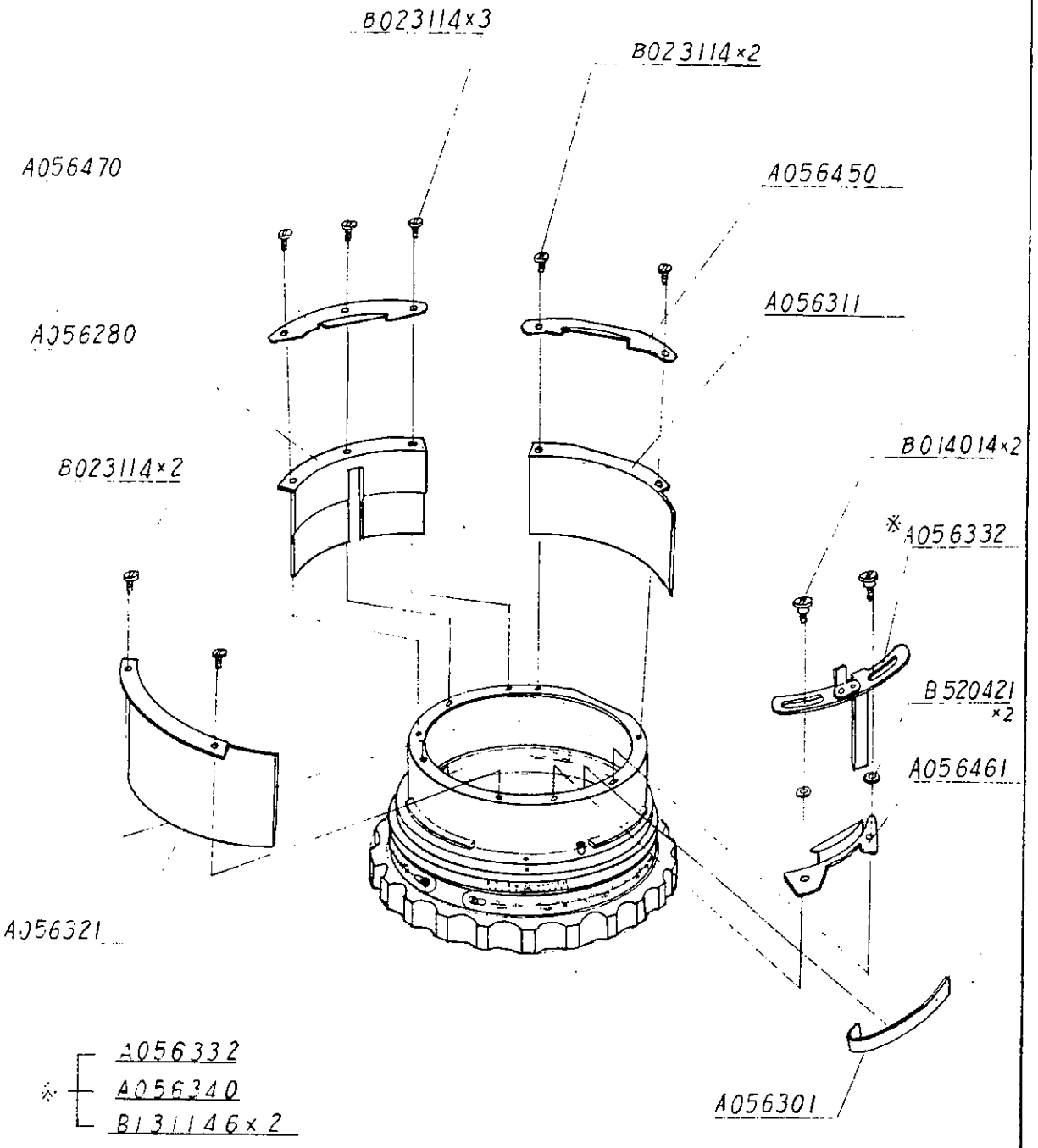
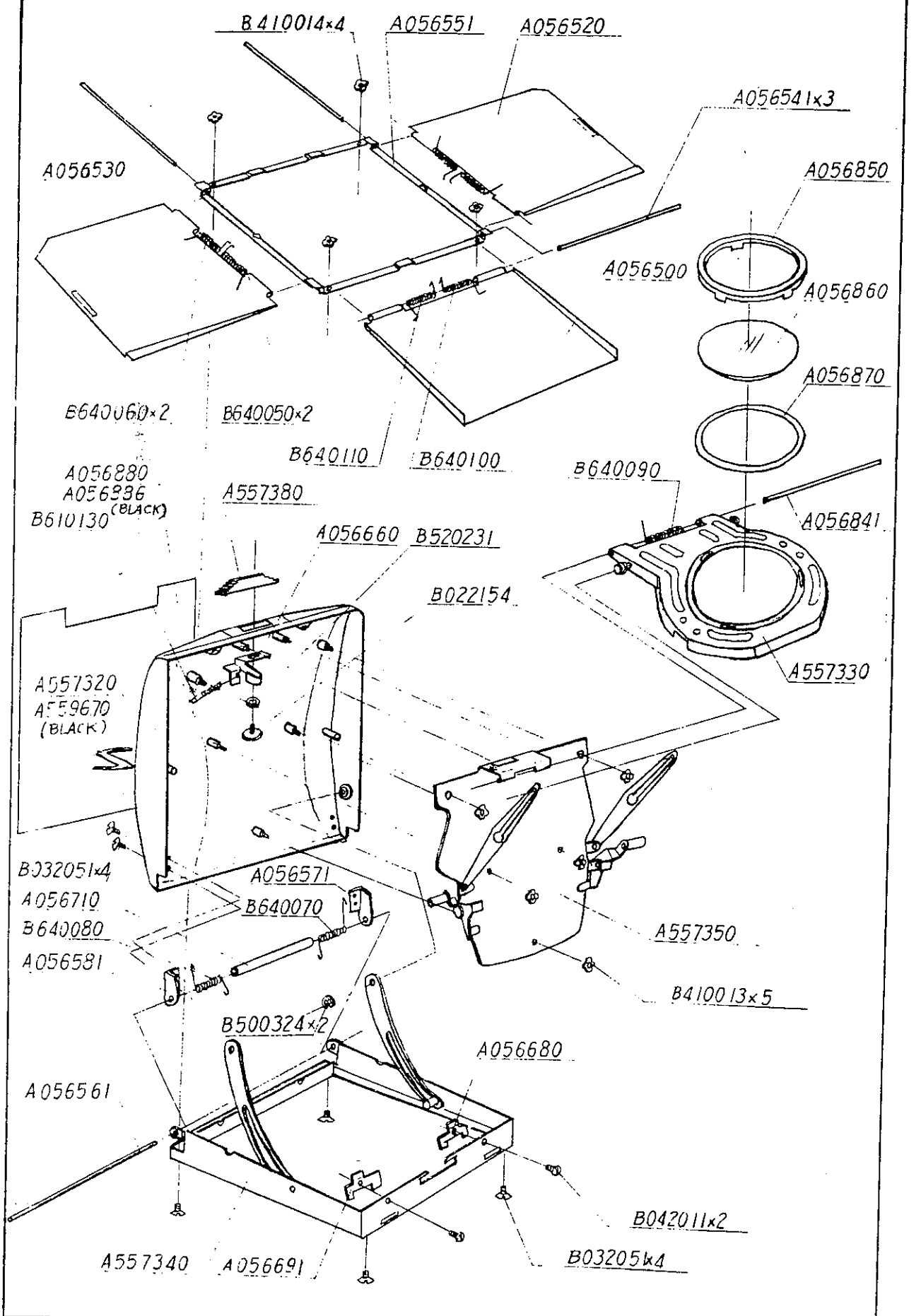
B056230×2
B033131×2



※ A056332
A056340
B131146×2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A056860
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B640060×2
B640050×2
B640110
B640100
B640090
A056880
A056836 (BLACK)
B610130
A557380
A056841
A056660
B520231
B022154
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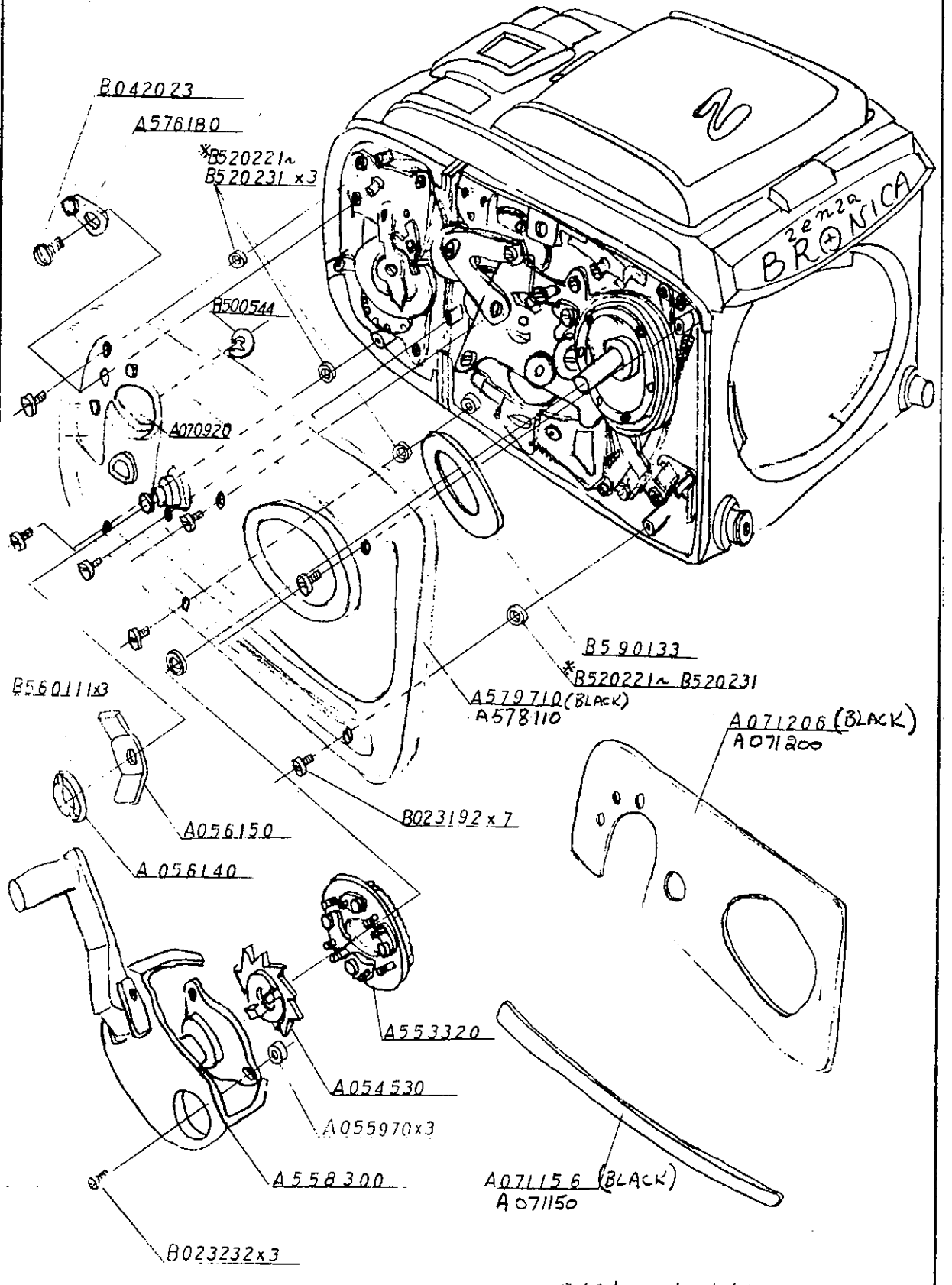
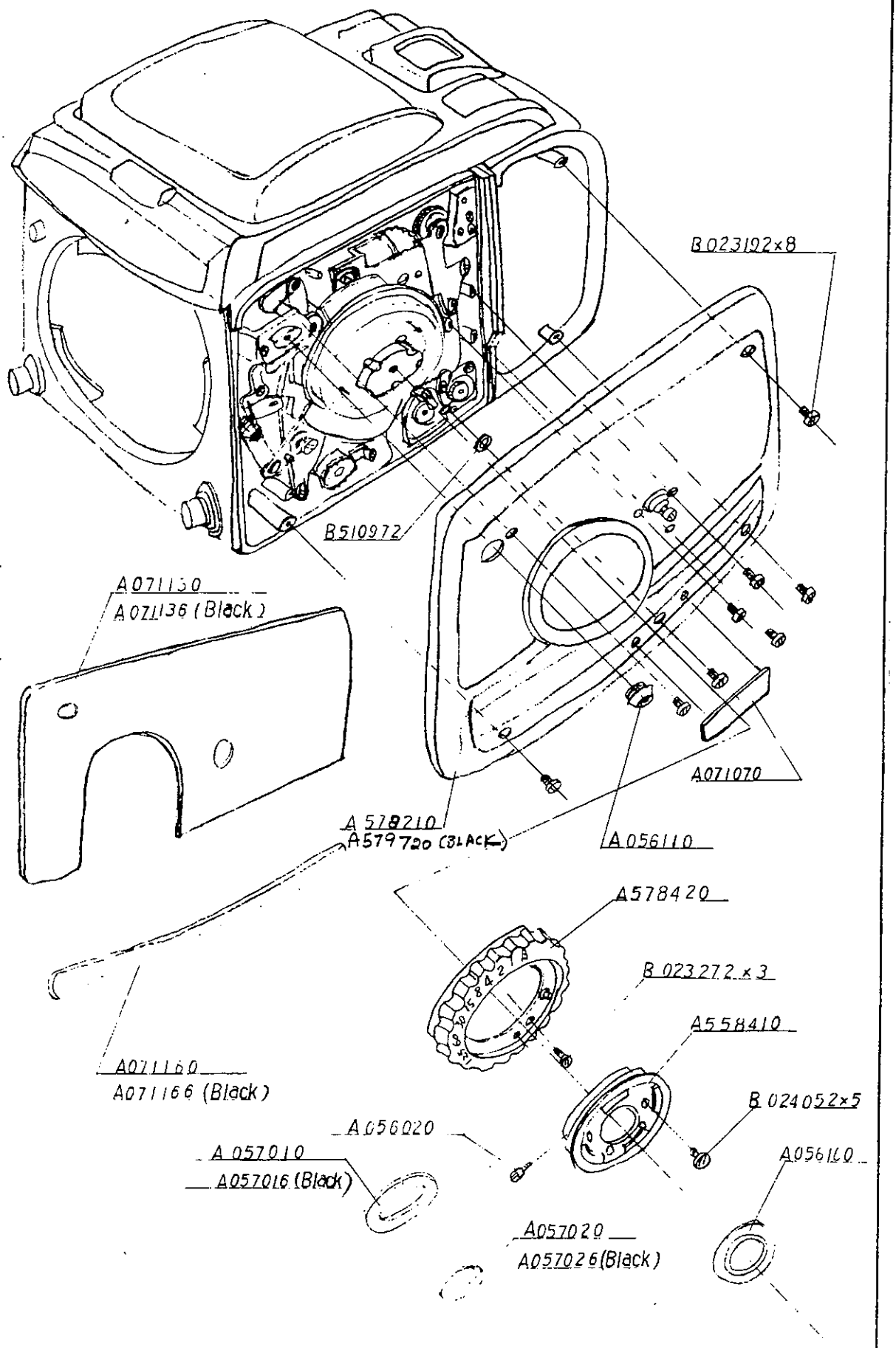
31. 3. 1969



※(ad)---adjustable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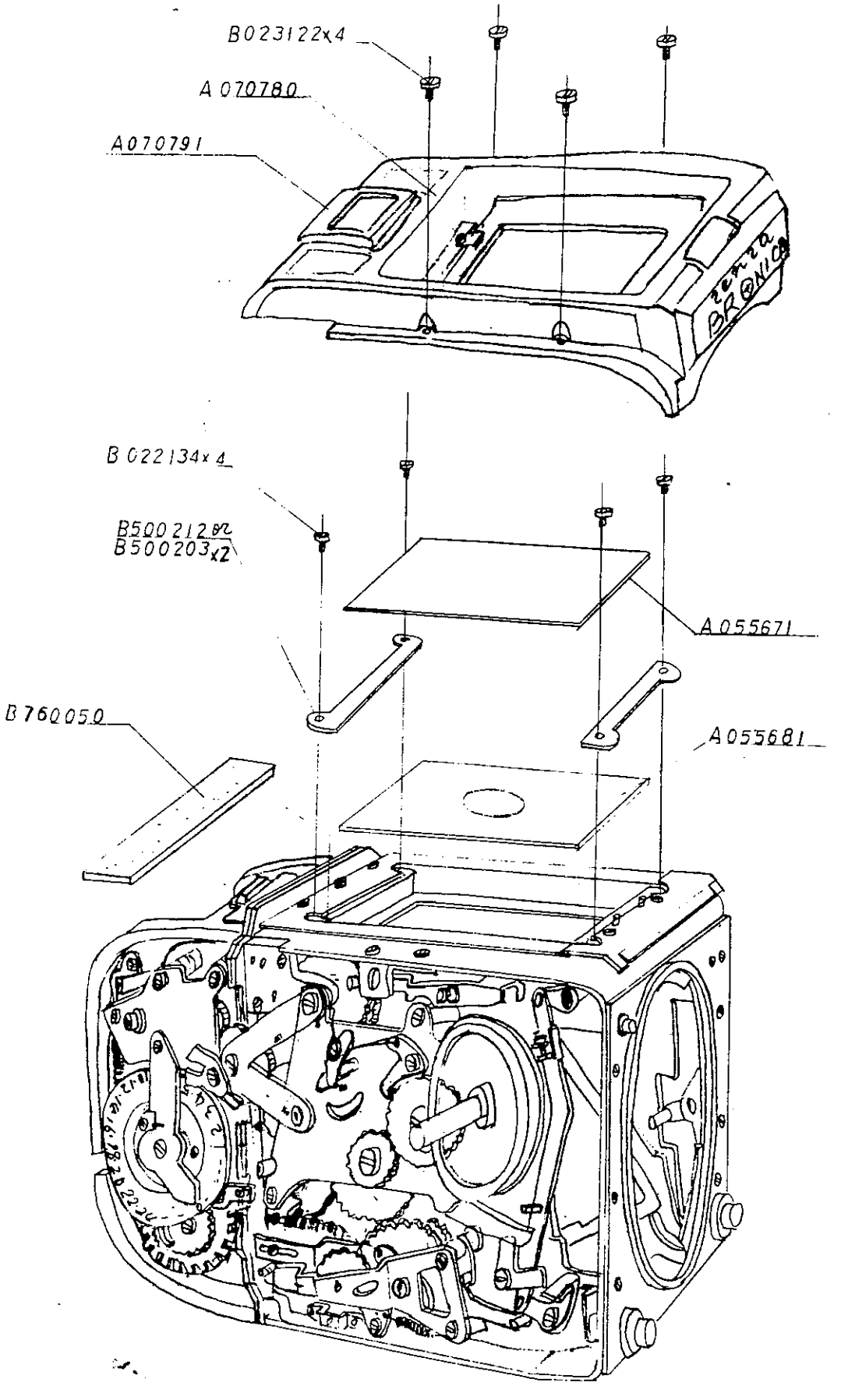
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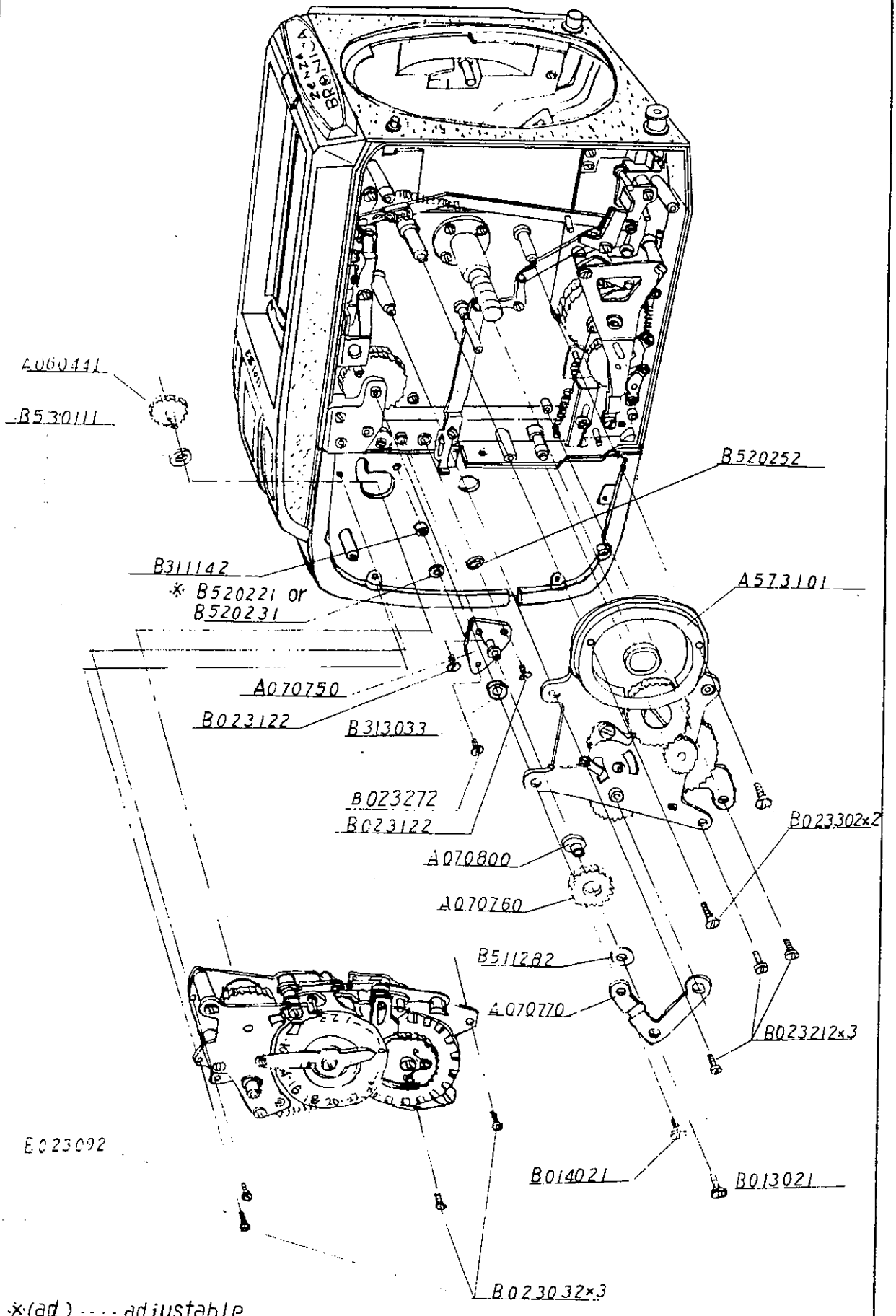
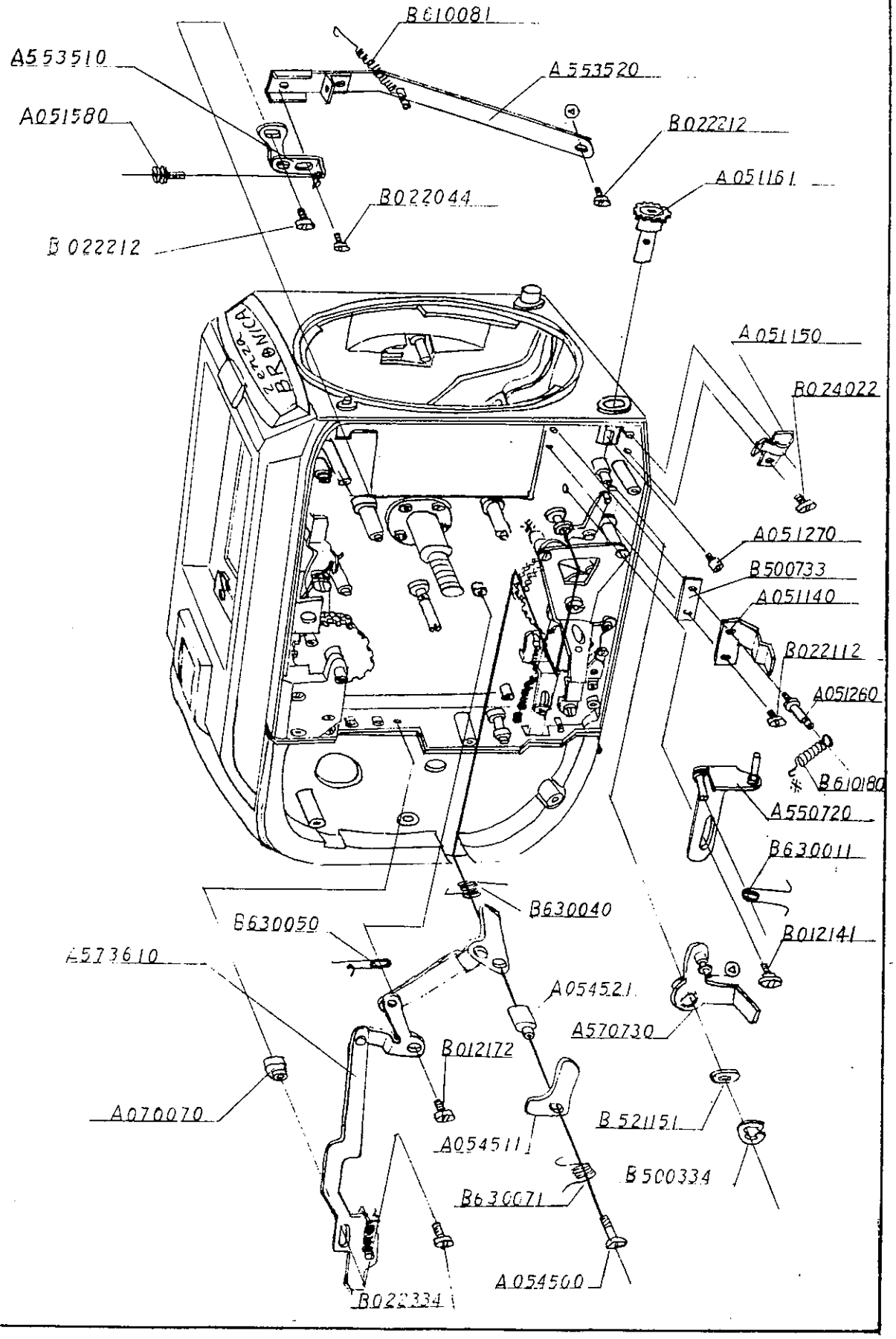


※(adj) ---- adjustable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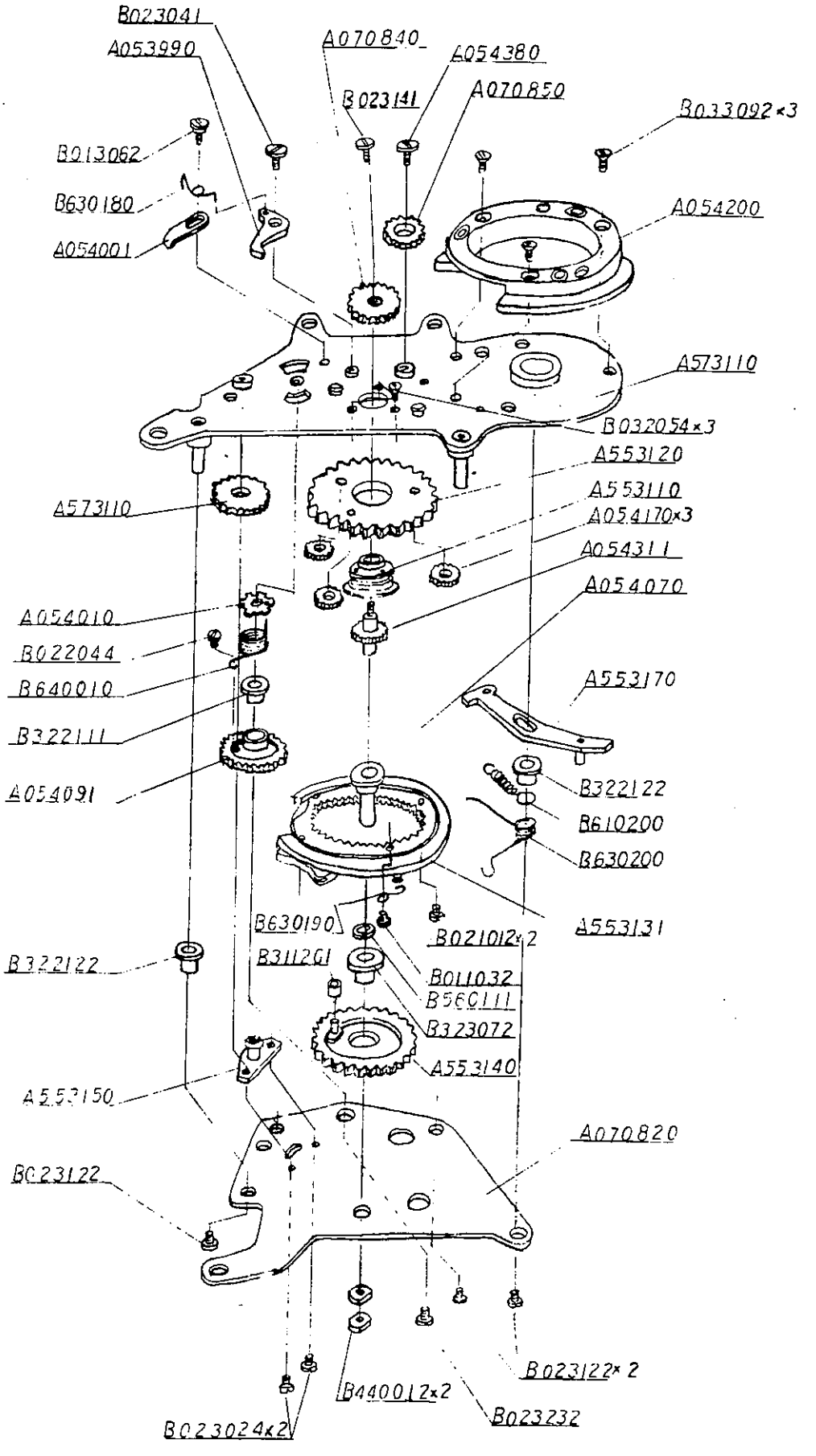
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A054070
A573110
A054010
B022044
B640010
B322111
A054091
A553170
B322122
B610200
B630200
B630190
B021012×2
A553131
B322122
B311201
B011032
B560111
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A553150
A070820
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B023122×2
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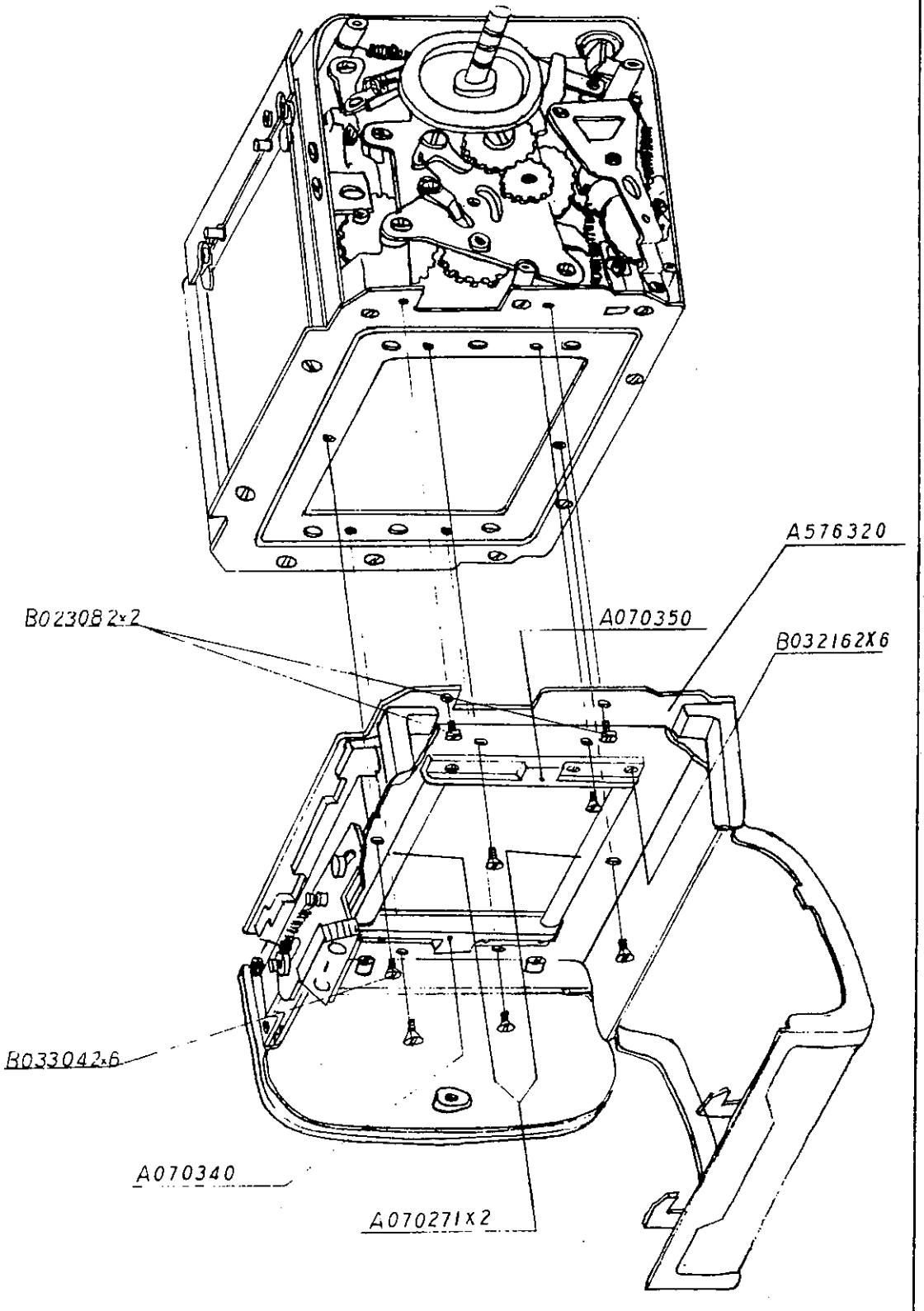
B023232
B023024×2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A070271X2

Chain action diagram

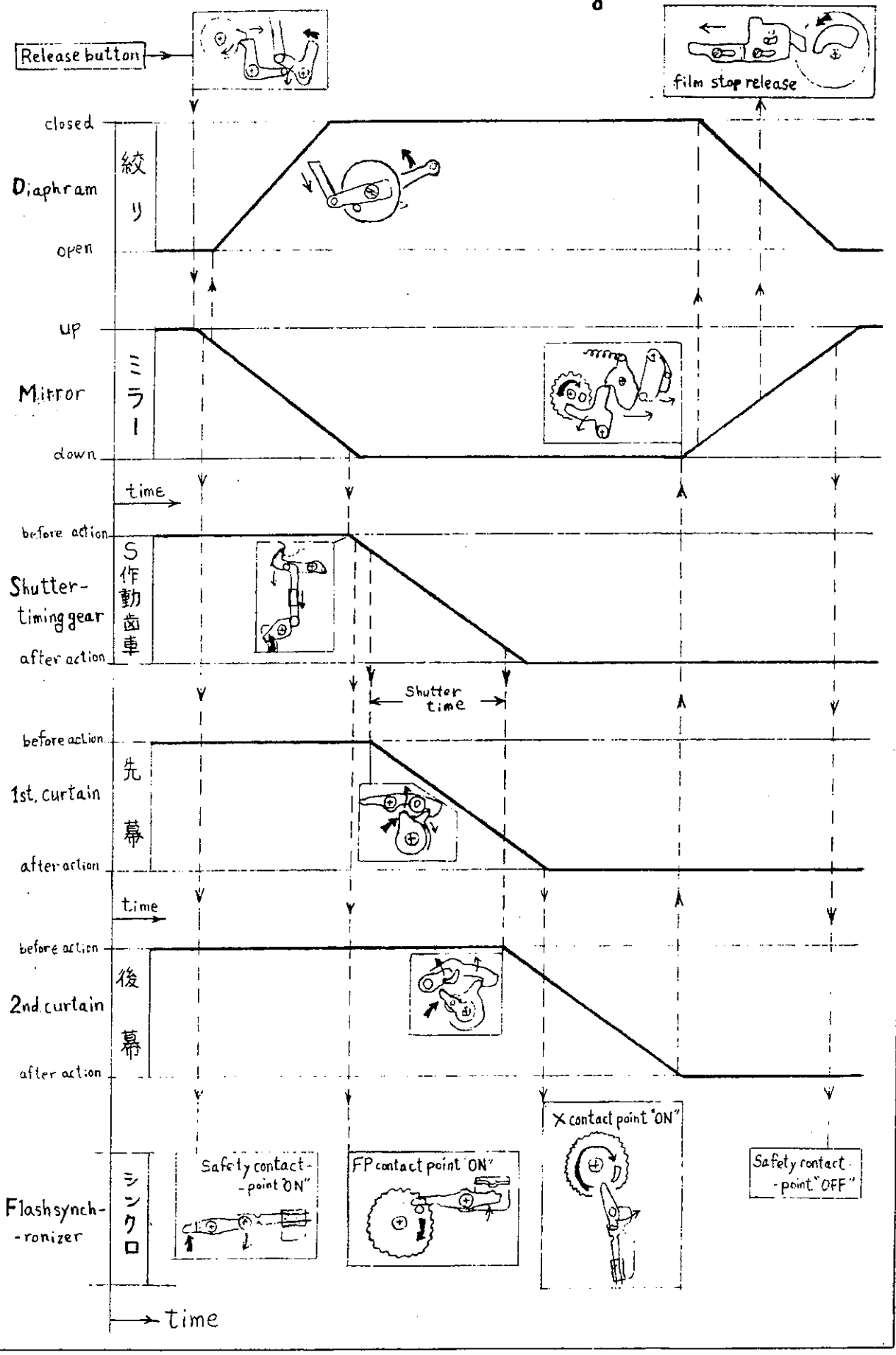


Diagram Showing Chain Reaction of Various Systems

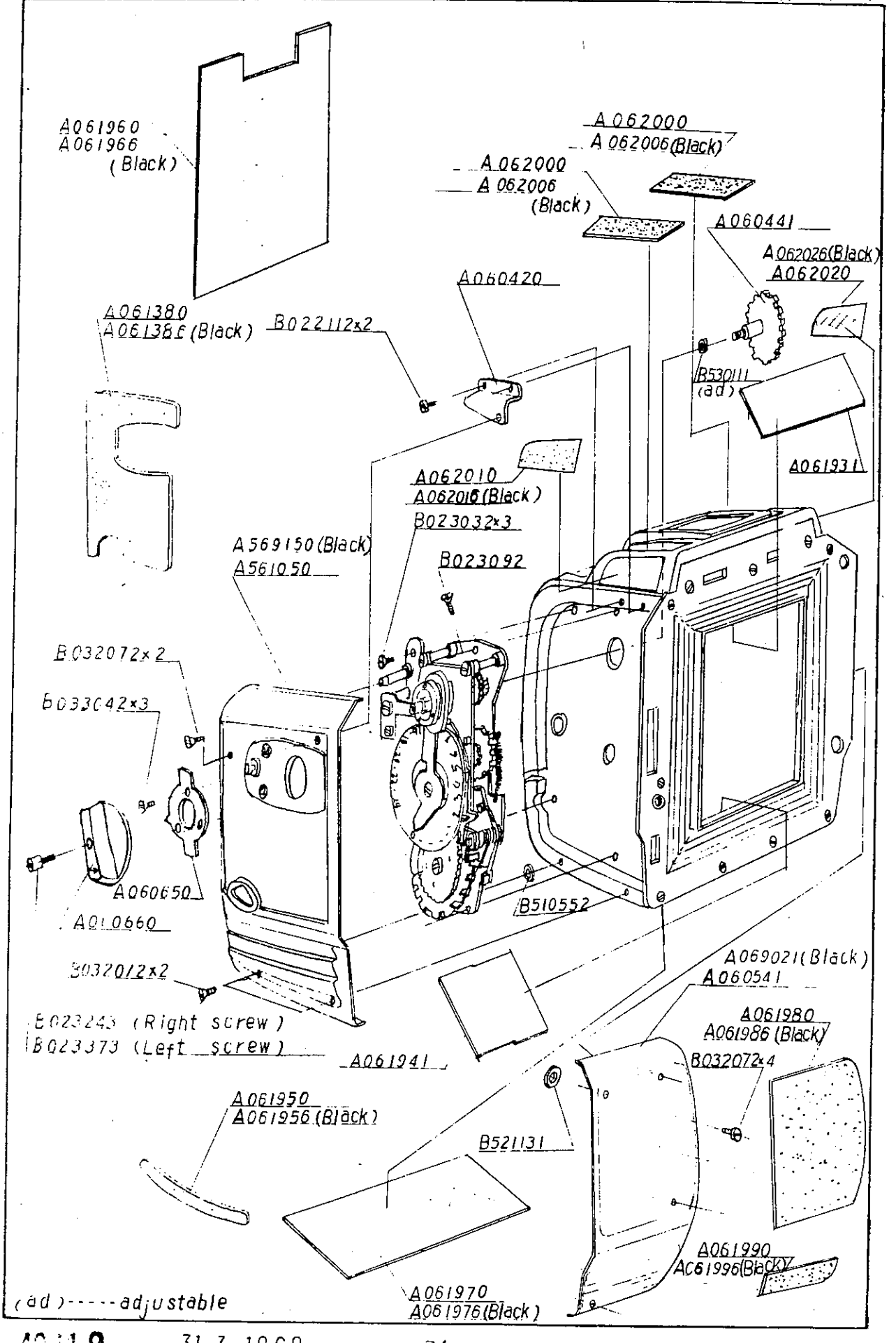
1. The course in which the motion is conveyed is shown by dotted lines and arrow marks on the dotted lines.

2. In the sectional illustrations of the systems, the initial motion is indicated by a thick arrow mark.

3. The diagram is based on shutter speeds ranging from 1/1000 sec. to 1/60 sec. In case of shutter speeds from 1/30 sec. to 1 sec. and X, the 2nd curtain starts its run at a delay of a given time through the function of the slow speed governor.

4. The standard speed of operation of the 1st and 2nd curtains is 15mm/54ms.

5. Structurally, the rate of movement of the S activation gear should not be exceeded by the movement of the 1st curtain.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A062000
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A062000
A062006
(Black)
A060441
A062026(Black)
A062020
A060420
A061380
A061385(Black)
B022112x2
B530111
(ad)
A061931
A062010
A062016(Black)
B023032x3
A569150(Black)
A561050
B023092
B032072x2
B033042x3
A060650
A010660
B032072x2
B023243 (Right screw)
B023373 (Left screw)
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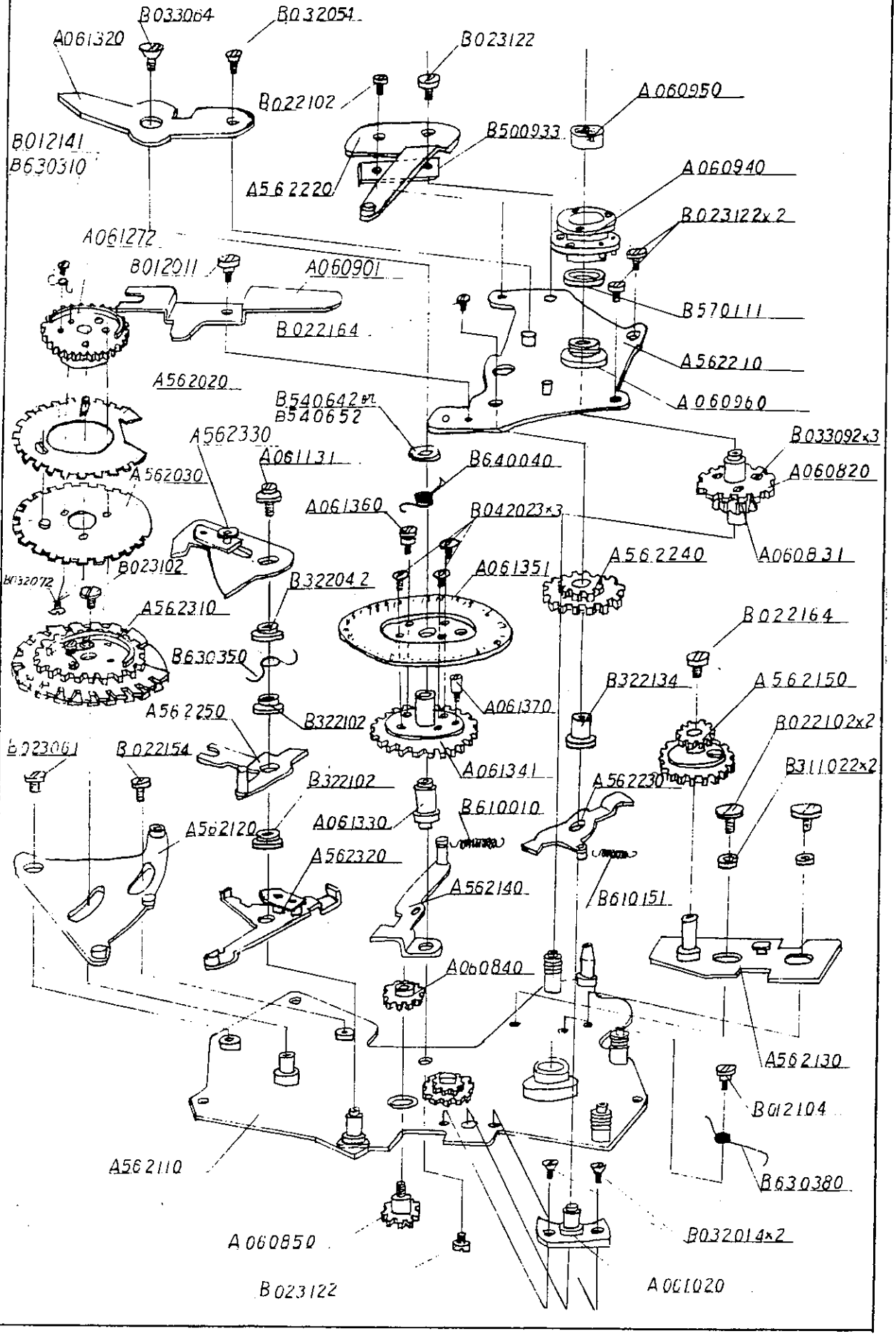
B510552
A069021(Black)
A060541
A061980
A061986 (Black)
B032072x4
A061950
A061956 (Black)
B521131
A061990
A061996(Black)
A061970
A061976(Black)
(ad)-----adjustable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B570111
B022164
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B540642
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B640040
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B042023x3
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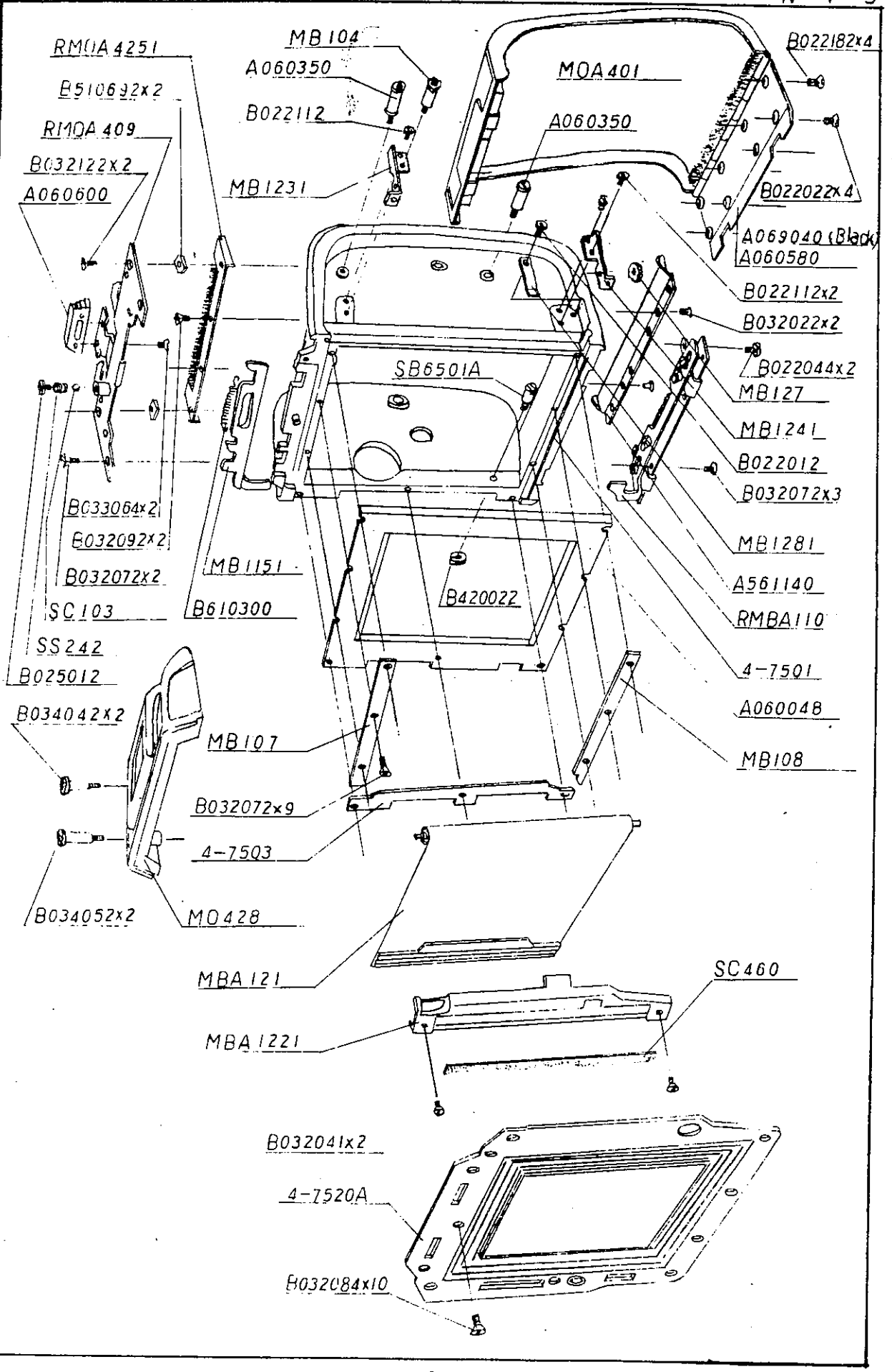
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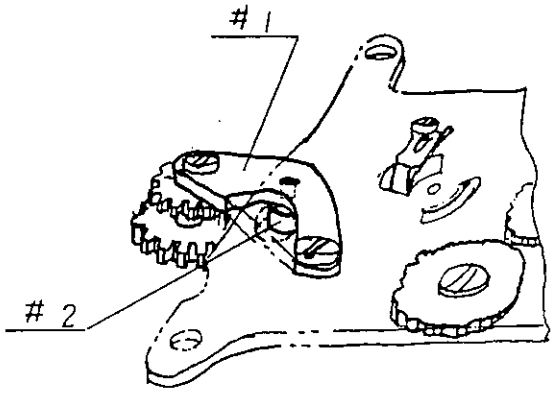
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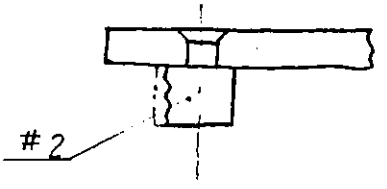
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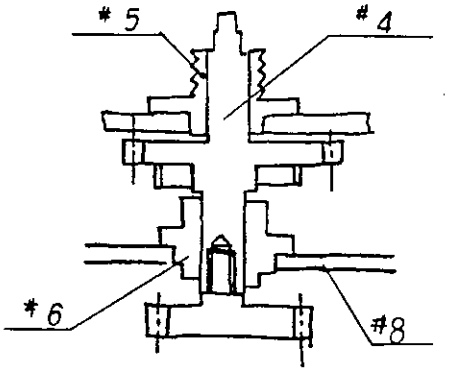
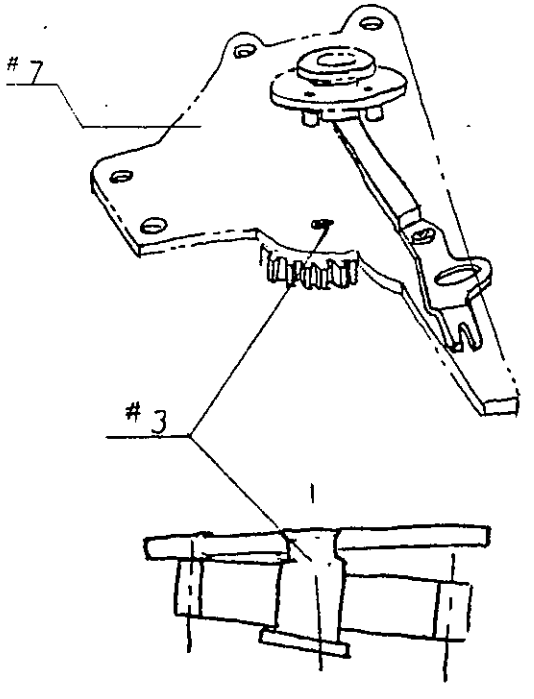

#5
#4
#6
#8


#7
#3

Malfunction: Excessive resistance of film advance mechanism of film back and scraping sensation felt in the course of film wind.

Method of checking: (Cause)	Method of repair:
1. Excessively tight gearing with Film Back Gear due to deformation of Pin #2 of Body F Film Advance Conveyor Lever (Upper) #1 (See Fig. 1).	1. Replace F Film Advance Conveyor Lever (Upper) Unit #1.
2. Improper gearing due to inclination of Stud #3 of Film Back Intermediate Film Advance Gear #4 (See Fig. 3).	2. Replace Upper Plate Unit #7.
3. Improper gearing due to inclination of Main F Film Advance Gear #4 (See Fig. 3).	3. Replace Upper Plate Unit #7.
4. Film advance fails to function smoothly due to excessive friction between Main F Film Advance Gear #4 and Upper #5 and Lower #6 Bearings (See Fig. 3).	4. After reshaping Upper #5 and Lower #6 Bearings, apply lubricant. Replace either Main F Film Advance Gear #4 or Upper Plate Unit #7, Base Plate Unit #8 and Main F Film Advance Gear #4.

Parts Nos.

#1 ..... A553180
2 ..... A553180
3 ..... A562210
4 ..... A060820
5 ..... A060960
6 ..... A562110
7 ..... A562210
8 ..... A562110

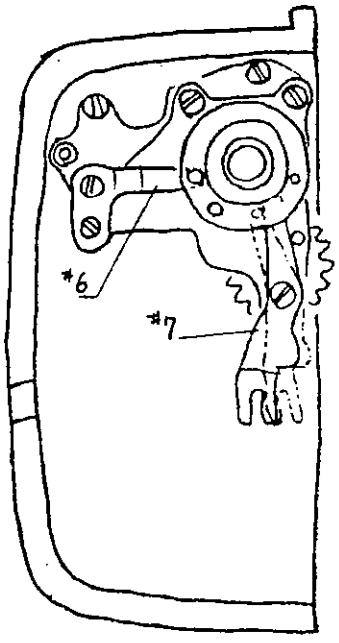


fig. 1

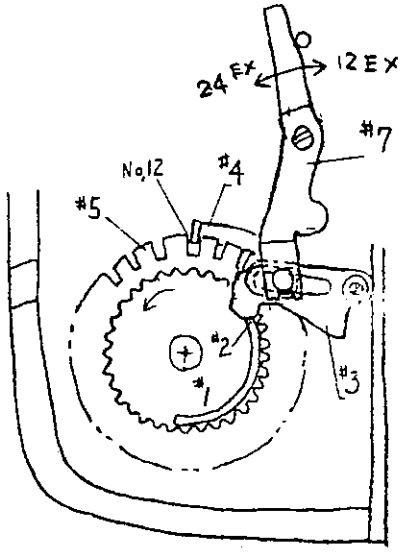


fig. 2

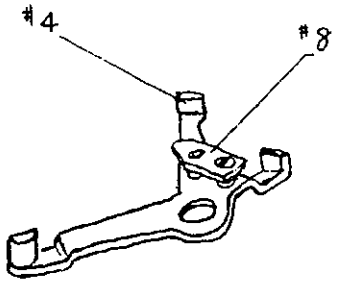


fig. 3

Malfunction: When adjusted to 12 exposures, automatic stop at the twelfth frame or free wind on and after the thirteenth frame fails to function properly.

Method of checking:

1. Film advance mechanism sometime fails to stop at the twelfth frame.

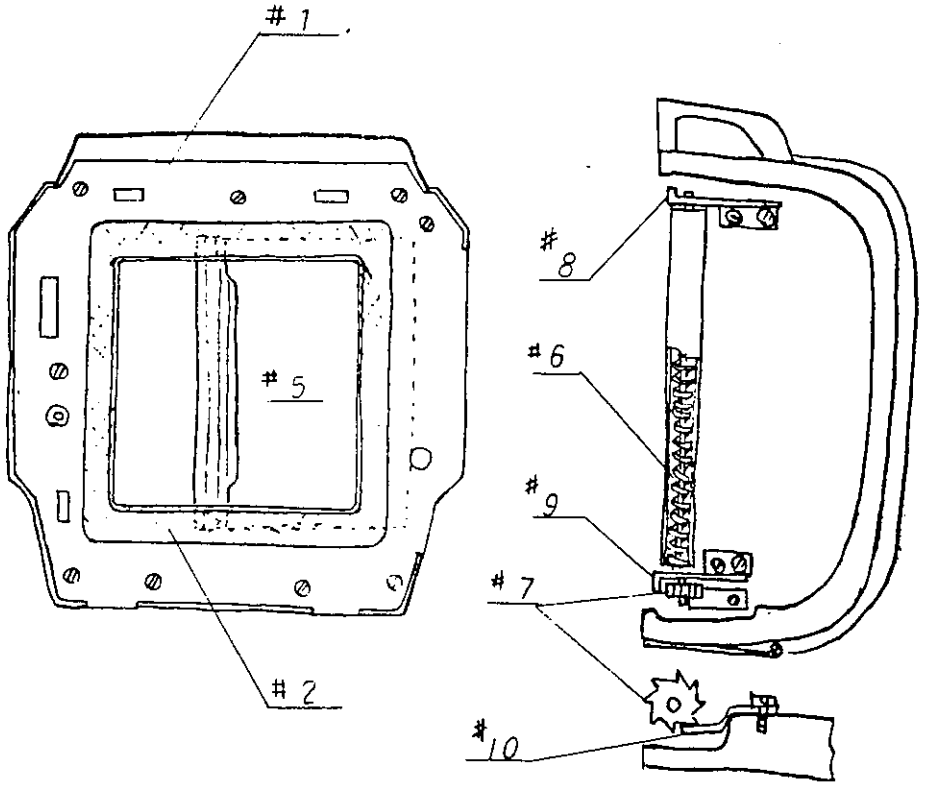
2. Film advance mechanism stops or fails to function smoothly at the thirteenth frame.

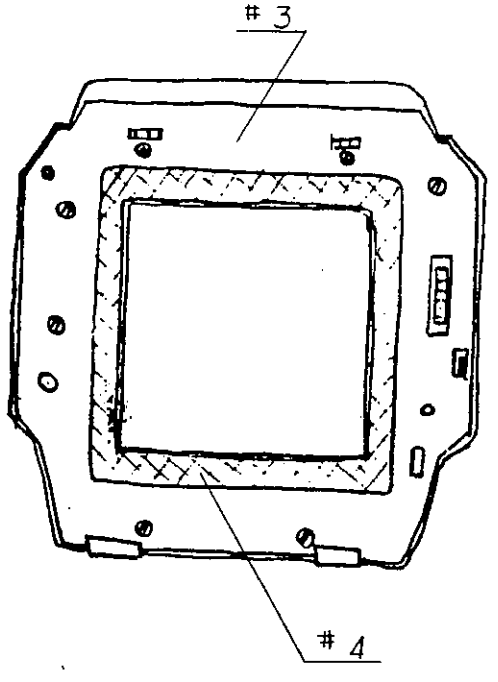
Check whether the 12 and 24 exposure switch lever clicks in properly (See Fig. 1).

Cause:	Method of repair:
1. Side #2 of Calibration Gear #1 is in contact with and pushes up Free Wind Lever #3, Preventing the tip of Calibration Lever #4 from properly engaging the No.12 Cut-out of Calibration Plate #5 (See Fig. 2)	1. Slightly file off Side #2 of Calibration Gear.
2. a. Improper positioning of Switch Lever #7 due to dislodging of Switch Clickstop Spring #6.	2. a. Apply bonding agent to the appropriate surface of Spring #6 and fix it securely into position.
b. Free Wind Operation Stub #8 featured on Calibration Lever #4 is not retained securely in position (See Fig. 3).	b. Tighten the setscrew securely.

Parts Nos.

#1 ..... A56231[illegible]
3 ..... A562330
4 ..... A562010
5 ..... A562020
6 ..... A562220
7 ..... A060501
8 ..... A562300


#1
#5
#2
#8
#6
#9
#7
#10


#3
#4

Malfunction: Light Shield Screen of film back fails to reset.

Cause:	Method of repair:
1. Dent in lined section #2 of Front Plate #1 of film back.	1. Reshape Front Plate #1 of film back into proper form.
2. Bulge at lined section #4 of Rear Plate #3 of camera body.	2. Reshape Rear Plate #3 of camera body into proper form.
3. Weak tension of Spring #6 providing power to open Light Shield Screen #5.	3. Turn Ratchet Wheel #7 to increase tension of Spring #6.

Parts Nos.

#1 ..... A591210

3 ..... A557240

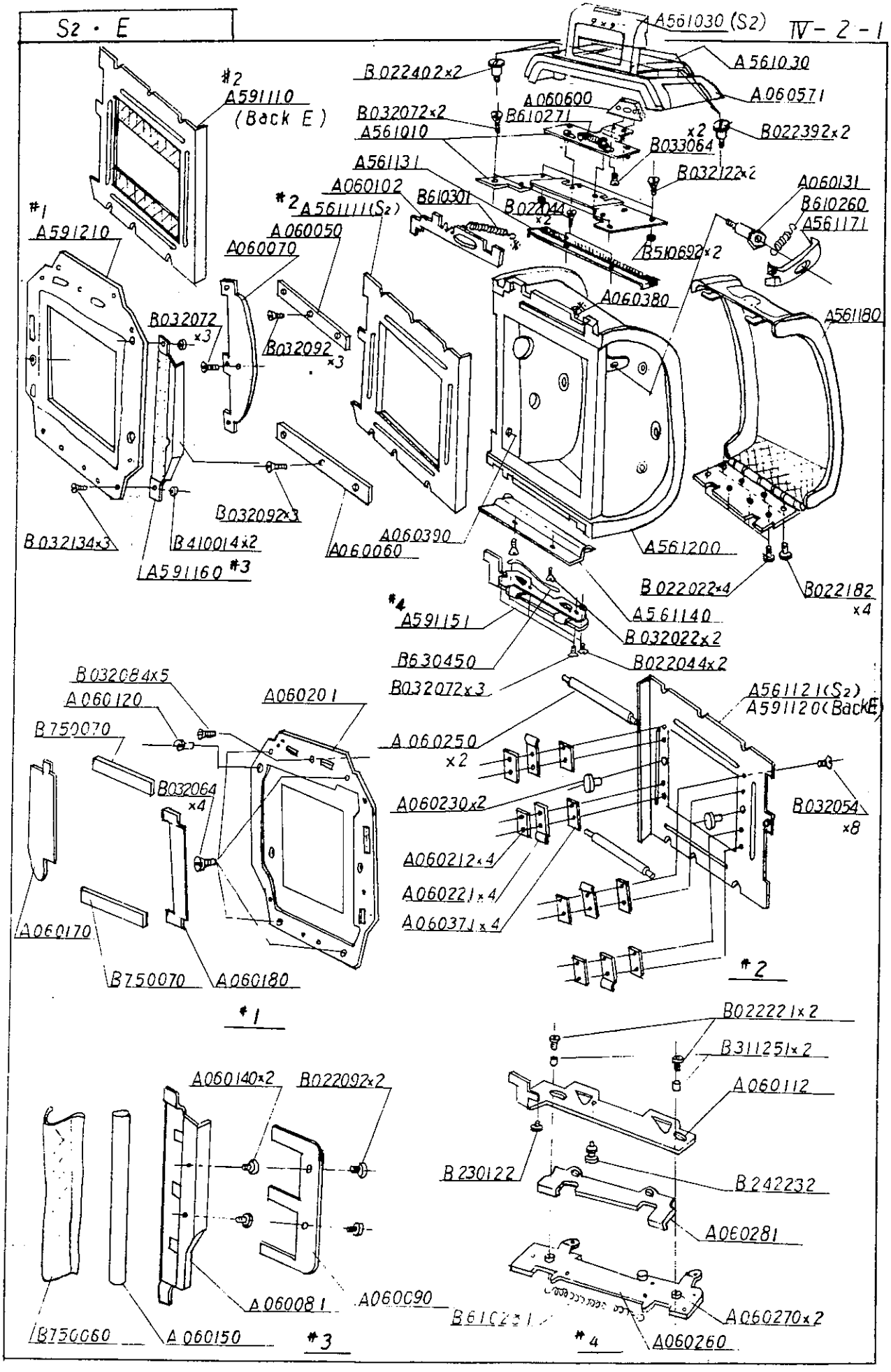
5 ..... (up to CM81500) MBA121

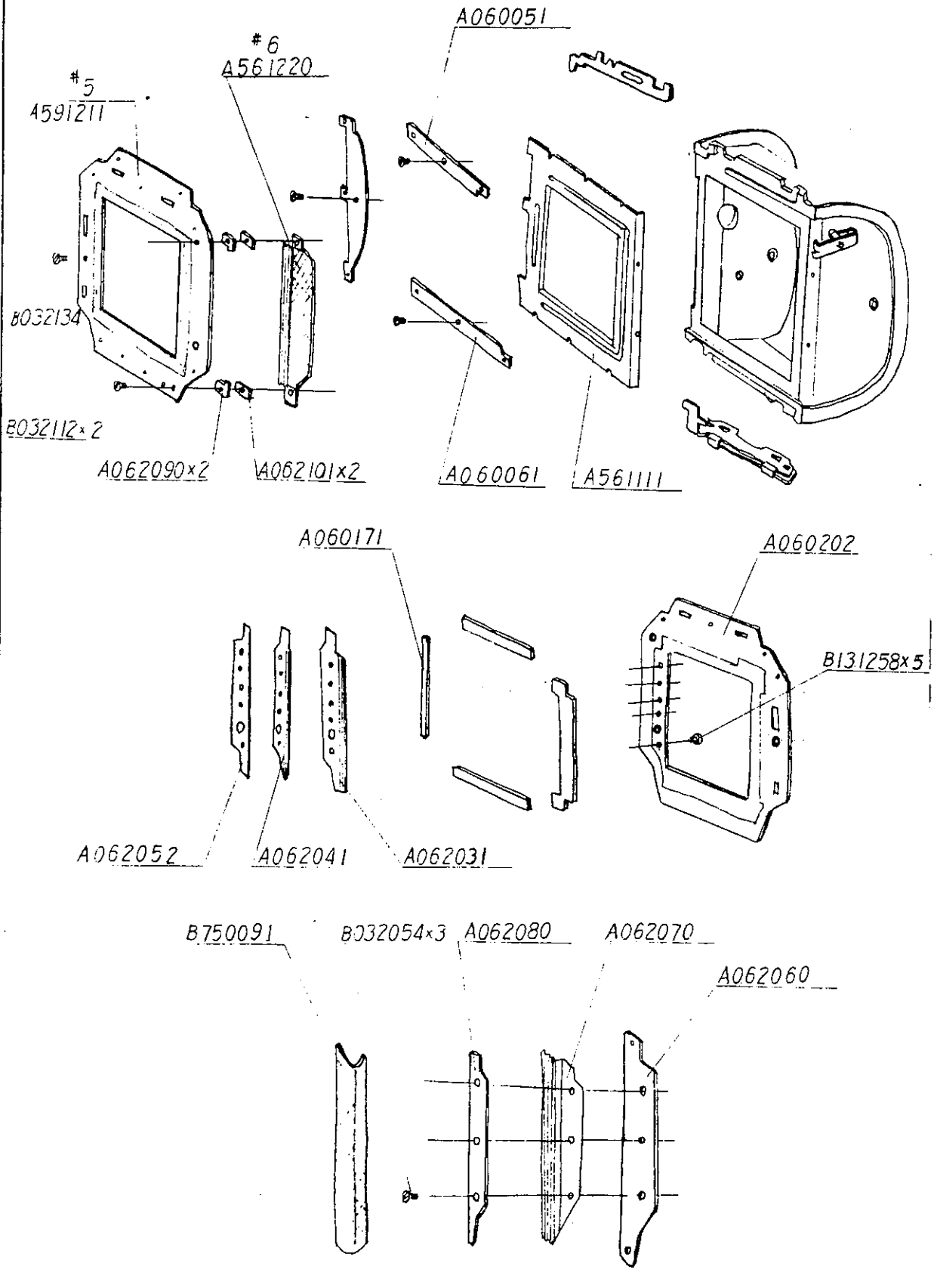
7 --------- MB127

8 --------- MB1231

9 --------- MB1241

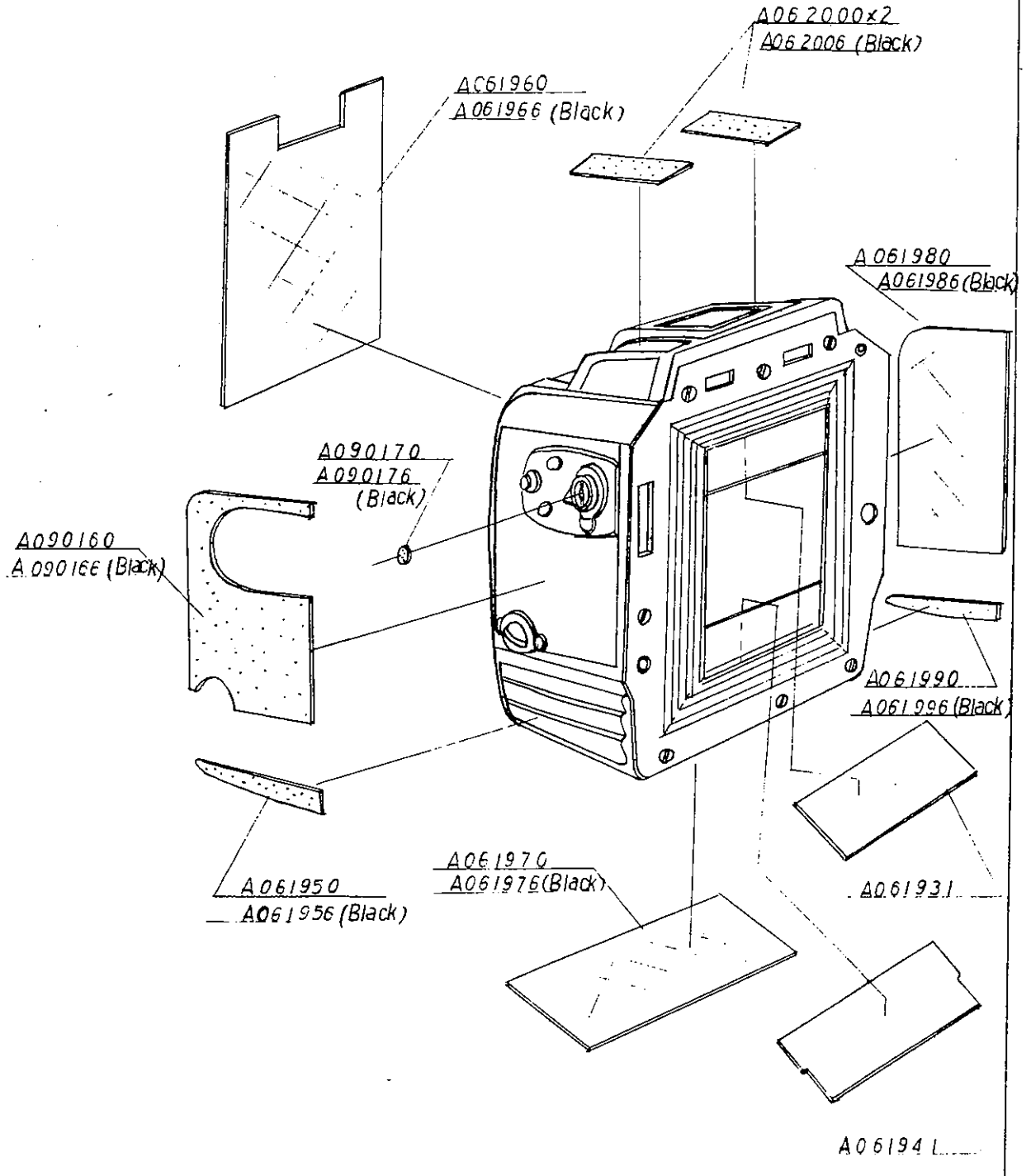
10 --------- MB1281

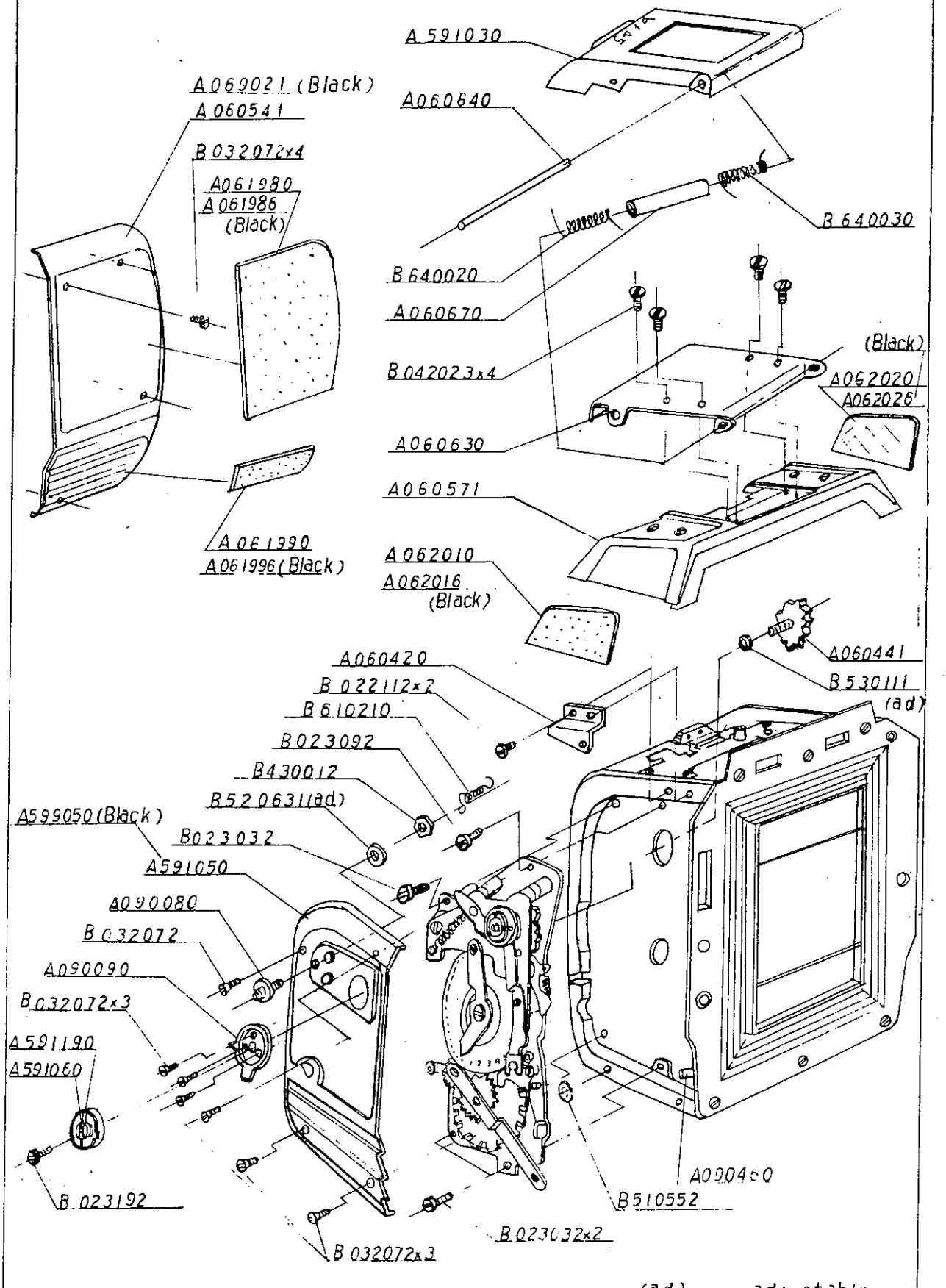

A561030 (S2)
A561030
A060571
A060600
B610271
B022402×2
B032072×2
A561010
B033064
B022392×2
B032122×2
A561131
A060102
B610301
A561111(S2)
B022044×2
A060131
B610260
A561171
B510692×2
#1
A591210
#2
A591110
(Back E)
A060050
A060070
B032072×3
B032092×3
A060380
A561180
B032092×3
B032134×3
B410014×2
A591160 #3
A060390
A060060
A561200
B022022×4
B022182×4
#4
A591151
A561140
B032022×2
B630450
B022044×2
B032072×3
B032084×5
A060120
A060201
B750070
A060250×2
A561121(S2)
A591120(Back E)
B032064×4
A060230×2
B032054×8
A060212×4
A060221×4
A060371×4
A060170
B750070
A060180
#1
#2
B022221×2
B311251×2
A060112
B230122
B242232
A060281
A060140×2
B022092×2
A060081
A060090
B750060
A060150
#3
B610231
A060270×2
A060260
#4



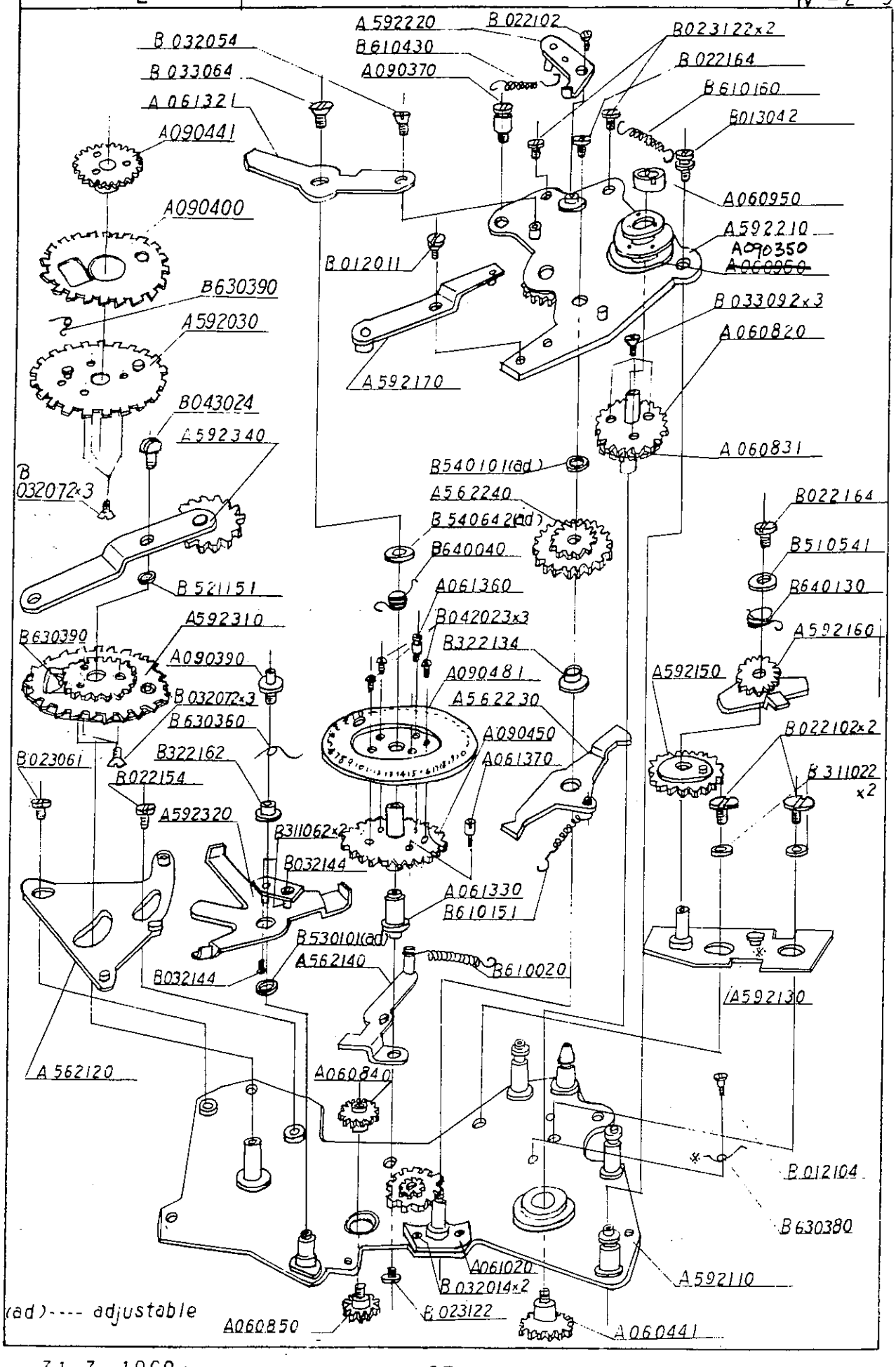
#1 Ass'y A591210 (up to CM 105000) ⟶ #5 Ass'y A591211 (from CM 105001)

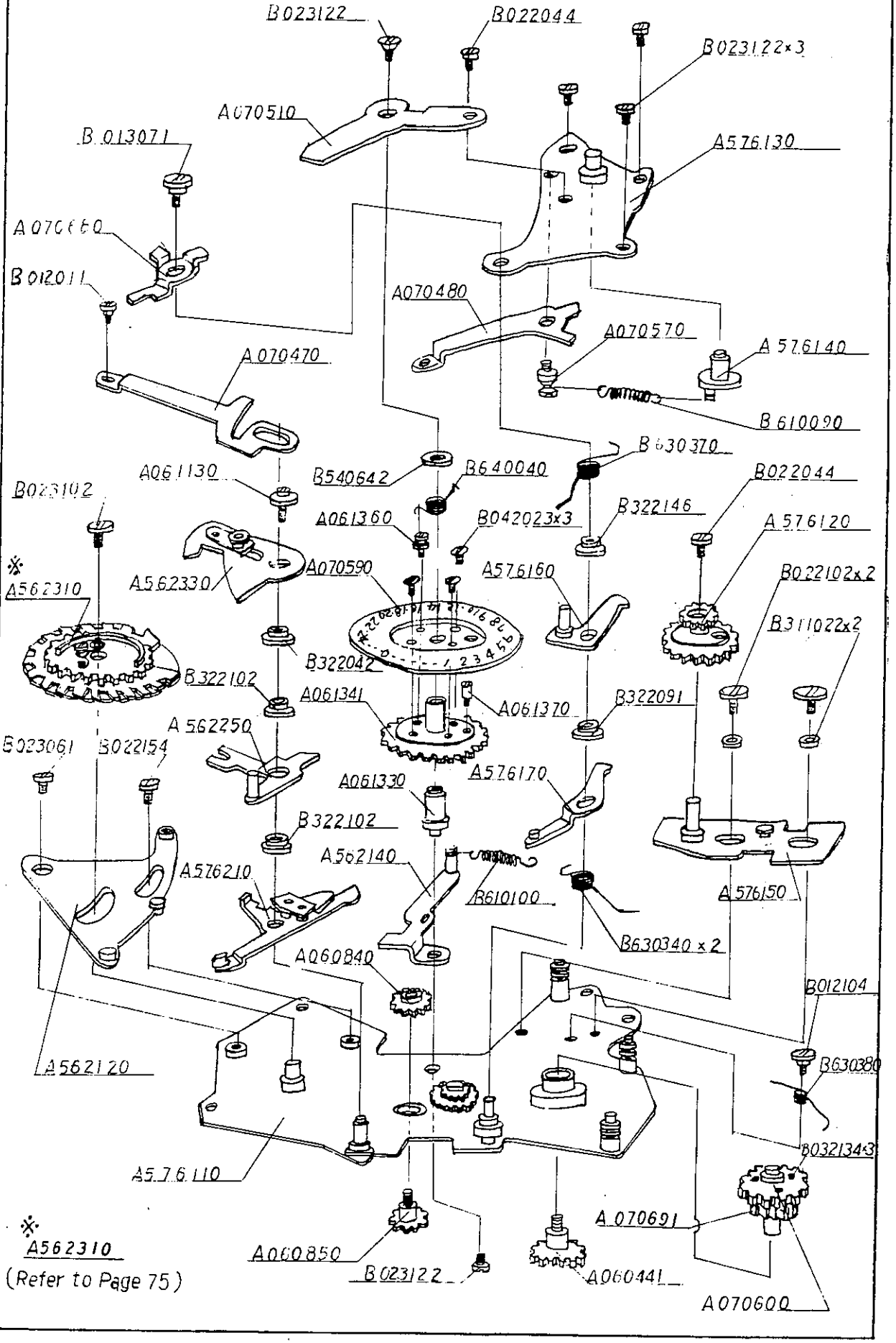
#3 Ass'y A591160 (up to CM 105000) ⟶ #6 Ass'y A561220 (from CM 105001)

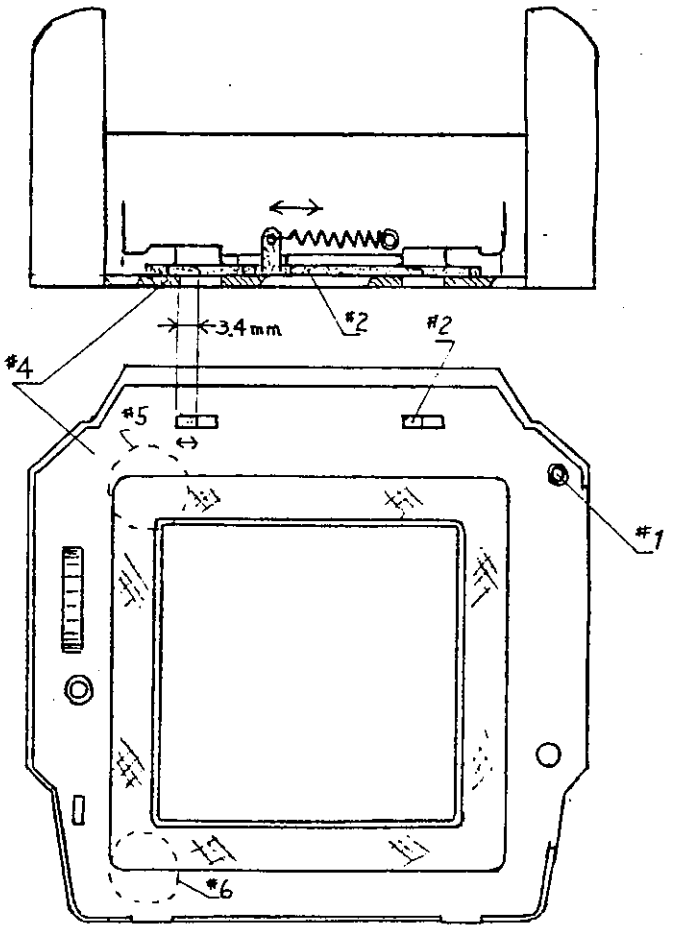

A06 2000×2
A06 2006 (Black)
AC61960
A061966 (Black)
A061980
A061986 (Black)
A090170
A090176
(Black)
A090160
A090166 (Black)
A061990
A061996 (Black)
A061970
A061976 (Black)
A061931
A061950
A061956 (Black)
A06194 L

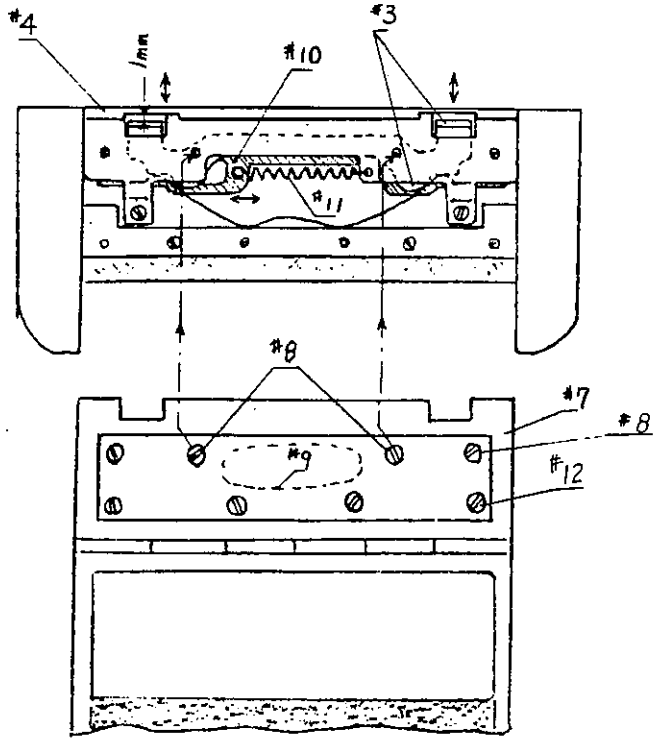


(ad) ---- adjustable


A592220
B022102
B610430
A090370
B032054
B033064
A061321
A090441
B023122×2
B022164
B610160
B013042
A060950
A592210
A090350
A060960
A090400
B012011
B630390
A592030
B033092×3
A060820
A592170
B043024
A592340
B032072×3
A060831
B540101(ad)
A562240
B540642(ad)
B022164
B640040
B510541
B521151
A061360
B640130
A592310
B042023×3
A592160
B630390
B322134
A090390
A090481
A592150
B032072×3
A562230
B630360
A090450
B022102×2
B322162
A061370
B023061
B022154
B311022
×2
A592320
B311062×2
B032144
A061330
B610151
B530101(ad)
A562140
B610020
B032144
A592130
A562120
A060840
B012104
B630380
A061020
A592110
B032014×2
B023122
A060850
A060441
(ad)---- adjustable


B023122
B022044
B023122×3
A070510
B013071
A576130
A070660
B012011
A070480
A070570
A576140
A070470
B610090
B630370
A061130
B540642
B640040
B023102
B022044
A061360
B042023×3
B322146
A576120
※
A562310
A562330
A070590
A576160
B022102×2
B322042
B311022×2
B322102
A061341
A061370
B322091
A562250
B023061
B022154
A061330
A576170
B322102
A562140
A576210
B610100
A576150
B630340×2
A060840
B012104
A562120
B630380
B0321343
A576110
※
A562310
(Refer to Page 75)
A060850
B023122
A060441
A070691
A070600


3.4 mm
#1
#2
#2
#4
#5
#6


#4
1mm
#10
#3
#11
#8
#7
#8
#9
#12

Malfunction: Film back rattles due to improper coupling with body (giving rise to possibility of light leakage).

Method of checking: Pull film back away from body. Draw out and insert dark slide alternately without mounting film back on camera body (Dark slide can be removed by pressing Pin #1 with tip of thin stick) and check whether Upper Coupler #2 and Lower Coupler #3 operate over the designated range (See figure).

Cause:	Method of repair:
1. Function of #2 is hampered by dent on Section #5 of Front Plate #4 film back.	1. Reshape to mend the dent.
2. Function of #3 is hampered by dent on Section #6 of Front Plate #4 of film back.	2. Reshape to mend the dent.
3. Function of #3 is hampered due to the fact that the tip of Screw #8 fixing Base Cover #7 in position is too long.	3. File off the tip of Screw #8.
4. Dent at Section #9 of Base Cover #7 impedes the function of Coupling Plate #10 or Spring #11.	4. Reshape the pertinent section.

Parts Nos.

#2 ..... A060102
3 ..... A59113
4 ..... A591210
7 ..... A060580
8 ..... B022022×3
10..... A060112
11..... B610281
12..... B022182×4

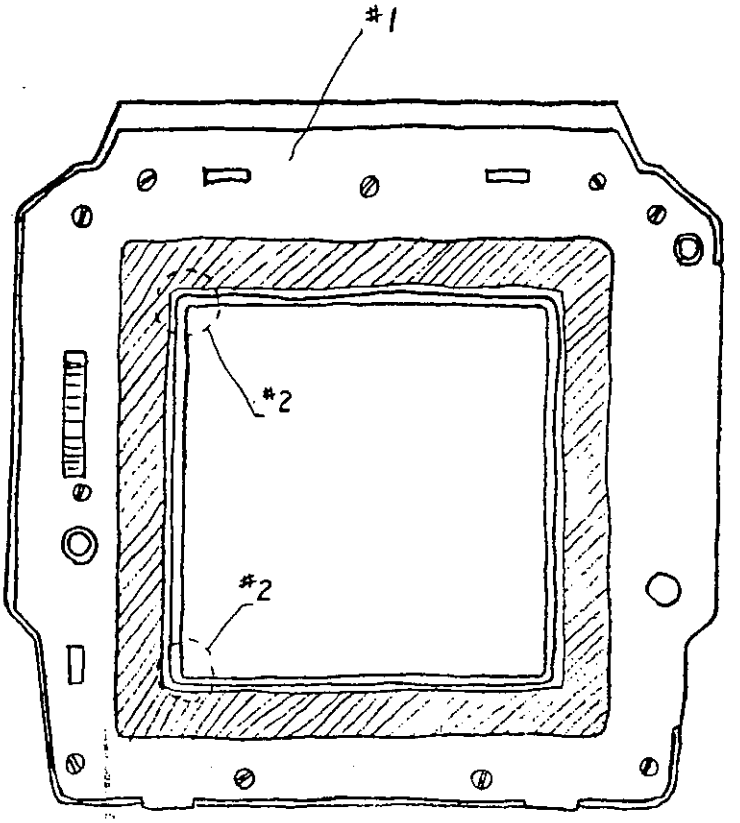


fig. 1

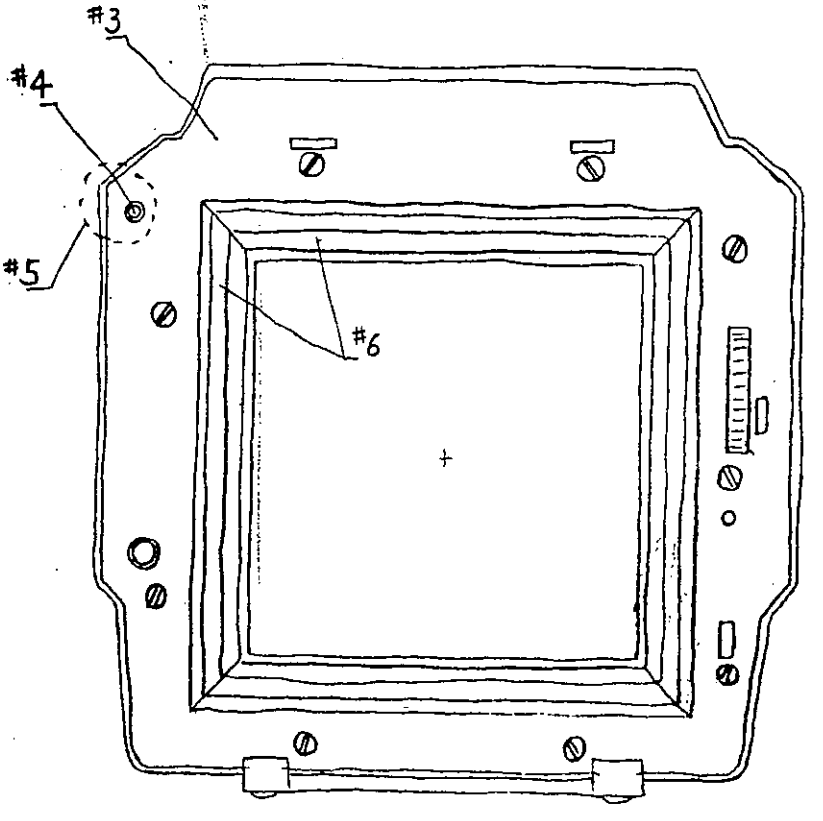


fig. 2

Malfunction: Body and film back fails to couple properly. (Dark slide cannot be withdrawn.)

Method of checking: Because dark slide cannot be withdrawn, film back falls off even if it is pressed against the body.

Cause:	Method of repair:
1. Coupling surfaces fail to set flush against each other because Front Plate #1 of film back (Fig. 1) and Rear Plate #3 of body (Fig. 2) are not flat and plane.	1. Reshape the surfaces into proper form or make replacement of the pertinent parts.
2. Corners #2 of the mask section of Front Plate #1 of film back are crushed and deformed.	2. File off the section where the edge flanges out.
3. Pin #4 on Rear Plate #3 of body fails to protrude sufficiently from surface because Section #5 bulges out.	3. Mend the swelling to bring out Pin #4 sufficiently.
4. Accumulation of foreign matters in Light Shielding Groove #6 of #3.	4. Clean off all foreign matters.

Parts Nos.

#1 ..... A591210
3 ..... A557240
4 ..... A557240

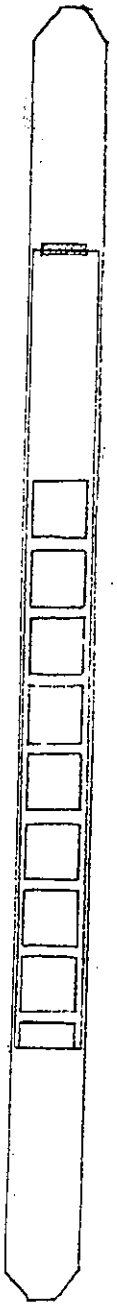


fig. 1

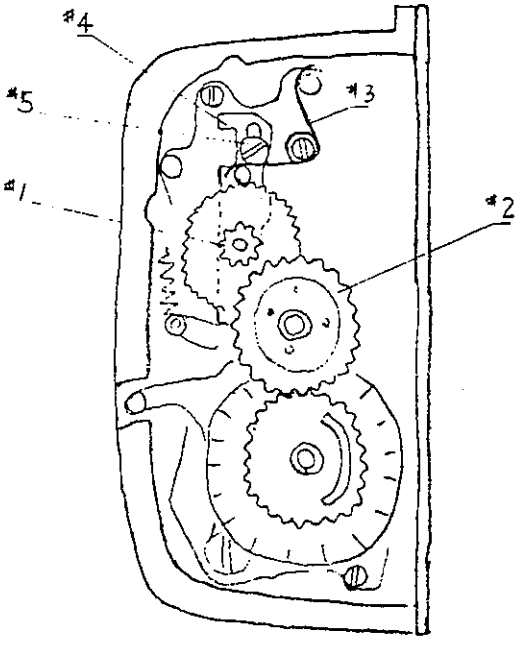


fig. 2

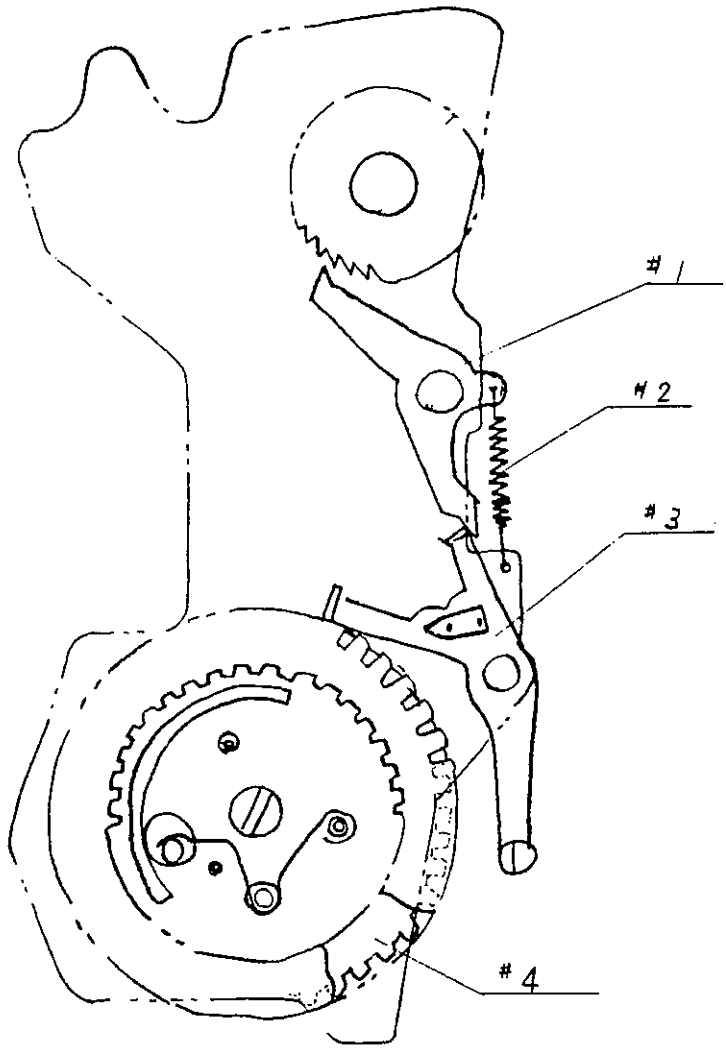
Malfunction: Automatic stop for the first frame functions belatedly, resulting in failure to register the specified number of frames on the film (See Fig. 1).

Method of checking: This is attributed to the film calibration system failing to function despite the fact that the film is advancing properly, and is caused by improper engagement of the gears driving the calibration gear block.

Cause:	Method of checking:
1. Weak recoiling power or disengagement of Spring #3 serving to press Calibration Gear #2 (See Fig. 2).	1. Adjust Spring #3 to assure smooth function.
2. Lever #4 which features the shaft of Gear #1 is held down tightly to move smoothly (See Fig. 2).	2. Reform the guide slot of Lever #4.

Parts Nos.

#1 ..... A562150
2 ..... A061341
3 ..... B630380
4 ..... A562130
5 ..... B022102


#1
#2
#3
#4

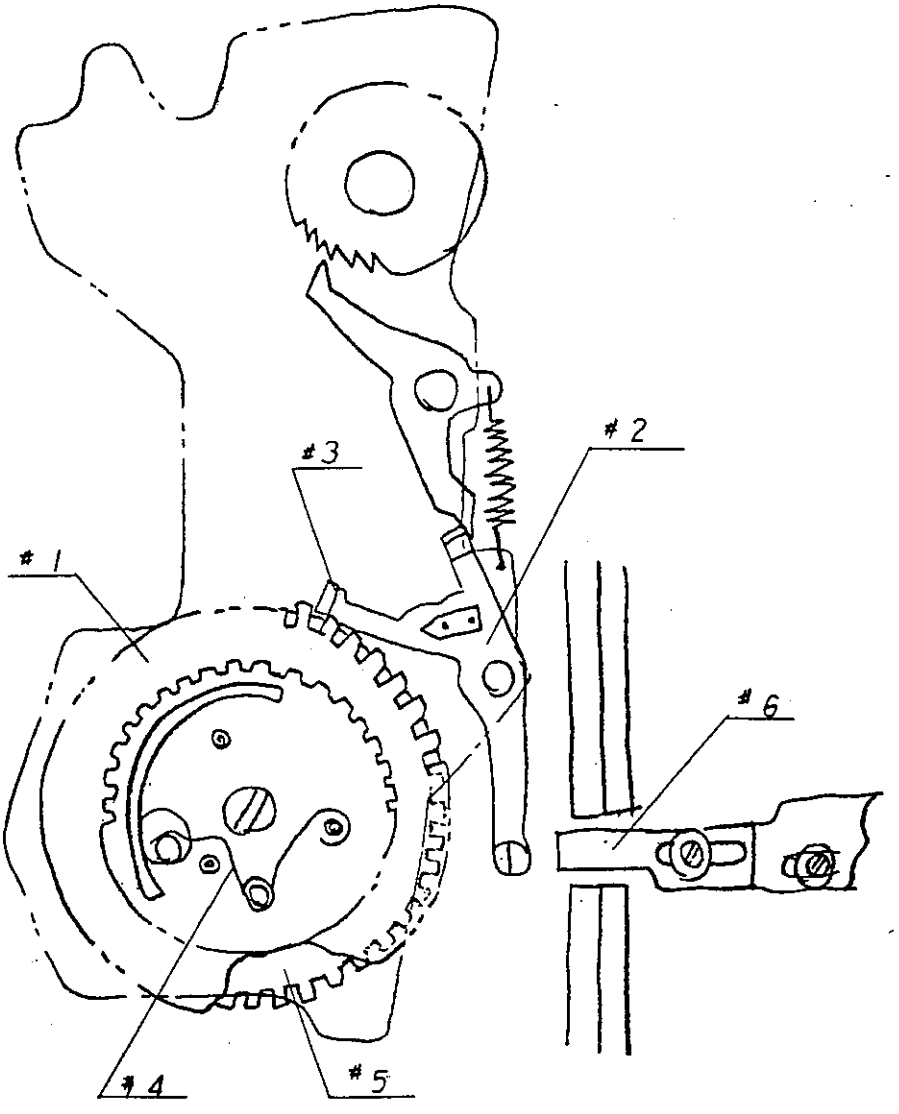
Malfunction: Overlapping of frames (Overlaps at irregular intervals)

Method of checking: Film Advance Stopper Claw #1 fails to engage smoothly.

Cause:	Method of repair:
1. a. Weak tension of Spring #2.	1. a. Regulate Spring #2 so as to provide greater tension.
b. Deformation of Stopper Claw #1.	b. Reshape Stopper Claw #1 into proper form.
c. Improper function of Calibration Lever #3.	c. Make adjustment to assure smooth function of Calibration Lever #3.
2. Deformation of Calibration Plate #4.	2. Reshape Calibration Plate #4 into proper form.

Parts Nos.

#1 ..... A562230
2 ..... B610151
3 ..... A562010
4 ..... A562030


#1
#2
#3
#4
#5
#6

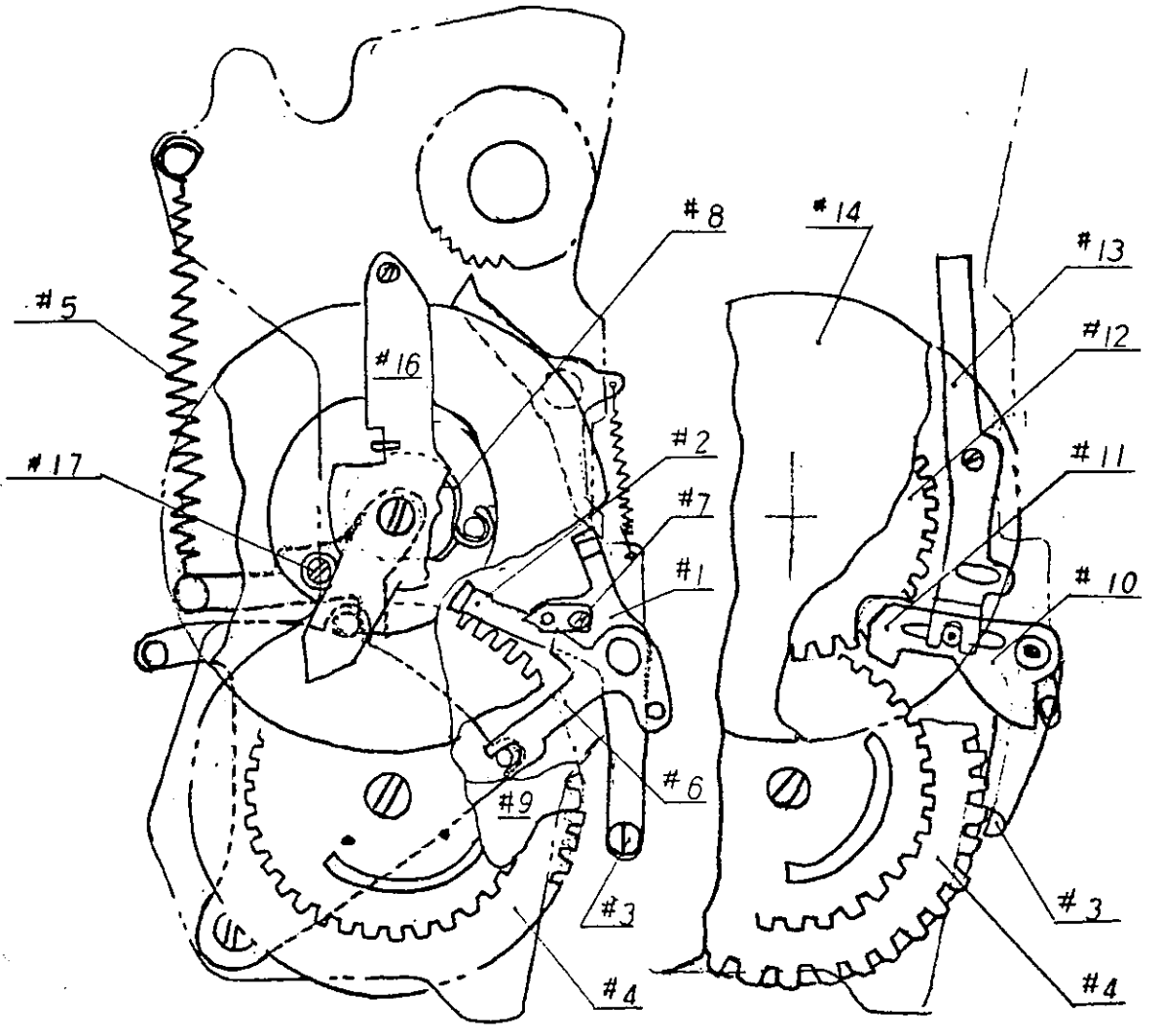
Malfunction: Overlapping of frames
(Frames overlap one over the other, showing hardly any trace of film advance.)

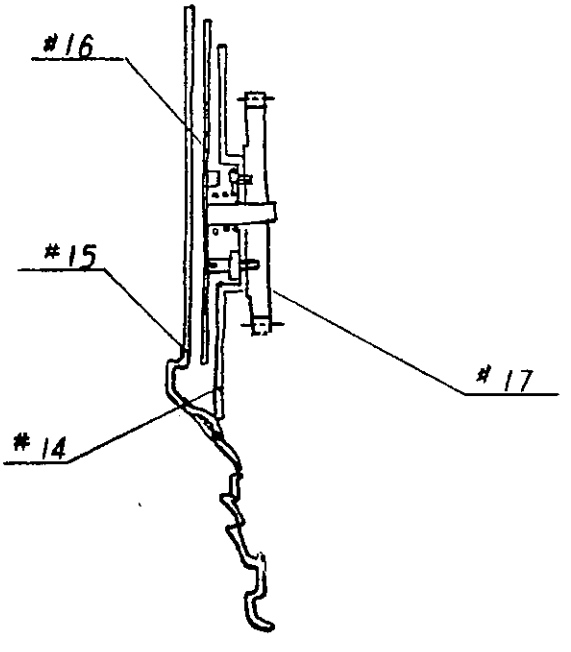
Method of checking: Tip #3 of Calibration Lever #2 disengages completely from cut-out of Calibration Plate #5 through function of F Film Advance Release Lever incorporated in the camera body, but resets into the same cut-out due to retarded function of #1.

Cause:	Method of repair:
1. a. Weak tension of Spring #4.	1. a. Regulate Spring #4 so as to provide greater tension.
b. Calibration Plate #5 and Auxiliary Calibration Plate #1 are in contact with each other.	b. Replace Calibration Plate Unit.
2. a. Deformation of Calibration Lever #2.	2. a. Reshape Calibration Lever #2 into proper form.
b. Deformation of F Film Advance Release Lever #6.	b. Reshape F Film Advance Release Lever #6 into proper form.

Parts Nos.

#1 ..... A562020
2 ..... A562010
4 ..... B630310
5 ..... A562030
6 ..... A550670


#8
#14
#13
#5
#16
#12
#2
#11
#17
#7
#1
#10
#6
#9
#3
#3
#4
#4


#16
#15
#17
#14

Malfunction: Exposure counter fails to reset to "0".

Cause:	Method of repair:
1. Tip #2 or #3 of Calibration Lever #1 comes into contact with Auxiliary Calibration Plate #4.	
a. Weak tension of Starter Spring #5.	1. a. Regulate Starter Spring #5 so as to provide greater tension.
b. Deformation of Calibration Lever #1.	b. Reshape Calibration Lever #1 into Proper form.
c. Deformation of Starting Relay Lever #6.	c. Reshape Starting Relay Lever #6 into proper form.
d. Loosening of Screw #7 of Calibration Lever #1.	d. Tighten Screw #7 securely.
2. Weak tension of Resetting Spring #8 of Counter Plate.	2. Regulate Resetting Spring #8 of Counter Plate so as to provide greater tension.
3. Starting Relay Lever #6 comes into contact with lower surface of Calibration Plate #9 due to deformation of the lever.	3. Reshape Starting Relay Lever #6 into Proper form.
4. Tip #11 of Free Wind Lever #10 comes into contact with Counter Gear #12.	4. Readjust the seating of Free Wind Lever #10 in proper position.
5. Switch Lever #13 comes into contact with the lower surface of Counter Plate #14 due to deformation of the lever.	5. Reshape Switch Lever #13 into proper form.
6. Side Cover #15 comes into contact with Counter Plate #14 due to deformation.	6. Reshape Side Cover #15 into proper form.
7. Indicator Plate #16 comes into contact with Stopper Screw #17 of Counter Plate #14.	7. Reshape Indicator Plate #16 into proper form.

Parts Nos.

#1 ..... A562010
4 ..... A562020
5 ..... B610010
6 ..... A562250
7 ..... B030144
8 ..... B640030

#9 ..... A562030 ~ A562310
10..... A562330
12..... A061341
13..... A060901
14..... A061351
15..... A561050
16..... A061320
17..... A061370

*(ad)---adjustable

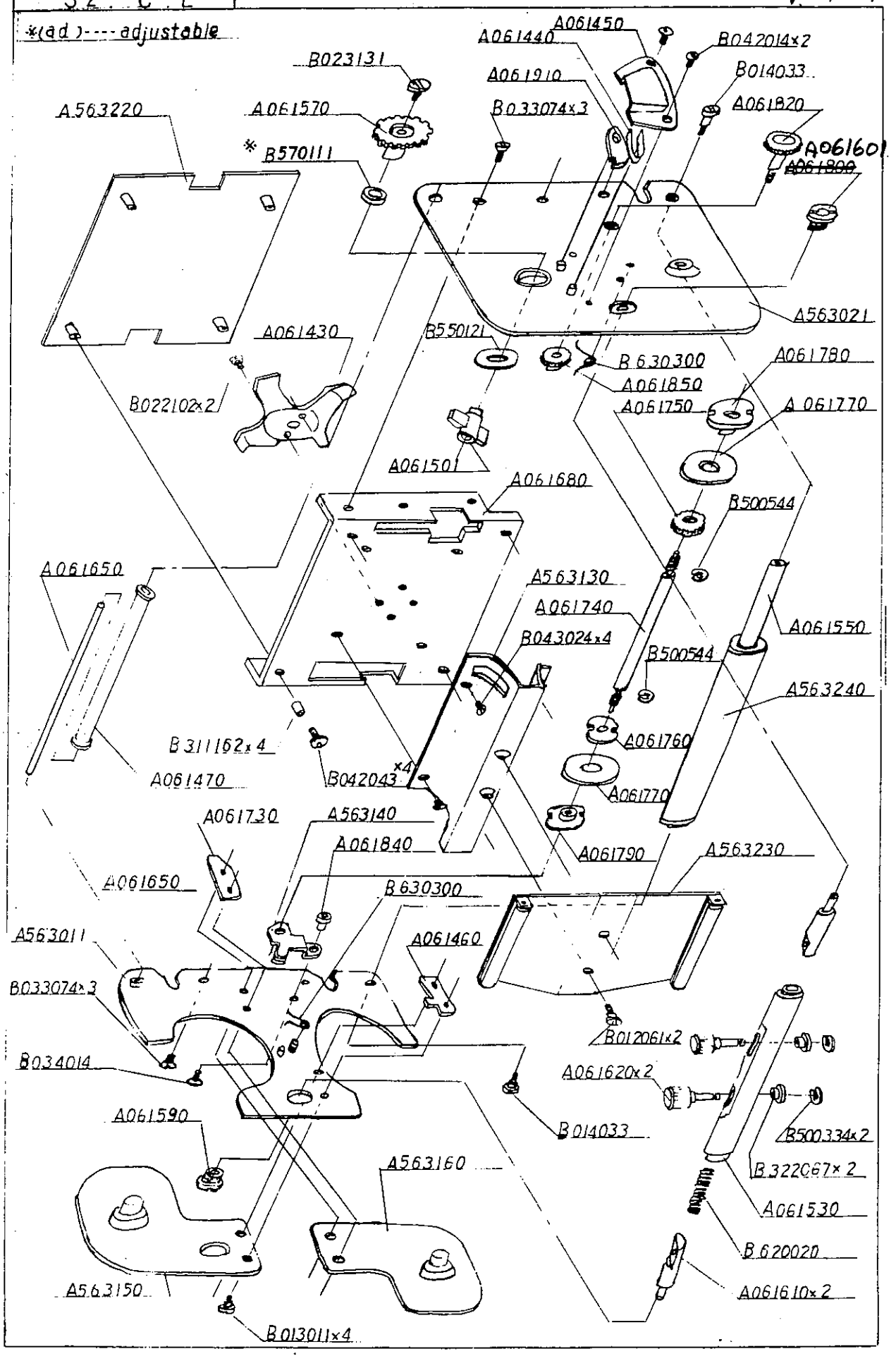


fig.1

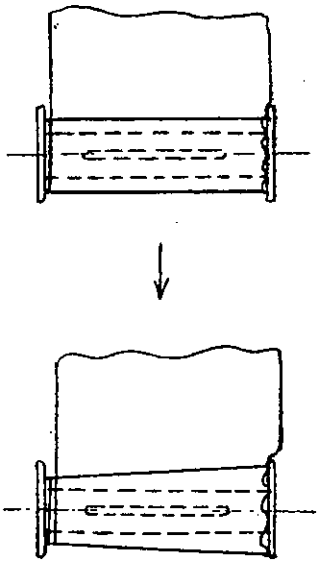


fig.2

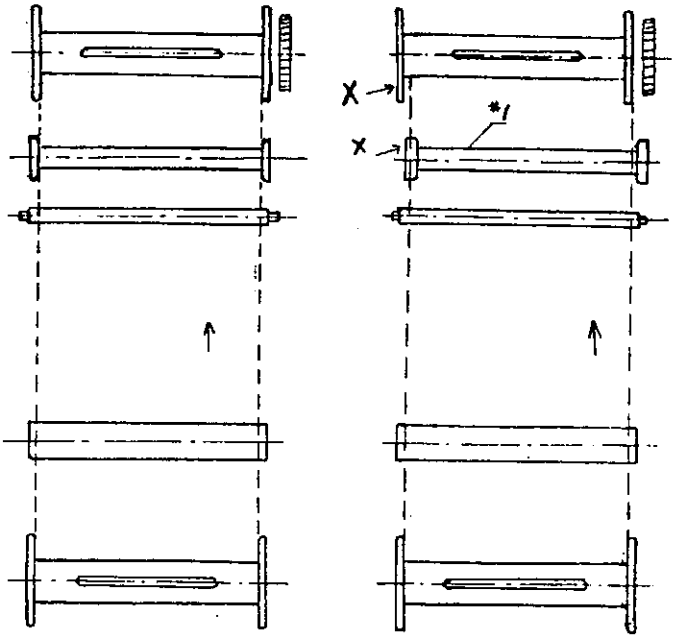


fig.3

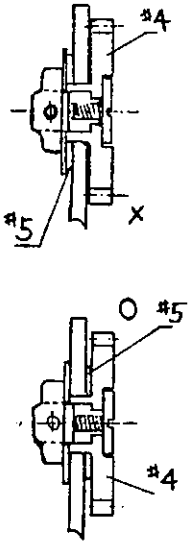
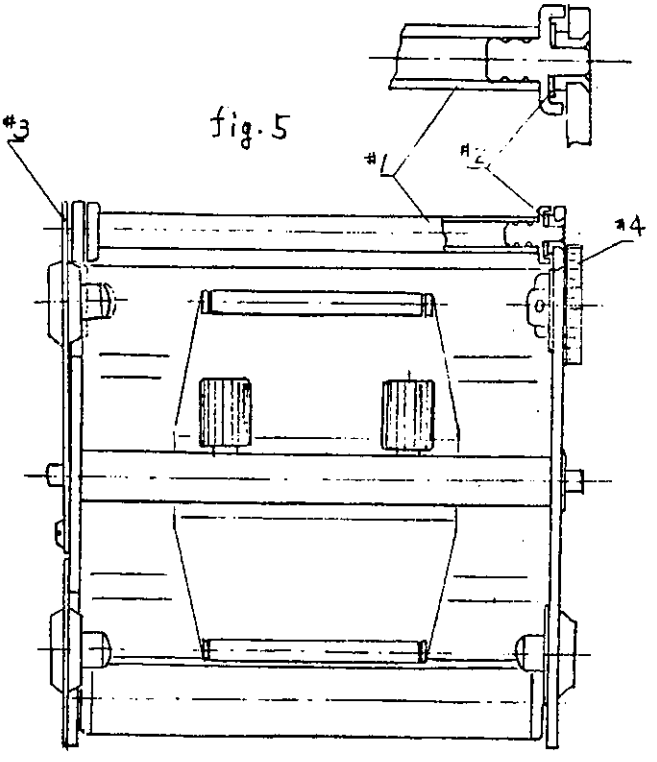


fig.4

fig.5



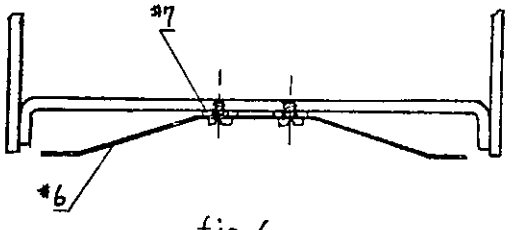


fig.6

Malfunction: Jagged film edge.

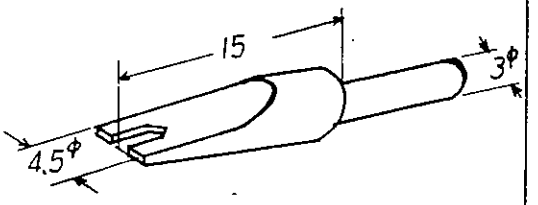
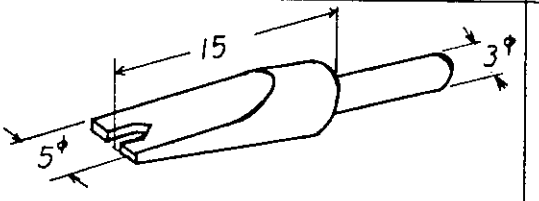
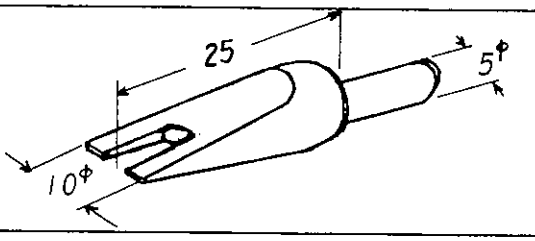
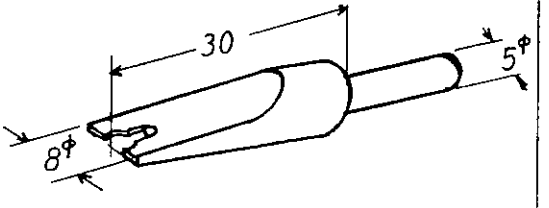
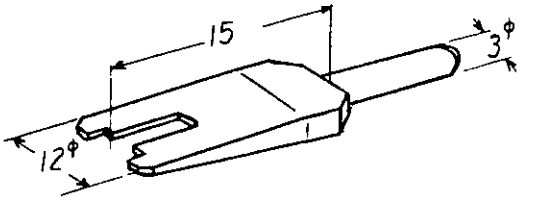
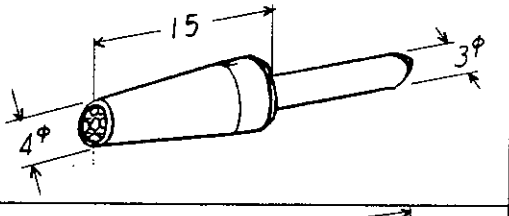
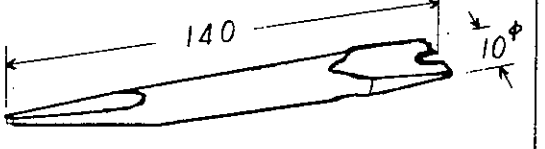
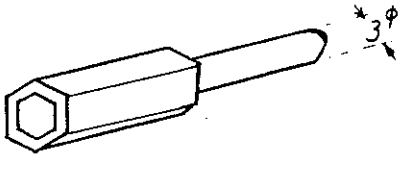
Method of checking: Load a test film (or leader paper wound on a spool) and check the film advance while keeping the rear cover opened. This deficiency is attributed to the tendency of the film or leader paper to shift off the center in either direction, with the result that ruffles form on the edge where it comes into contact with the spool flange. In the course of film wind, the ruffled edges tear and pile up one on top of the other, forming a taper and resulting in uneven tension on the film which in turn increases the ruffling on the edge (Fig. 1).
This is caused by improper alignment of the spool and rollers, improper axial positioning (Fig. 2); uneven pressure of the right and left sections of the pressure plate.

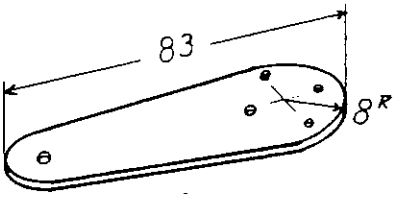
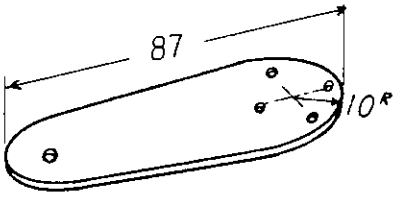
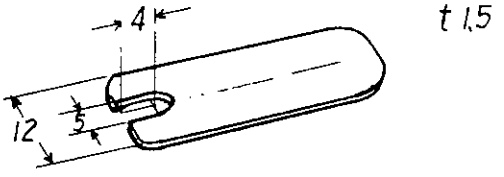
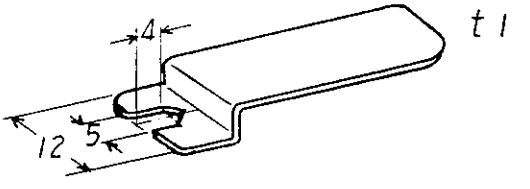
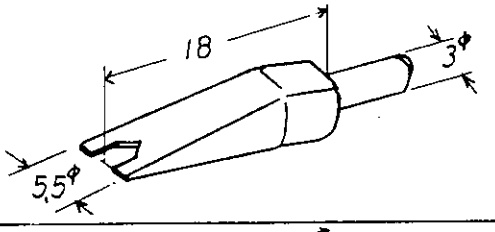
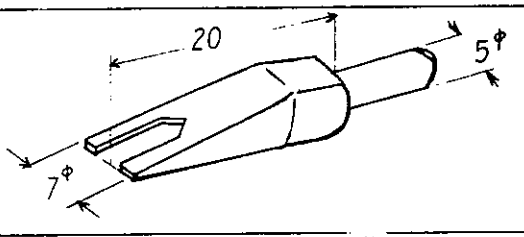
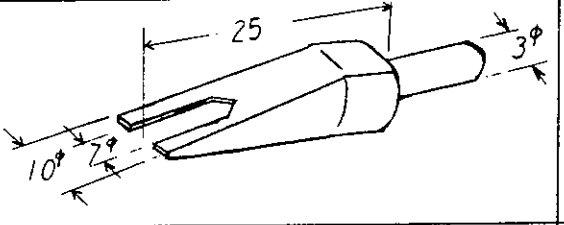
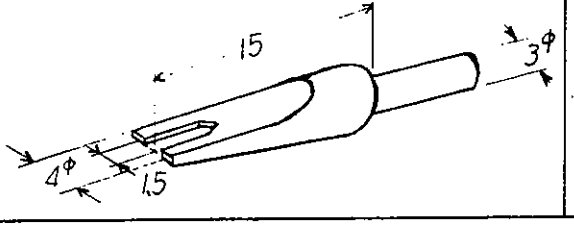
Note: . This deficiency is often caused by improper taping of the film to the leader paper (Fig. 3).
. Apply grease to the rotating parts of rollers.

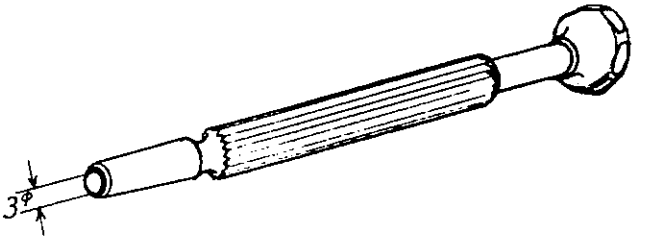
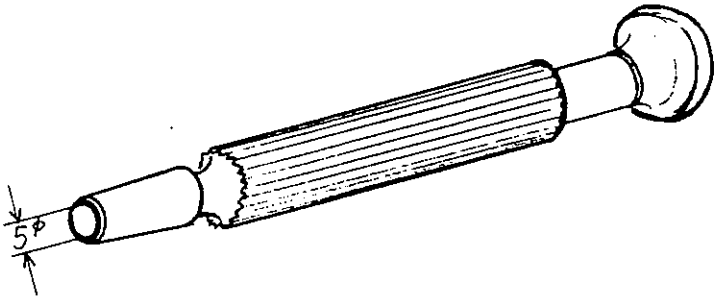
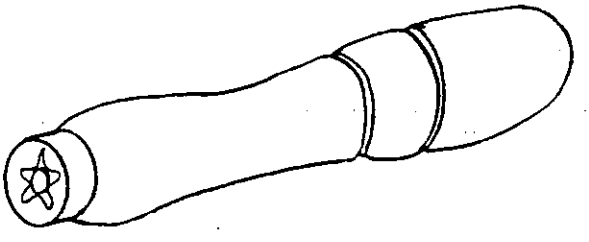
Cause:	Method of repair:
1. Roller #1 is not positioned symmetrically (Fig. 5).	1. Make adjustment by setting Washer #2 on the shaft section.
2. Spool Stud Mounting Plate #3 is positioned at an angle and spool tends to shift toward one direction (Fig. 4).	2. Adjust #3 to proper position.
3. Regulator Washer #5 of Spool Drive Gear #4 is positioned inside (Fig. 4).	3. Reposition Washer #5 outside.
4. Uneven right and left pressure or excessive pressure of the pressure plate.	4. Bend Pressure Plate Spring #6 equally on all four points and use Washer #7 on the mount section (Fig. 6).

Parts Nos.

#2 ..... B520311
5 ..... B570101 or A570111
7 ..... B510821

Tool Number / Parts Number / Usable Place	Describe	Qty	Holder
CT113-SN160B B430012 S2.C.S.D. Use the Bearing metal(A051660) and Side cover (right)		1	NO.5
CT113-SN172B SN172B S B430022 S2. C. D Use the Wind-up unit		1	NO.5
391-7660-AJ A055650 S2 Use the Connection metal attaching screw		1	NO.7
392-7564-AJ A060950 Back S2.E Use the Change-over metal setting nut of F. wind-up unit.		1	NO.7
CT113-B0931 A056140 S2.C.S.D Use the Release catch nut of Side cover right and left		1	NO.5
CT113-SN122A-1 B410013. B410014 S2.C.E.S.D Use the Mirror unit, Focusing hood unit, Synchronized contact unit and Dark slide insert metal.		1	NO.5
CT113-BK252 BK2521 S. D. Use the Wind-up crank shaft		1	Wood holder
B410054-AJ B410054,B410056 S2.C.E.S. Use the Mirror unit, Focusing hood unit, Synchronized contact unit and Dark slide insert metal.		1	NO.5

Tool Number / Parts Number / Usable Place	C. P.	Describe	Qty	Holder
CM104-MA233-AJ MA233 Attach to the Film holder trans-mission gear	S		1	
381-7180-AJ A040441 Attach to the Film holder trans-mission gear	S2. C. E.		1	
381-SN173-AJ B440012 Use the Wind-up unit	S2. C		1	
T-SN-173 B440012 Use the Wind-up unit	S2. C		1	
CT113-BK263-AJ BK263 A055910 Use the Wind-up crank unit	S S2. C		1	NO.5
CT113-SN171A B450011 Use the Shutter unit	S2.C.S.D.		1	NO.7
381-7285-AJ A056110 Use the Plug screw	S2. C		1	NO.5
CT113-SN123B B410022 Use the Shutter unit, Bearing metal and Ancle lever. (A051660)	S2.C.S.D.		1	NO.5

Holder	Describe	Remarks
NO.5		
NO.7		
Wood holder		

ZENZA BRONICA IND., INC.