

NIKKOREX-F

REPAIR MANUAL



NIPPON KOGAKU K. K.

NIKKOREX-F

REPAIR MANUAL



NIPPON KOGAKU K. K.

C o n t e n t s

	page
I. Disassembling and reassembling	
A. Top-cover assembly	1
B. Bayonet lens mount assembly	2
C. Bottom cover assembly	2
D. Finder, mirror housing and shutter assembly..	3
E. Exposure counter assembly	4
F. Lower winding mechanism assembly	5
G. Upper winding mechanism assembly	6
H. Camera back assembly	7
 II. Repairing	
1. Film advance lever cannot be wound up	8
2. Film advance lever doesn't return completely.	10
3. Shutter cannot be released	10
4. Shutter release button works too heavy	11
5. Shutter fails to operate with correct speeds.	11
6. Shutter releases at the instant it is wound up before depressing the release button	11
7. Blades of shutter do not close completely ...	12
8. Exposure counter does not advance correctly..	12
9. Lens is out of focus	12
10. Light leak	13
11. Film rewind button doesn't work properly	13
12. Rewind knob works too heavy	13

Note: K added to a part number signifies a
subassembly comprising the part
represented by that number.

I. DISASSEMBLING AND REASSEMBLING

A. Top-cover assembly (See p. 1, 2 and 11)

Disassembling

1. Unscrewing 1522 (lefthand threaded) with a wrench tool, remove 1523, 1521, 1524, 1525 and 1576.
2. Open camera back 1211K.
Holding the slot on the 1581, remove rewind knob 1590 by anti-clock-wise revolving.
3. Releasing two set screws 1725, remove shutter speed dial 1721.
4. Unscrewing two screws 1518, remove top cover 1511K (including 1531K, 1533).
5. Releasing two screws 1120 from the inside of the top cover, remove lead wire for flash synchronization.

Reassembling

1. Attach lead wire with screws 1120 (M-contact is colored brown, X-contact blue).
2. Inserting 1533 into 1531K, fit the both together to the inside of the top cover 1511K which is then placed over the camera body. Secure the cover with two screws 1518. Take care not to have the lead wire caught by the top cover.
3. Place shutter speed dial 1721 and set it with two set screws 1725. Shutter speed dial shaft 1711 should correctly be positioned in respect to the shutter speed graduation.
4. Holding the slot on 1581, screw in rewind knob 1590.
5. Placing 1576, 1525, 1524, 1521 and 1523 one on top of the other in sequence and fasten them with top screw 1522 (lefthand threaded). Make sure that the exposure counter advances and returns correctly.

B. Bayonet lens mount assembly (See p. 2)

Disassembling

1. Remove the top cover assembly (See A).
2. Unscrewing two screws 2.5D 1.4 x 2.5 and screw 2.5C 1.4 x 2.5, then remove 2113.
3. Unscrewing four screws 3.8D 2 x 3.5, remove 2114K.
4. If necessary,
 - a. unscrewing four screws 2115, remove 2111.
 - b. unscrewing six screws 3B 1.7 x 2, remove three bayonet parts 2112.
 - c. unscrewing three screws 3C 1.7 x 1.5, remove 2551.

Reassembling

1. Fasten 2114K with four screws 3.8 D 2 x 3.5.
Depth of field control lever 2133 being worked, 2441 (See p. 7) should move smoothly and not touch with 2551.
2. Adjust the dimension between the pressure plate surface and the front surface of bayonet to 46.67mm ± 0.02 .
3. Fasten 2113 with two screws 2.5D 1.4 x 2.5 and screw 2.5C 1.4 x 2.5.
4. Attach the top cover assembly (See A).

C. Bottom cover assembly (See p. 4)

Disassembling

1. Unscrewing two screws 3D 1.7 x 3, remove bottom cover 1611.
2. Taking off two C-clips 1462, remove 1461.
3. Unscrewing screws 1476 and 1477, remove 1471 K.
4. If necessary, taking off C-clip 1474, remove spacer 1473.

Reassembling

1. Fasten 1471K with screws 1476 and 1477.
2. Place 1461 and fasten it with two C-clips 1462.

Winding up film advance lever 1521, check the operation of the shutter (1711) and mirror housing (2400). If charging of 2461K can not be enough, replace spacer 1473 for 1471K with a thicker one.

3. Fasten 1611 with two screws 3D 1.7 x 3.

D. Finder, mirror housing and shutter assembly (See p. 2, 5, 6, 7, 11)

Disassembling

1. Remove top cover assembly (See A).
2. Remove bayonet lens mount assembly (See B).
3. Remove bottom cover assembly (See C).
4. Unscrewing four screws 4B 1.7 x 2.5, remove 2542K and 2512K (See p. 5).
5. If necessary, raise up the claw of 2542K, to remove semicircular lens 2541. (p. 6).
6. If necessary, remove roof-prism holder 2514 and then 2513 and 2511.
7. Unscrewing four screws 4B 1.7 x 4, remove 2522K and two springs 2523.
8. If necessary, unscrewing four screws 3B 1.7 x 1.4, remove two lens holders 2533, condenser lens 2531 and finder screen 2521.
9. Unscrewing four screws 4B 2 x 4, remove mirror housing 2400. In this removal, take caution not to scratch the surface of 1711.
10. Unscrewing screw 1754 (lefthand threaded), remove 1751 and 1752K (See p. 2).
11. Separate 1731K from pin 1711. Remove pieces of plastic sponge 1926 and 1927.
12. Unscrewing 1713 and 1714, remove 1711.
13. If not necessary 2542K, 2512K and 2522K, all together with the mirror housing (2400) can be removed as a unit.

Reassembling

1. Insert 1711 into the camera body, fitting its groove at the bottom into 1712.
2. Attach film advance lever 1521 tentatively, and wind it up. In the wound up position, have the charge gear of shutter assembly 1711 engaged to 1341K and fasten this shutter assembly with screws 1713 and 1714. Attach 1926 and 1927.
3. Make sure that the shutter (1711) is correctly charged by one winding stroke of the lever. For shutter releasing, push forward the release lever in 1711.
4. Fit the hole in 1731K to the pin in the shutter assembly (1711).
5. Slide the pin in 1752K into the hole of the selftimer cam and fasten 1751 with screw 1754 (lefthand threaded).
6. Insert 2400 and fasten with four screws 4B 2 x 4. Slip in 2441 under 2133 and 2451 under the mirror lever and 2434K under the release lever in 1711.
7. Attach the bottom cover assembly (See C).
8. Attach the bayonet lens mount (See B).
9. Put two springs 2523 into the groove on the mirror housing (2400). Fasten 2522K with four screws 4B 1.7 x 4.
10. Fasten 2512K and 2542K with four screws 4B 1.7 x 2.5.
11. Lenses being attached, adjust focus at infinity or a finite distance by raising or lowering 2422K with four screws 4B 1.7 x 4. After finishing the above adjustment, fix the screws with lacquer.
12. Attach the top cover assembly (See A).

E. Exposure counter assembly (See p. 9)

Disassembling

1. Remove the top cover assembly (See A).
2. Separate spring 1573 from 1553 and then remove 1571K.

3. If necessary, unscrew two screws 1575 and then remove counter dial 1571. Raise up the claw of 1572K and remove spring 1573.
4. Remove 1553 and 1551K together with a spring 1554.
5. Remove 1542 and 1541K together with spring 1543.

Reassembling

1. Fasten 1541 with screw 1542 and hook up spring 1543 thereon.
2. Put 1554 into 1551K and fasten it with screw 1553. Hook up spring 1554 on 1551 and 1381K.
3. Put on counter dial 1571K. Wind spring 1573 two turns anti-clockwise and hook it up on 1553.
4. Attach film advance lever 1522 tentatively. Adjust 1541 by bending the lower projection and 1551K by filing off the side of the claw so that the counter dial advances one division every time the lever is wound up.
5. Attach the top cover assembly (See A.)

F. Lower winding mechanism assembly (See p. 8)

Disassembling

1. Remove the bottom cover assembly (See C).
2. Unscrew screw 1453 and then remove spring 1454, lever 1451 and washer 1455.
3. Unscrew 1452 and 3B 1.7 x 3. Then, remove 1422K.
4. Unscrew 1442, remove 1441.
5. Unscrewing 1418 remove 1416K, 1413K, 1412 and 1411.
6. If necessary, unscrewing 3B 1.7 x 3, remove spring 1414.
7. Unscrew 1432 and then remove 1433 and 1431.

Reassembling

1. Fasten 1431 with screw 1432 and hook up spring 1433.

2. Take care of the directions of 1411 and 1412 to be inserted.
3. Slip on 1413K. Wind spring 1414 one turn anti-clock-wise and hook it up on 1415. Then, put on 1416K and fasten with screw 1418.
4. Hook up spring 1443 on 1441 and fasten with screw 1442.
5. Hook up the other end of spring 1443 in the hole on 1422K and fasten 1422K with 1452 and 3B 1.7 x 3.
6. Put washer 1455 and fasten 1451 with screw 1453, hook up the spring 1454.
7. Attach the bottom cover assembly (See C).

G. Upper winding mechanism assembly (See p. 9 and 10)

Disassembling

1. Remove the top cover assembly (See A).
2. Remove the bottom cover assembly (See C).
3. Remove the lower winding mechanism assembly (See F).
4. Remove the exposure counter assembly (See E).
5. Unscrew screw 1544 and two screws 4B 1.7 x 4. Then, remove 1381K.
6. Remove washer 6W 2 x 0.2 and spring 1375.
7. Lift out shaft 1311K and remove 1321K and spacer 1318.
8. Unscrewing screw 4B 1.7 x 3, remove 1392K.
9. If necessary, unscrew screw 1393 and remove 1391 and spring 1394.
10. Unscrew screw 1344 (lefthand threaded) and remove gear 1341K and washer 1345.
11. Remove C-clip 1336 and then gear 1331K and unscrew shaft 1334.
12. Open camera back (1211K). Unscrew 1376, pull out shaft 1372K and remove sprocket 1371.
13. Pull out 1351K, remove washer 1353 and remove film take-up spool 1361K.
14. If necessary, remove 1362.

Reassembling

1. Insert 1362 into 1361. Put 1361 into the camera body. Placing on washer 1353, push 1351K into 1361.
2. Put sprocket 1371, into the camera body. Insert shaft 1372K into the sprocket 1371 and fasten with screw 1376.
3. Fix shaft 1334 and place gear 1331K in position and fasten with C-clip 1336.
4. Place washer 1345 and then gear 1341K thereon. Fasten with screw 1344 (lefthand threaded).
5. Fasten 1392K with screw 4B 1.7 x 3.
6. Thread shaft 1311K through gear 1321K and spacer 1318 arranged one on top of another.
7. Insert 1375 and 6W 2 x 0.2. Fasten 1381K with screw 1544 and two screws 4B 1.7 x 4.
8. Attach the lower winding mechanism assembly (See F).
9. By winding up the film advance lever (1311K), make sure that the shutter is charged correctly.
If it is not the case, make adjustment of gearing position of the upper charge gear in the shutter assembly (1711).
10. Attach the bottom cover assembly (See C).
11. Attach the exposure counter assembly (See E).
12. Attach the top cover assembly (See A).

Note: If the adjustment of the shutter assembly is not found easy, you had better make the adjustment with the mirror housing and the shutter assembly separated.

H. Camera back assembly (p. 11)

Disassembling

First, peel off leather 1912, then unscrew three screws 1153, and

remove camera back 1211K from the body.

Reassembling

Attach the camera back (1121K) with three screws 1153 to the body and thereafter glue leather 1912 on the outside surface.

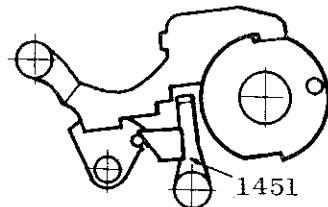
II. REPAIRING

1. Film advance lever cannot be wound up.

Remove the bottom cover and check the position of cam in 1711.

A. If the pin on the cam faces toward 1451.

Depress the shutter release button and see if shutter is released or not.
a. If it does, wind up the lever again.



Then, if the lever can be wound up, it will be O.K.

If it cannot yet be wound up, see 1, B.

b. Shutter is not released even though the mirror raises.

(1).The shutter is not released until the mirror is raised by hand.

Check the tension of spring 2474. If it is found too weak, adjust or replace the spring. If the tension is strong enough, bend the release lever of shutter slightly toward the rear of the camera, so that the lever properly operates when pushed by 2434K.

(2).The shutter is not released even though the mirror is raised by hand.

Push forward the release lever of shutter. If, by so doing, the shutter is released, bend the release lever slightly toward the rear of the camera so that it properly operates when pushed by 2434K.

If the shutter is not released even by pushing forward the release lever, disengage 1391 from the upper gear of 1341K.

If, while so doing, the shutter is released, adjust gearing position between the shutter charge gear and 1341 after unscrewing screws 1713 and 1714.

If by revolving clockwise the shutter charge gear and depressing the release lever the shutter is released, adjust the gearing position between the charge gear and 1341K in the same way as above.

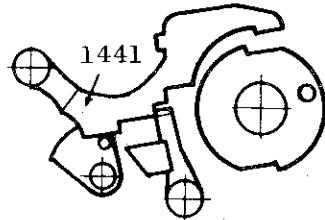
If the self-timer lever in the shutter is displaced forward from its correct position, fix it up.

c. The mirror is not raised with the shutter release button depressed.

If the hole in 1731K fails to engage with the shutter pin, put it in place.

2461K cannot be charged, then replace 1473 with a thicker one.

If spring 2474 is out of place, hook up correctly the spring again.



B. If the pin on the cam faces toward 1441.

See if the end of 1441 disengages out of the recess in 1416K or not.

a. If it does not, try to wind up the lever after releasing 1441 from the recess.

If the pin on the cam does not push up 1441, extend the part indicated by the slant lines by knocking. (See Fig.)

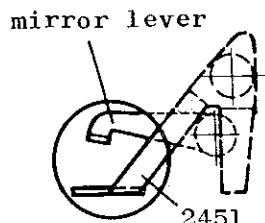


If pawl of 1451 is too long to set in the step of 1441, bend the pawl to an appropriate length.

The lever cannot be wound yet, then see the next paragraph.

b. If 1441 disengages from 1416K.

If the mirror lever of shutter slips under 2451 and its operation is hindered, adjust the mirror housing in place so that 2451 locates under the mirror lever.

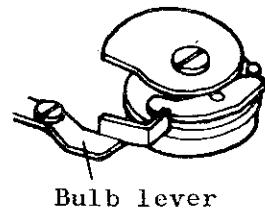


If any play or loosenesses is found between each gear axle, remove it.

C. Film advance lever stops halfway.

a. If the shutter is set deficiently or excessively (this can be seen by the position of the cam on the shutter charge gear), adjust the position of the charge gear of shutter in respect to 1341K.

b. If 1421 does not free properly, adjust the position of 1421 by releasing screws 1452 and 3B 1.7 x 3.



2. Film advance lever doesn't return completely

a. See if 1478 is effective or not.

If it is not, replace 1478.

b. See if 1414 is effective.

If it is not, replace it.

If it is, check the lever for touching the top cover or other parts, and also check 1421 for disengaging properly.

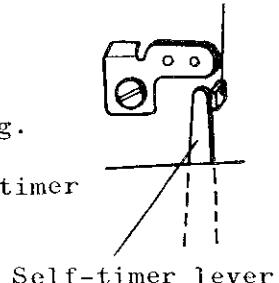
Stop' lever

3. Shutter cannot be released

a. Winding cannot be made, see 1 A, a and b.

b. Shutter is not released at self-timer setting.

This is caused by disengagement of the self-timer lever or self-timer spring, or insufficient



pushing of the stop lever by the self-timer lever.

- c. The self-timer lever does not move uniformly.

Clean the governor.

- d. Too long or short delay time of the self-timer is corrected by bending the end of the stop lever.

4. Shutter release button works too heavy.

- a. Movement of 1731K is not correct -- adjustment is needed.
- b. Shutter cam touches 1731K and/or 1741.
- c. 1531K fits the hole in 1511K too tightly -- pass reamer through the hole.

5. Shutter fails to operate with correct speeds.

- a. If the shutter cannot operate at B or all the speeds operate as B, with the topcover attached, file off slightly the bottom end of 1533.
- b. If the bulb-lever doesn't operate correctly, replace the shutter assembly.
- c. If shutter doesn't operate at lower speeds, clean the governor.
- d. If the shutter speed or synchronization, etc. is not correct, replace the shutter assembly.

6. Shutter releases at the instant it is wound up before depressing the release button.

See if the mirror is lowered. If not, adjust the motion of the mirror holder 2413K so as to move smoothly.

- a. See if the mirror lever hits 2451. If not, adjust 2451 by bending upward.
- b. If spring 2463 is not hooked between the claw of the 2461 and 2464, hook it in place.

c. See if 2471K is hooked up on 2481. If not, increase the tension of spring 2463.

7. Blades of shutter do not close completely.

If the mirror lever does not hit 2451K sufficiently, adjust 2451 by bending downward.

8. Exposure counter does not advance correctly.

a. The counter advances two or more steps at one time or does not advance at all.

If 1543 and 1554 do not operate effectively, replace them.

If they work adequately, adjust the operation of 1541 and 1551 so that the counter advances step by step.

b. The counter does not return to S when the camera back is opened. See if 1561 moves perfectly.

See if 1561 is securely attached.

Open the camera back and see if the pawls of 1541 and 1551 are disengaged from the teeth of 1572.

See if the tension of spring 1563 is not too weak.

See if spring 1573 is effective (should be wound two turns).

See if 1571 does not touch 1511K, etc.

9. Lens is out of focus

If the tension of the film pressure plate springs is too weak — Increase the tension of 1242.

If the dimension 46.67mm (See I.B. Reassembling 2) is not within ± 0.02 mm, adjust it by filing off or inserting a washer.

If the camera lens is not good, replace it.

If focusing by the finder screen is found to cause the out-of-focus, adjust the position of 2522K, using the standard lens, until no blur

on the screen takes place when the split-image is brought to coincidence.

10. Light leak

Check light-tightness of the camera back. Adjust the latch.

Check plastic sponge used in the camera back grooves.

Check the upper and lower plastic sponge on the back.

11. Film rewind button doesn't work properly

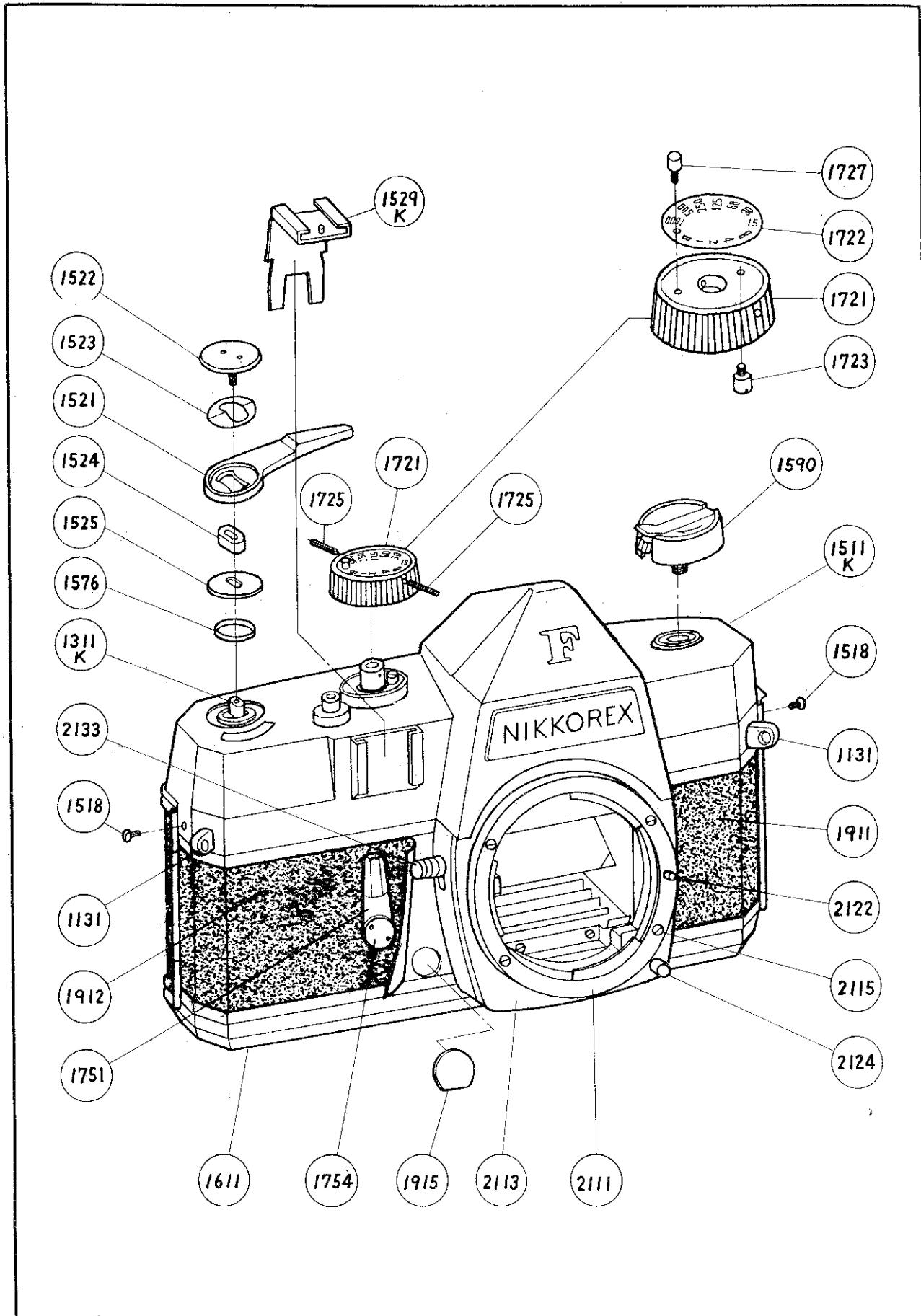
When the sprocket operates during rewinding, see if 1422 is effective. If not, increase the tension.

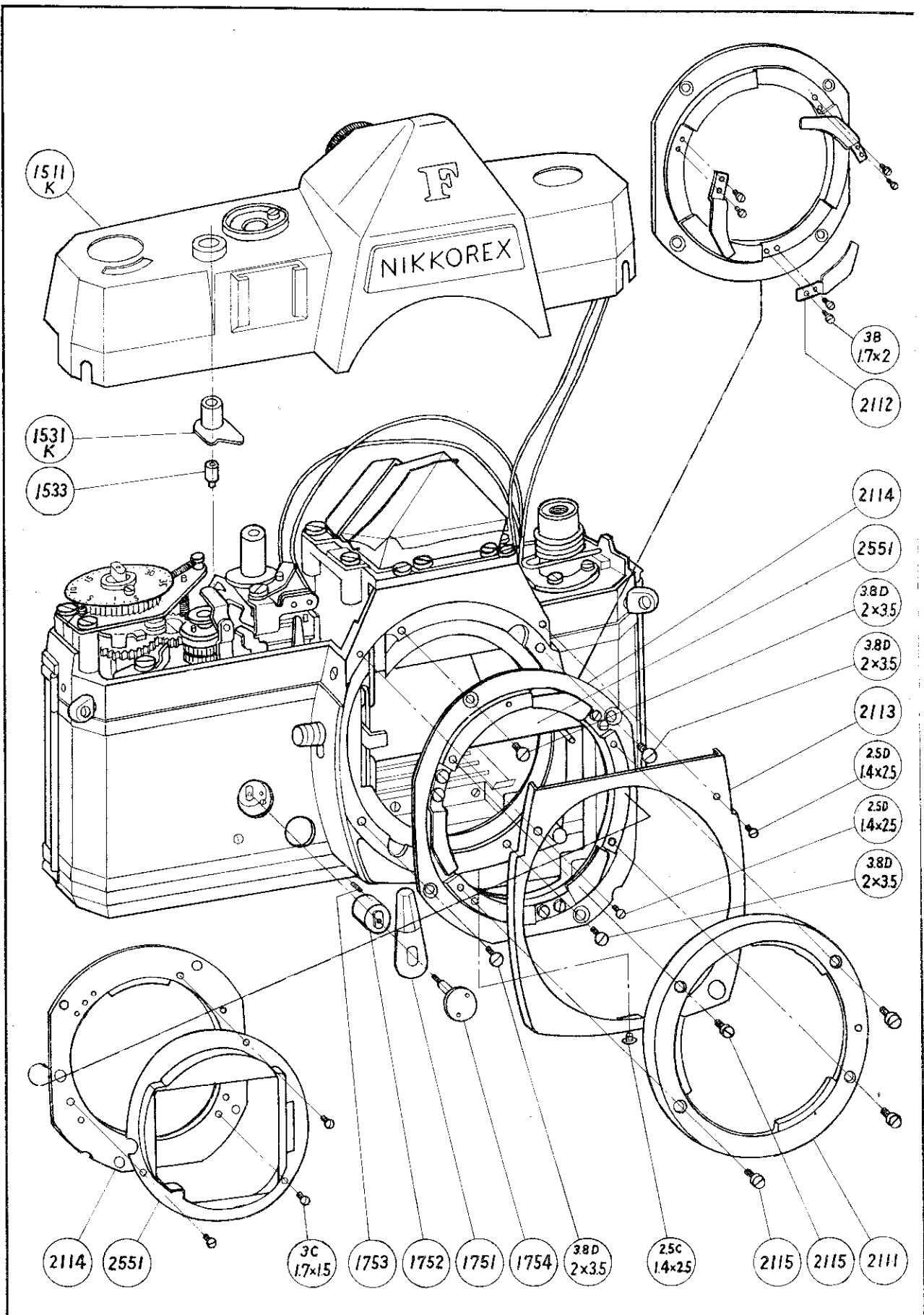
If the sprocket doesn't operate during winding up the film advance lever, see if 1372K is lowered completely and 1372K touches 1611 (file off slightly the inside of the hole in 1611), or see if the tension of spring 1375 is too weak (increase the tension).

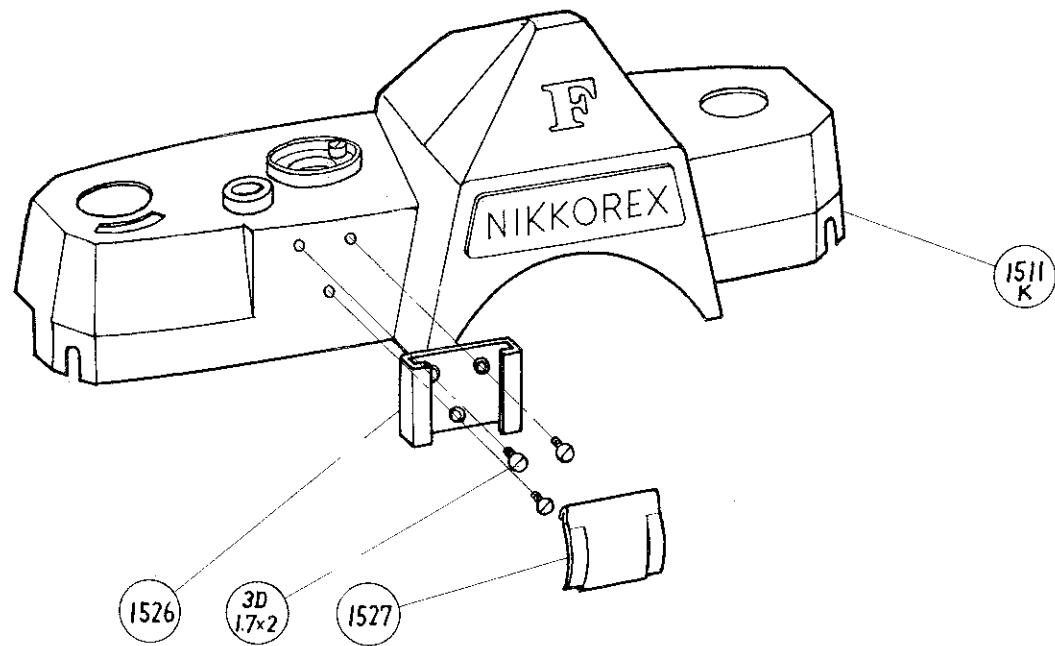
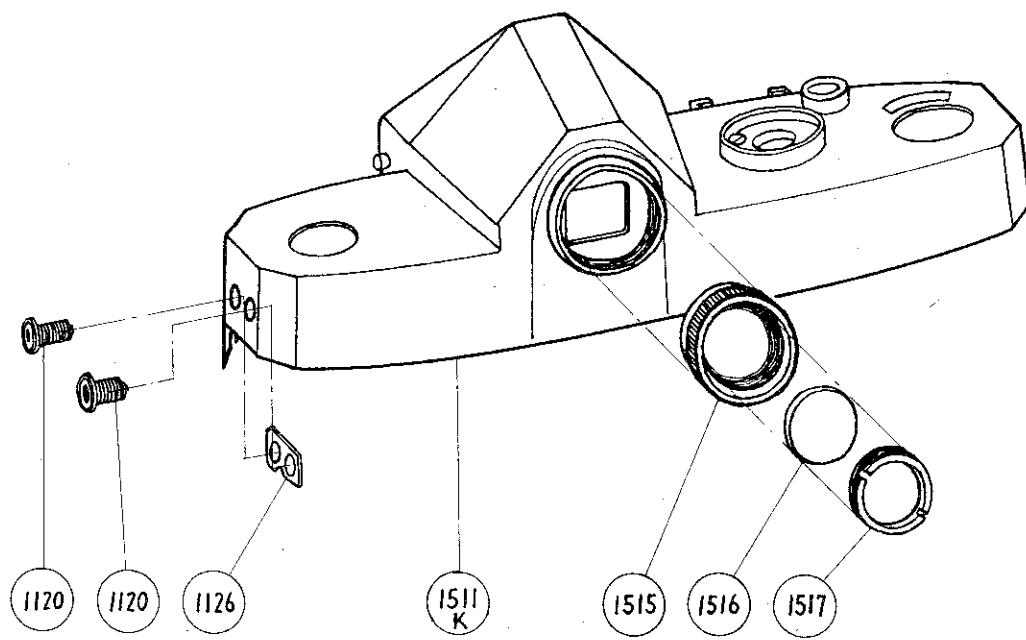
12. Rewind knob works too heavy

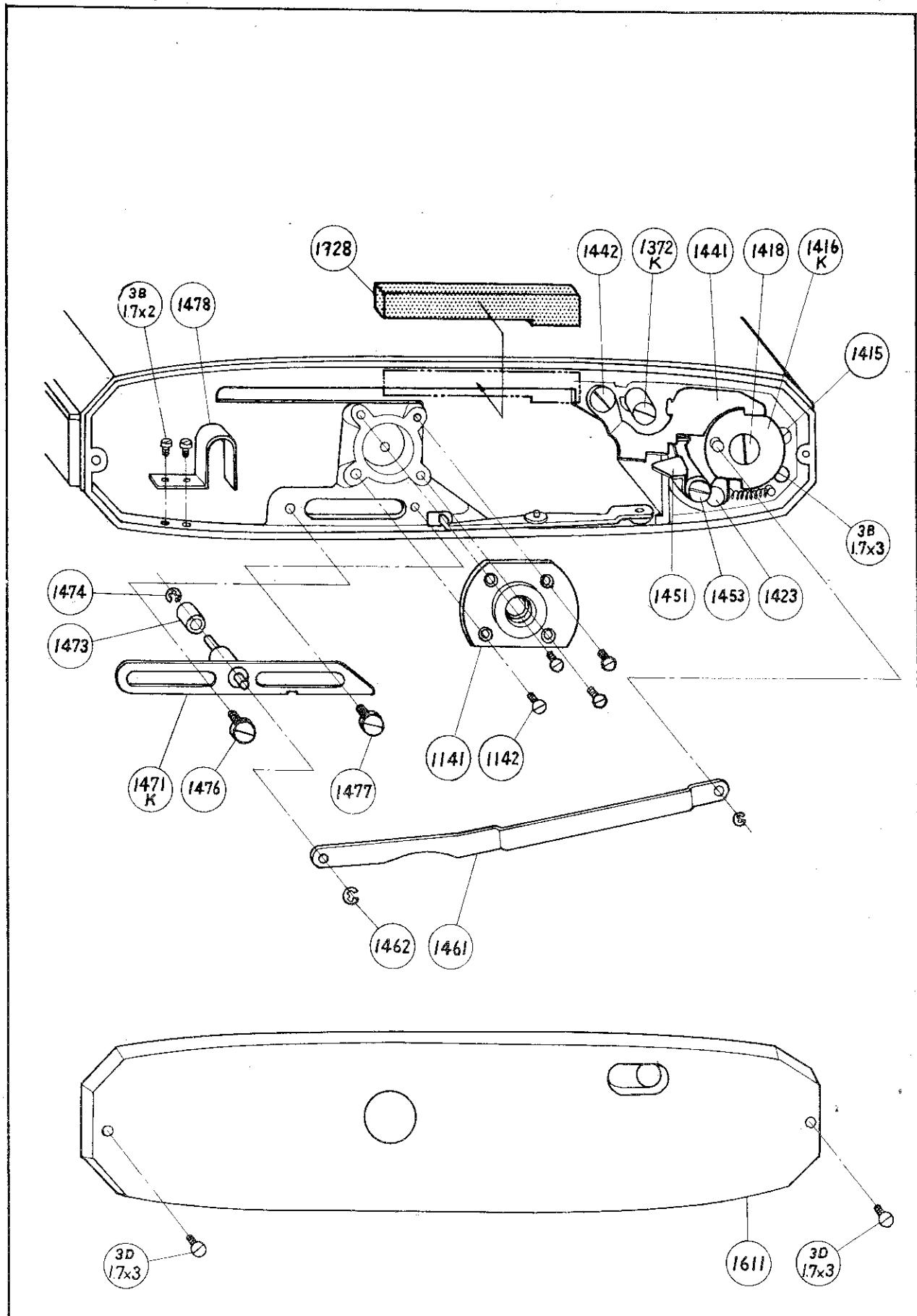
After removing spring 1582, try turning. In this case if the turning becomes lighter, reduce the tension of 1582.

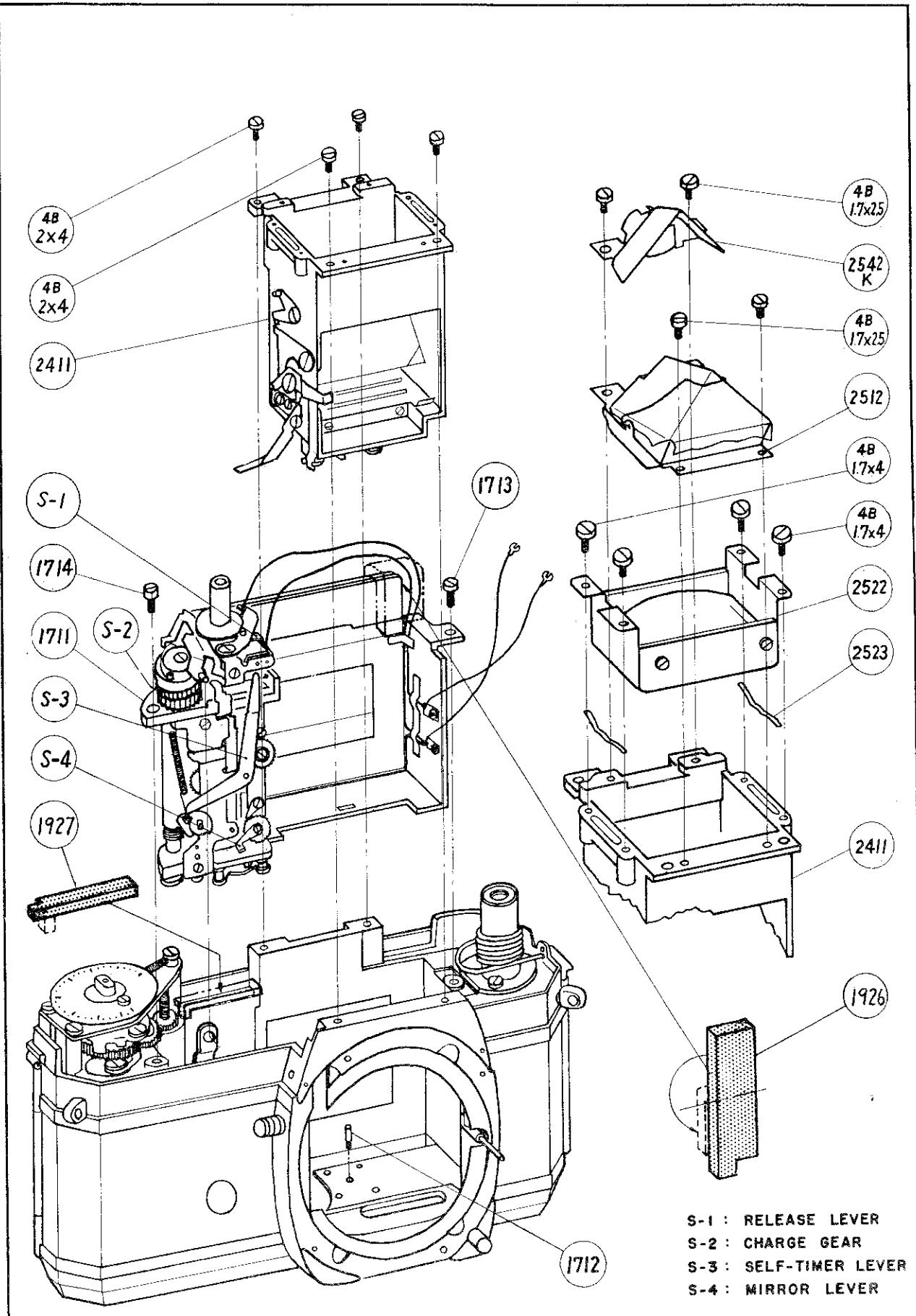
If the turning is still too heavy, pass a reamer through the hole in 1583 and apply vaseline.

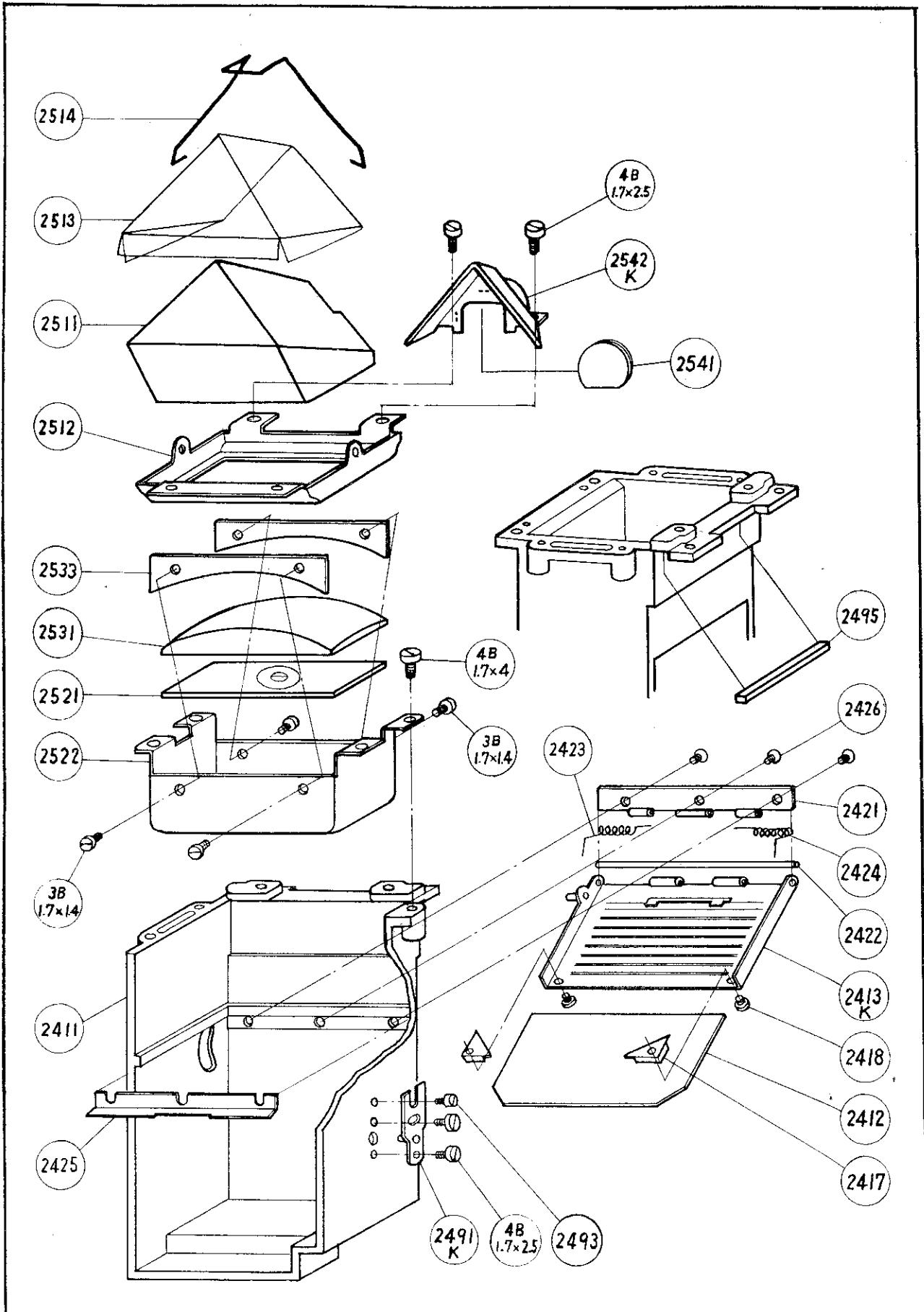


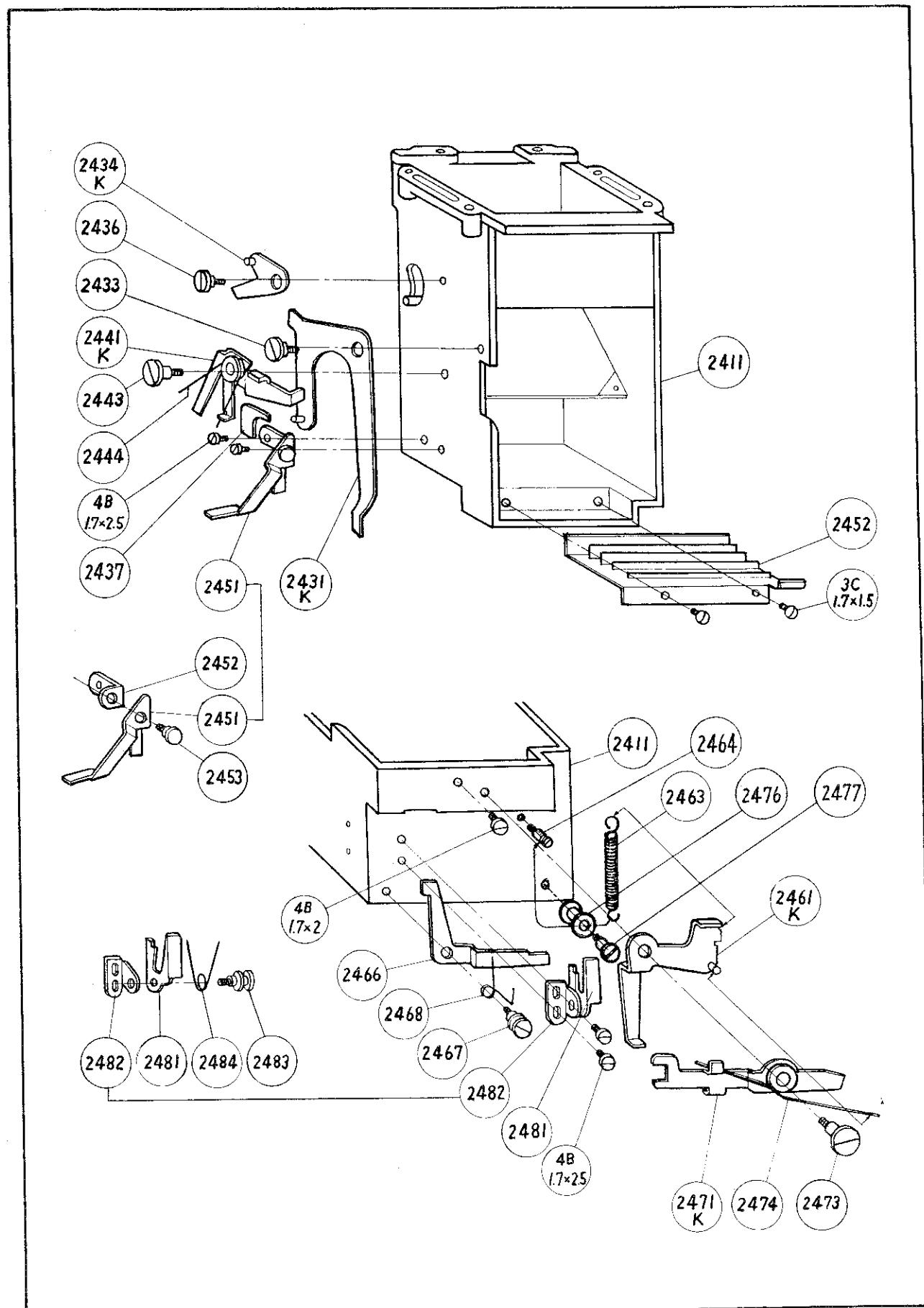


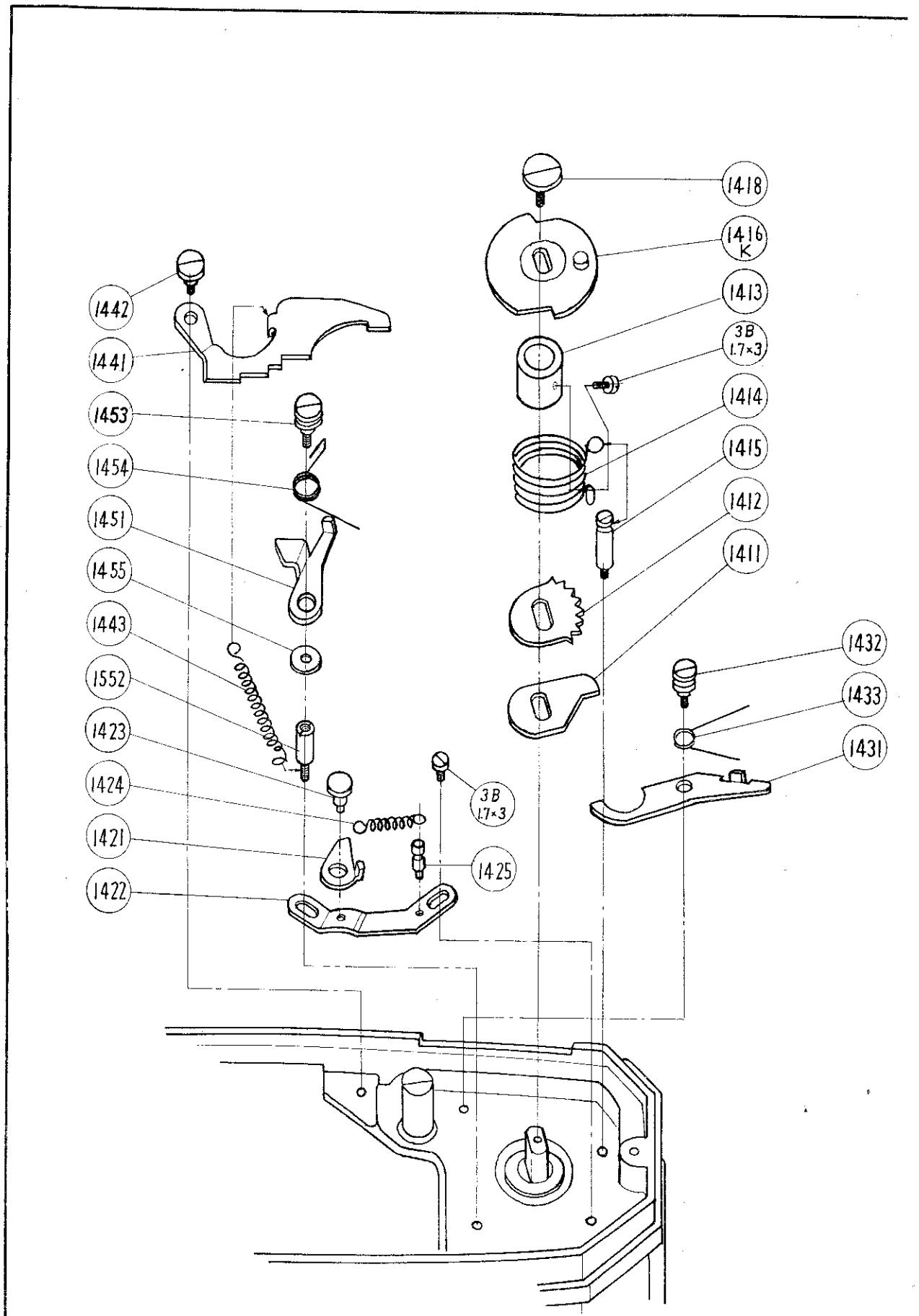


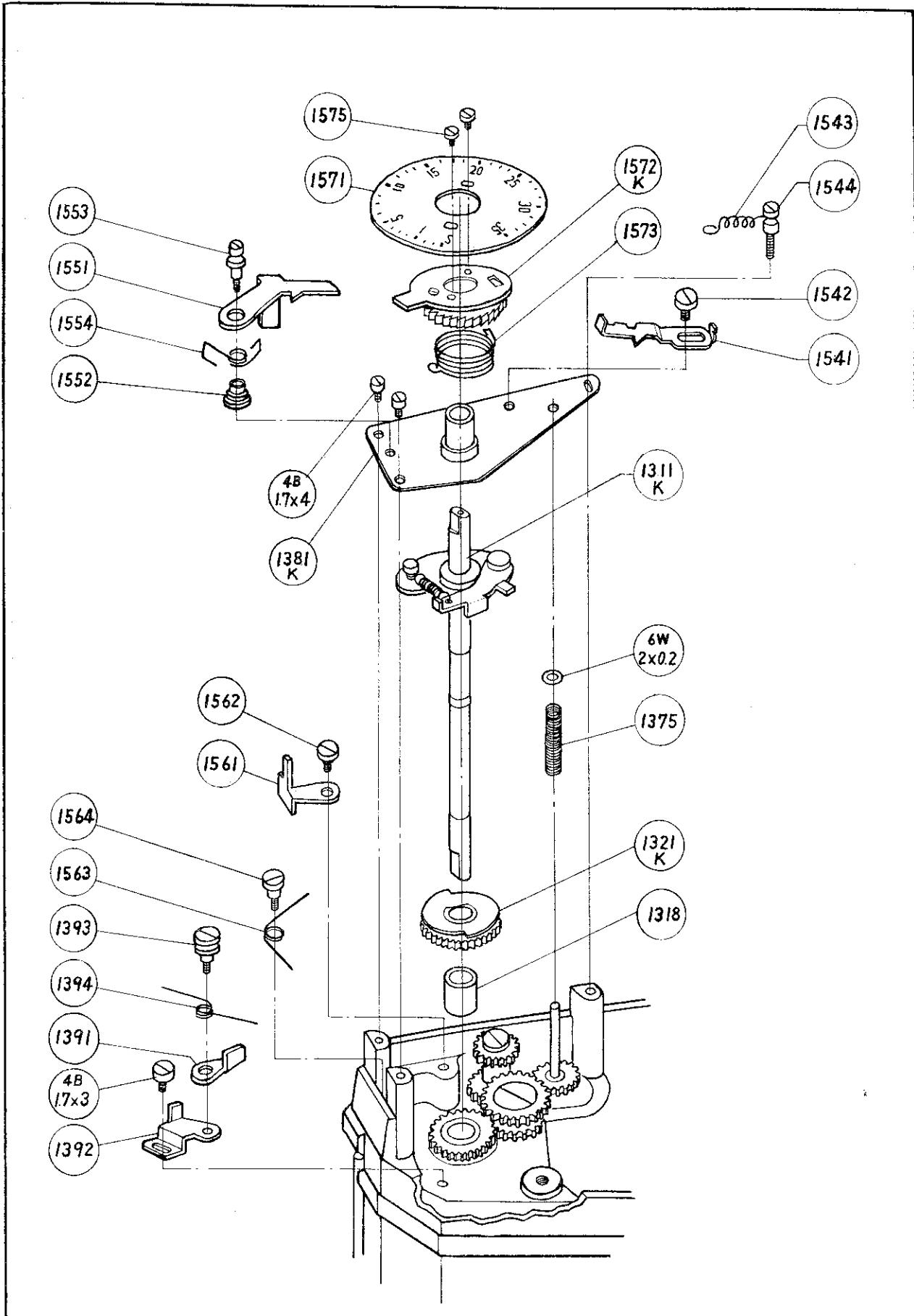


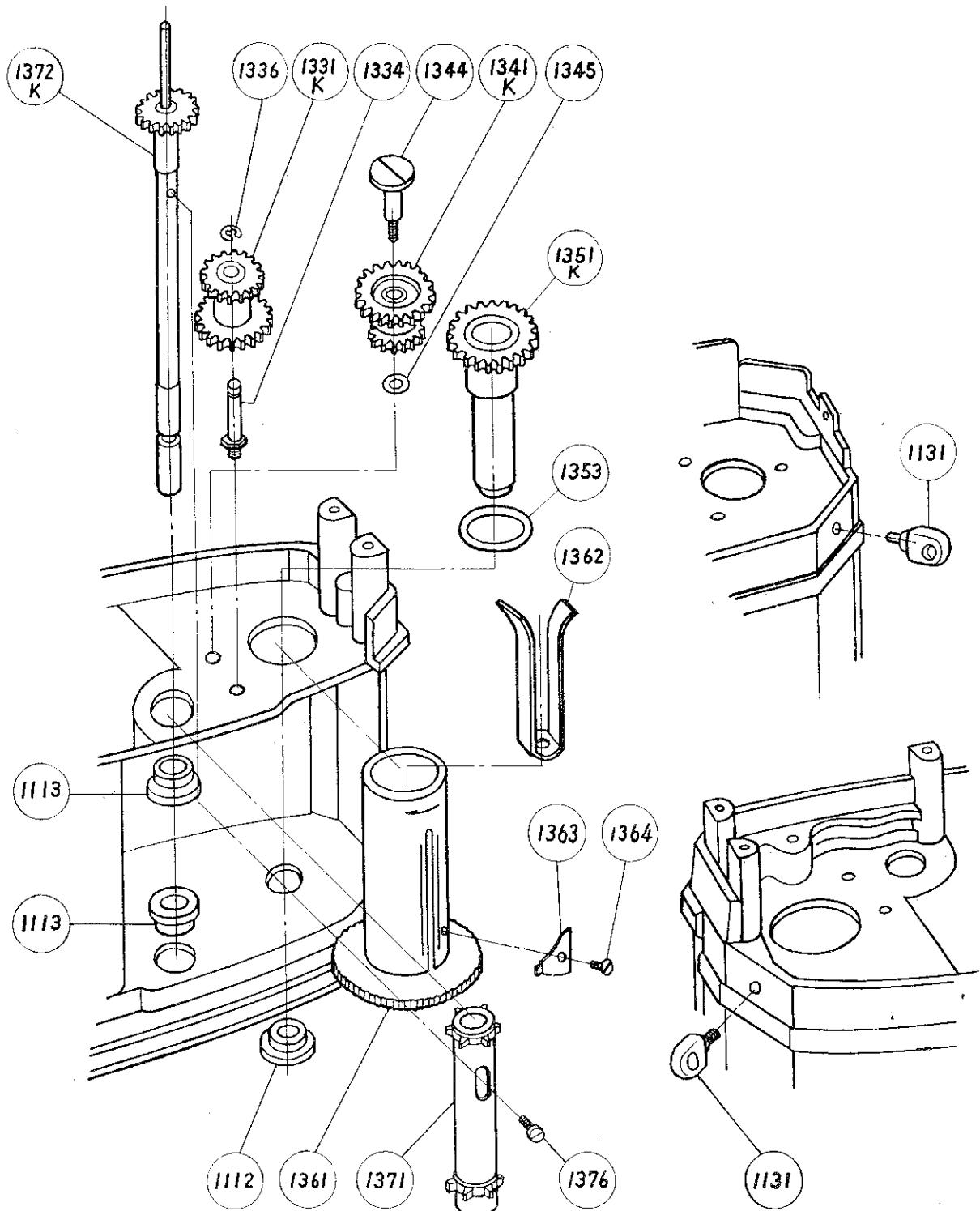


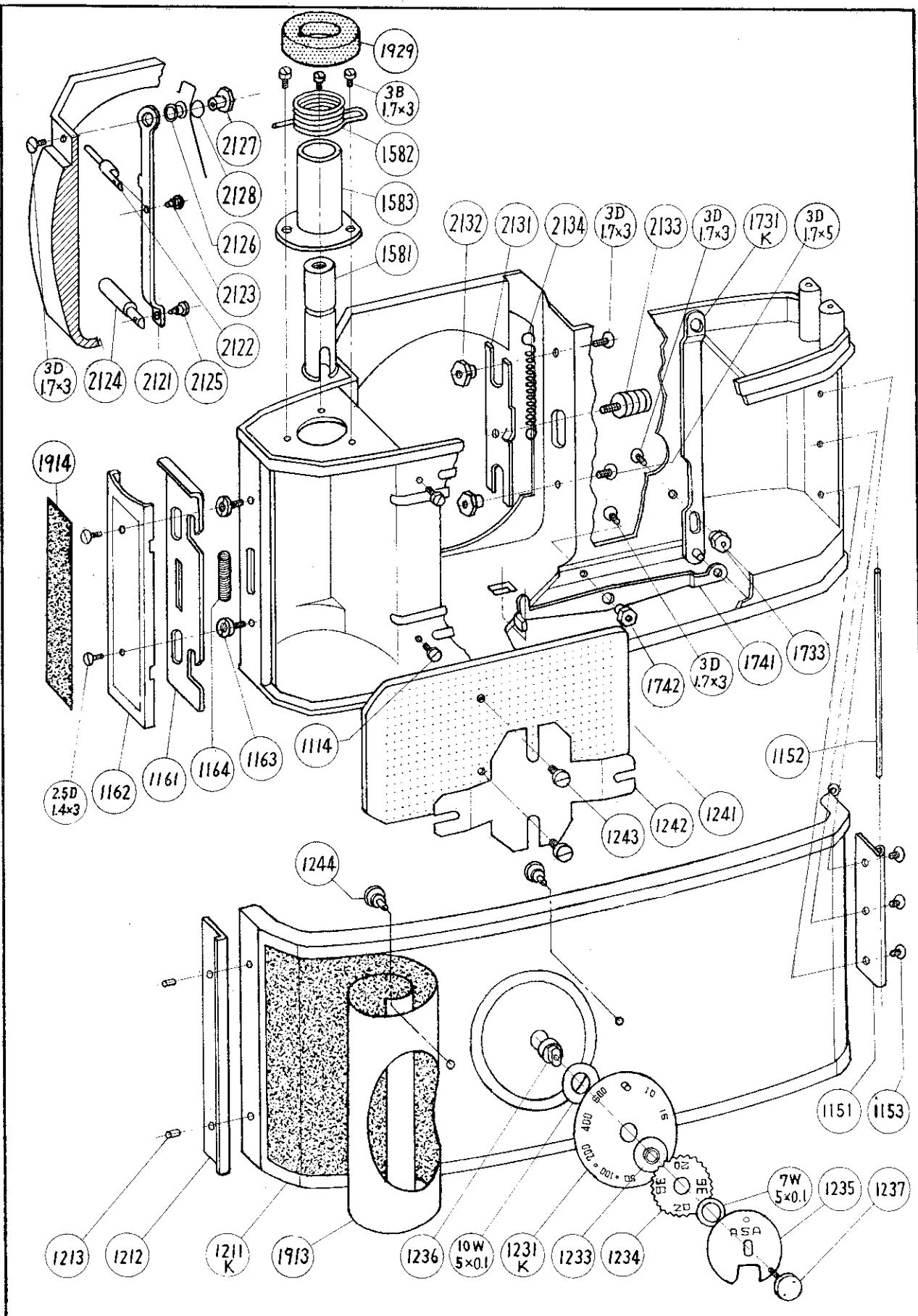


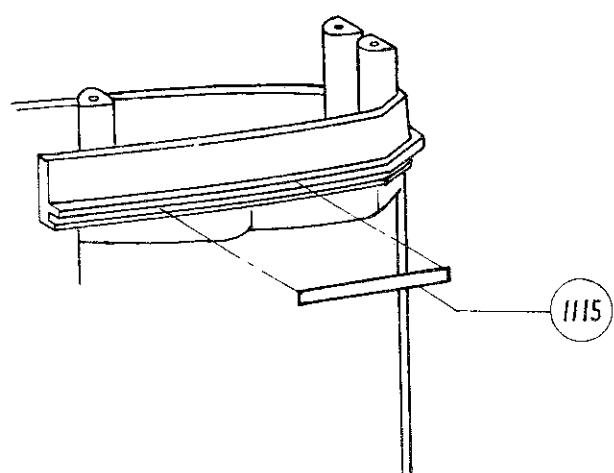
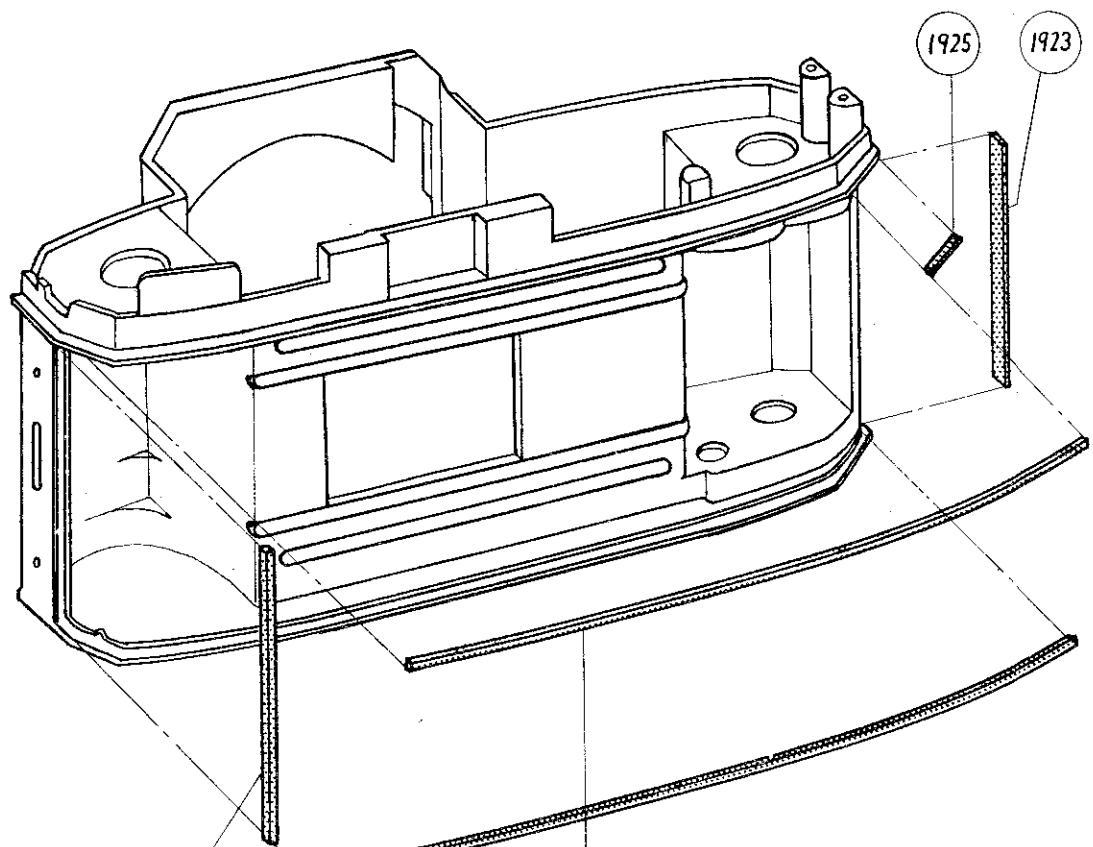


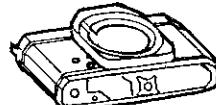
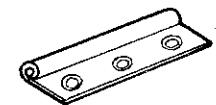
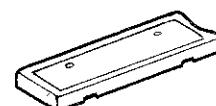
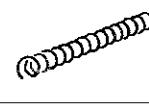
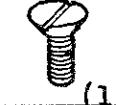










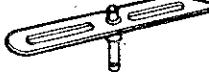
Parts No.		Pcs.	Page	Parts No.		Pcs.	Page
1111		1	1.2.4. 5.8.9. 10.11. 12.	1151		1	11
1112		1	10	1152		1	11
1113		2	10	1153		3	11
1114		2	11	1161		1	11
1115		1	12	1162		1	11
1120		2	3	1163		2	11
1126		1	3	1164		1	11
1131		2	10.	25D 14 x 3		2	11
1141		1	4				
1142		4	4				

Parts No.		Pcs.	Page	Parts No.		Pcs.	Page
1211K		1	11	1241		1	11
1212		1	11	1242		1	11
1213		2	11	1243		2	11
1231K		1	11	1244		2	11
1233		1	11				
1234		1	11				
1235		1	11				
1236		1	11				
1237		1	11				
10W 5 x 01		1	11				
7W 5 x 01		1	11				

Parts No.		Pcs.	Page	Parts No.		Pcs.	Page
1311K		1	1. 9.	1351K		1	10
1318		1	9	1353		1	10
1321K		1	9	1361		1	10
1331K		1	10	1362		1	10
1334		1	10	1371		1	10
1336		1	10	1372K		1	4. 10.
1341K		1	10	1375		1	9
1344		1	10	1376		1	10
1345		1	10	6W 2 x Q2		1	9
				1363		1	10
				1364		1	10

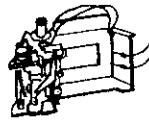
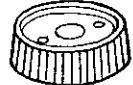
Parts No.		Pcs.	Page	Parts No.		Pcs.	Page
1381K		1	9	1411		1	8
4B 17 x 4		2	9	1412		1	8
1391		1	9	1413		1	8
1392		1	9	1414		1	8
1393		1	9	1415		1	4. 8.
1394		1	9	1416K		1	4. 8.
4B 17 x 3		1	9	1418		1	4. 8.
				3B 1.7 x 3		1	4. 8.

Parts No.		Pcs.	Page	Parts No.		Pcs.	Page
1421		1	8	1441		1	4 8
1422		1	8	1442		1	4 8
1423		1	4 8	1443		1	8
1424		1	8	1451		1	4 8
1425		1	8	1452		1	8
3B 17 x 3		1	8	1453		1	4 8
1431		1	8	1454		1	8
1432		1	8	1455		1	8
1433		1	8	1461		1	4
				1462		2	4

Parts No.		Pcs.	Page	Parts No.		Pcs.	Page
1471K		1	4	1511K		1	1 2 3
1473		1	4	1515		1	3
1474 (1462)		1	4	1516		1	3
1476		1	4	1517		1	3
1477		1	4	1518		2	1
1478		1	4				
3B 17 x 2		2	4				

Parts No.		Pcs.	Page	Parts No.		Pcs.	Page
1521		1	1	1531K		1	2
1522		1	1	1533		1	2
1523		1	1				
1524		1	1	1541		1	9
1525		1	1	1542		1	9
1526		1	3	1543		1	9
1527		1	3	1544		1	9
3D L7 x 2		3	3	1551		1	9
1529K		1	1	1552		1	9
				1553		1	9
				1554		1	9

Parts No.		Pcs.	Page	Parts No.		Pcs.	Page
1561		1	9	1581		1	11
1562		1	9	1582		1	11
1563		1	9	1583		1	11
1564		1	9	3B 1.7 x 3		3	11
1571		1	9	1590		1	1
1572K		1	9				
1573		1	9				
1575		2	9				
1576		1	1				

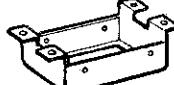
Parts No.		Pcs.	Page	Parts No.		Pcs.	Page
1611		1	4	1711		1	5
3D 17 x 3	 (1611)	2	4	1712		1	5
				1713		1	5
				1714		1	5
				1721		1	1
				1722		1	1
				1723		1	1
				1725		2	1
				1727		1	1

Parts No.		Pcs.	Page	Parts No.		Pcs.	Page
1731K		1	11	1911		1	1
1733		1	11	1912		1	1
3D 17 x 3		1	11	1913		1	11
1741		1	11	1914		1	11
1742 (1733)		1	11	1915		1	1
3D 17 x 3		1	11	1921		1	12
1751		1	2	1922		1	12
1752		1	2	1923		1	12
1753		1	2	1924		1	12
1754		1	2	1925		1	12
1929		1	11	1926		1	5
1928		1	4	1927		1	5

Parts No.		Pcs.	Page	Parts No.		Pcs.	Page
2111		1	1 2	2121		1	11
2112		3	2	2122		1	1 11
2113		1	1 2	2123		1	11
2114		1	2	2124		1	1 11
2115		4	1 2	2125		1	11
0.5 3B 17 x 2		6	2	2126		1	11
25D 14 x 25		2	2	2127		1	11
0.6 25C 14 x 25		1	2	2128		1	11
38D 2 x 35		4	2	3D 17 x 3		1	11

Parts No.		Pcs.	Page	Parts No.		Pcs.	Page
2131		1	11	2411		1	5 6 7
2132		2	11	2412		1	6
2133		1	11	2413K		1	6
2134		1	11	2417		2	6
3D 17 x 3		1	11	2418		2	6
3D 17 x 5		1	11	4B 2 x 4		4	5
				2421		1	6
				2422		1	6
				2423		1	6
				2424		1	6
				2425		1	6
				2426 (1153)		3	6

Parts No.		Pcs.	Page	Parts No.		Pcs.	Page
2431K		1	7	2461K		1	7
2433		1	7	2463		1	7
2434K		1	7	2464		1	7
2436 (2433)		1	7	2466		1	7
2441K		1	7	2467 (1432)		1	7
2443		1	7	2468		1	7
2444		1	7	2471K		1	7
2451		1	7	2473		1	7
2452		1	7	2474		1	7
2453		1	7	4B 17 x 2		1	7
4B 17 x 25		2	7	2476		1	7
2437		1	7	2477		1	7

Parts No.		Pcs.	Page	Parts No.		Pcs.	Page
2481		1	7	2511		1	6
2482		1	7	2512		1	5 6
2483 (1432)		1	7	2513		1	6
2484		1	7	2514		1	6
4B L7 x 25		2	7	4B L7 x 25		4	5 6
2491K		1	6	2521		1	6
2493		1	6	2522		1	5 6
4B L7 x 25		2	6	2523		2	5
2495		1	6	4B L7 x 4		4	5 6

Parts No.		Pcs.	Page	Parts No.		Pcs.	Page
2531		1	6				
2533		2	6				
3B 1.7 x 1.4		4	6				
2541		1	6				
2542K		1	5 6				
2551		1	2				
2552		1	7				
0.6 3C 1.7 x 1.5		3	2				
0.6 3C 1.7 x 1.5		2	7				