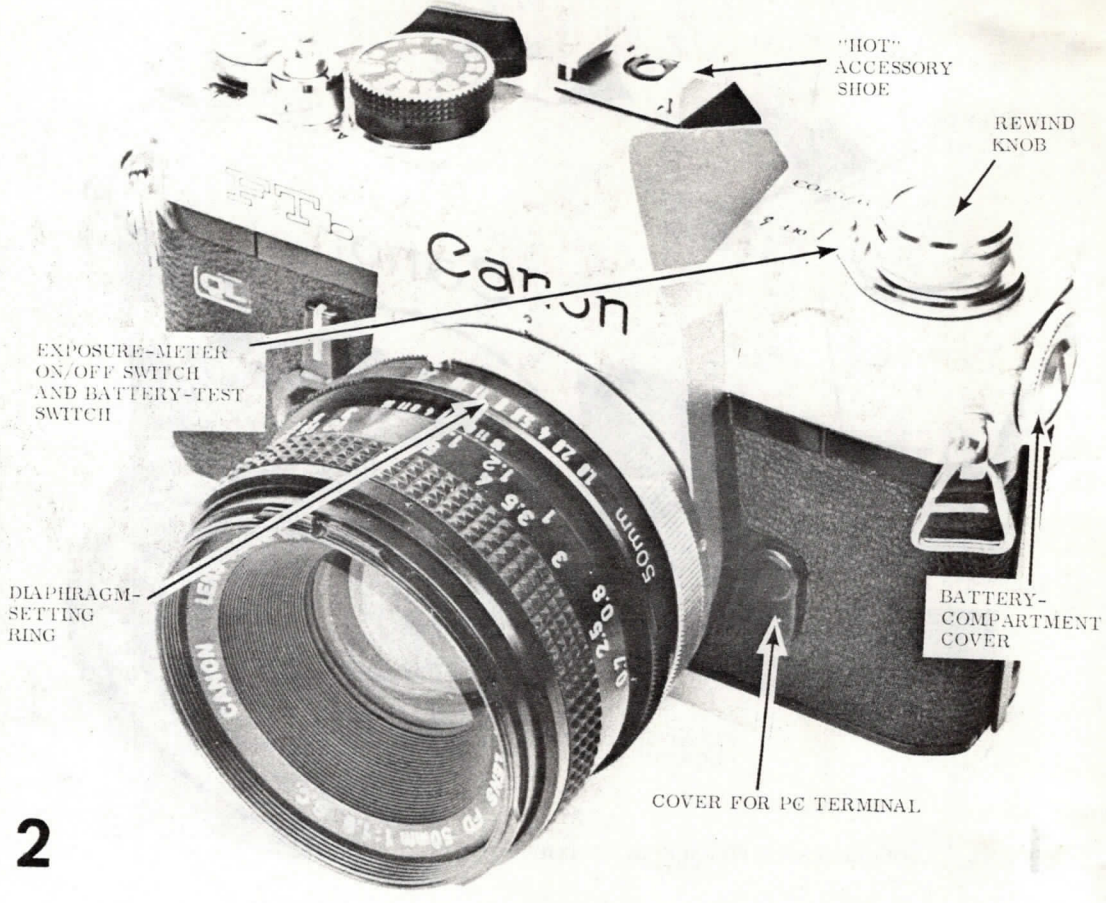
NatCam

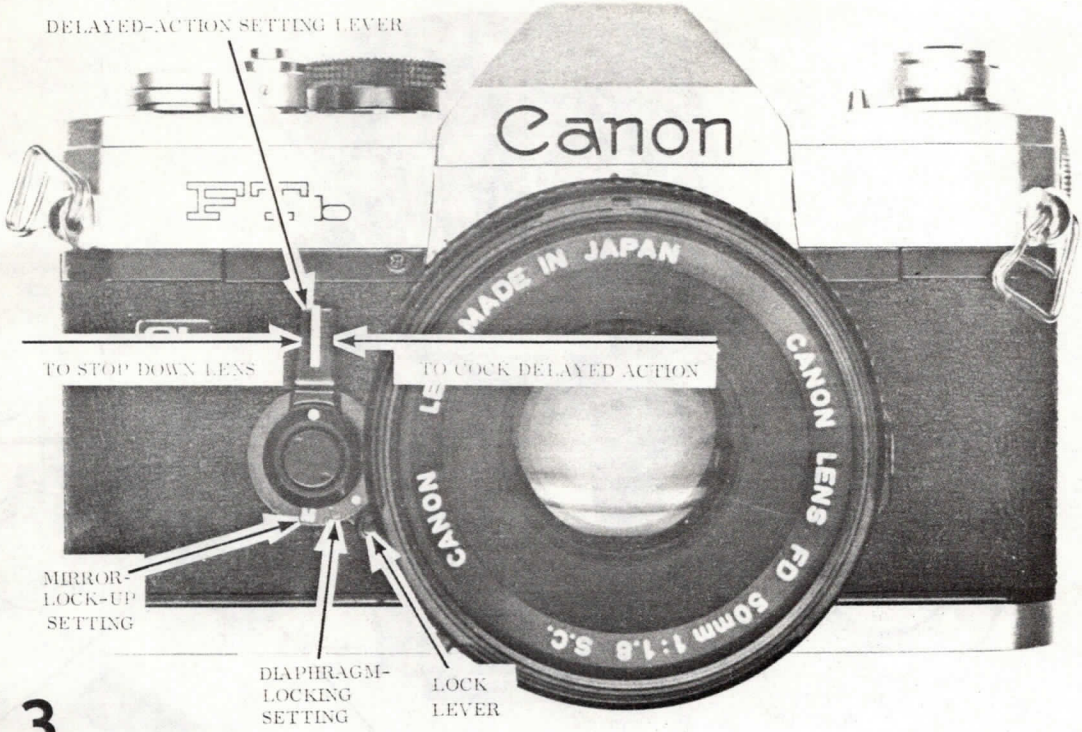
Canon FTb Guide


WIND LEVER
RELEASE BUTTON
Canon
FOCUSING RING
RELEASE-BUTTON LOCK
DELAYED-ACTION COCKING LEVER
COUPLING STUD FOR SPEEDLITE 133D

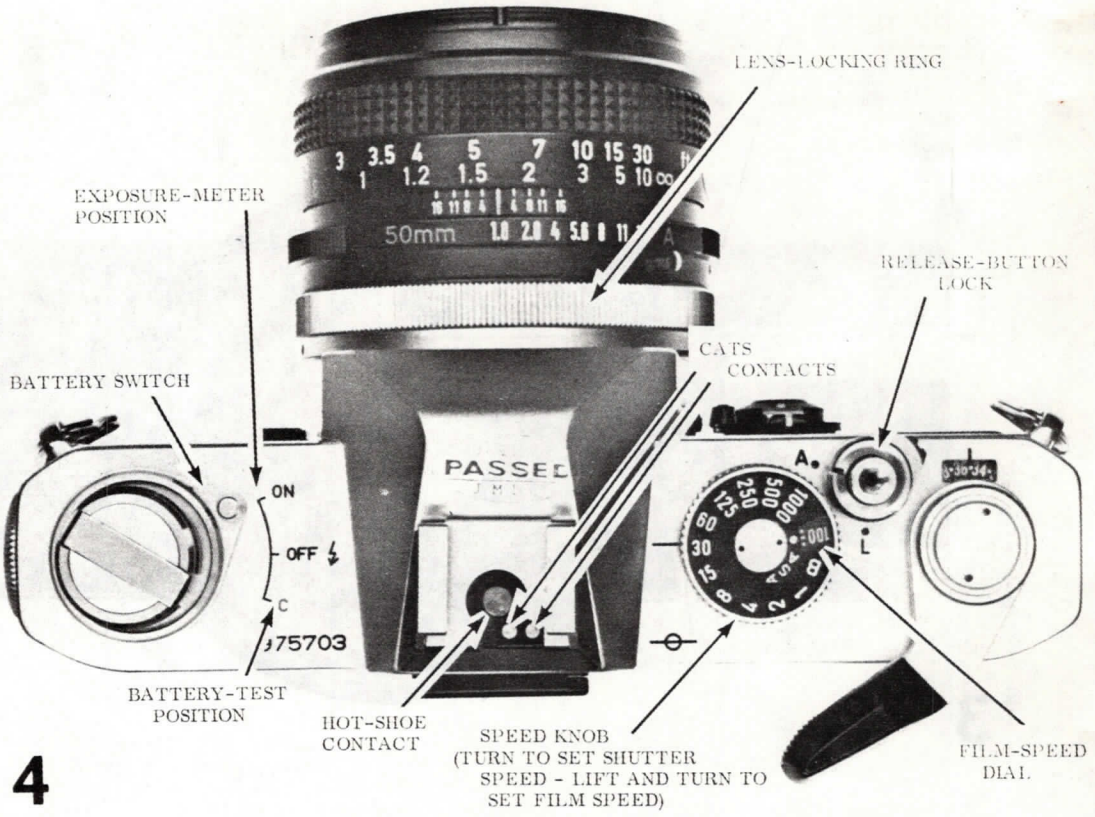
1


"HOT"
ACCESSORY
SHOE
REWIND
KNOB
EXPOSURE-METER
ON/OFF SWITCH
AND BATTERY-TEST
SWITCH
DIAPHRAGM-
SETTING
RING
BATTERY-
COMPARTMENT
COVER
COVER FOR PC TERMINAL

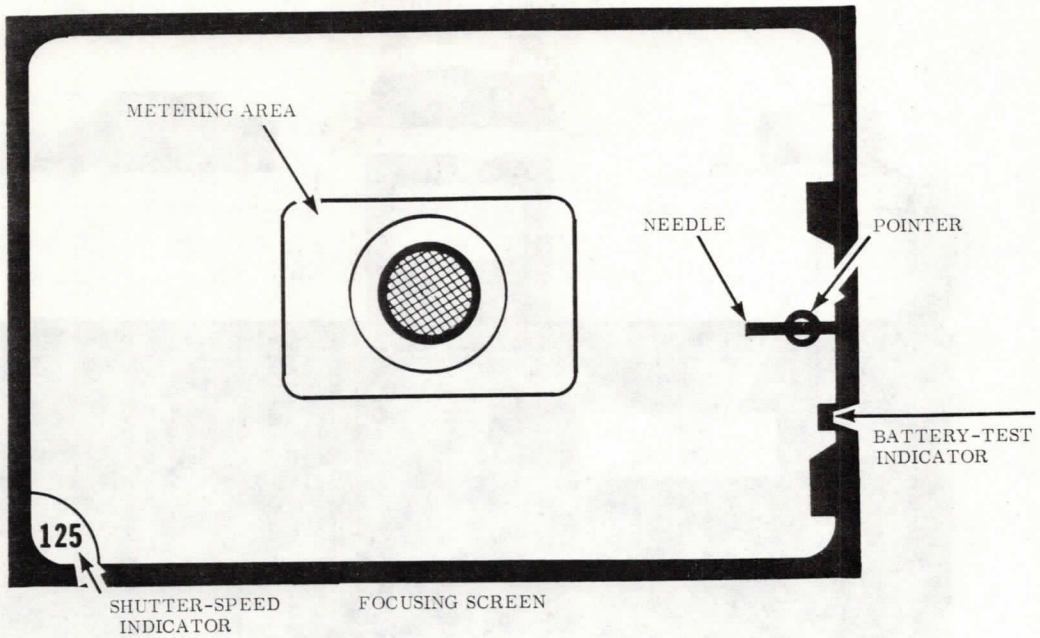
2


DELAYED-ACTION SETTING LEVER
Canon
TO STOP DOWN LENS
TO COCK DELAYED ACTION
MADE IN JAPAN
CANON LENS FD 50mm 1:1.8 S.C.
MIRROR-LOCK-UP SETTING
DIAPHRAGM-LOCKING SETTING
LOCK LEVER

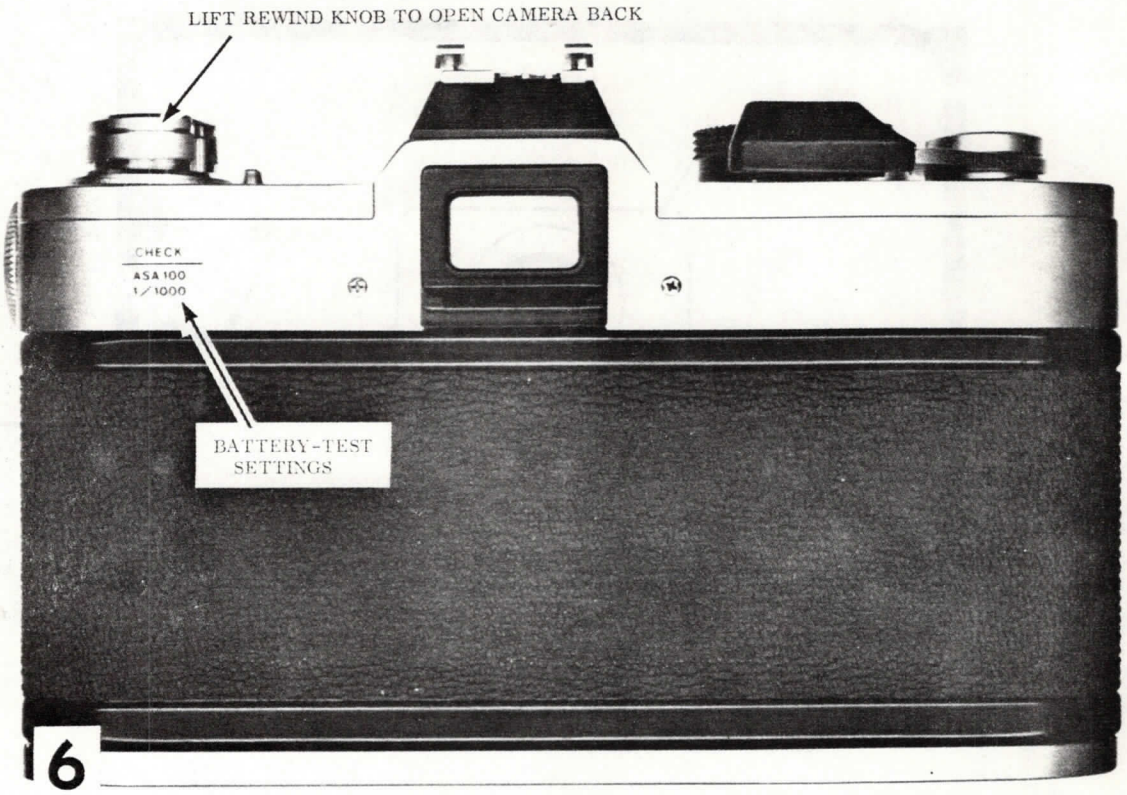
3

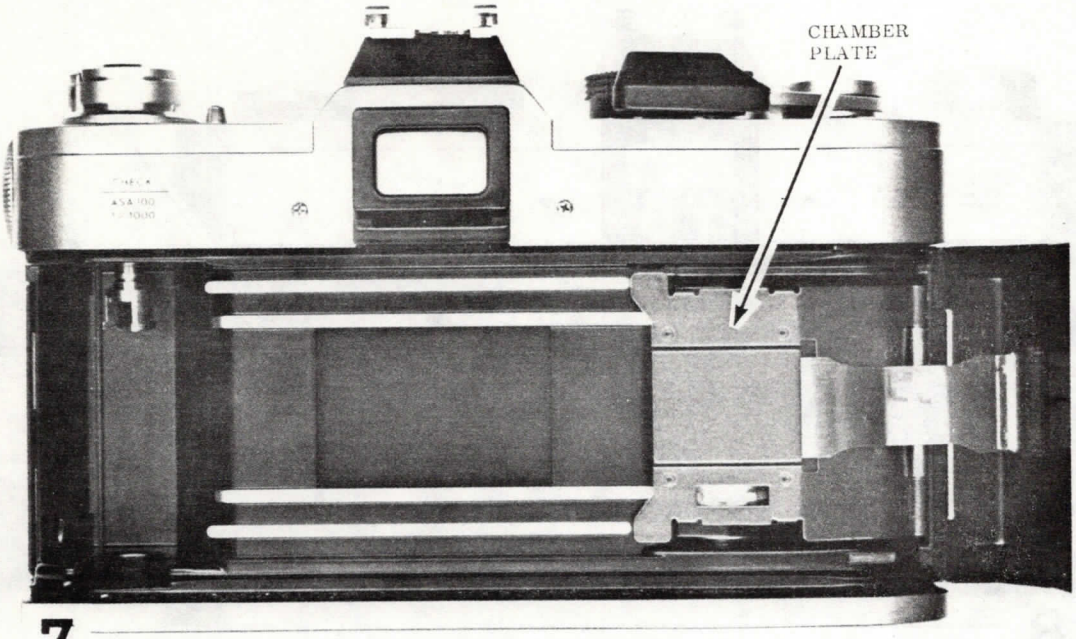

LENS-LOCKING RING
EXPOSURE-METER POSITION
RELEASE-BUTTON LOCK
CATS CONTACTS
BATTERY SWITCH
ON
OFF
C
BATTERY-TEST POSITION
HOT-SHOE CONTACT
SPEED KNOB (TURN TO SET SHUTTER SPEED - LIFT AND TURN TO SET FILM SPEED)
FILM-SPEED DIAL
50mm
PASSED

4

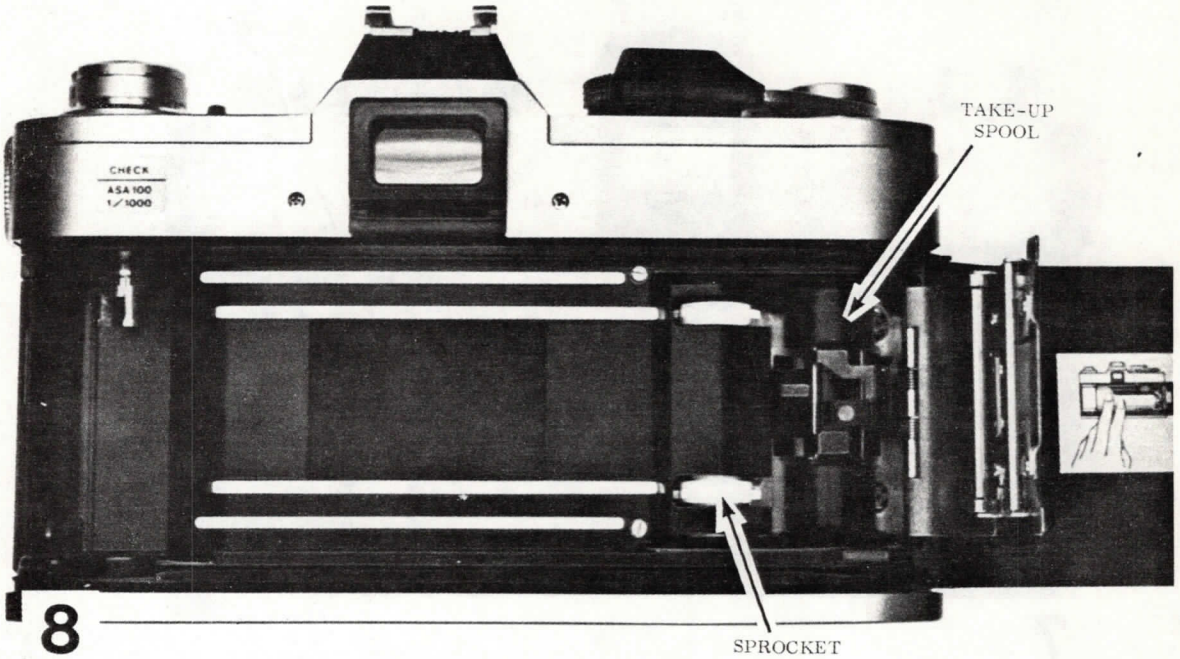

METERING AREA
NEEDLE
POINTER
BATTERY-TEST
INDICATOR
125
SHUTTER-SPEED
INDICATOR
FOCUSING SCREEN

5

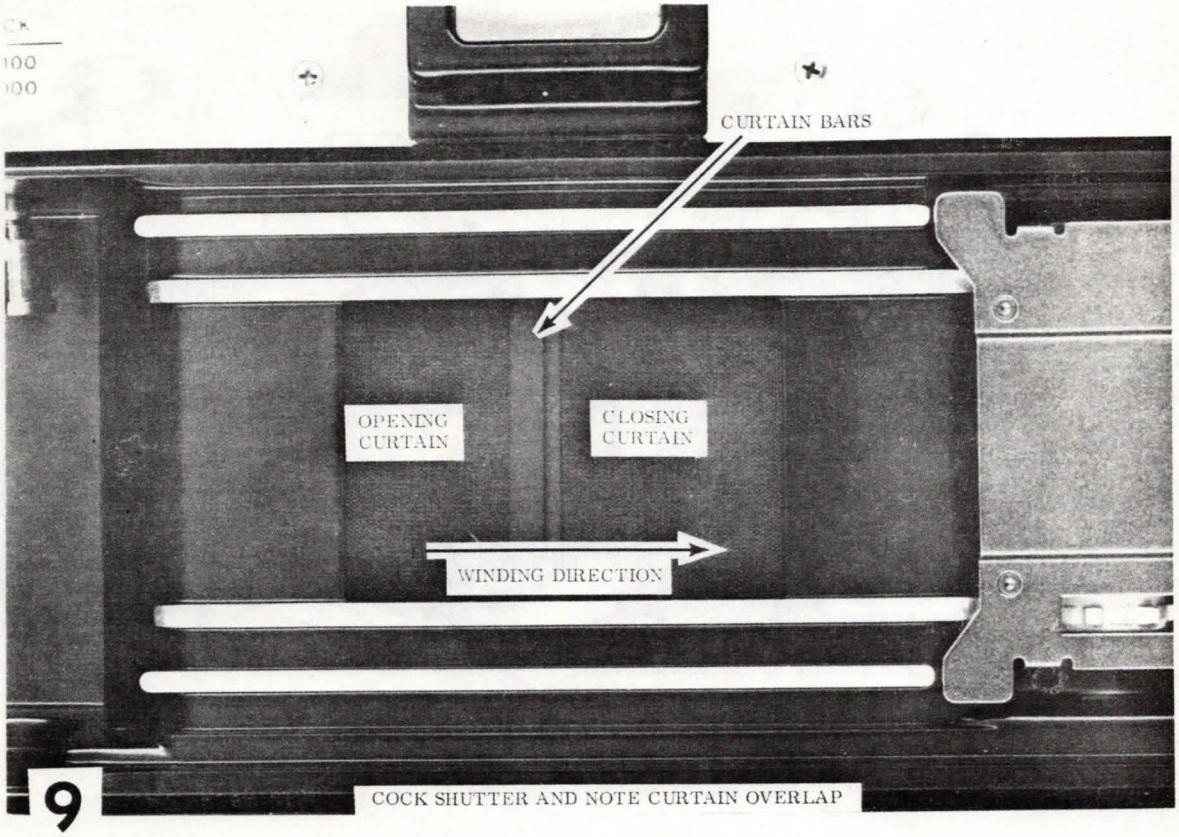

LIFT REWIND KNOB TO OPEN CAMERA BACK
CHECK
ASA 100
1/1000
BATTERY-TEST
SETTINGS
6



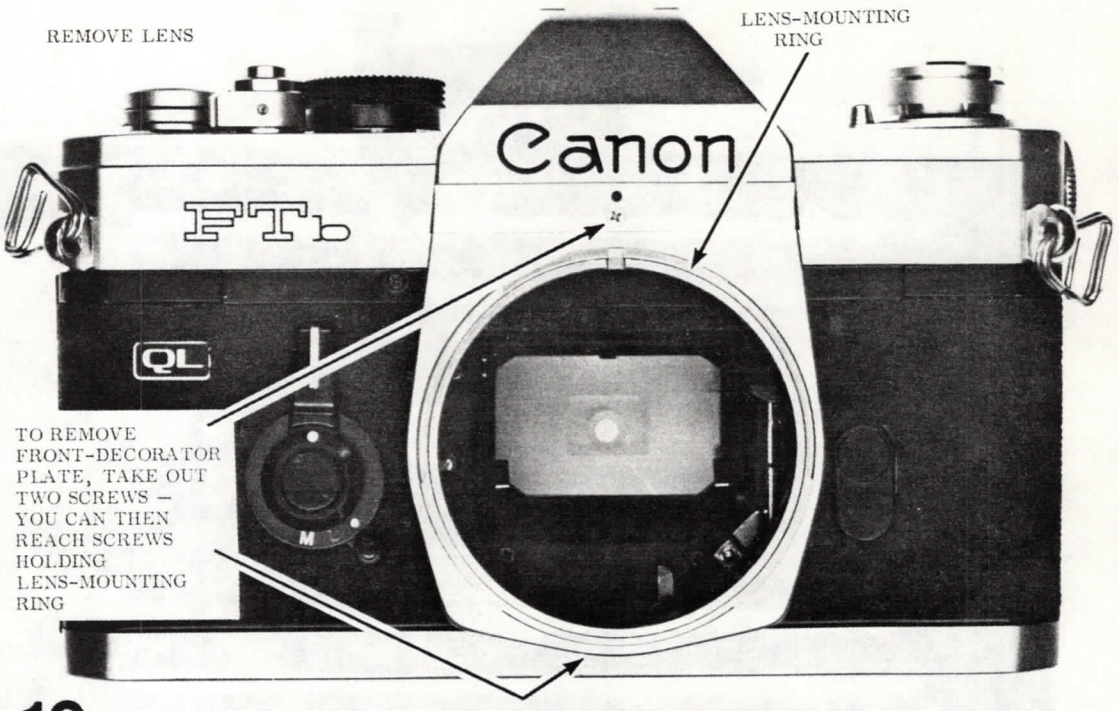
7



8

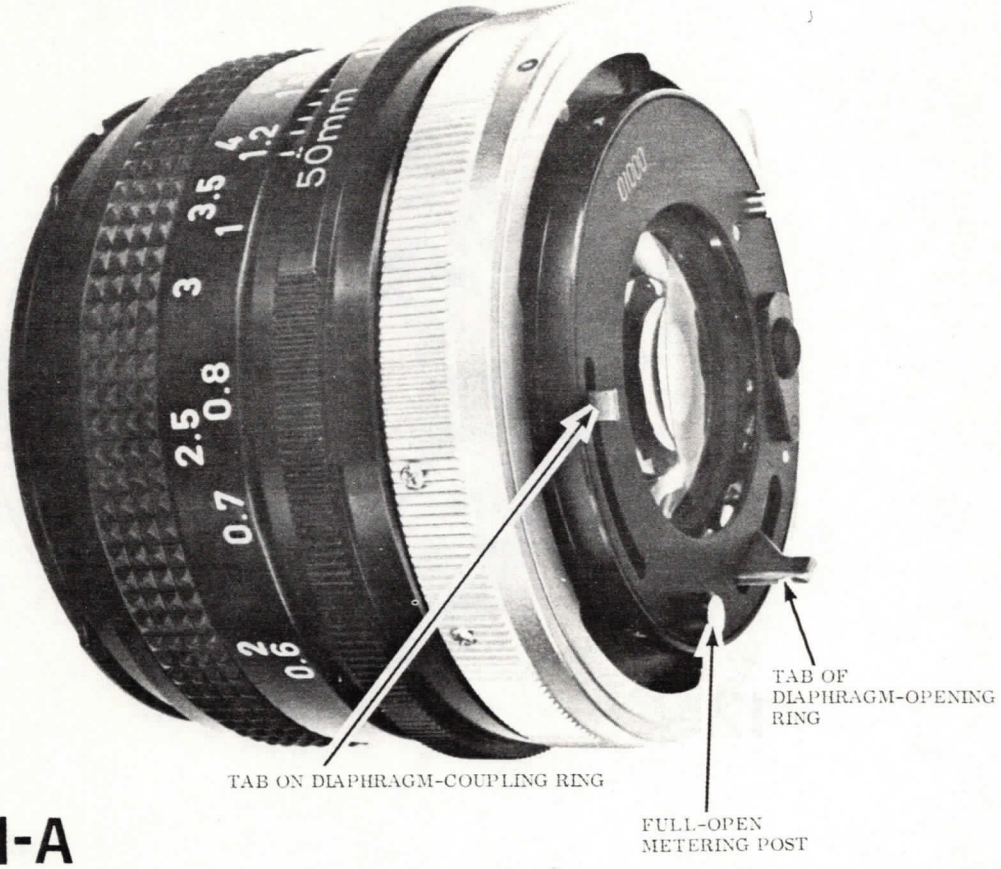


9 COCK SHUTTER AND NOTE CURTAIN OVERLAP

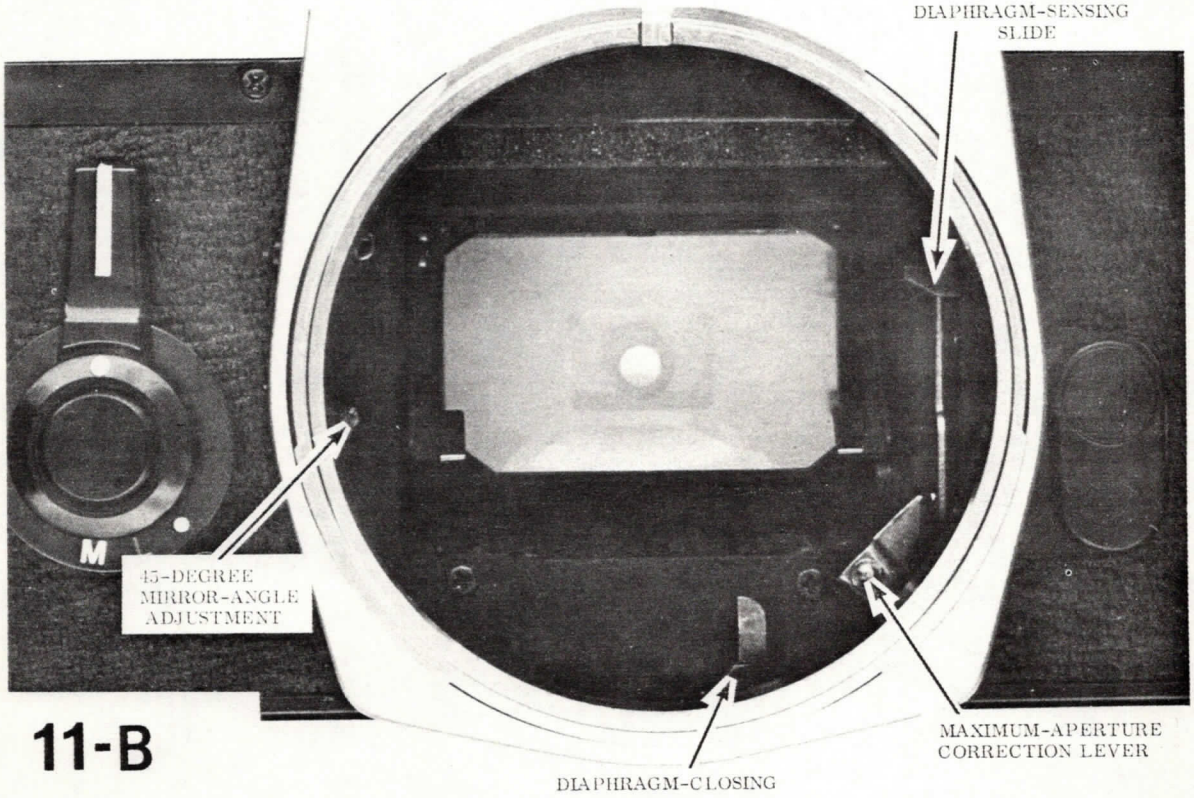


10

Canon's specification for the flange-focal distance is 42.14mm measured to the pressure-plate rails (41.9mm to the film-guide rails).

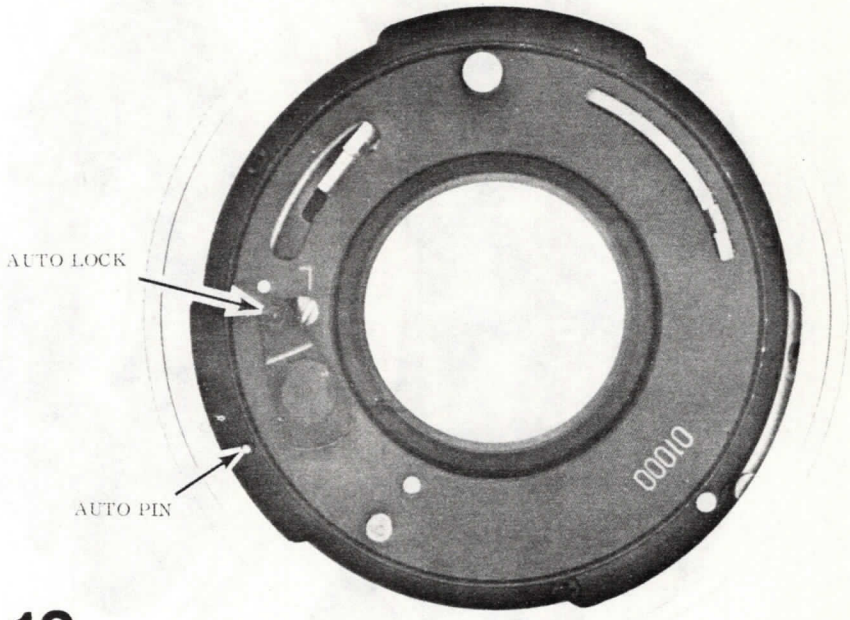


11-A

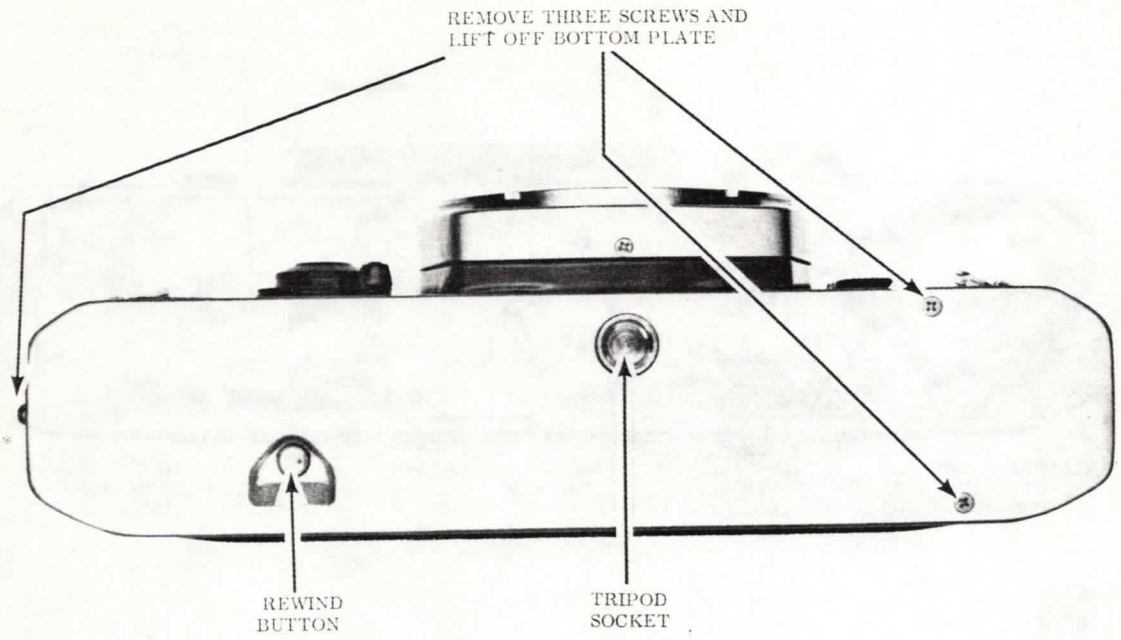


11-B

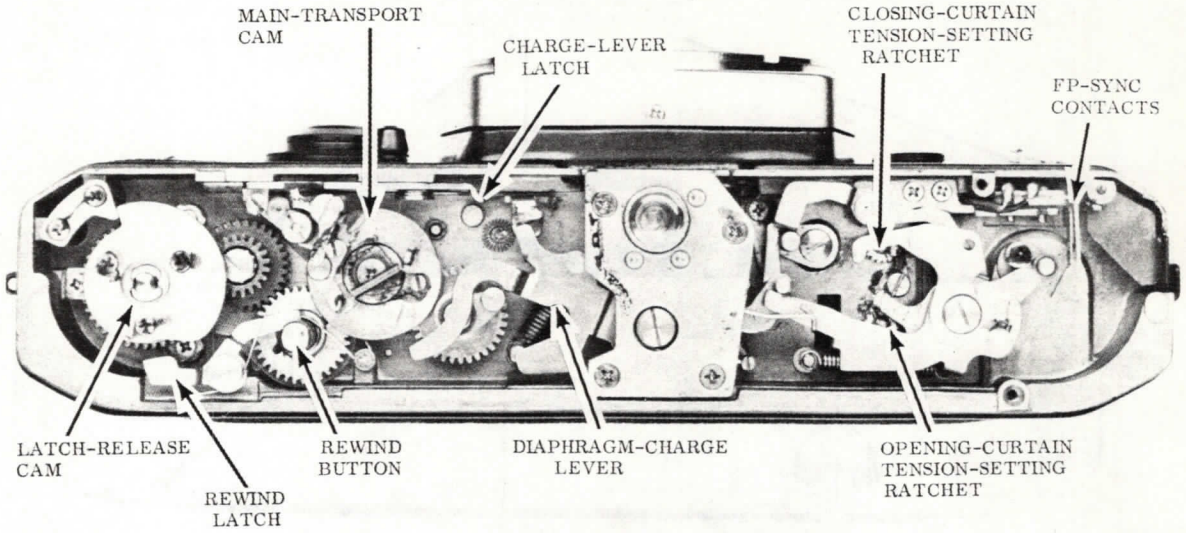
The adjustment for the maximum-aperture correction lever is on the rewind side of the mirror-cage wall. You can reach the adjusting eccentric from inside the mirror cage by first lifting the mirror. The end of the maximum-aperture correction lever should be 9mm from the front surface of the lens-mounting ring.



12



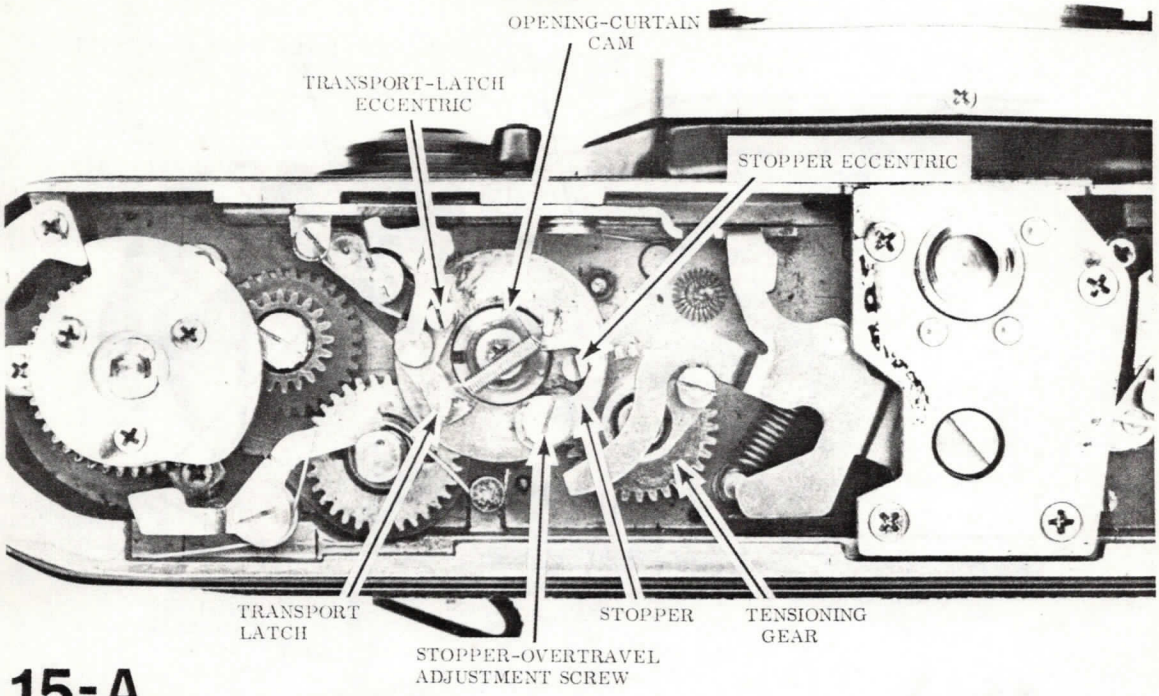
*NOTE DIFFERENCE IN HEAD SHAPE OF SCREW
AT END OF BOTTOM PLATE



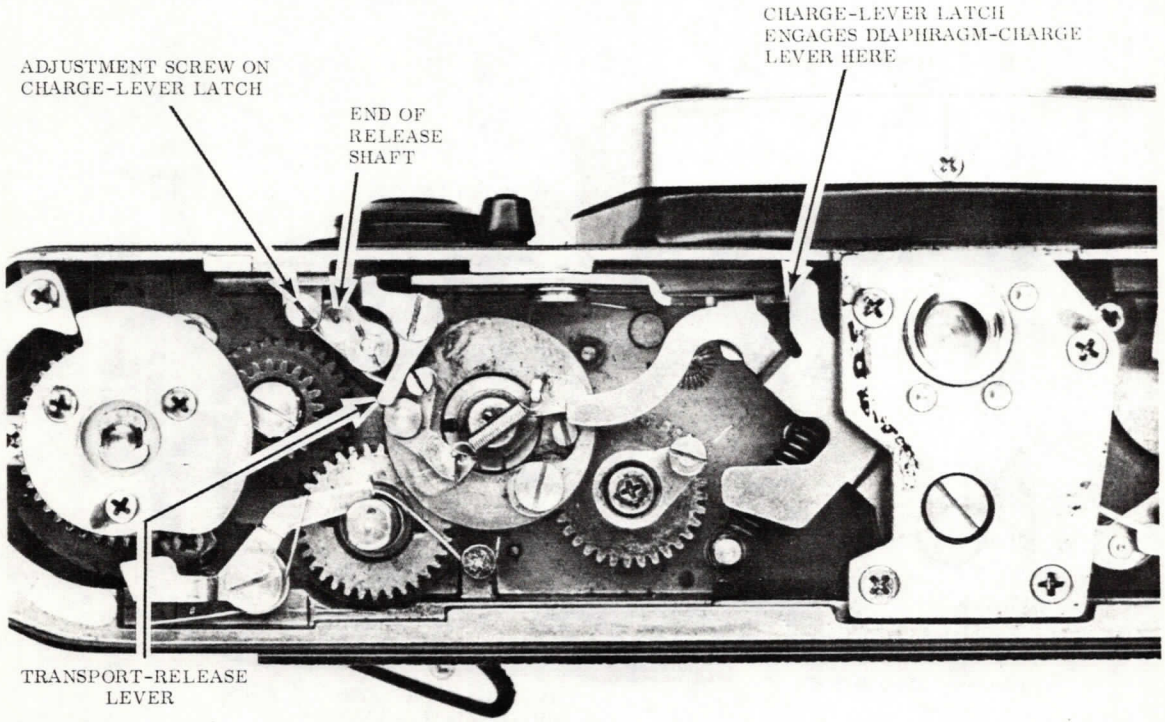
14

FP Sync

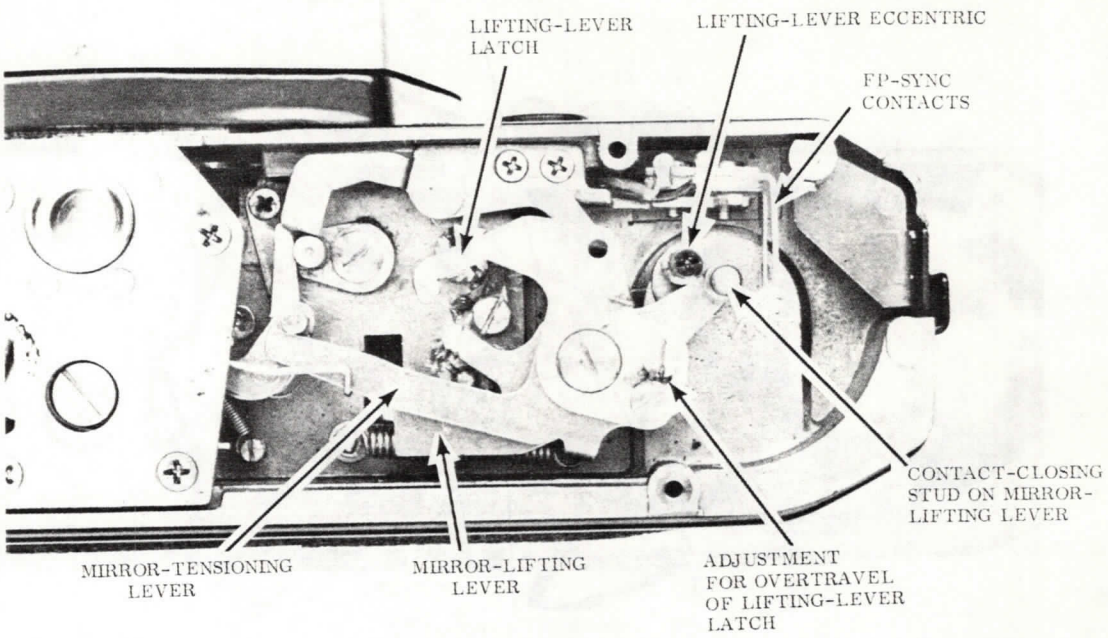
Adjust the FP-sync delay (10.5 - 13.5ms) by forming the FP-sync contacts.



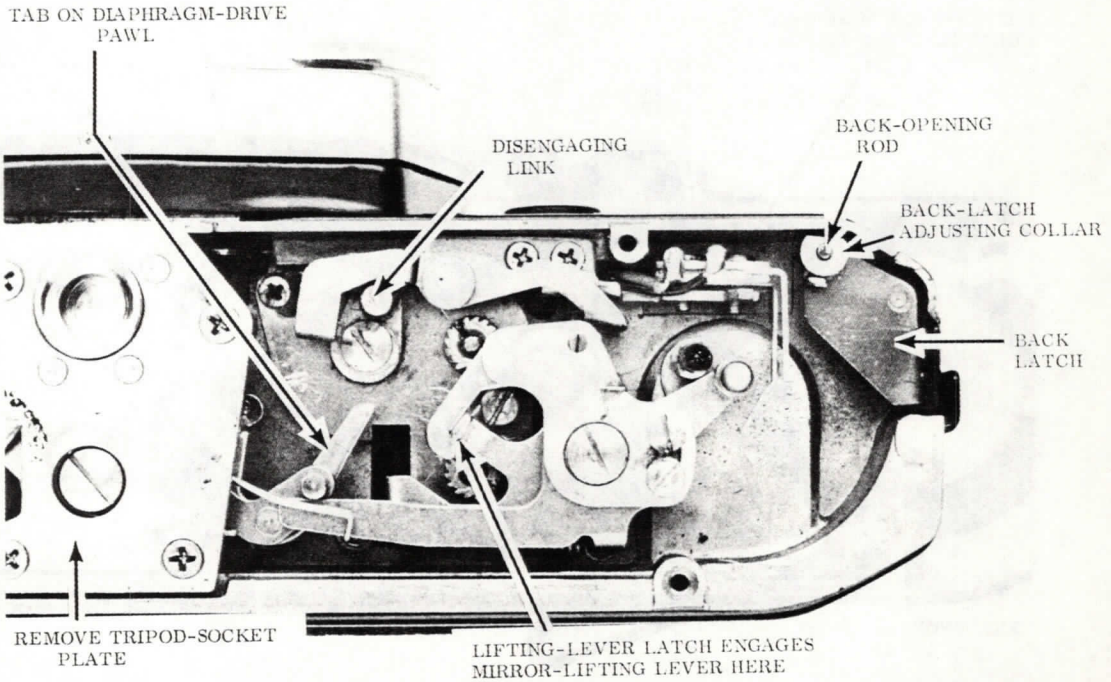
15-A SHUTTER RELEASED



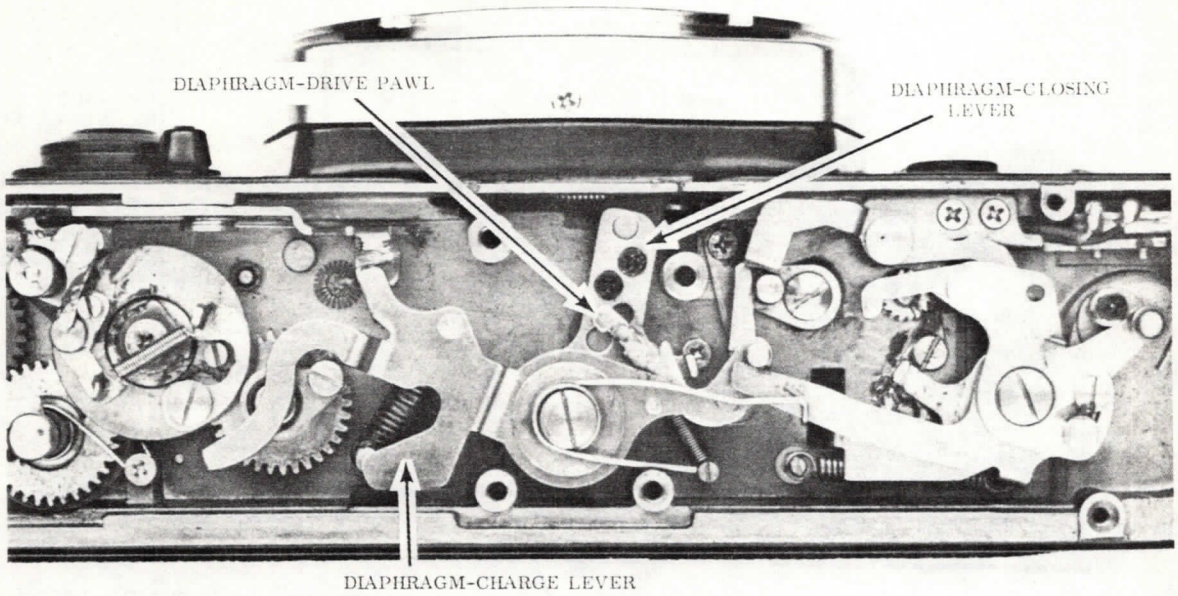
15-B SHUTTER COCKED



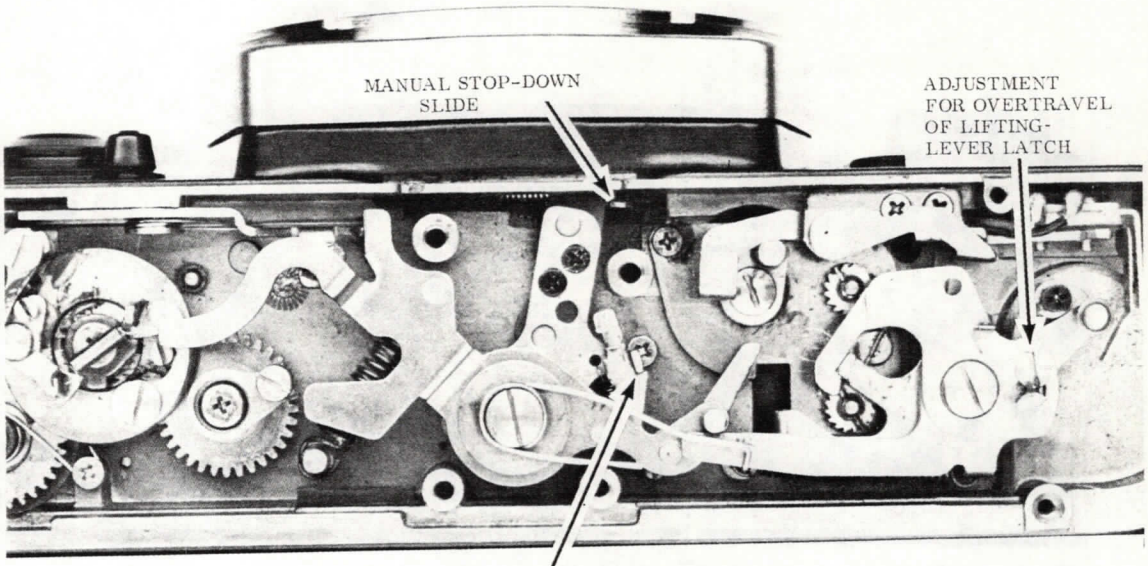
16-A SHUTTER RELEASED

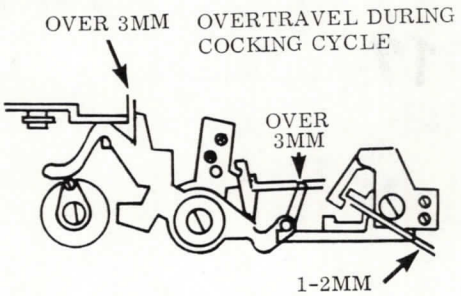


16-B SHUTTER COCKED

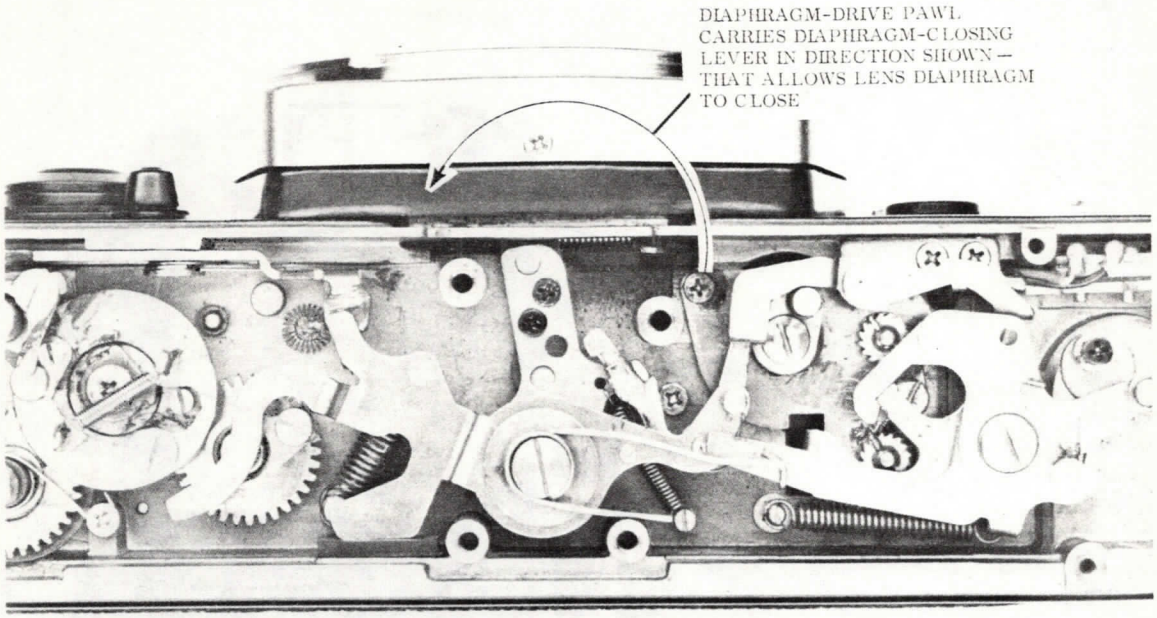


17 SHUTTER RELEASED



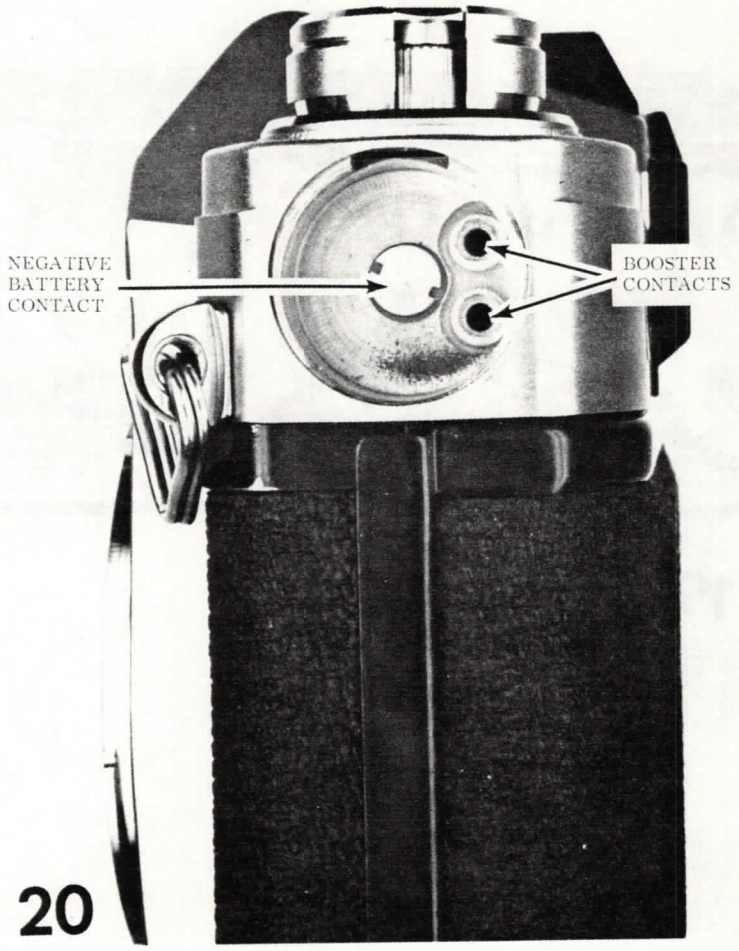


18 SHUTTER COCKED

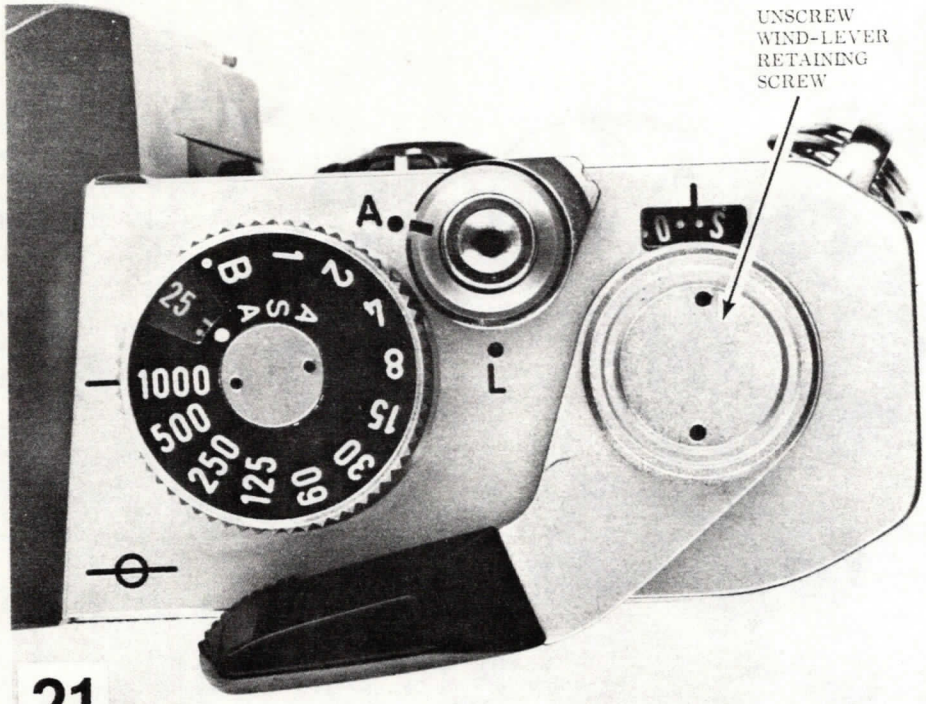


19 SHUTTER OPEN

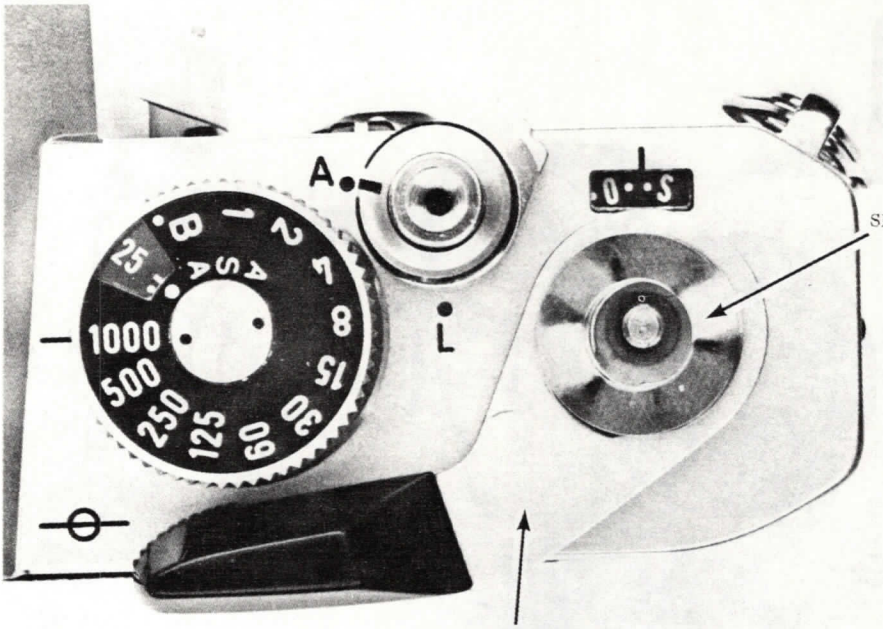
REMOVE BATTERY-COMPARTMENT
COVER AND BATTERY



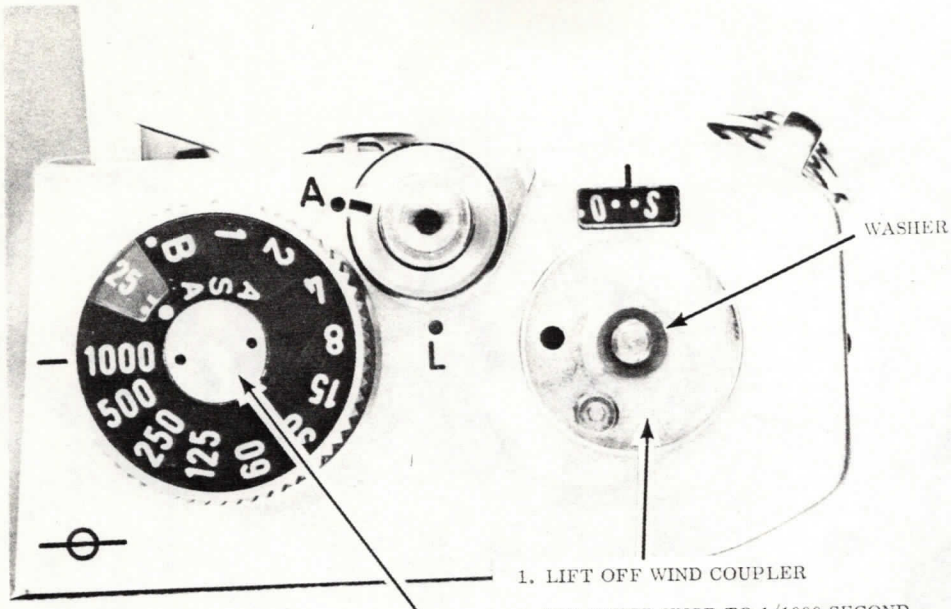
20


UNSCREW
WIND-LEVER
RETAINING
SCREW
A
L
B
1
2
4
8
15
30
60
125
250
500
1000
25
ASA

21

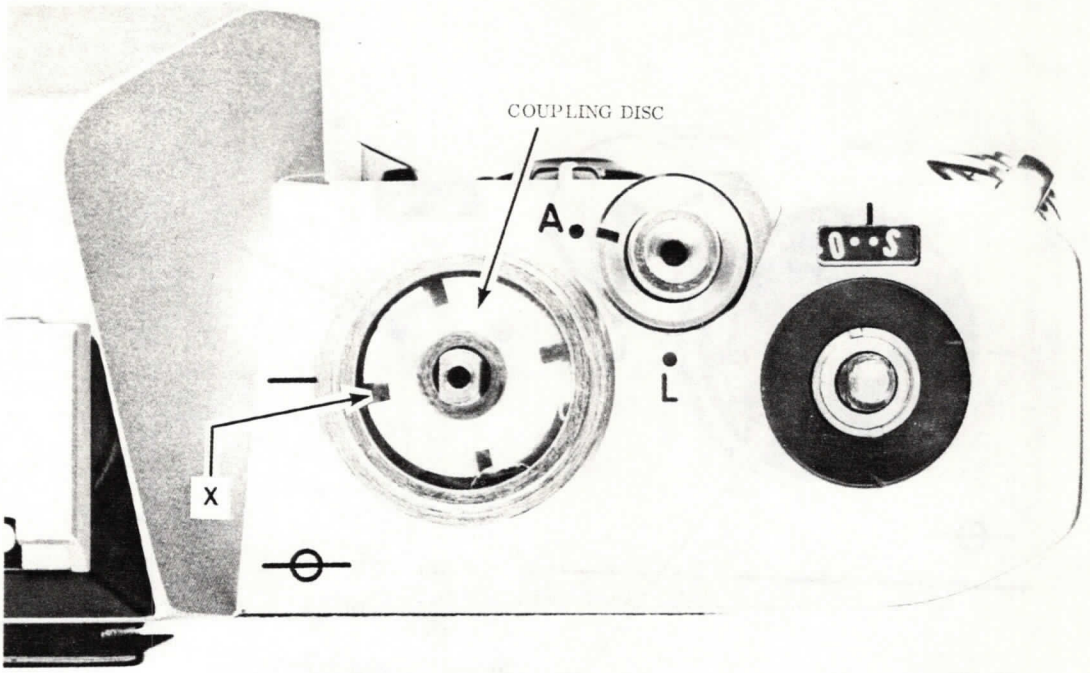

A
O • S
B
1
2
4
8
15
30
60
125
250
500
1000
25
L
SPRING WASHERS
LIFT OFF WIND LEVER
(NOTE POSITIONS OF SPRING
WASHERS AND SPACER)

22



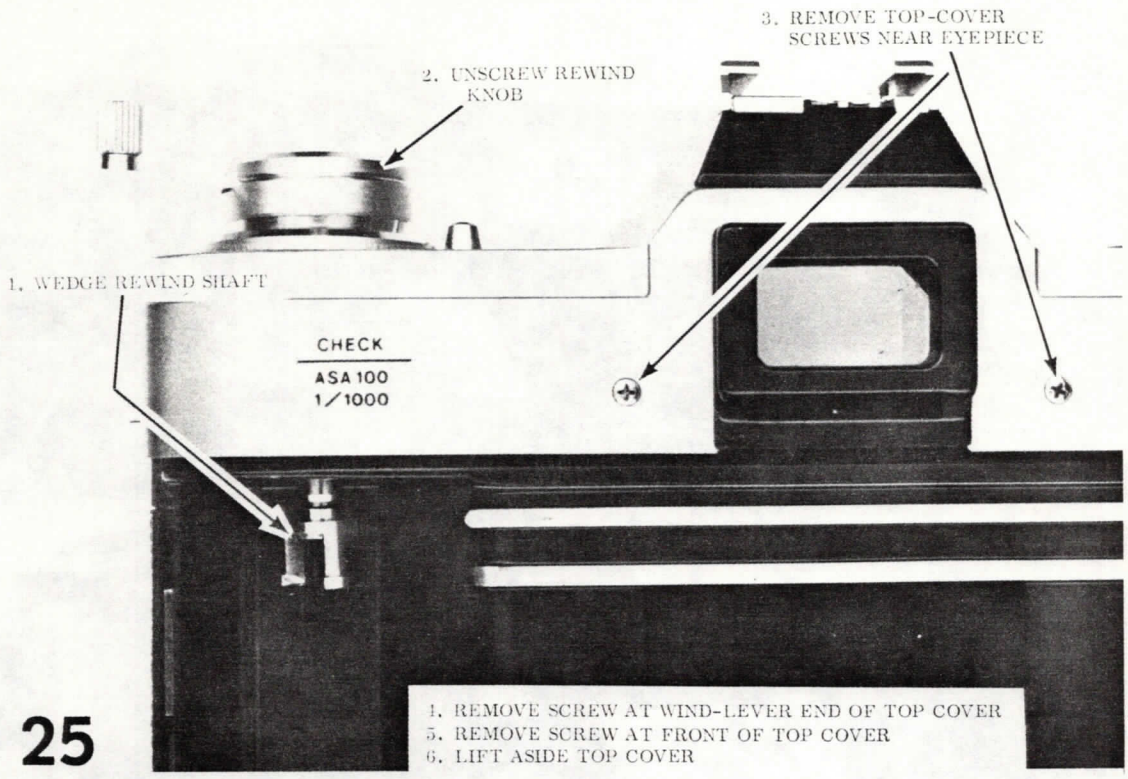
1. LIFT OFF WIND COUPLER
2. SET SPEED KNOB TO 1/1000 SECOND AND ASA 25
3. REMOVE SPEED-KNOB SCREW
4. LIFT OFF SPEED KNOB

23

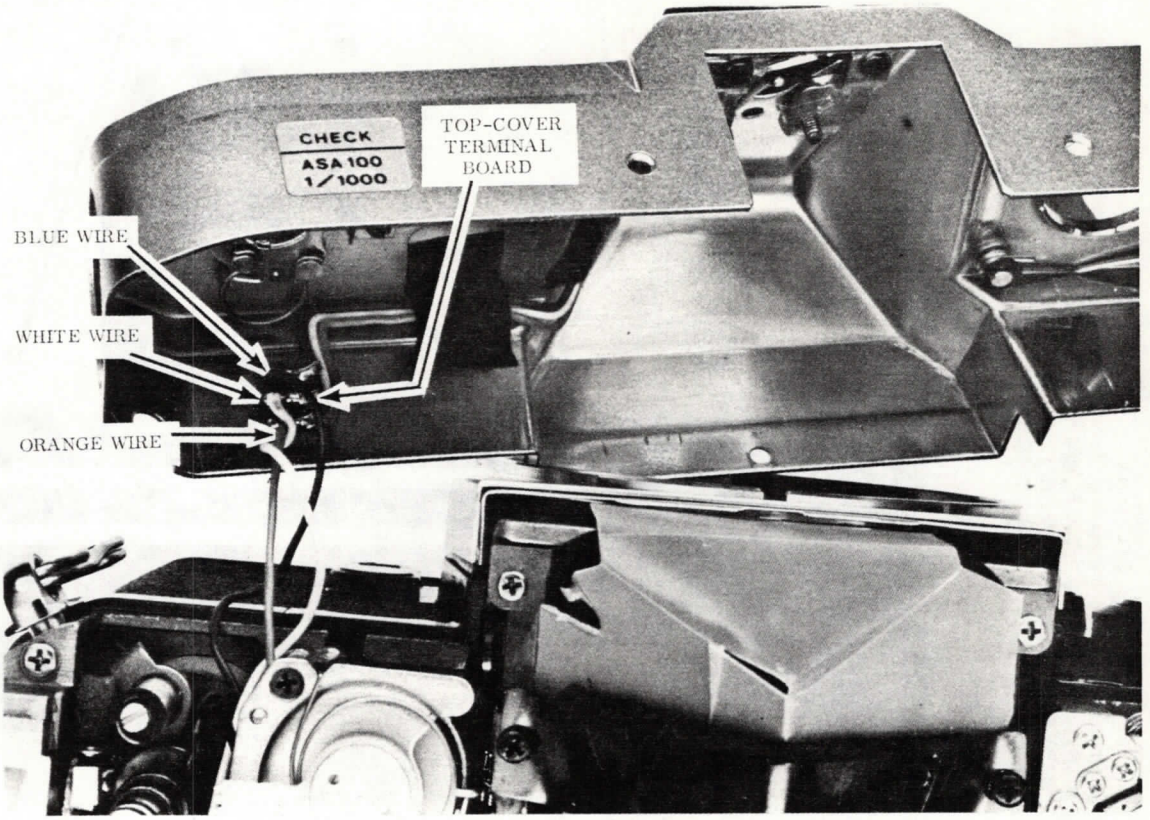


24

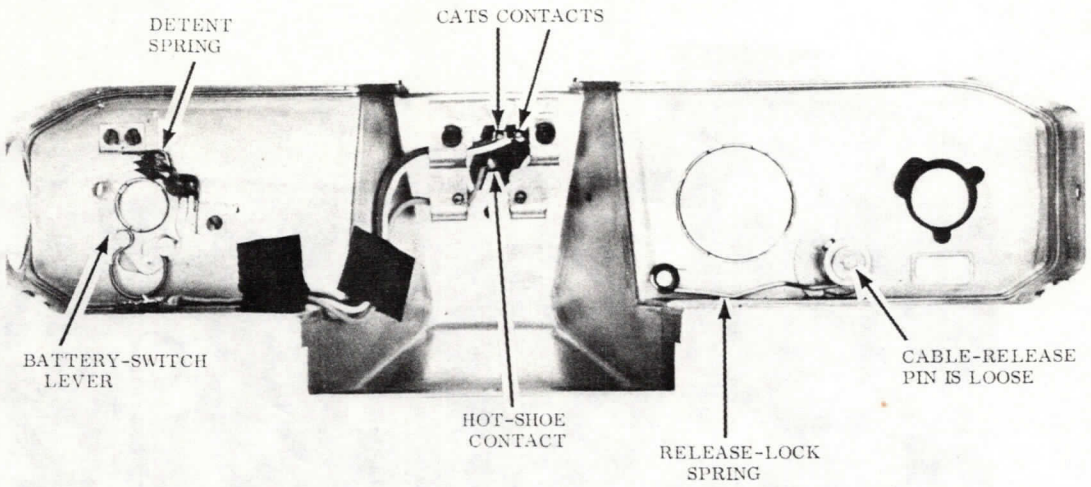
REASSEMBLY: SEAT THE SPEED KNOB AT THE SETTINGS OF ASA 25 AND 1/1000 SECOND. REACH UNDER SPEED KNOB AND TURN COUPLING DISC CLOCKWISE UNTIL SPEED-KNOB PIN PASSES INTO COUPLING-DISC SLOT MARKED "X."


3. REMOVE TOP-COVER SCREWS NEAR EYEPIECE
2. UNSCREW REWIND KNOB
1. WEDGE REWIND SHAFT
CHECK
ASA 100
1/1000
1. REMOVE SCREW AT WIND-LEVER END OF TOP COVER
5. REMOVE SCREW AT FRONT OF TOP COVER
6. LIFT ASIDE TOP COVER

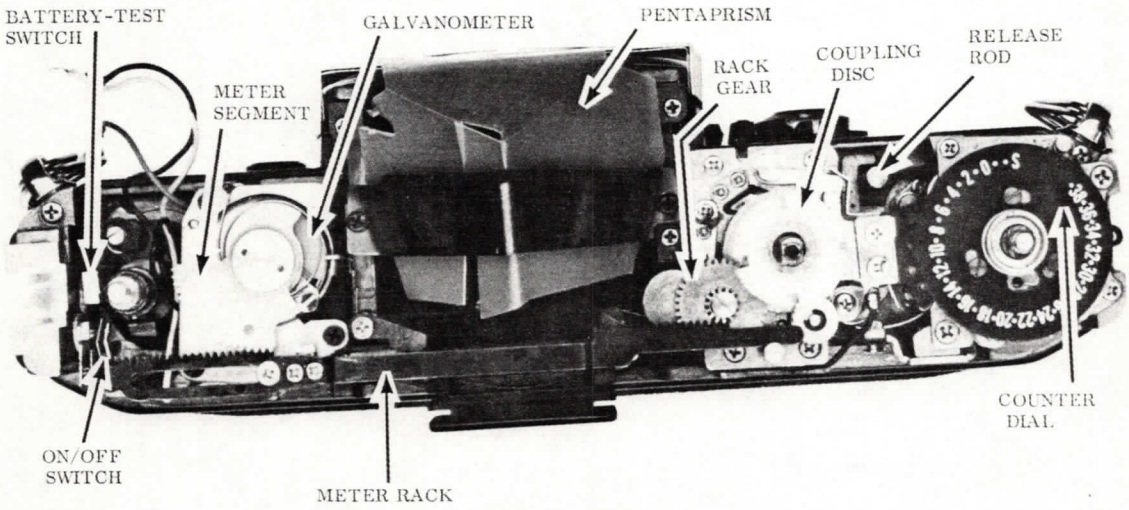
25



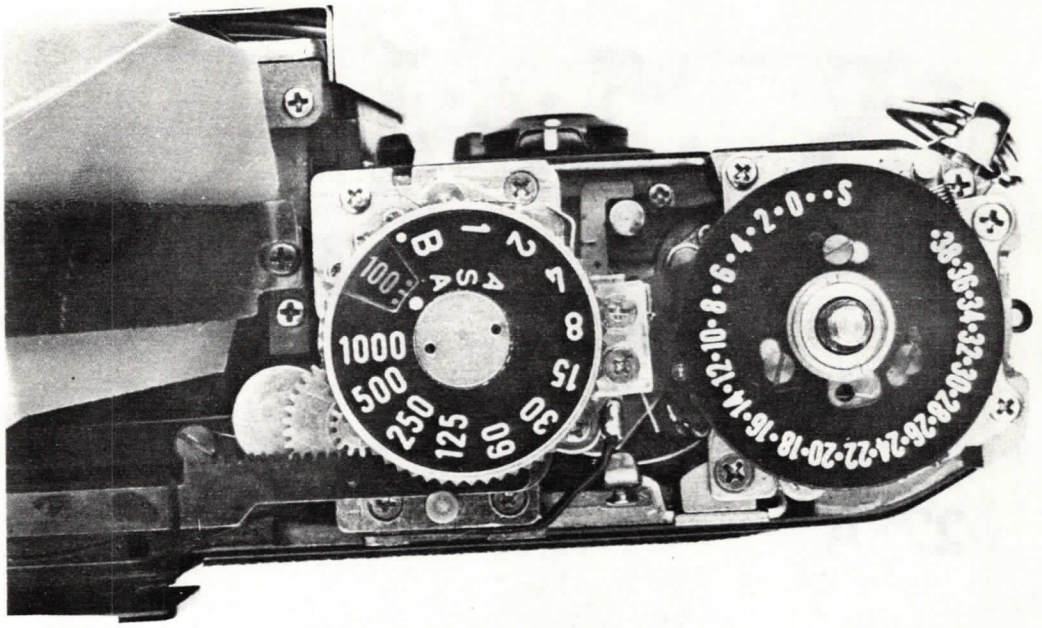
26 UNSOLDER THREE WIRES GOING FROM CAMERA TO TOP-COVER TERMINAL BOARD


DETENT SPRING
CATS CONTACTS
BATTERY-SWITCH LEVER
HOT-SHOE CONTACT
RELEASE-LOCK SPRING
CABLE-RELEASE PIN IS LOOSE

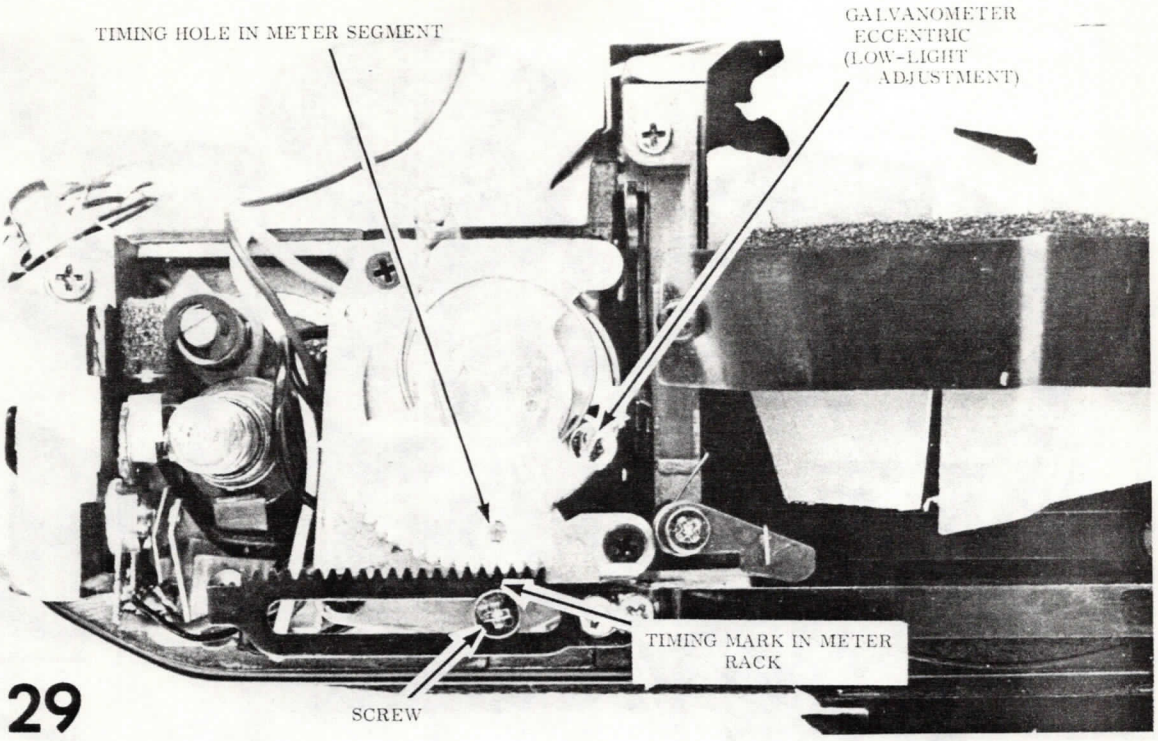
27-A


BATTERY-TEST SWITCH
METER SEGMENT
GALVANOMETER
PENTAPRISM
RACK GEAR
COUPLING DISC
RELEASE ROD
ON/OFF SWITCH
METER RACK
COUNTER DIAL

27-B

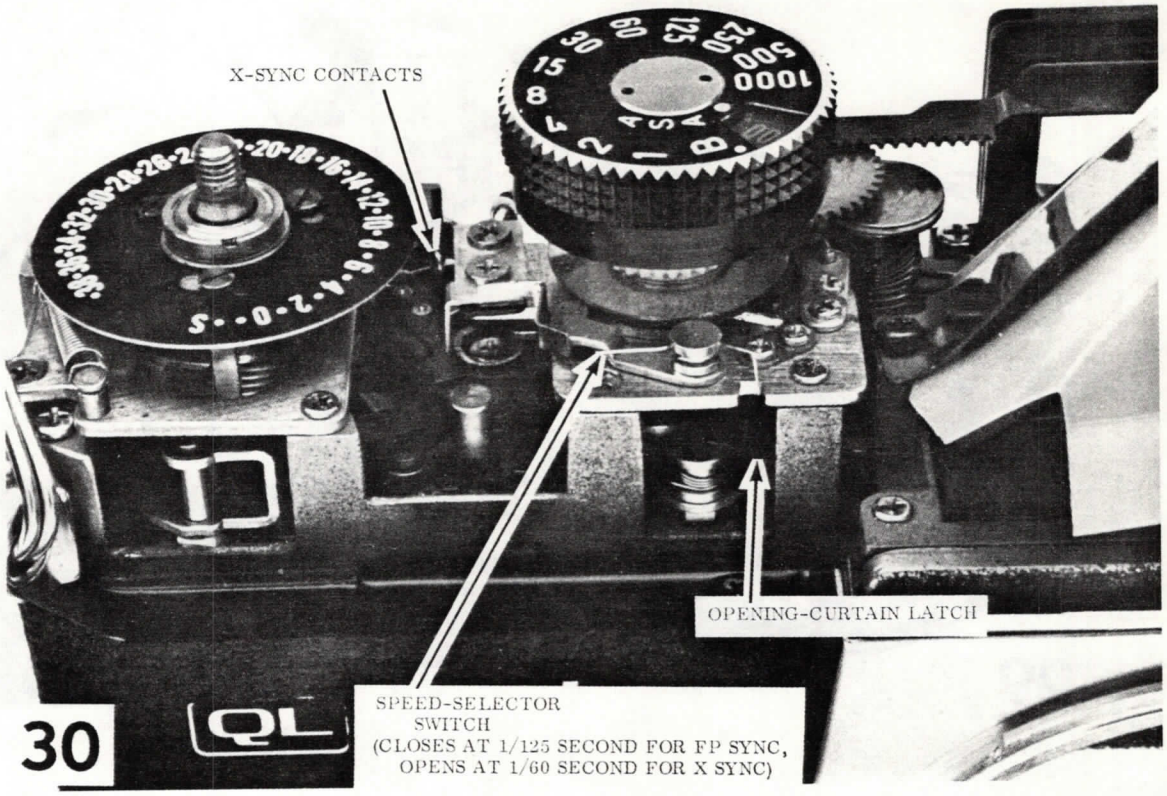


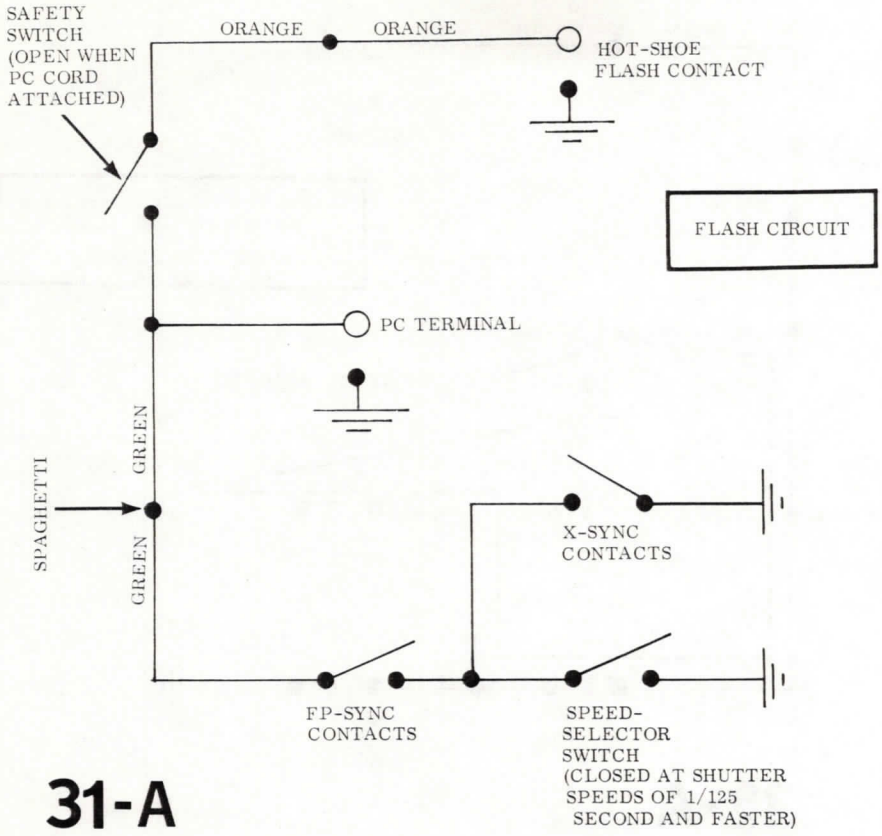
28 REPLACE SPEED KNOB AT 1/1000 SECOND AND ASA 25 — THEN SET TEST SETTINGS OF 1/1000 SECOND AND ASA 100



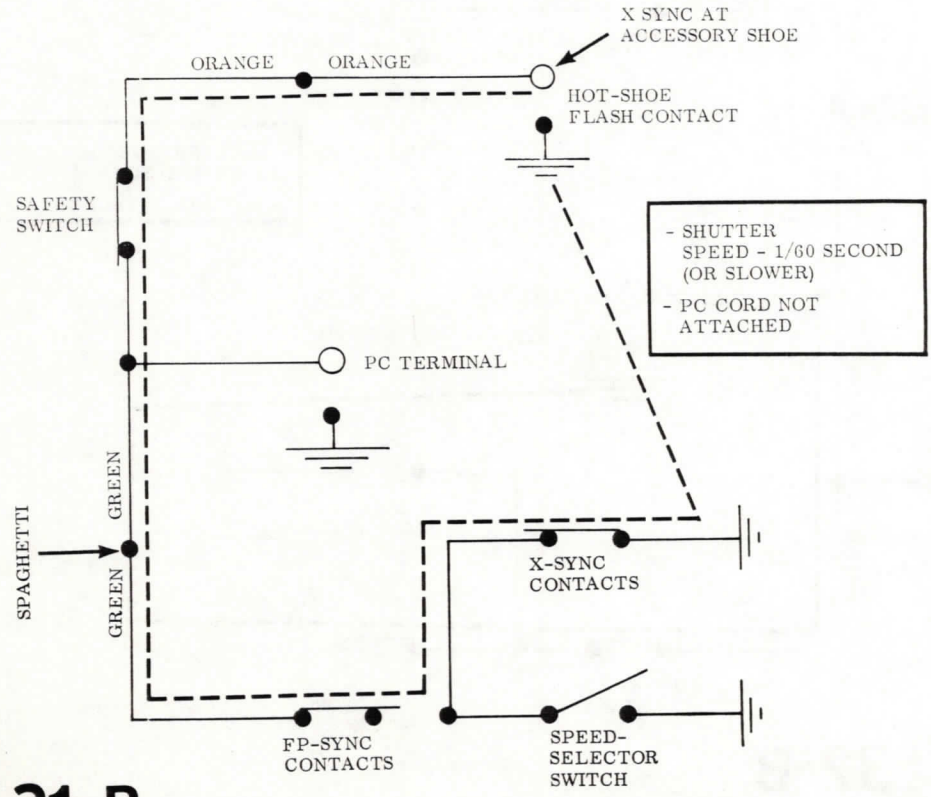
29

AT SETTINGS OF 1/1000 SECOND AND ASA 100, TIMING HOLES ALIGN WITH CENTER OF SCREWHEAD AS SHOWN

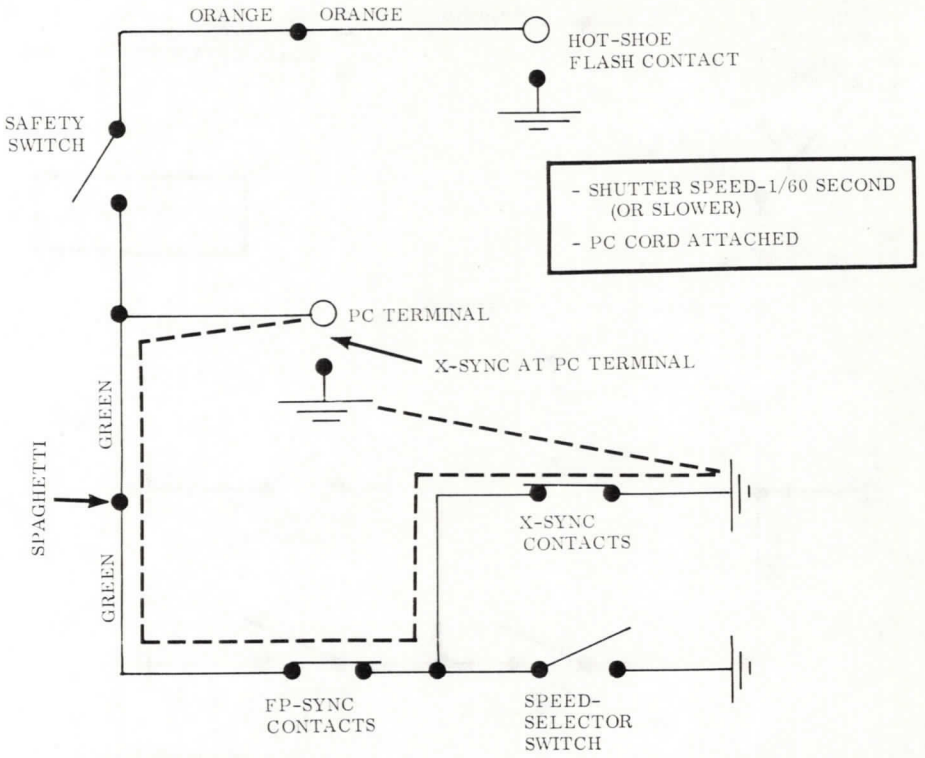

X-SYNC CONTACTS
OPENING-CURTAIN LATCH
SPEED-SELECTOR SWITCH (CLOSES AT 1/125 SECOND FOR FP SYNC, OPENS AT 1/60 SECOND FOR X SYNC)
30
QL


SAFETY SWITCH (OPEN WHEN PC CORD ATTACHED)
ORANGE
ORANGE
HOT-SHOE FLASH CONTACT
FLASH CIRCUIT
PC TERMINAL
SPAGHETTI
GREEN
GREEN
X-SYNC CONTACTS
FP-SYNC CONTACTS
SPEED-SELECTOR SWITCH (CLOSED AT SHUTTER SPEEDS OF 1/125 SECOND AND FASTER)

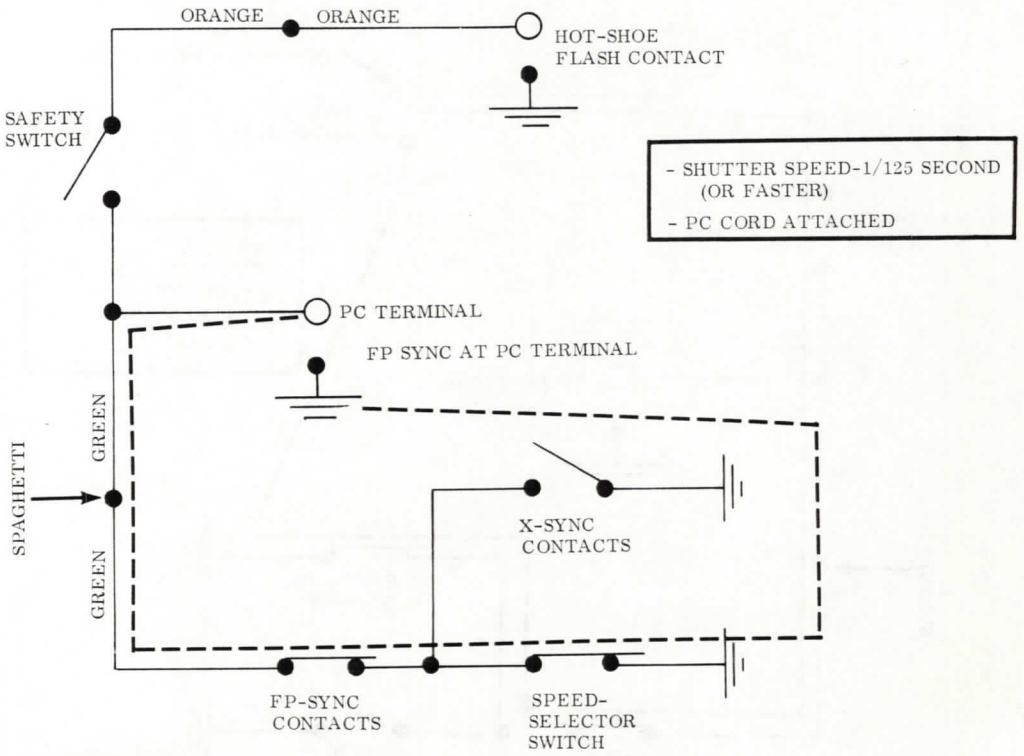
31-A


X SYNC AT ACCESSORY SHOE
ORANGE
ORANGE
HOT-SHOE FLASH CONTACT
SAFETY SWITCH
- SHUTTER SPEED - 1/60 SECOND (OR SLOWER)
- PC CORD NOT ATTACHED
PC TERMINAL
SPAGHETTI
GREEN
GREEN
X-SYNC CONTACTS
FP-SYNC CONTACTS
SPEED-SELECTOR SWITCH

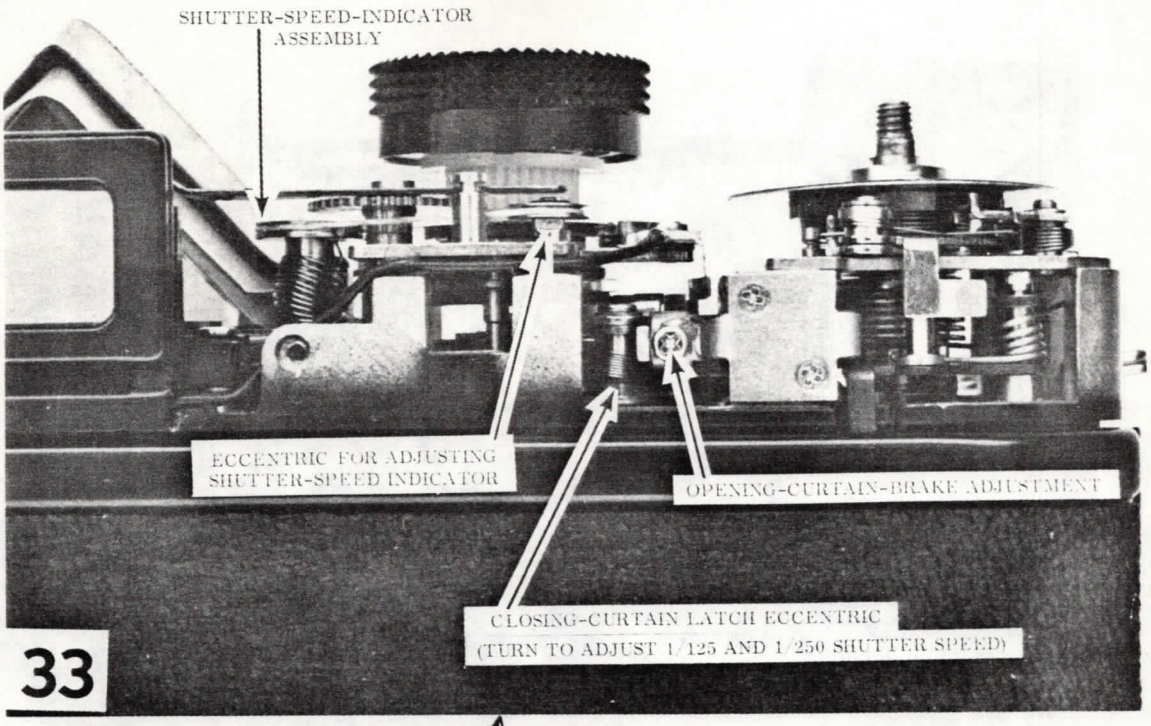
31-B


ORANGE
ORANGE
HOT-SHOE
FLASH CONTACT
SAFETY
SWITCH
- SHUTTER SPEED-1/60 SECOND
(OR SLOWER)
- PC CORD ATTACHED
PC TERMINAL
X-SYNC AT PC TERMINAL
GREEN
SPAGHETTI
GREEN
X-SYNC
CONTACTS
FP-SYNC
CONTACTS
SPEED-
SELECTOR
SWITCH

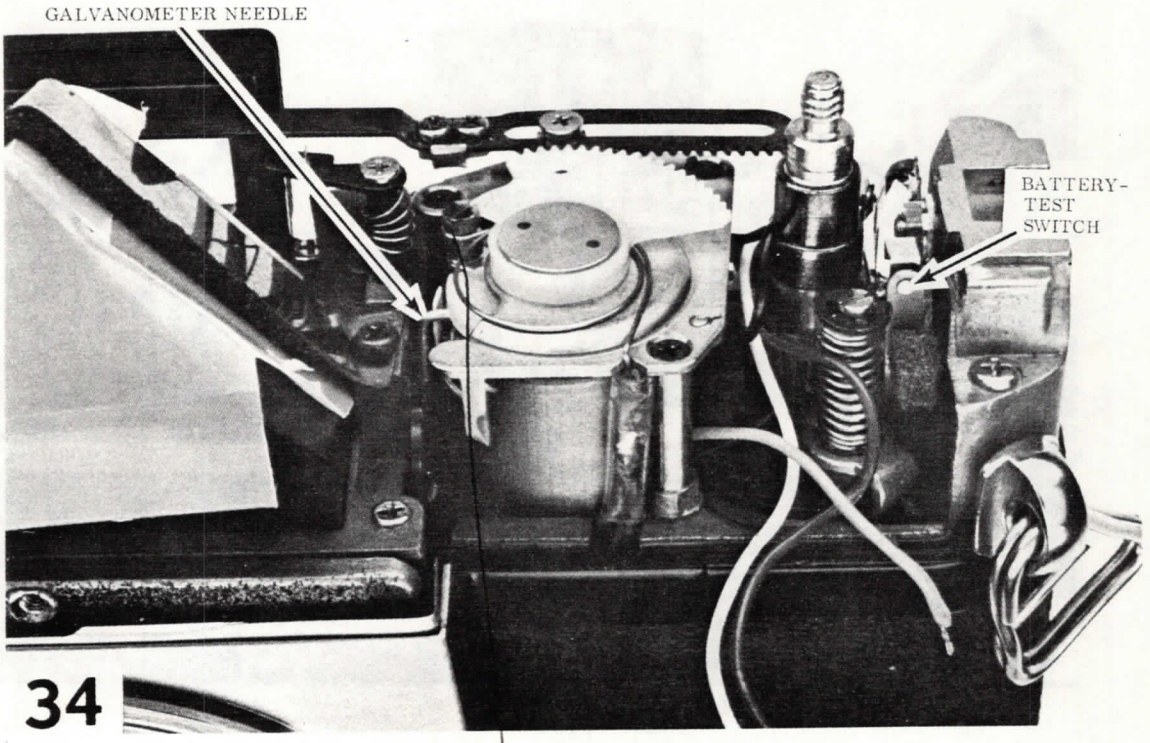
32-A


ORANGE
ORANGE
HOT-SHOE
FLASH CONTACT
SAFETY
SWITCH
- SHUTTER SPEED-1/125 SECOND
(OR FASTER)
- PC CORD ATTACHED
PC TERMINAL
FP SYNC AT PC TERMINAL
GREEN
SPAGHETTI
GREEN
X-SYNC
CONTACTS
FP-SYNC
CONTACTS
SPEED-
SELECTOR
SWITCH

32-B

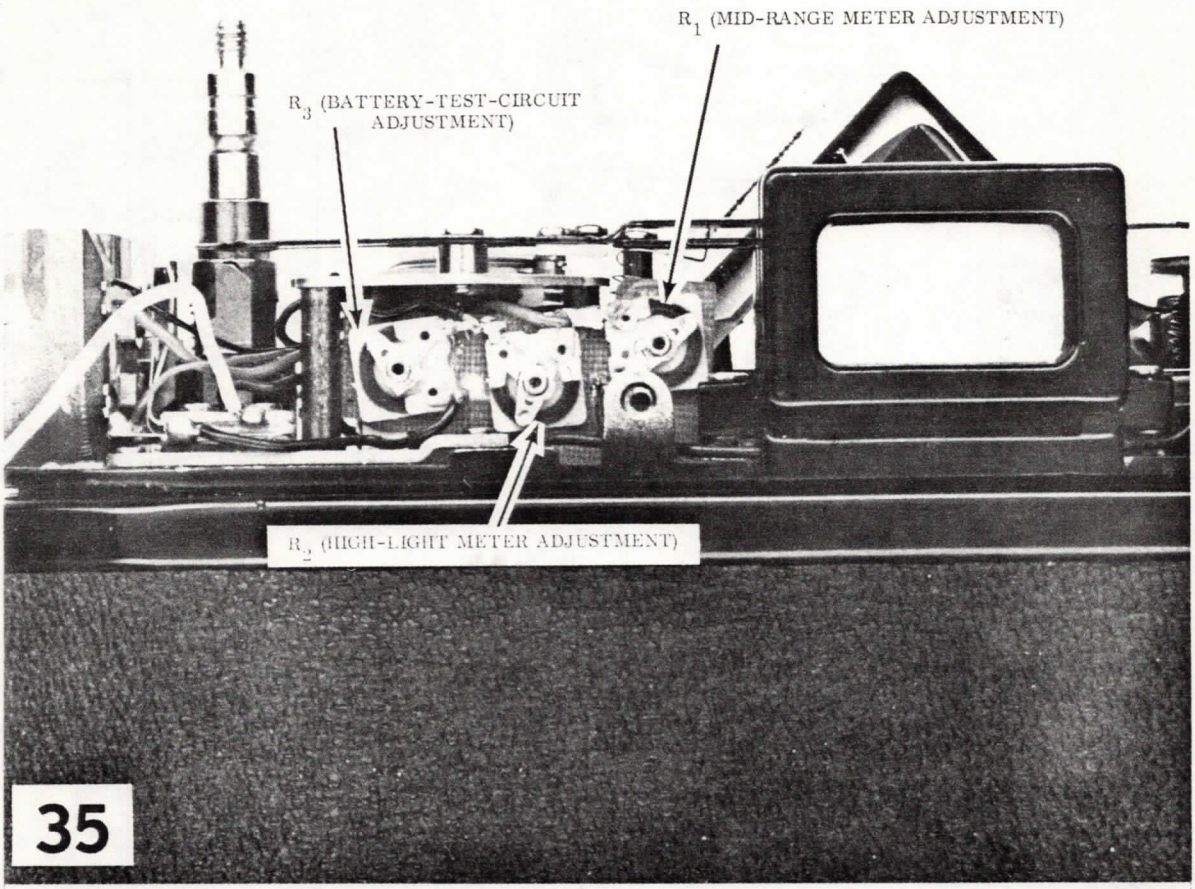


Spds adjust 1/250 & 1/125



34

Low Range adjust

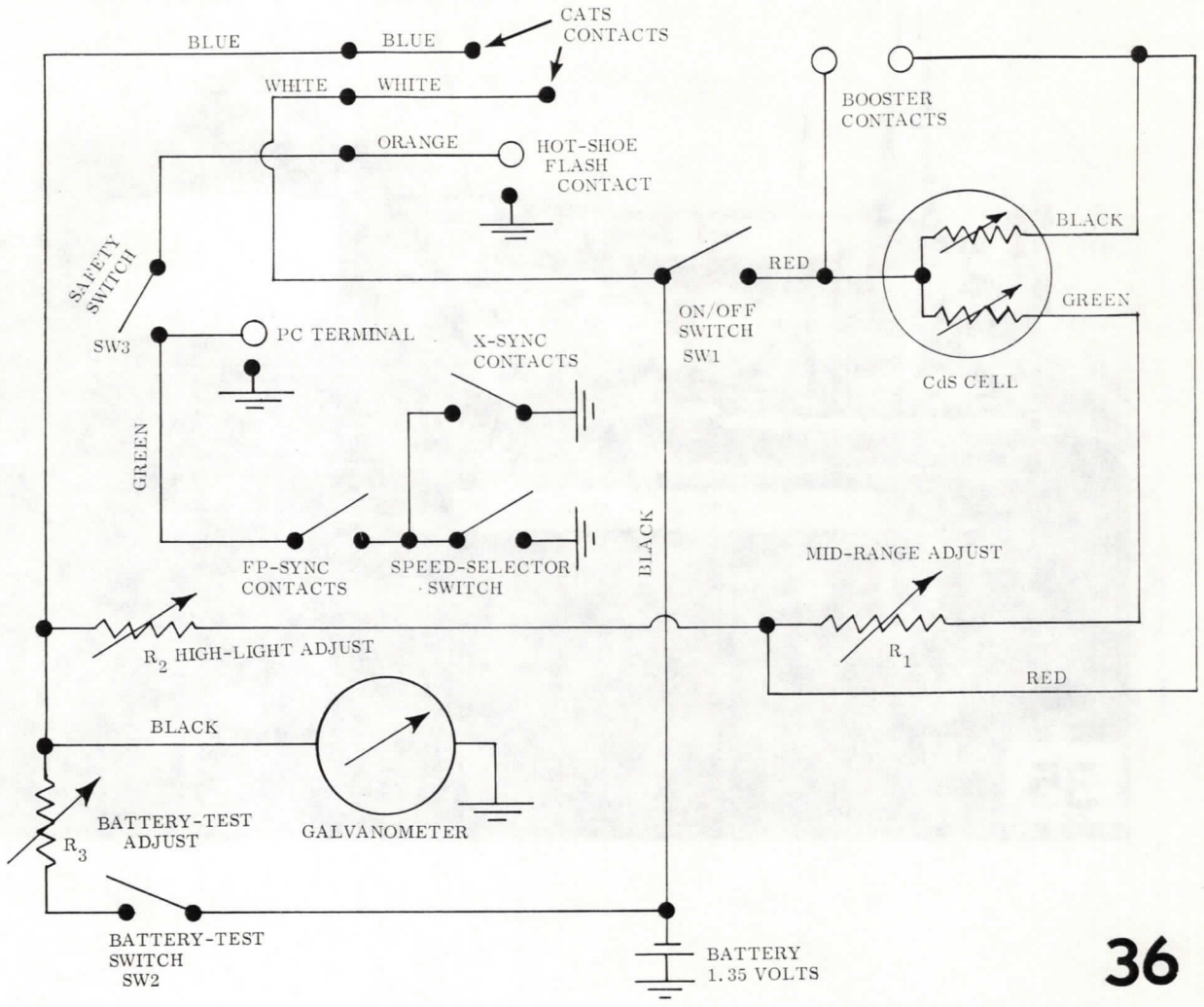


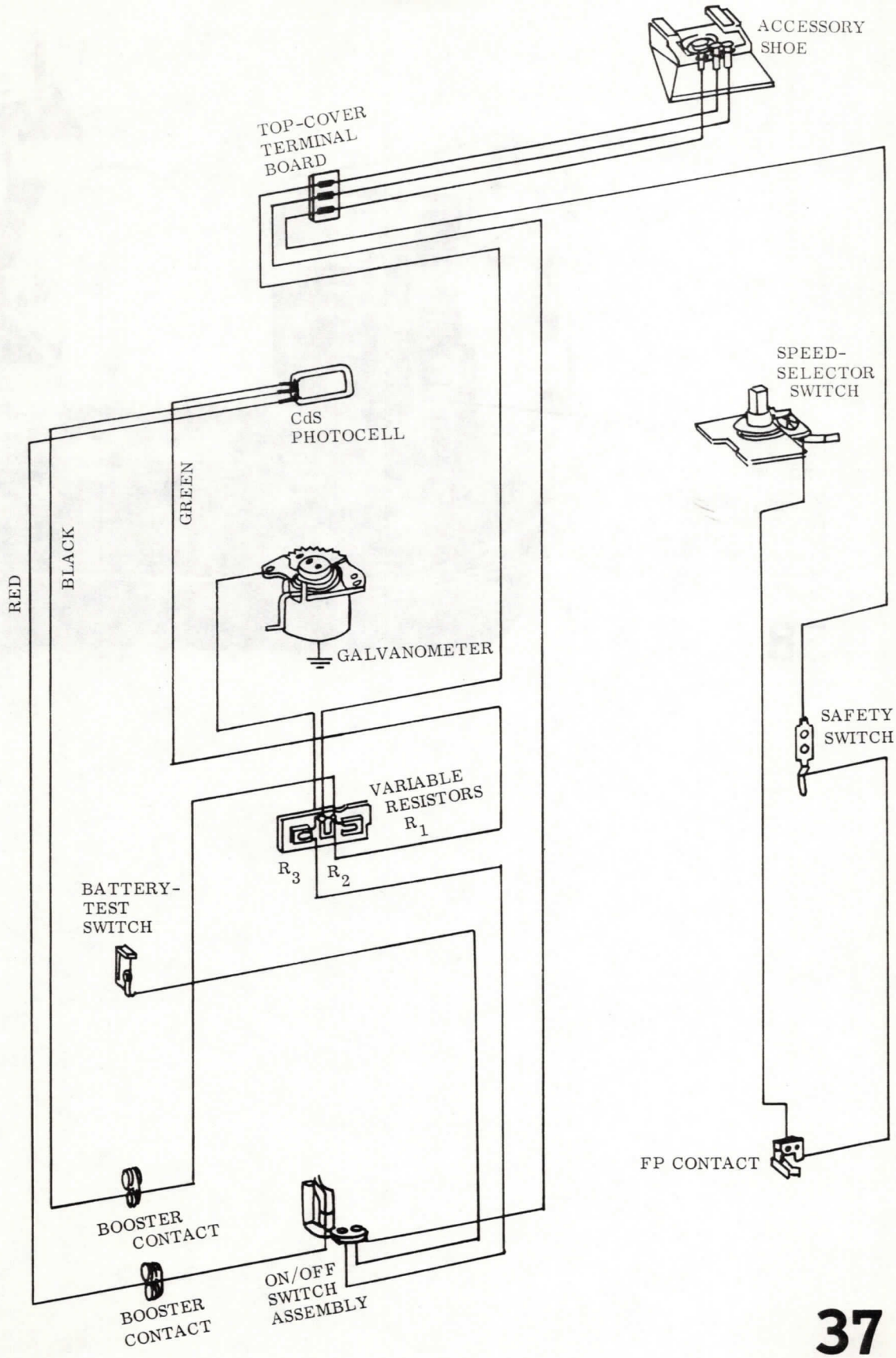
Meter adjust

High Light — R_2

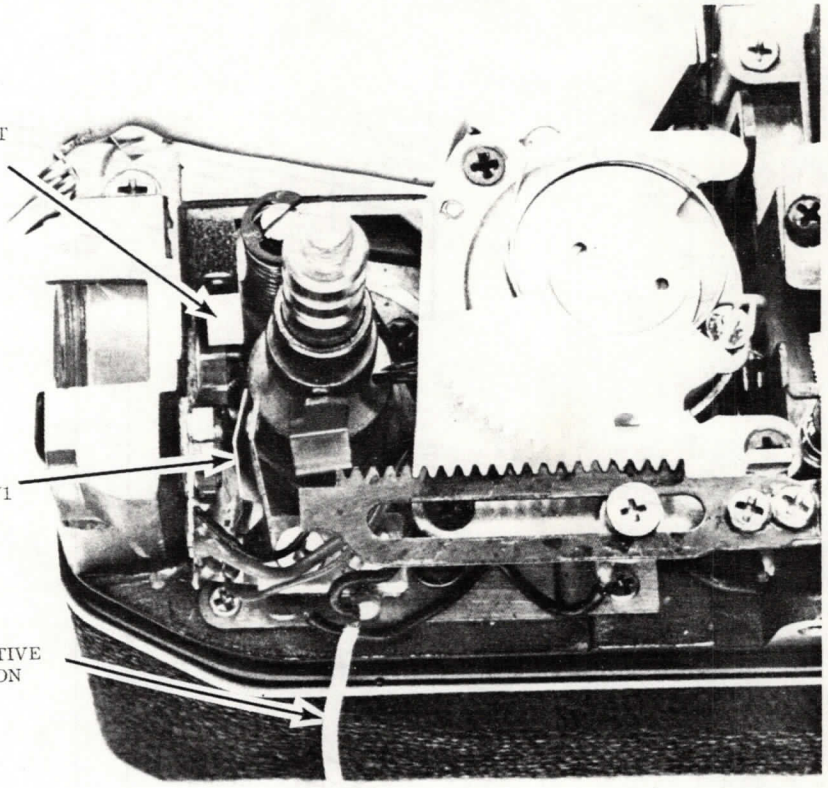
Mid Range —— R_1

Low Range — meter eccentric screw

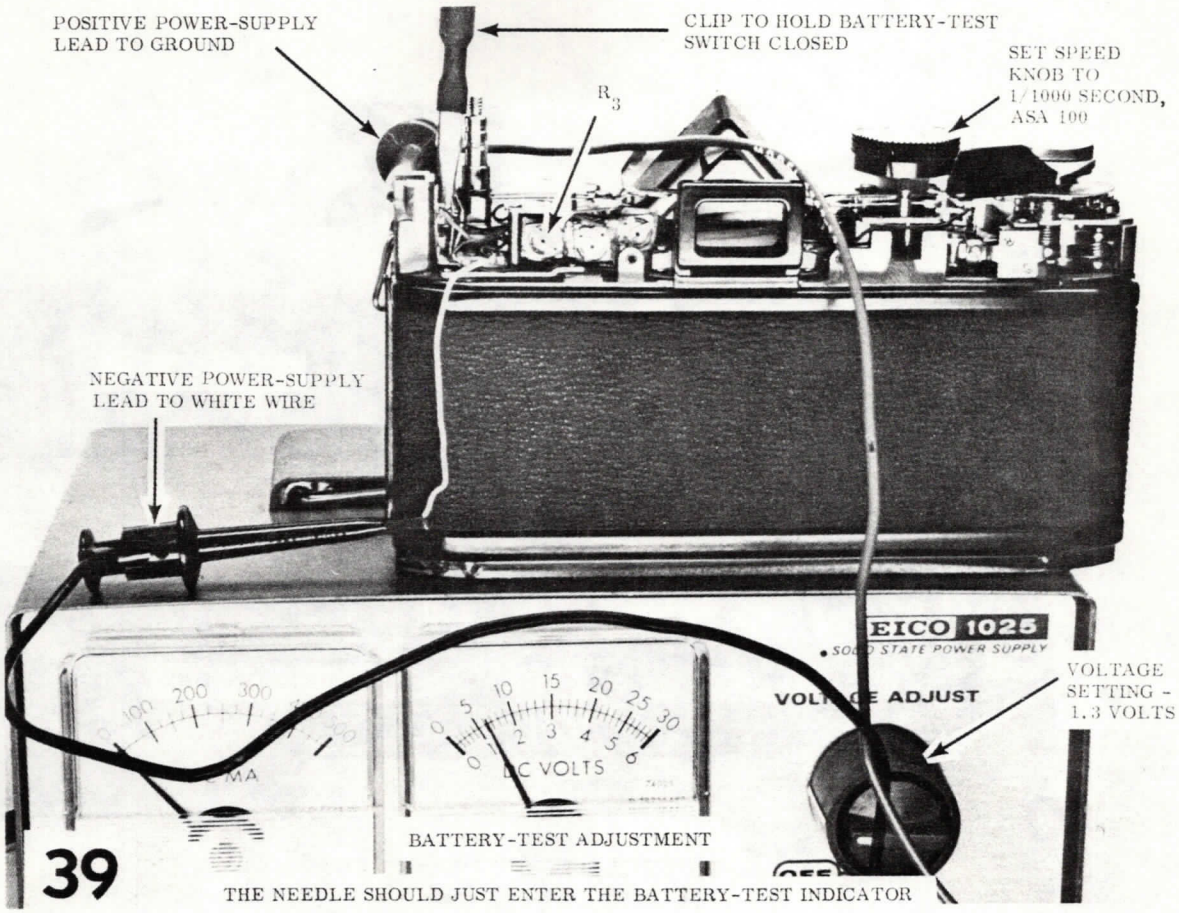

CATS CONTACTS
BLUE
BLUE
WHITE
WHITE
ORANGE
HOT-SHOE FLASH CONTACT
BOOSTER CONTACTS
BLACK
RED
GREEN
SAFETY SWITCH
SW3
PC TERMINAL
X-SYNC CONTACTS
ON/OFF SWITCH SW1
CdS CELL
GREEN
FP-SYNC CONTACTS
SPEED-SELECTOR SWITCH
BLACK
MID-RANGE ADJUST
R2 HIGH-LIGHT ADJUST
R1
RED
BLACK
BATTERY-TEST ADJUST
R3
GALVANOMETER
BATTERY-TEST SWITCH SW2
BATTERY 1.35 VOLTS

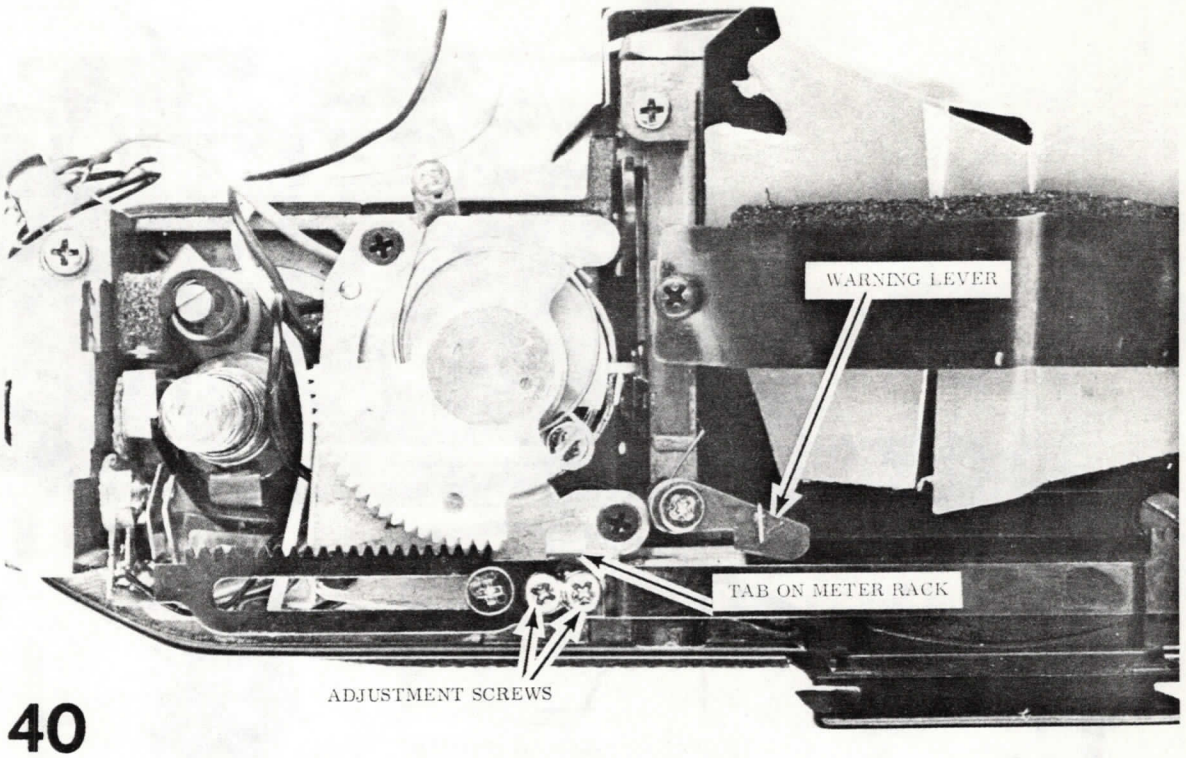


COURTESY CANON


BATTERY-TEST
SWITCH SW2
ON/OFF
SWITCH SW1
WHITE WIRE UNSOLDERED
FROM TOP-COVER
TERMINAL BOARD
CAN BE USED FOR
NEGATIVE POWER-SUPPLY
CONNECTION — MAKE POSITIVE
POWER-SUPPLY CONNECTION
TO GROUND

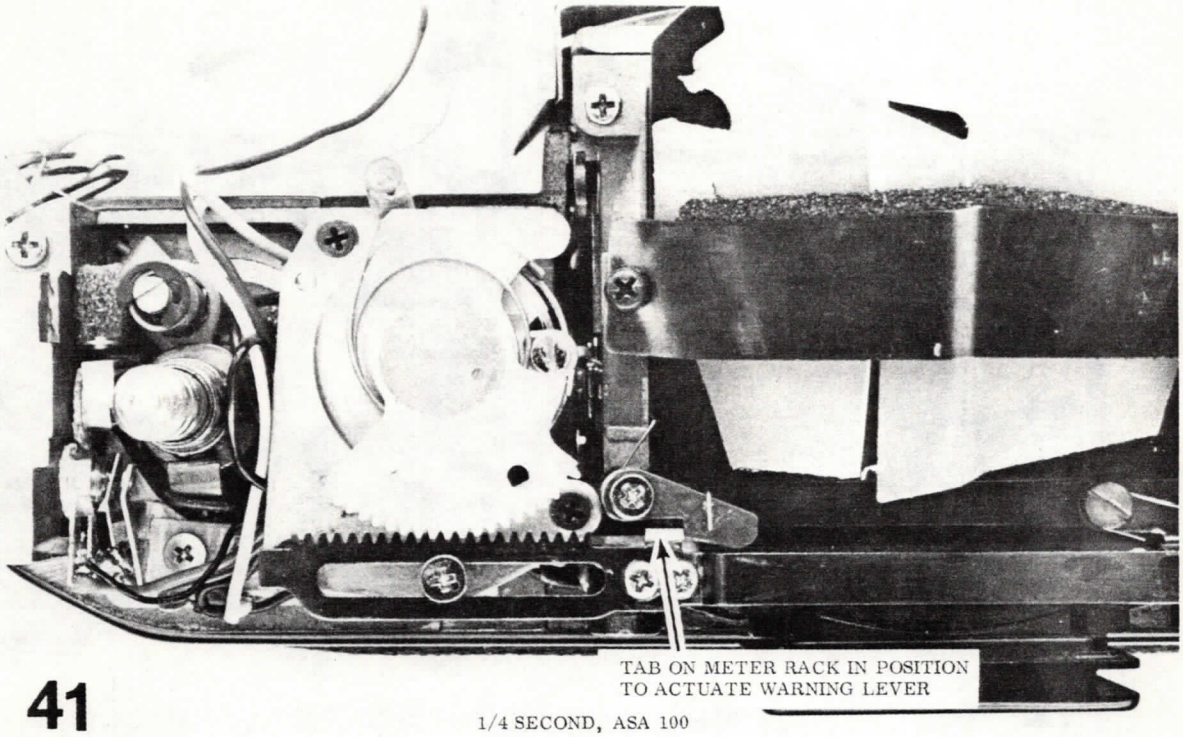
38


POSITIVE POWER-SUPPLY LEAD TO GROUND
CLIP TO HOLD BATTERY-TEST SWITCH CLOSED
SET SPEED KNOB TO 1/1000 SECOND, ASA 100
R_3
NEGATIVE POWER-SUPPLY LEAD TO WHITE WIRE
EICO 1025
VOLTAGE ADJUST
VOLTAGE SETTING - 1.3 VOLTS
DC VOLTS
BATTERY-TEST ADJUSTMENT
39
THE NEEDLE SHOULD JUST ENTER THE BATTERY-TEST INDICATOR



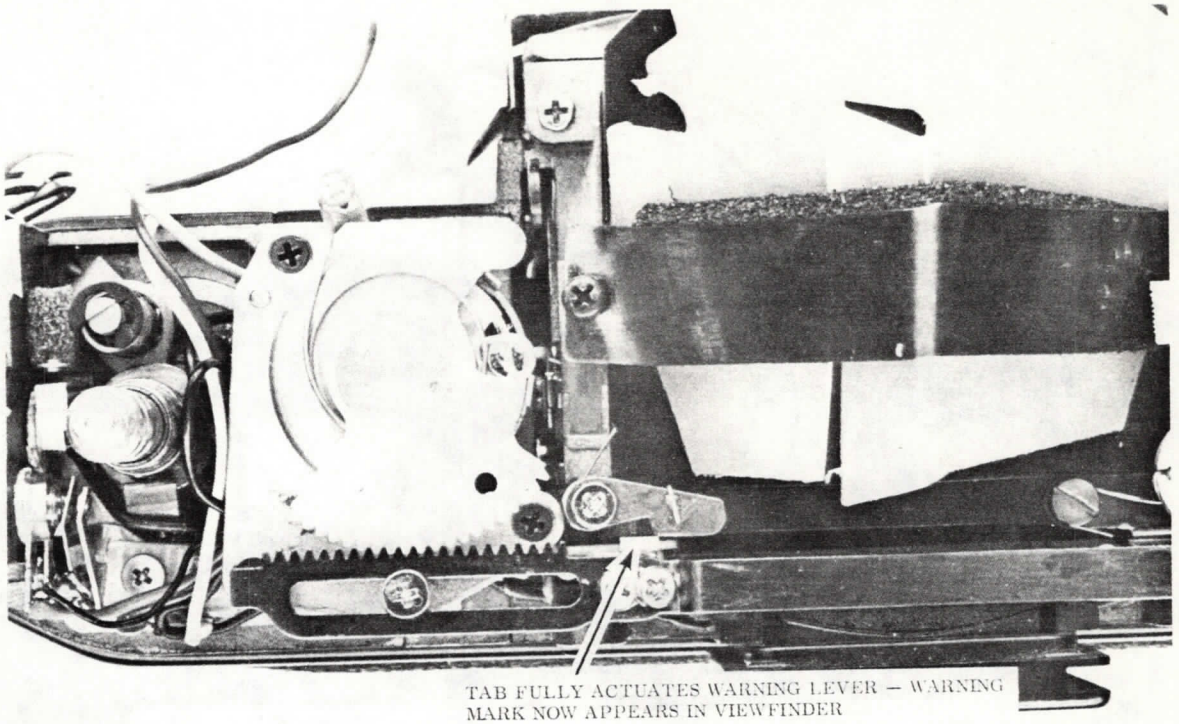
40

Make the warning-mark adjustment with the adjustable lug or with the warning-mark lever. By loosening the left-hand screw, you can reposition the warning-mark lever.



41

1/4 SECOND, ASA 100



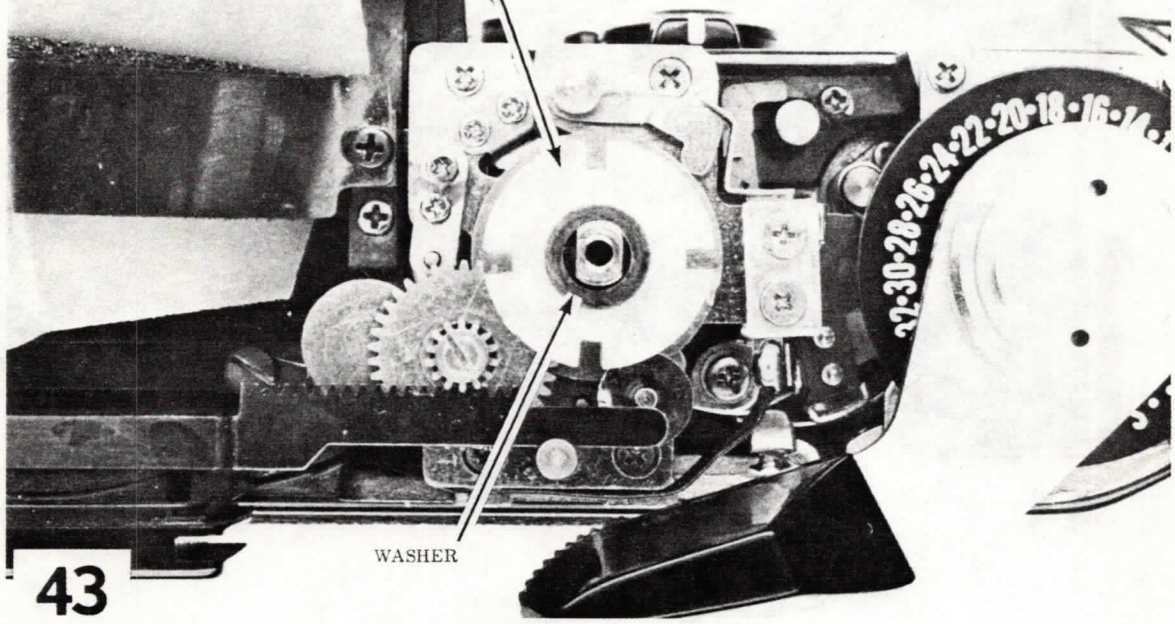
TAB FULLY ACTUATES WARNING LEVER — WARNING MARK NOW APPEARS IN VIEWFINDER

42

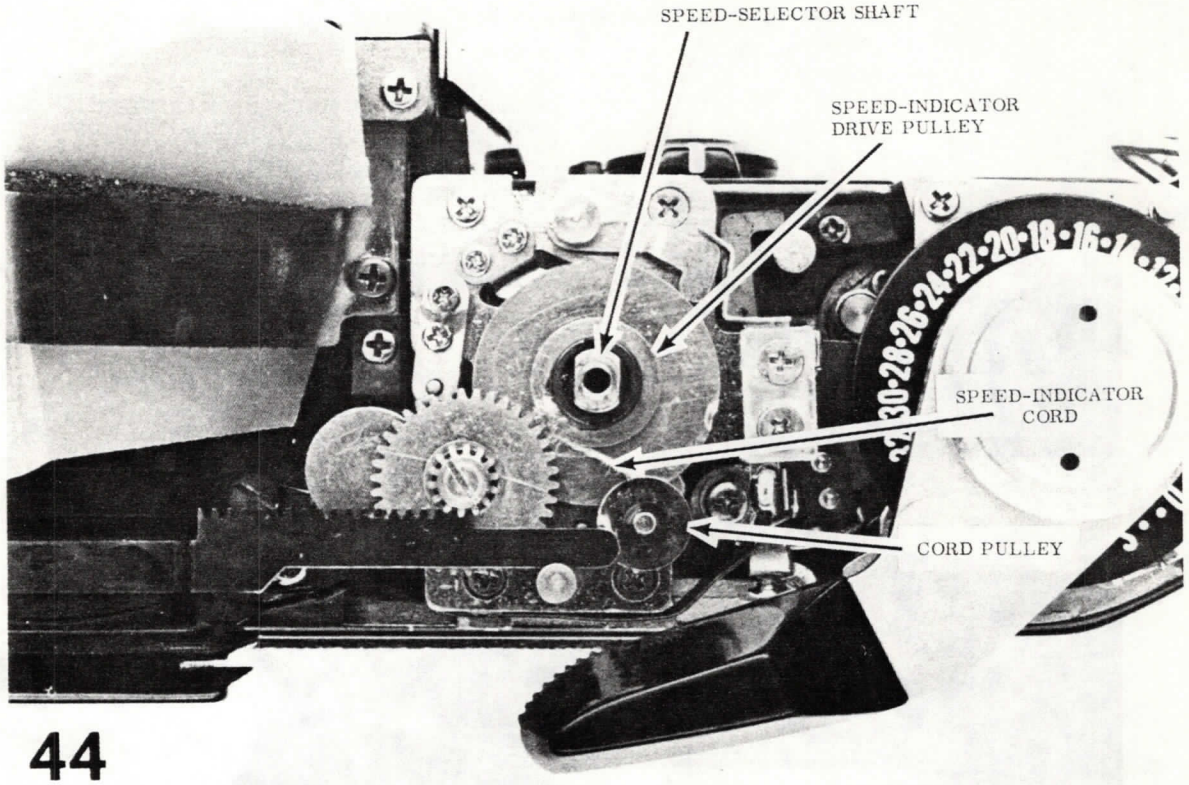
BETWEEN 1/4 SECOND AND 1/2 SECOND, ASA 100

1. REMOVE SPEED KNOB AT SETTINGS OF ASA 100 AND 1/1000 SECOND
2. LIFT OFF COUPLING DISC

REASSEMBLY: HOLD METER RACK WITH TIMING MARKS ALIGNED. THEN, INSTALL COUPLING DISC WITH ONE SLOT FACING THE FRONT OF THE CAMERA. CONTINUE HOLDING METER RACK AND REPLACE SPEED KNOB AT SETTINGS OF ASA 100 AND 1/1000 SECOND.

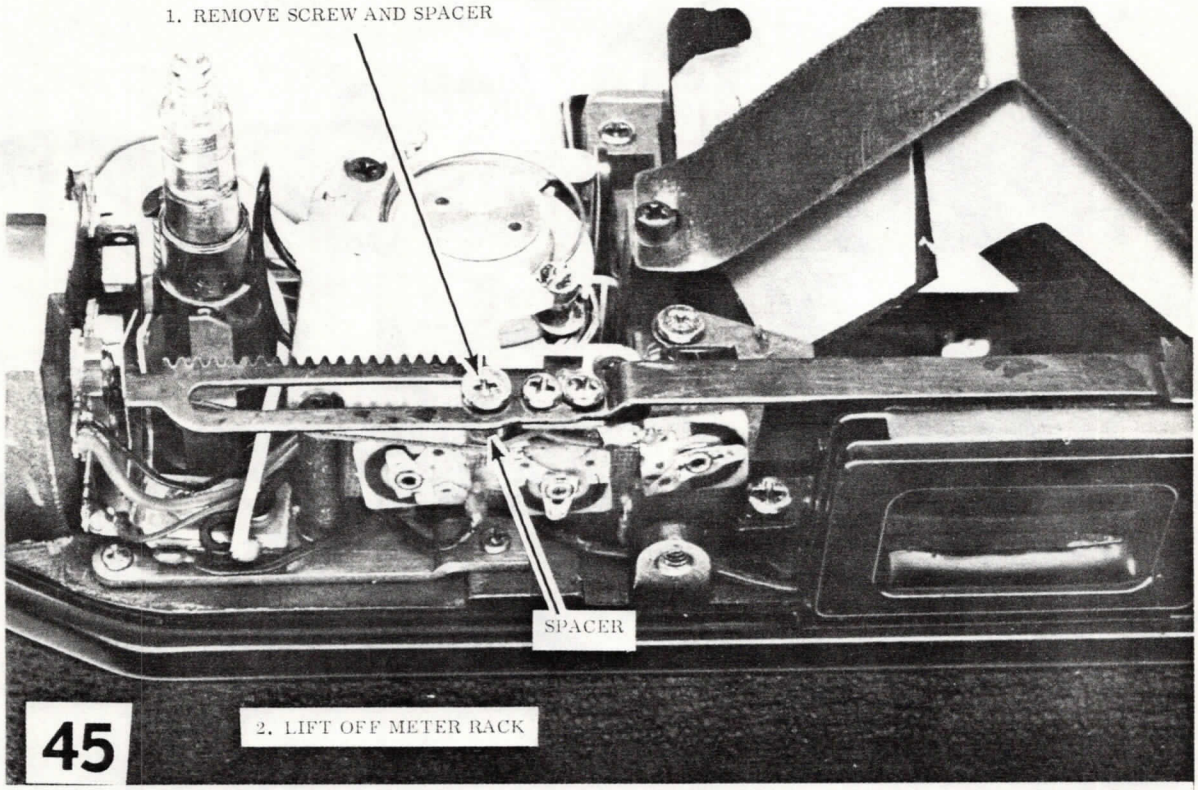


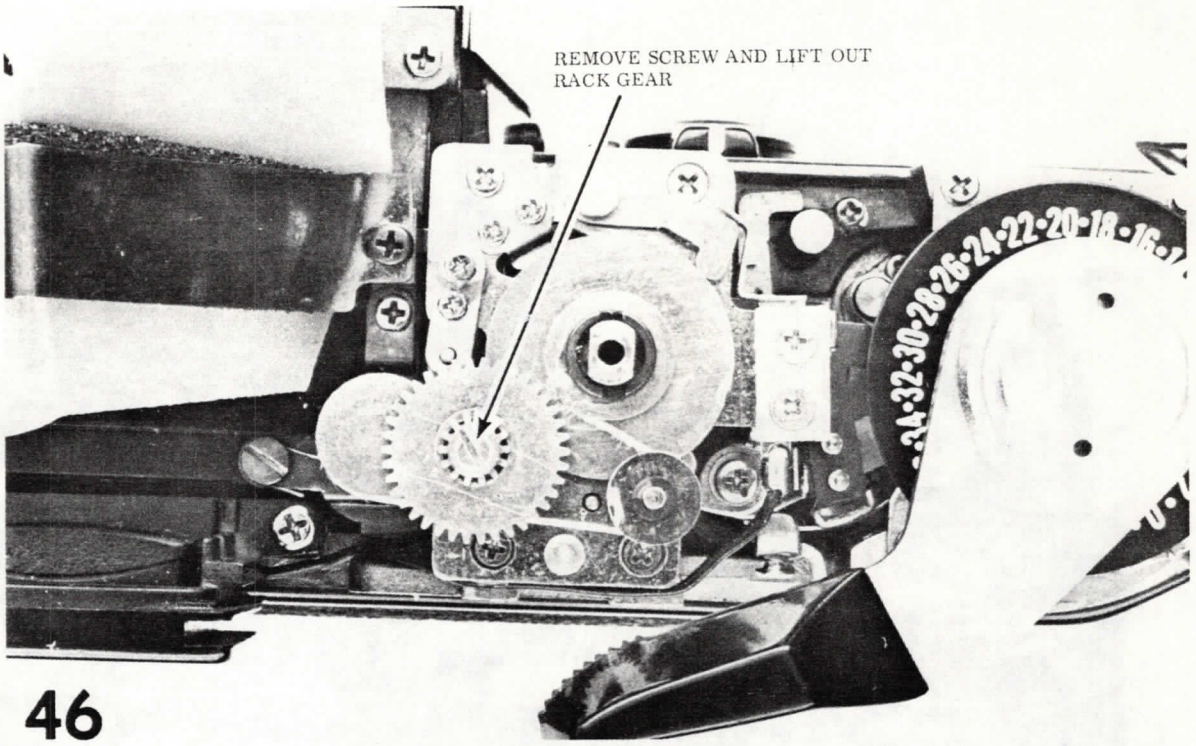
43


SPEED-SELECTOR SHAFT
SPEED-INDICATOR DRIVE PULLEY
SPEED-INDICATOR CORD
CORD PULLEY

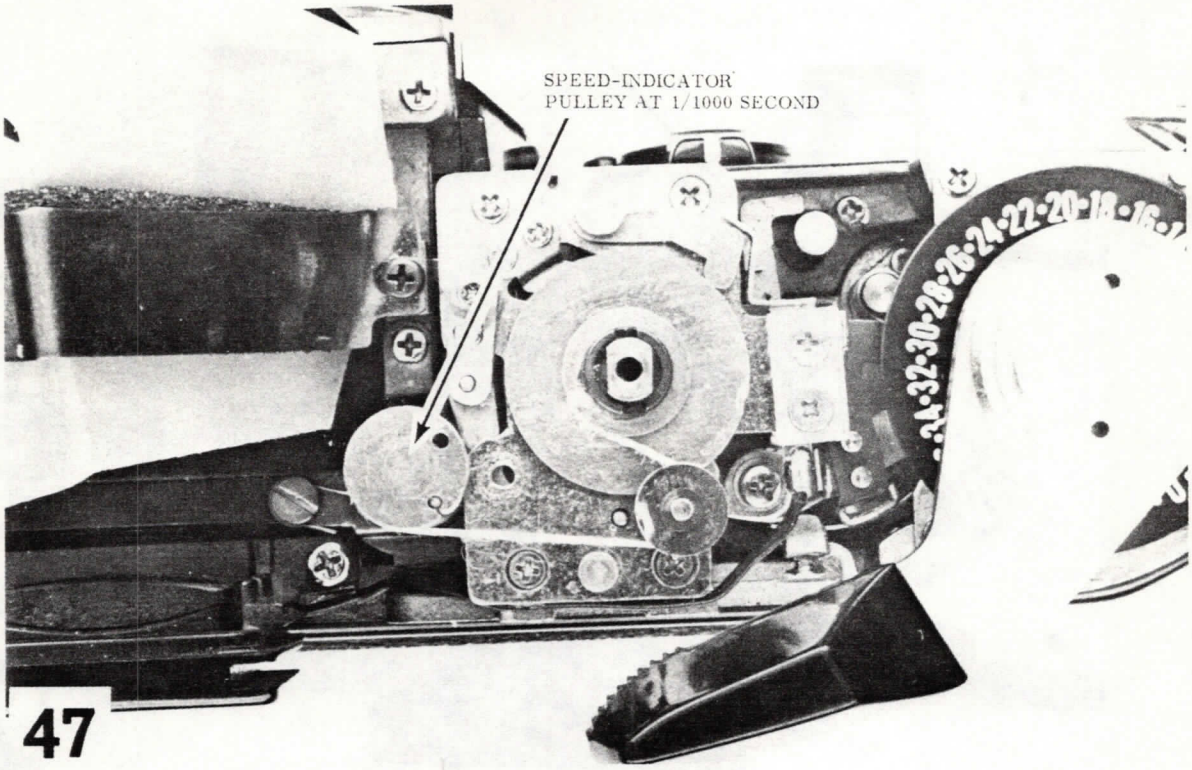
44

REASSEMBLY: REPLACE METER RACK WITH TIMING HOLES ALIGNED.



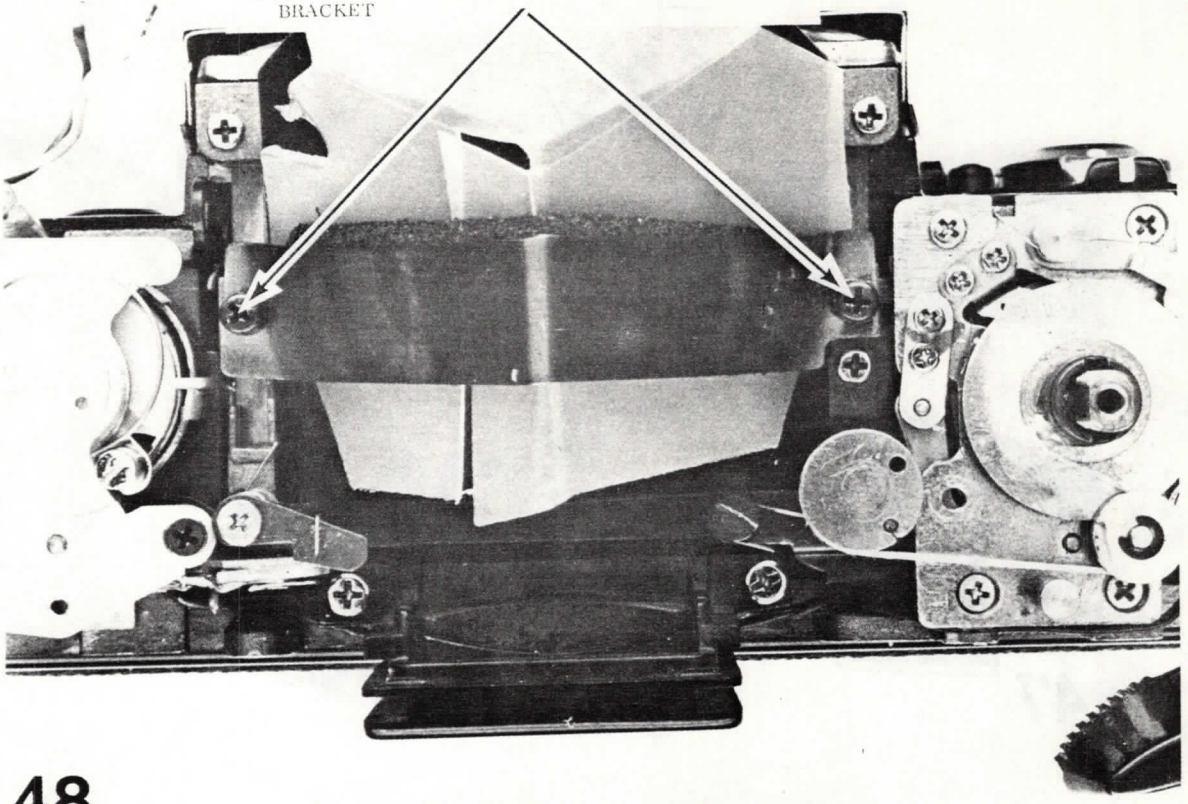


46

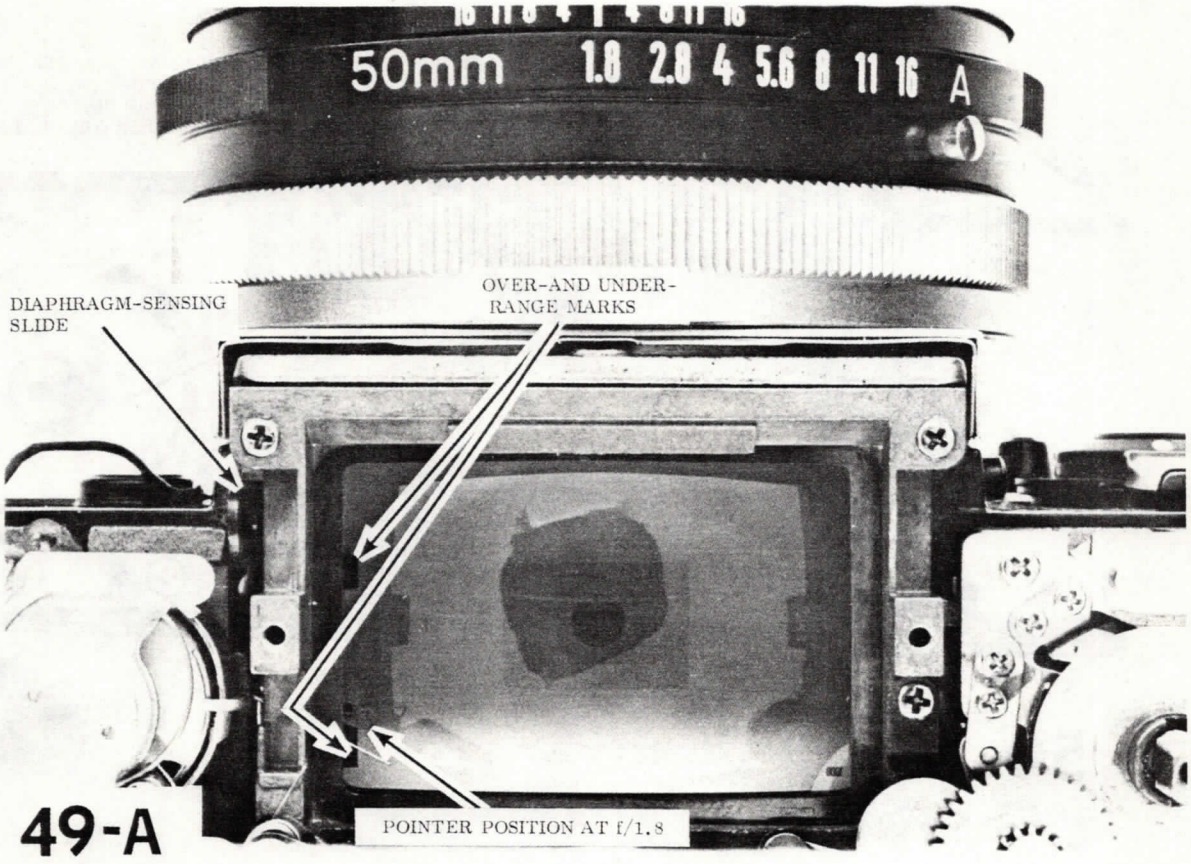


47

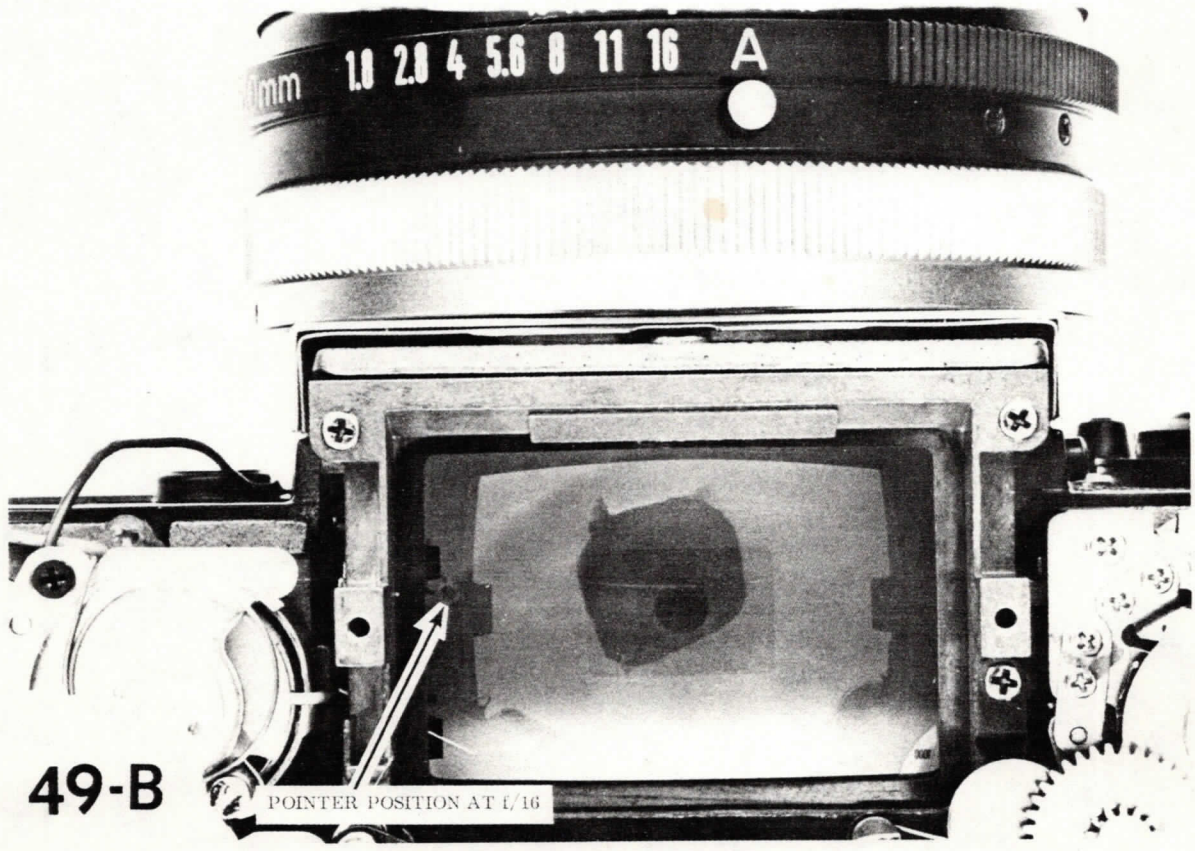
1. REMOVE TWO SCREWS AND LIFT OFF PENTAPRISM BRACKET



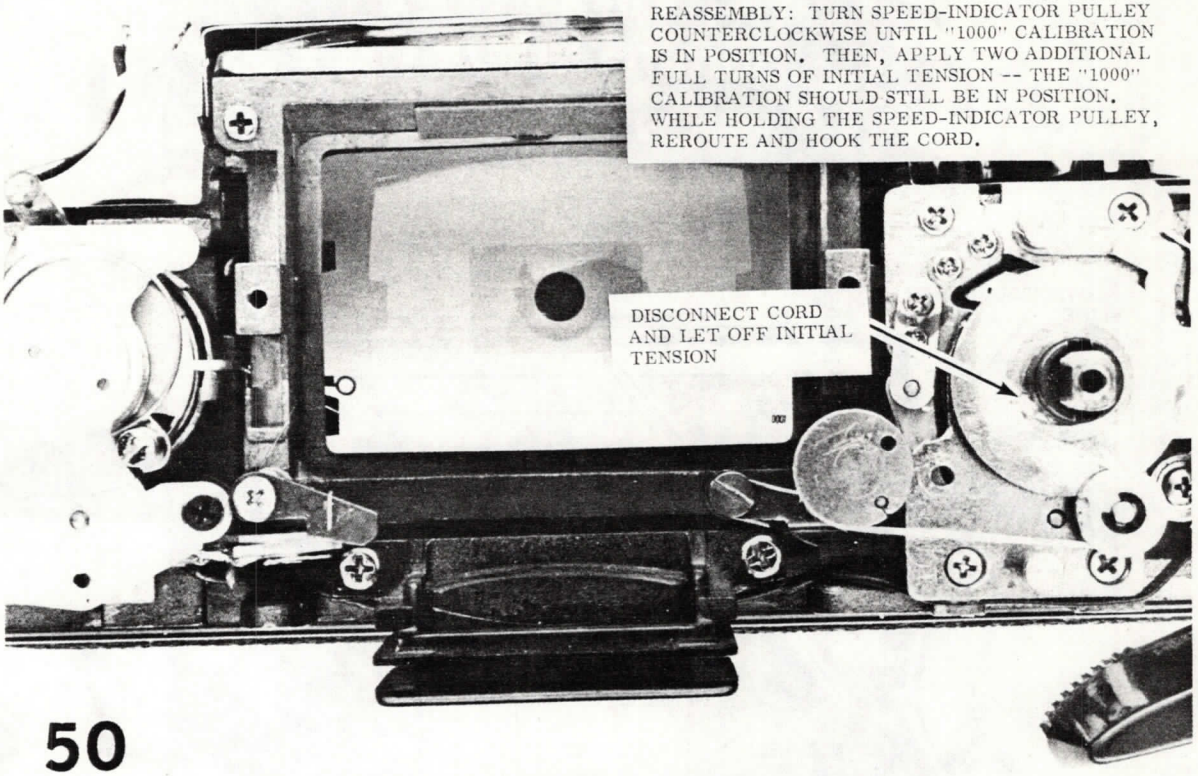
2. LIFT OUT PENTAPRISM COVER AND PENTAPRISM

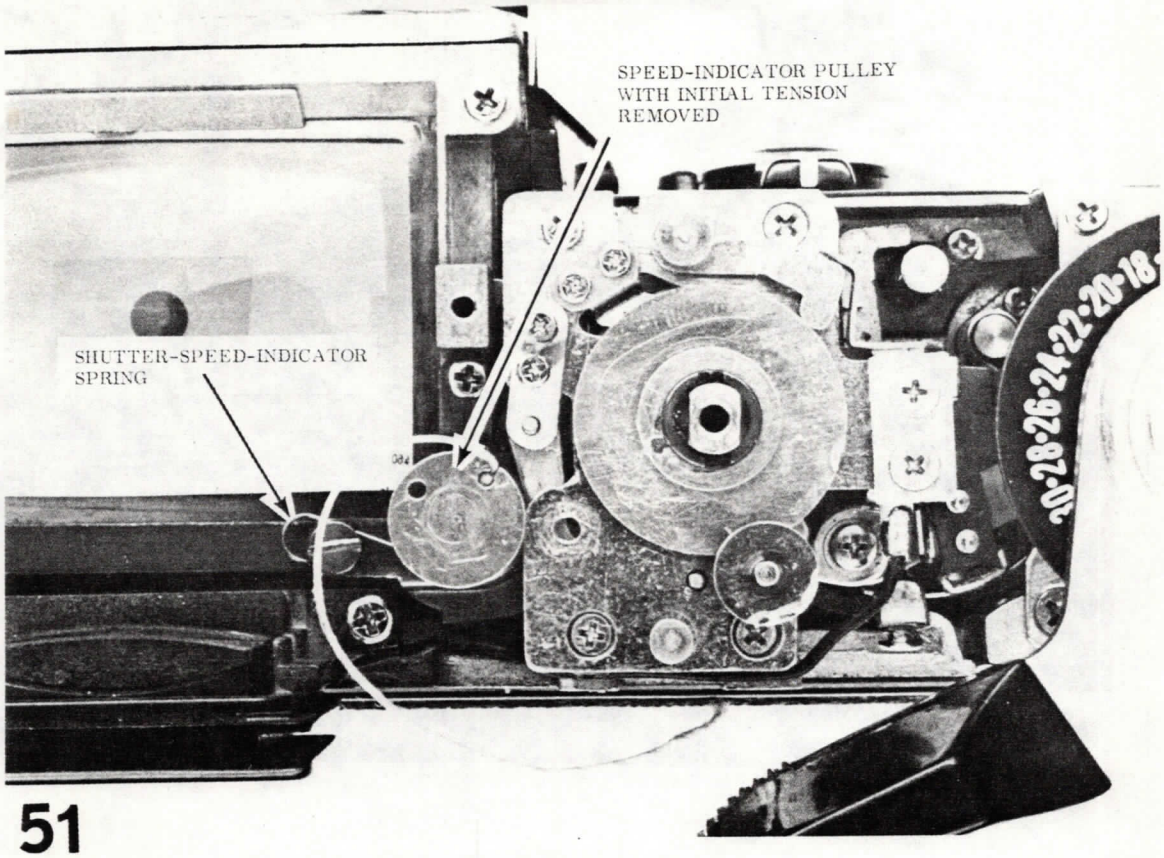

50mm 1.8 2.8 4 5.6 8 11 16 A
DIAPHRAGM-SENSING SLIDE
OVER-AND UNDER-RANGE MARKS
POINTER POSITION AT f/1.8

49-A

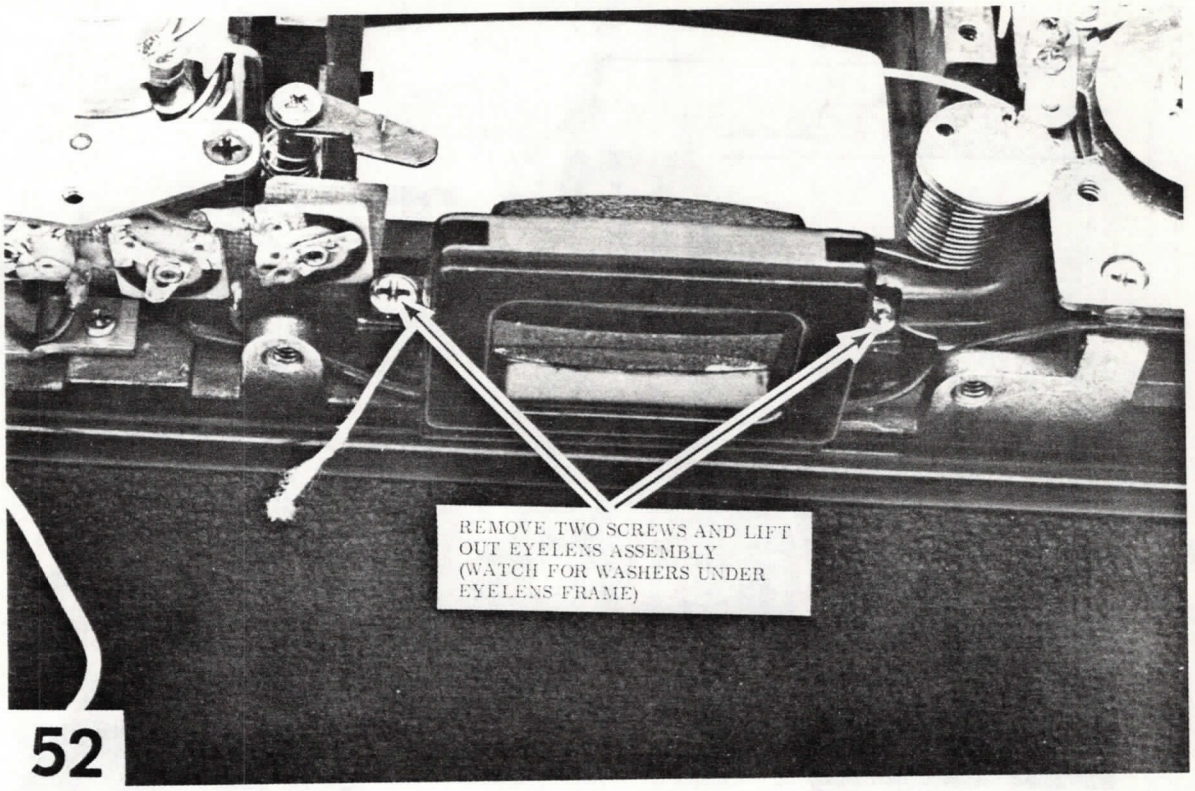

1.8 2.8 4 5.6 8 11 16 A
POINTER POSITION AT f/16

49-B


REASSEMBLY: TURN SPEED-INDICATOR PULLEY COUNTERCLOCKWISE UNTIL "1000" CALIBRATION IS IN POSITION. THEN, APPLY TWO ADDITIONAL FULL TURNS OF INITIAL TENSION -- THE "1000" CALIBRATION SHOULD STILL BE IN POSITION. WHILE HOLDING THE SPEED-INDICATOR PULLEY, REROUTE AND HOOK THE CORD.
DISCONNECT CORD AND LET OFF INITIAL TENSION

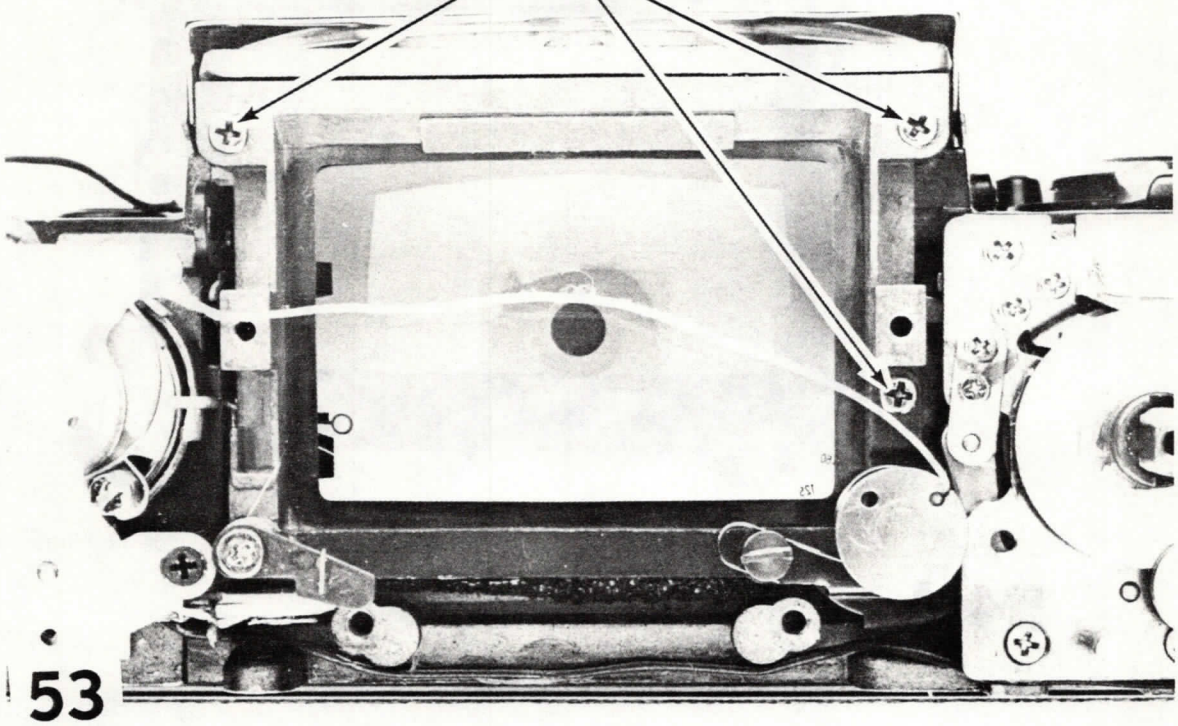

SPEED-INDICATOR PULLEY
WITH INITIAL TENSION
REMOVED
SHUTTER-SPEED-INDICATOR
SPRING
30·28·26·24·22·20·18

51

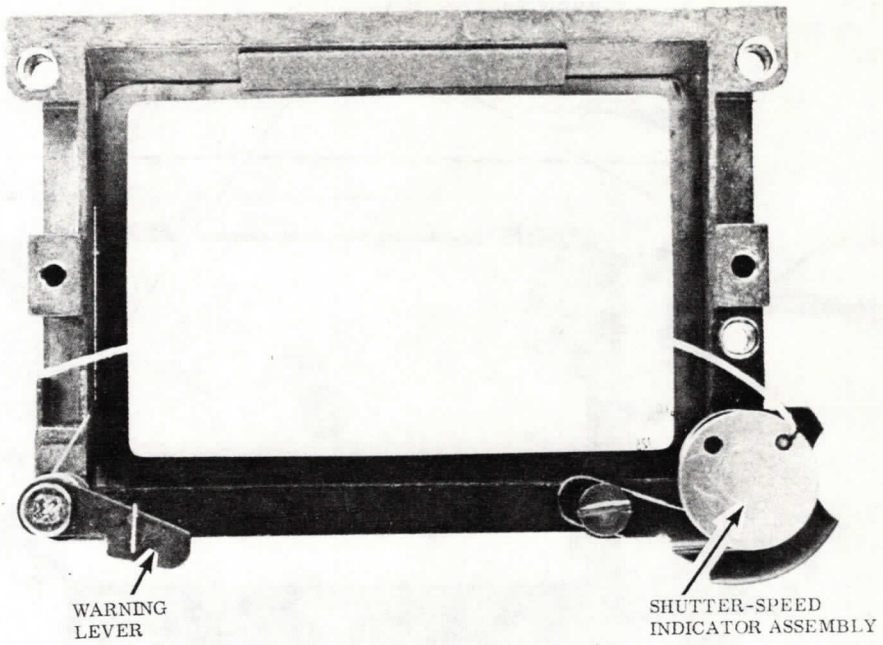

REMOVE TWO SCREWS AND LIFT
OUT EYELENS ASSEMBLY
(WATCH FOR WASHERS UNDER
EYELENS FRAME)

52

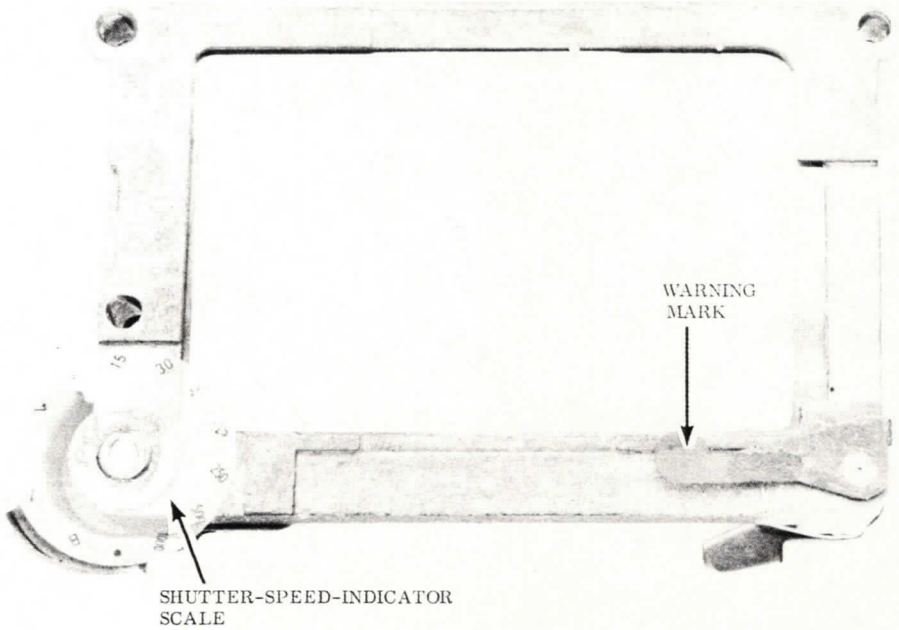
REMOVE THREE SCREWS AND LIFT OUT
PENTAPRISM FRAME



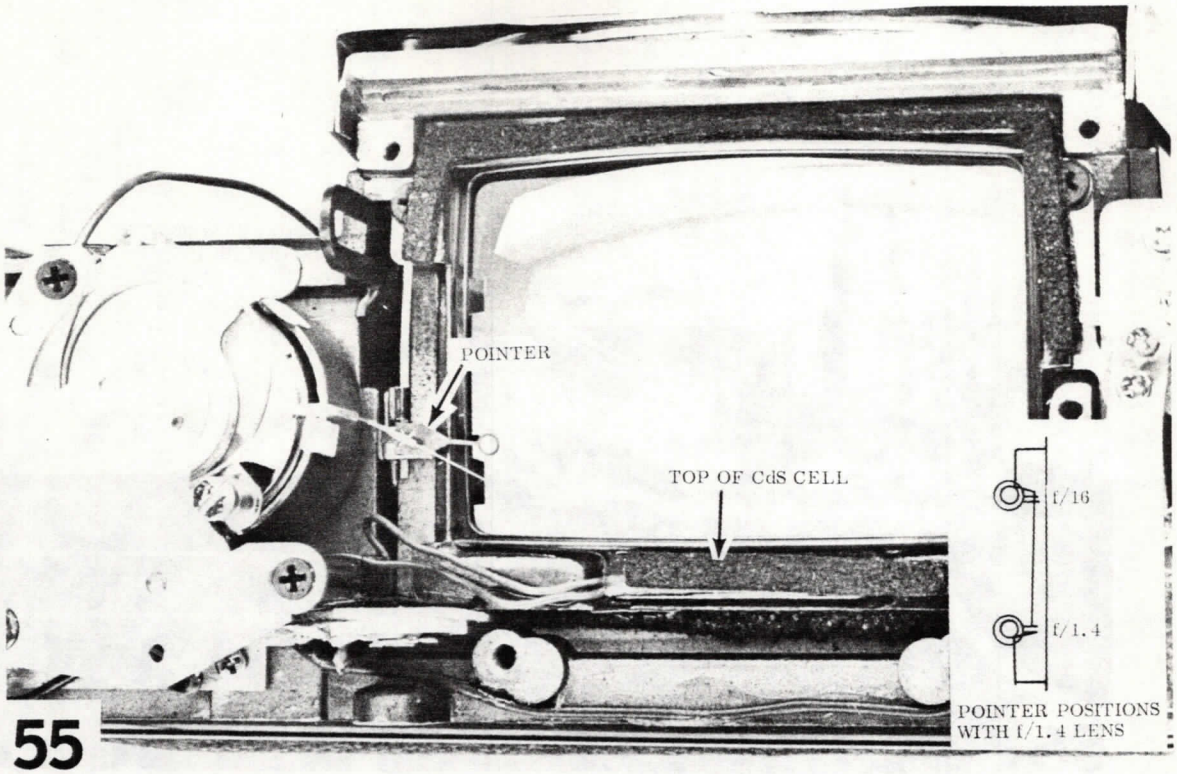
53



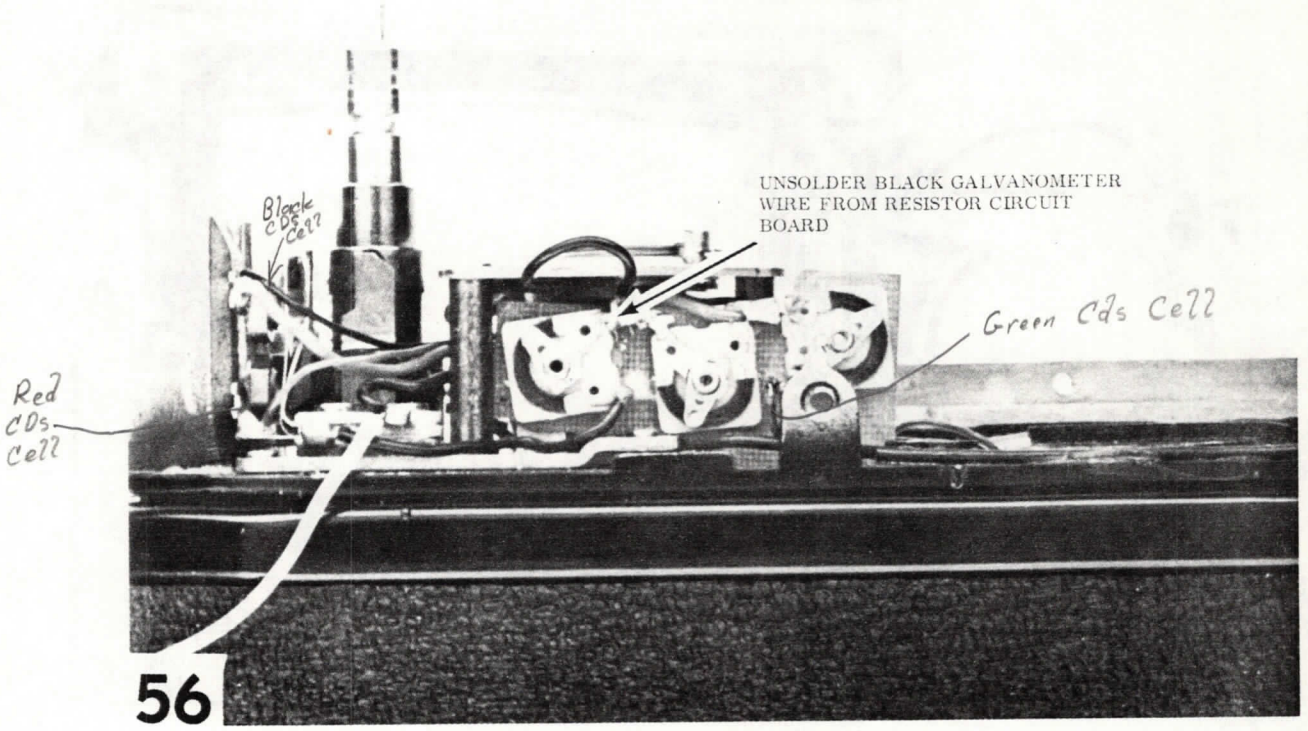
54-A TOP OF PENTAPRISM FRAME



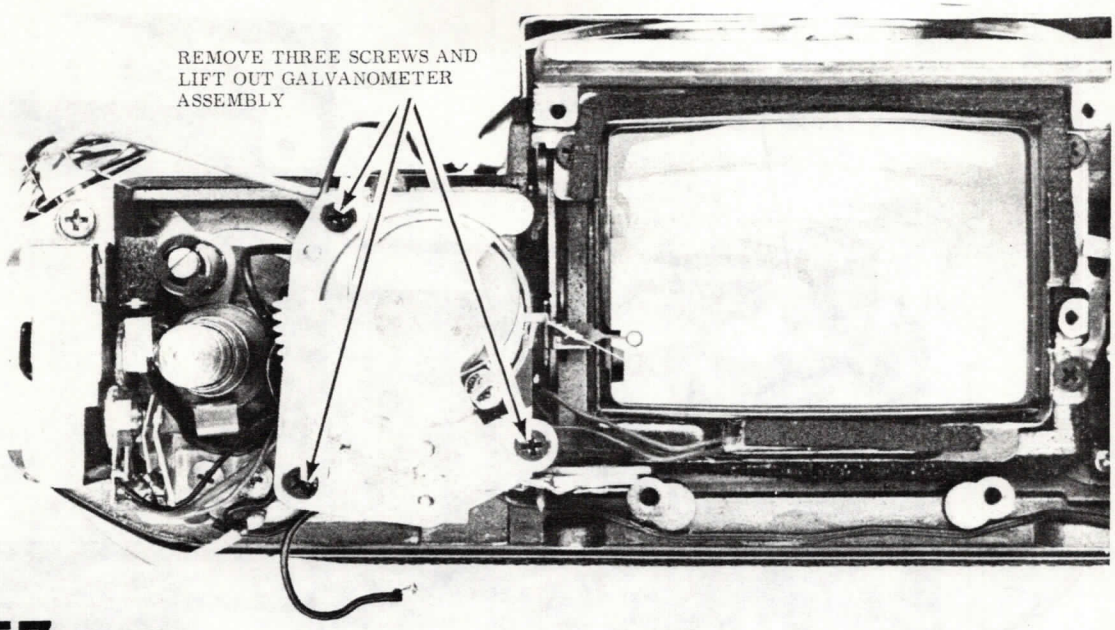
54-B BOTTOM OF PENTAPRISM FRAME


POINTER
TOP OF CdS CELL
f/16
f/1.4
POINTER POSITIONS
WITH f/1.4 LENS

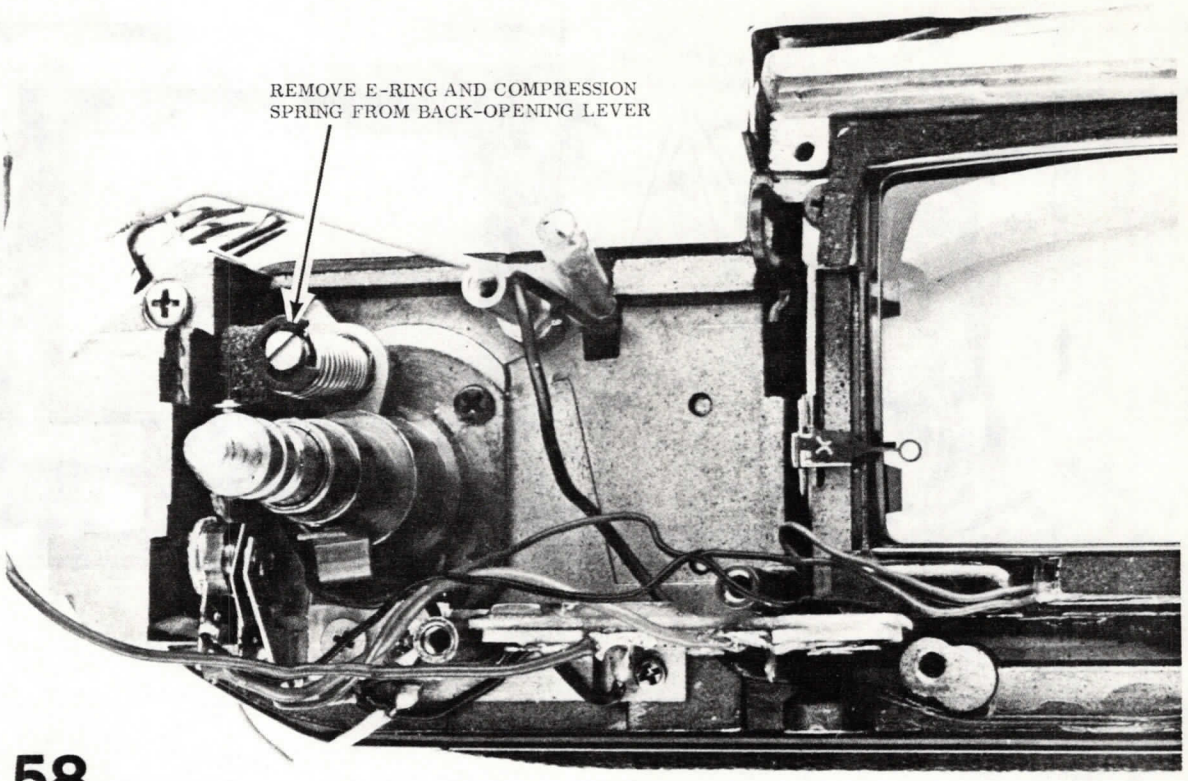
55


Black CDS Cell
UNSOLDER BLACK GALVANOMETER WIRE FROM RESISTOR CIRCUIT BOARD
Green Cds Cell
Red CDs Cell

56



57

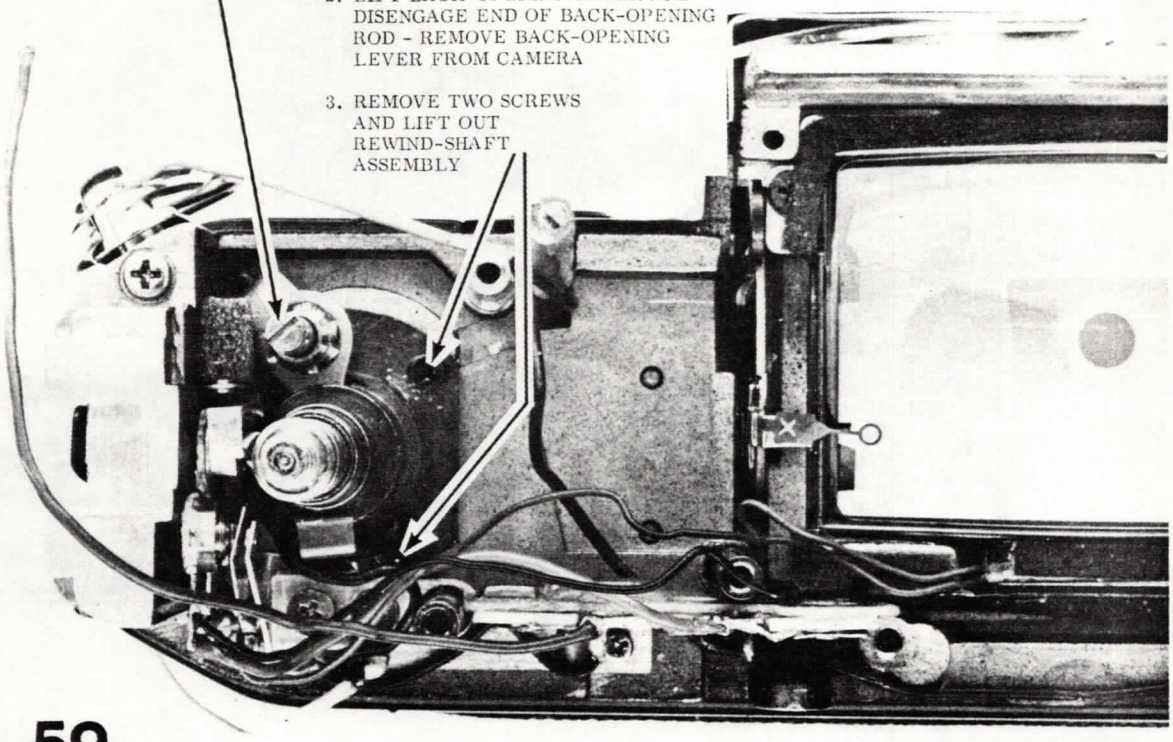

REMOVE E-RING AND COMPRESSION
SPRING FROM BACK-OPENING LEVER

58

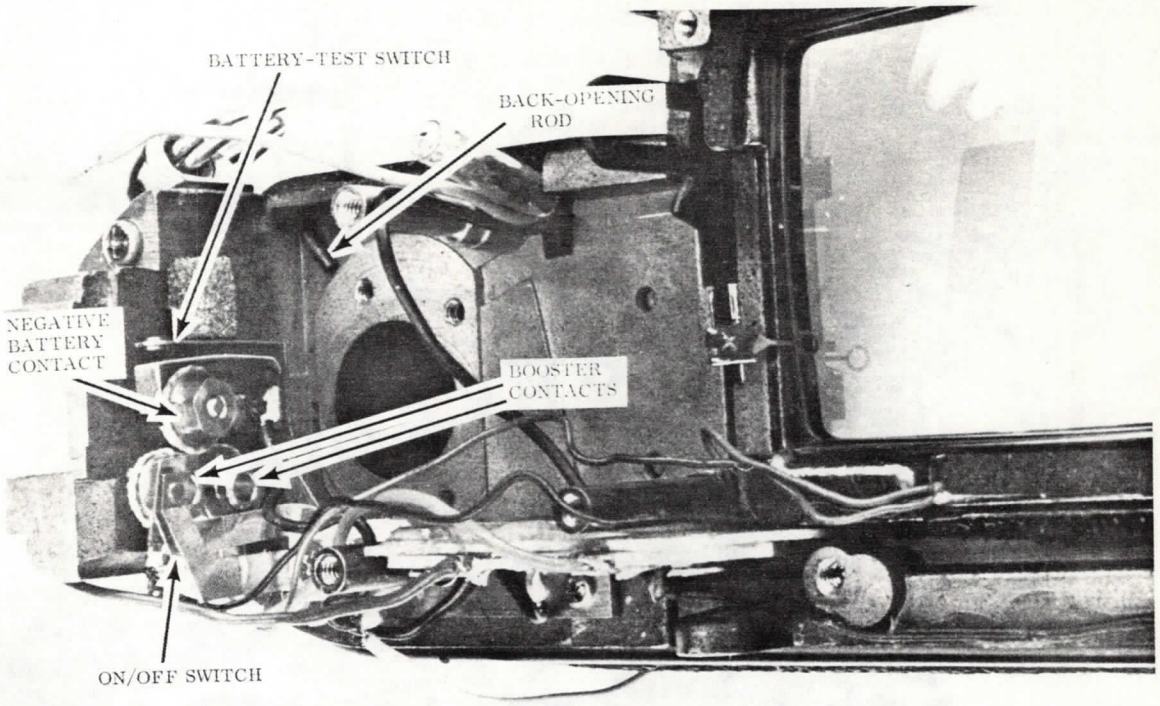
1. UNSCREW BACK-OPENING-LEVER SCREW

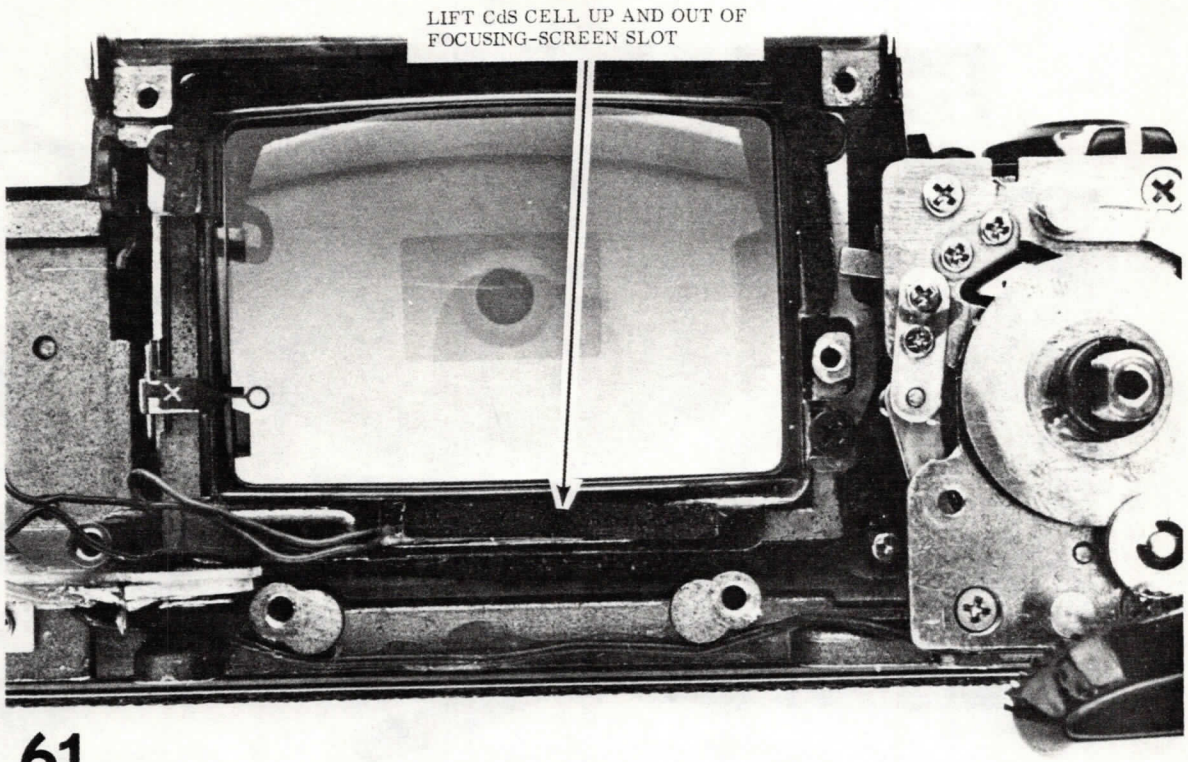
2. LIFT BACK-OPENING LEVER AND DISENGAGE END OF BACK-OPENING ROD - REMOVE BACK-OPENING LEVER FROM CAMERA

3. REMOVE TWO SCREWS AND LIFT OUT REWIND-SHAFT ASSEMBLY

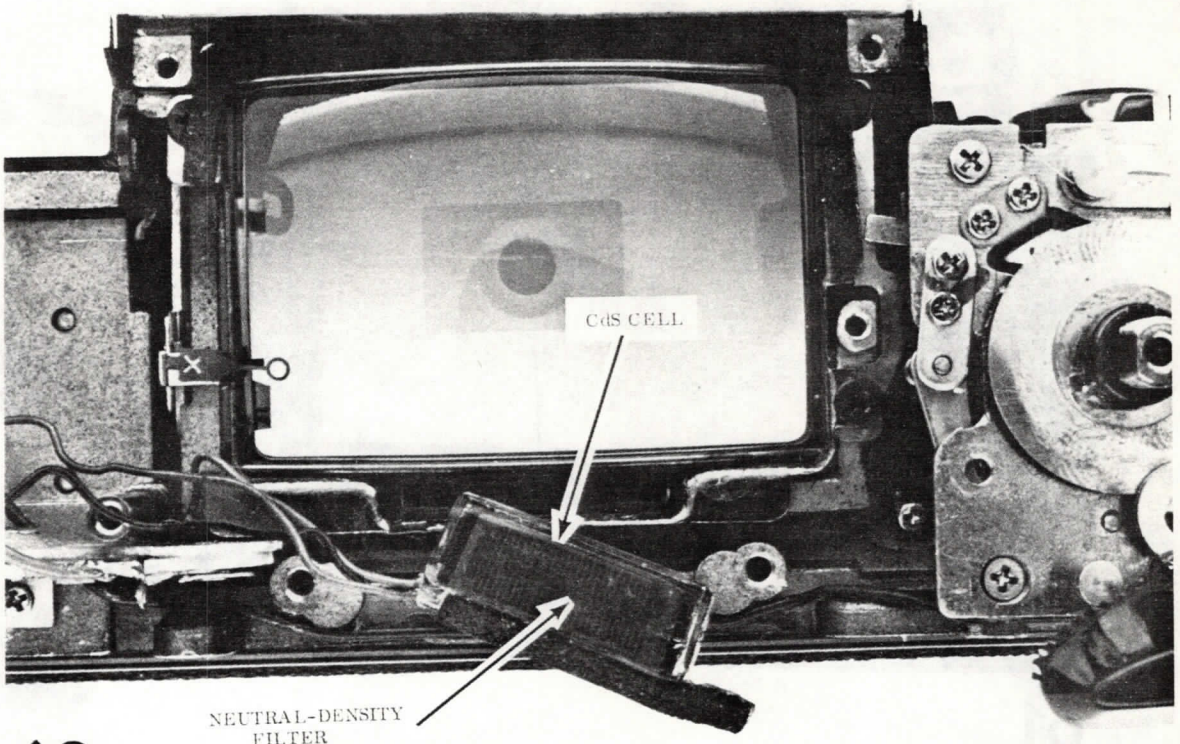


59

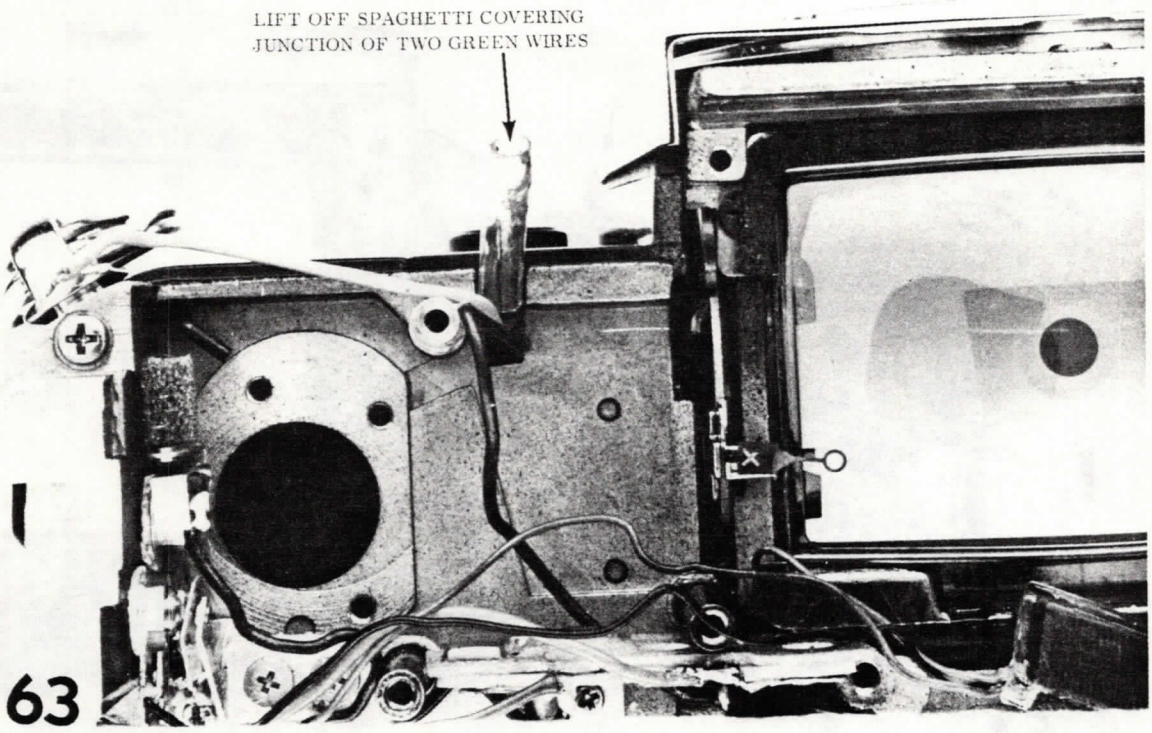

BATTERY-TEST SWITCH
BACK-OPENING ROD
NEGATIVE BATTERY CONTACT
BOOSTER CONTACTS
ON/OFF SWITCH



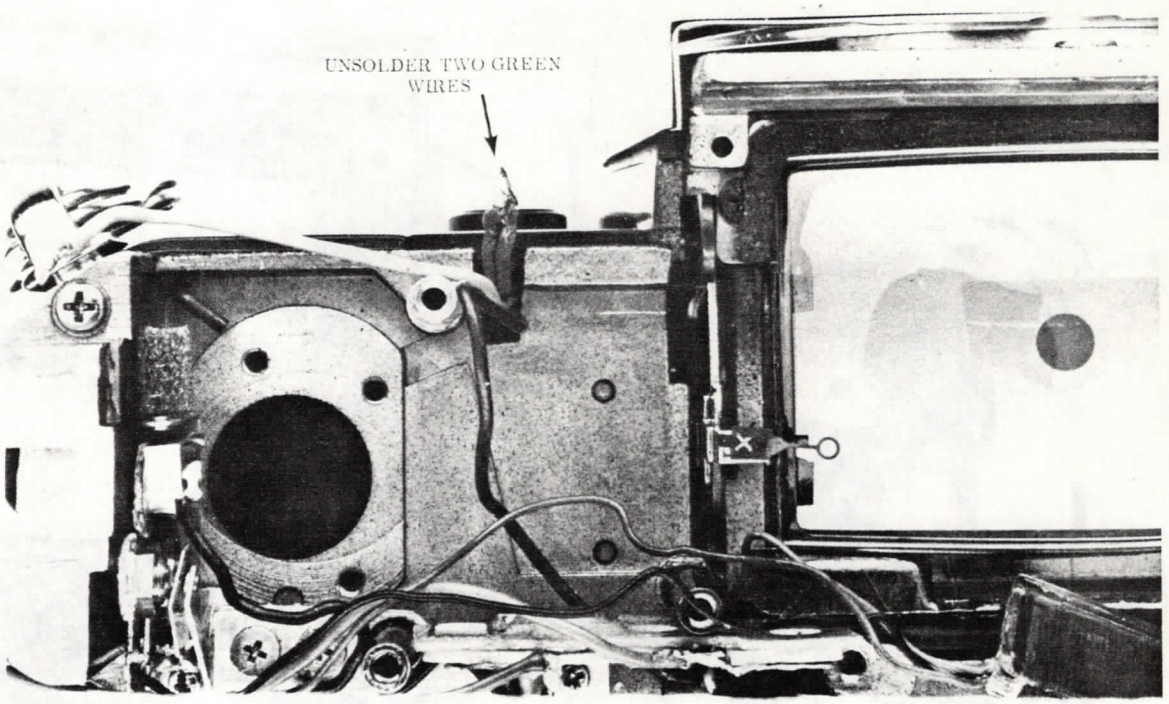
61



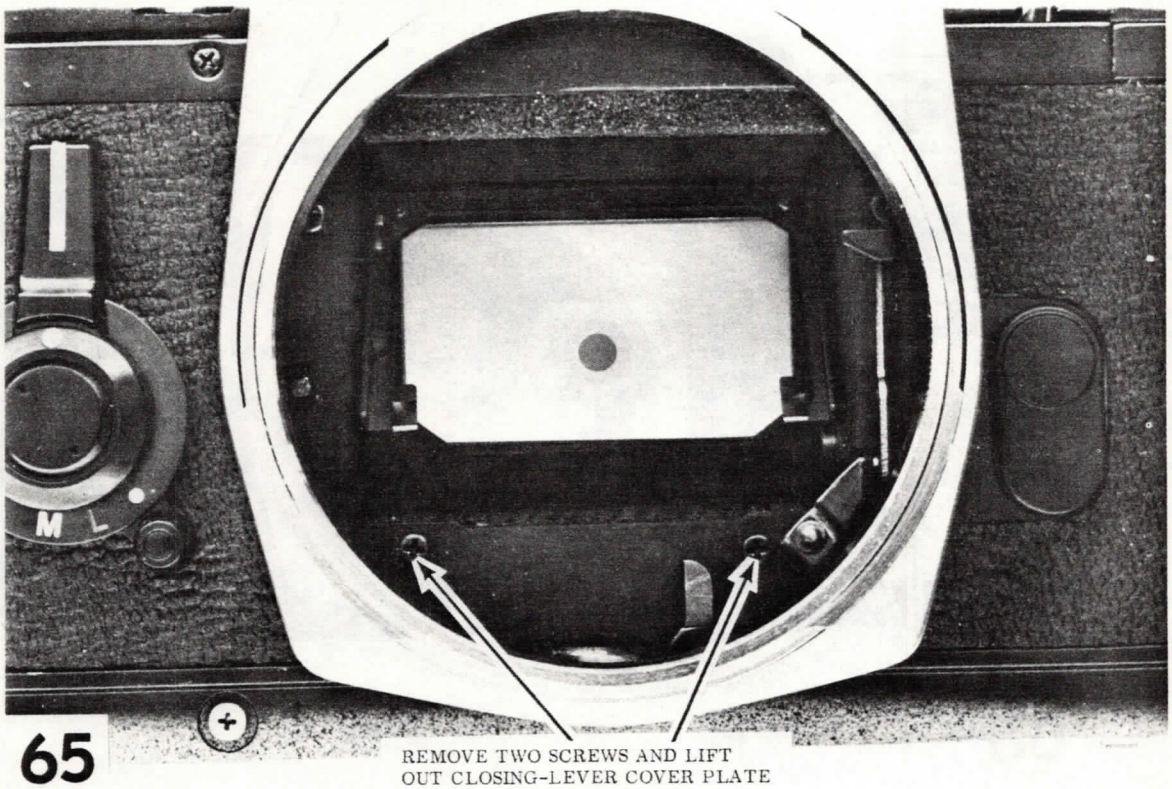
62



63

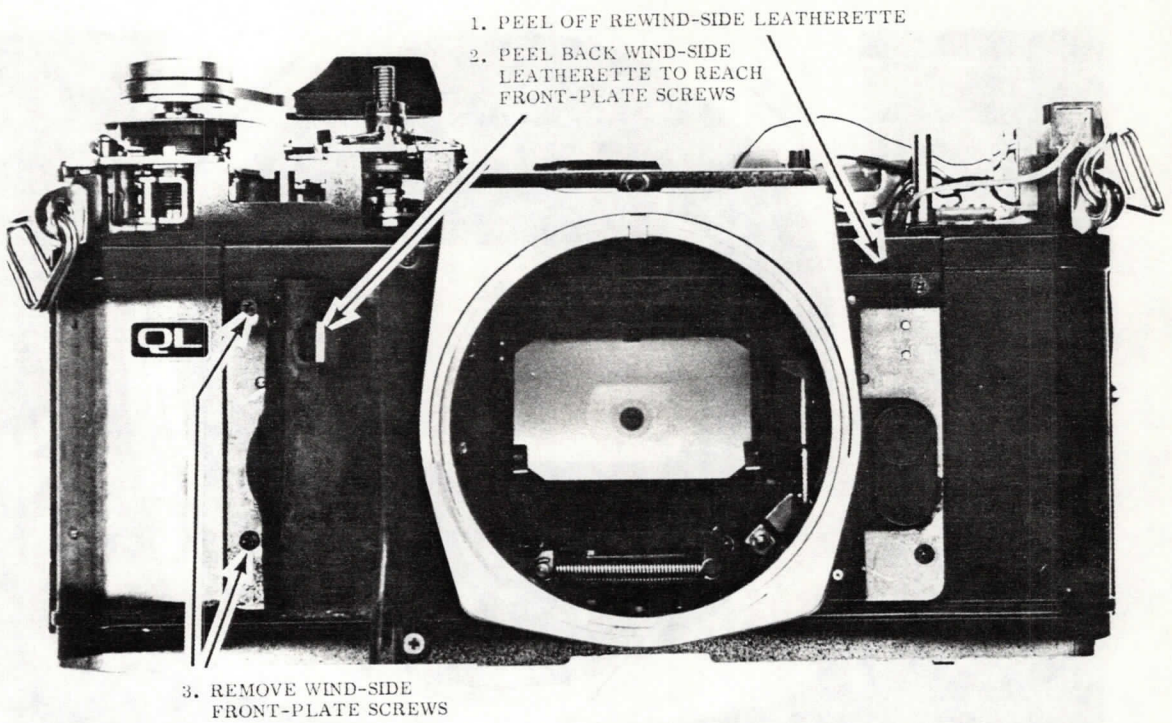


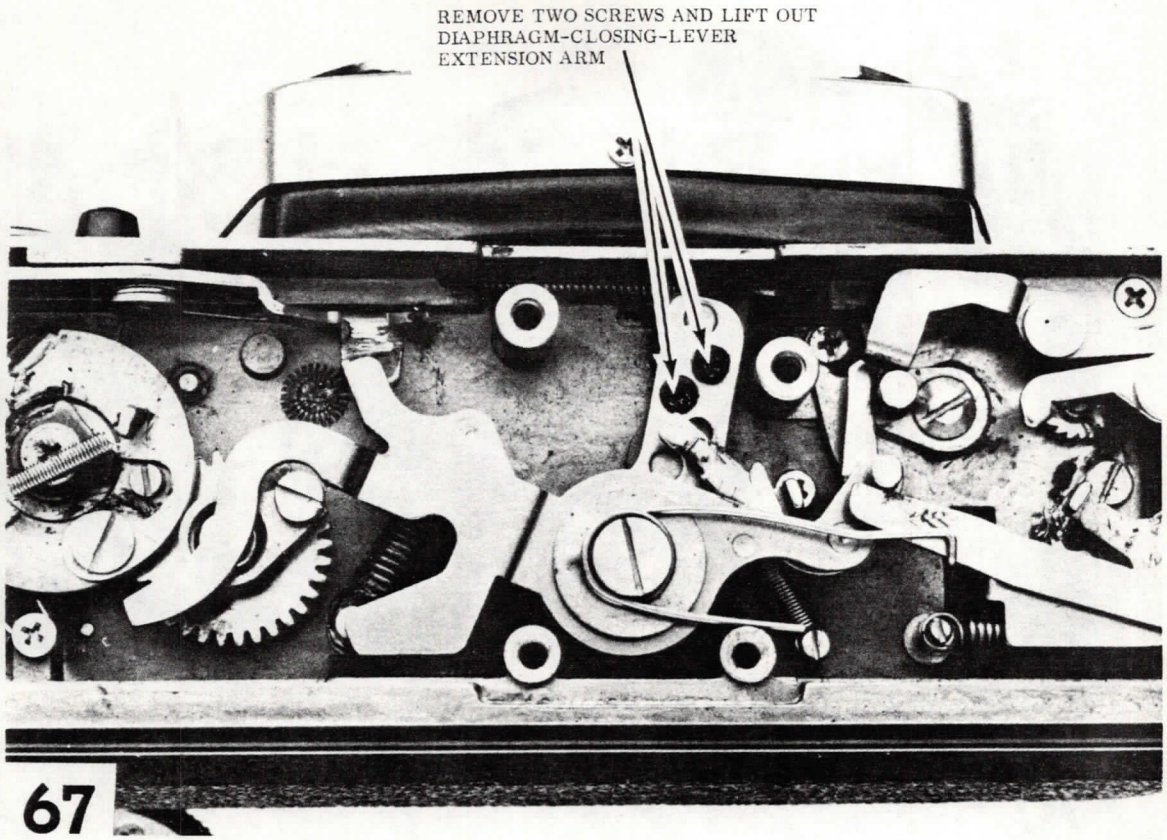
64



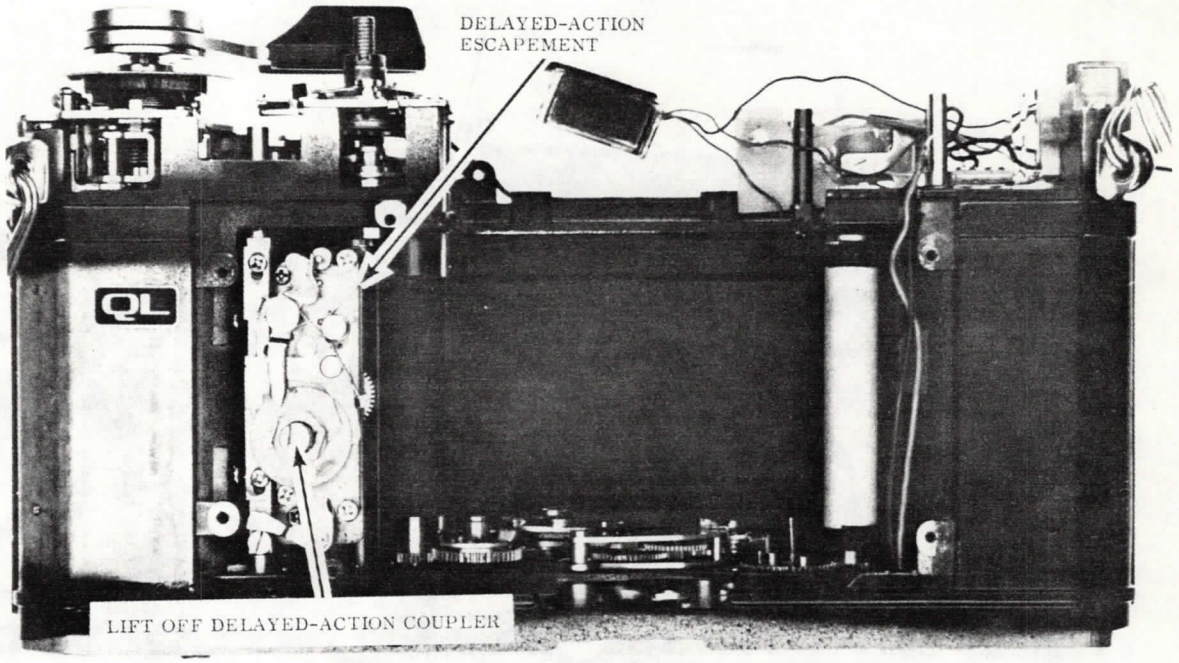
65

REMOVE TWO SCREWS AND LIFT
OUT CLOSING-LEVER COVER PLATE

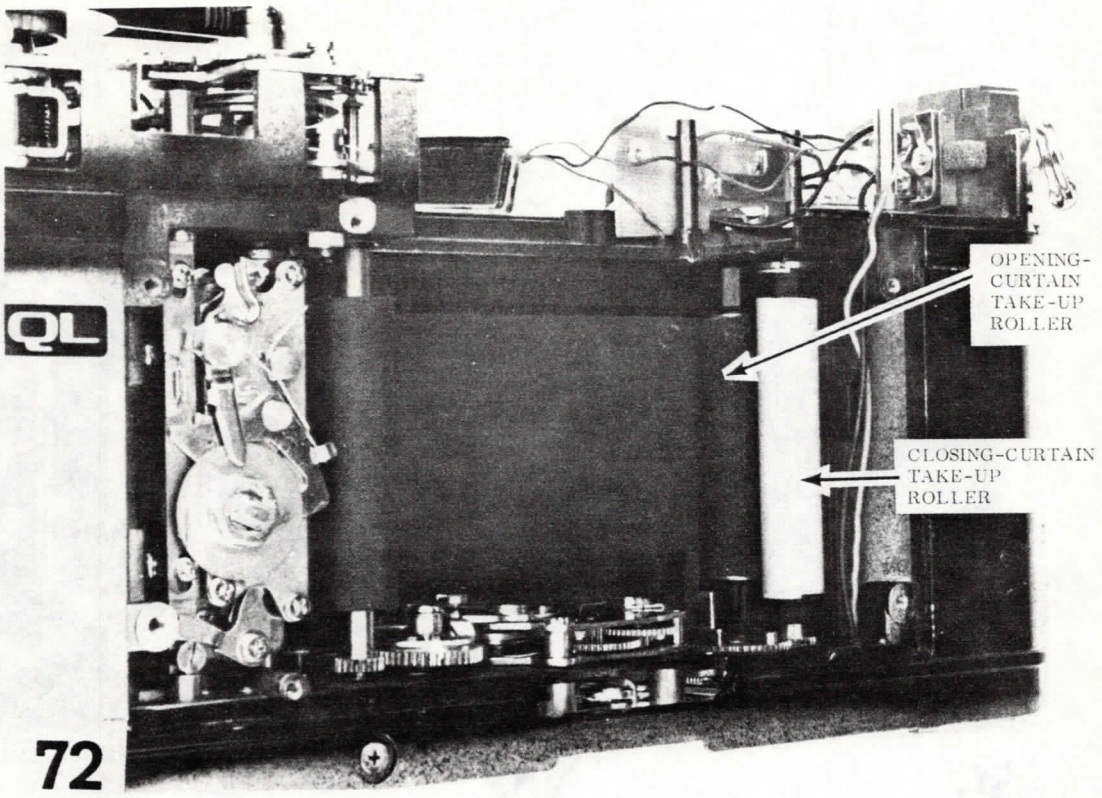

1. PEEL OFF REWIND-SIDE LEATHERETTE
2. PEEL BACK WIND-SIDE LEATHERETTE TO REACH FRONT-PLATE SCREWS
QL
3. REMOVE WIND-SIDE FRONT-PLATE SCREWS


REMOVE TWO SCREWS AND LIFT OUT
DIAPHRAGM-CLOSING-LEVER
EXTENSION ARM

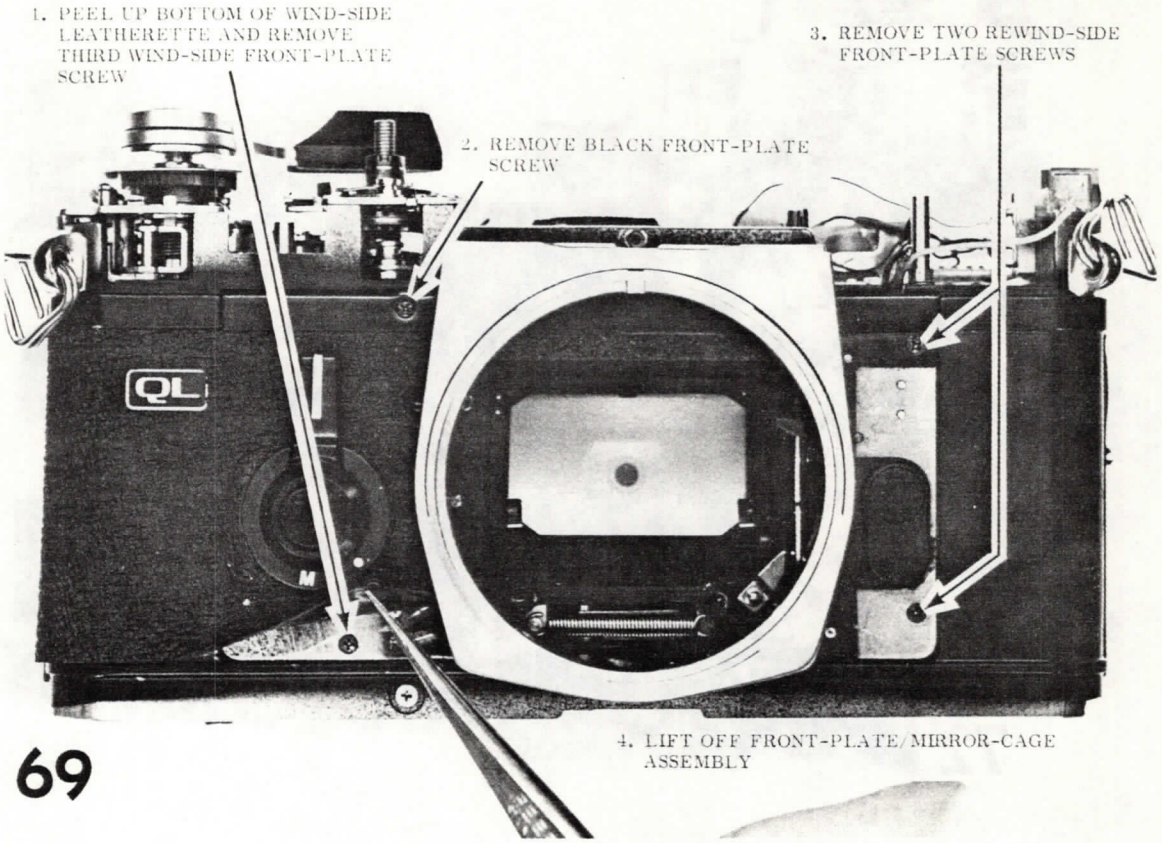
67

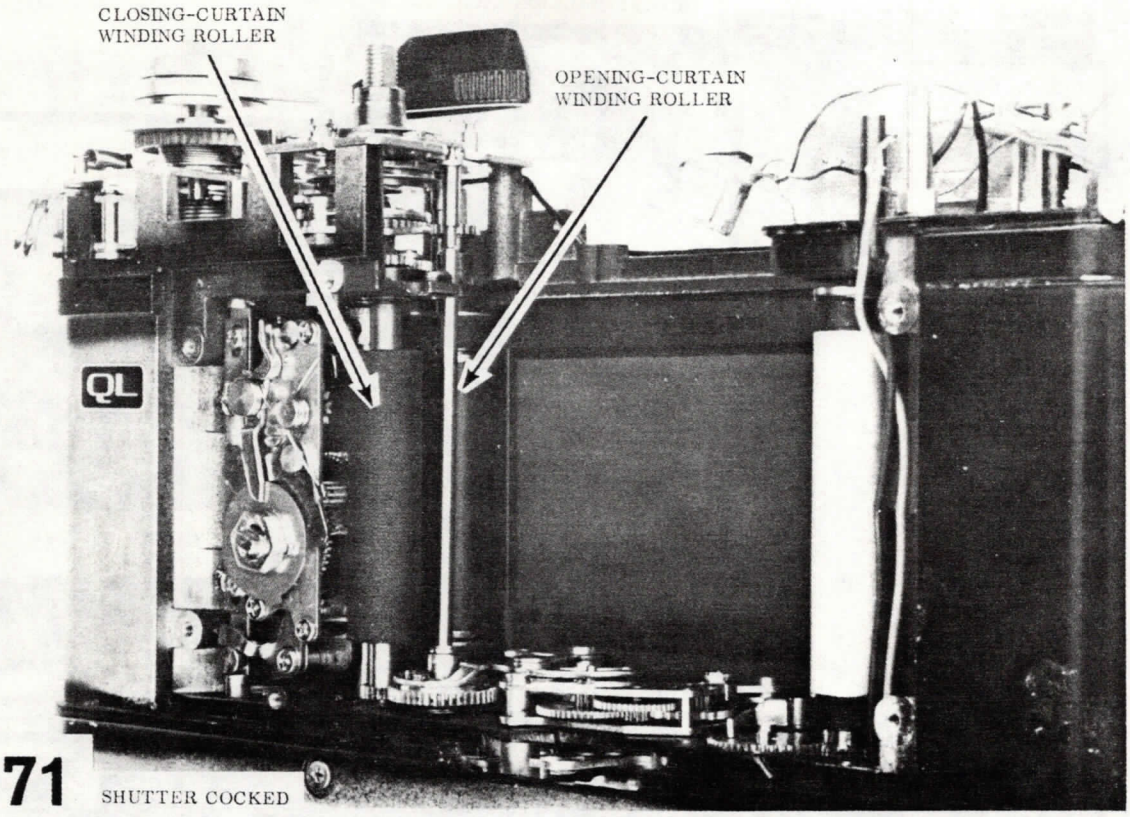


REASSEMBLY: COCK THE DELAYED-ACTION ESCAPEMENT BEFORE REPLACING THE FRONT-PLATE/MIRROR-CAGE ASSEMBLY. JUST TURN THE DELAYED-ACTION COUPLER WITH A LARGE SCREWDRIVER. ALSO, TURN THE DELAYED-ACTION COCKING LEVER (IN THE FRONT PLATE) TO THE COCKED POSITION. AFTER SEATING THE FRONT-PLATE/MIRROR-CAGE ASSEMBLY, COCK AND RELEASE THE SHUTTER. THE DELAYED-ACTION ESCAPEMENT SHOULD PICK UP AND TURN THE DELAYED-ACTION COCKING LEVER.


QL
OPENING-CURTAIN TAKE-UP ROLLER
CLOSING-CURTAIN TAKE-UP ROLLER

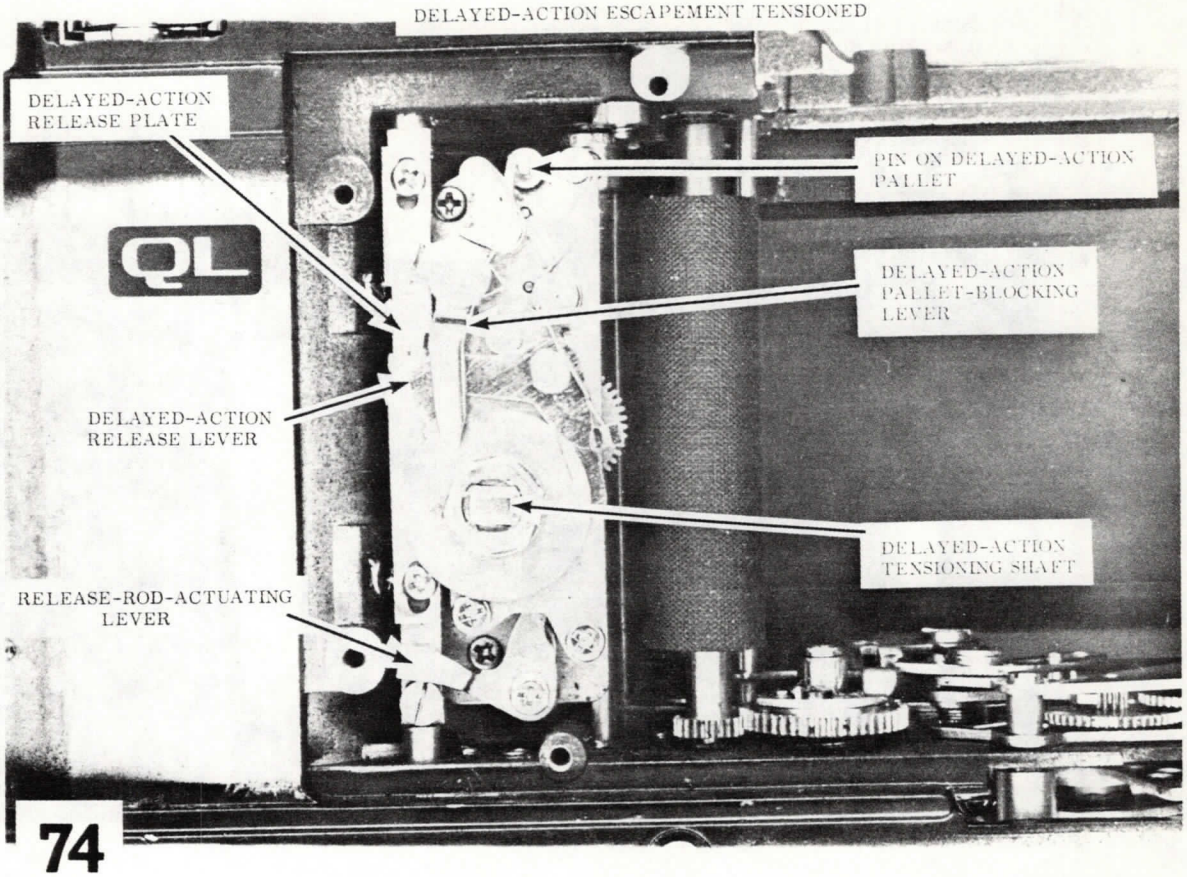
72


1. PEEL UP BOTTOM OF WIND-SIDE LEATHERETTE AND REMOVE THIRD WIND-SIDE FRONT-PLATE SCREW
2. REMOVE BLACK FRONT-PLATE SCREW
3. REMOVE TWO REWIND-SIDE FRONT-PLATE SCREWS
4. LIFT OFF FRONT-PLATE/MIRROR-CAGE ASSEMBLY
QL

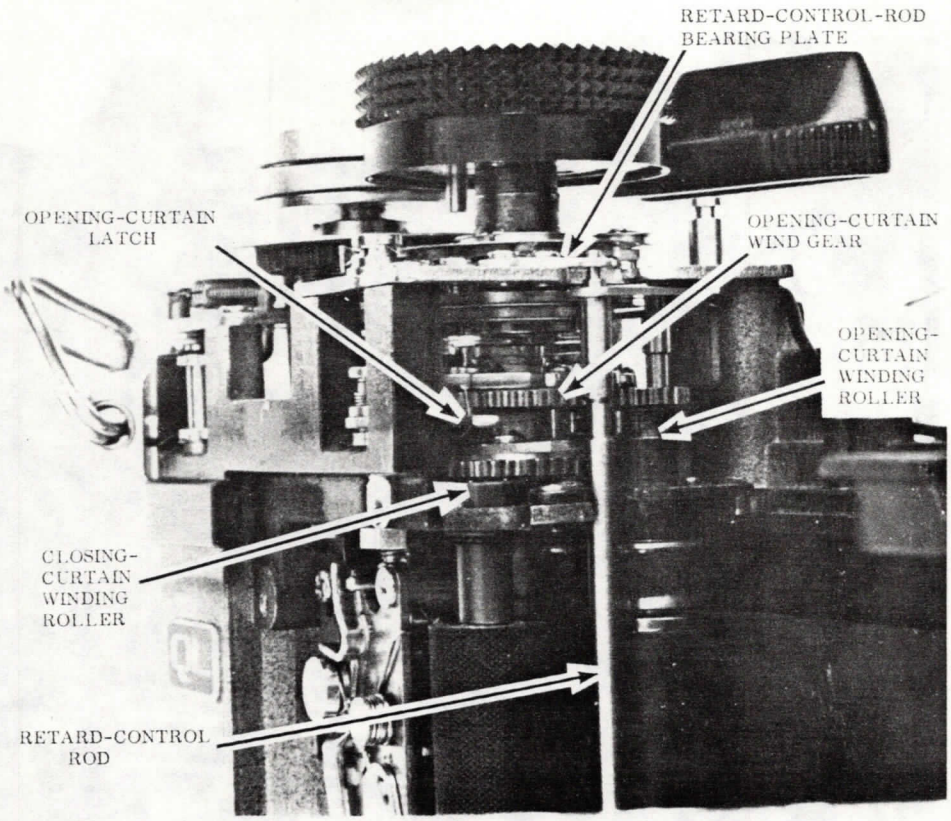


71 SHUTTER COCKED

DELAYED-ACTION ESCAPEMENT TENSIONED

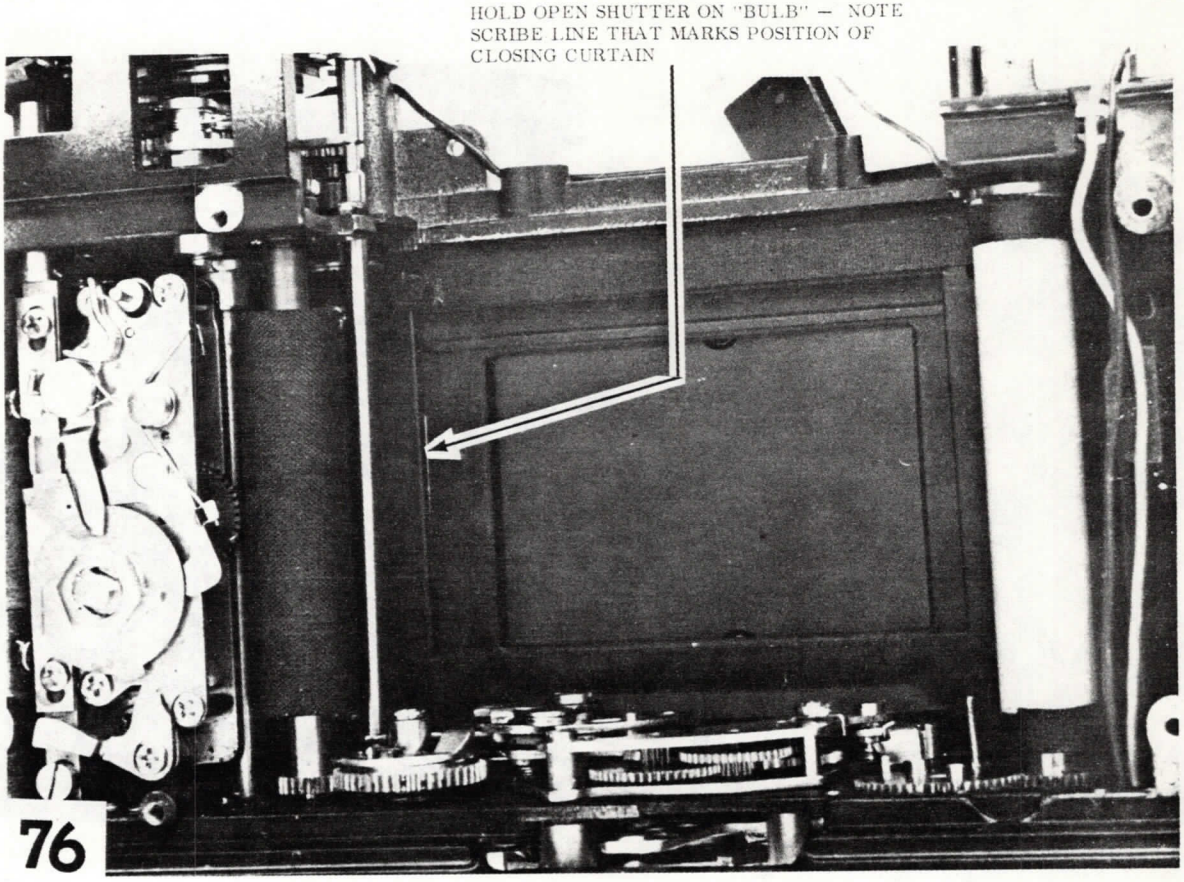


74



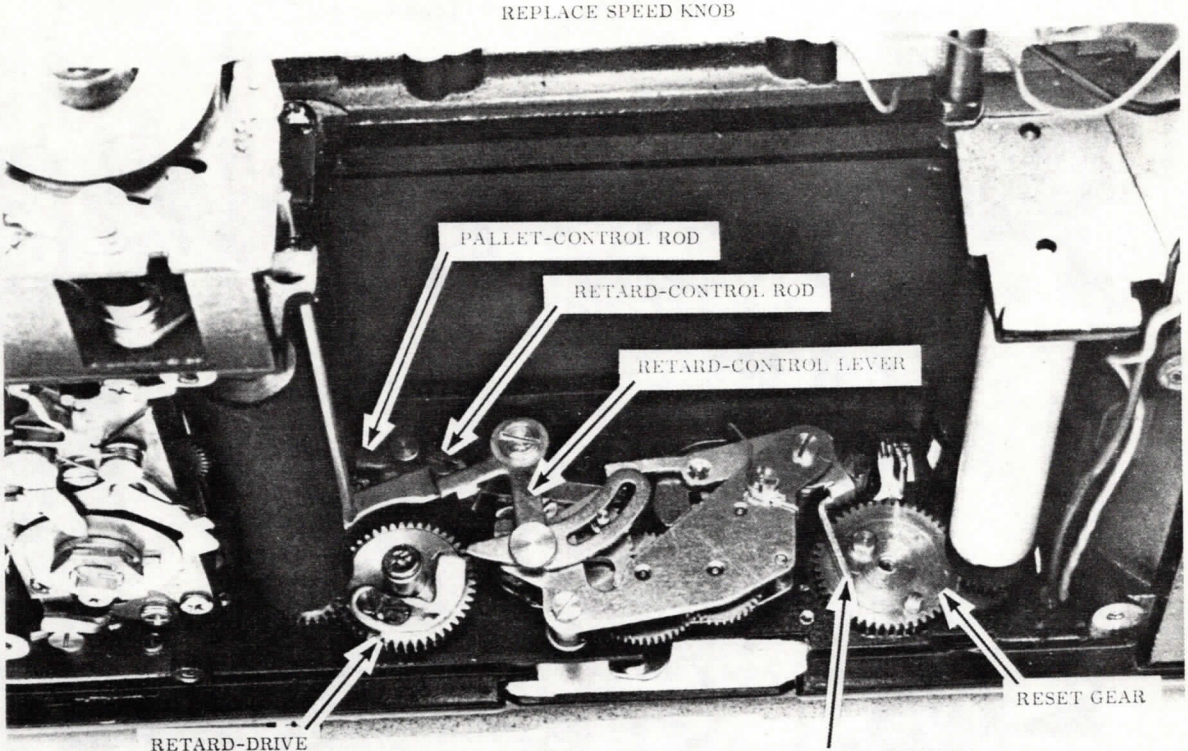
73

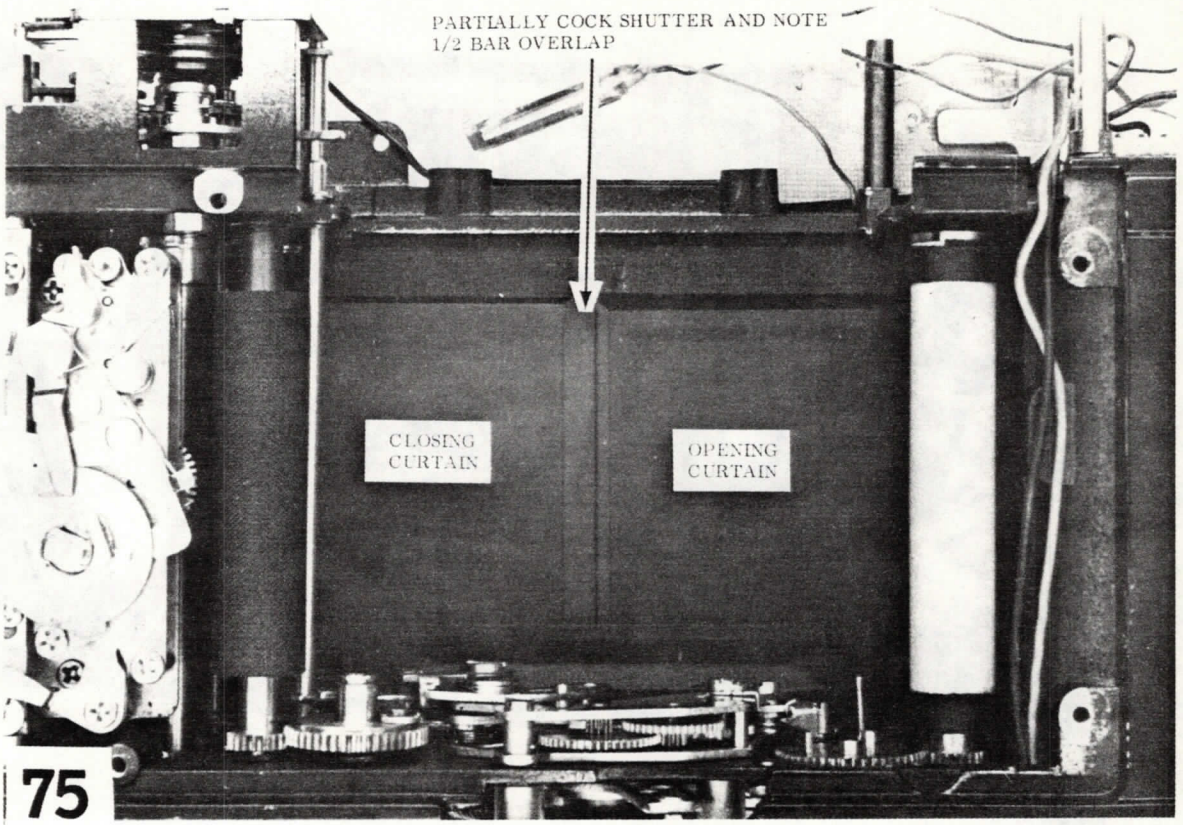
Note that you can shift the position of the retard-control-rod bearing plate for a slow-speed adjustment.


HOLD OPEN SHUTTER ON "BULB" — NOTE SCRIBE LINE THAT MARKS POSITION OF CLOSING CURTAIN

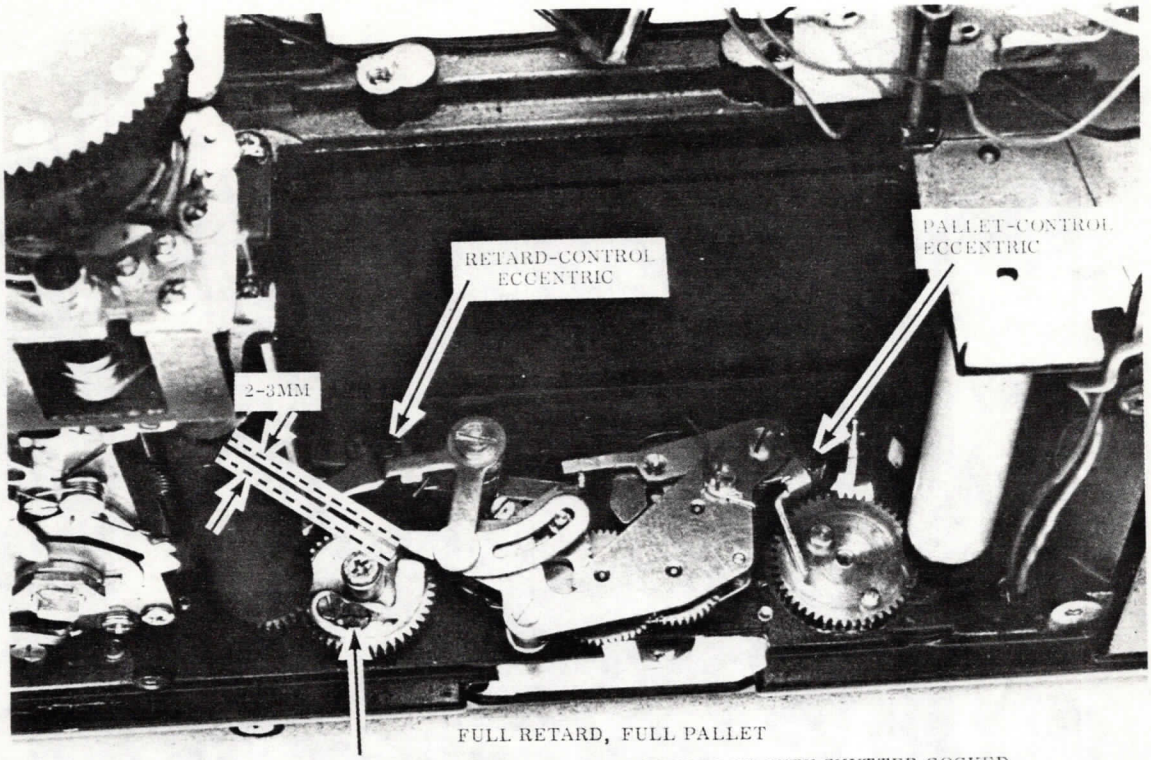
76

REPLACE SPEED KNOB




PARTIALLY COCK SHUTTER AND NOTE
1/2 BAR OVERLAP
CLOSING
CURTAIN
OPENING
CURTAIN

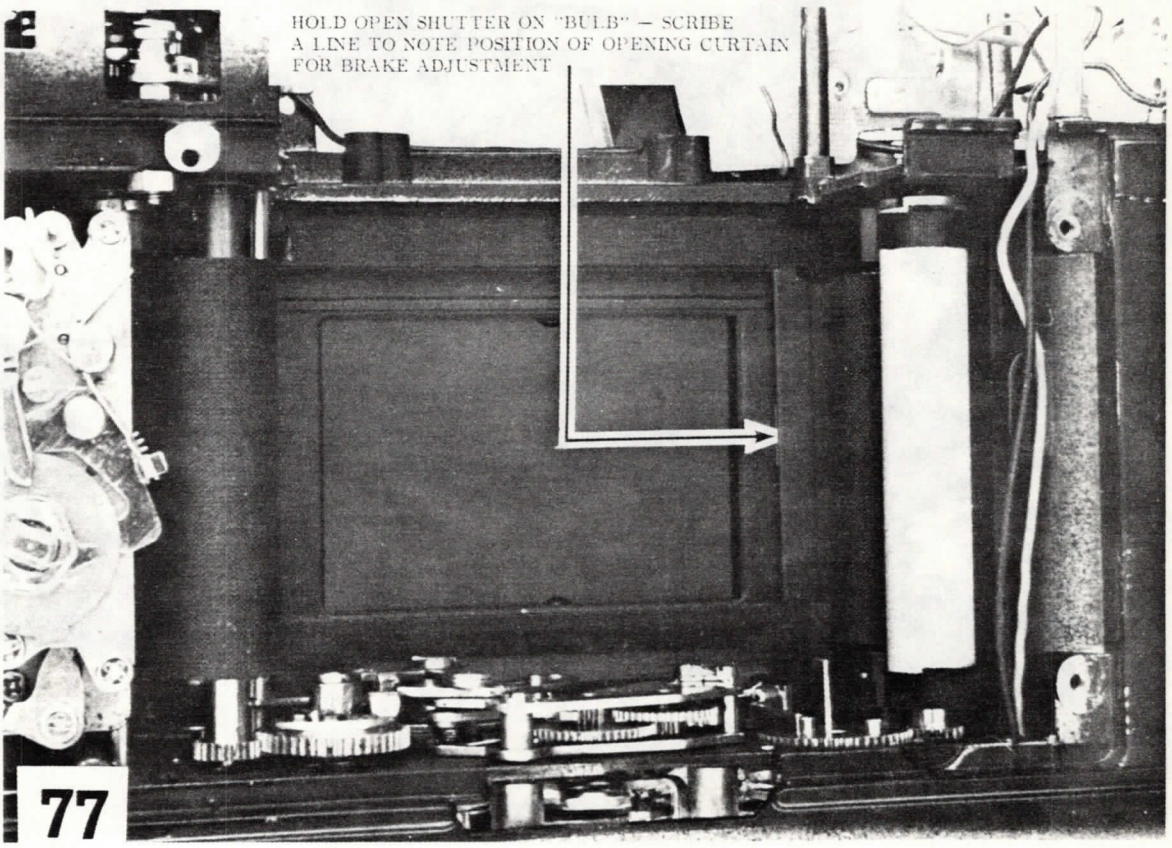
75



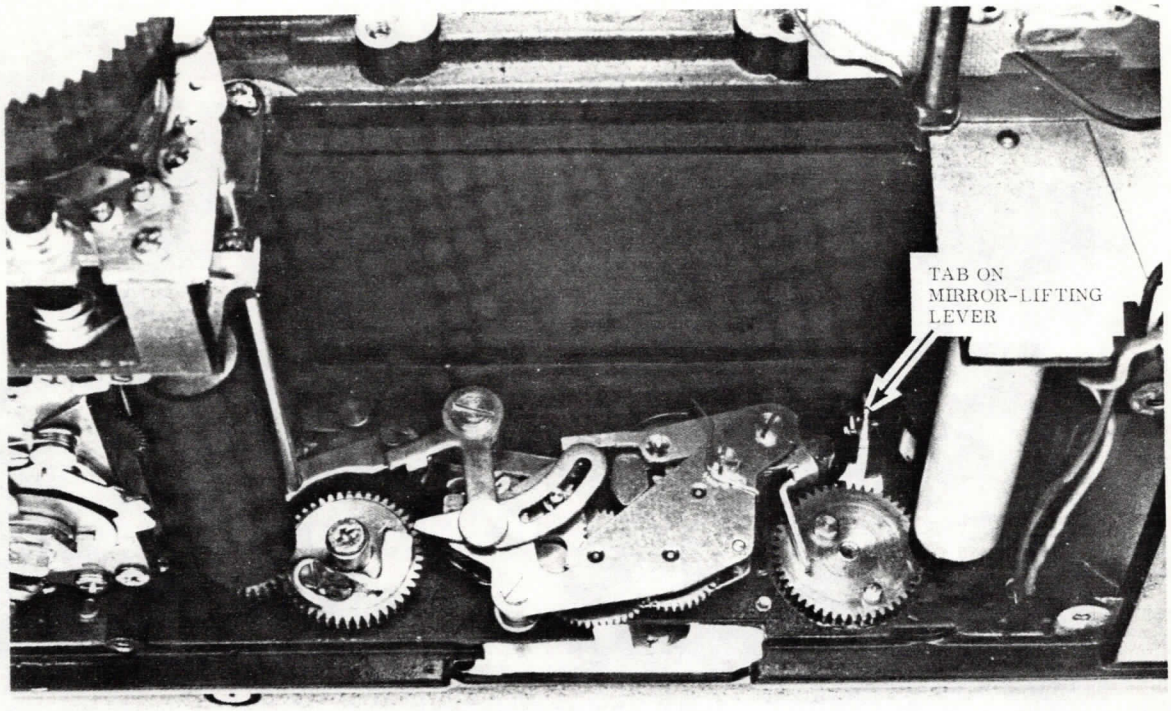
FULL RETARD, FULL PALLET

ADJUST POSITION OF RETARD-DRIVE LUG WITH SHUTTER COCKED

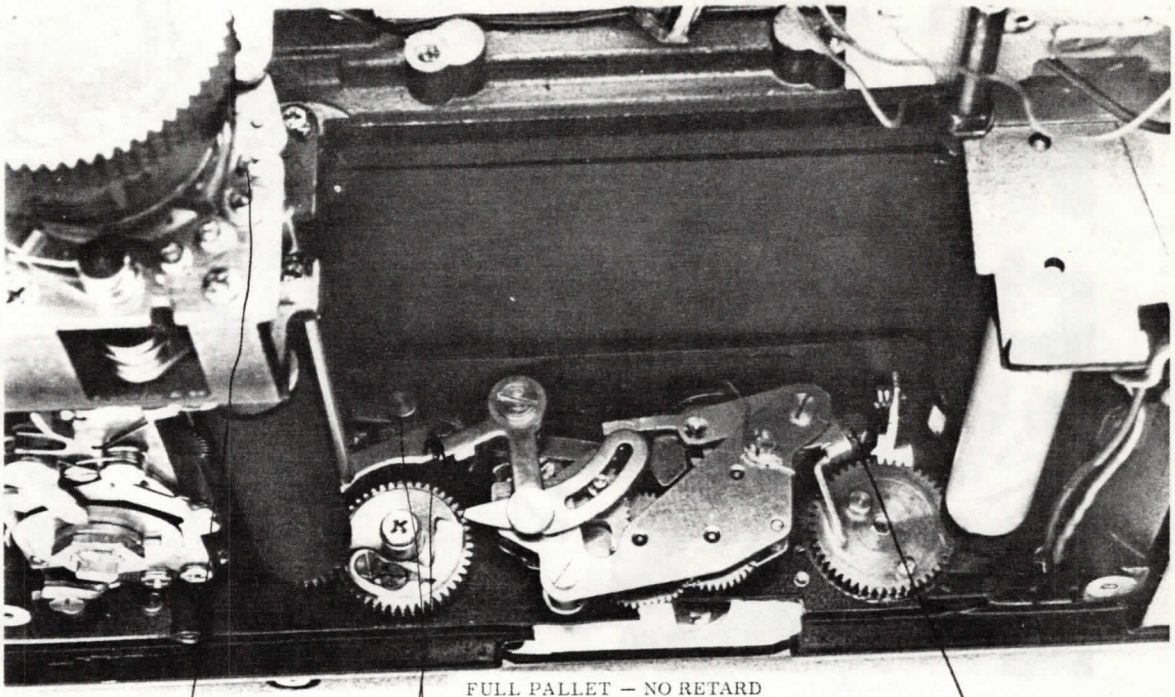
SPEED KNOB SET TO 1 SECOND


HOLD OPEN SHUTTER ON "BULB" – SCRIBE
A LINE TO NOTE POSITION OF OPENING CURTAIN
FOR BRAKE ADJUSTMENT

77



NO RETARD
SPEED KNOB SET TO 1/60 SECOND



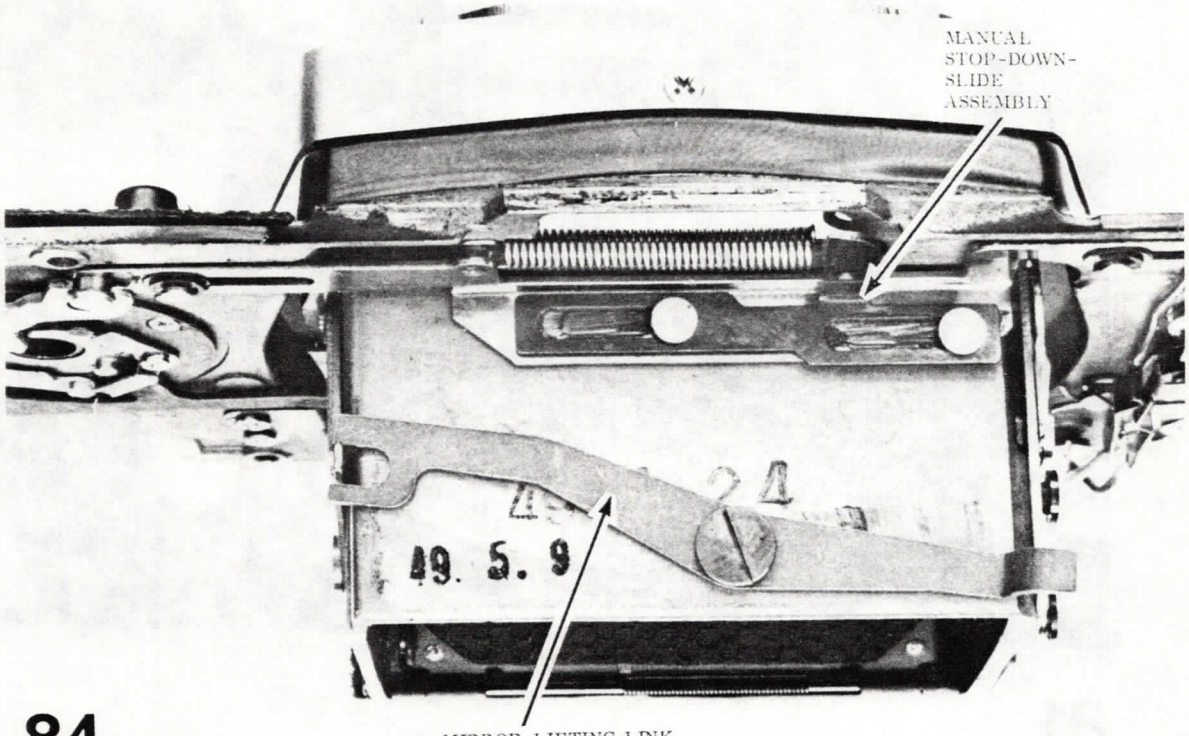
FULL PALLET — NO RETARD

79

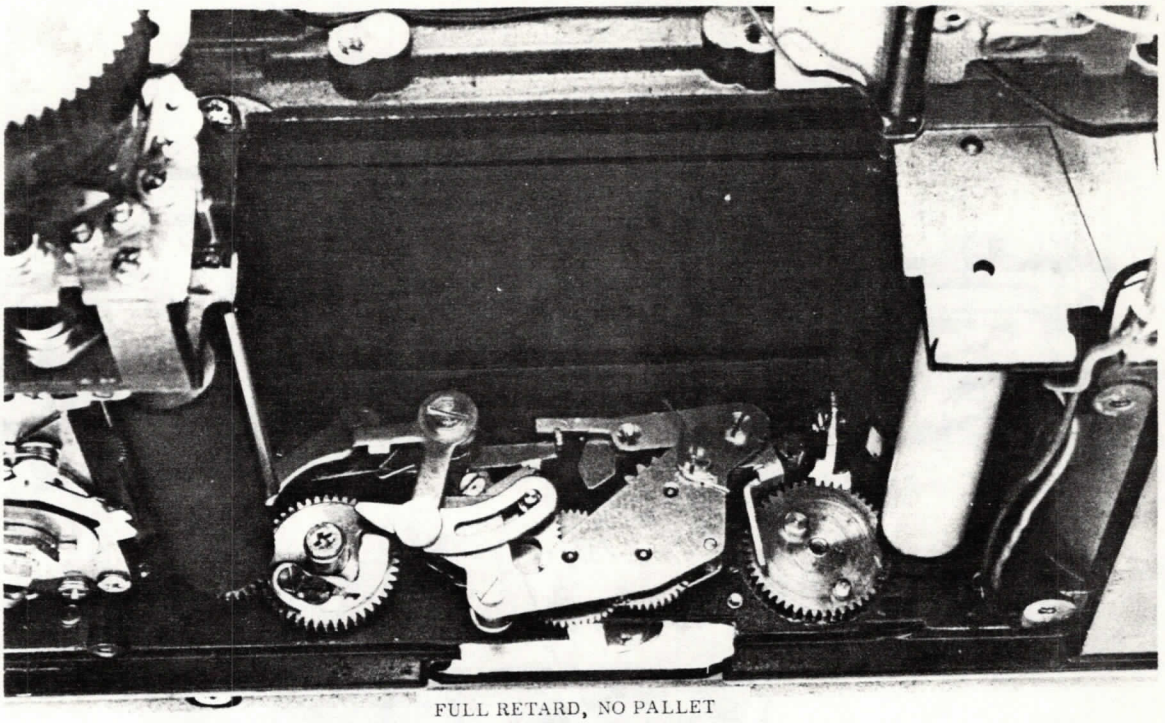
SPEED KNOB SET TO BULB

1 see adjust

¼ adjust



84

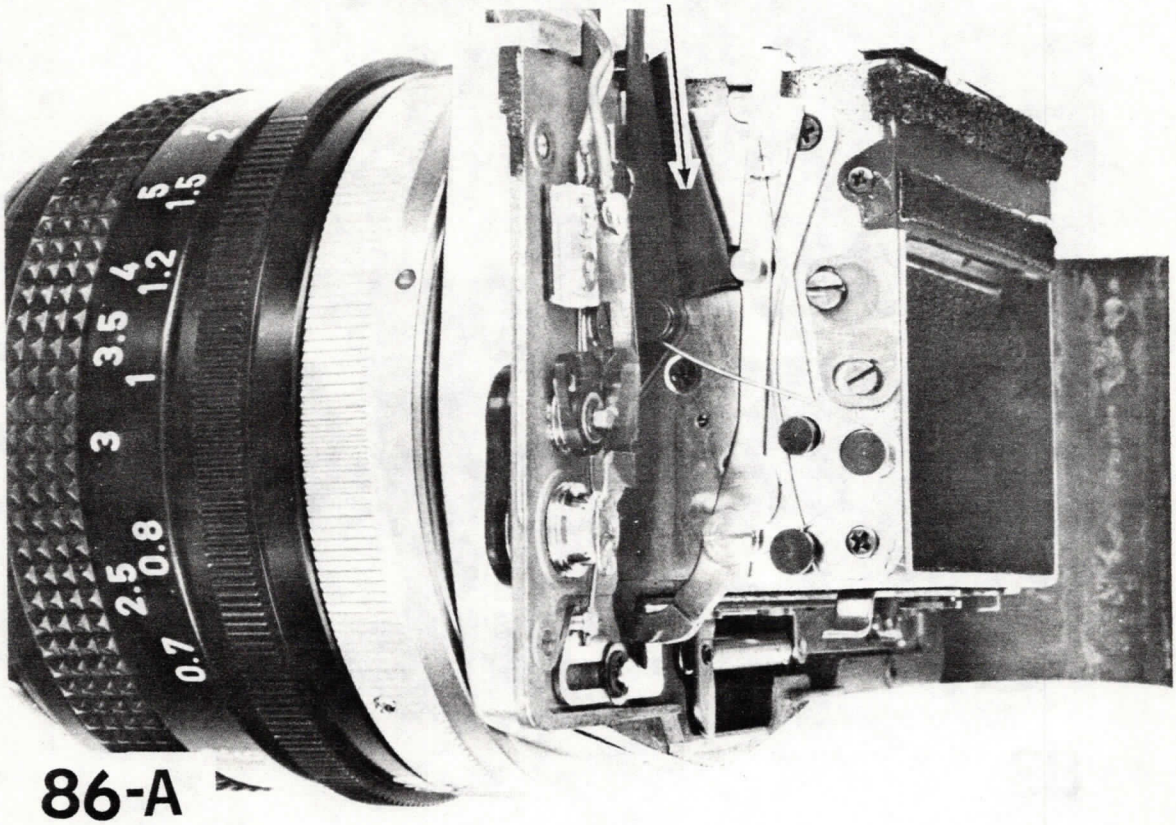


FULL RETARD, NO PALLET

81

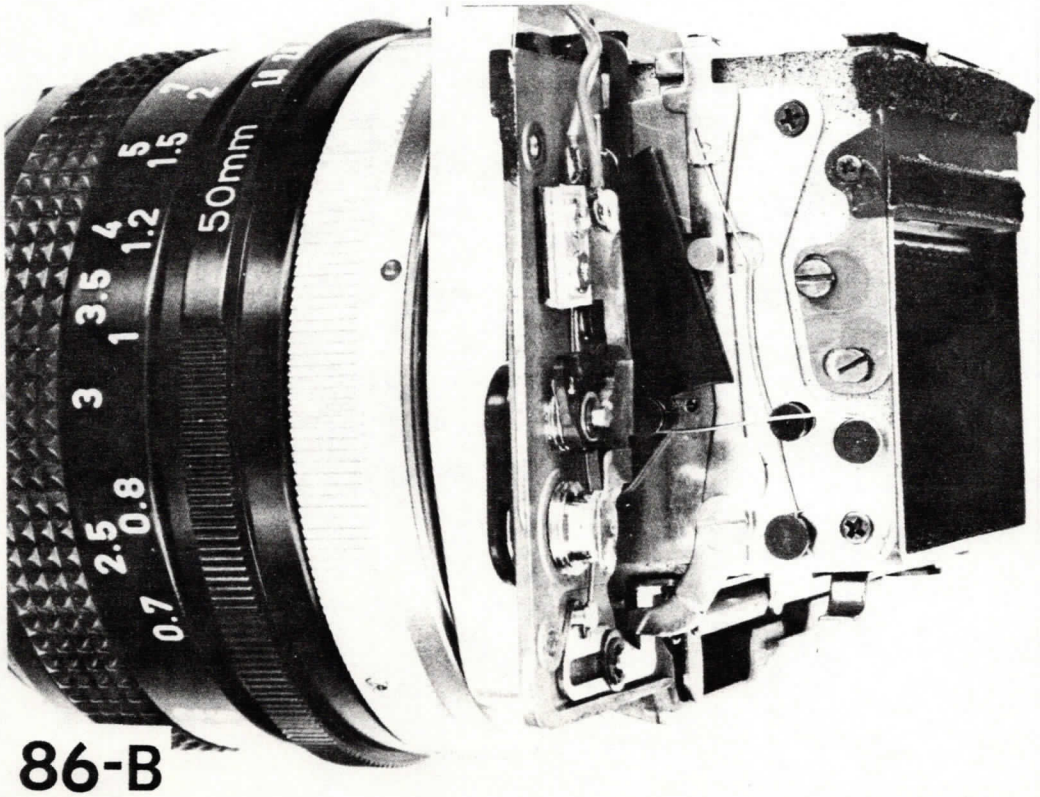
SPEED KNOB SET TO 1/8 SECOND

AT LARGER APERTURES, CAM SURFACE PUSHES
POINTER LEVER TOWARD BACK OF CAMERA

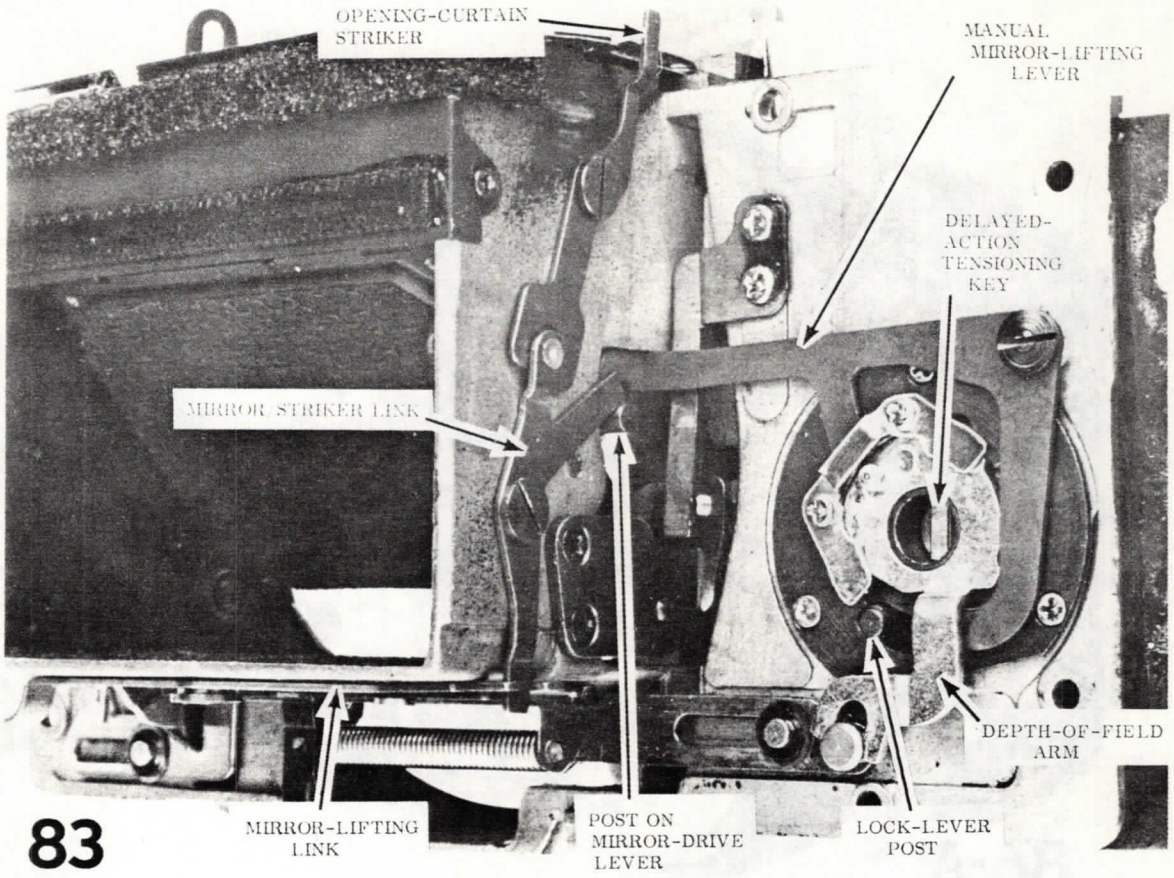


86-A

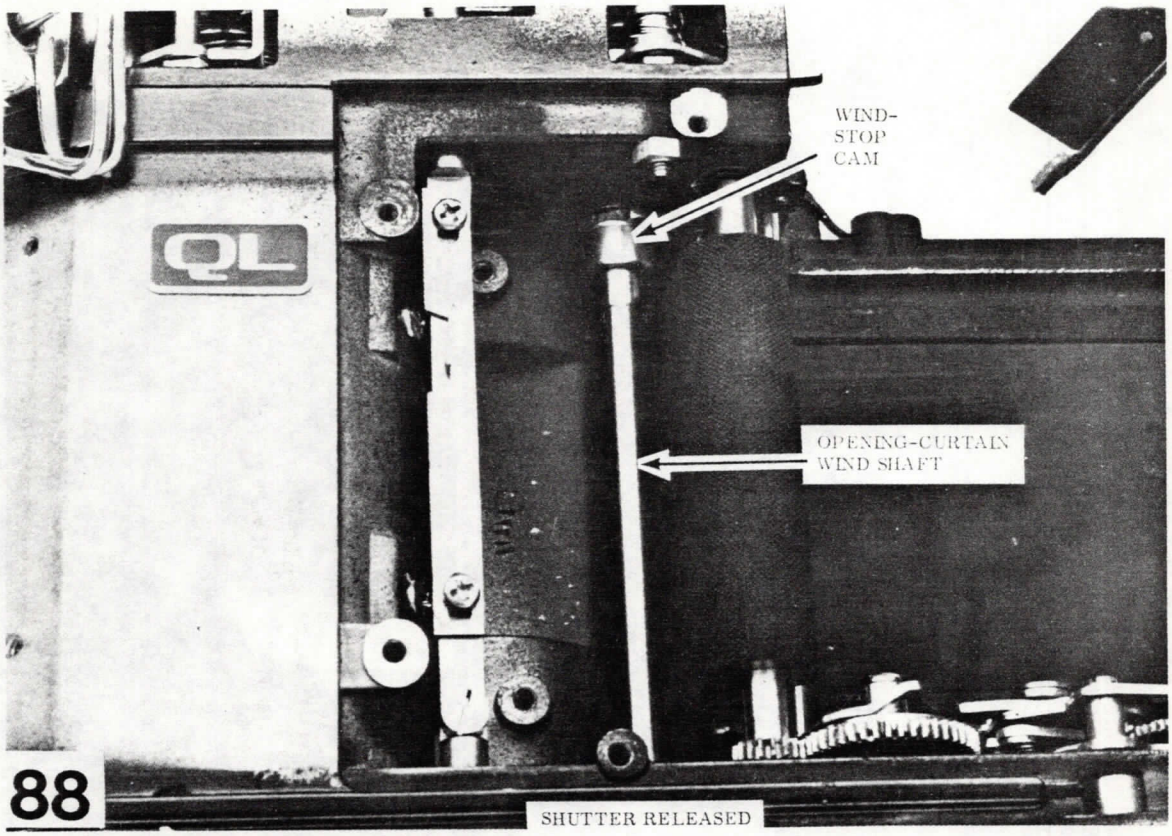
AT SMALLER APERTURES, CAM SURFACE MOVES DOWN — THAT ALLOWS
POINTER LEVER TO MOVE TOWARD FRONT OF CAMERA



86-B

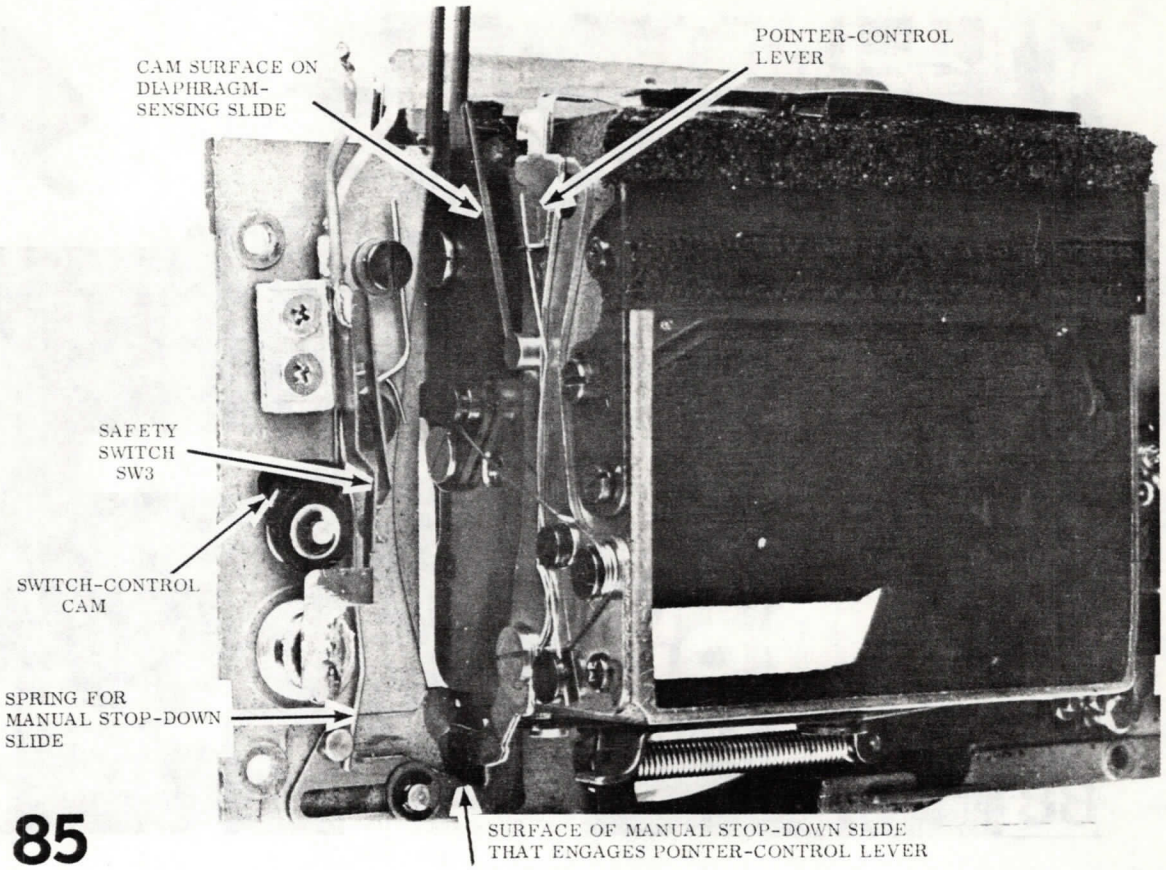

OPENING-CURTAIN STRIKER
MANUAL MIRROR-LIFTING LEVER
DELAYED-ACTION TENSIONING KEY
MIRROR STRIKER LINK
DEPTH-OF-FIELD ARM
MIRROR-LIFTING LINK
POST ON MIRROR-DRIVE LEVER
LOCK-LEVER POST

83

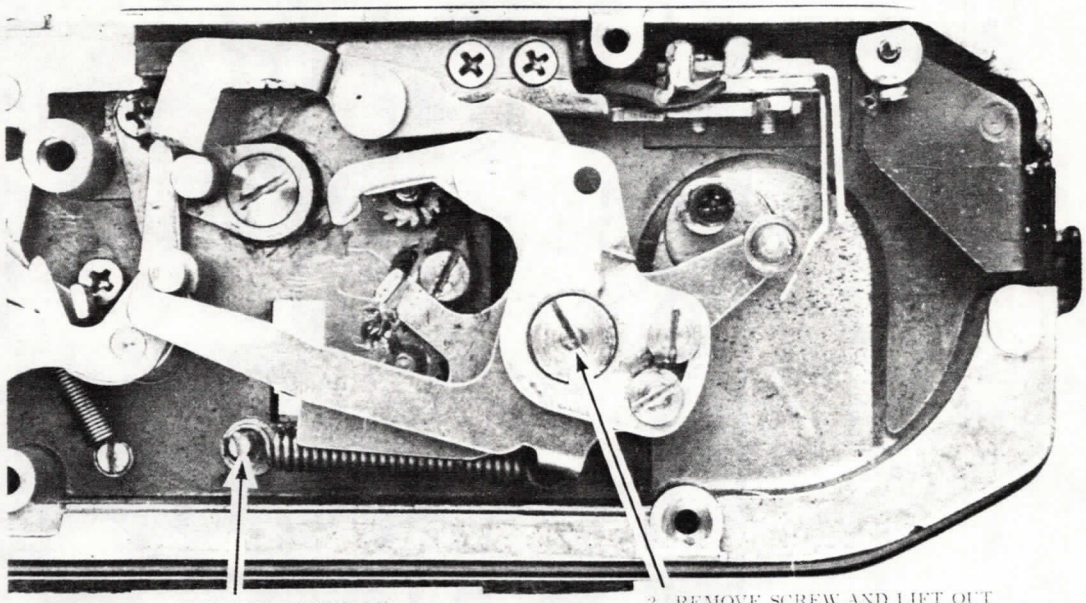


88

SHUTTER RELEASED

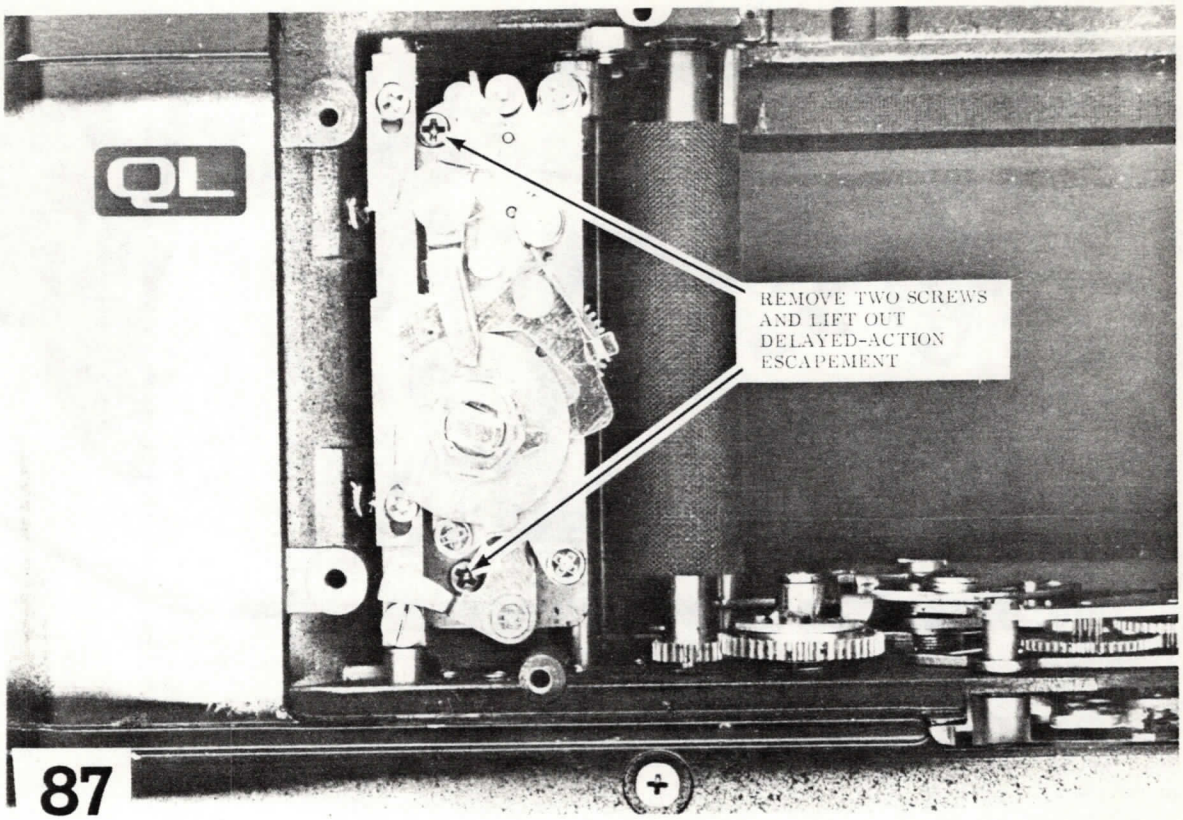

CAM SURFACE ON DIAPHRAGM-SENSING SLIDE
POINTER-CONTROL LEVER
SAFETY SWITCH SW3
SWITCH-CONTROL CAM
SPRING FOR MANUAL STOP-DOWN SLIDE
SURFACE OF MANUAL STOP-DOWN SLIDE THAT ENGAGES POINTER-CONTROL LEVER

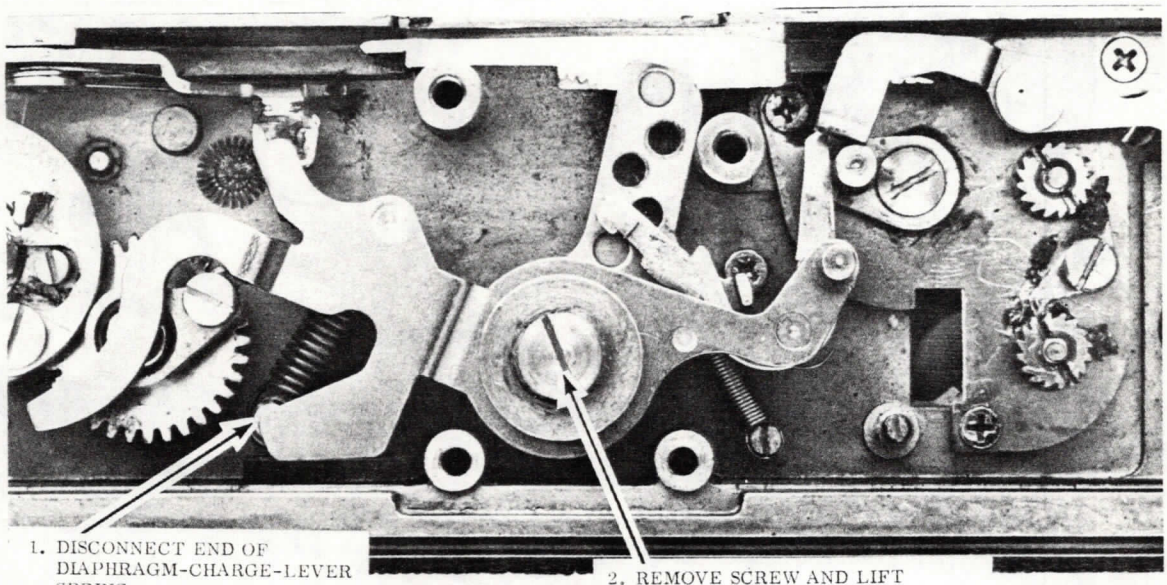
85



1. DISCONNECT END OF MIRROR-TENSIONING-LEVER TENSION SPRING

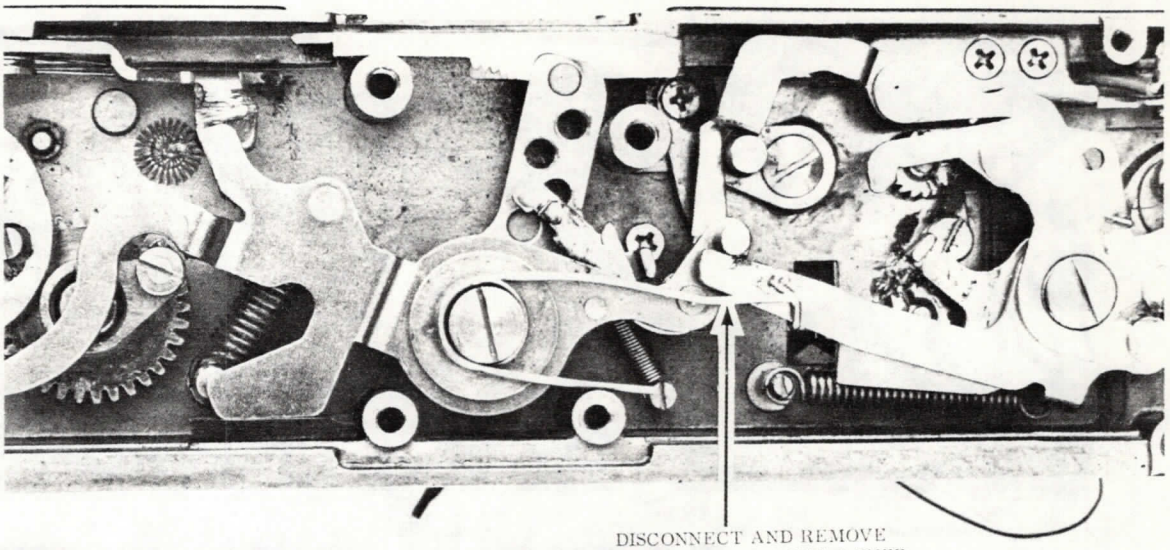
2. REMOVE SCREW AND LIFT OUT MIRROR-TENSIONING LEVER


QL
REMOVE TWO SCREWS
AND LIFT OUT
DELAYED-ACTION
ESCAPEMENT
87

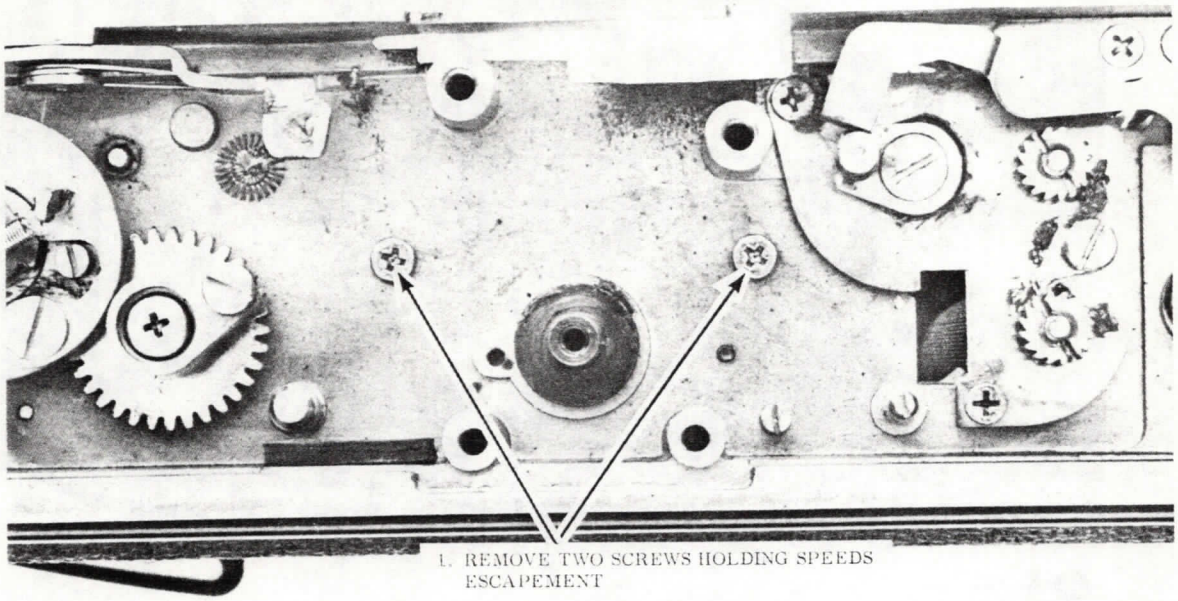


1. DISCONNECT END OF DIAPHRAGM-CHARGE-LEVER SPRING

2. REMOVE SCREW AND LIFT OUT DIAPHRAGM-CHARGE LEVER

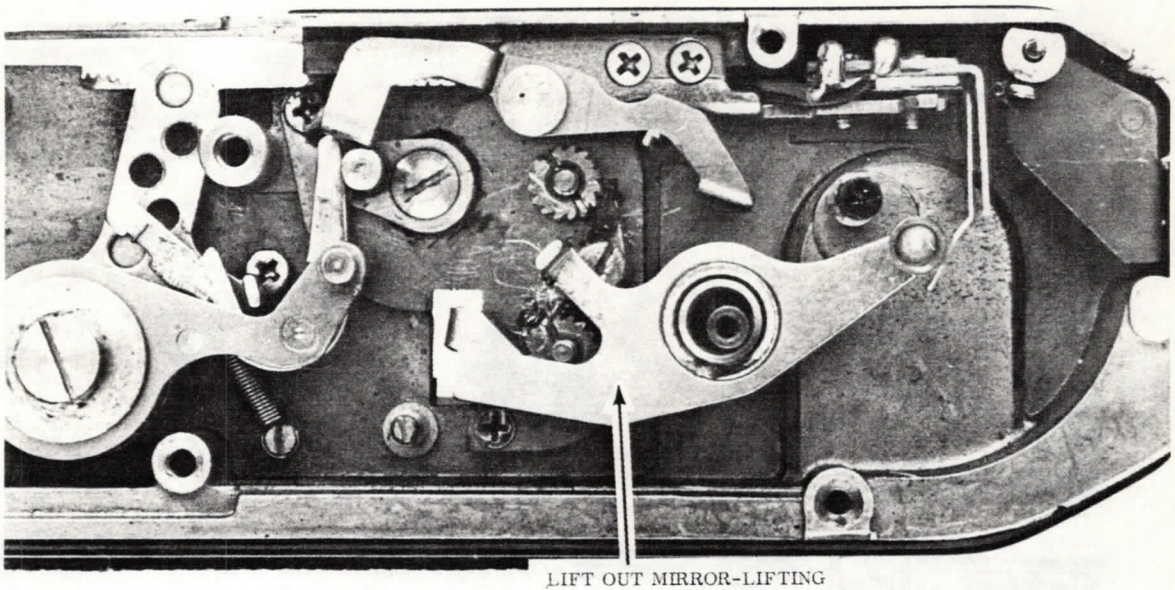


DISCONNECT AND REMOVE
MIRROR-TENSIONING-LEVER
TORSION SPRING



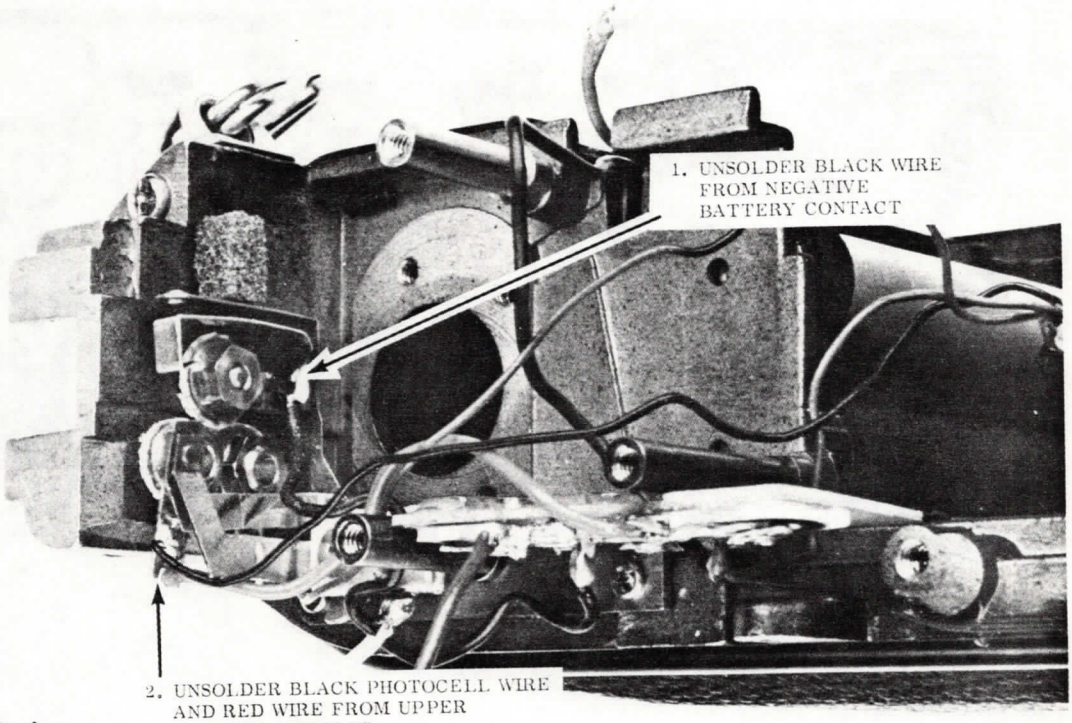
1. REMOVE TWO SCREWS HOLDING SPEEDS ESCAPEMENT

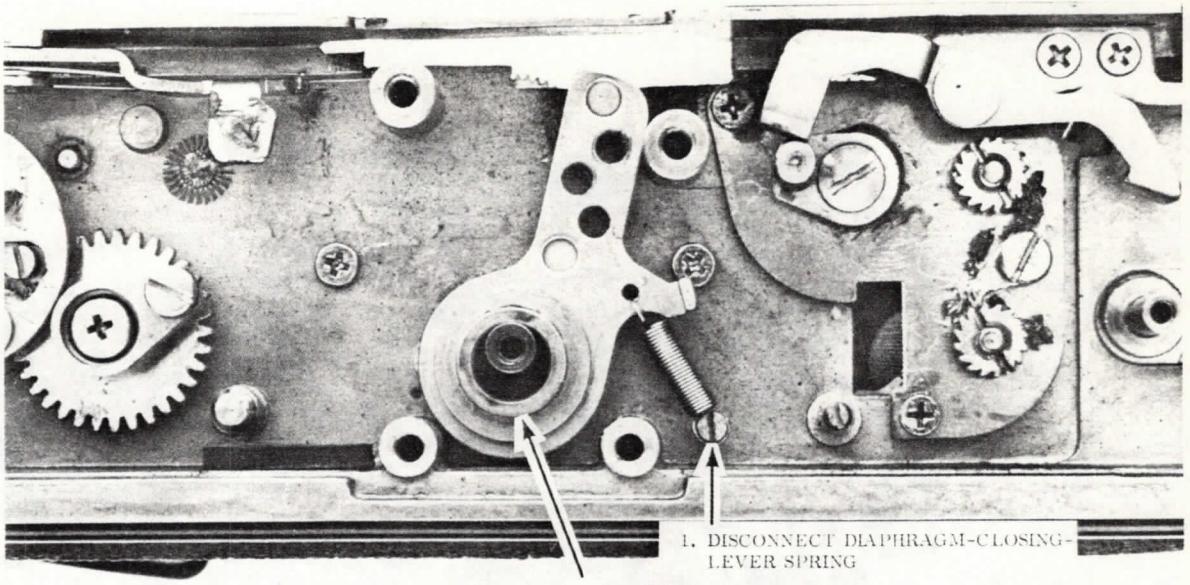
2. REMOVE SPEEDS ESCAPEMENT



LIFT OUT MIRROR-LIFTING LEVER

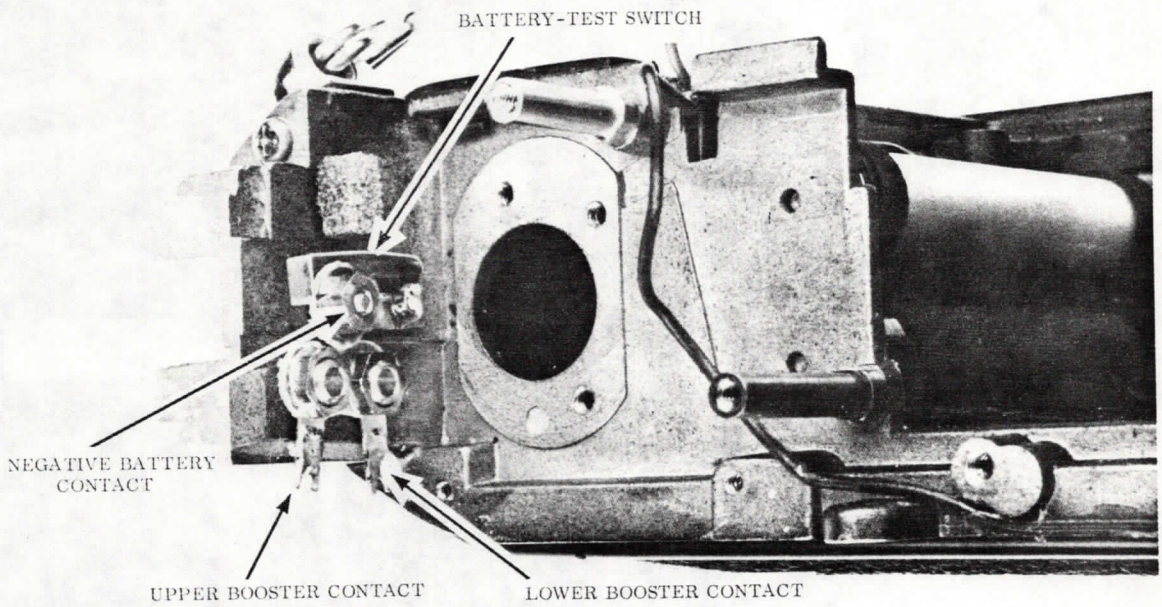
91


1. UNSOLDER BLACK WIRE FROM NEGATIVE BATTERY CONTACT
2. UNSOLDER BLACK PHOTOCELL WIRE AND RED WIRE FROM UPPER BOOSTER CONTACT

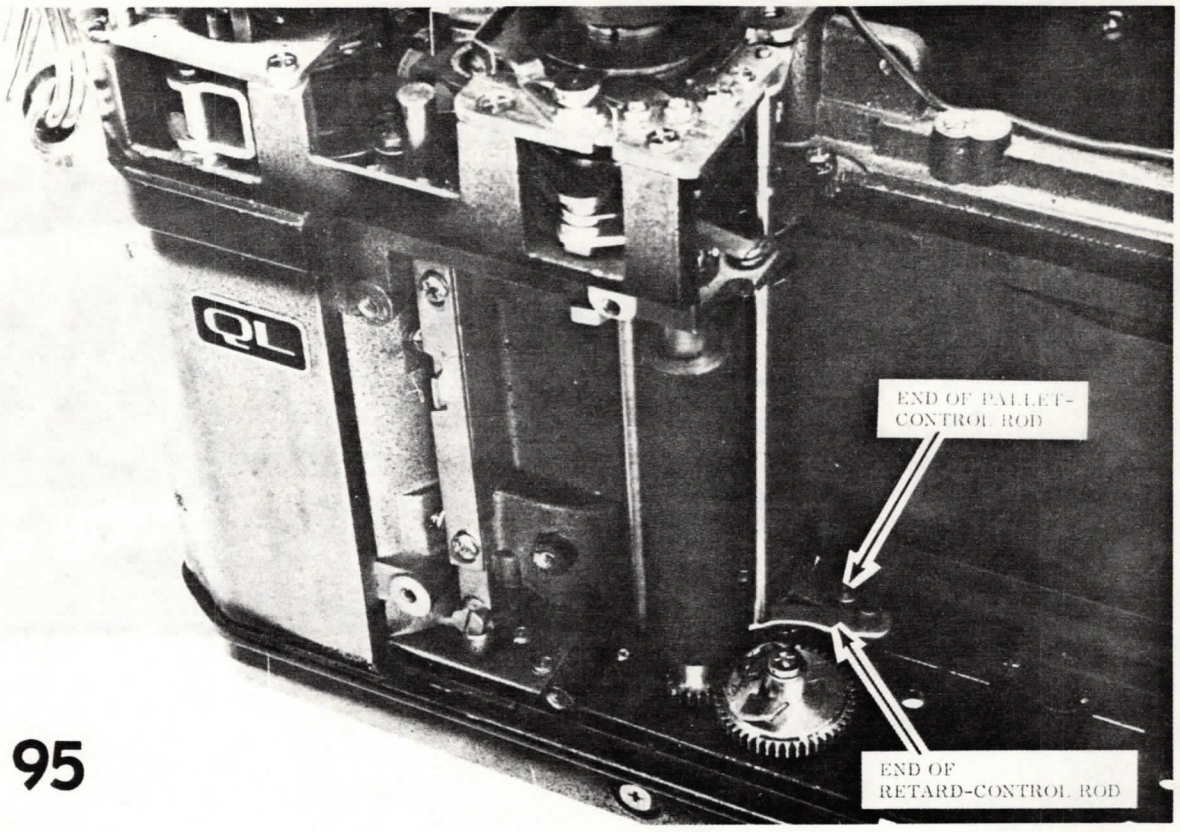


1. DISCONNECT DIAPHRAGM-CLOSING-LEVER SPRING

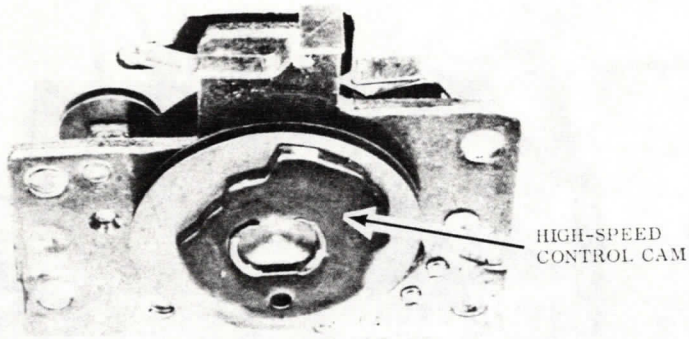
2. LIFT OUT DIAPHRAGM-CLOSING-LEVER


BATTERY-TEST SWITCH
NEGATIVE BATTERY CONTACT
UPPER BOOSTER CONTACT
LOWER BOOSTER CONTACT

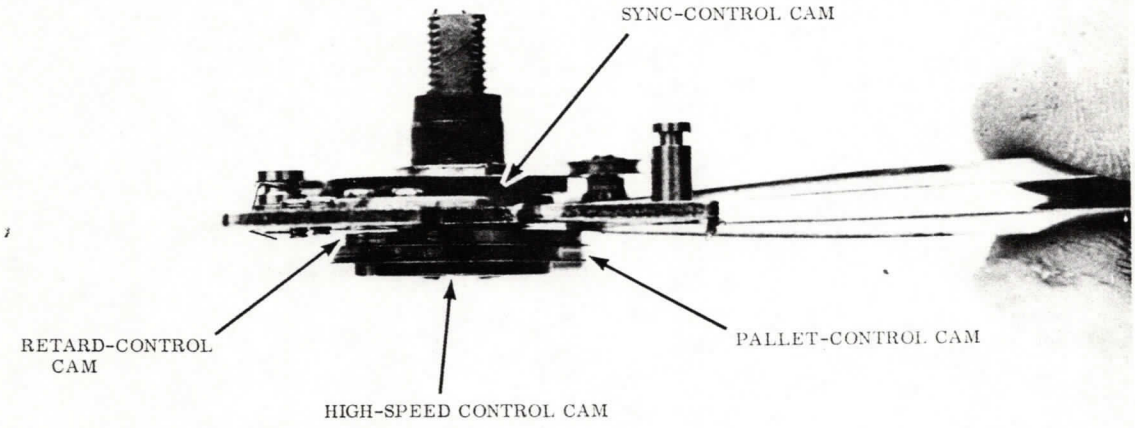
98



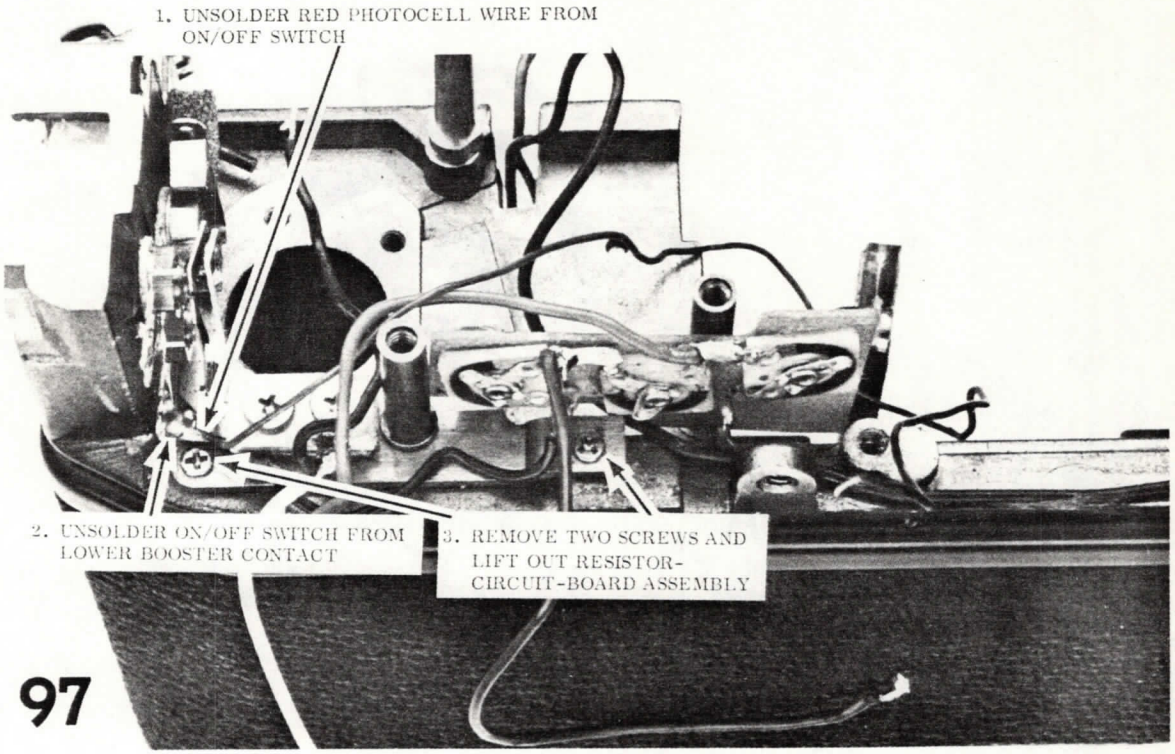
95



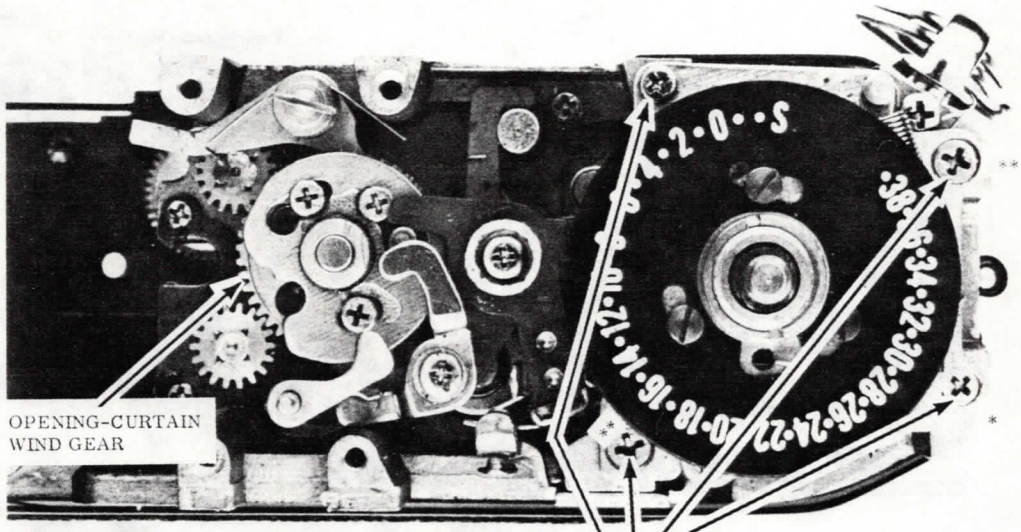
100-A UNDERSIDE OF SPEED-SELECTOR ASSEMBLY



100-B SIDE OF SPEED — SELECTOR ASSEMBLY

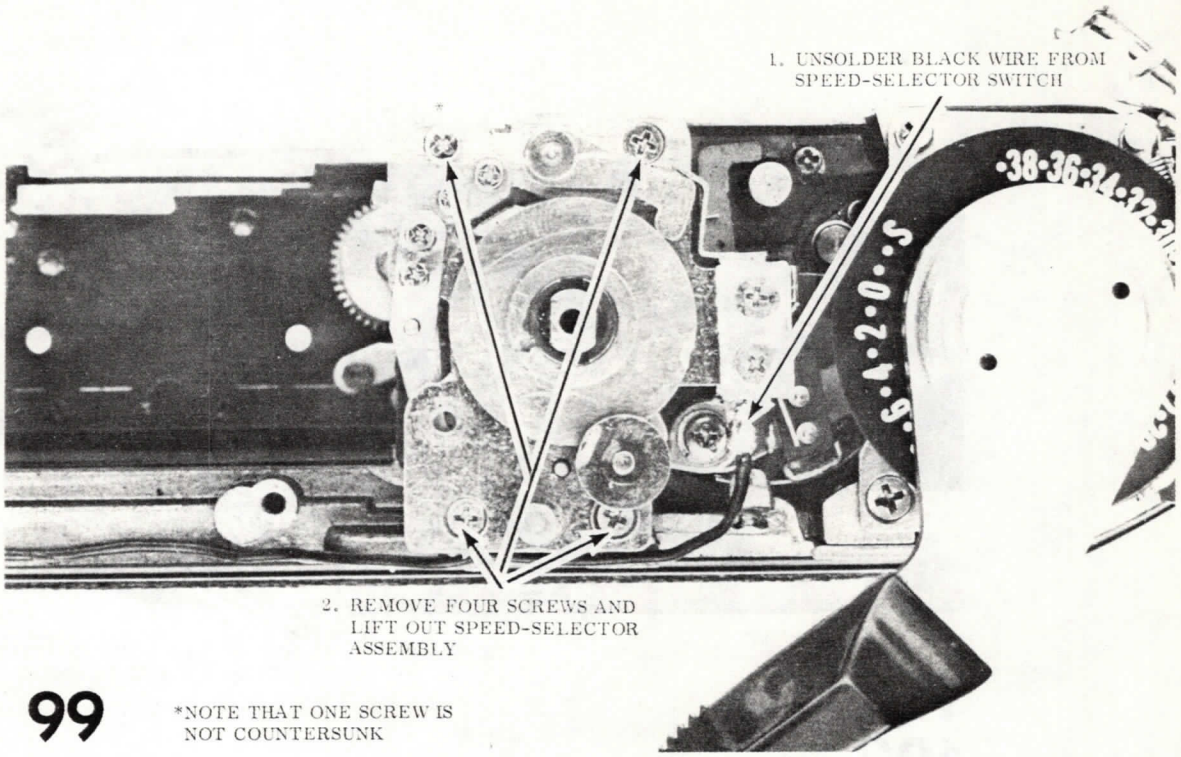

1. UNSOLDER RED PHOTOCELL WIRE FROM ON/OFF SWITCH
2. UNSOLDER ON/OFF SWITCH FROM LOWER BOOSTER CONTACT
3. REMOVE TWO SCREWS AND LIFT OUT RESISTOR-CIRCUIT-BOARD ASSEMBLY
97

1. REMOVE WIND LEVER

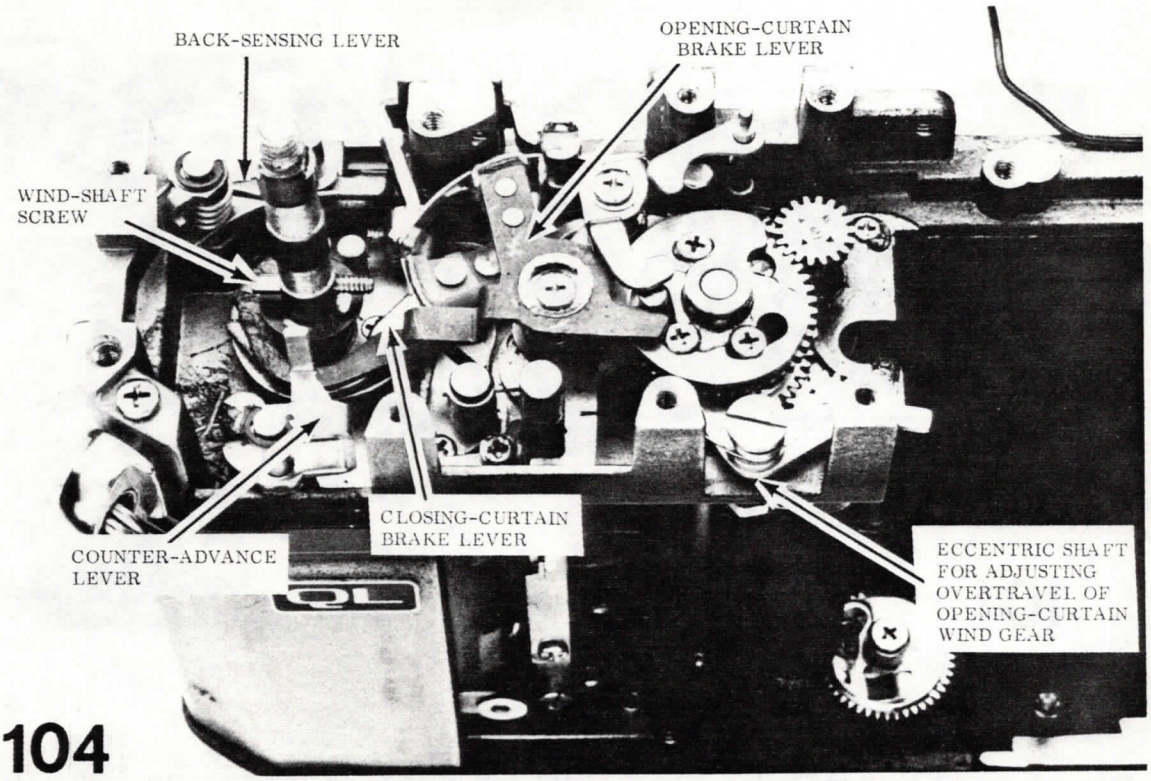


*SMALL COUNTERSUNK SCREW

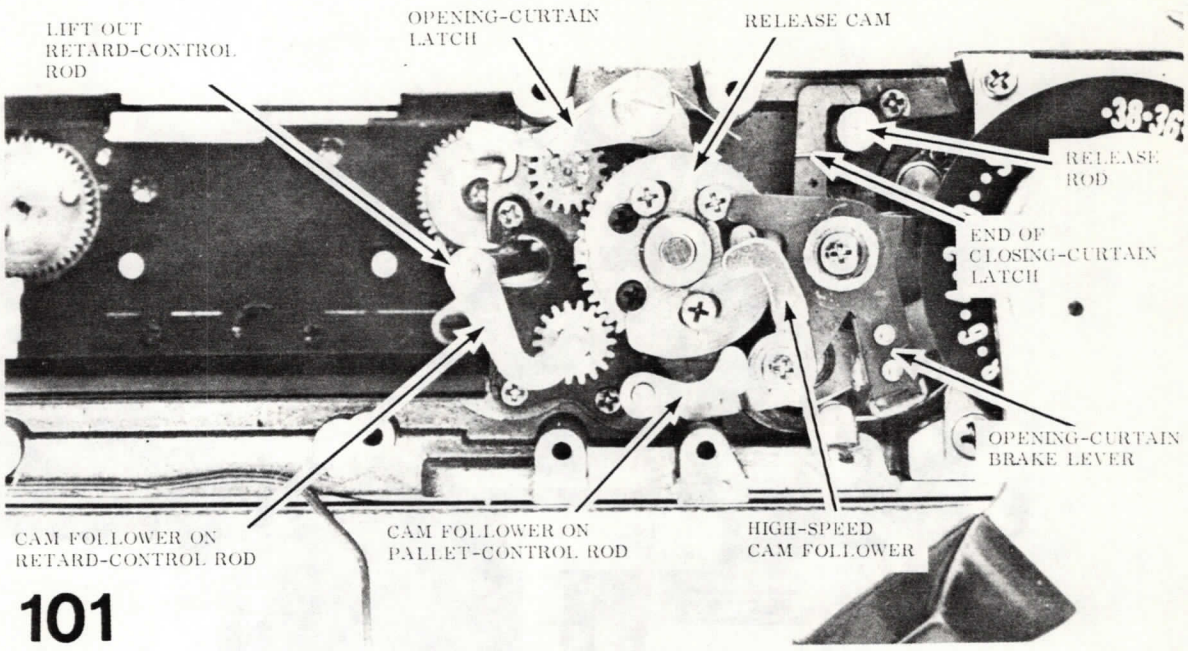
**LARGE COUNTERSUNK SCREWS



*NOTE THAT ONE SCREW IS NOT COUNTERSUNK

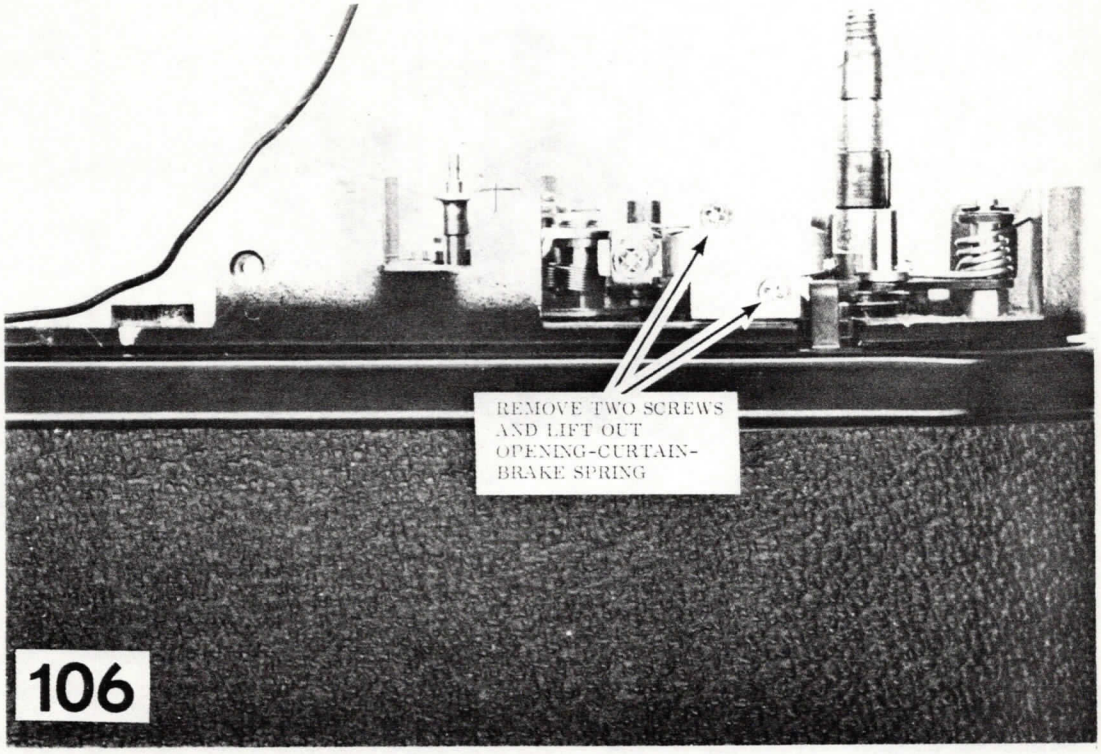

BACK-SENSING LEVER
OPENING-CURTAIN BRAKE LEVER
WIND-SHAFT SCREW
CLOSING-CURTAIN BRAKE LEVER
COUNTER-ADVANCE LEVER
ECCENTRIC SHAFT FOR ADJUSTING OVERTRAVEL OF OPENING-CURTAIN WIND GEAR

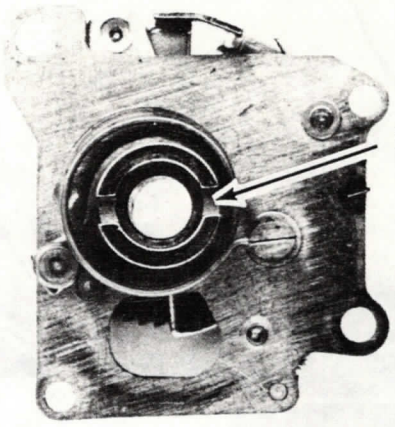
104



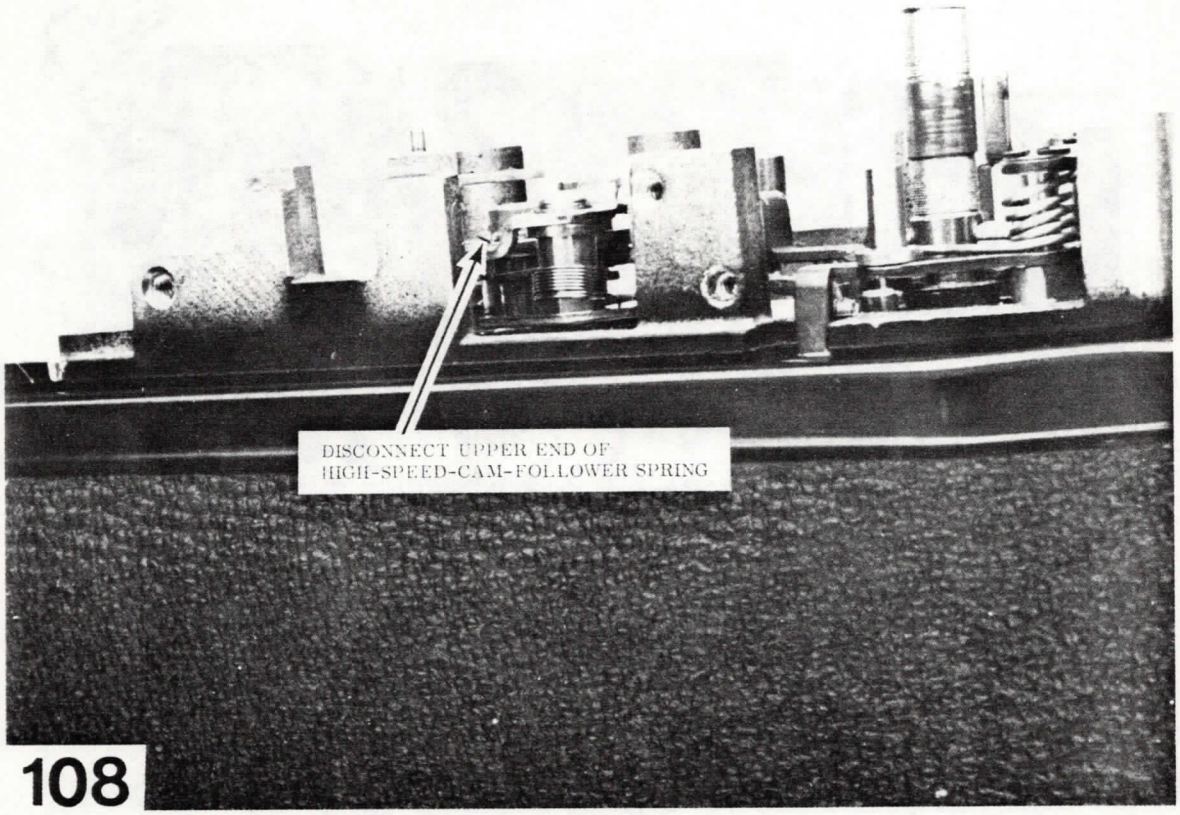
Three screws hold the release cam to the top of the opening-curtain wind gear. By first loosening the screws, you can shift the position of the release cam. That changes the fas shutter speeds. Adjust the release-cam position for the 1/500 and 1/1000 settings. Turr the release cam counterclockwise for a faster shutter speed, clockwise for a slower shutter speed.

High Speed (1/1000, 1/500)

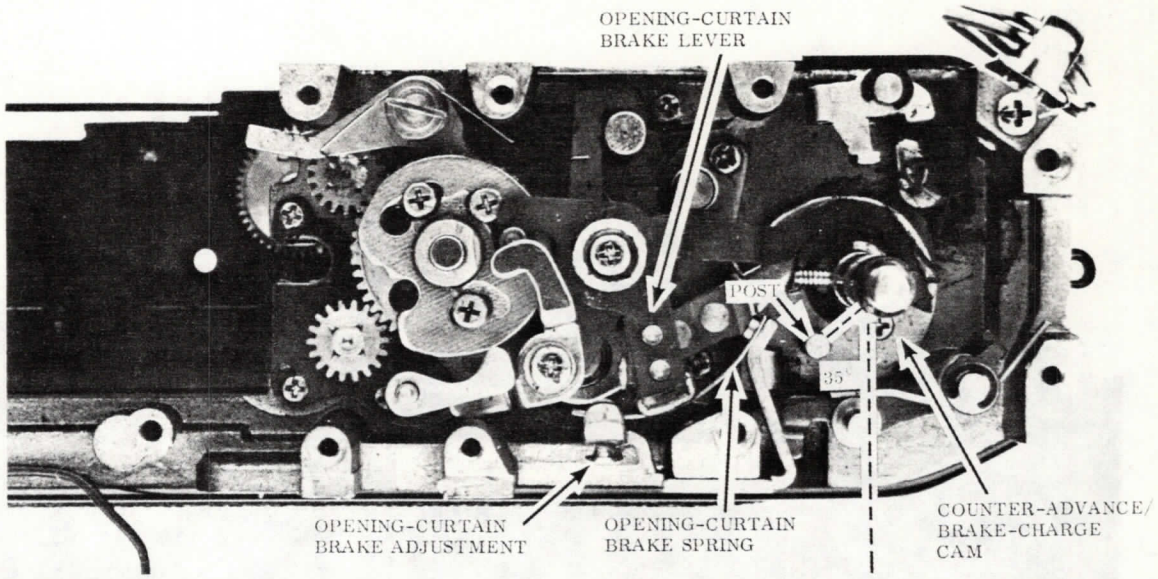

REMOVE TWO SCREWS
AND LIFT OUT
OPENING-CURTAIN-
BRAKE SPRING
106



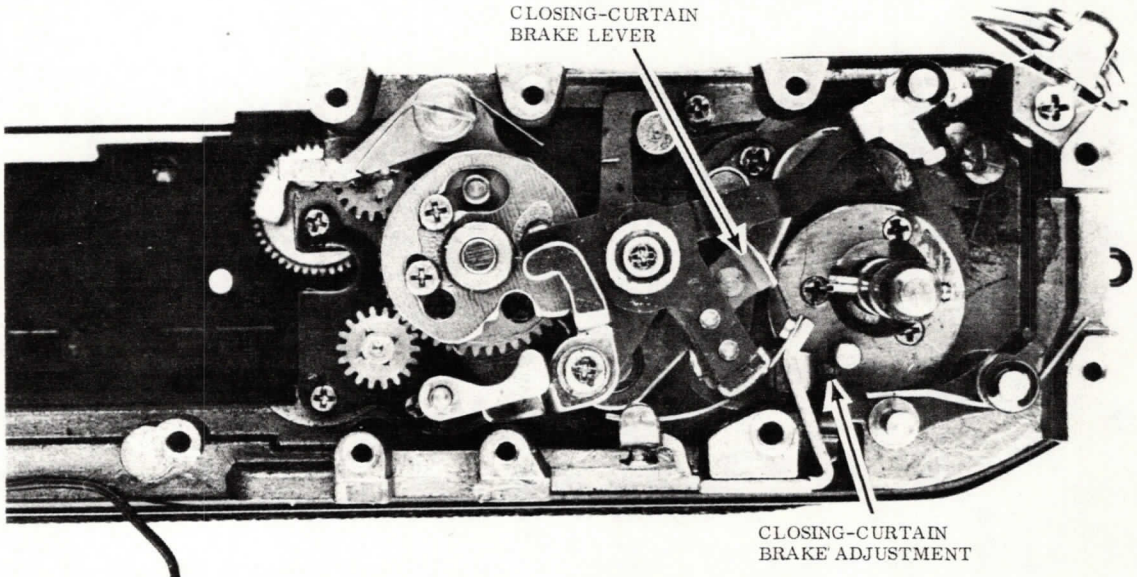
103 UNDERSIDE OF FILM-COUNTER ASSEMBLY



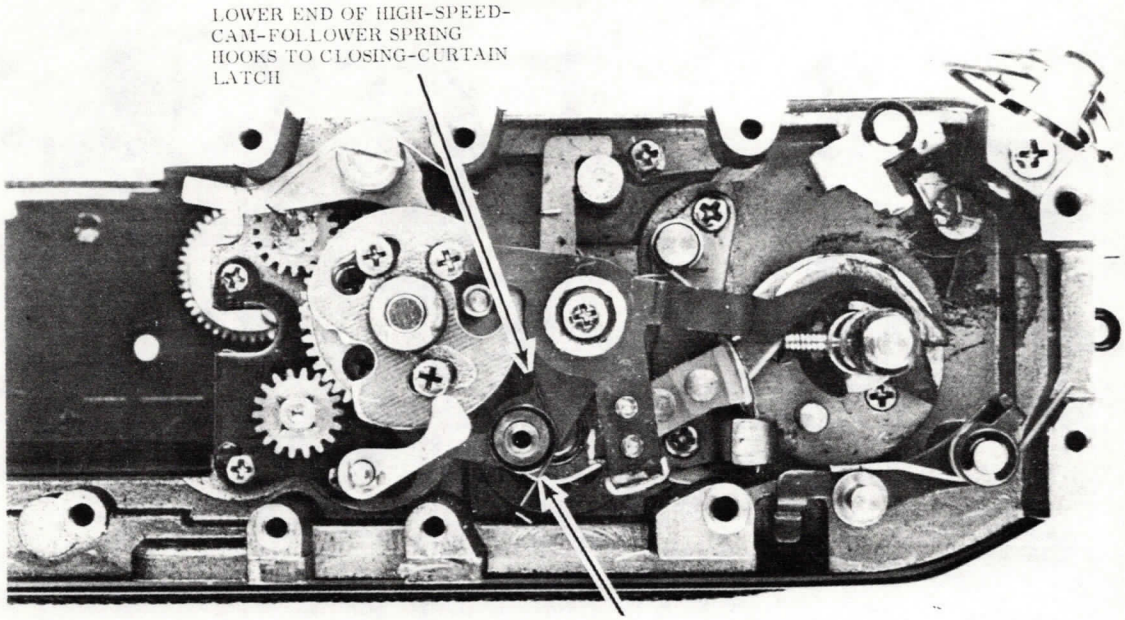
108

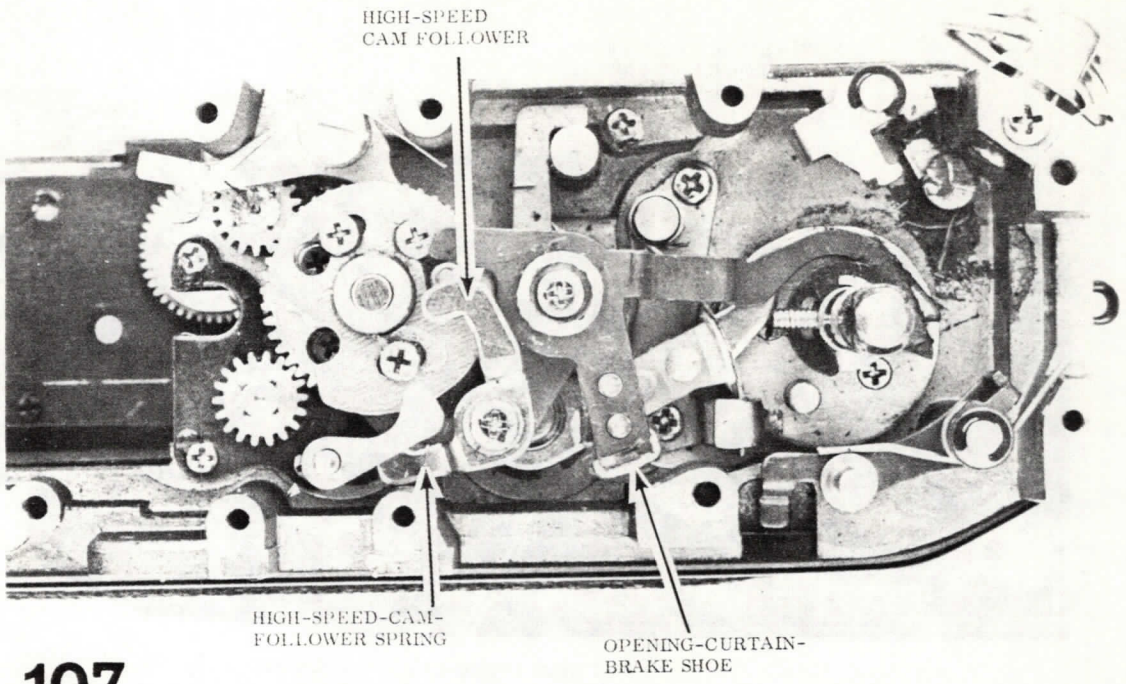


105-A SHUTTER RELEASED

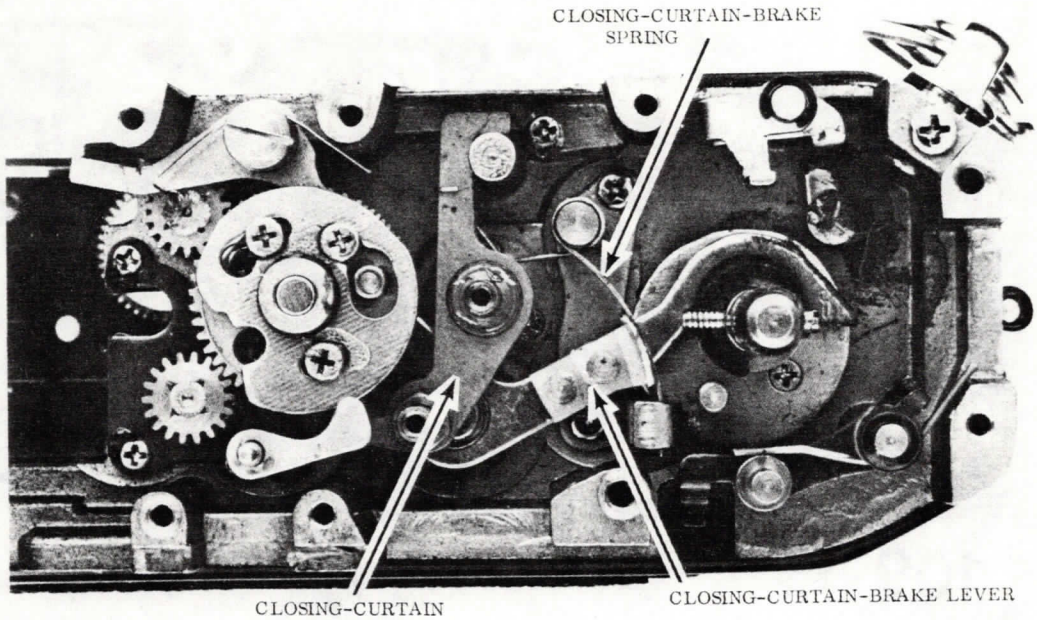


105-B SHUTTER COCKED

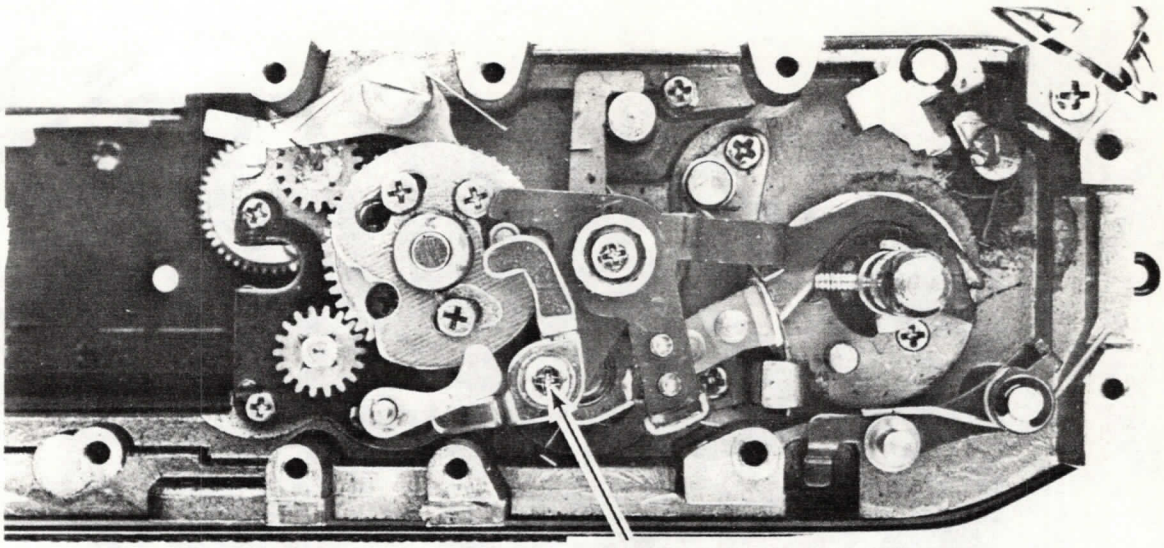

LOWER END OF HIGH-SPEED-CAM-FOLLOWER SPRING HOOKS TO CLOSING-CURTAIN LATCH
LIFT OUT HIGH-SPEED-CAM-FOLLOWER SPRING


HIGH-SPEED
CAM FOLLOWER
HIGH-SPEED-CAM-
FOLLOWER SPRING
OPENING-CURTAIN-
BRAKE SHOE

107

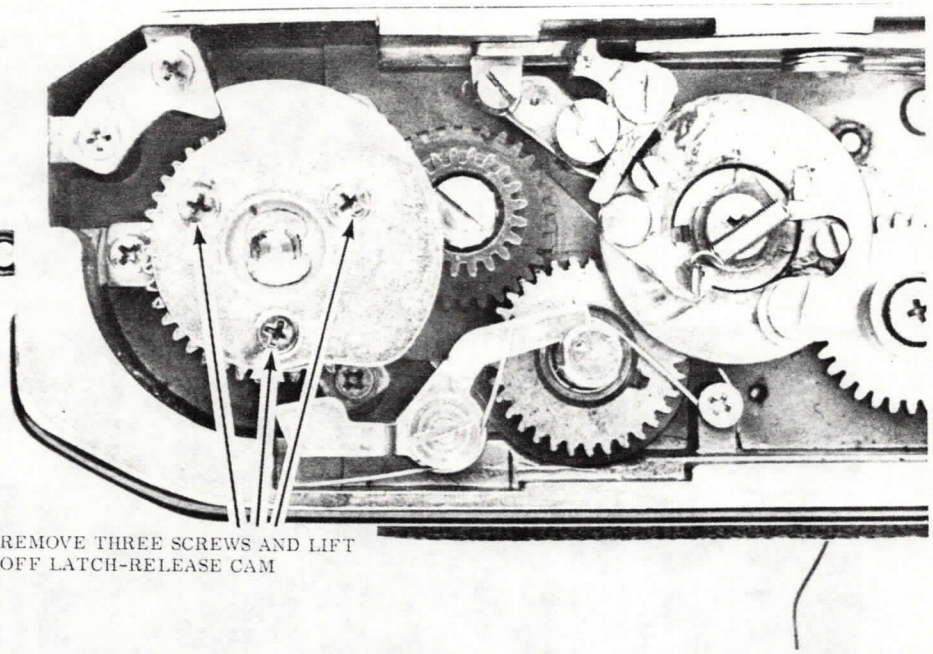

CLOSING-CURTAIN-BRAKE SPRING
CLOSING-CURTAIN LATCH
CLOSING-CURTAIN-BRAKE LEVER

112

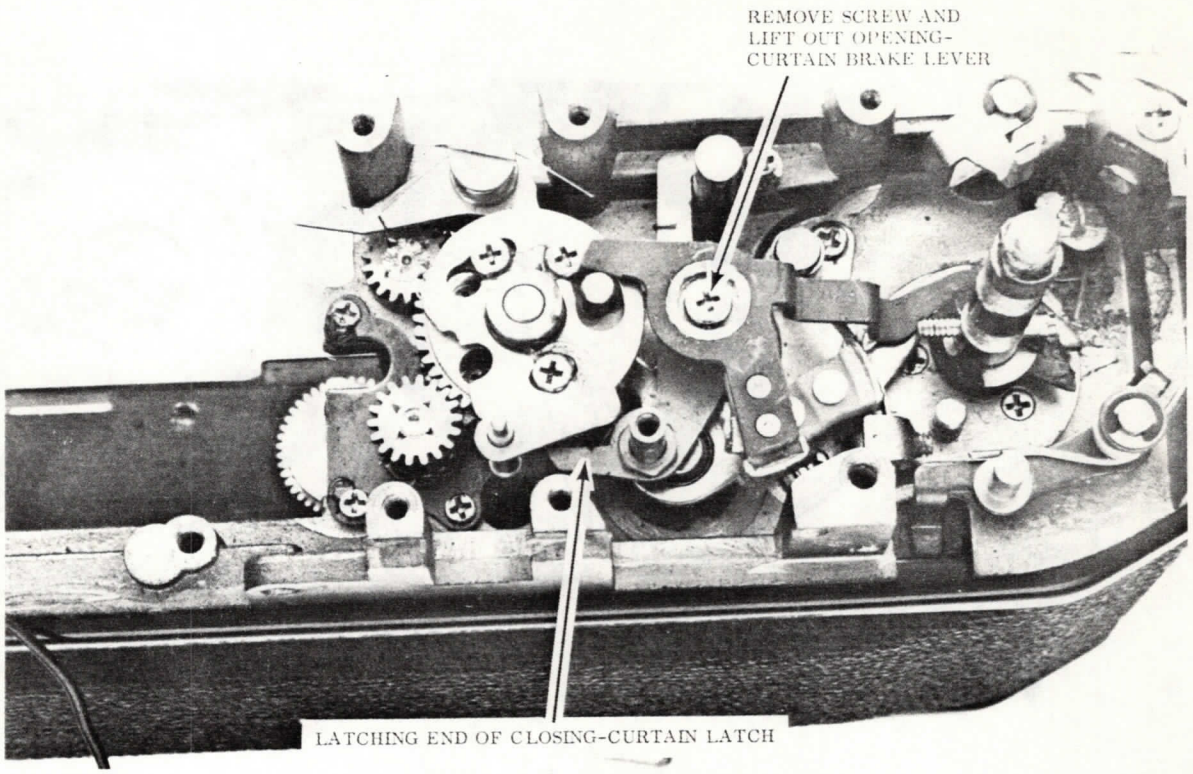


109

REMOVE SCREW AND LIFT OUT
HIGH-SPEED CAM FOLLOWER
(WATCH FOR SPACERS ABOVE AND
BELOW HIGH-SPEED CAM
FOLLOWER)

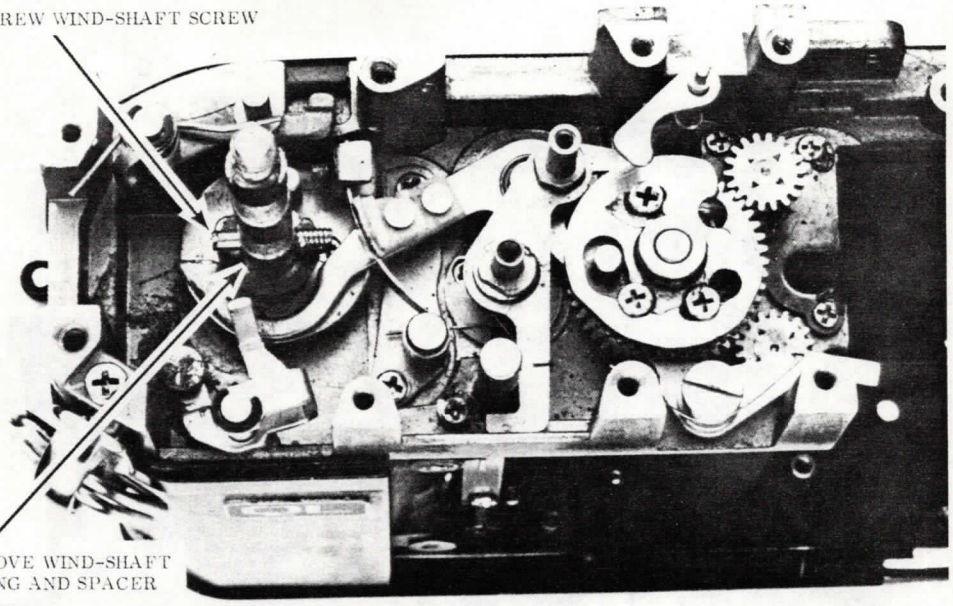


REMOVE THREE SCREWS AND LIFT
OFF LATCH-RELEASE CAM

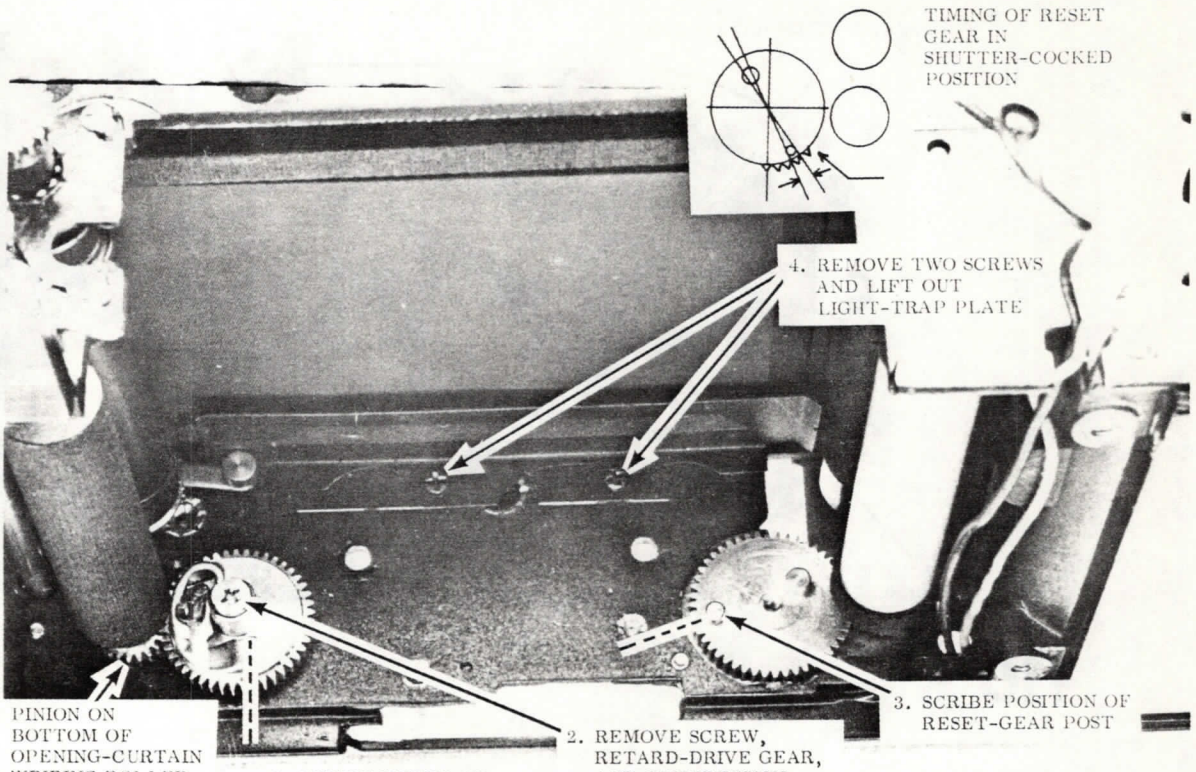

REMOVE SCREW AND
LIFT OUT OPENING-
CURTAIN BRAKE LEVER
LATCHING END OF CLOSING-CURTAIN LATCH

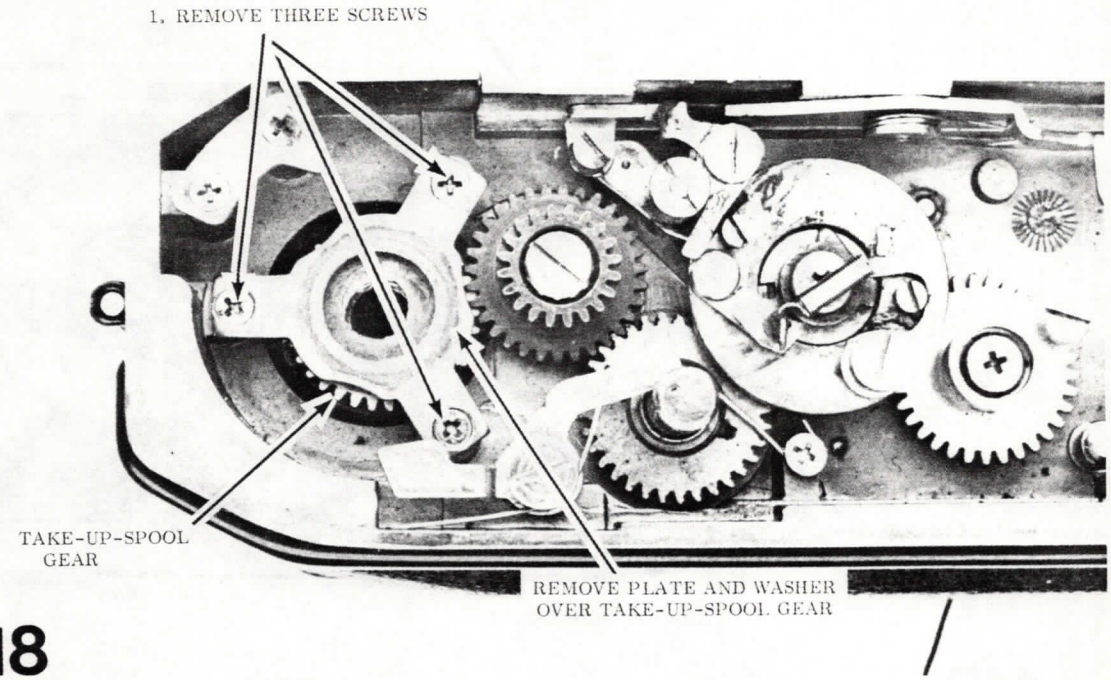
111

1. UNSCREW WIND-SHAFT SCREW

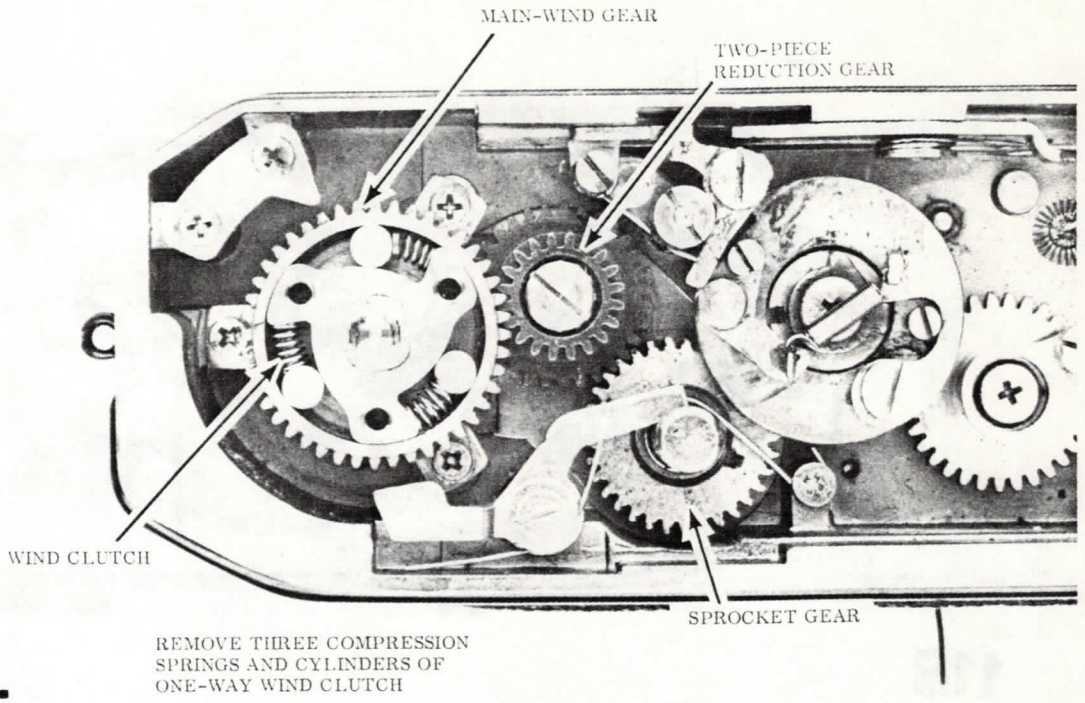


2. REMOVE WIND-SHAFT E-RING AND SPACER


TIMING OF RESET GEAR IN SHUTTER-COCKED POSITION
4. REMOVE TWO SCREWS AND LIFT OUT LIGHT-TRAP PLATE
PINION ON BOTTOM OF OPENING-CURTAIN WINDING ROLLER
1. SCRIBE TIMING OF RETARD-DRIVE GEAR IN SHUTTER-RELEASED POSITION
2. REMOVE SCREW, RETARD-DRIVE GEAR, AND COMPRESSION SPRING UNDER GEAR
3. SCRIBE POSITION OF RESET-GEAR POST

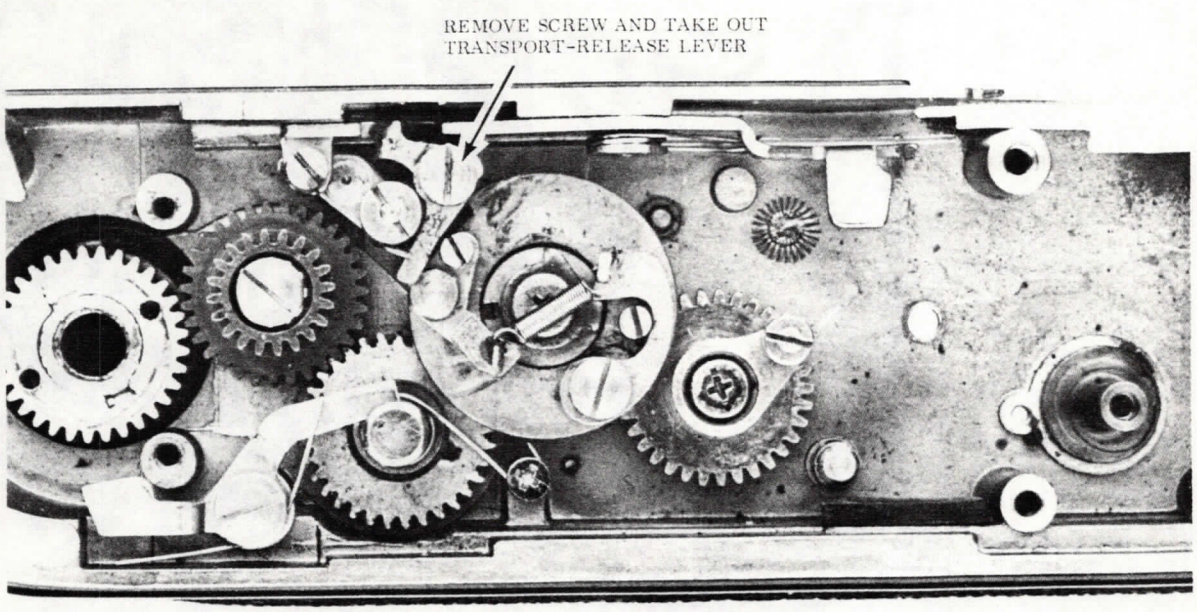

1. REMOVE THREE SCREWS
TAKE-UP-SPOOL GEAR
REMOVE PLATE AND WASHER OVER TAKE-UP-SPOOL GEAR

118

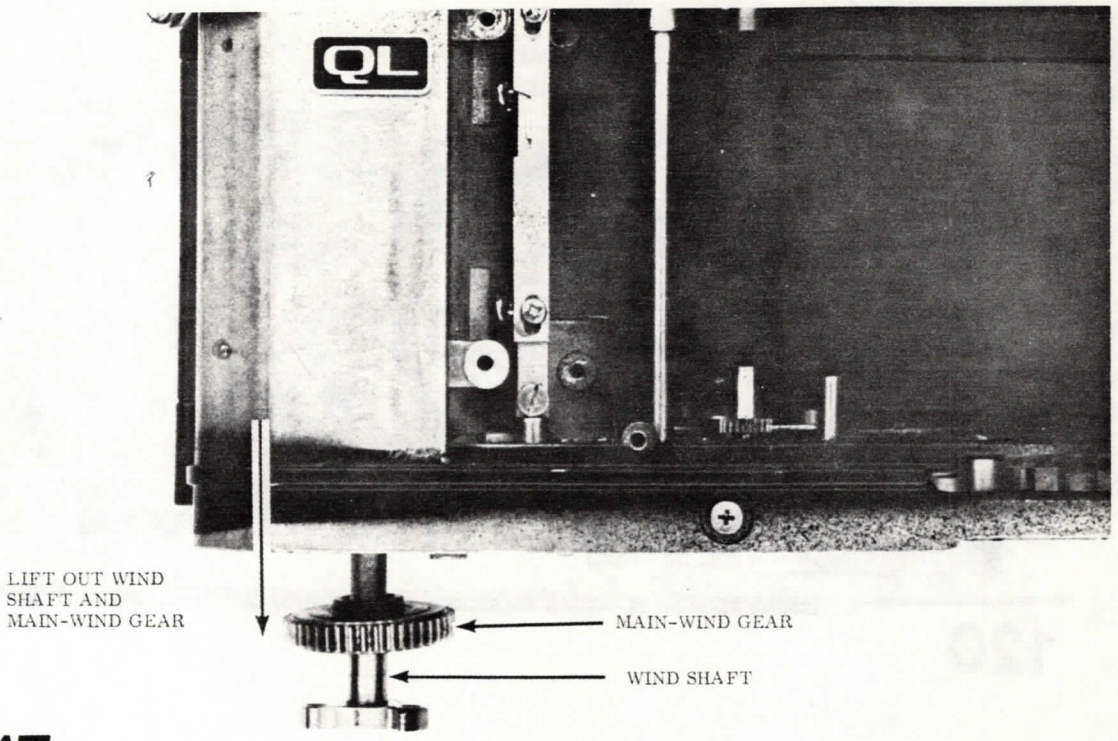


REMOVE THREE COMPRESSION SPRINGS AND CYLINDERS OF ONE-WAY WIND CLUTCH

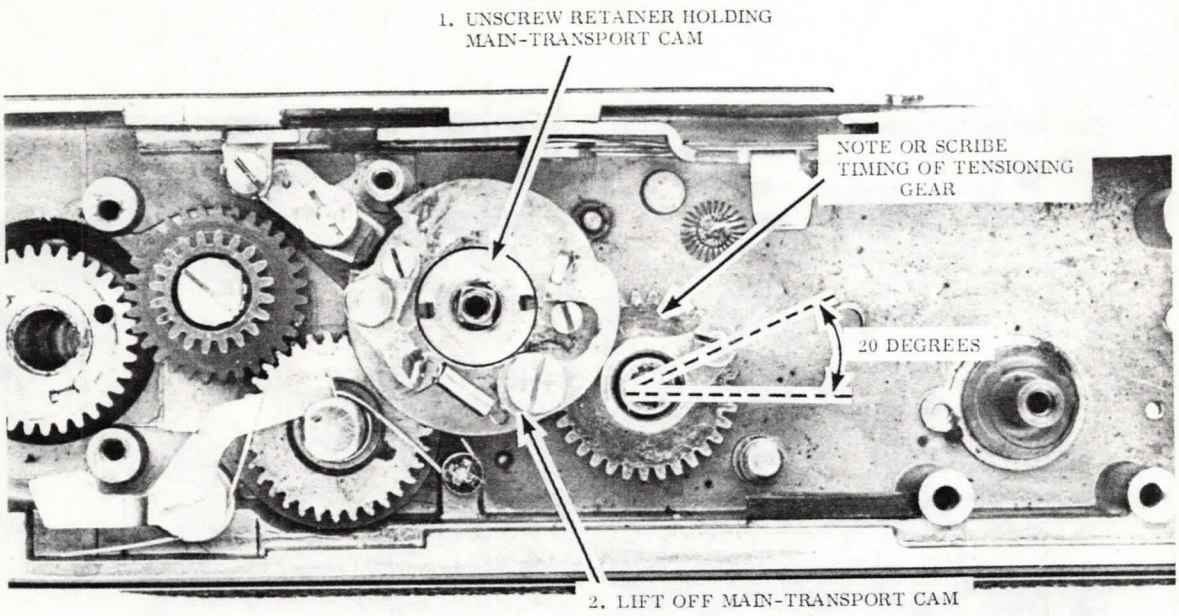
115

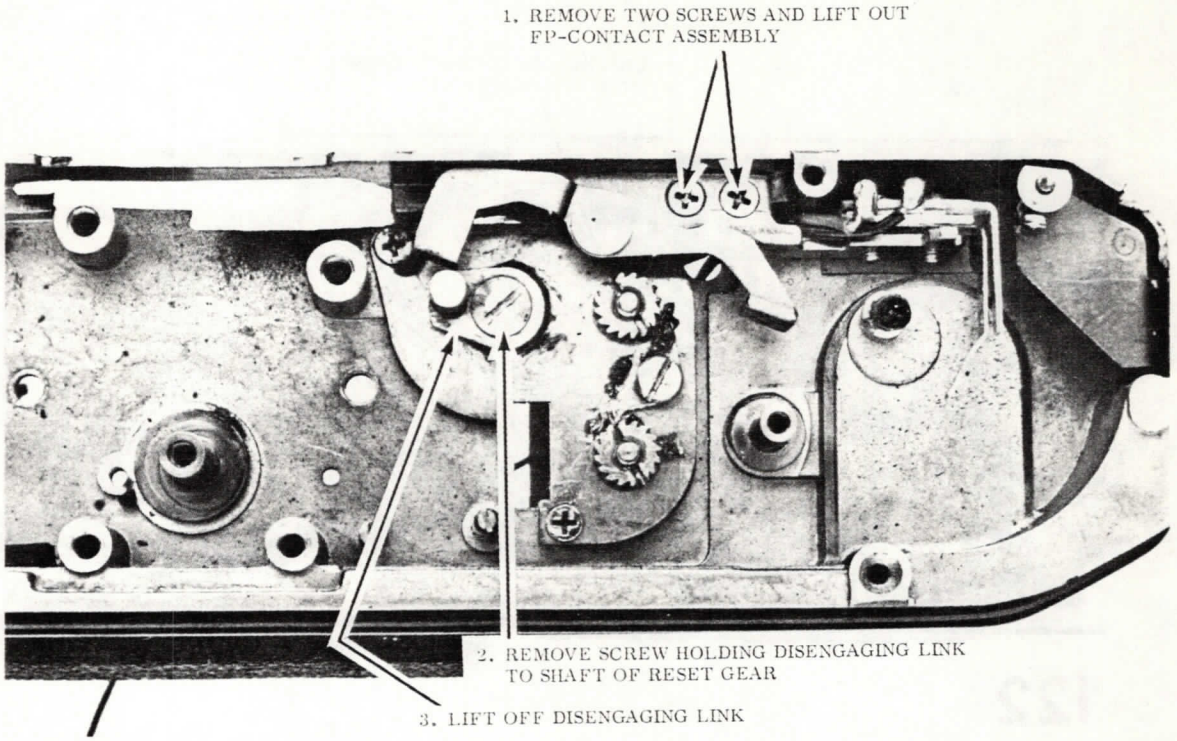


120

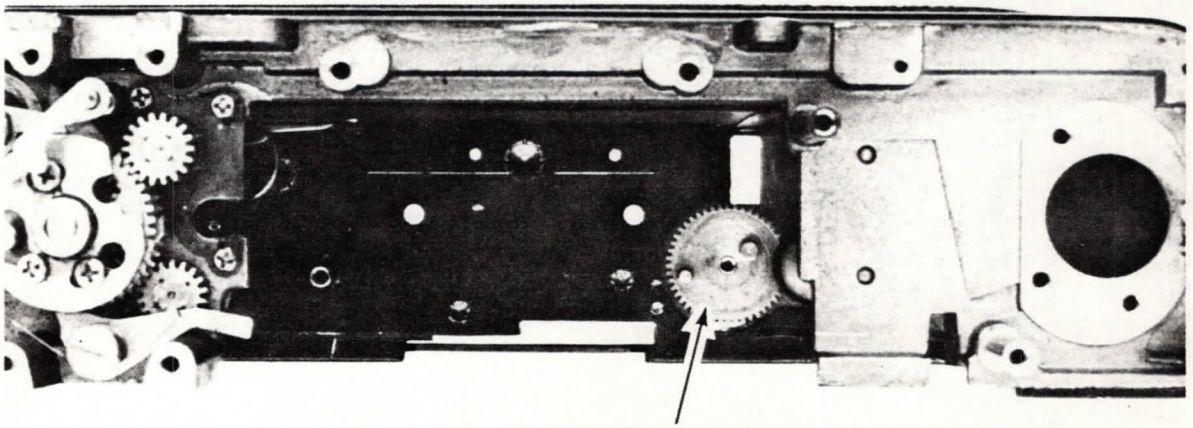

QL
LIFT OUT WIND
SHAFT AND
MAIN-WIND GEAR
MAIN-WIND GEAR
WIND SHAFT

117


1. UNSCREW RETAINER HOLDING MAIN-TRANSPORT CAM
NOTE OR SCRIBE TIMING OF TENSIONING GEAR
20 DEGREES
2. LIFT OFF MAIN-TRANSPORT CAM

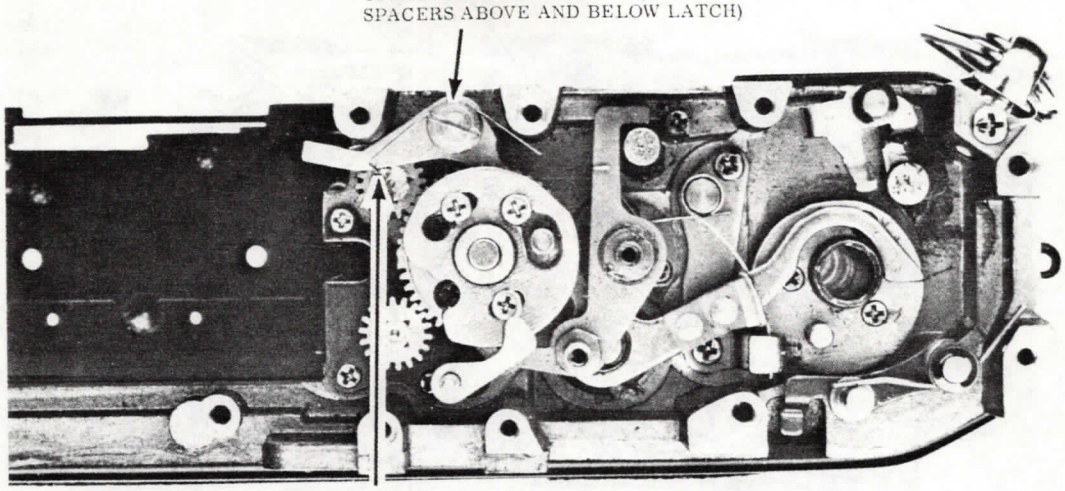

1. REMOVE TWO SCREWS AND LIFT OUT FP-CONTACT ASSEMBLY
2. REMOVE SCREW HOLDING DISENGAGING LINK TO SHAFT OF RESET GEAR
3. LIFT OFF DISENGAGING LINK

119-A

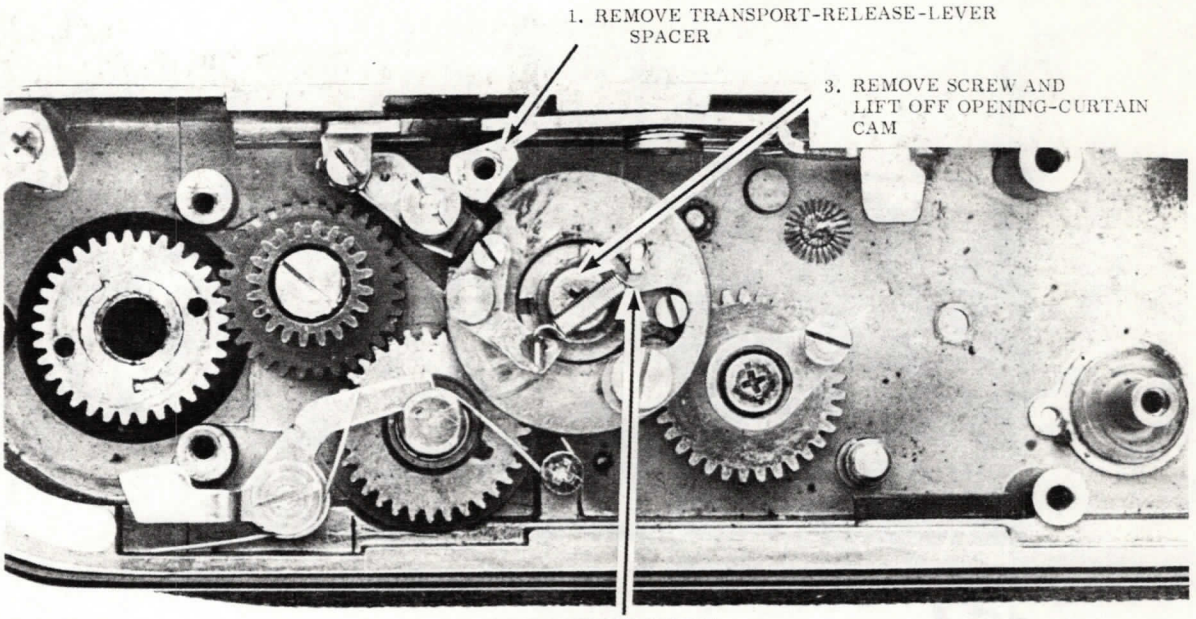

4. LIFT OUT RESET GEAR

119-B

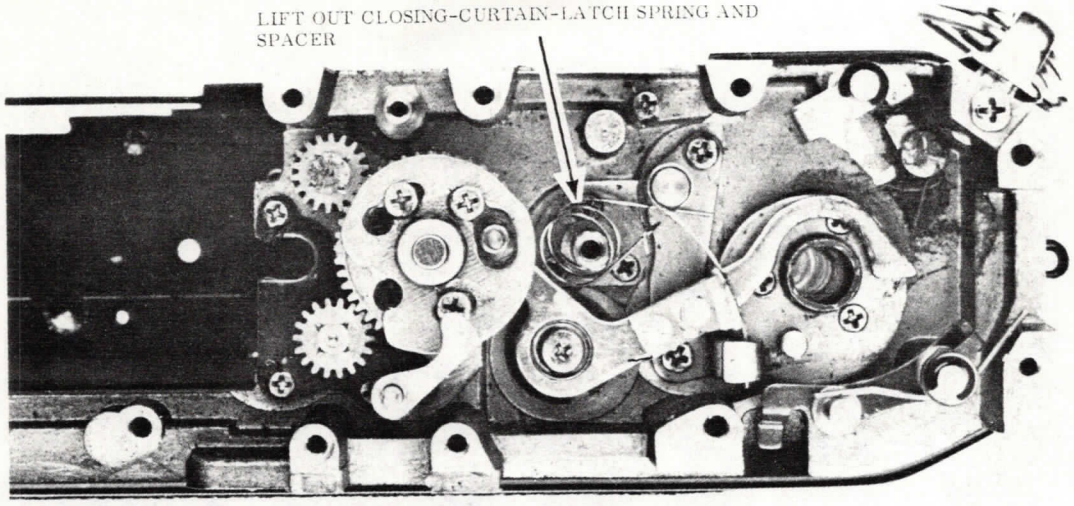
2. REMOVE SCREW AND LIFT OUT OPENING-CURTAIN LATCH (WATCH FOR SPACERS ABOVE AND BELOW LATCH)



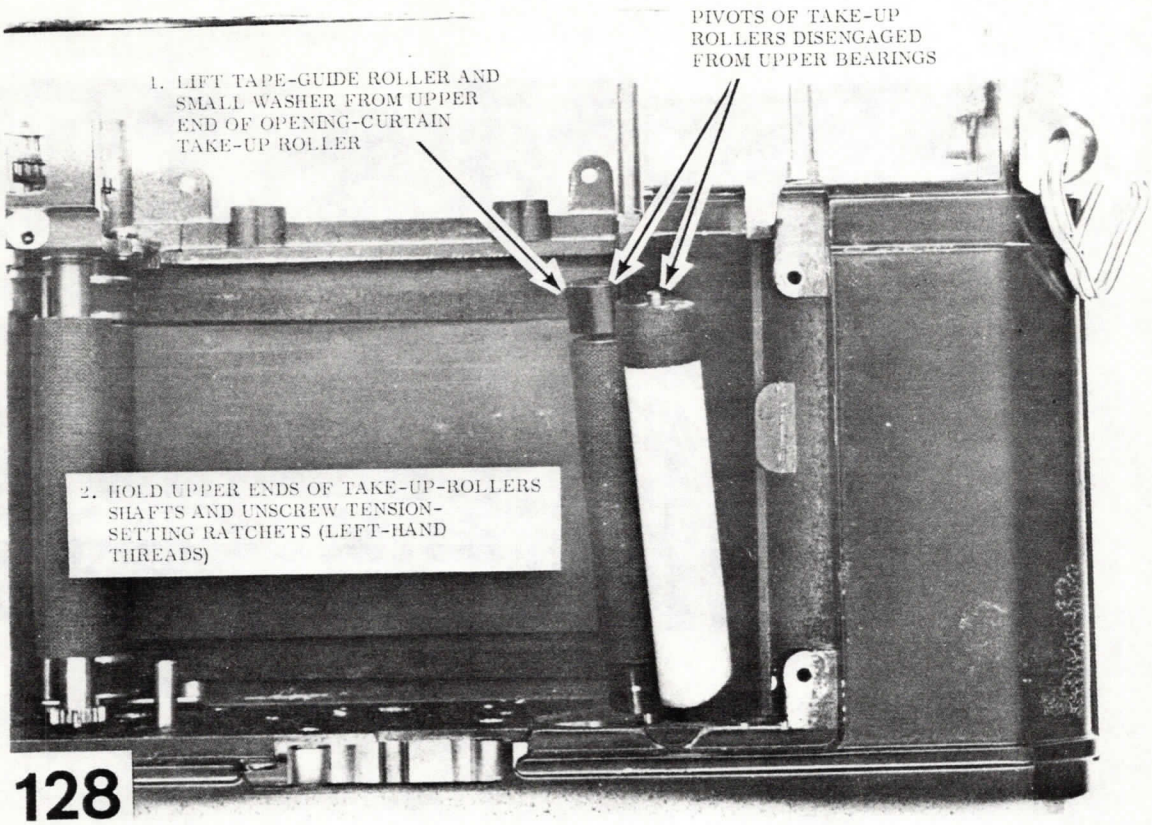
1. DISCONNECT OPENING-CURTAIN-LATCH SPRING

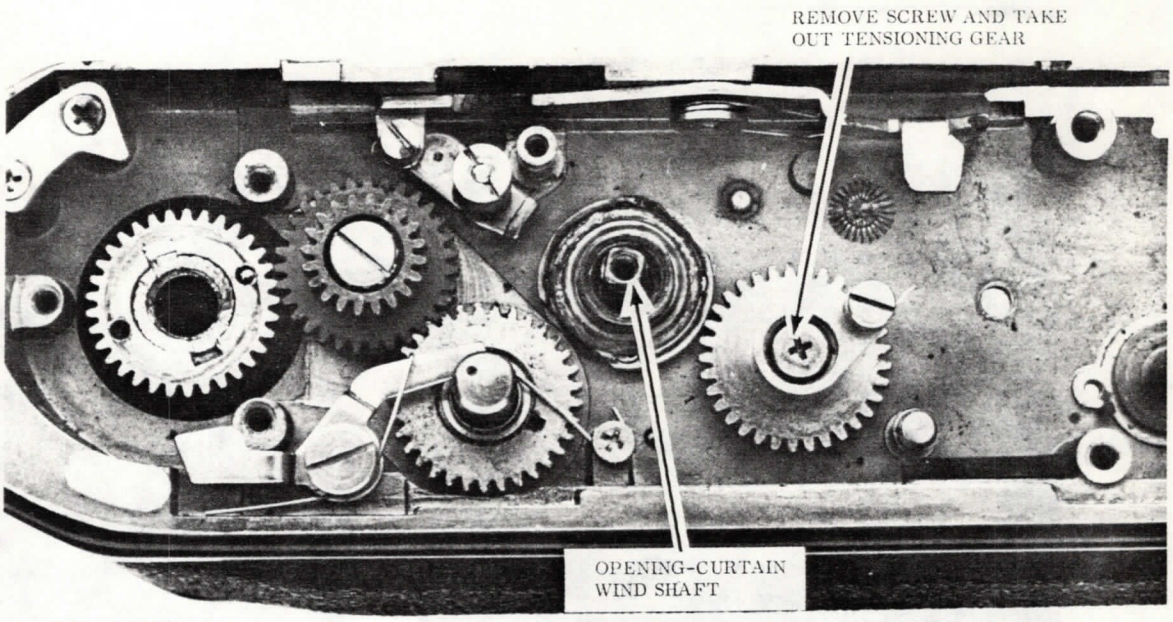

1. REMOVE TRANSPORT-RELEASE-LEVER SPACER
3. REMOVE SCREW AND LIFT OFF OPENING-CURTAIN CAM
2. DISCONNECT SPRING FROM STOPPER

121

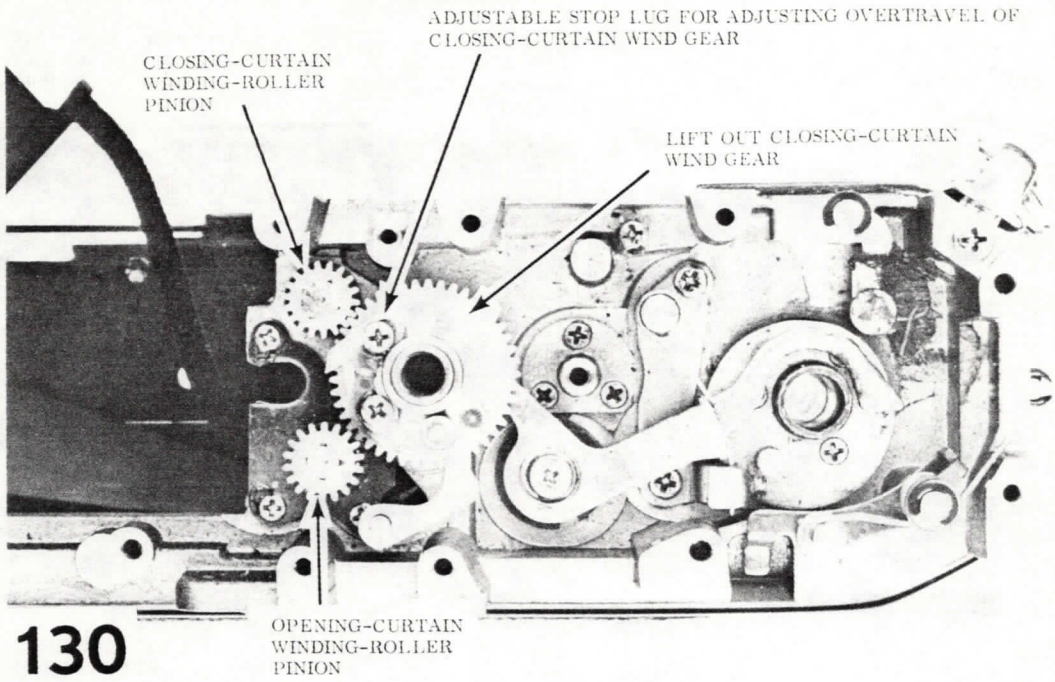


126

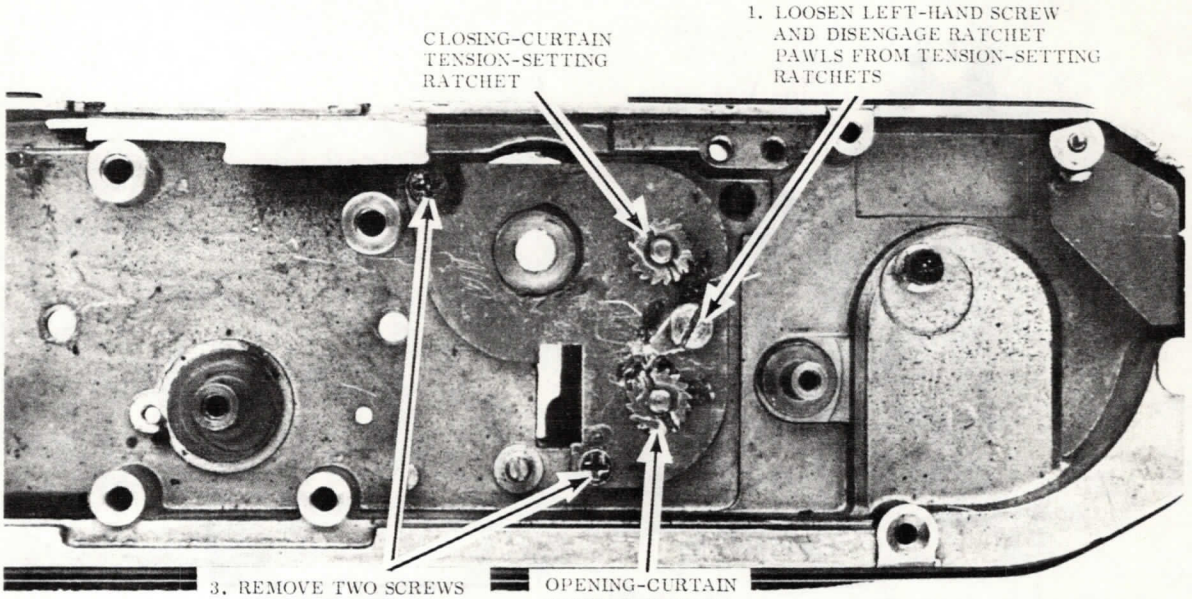

PIVOTS OF TAKE-UP ROLLERS DISENGAGED FROM UPPER BEARINGS
1. LIFT TAPE-GUIDE ROLLER AND SMALL WASHER FROM UPPER END OF OPENING-CURTAIN TAKE-UP ROLLER
2. HOLD UPPER ENDS OF TAKE-UP-ROLLERS SHAFTS AND UNSCREW TENSION-SETTING RATCHETS (LEFT-HAND THREADS)

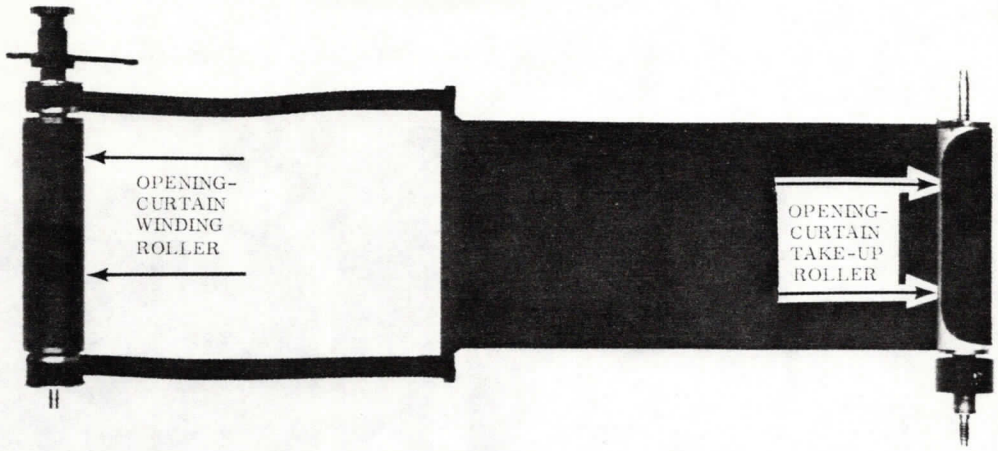

REMOVE SCREW AND TAKE
OUT TENSIONING GEAR
OPENING-CURTAIN
WIND SHAFT

123


ADJUSTABLE STOP LUG FOR ADJUSTING OVERTRAVEL OF CLOSING-CURTAIN WIND GEAR
CLOSING-CURTAIN WINDING-ROLLER PINION
LIFT OUT CLOSING-CURTAIN WIND GEAR
OPENING-CURTAIN WINDING-ROLLER PINION

130

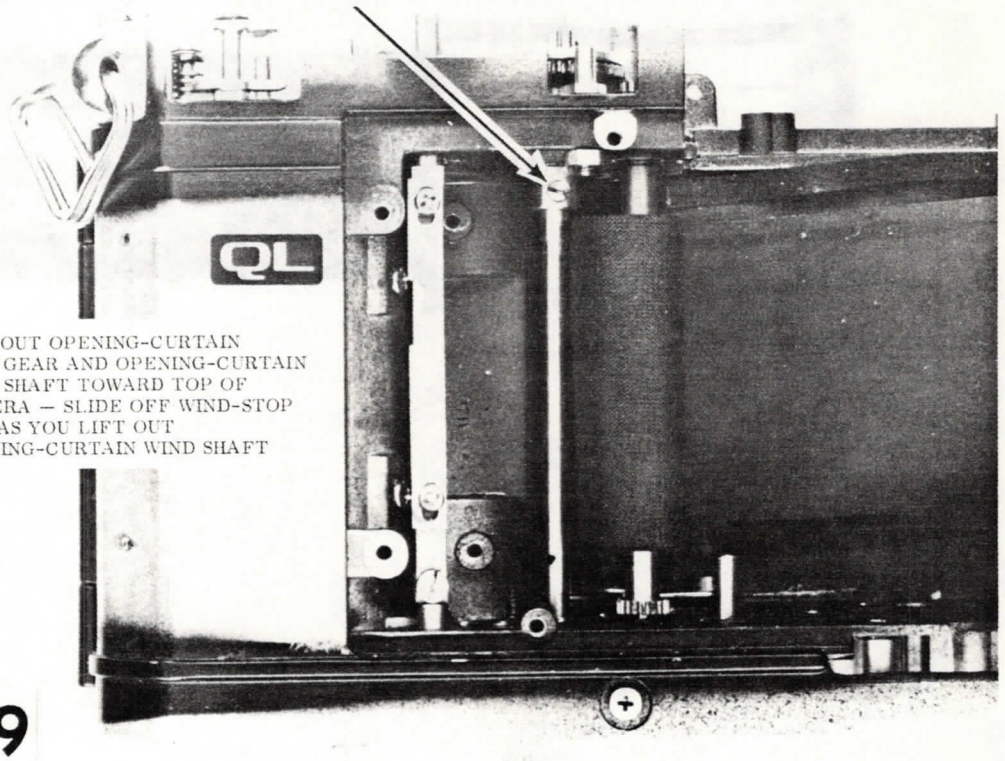

CLOSING-CURTAIN TENSION-SETTING RATCHET
1. LOOSEN LEFT-HAND SCREW AND DISENGAGE RATCHET PAWLS FROM TENSION-SETTING RATCHETS
3. REMOVE TWO SCREWS AND LIFT TAKE-UP-ROLLERS PLATE AWAY FROM CAMERA BODY
OPENING-CURTAIN TENSION-SETTING RATCHET
2. LET OFF CURTAIN TENSIONS BY TURNING TENSION-SETTING RATCHETS CLOCKWISE



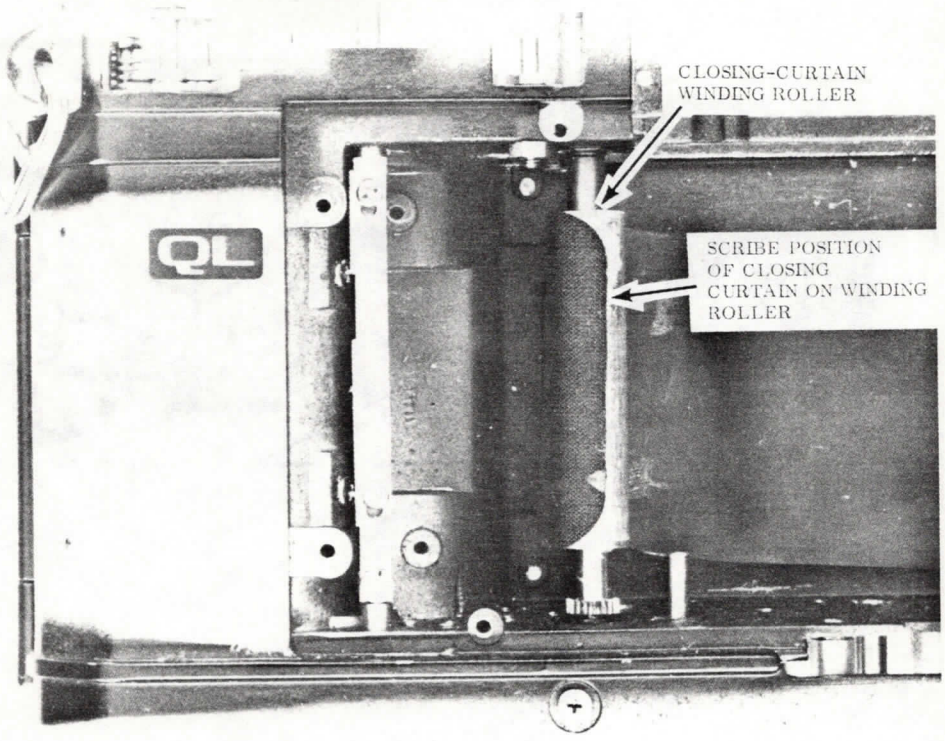
132 OPENING-CURTAIN ASSEMBLY

1. TURN OPENING-CURTAIN WIND GEAR UNTIL CURTAINS ARE IN FULLY TENSIONED POSITION

2. REMOVE SCREW HOLDING WIND-STOP CAM TO OPENING-CURTAIN WIND SHAFT

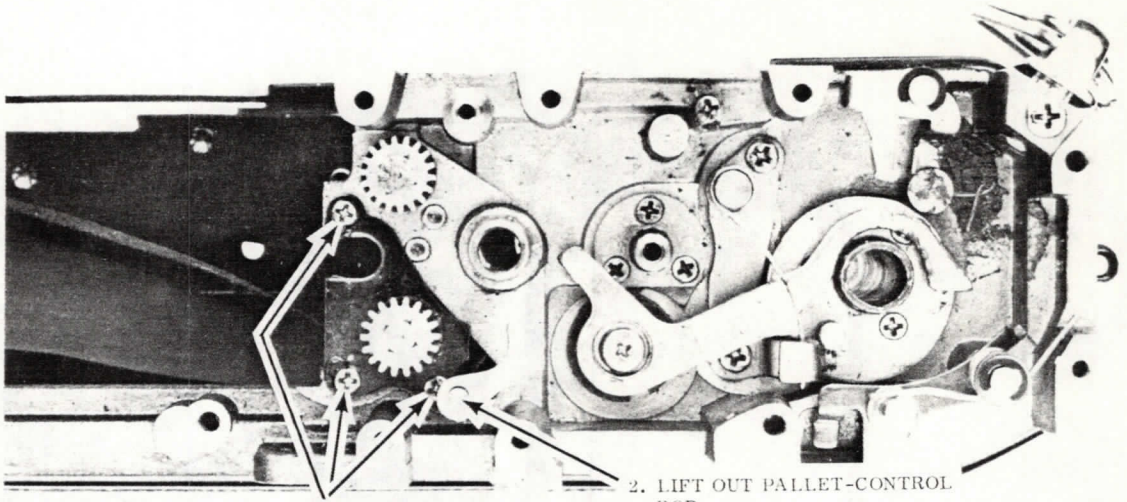


3. LIFT OUT OPENING-CURTAIN WIND GEAR AND OPENING-CURTAIN WIND SHAFT TOWARD TOP OF CAMERA — SLIDE OFF WIND-STOP CAM AS YOU LIFT OUT OPENING-CURTAIN WIND SHAFT



134

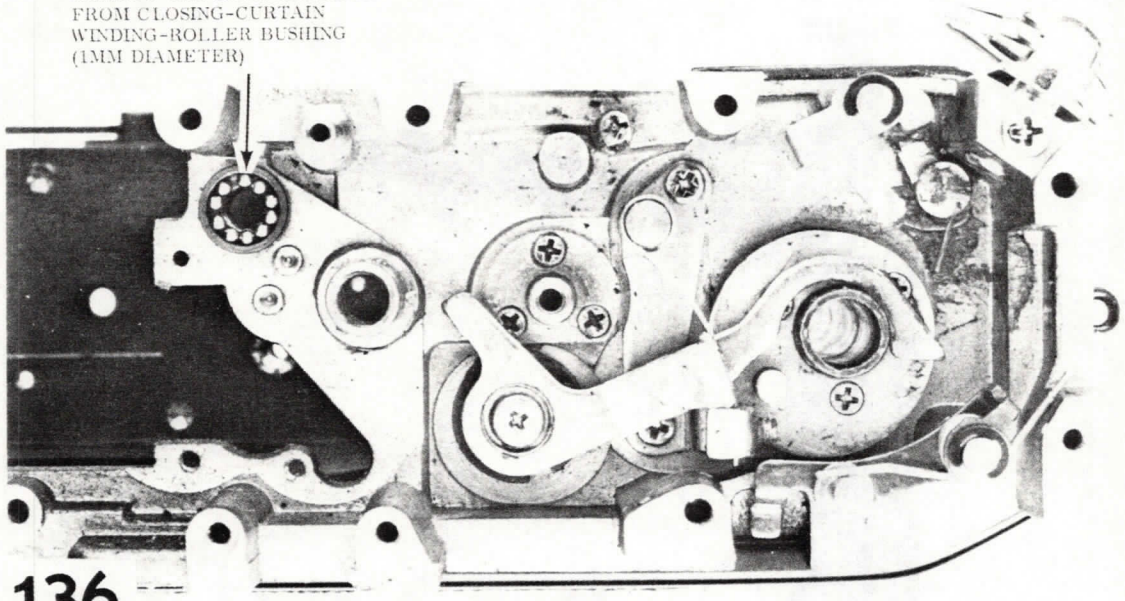
You can replace the closing curtain without removing the closing-curtain winding roller. First, scribe the position of the old curtain (just to make sure you cement the new curtain square to the roller). Then, peel off the old closing curtain. Also scribe the ends of the closing curtain tapes on the closing-curtain take-up roller.



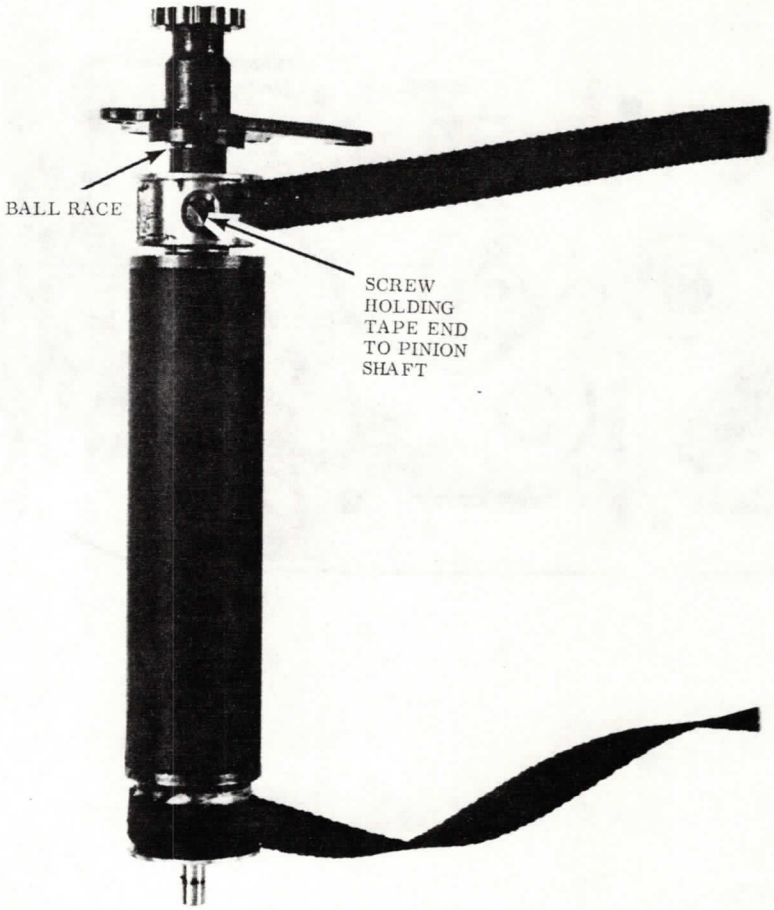
1. REMOVE THREE SCREWS AND LIFT OUT OPENING-CURTAIN ASSEMBLY

2. LIFT OUT PALLET-CONTROL ROD

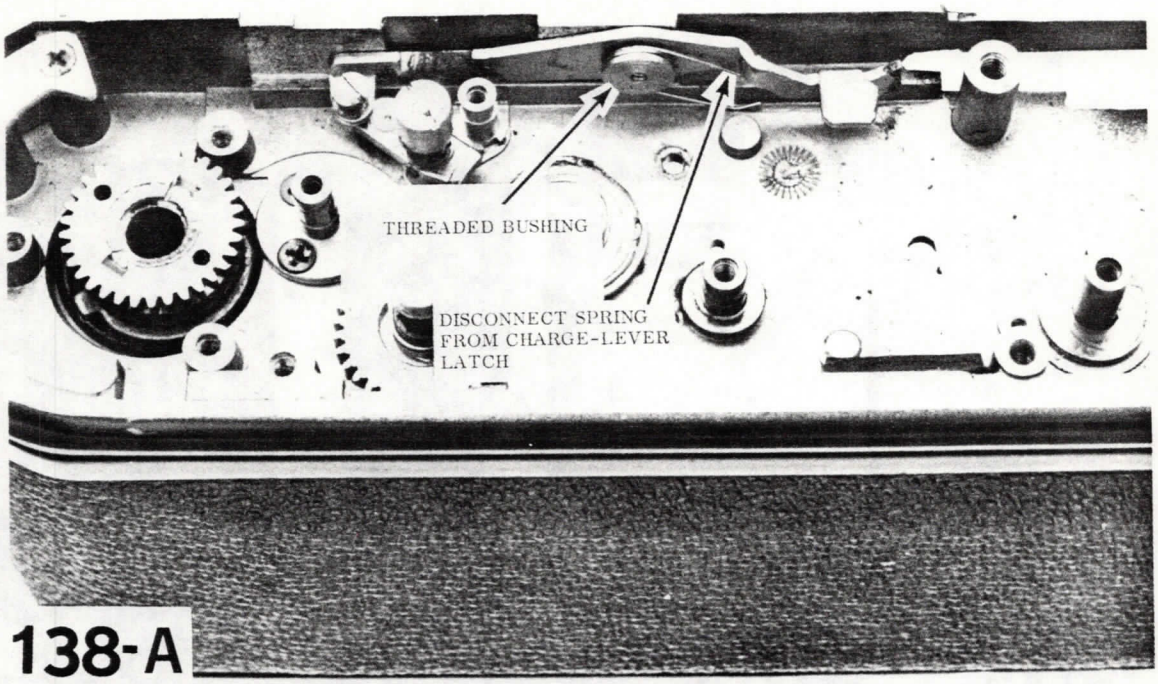
REMOVE TEN BALL BEARINGS FROM CLOSING-CURTAIN WINDING-ROLLER BUSHING (1MM DIAMETER)



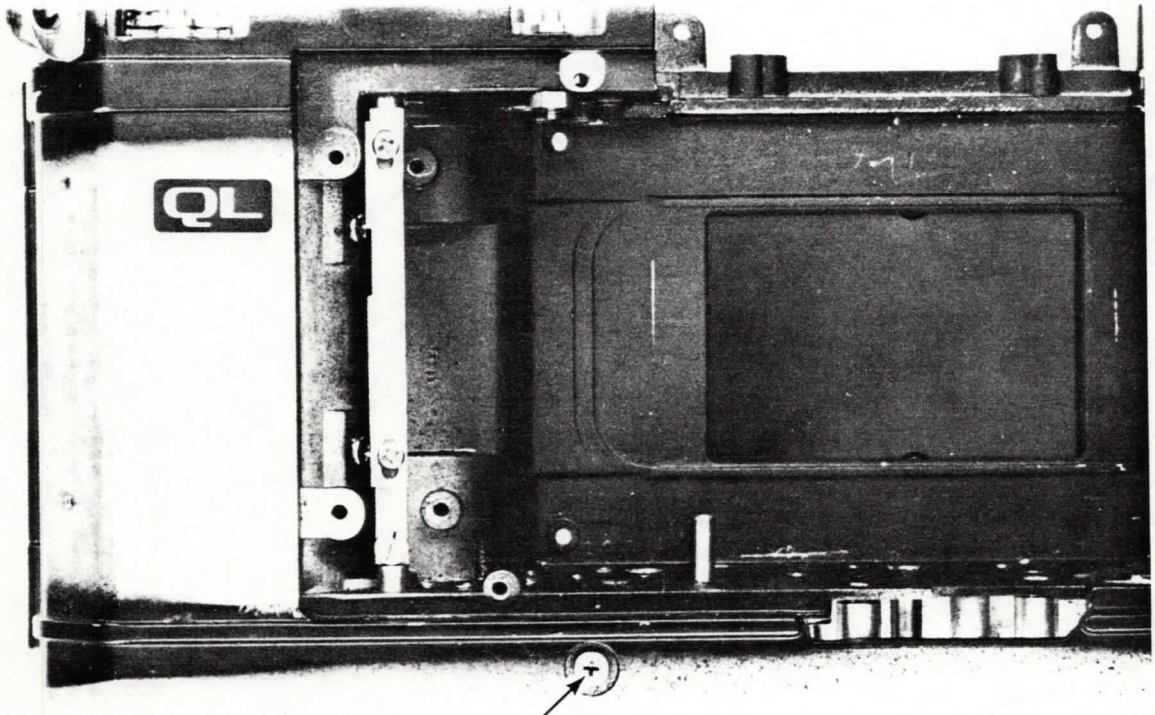
136



133 OPENING-CURTAIN WINDING ROLLER



138-A



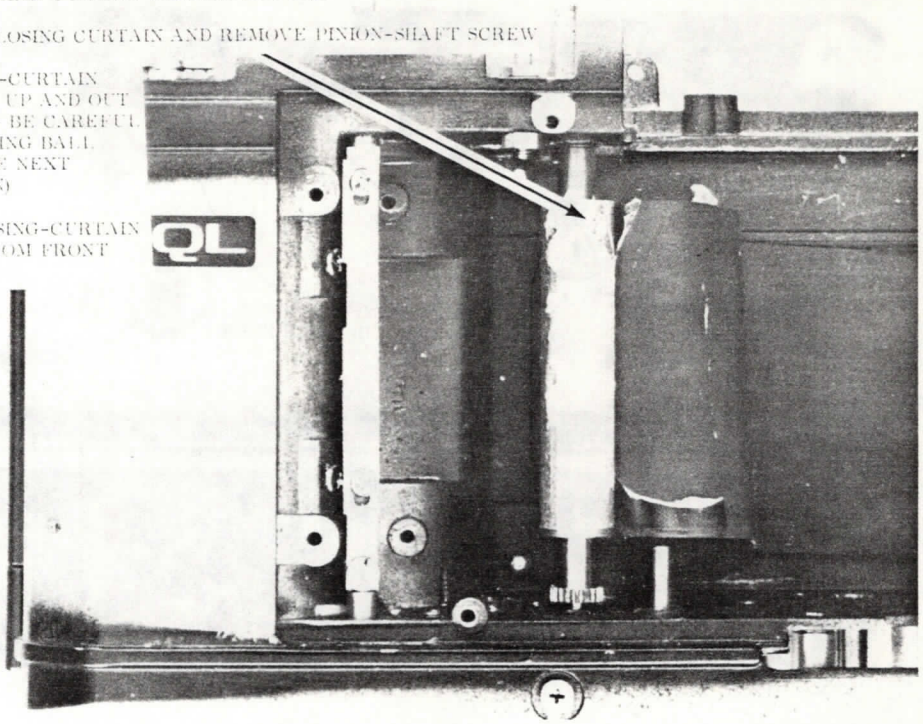
2. REMOVE SCREW THAT HOLDS THREADED BUSHING

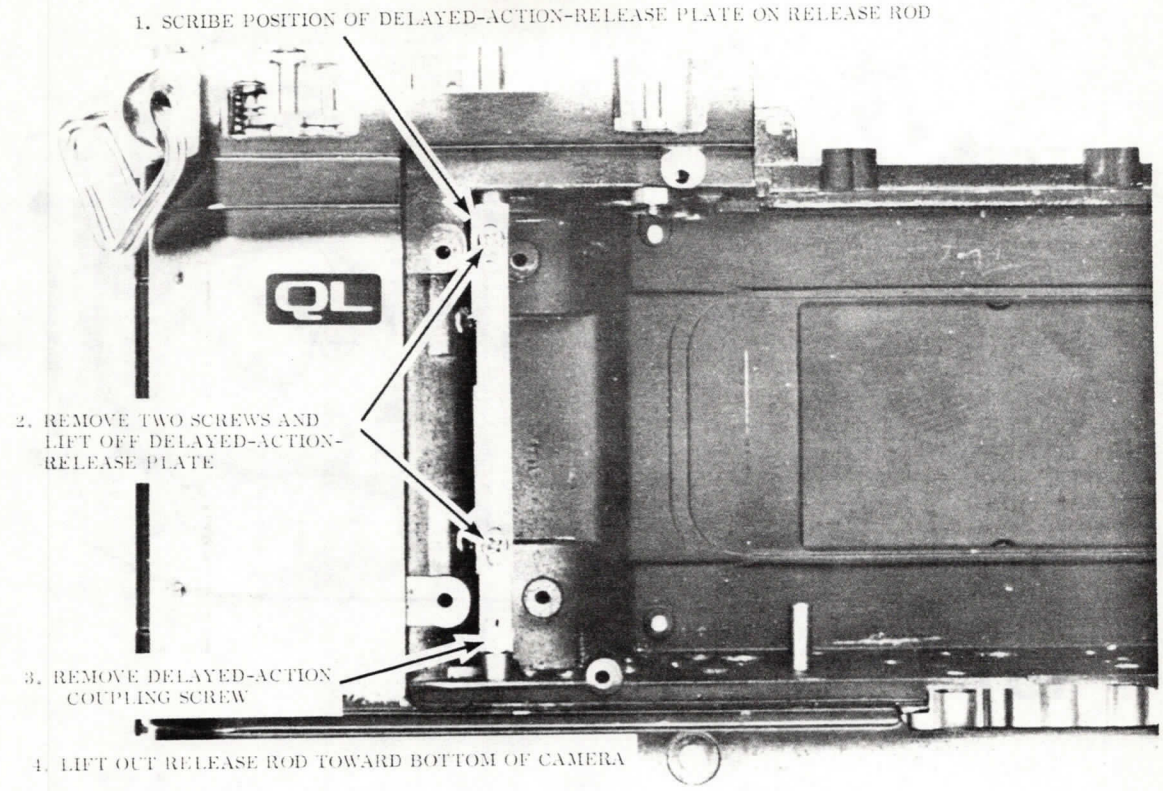
3. REMOVE CHARGE-LEVER LATCH, THREADED BUSHING, AND SPRING

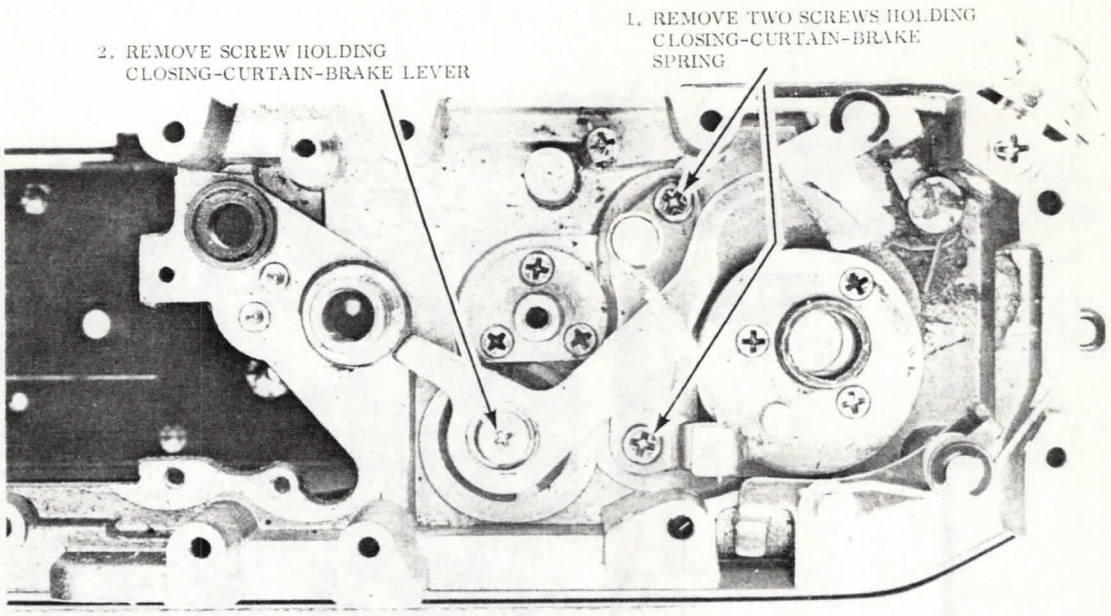
138-B

TO REMOVE CLOSING-CURTAIN WINDING ROLLER:

1. PEEL BACK CLOSING CURTAIN AND REMOVE PINION-SHAFT SCREW
2. LIFT CLOSING-CURTAIN PINION SHAFT UP AND OUT OF CAMERA – BE CAREFUL TO AVOID LOSING BALL BEARINGS (SEE NEXT ILLUSTRATION)
3. REMOVE CLOSING-CURTAIN ASSEMBLY FROM FRONT OF CAMERA

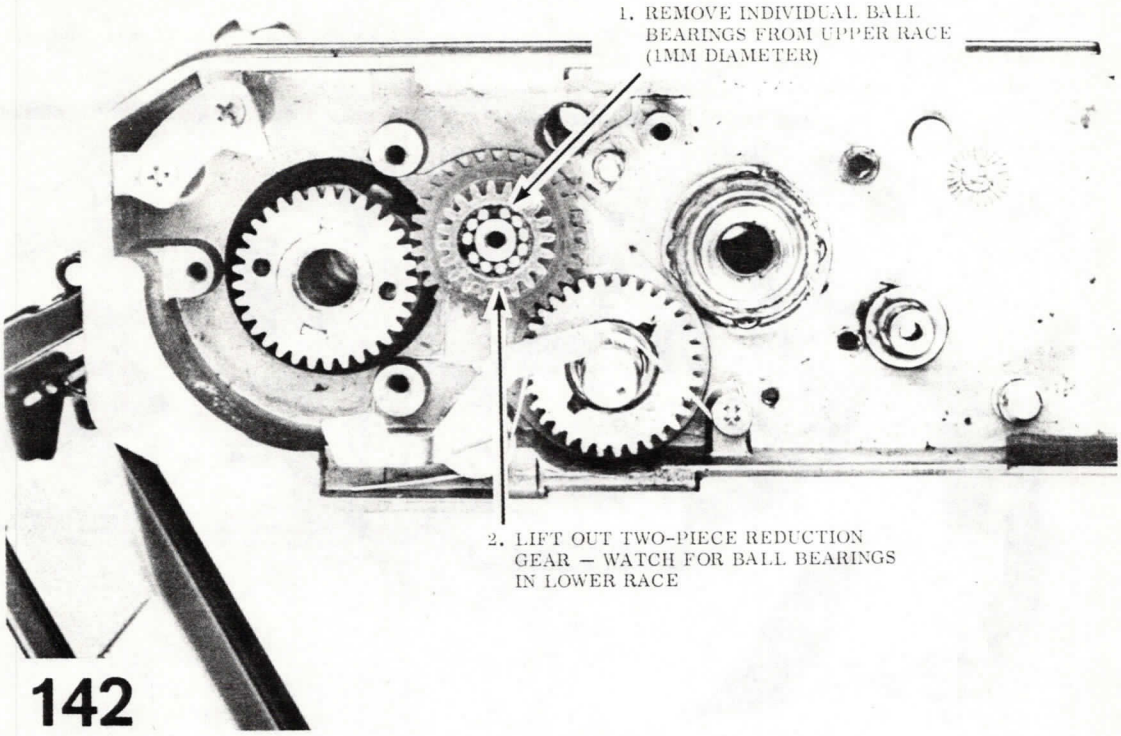



1. SCRIBE POSITION OF DELAYED-ACTION-RELEASE PLATE ON RELEASE ROD
2. REMOVE TWO SCREWS AND LIFT OFF DELAYED-ACTION-RELEASE PLATE
3. REMOVE DELAYED-ACTION COUPLING SCREW
4. LIFT OUT RELEASE ROD TOWARD BOTTOM OF CAMERA
QL

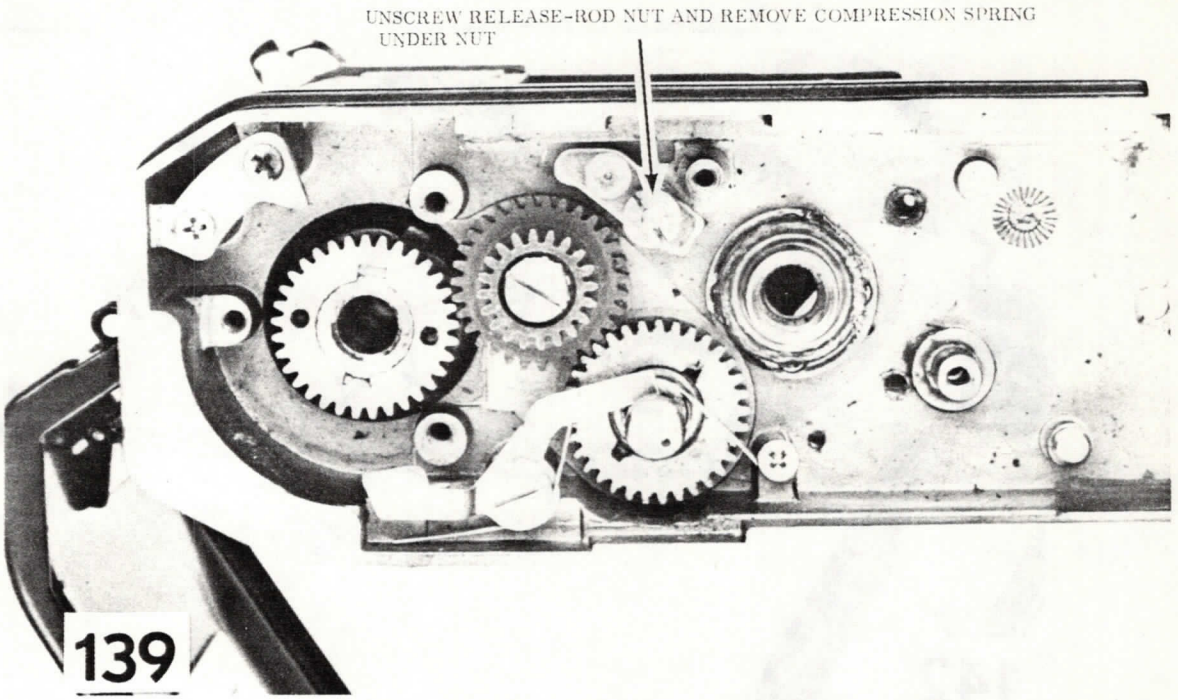


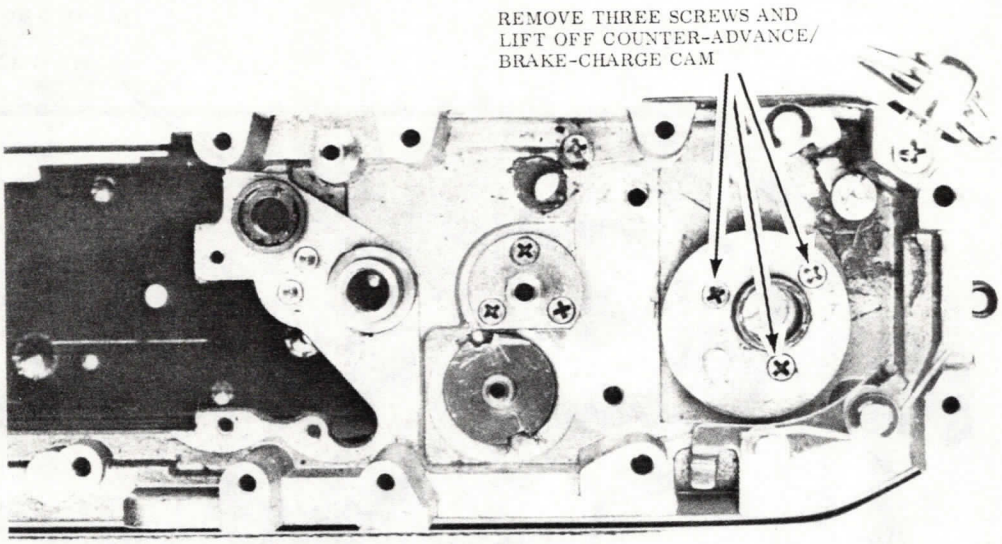
137

3. LIFT OUT CLOSING-CURTAIN-BRAKE LEVER
TOGETHER WITH CLOSING-CURTAIN-BRAKE SPRING

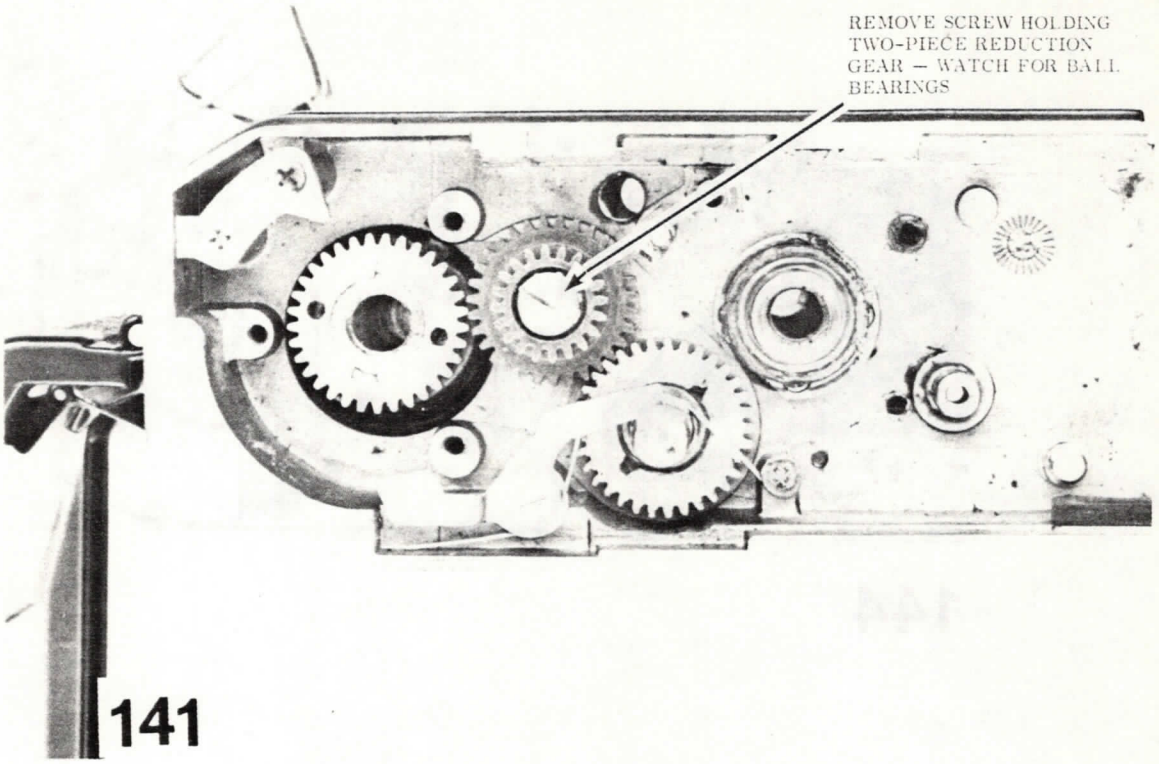

1. REMOVE INDIVIDUAL BALL BEARINGS FROM UPPER RACE (1MM DIAMETER)
2. LIFT OUT TWO-PIECE REDUCTION GEAR – WATCH FOR BALL BEARINGS IN LOWER RACE

142

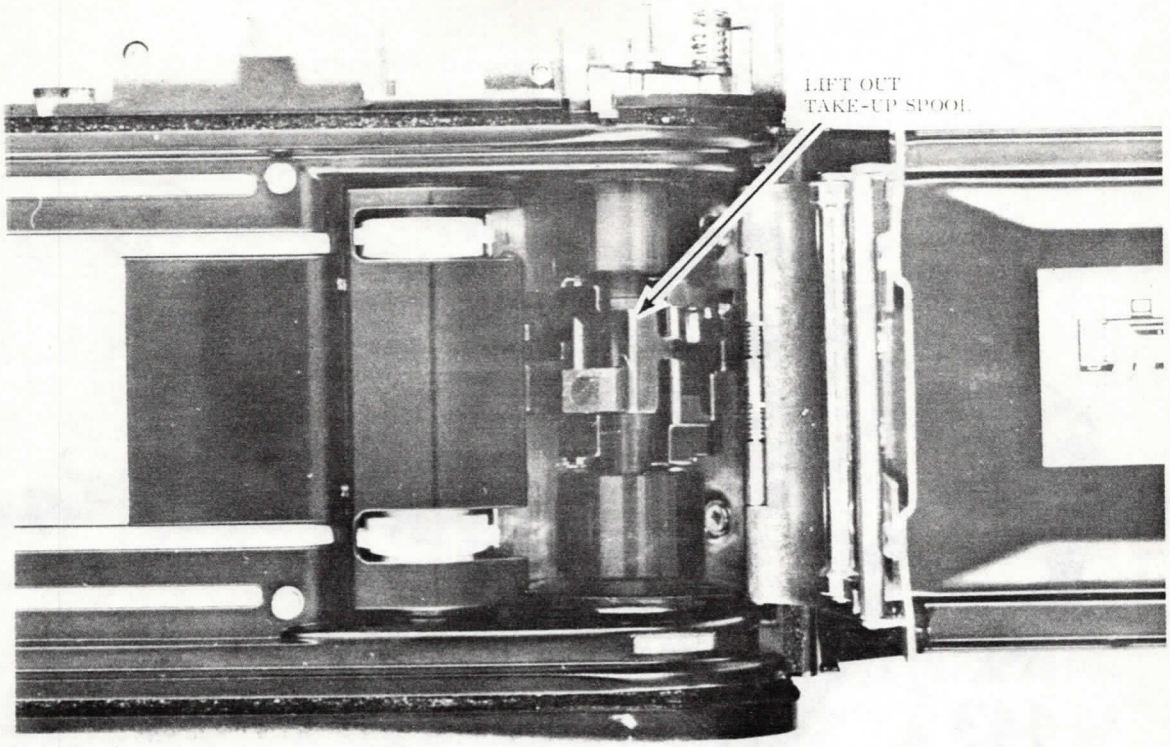

UNSCREW RELEASE-ROD NUT AND REMOVE COMPRESSION SPRING UNDER NUT
139


REMOVE THREE SCREWS AND
LIFT OFF COUNTER-ADVANCE/
BRAKE-CHARGE CAM

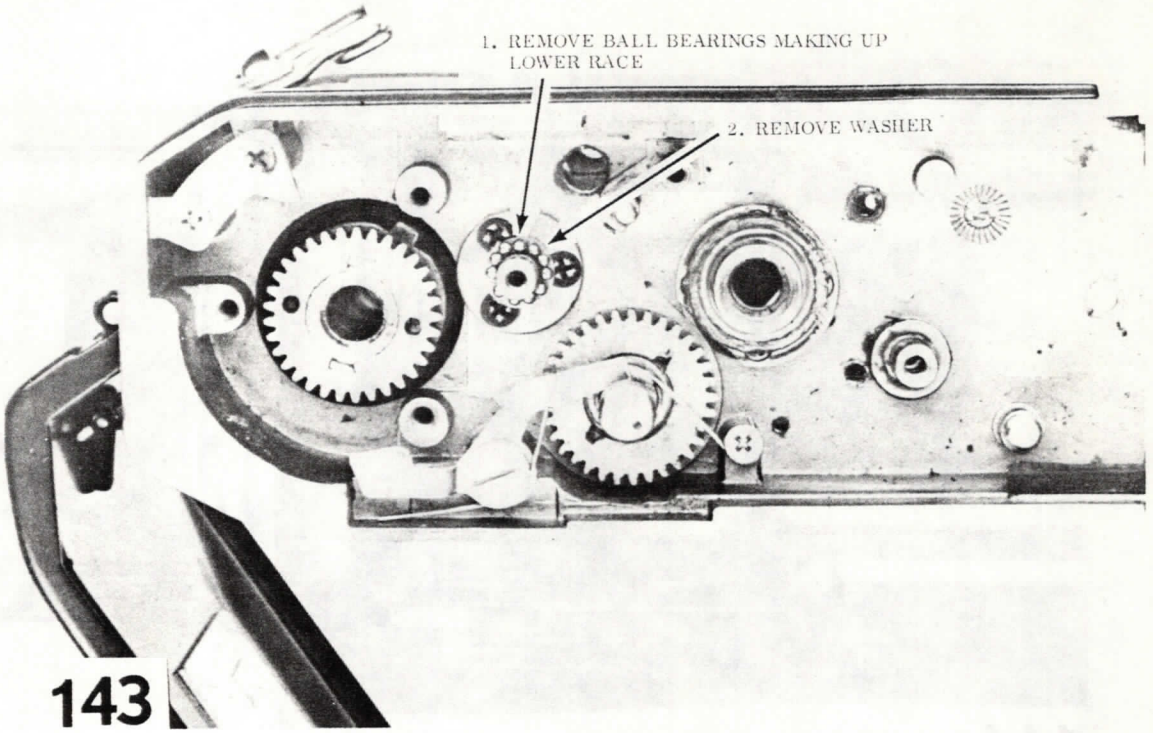
144


REMOVE SCREW HOLDING
TWO-PIECE REDUCTION
GEAR — WATCH FOR BALL
BEARINGS

141

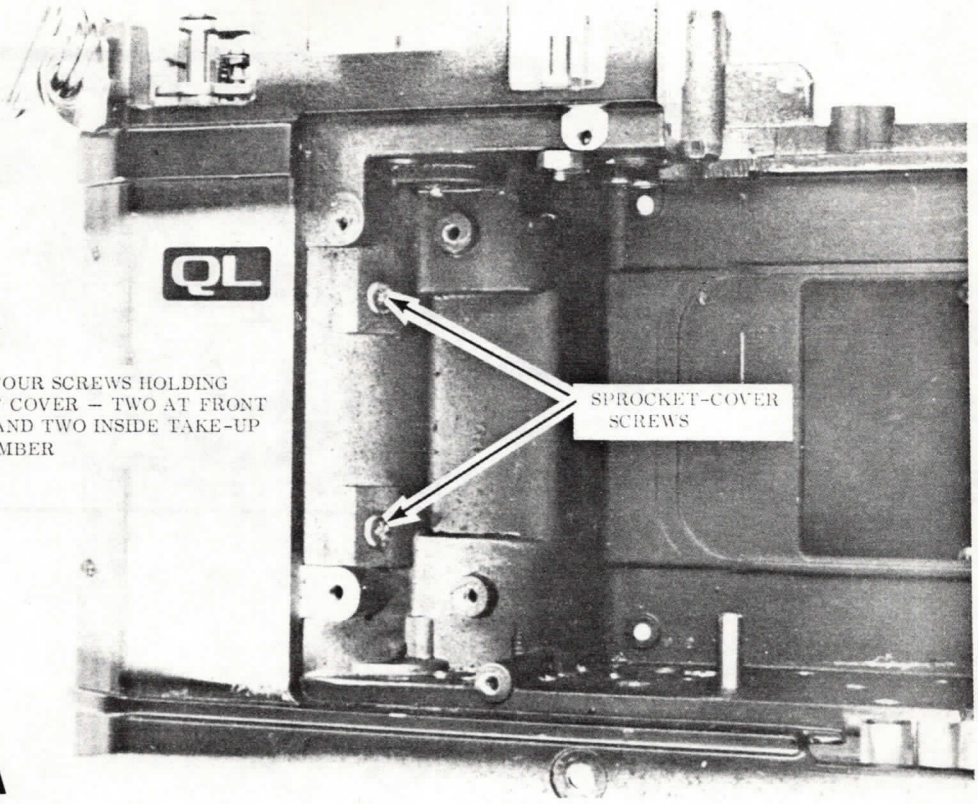


146

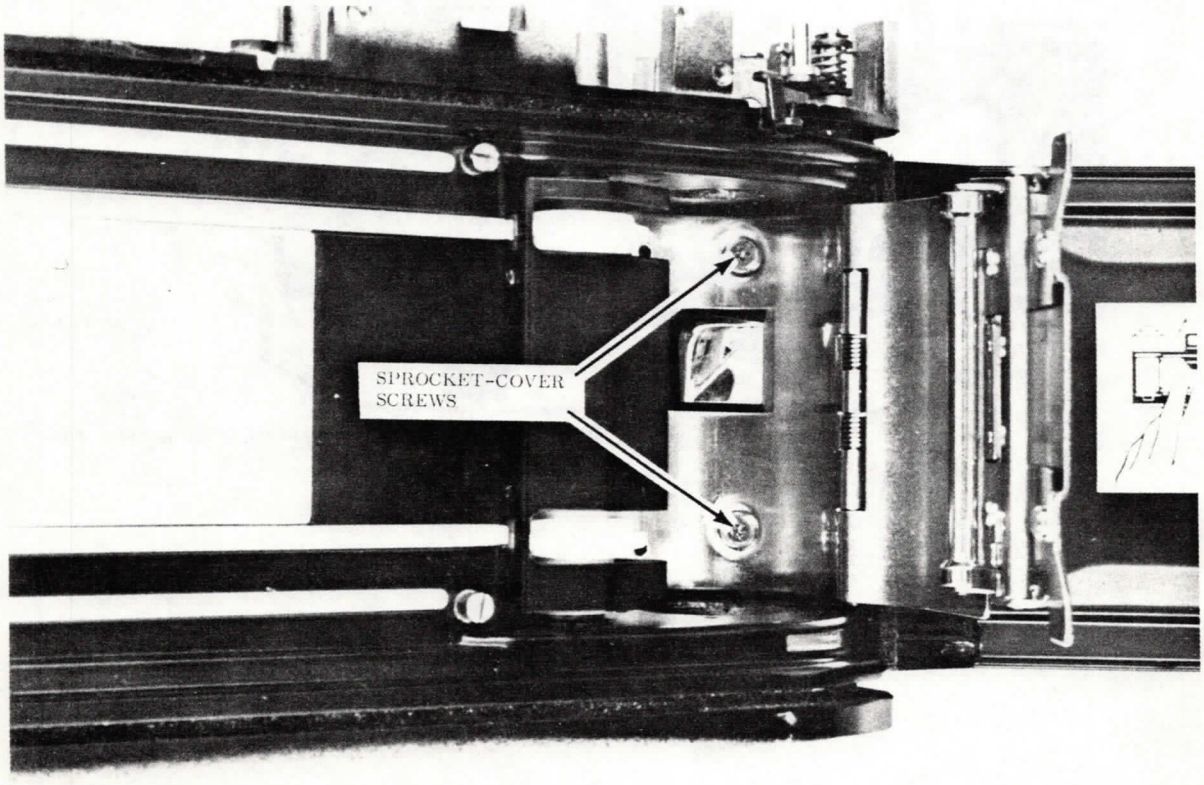


143

REMOVE FOUR SCREWS HOLDING SPROCKET COVER – TWO AT FRONT OF BODY AND TWO INSIDE TAKE-UP FILM CHAMBER

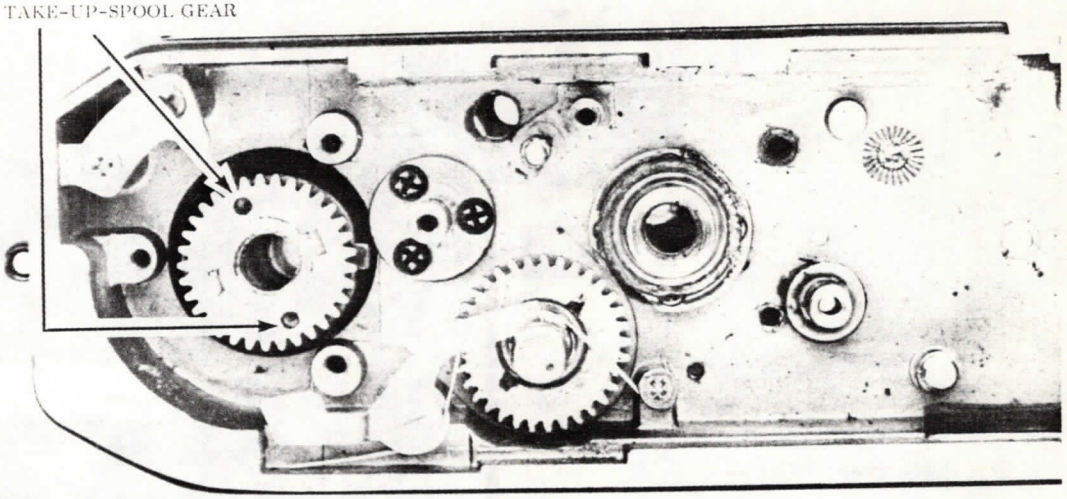


148-A



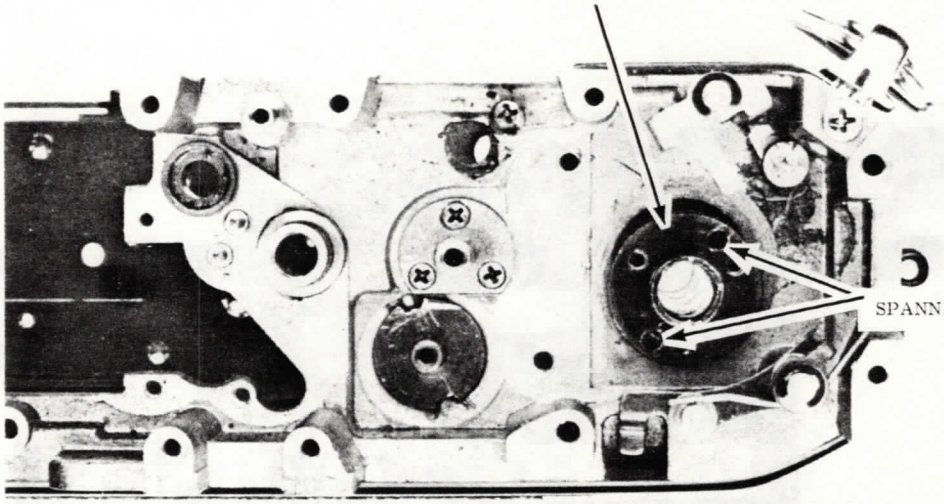
148-B

1. USE SPANNER HOLES TO HOLD TAKE-UP-SPOOL GEAR



145-A

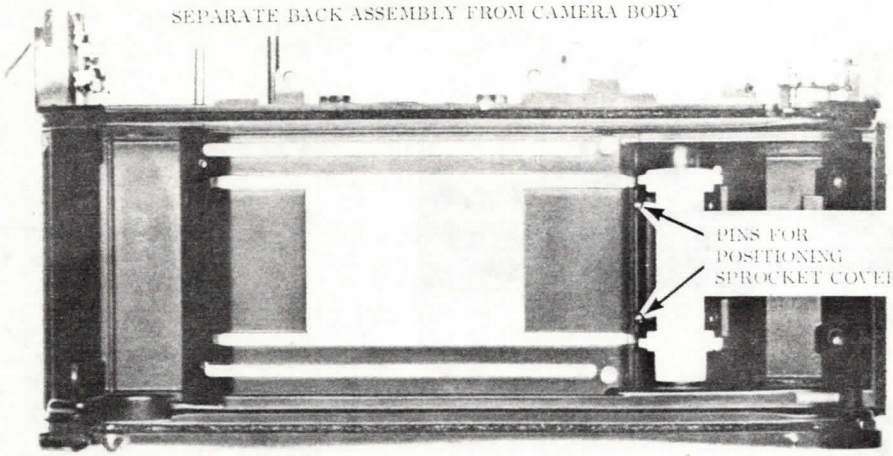
2. UNSCREW AND REMOVE TAKE-UP-SPOOL BEARING

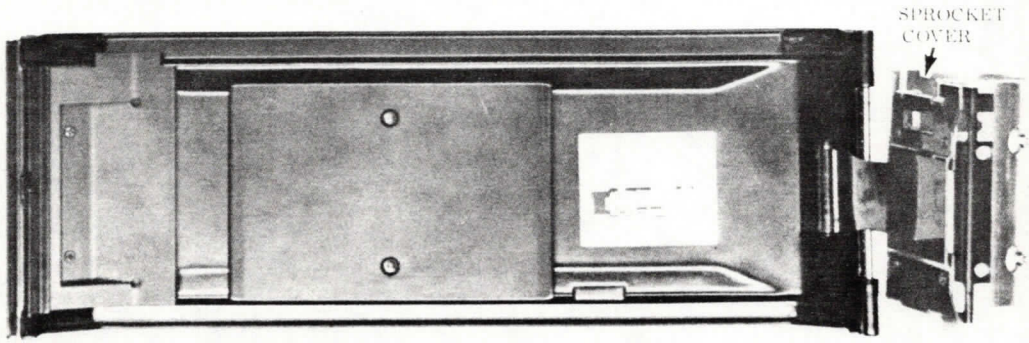


3. LIFT OUT TAKE-UP-SPOOL GEAR AND SHAFT

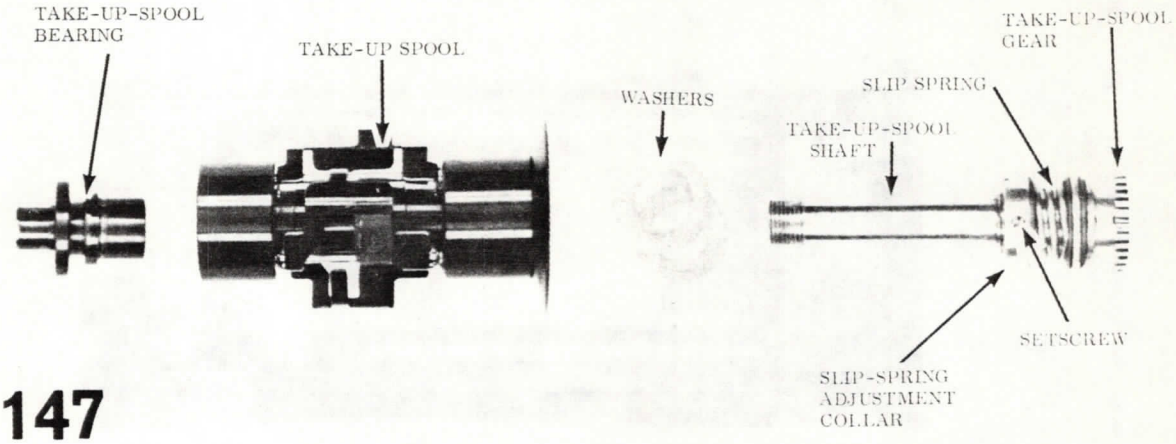
145-B

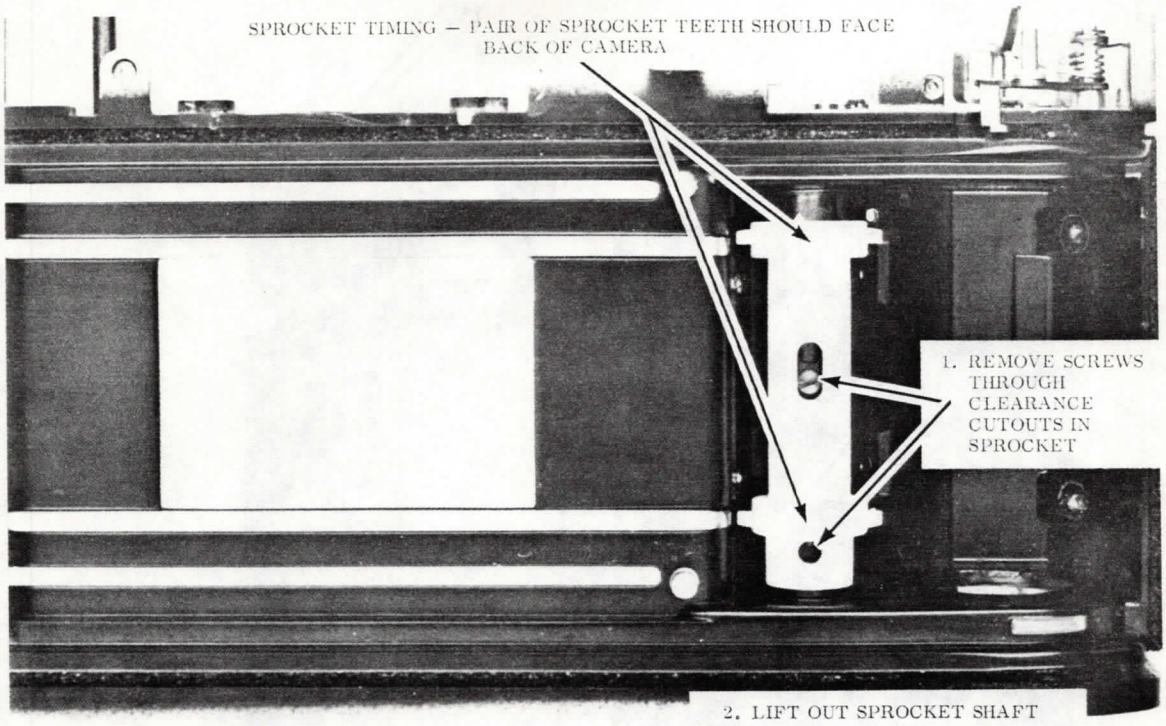
SEPARATE BACK ASSEMBLY FROM CAMERA BODY

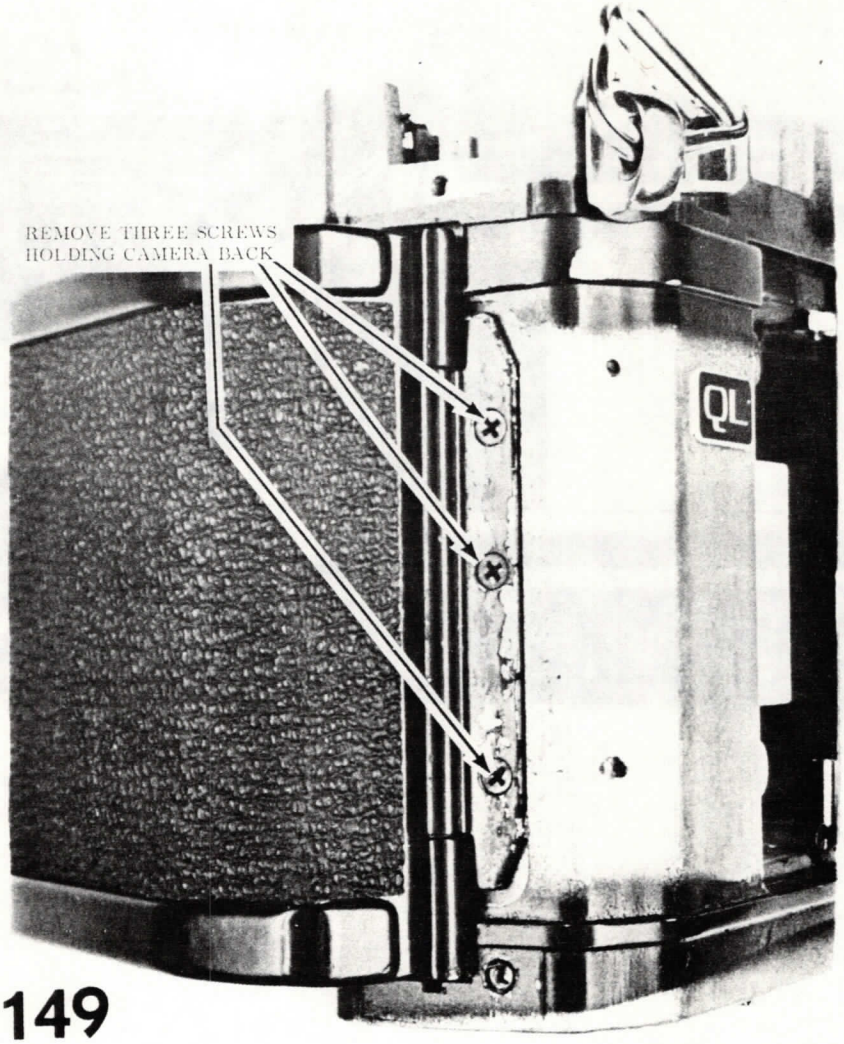




150

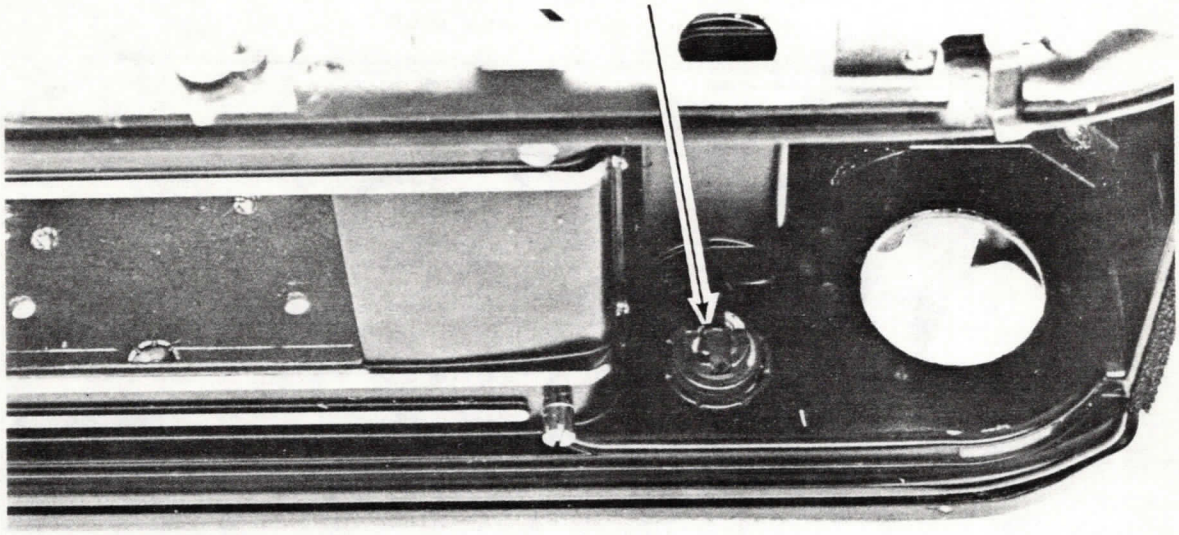

TAKE-UP-SPOOL BEARING
TAKE-UP SPOOL
WASHERS
TAKE-UP-SPOOL GEAR
SLIP SPRING
TAKE-UP-SPOOL SHAFT
SETSCREW
SLIP-SPRING ADJUSTMENT COLLAR


SPROCKET TIMING — PAIR OF SPROCKET TEETH SHOULD FACE BACK OF CAMERA
1. REMOVE SCREWS THROUGH CLEARANCE CUTOUTS IN SPROCKET
2. LIFT OUT SPROCKET SHAFT

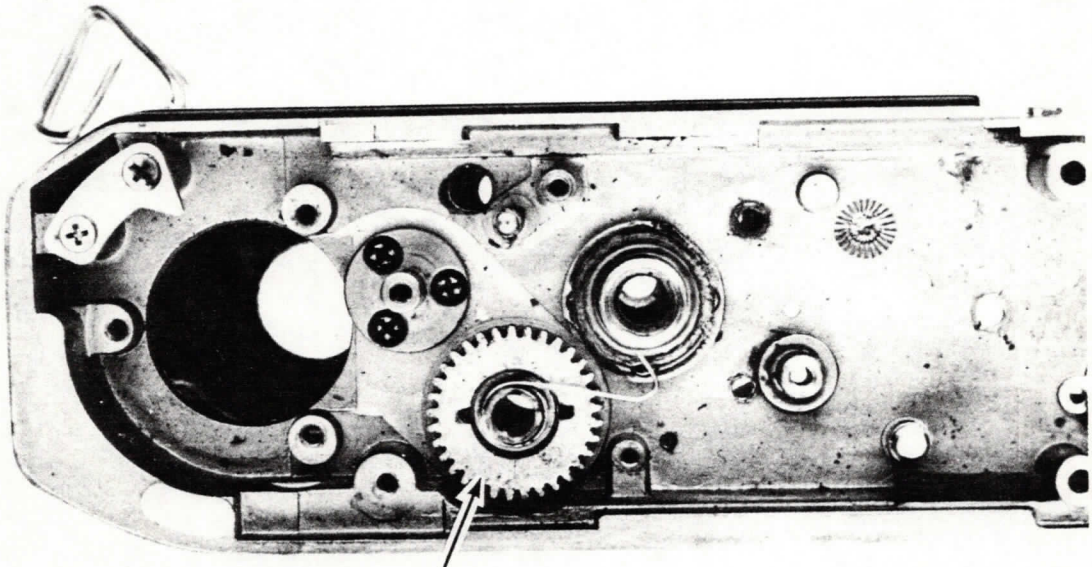


149

1. WEDGE SPROCKET DRIVER

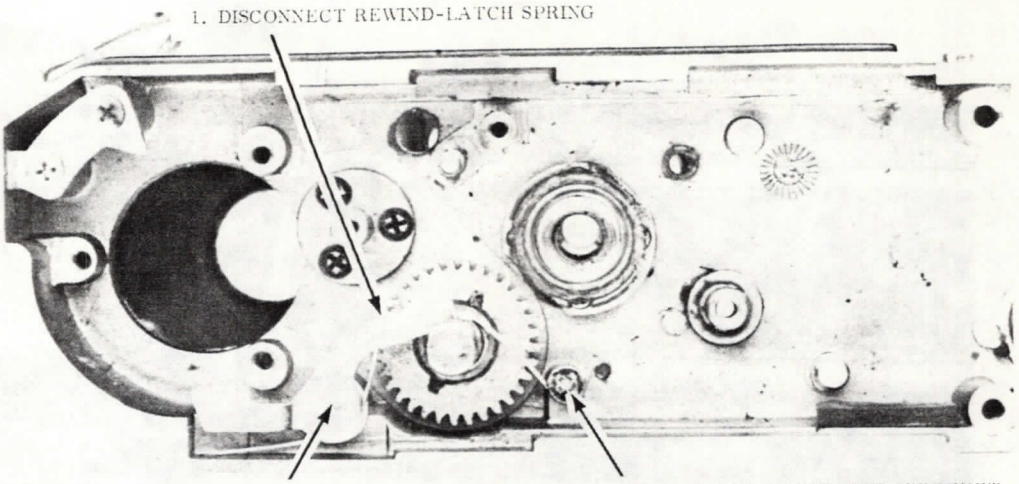


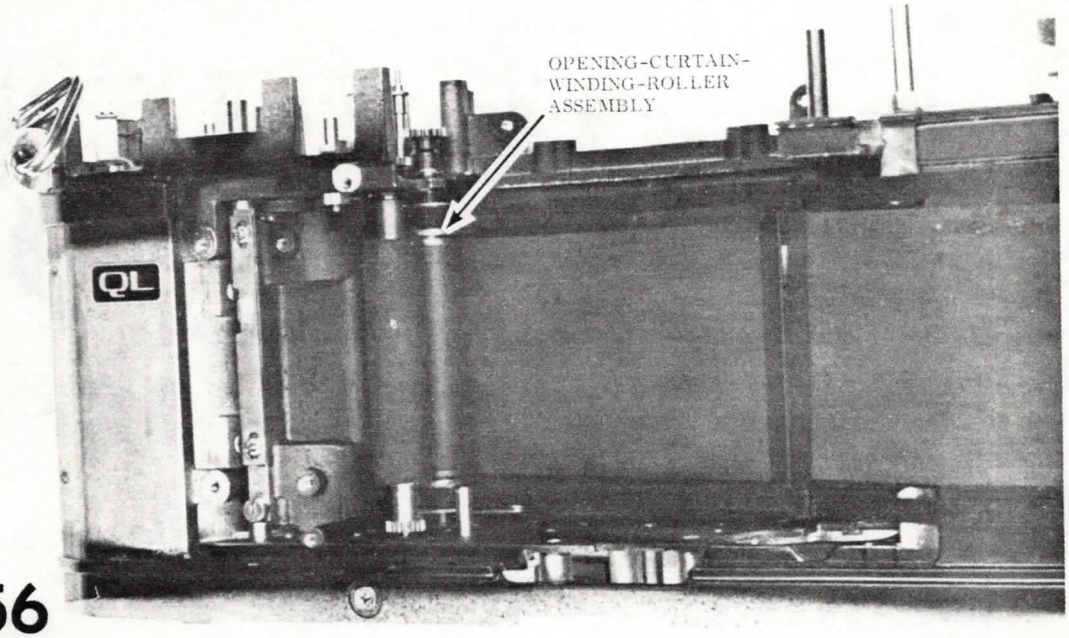
154-A



2. UNSCREW SPROCKET GEAR

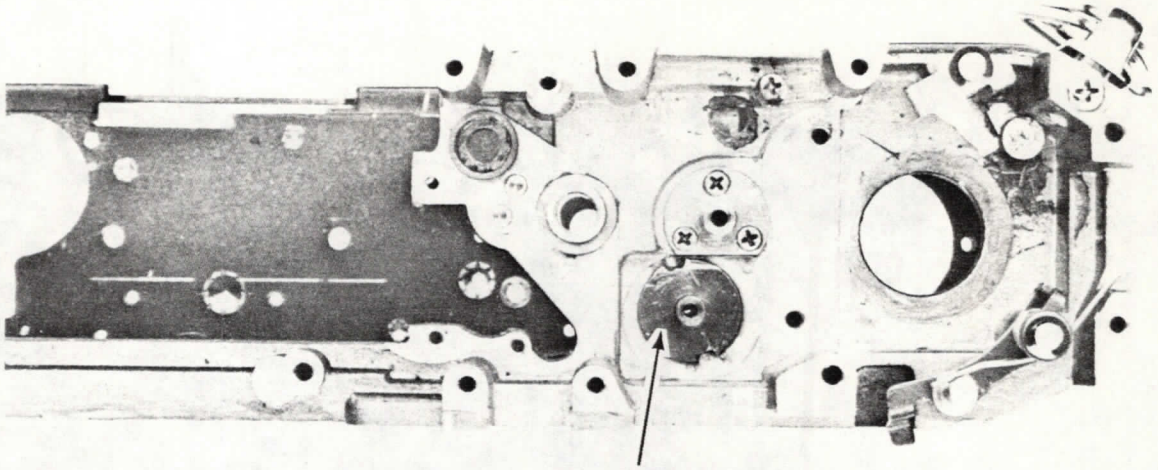
154-B


1. DISCONNECT REWIND-LATCH SPRING
2. REMOVE SCREW — TAKE OUT REWIND LATCH AND SPRING
3. REMOVE SCREW HOLDING SPROCKET-CLUTCH SPRING (NOT NECESSARY UNLESS YOU ARE GOING TO REMOVE SPROCKET GEAR)



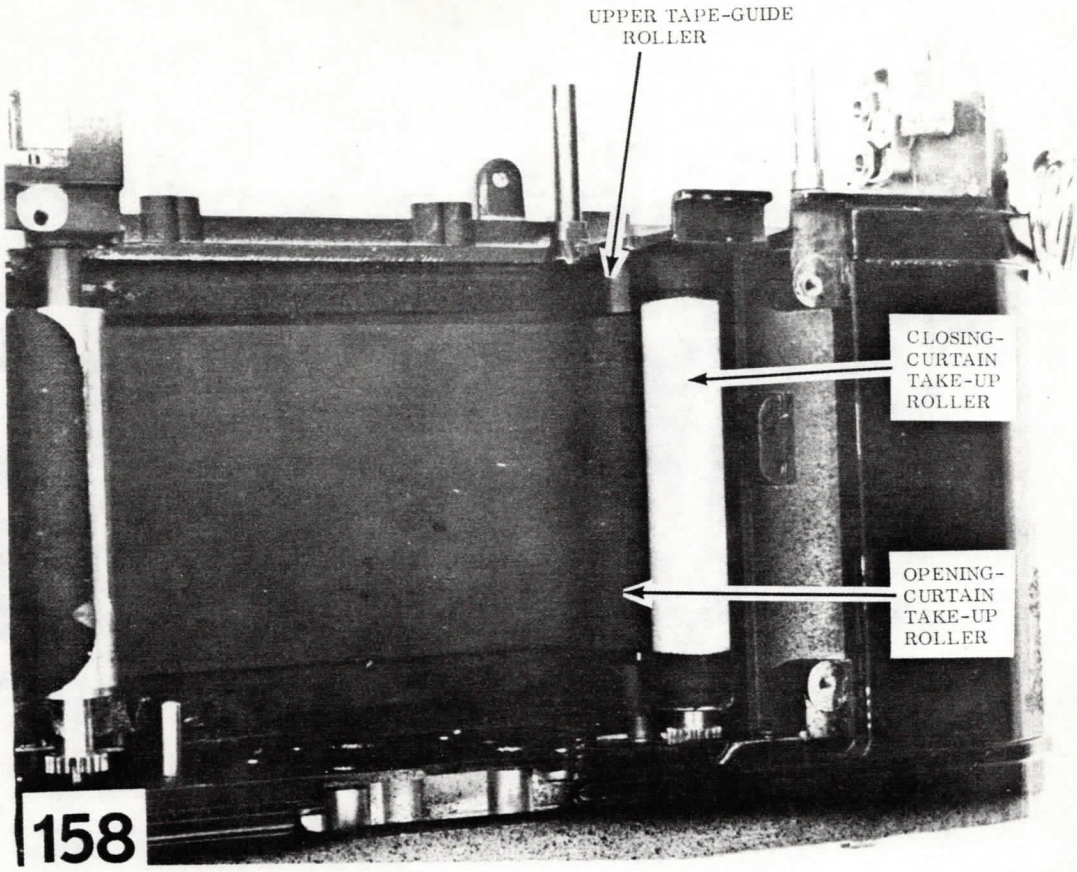
156

Replace the opening-curtain-winding-roller assembly. Make sure the closing curtain passes to the back of the opening-curtain winding roller.



1. UNSCREW SPROCKET BEARING

2. LIFT SPROCKET FROM BACK OF CAMERA (WATCH FOR WASHER ABOVE SPROCKET AND COMPRESSION SPRING INSIDE SPROCKET)

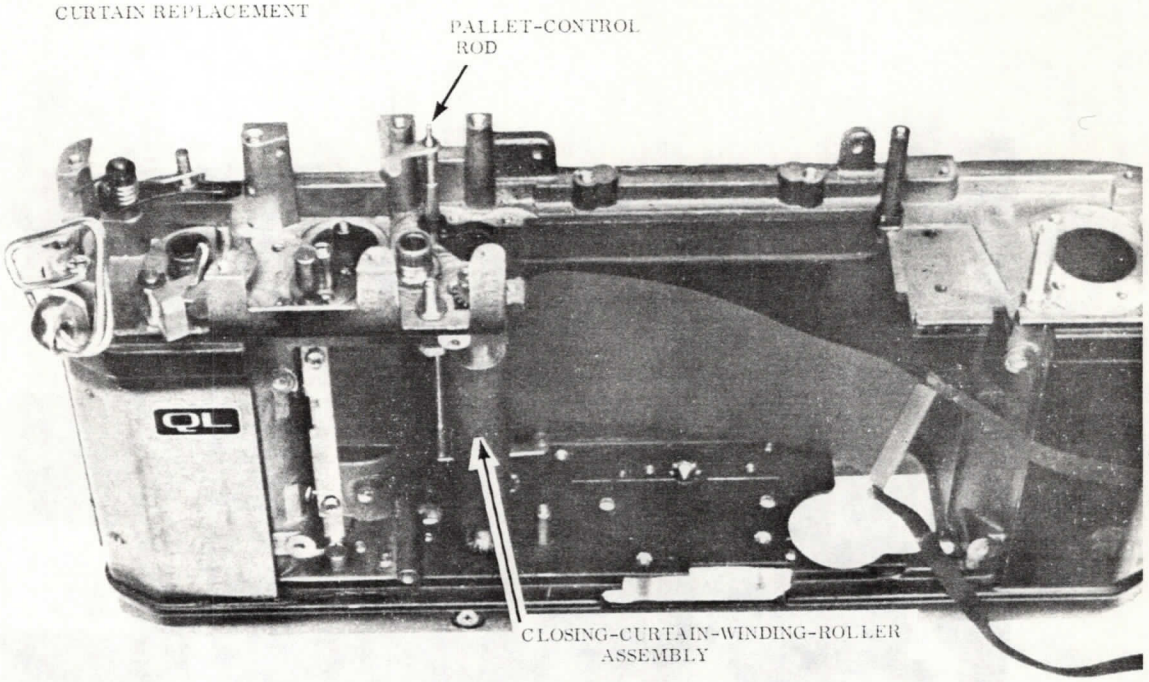


Seat the take-up-rollers plate over the lower ends of the take-up rollers and replace the tension-setting ratchets. Tighten the tension-setting ratchets before seating the upper pivots of the take-up rollers.

Seat the upper tape-guide roller and washer on the upper shaft of the opening-curtain take-up roller. The closing-curtain tapes must pass to the back of the tape-guide rollers.

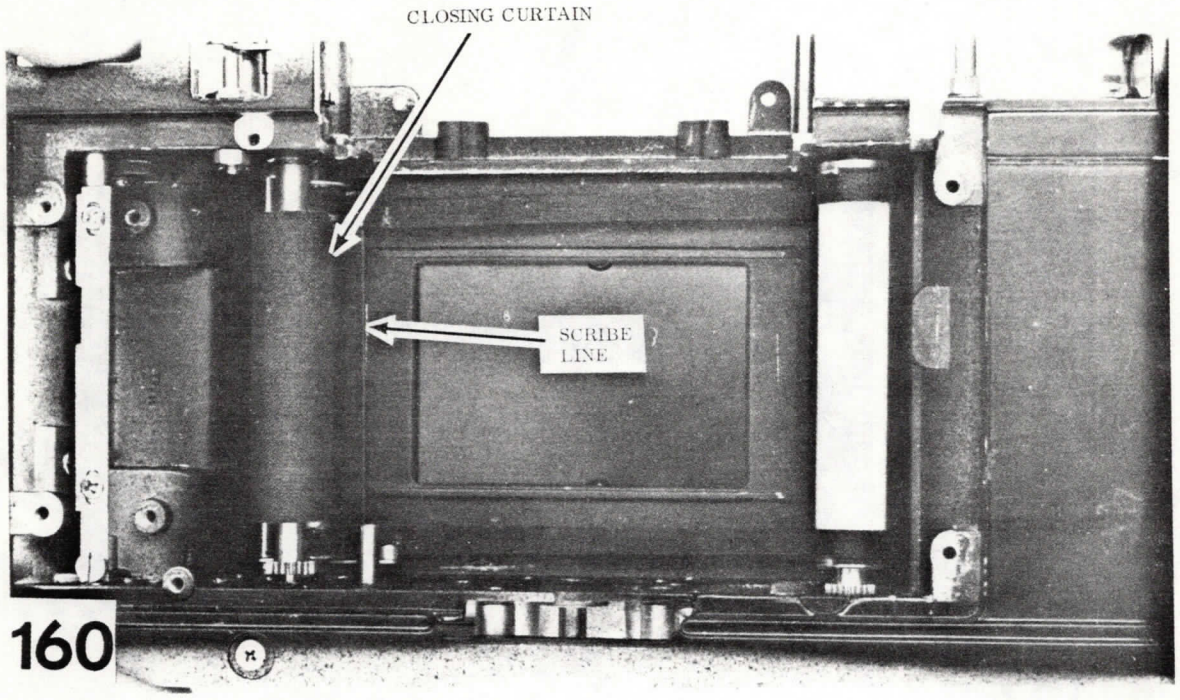
Seat the upper pivots of the take-up rollers. Replace the screws holding the take-up-rollers plate.

Place around one turn of initial tension on the closing-curtain take-up roller by turning the tension-setting ratchet in a counterclockwise direction.



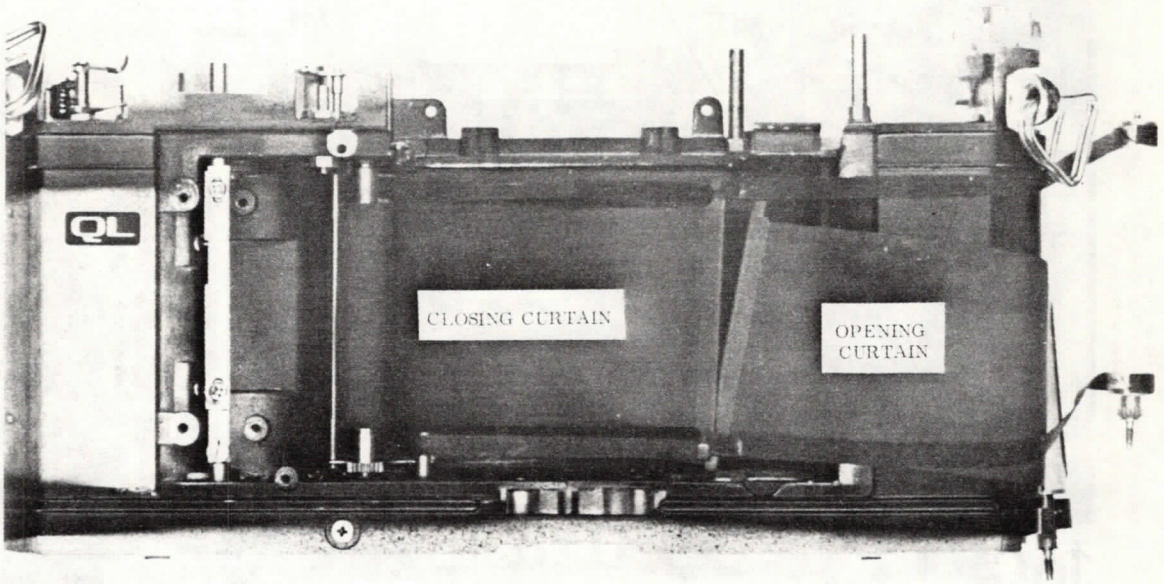
155

Replace the pallet-control rod. Then, seat the closing-curtain-winding-roller assembly as shown.



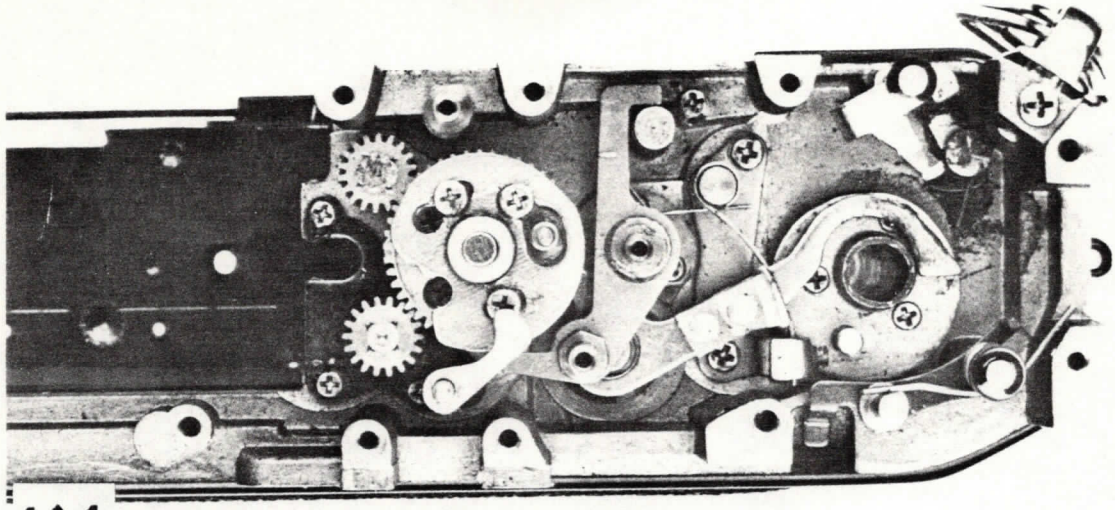
Check the timing of the closing curtain. Allow the closing-curtain latch to hold the closing-curtain wind gear in the curtain-tensioned position (the bulb position). The lead edge of the closing-curtain bar should now be aligned with the scribe line as shown. If the closing curtain does not align properly, adjust the timing between the closing-curtain wind gear and the closing-curtain winding-roller pinion.

Once the timing is correct, release the closing curtain.



157

Pass the closing-curtain take-up roller through the opening-curtain tapes. The closing curtain should now be to the front of the opening curtain.



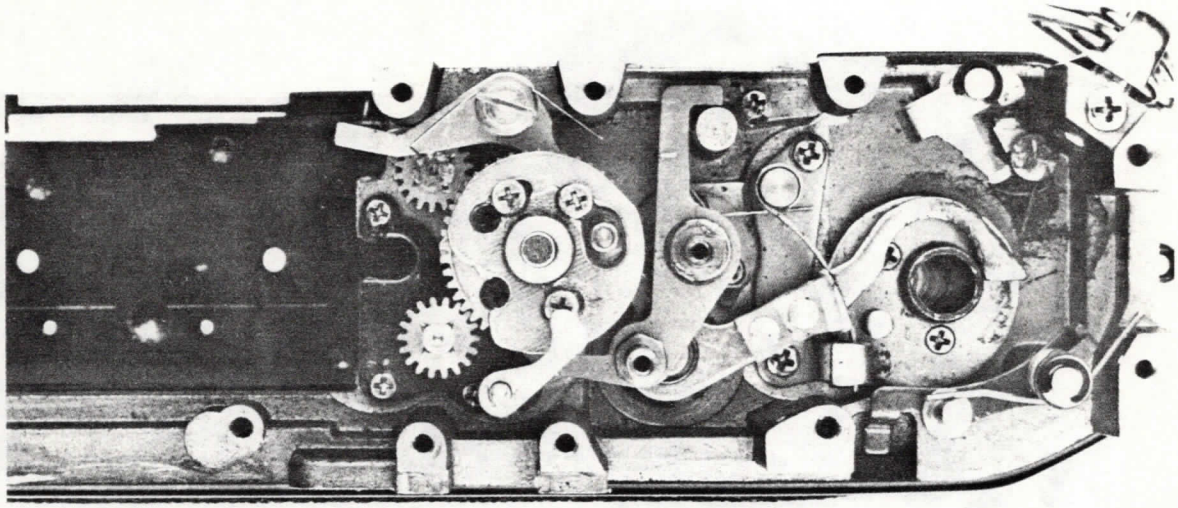
161

Position the opening curtain at the closing side of the focal-plane aperture in approximately the proper position with respect to the closing curtain -- 1/2 bar overlap.

Turn the closing-curtain winding roller to partially wind the closing curtain.

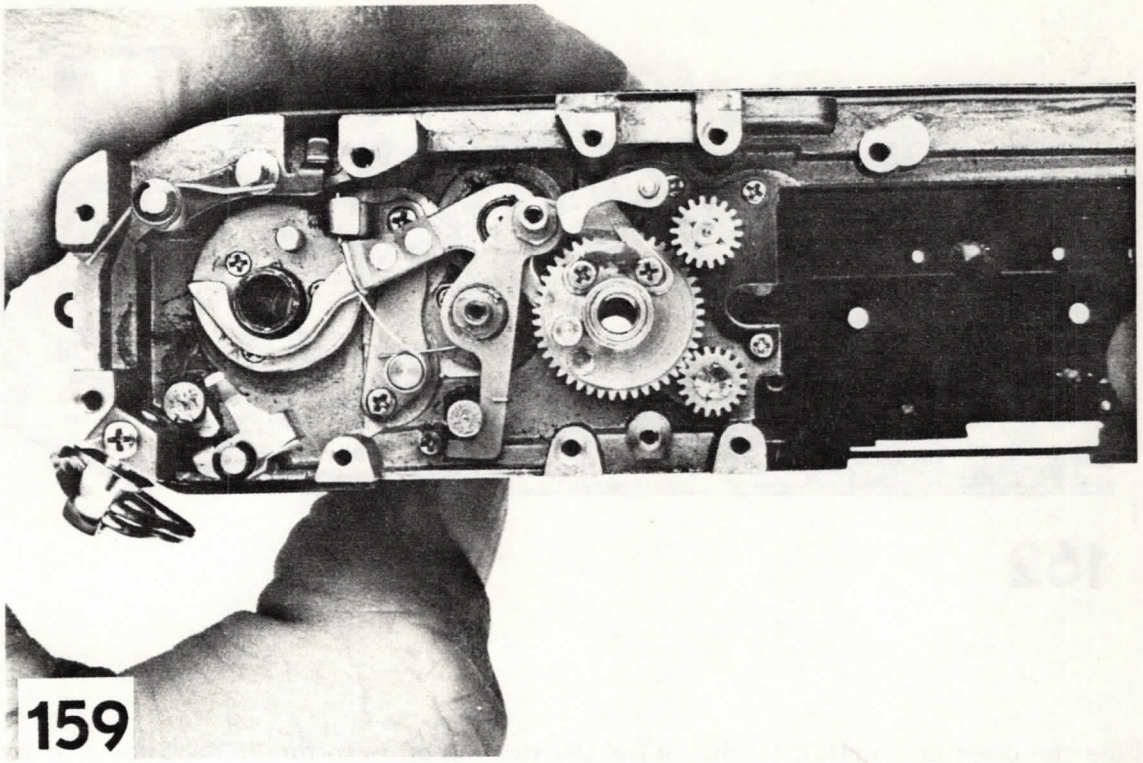
Replace the opening-curtain wind gear as shown. Put around one turn of initial tension on the opening-curtain take-up roller.

Turn the opening-curtain wind gear clockwise to wind on the curtains. The opening-curtain wind gear should pick up and turn the closing-curtain wind gear. Check the overlap during the wind cycle. Adjust the timing between the opening-curtain wind gear and the opening-curtain winding-roller pinion for the proper 1/2 bar overlap.



162

Replace the opening-curtain latch. Wind the two curtains to the cocked position by turning the opening-curtain wind gear. You can then replace the screw to hold the wind-stop cam.



Replace the closing-curtain latch. Wind the closing curtain until the closing-curtain bar aligns with the scribe line. Then, replace the closing-curtain wind gear with the latching lug positioned as shown.