



Canon
EF-EF

Canon
EF-EF

Canon
EF-EF

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EF-EF

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EF-EF

Canon
EF-EF



GREEN CIRCLE FOR AUTOMATIC-DIAPHRAGM CONTROL

DIAPHRAGM-SETTING RING

LED (LIGHT-EMITTING DIODE)

FLASHES DURING SLOW EXPOSURES AND WHEN YOU DEPRESS BATTERY-TEST BUTTON ON BOTTOM OF CAMERA

DIAPHRAGM-SETTING-RING LOCK BUTTON--DEPRESS TO SELECT AUTOMATIC SETTING

SHUTTER-SPEED DIAL

COUNTER WINDOW

SYNC-TERMINAL COVER

NEEDLE-HOLD BUTTON

HOT-SHOE COVER

WIND LEVER IN "STORAGE" POSITION



FILM-SPEED KNOB -- LIFT AND TURN TO SET FILM SPEED

INTENTIONAL DOUBLE-
EXPOSURE BUTTON

NORMAL

撮影時以外はメイン
スイッチを OFF にして
ください。

AFTER USING, TURN
THE CAMERA OFF.

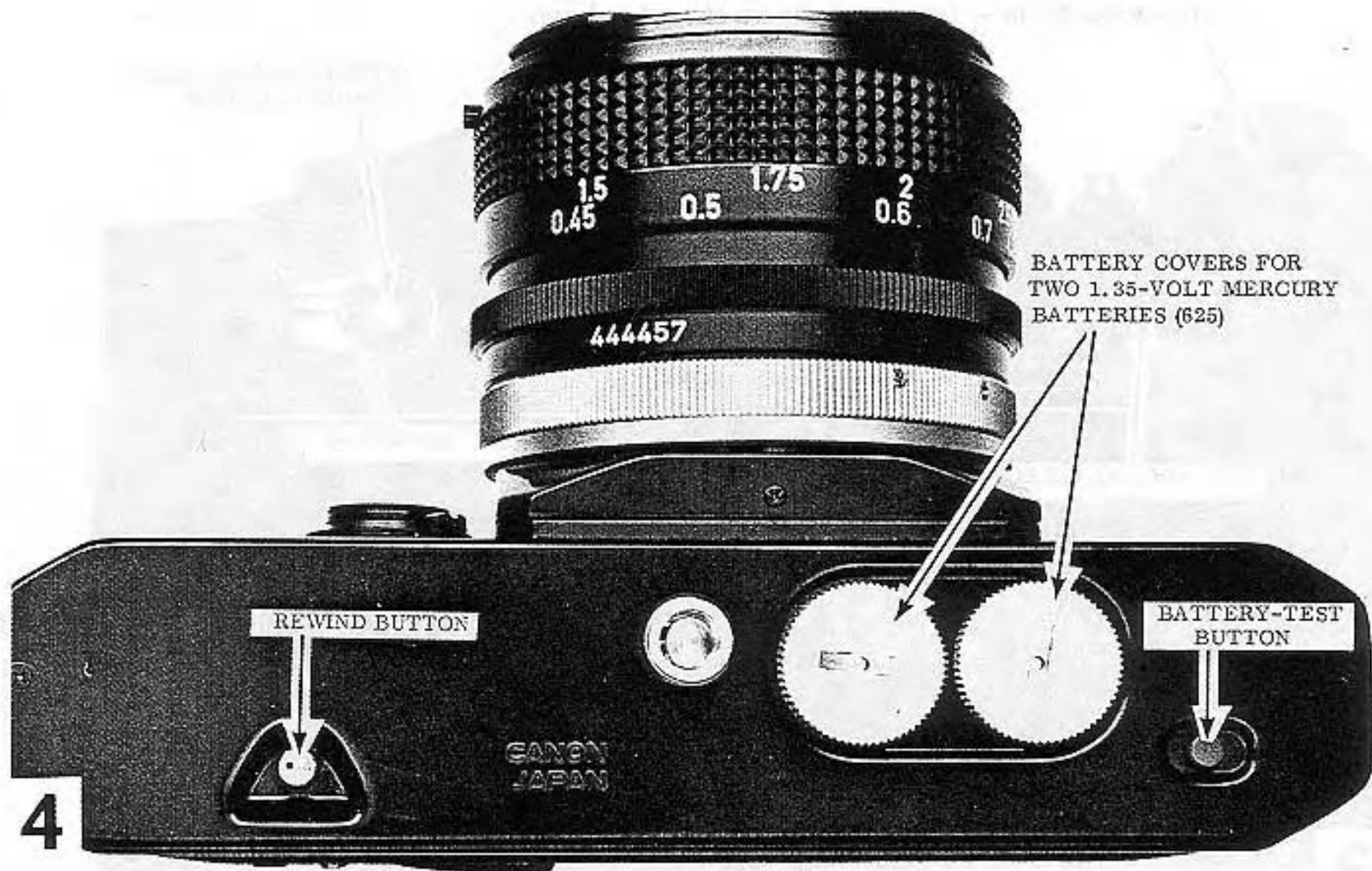
ON

OFF

ON-OFF SELECTOR

CATS-NORMAL SELECTOR

3



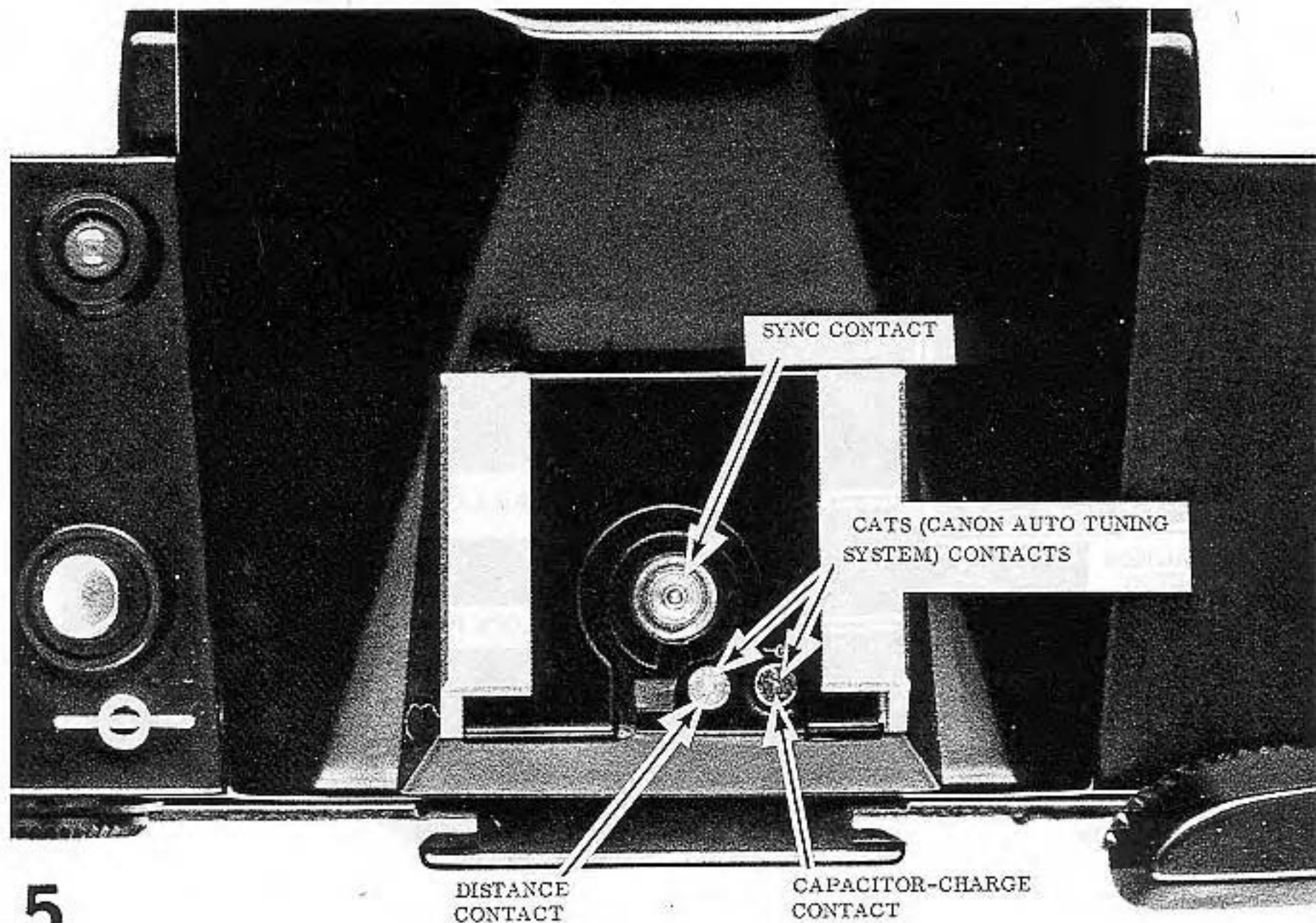
BATTERY COVERS FOR
TWO 1.35-VOLT MERCURY
BATTERIES (625)

REWIND BUTTON

BATTERY-TEST
BUTTON

CANON
JAPAN

4



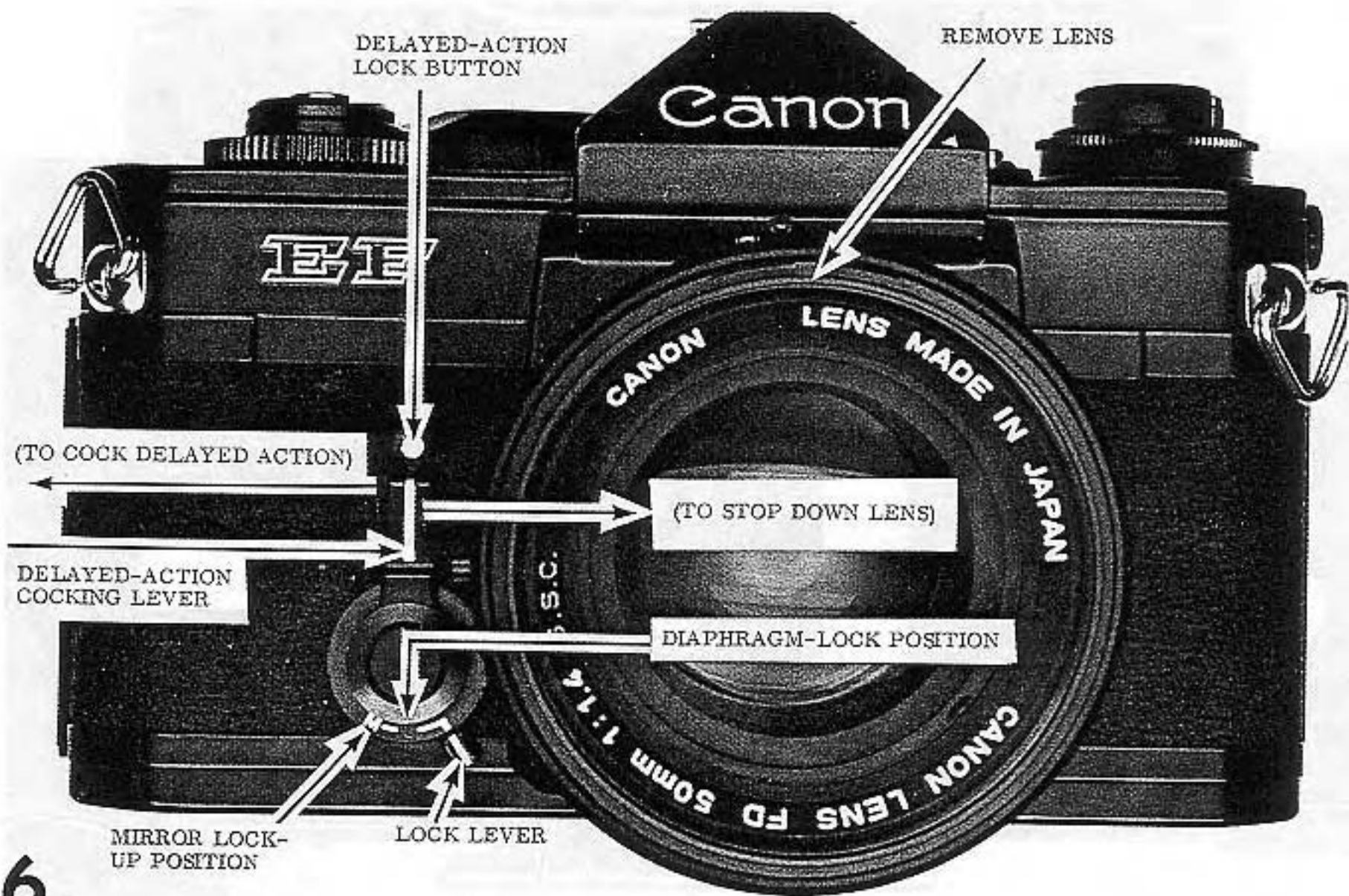
SYNC CONTACT

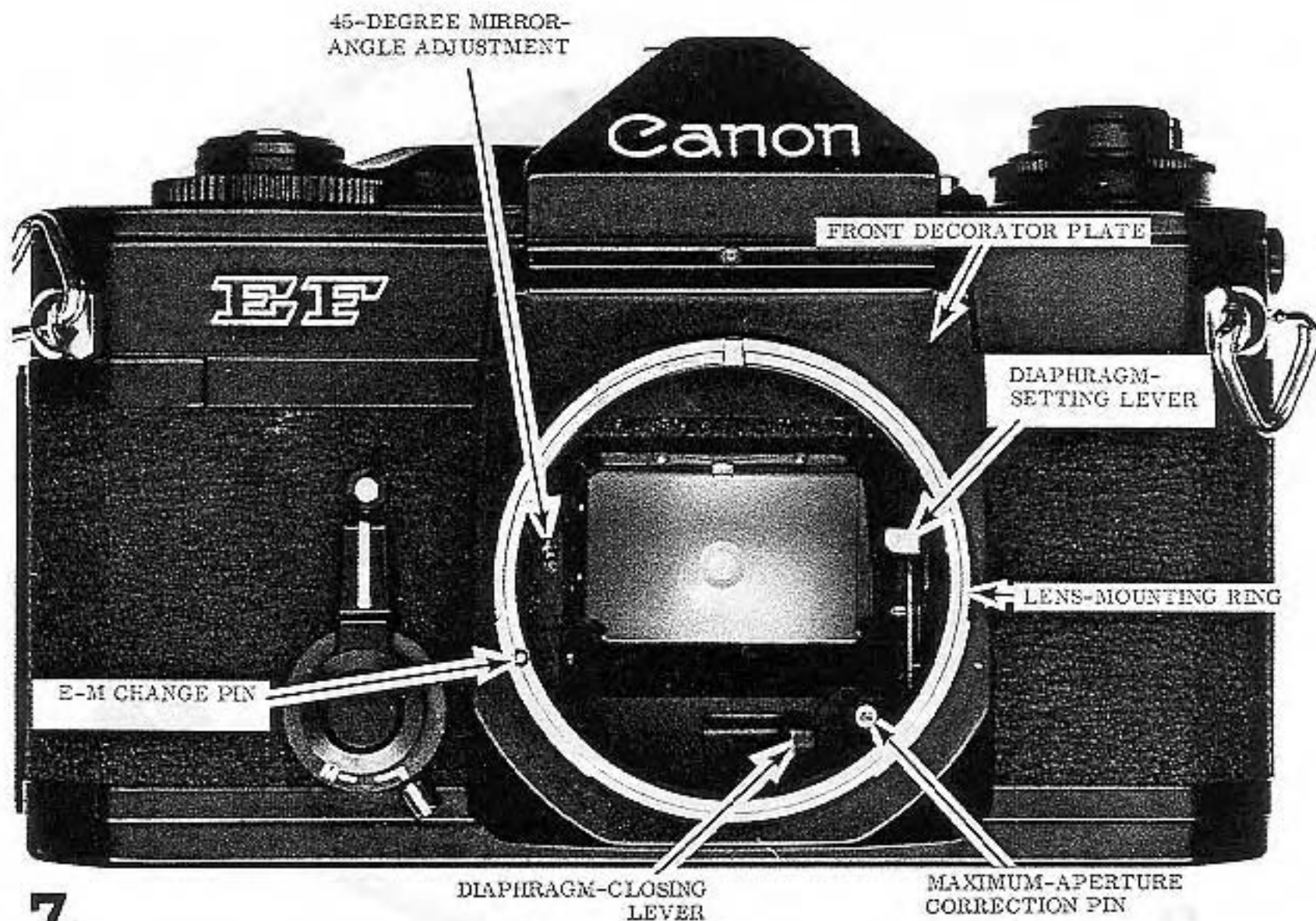
CATS (CANON AUTO TUNING
SYSTEM) CONTACTS

DISTANCE
CONTACT

CAPACITOR-CHARGE
CONTACT

5





7

Check the flange-focal distance (42.14 mm) by measuring between the front surface of the lens-mounting ring and the film rails. To make an adjustment, first remove the screw at the bottom of the front decorator plate. Lift off the front decorator plate and remove the four screws holding the lens-mounting ring. You can now add or remove spacers to adjust the flange-focal distance and/or parallelism.

TAB ON DIAPHRAGM-
COUPLING RING

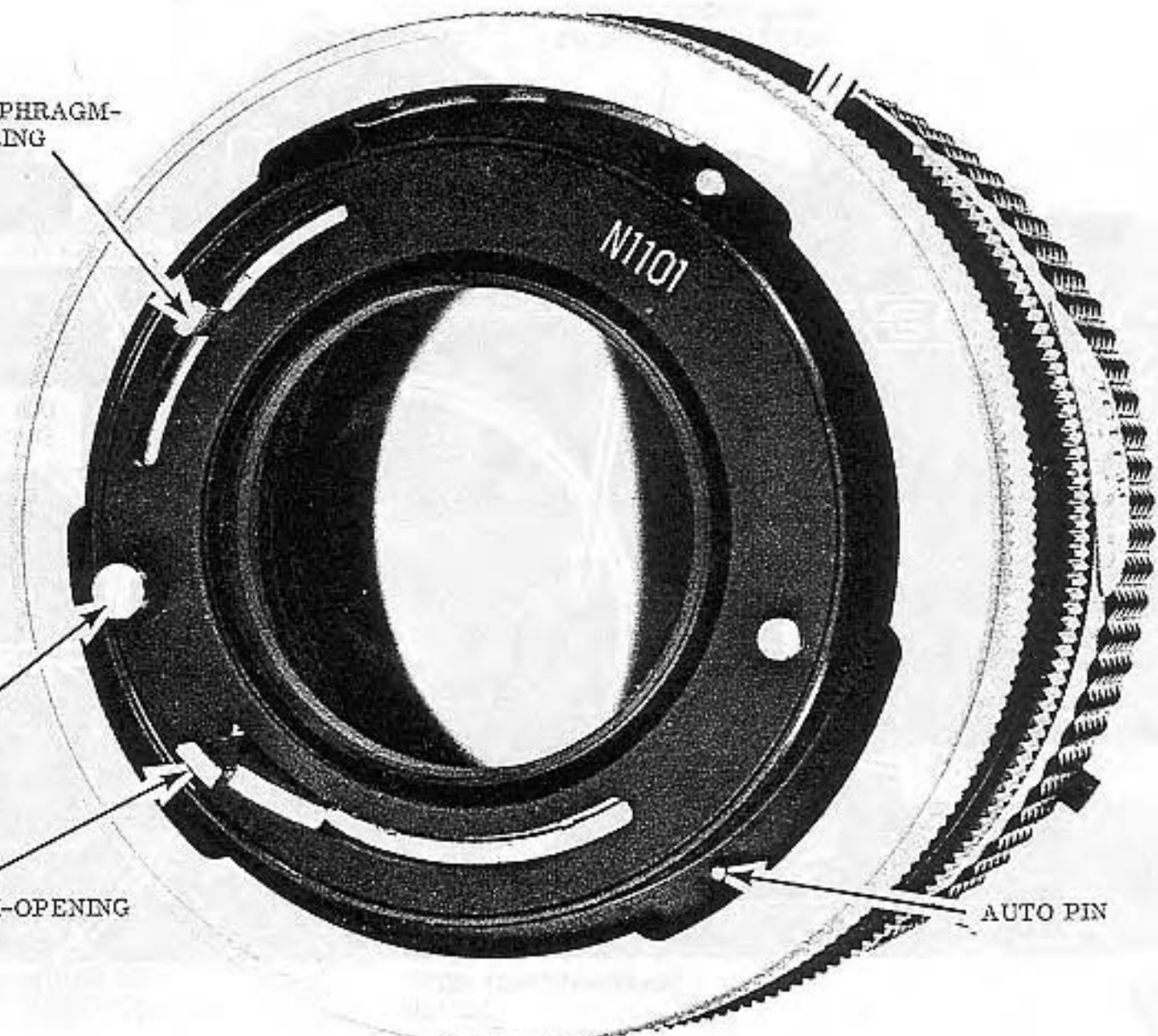
FULL-OPEN
METERING
POST

TAB OF
DIAPHRAGM-OPENING
RING

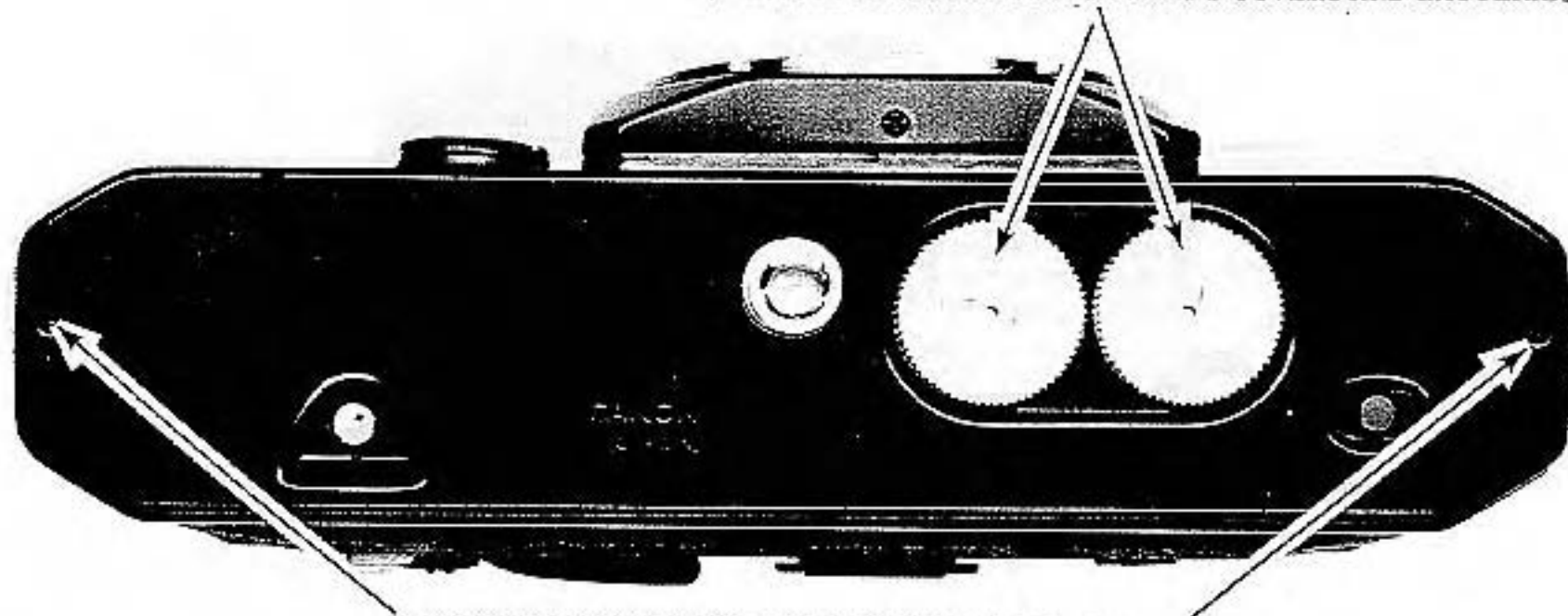
AUTO PIN

8

BACK OF FD LENS

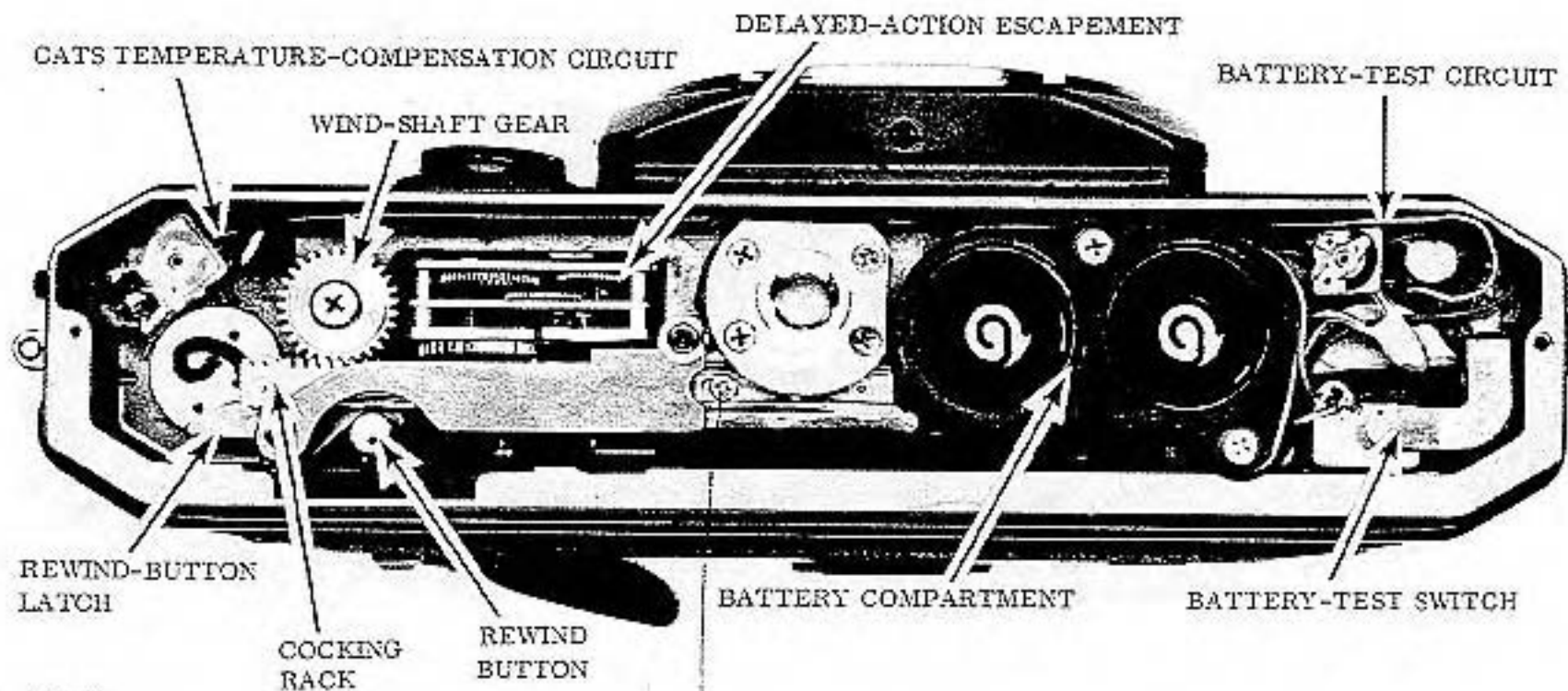


1. REMOVE BATTERY-COMPARTMENT COVERS AND BATTERIES



2. REMOVE TWO SCREWS AND LIFT OFF BOTTOM PLATE

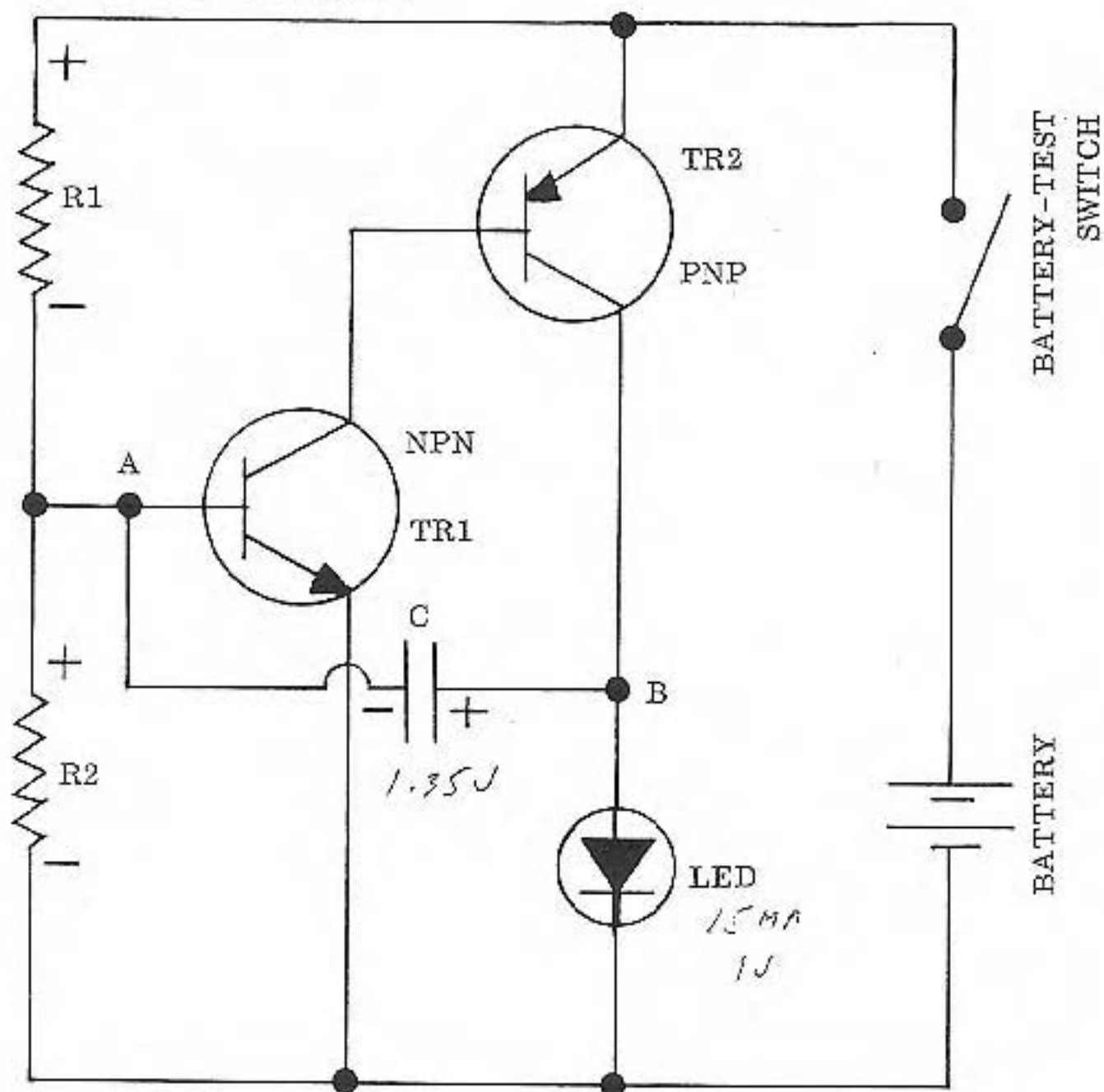
CAUTION: BATTERY-TEST BUTTON WILL BE LOOSE WHEN YOU LIFT OFF BOTTOM PLATE



10

*adjustment for overtravel or undertake
(cocking)*

BASIC LED CIRCUIT

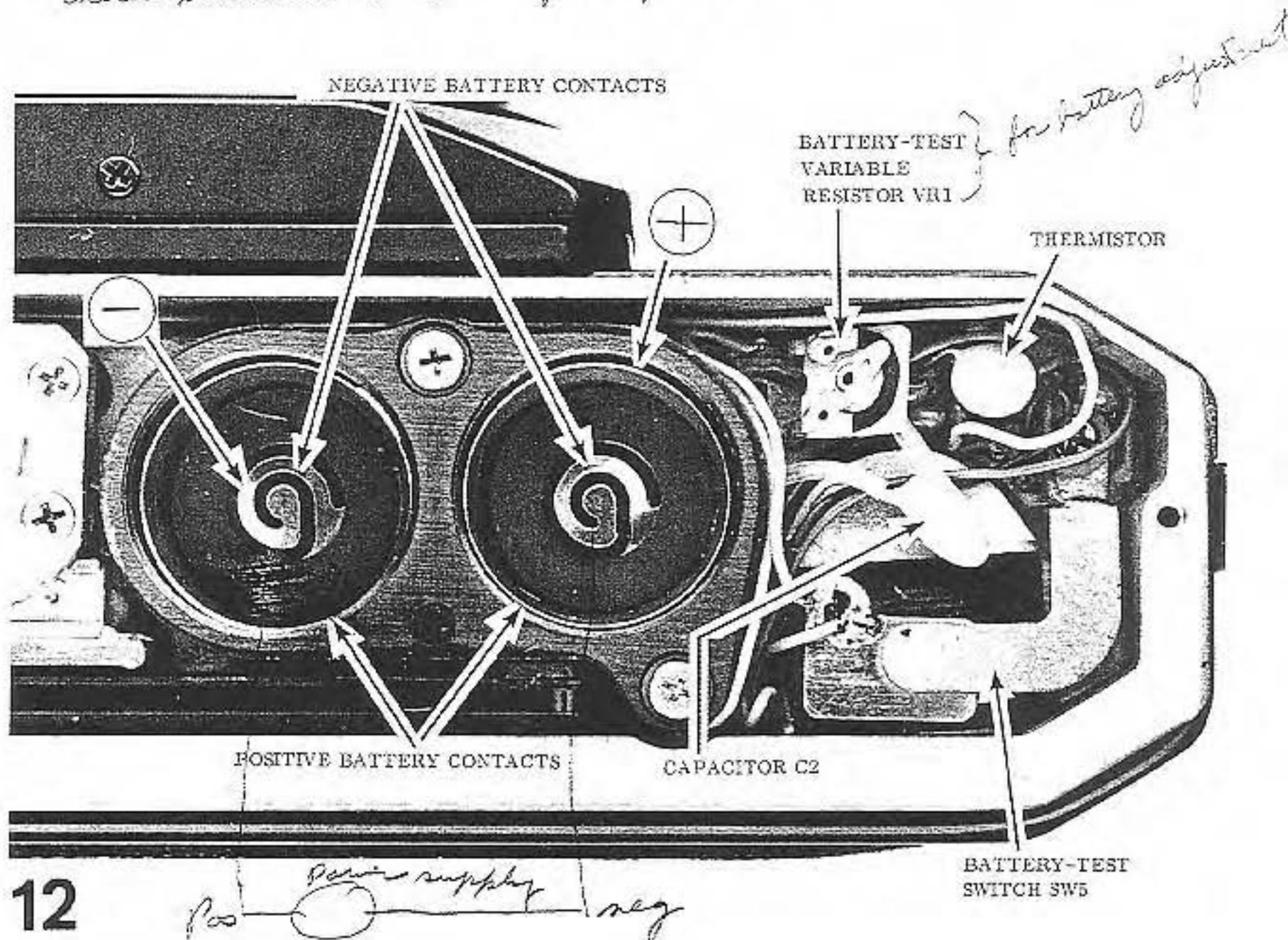


11

on-off Rates 8:1

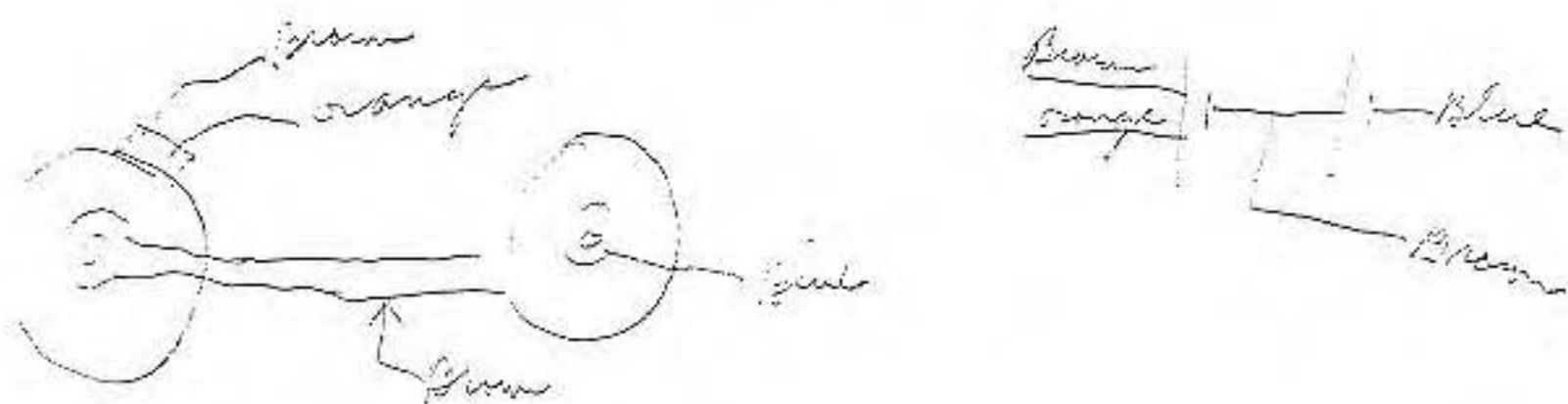
Current drawn - 1.9 MA

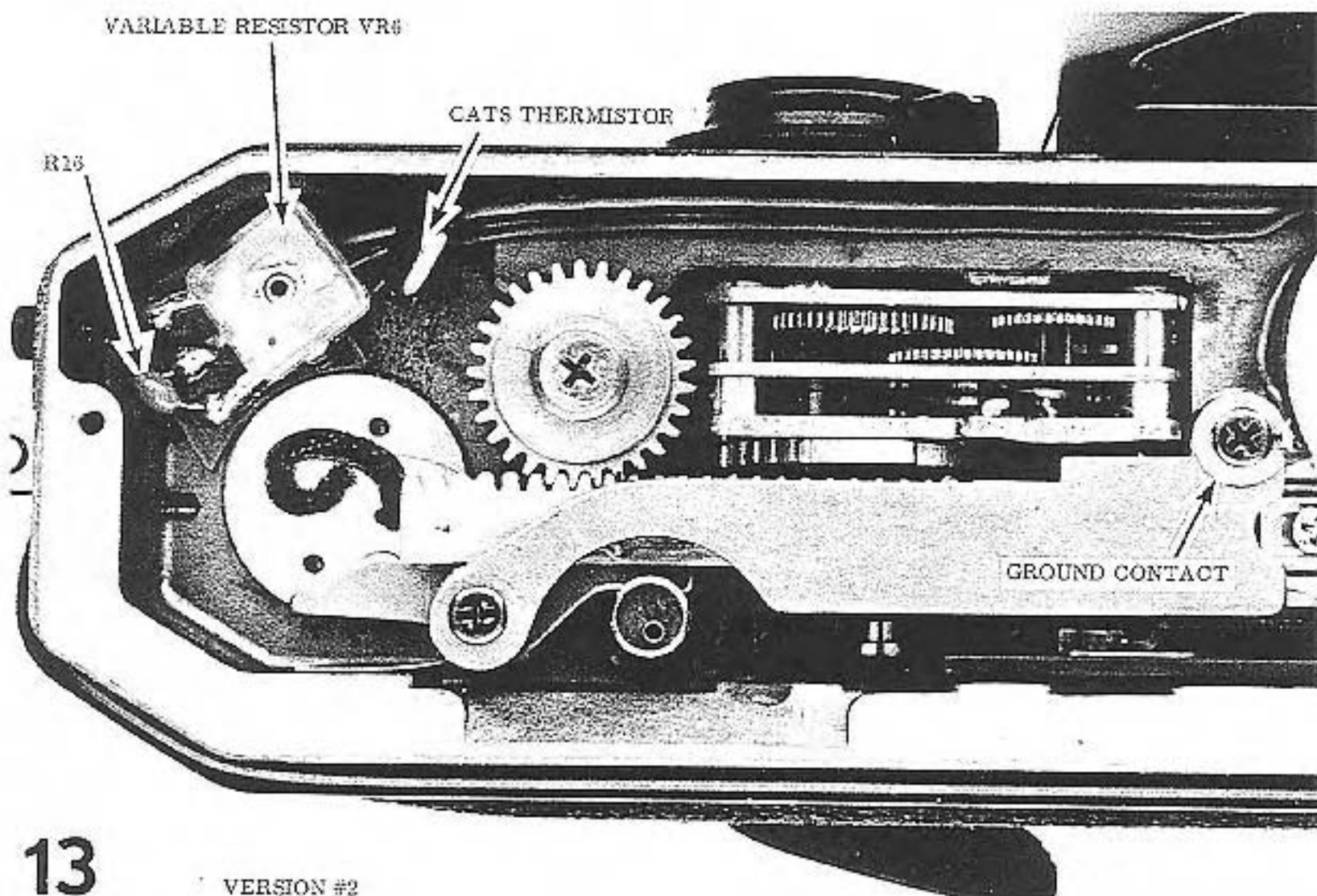
Check insulation on battery compartment



BATTERY-TEST-CIRCUIT ADJUSTMENT: Hook a DC power supply to the battery compartment as shown by the polarity indications. With the power supply set at 2.31 volts, the LED should operate when you close the battery-test switch; the LED should not operate at 2.28 volts. Make the adjustment with the battery-test variable resistor VR1.

If battery runs down fast - Take off battery holder & tape underside (maybe shorted)





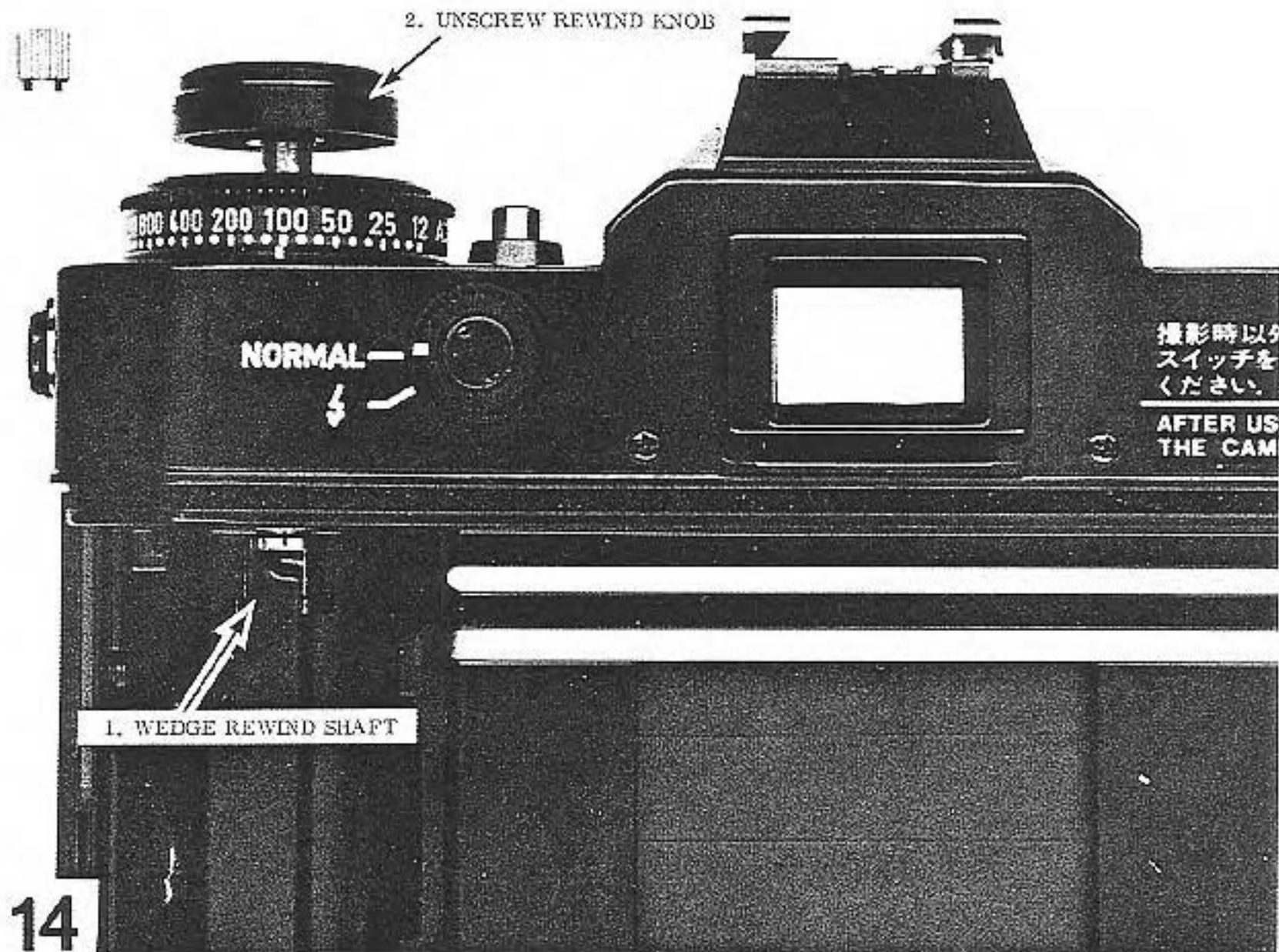
13

VERSION #2

The original Canon EF (version #1) does not have the CATS temperature-compensation circuit. The temperature-compensation circuit was added as a modification to the model illustrated (version #2). Later models (versions #3 and #4) have the thermistor and the fixed resistor at the top of the camera; in these cameras, the only part on the circuit board shown is the variable resistor VR6.

The red wire connects resistor VR6 to ground in the model illustrated. Later models use a screw to hold the VR6 circuit board. So the screw acts as a ground connection and eliminates the need for the red wire.



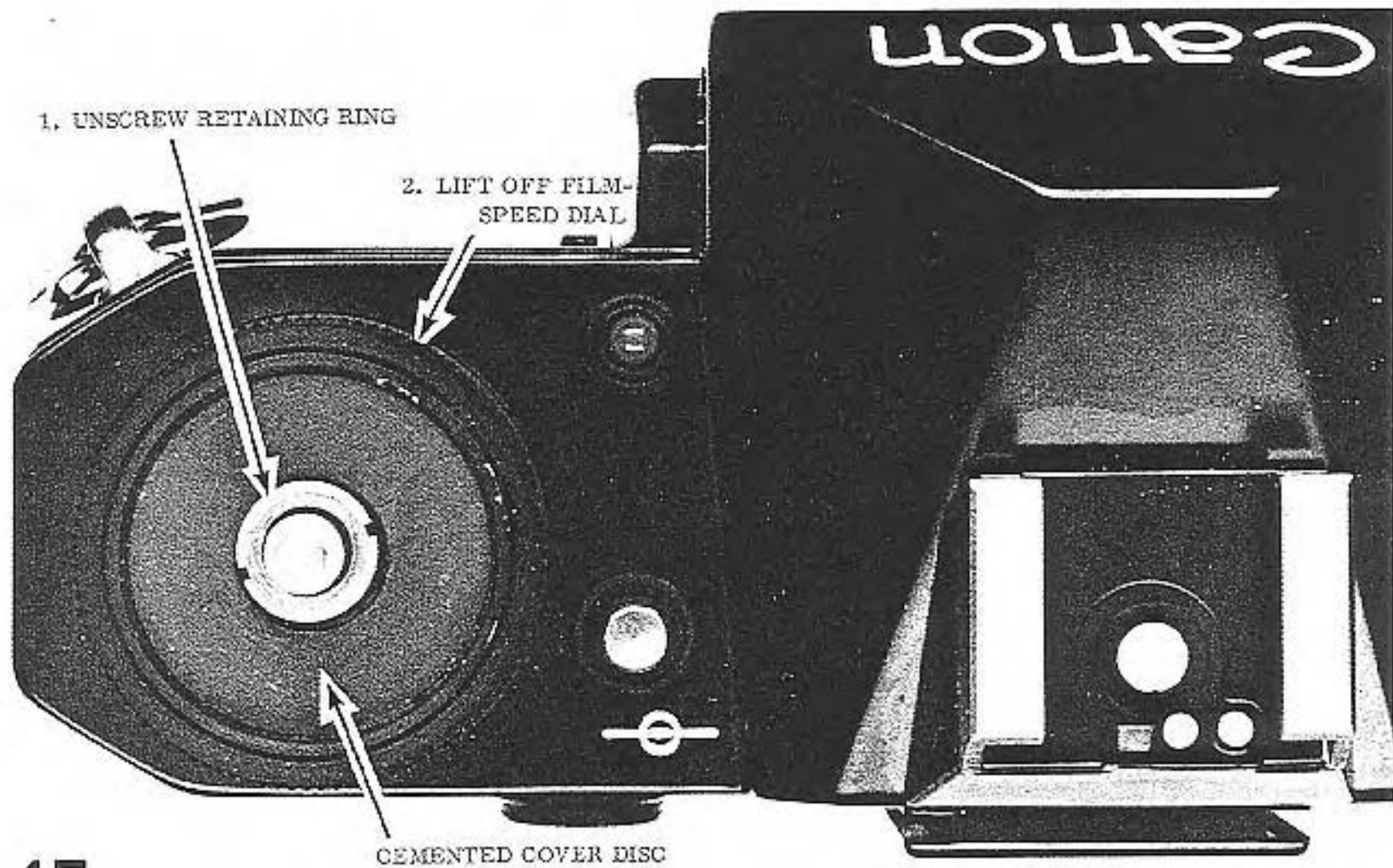


Disassembly

ASA 100

BULB

on-off selector off



FILM-SPEED DIAL WITH CEMENTED
COVER DISC REMOVED

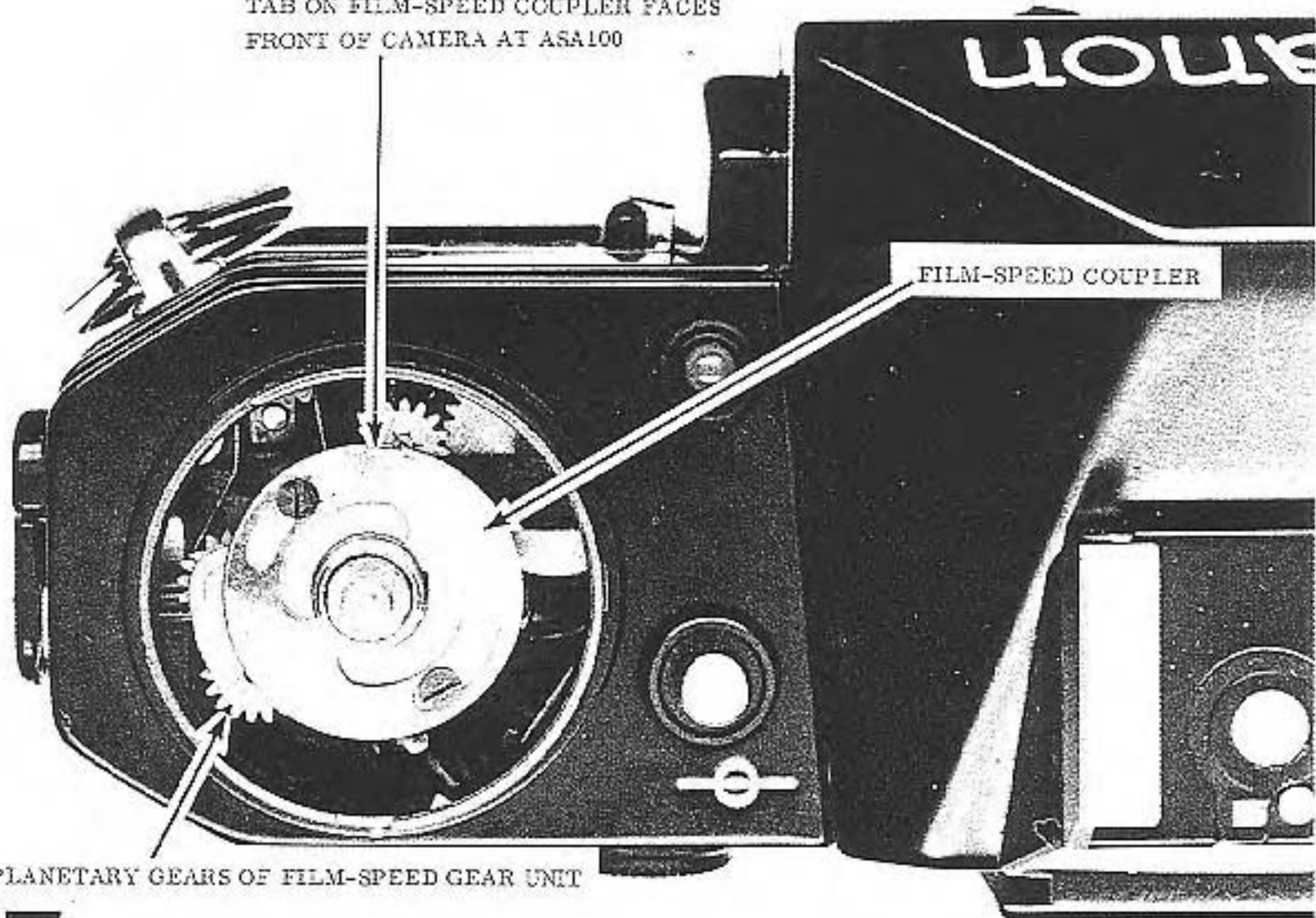
FORK ON FILM-SPEED DIAL STRADDLES TAB ON FILM-SPEED COUPLER

SCREWS FOR MINOR ADJUSTMENTS ONCE TOP COVER IS INSTALLED

TAB ON FILM-SPEED COUPLER FACES
FRONT OF CAMERA AT ASA100

FILM-SPEED COUPLER

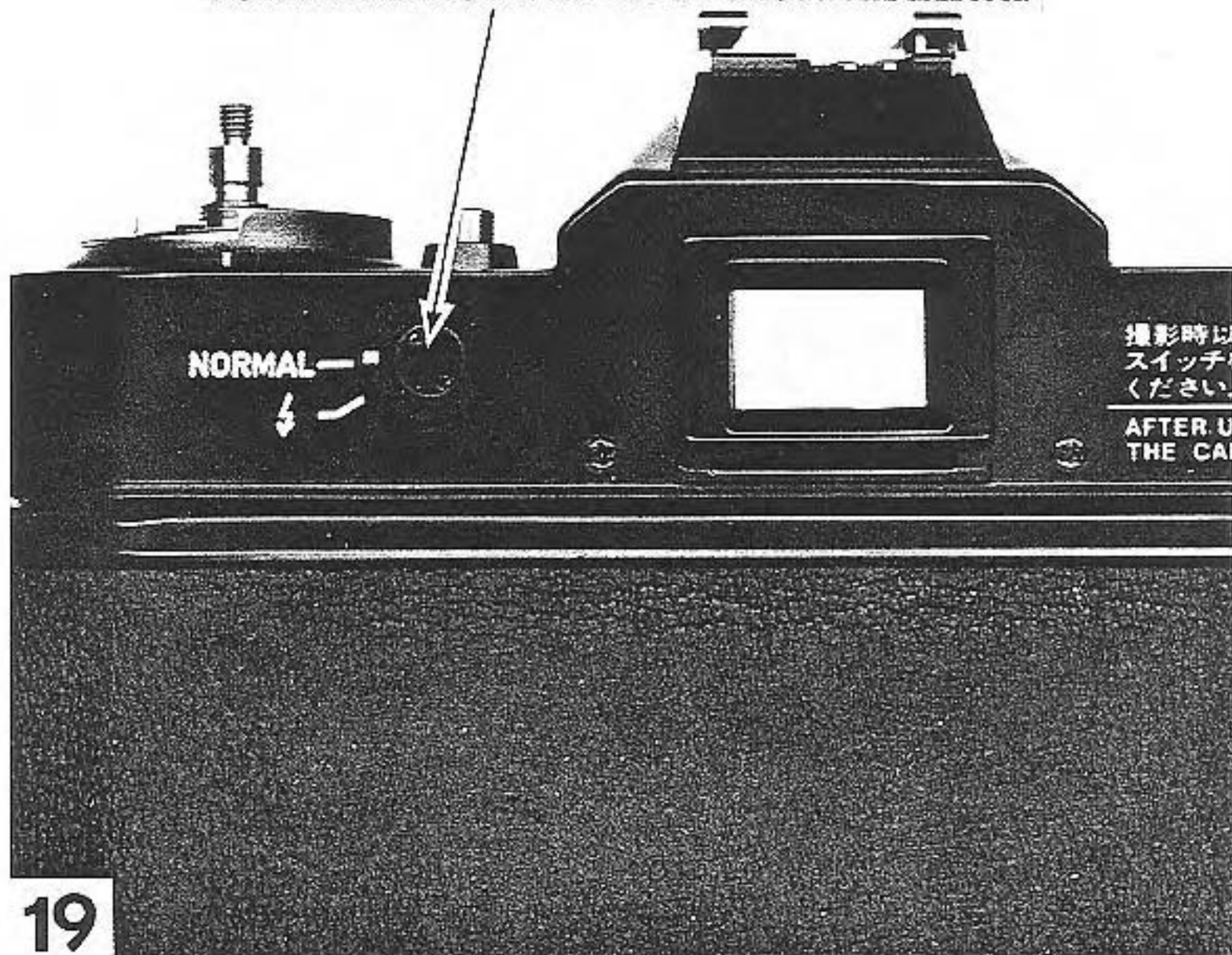
PLANETARY GEARS OF FILM-SPEED GEAR UNIT



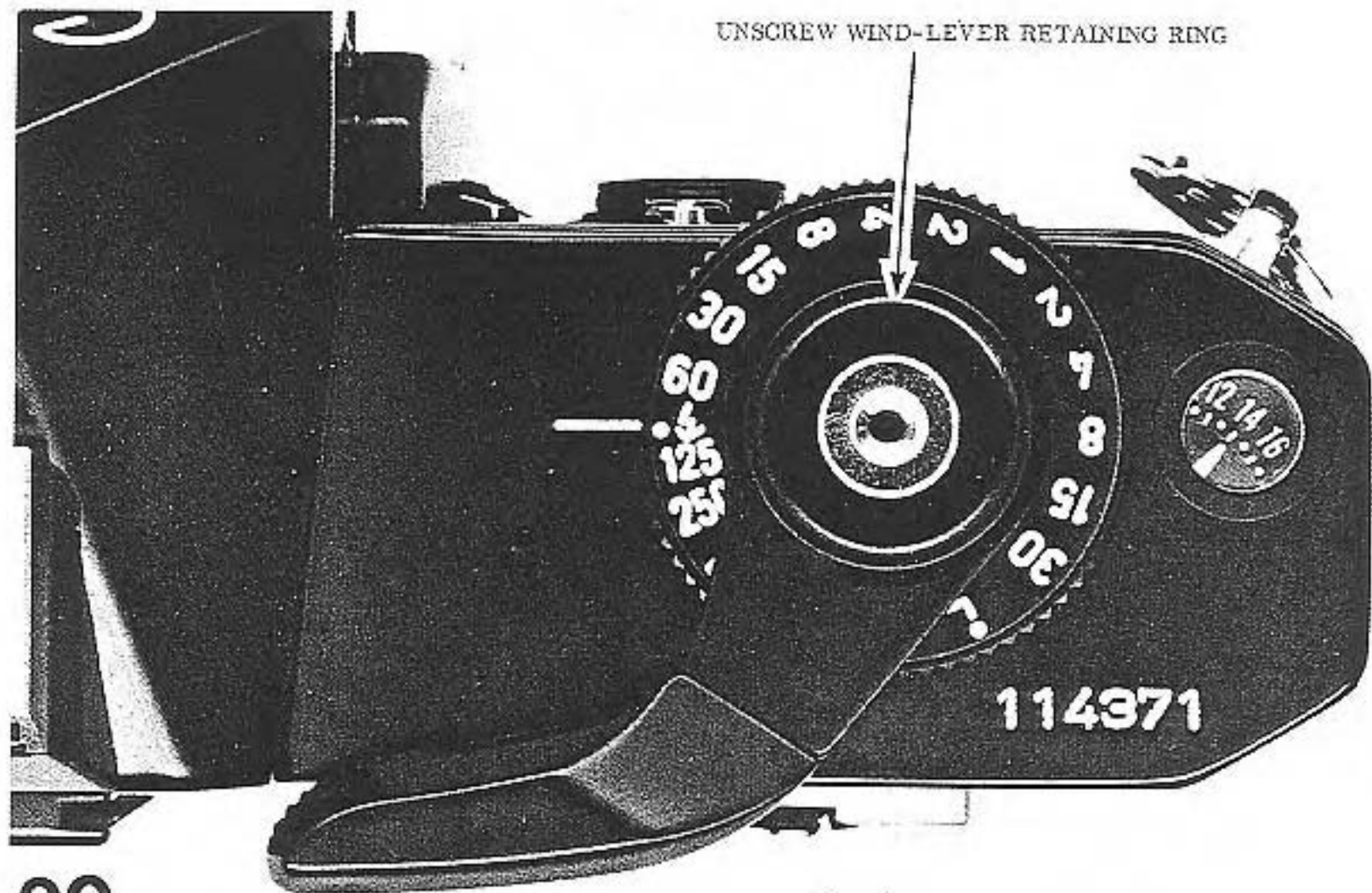
SPECIAL TOOL MAY BE SCREWED ONTO
RETAINING-RING THREADS TO HOLD
PARTS IN ASA100 POSITION

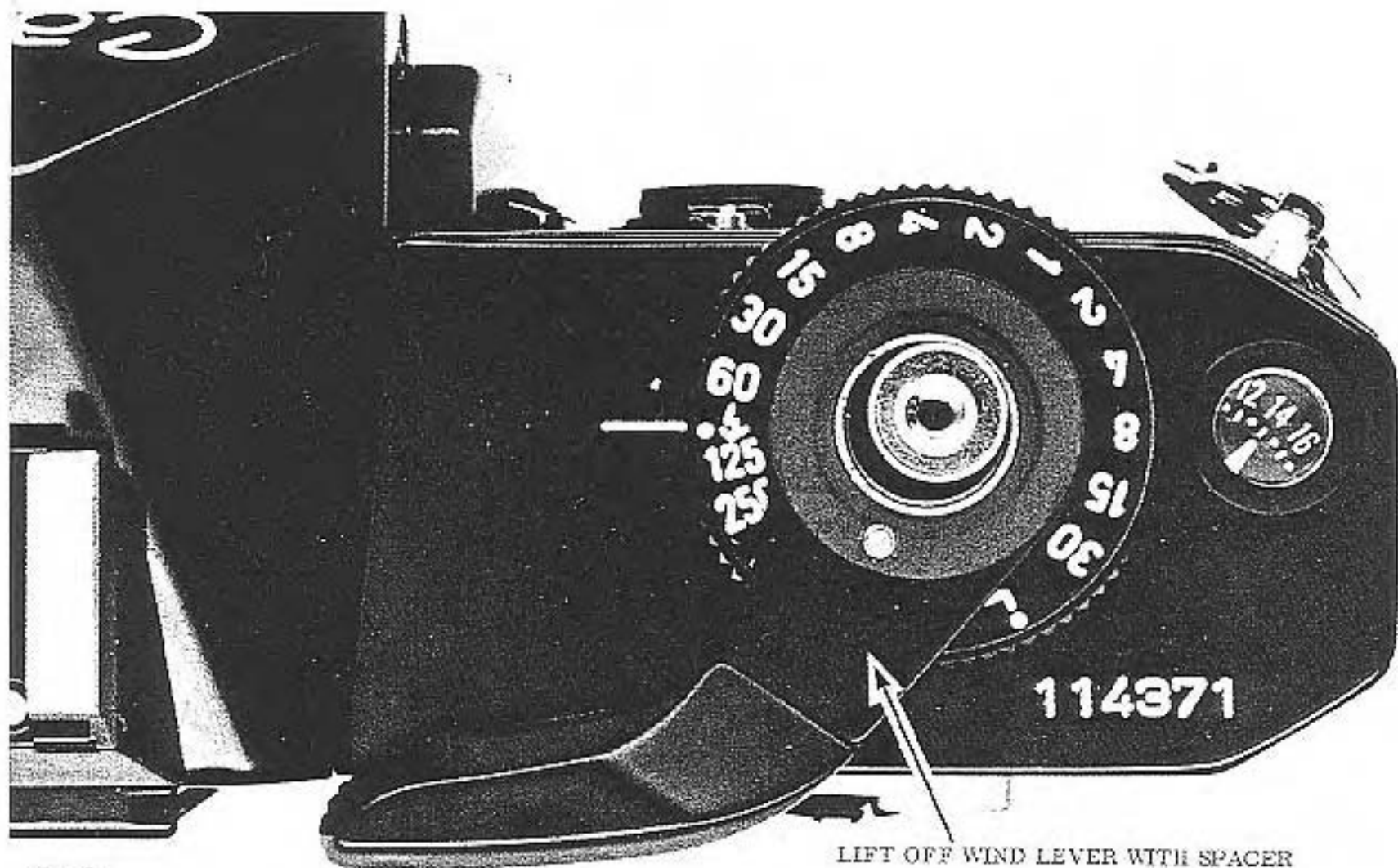


UNSCREW RETAINING SCREW AND LIFT OFF CATS-NORMAL SELECTOR

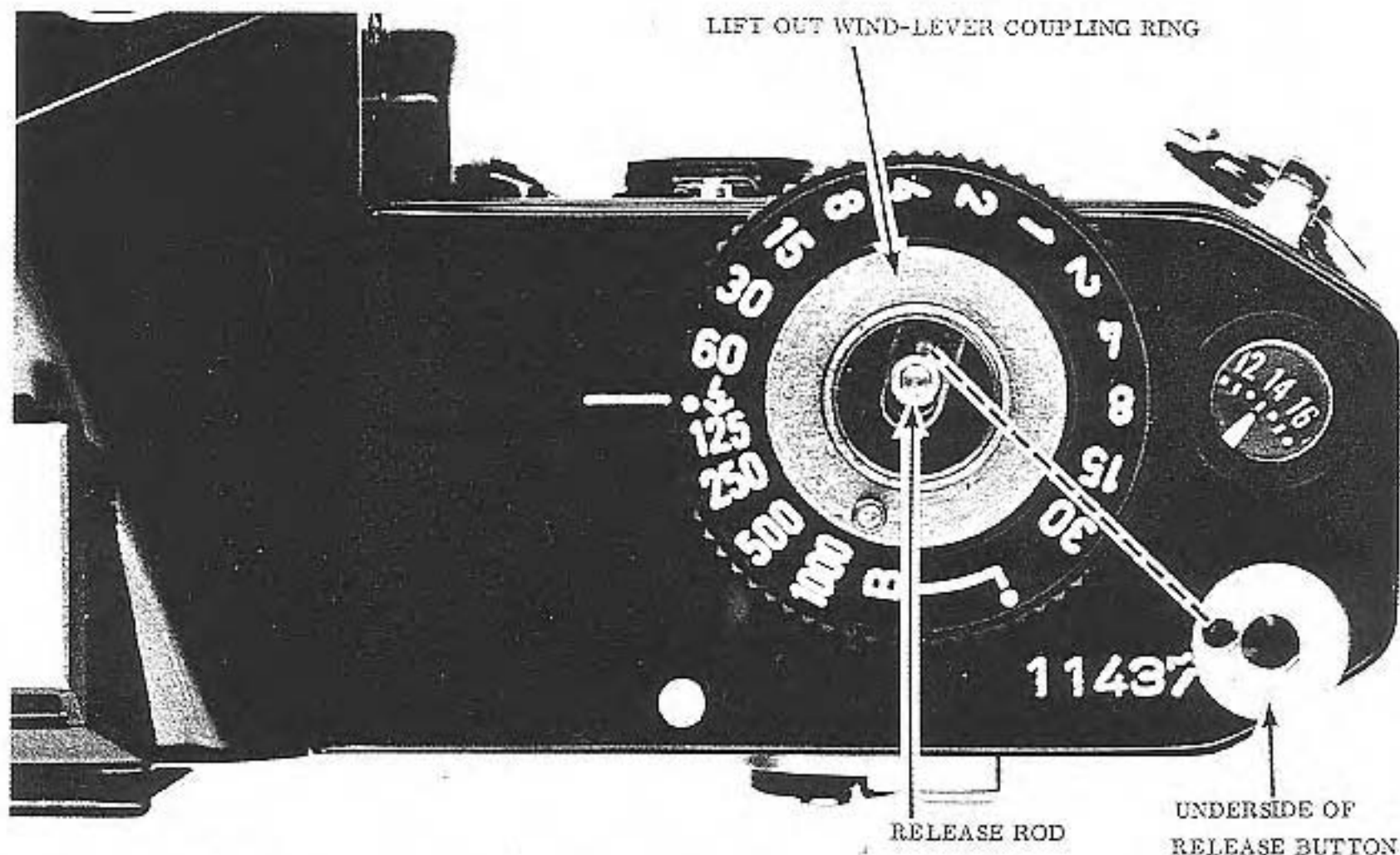


UNSCREW WIND-LEVER RETAINING RING





LIFT OFF WIND LEVER WITH SPACER



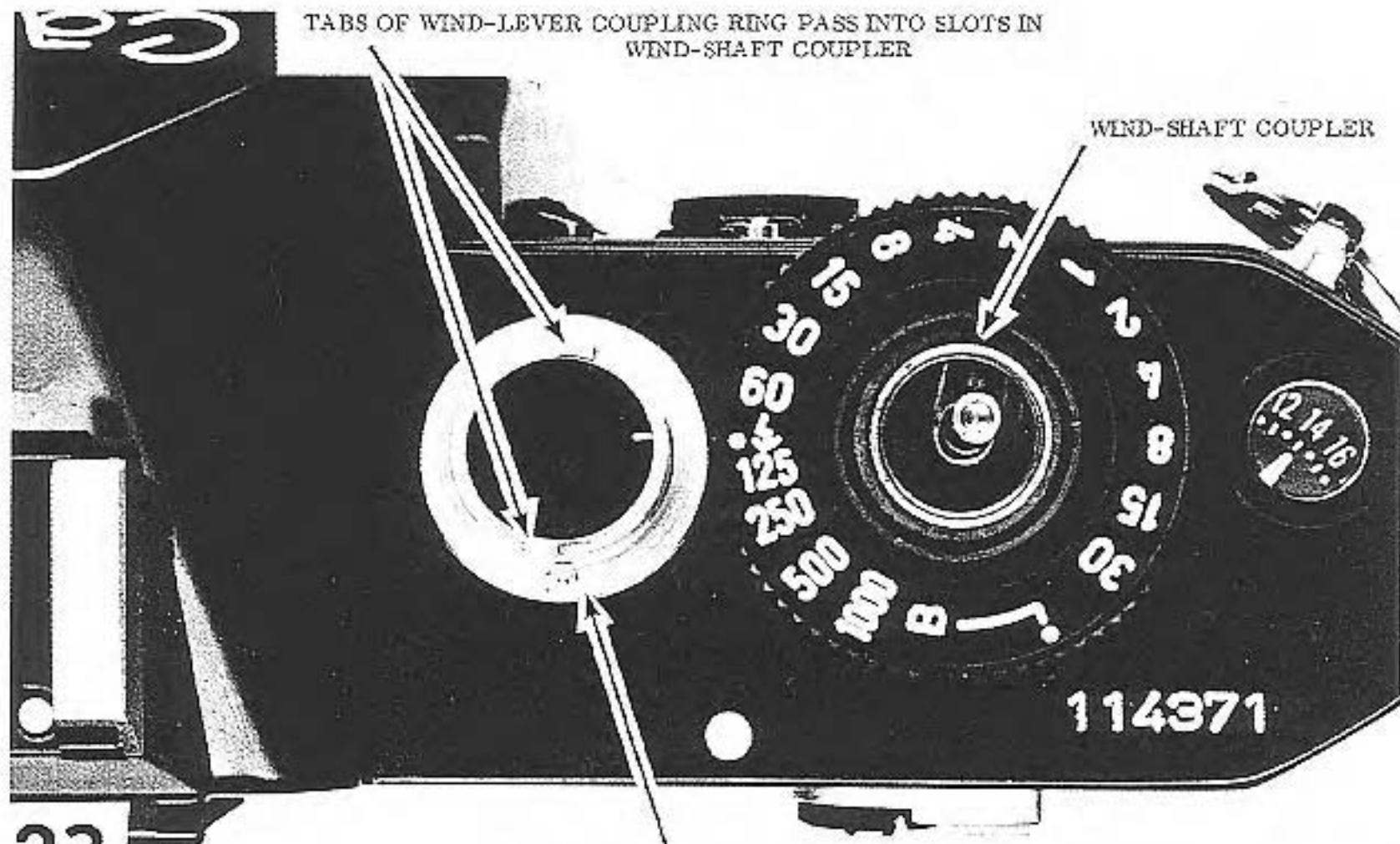
NOTE: IT'S NOT NECESSARY TO REMOVE THE
RELEASE BUTTON; IF YOU DO, NOTE THE HOLE
IN THE RELEASE BUTTON THAT FITS OVER THE
PIN ON THE RELEASE ROD

TABS OF WIND-LEVER COUPLING RING PASS INTO SLOTS IN
WIND-SHAFT COUPLER

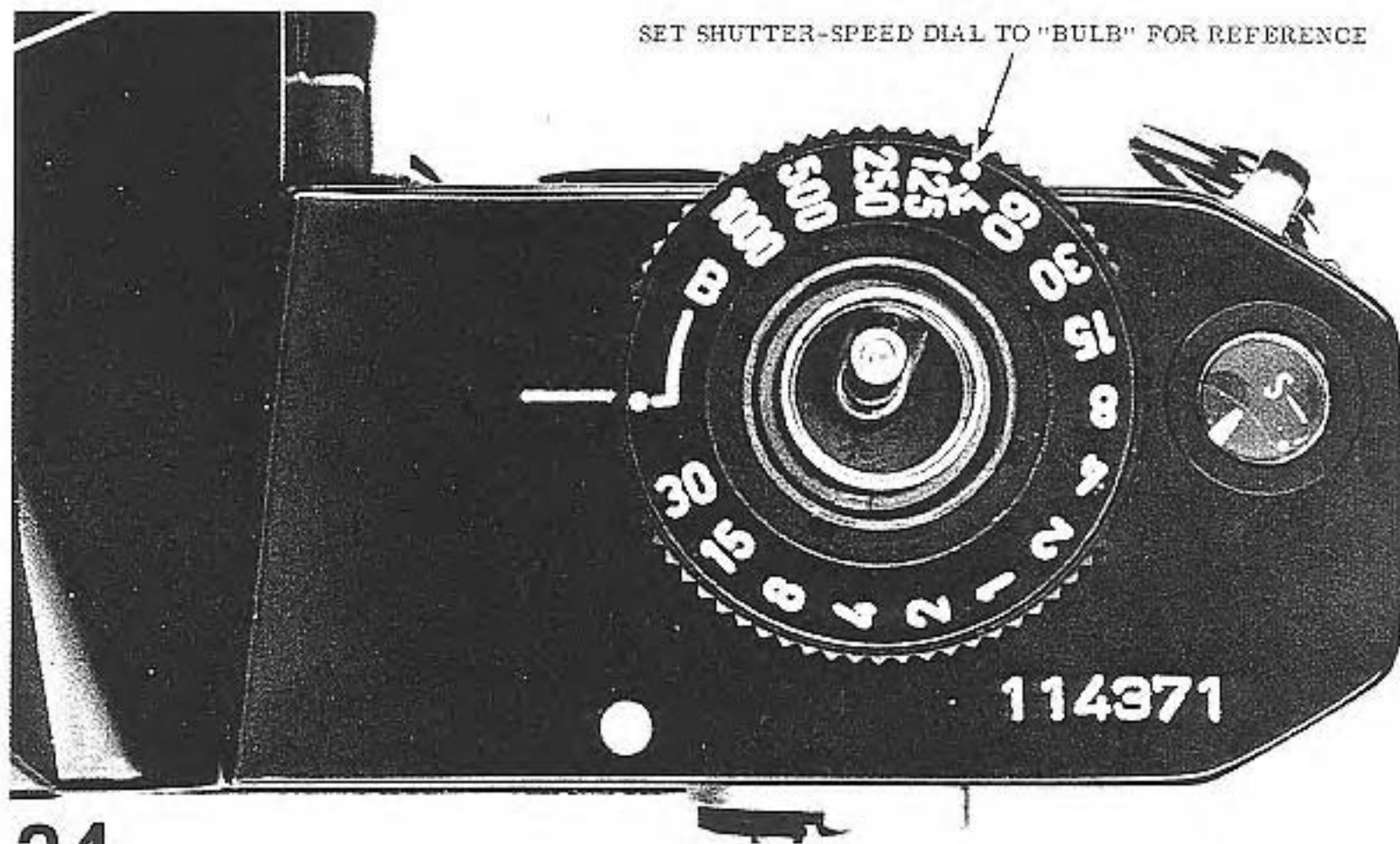
WIND-SHAFT COUPLER

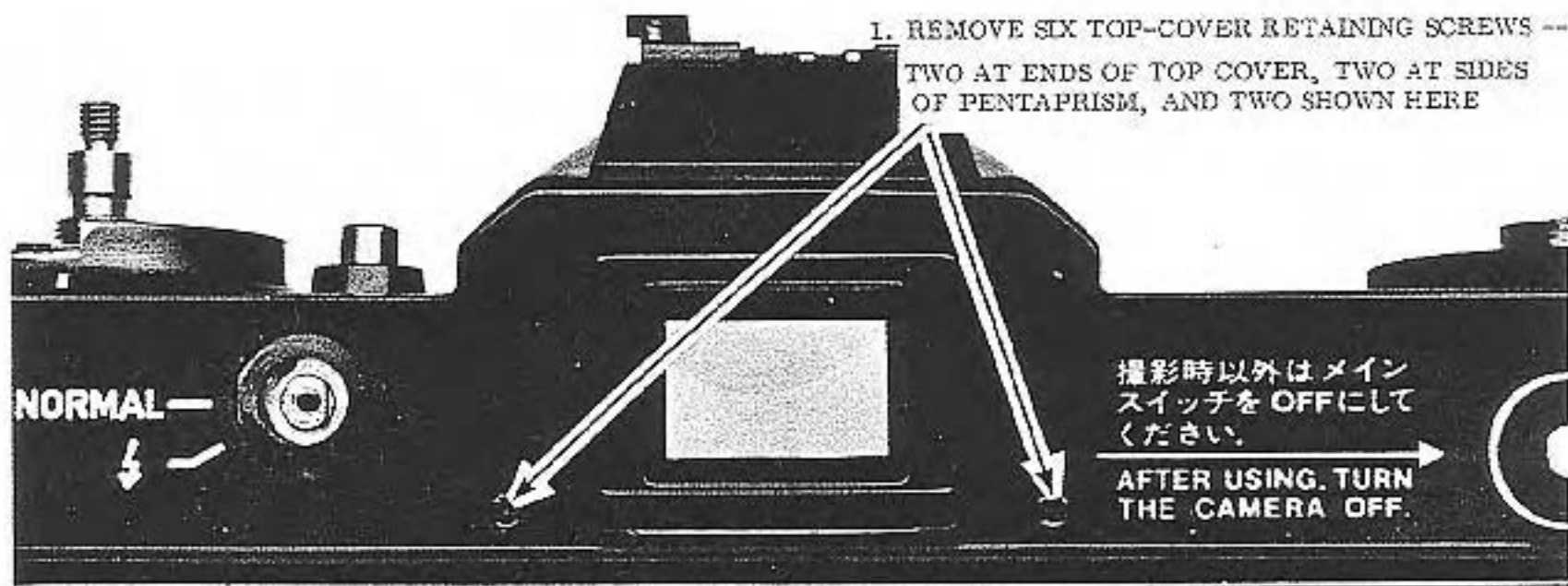
UNDERSIDE OF WIND-LEVER COUPLING RING

23



SET SHUTTER-SPEED DIAL TO "BULB" FOR REFERENCE



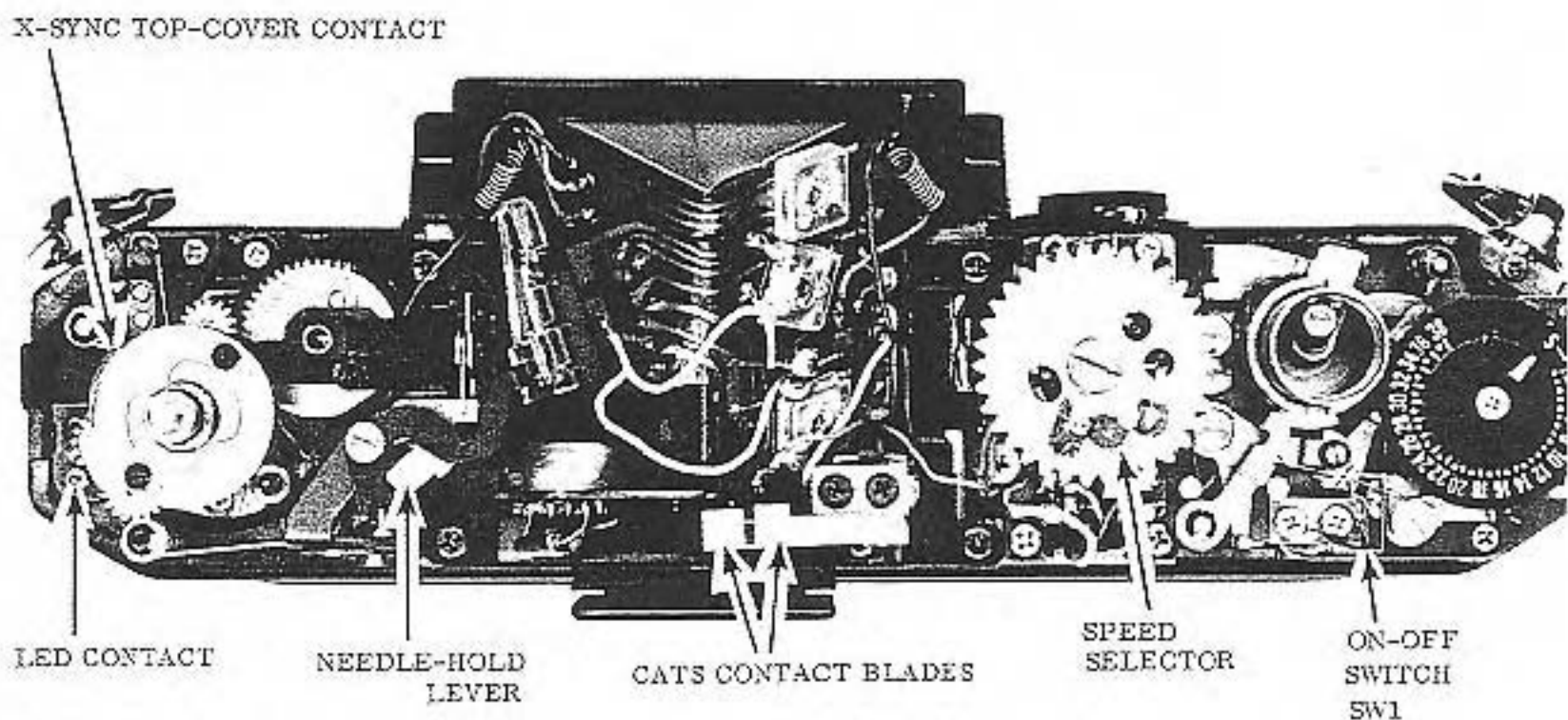
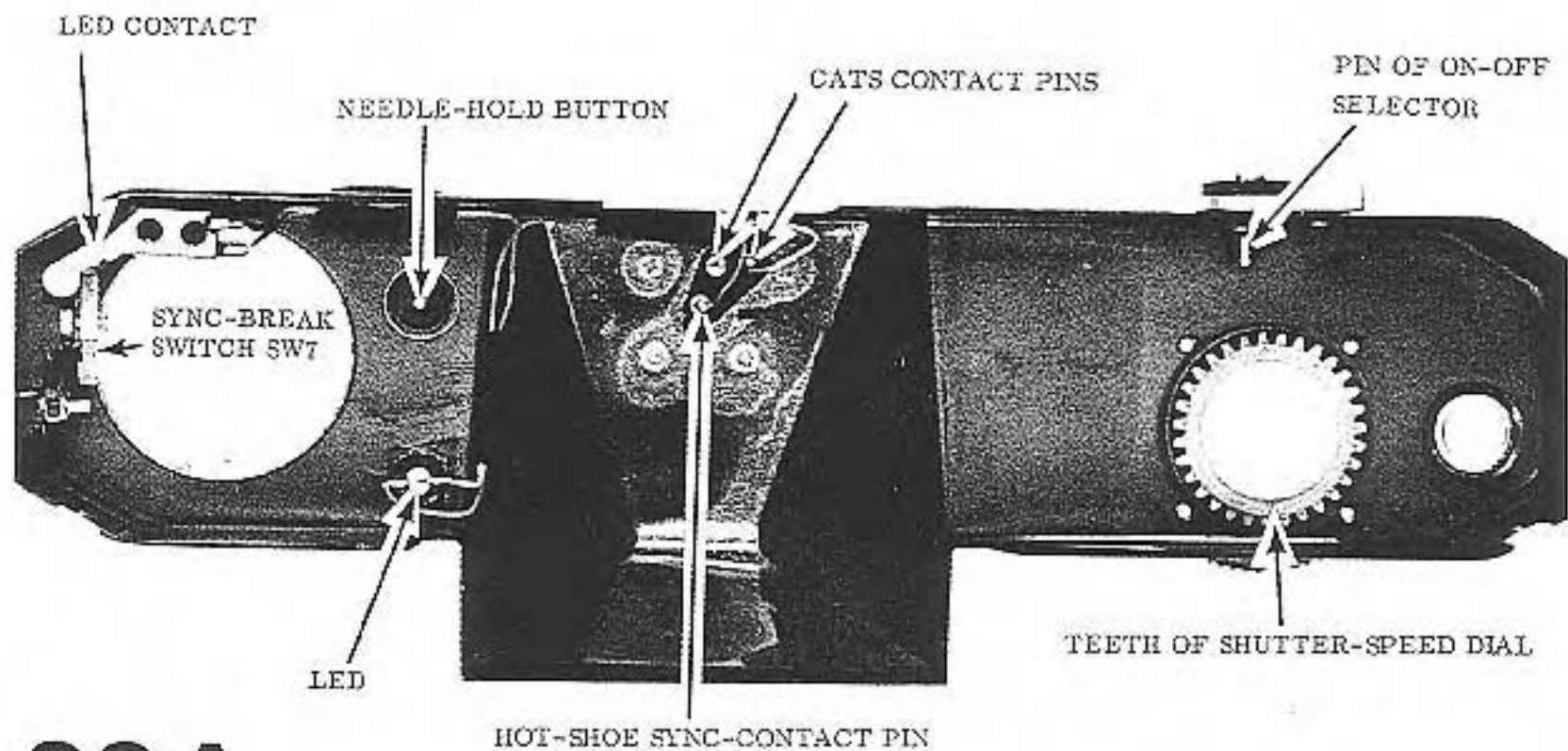


1. REMOVE SIX TOP-COVER RETAINING SCREWS --
TWO AT ENDS OF TOP COVER, TWO AT SIDES
OF PENTAPRISM, AND TWO SHOWN HERE

撮影時以外はメイン
スイッチを OFF にして
ください。

AFTER USING. TURN
THE CAMERA OFF.

2. LIFT OFF TOP COVER

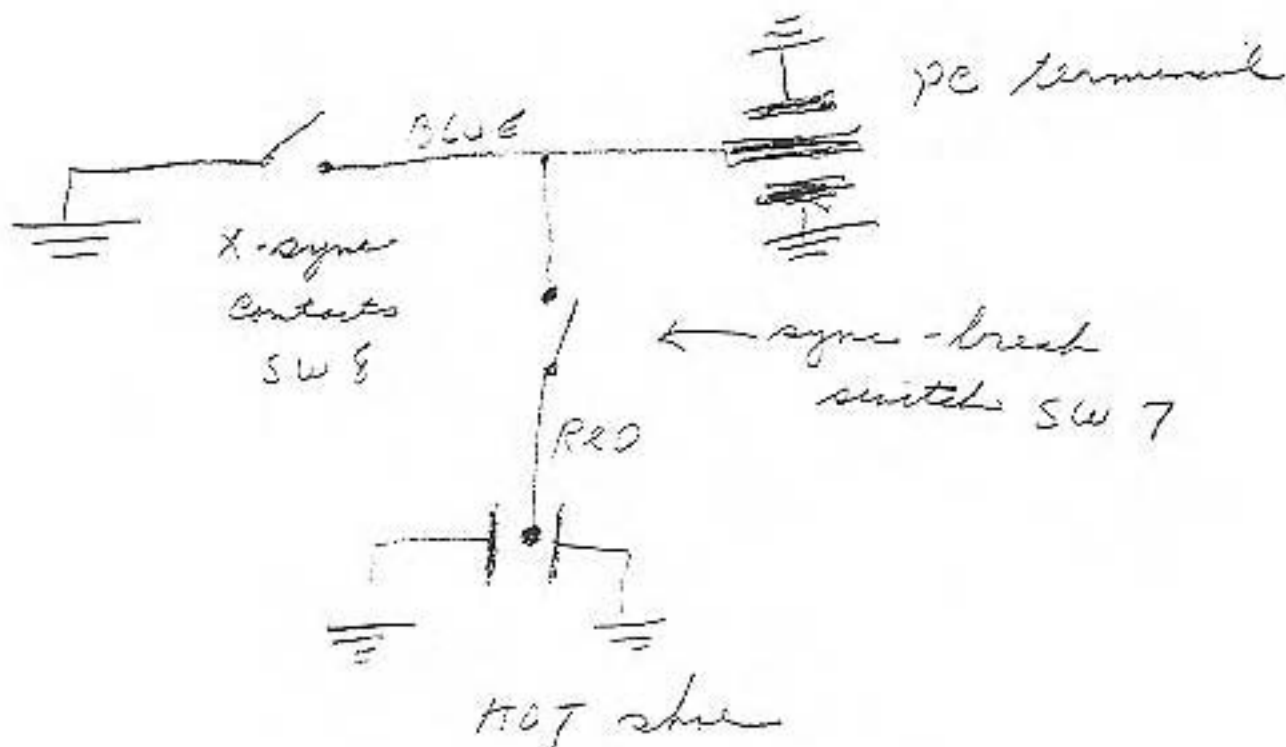




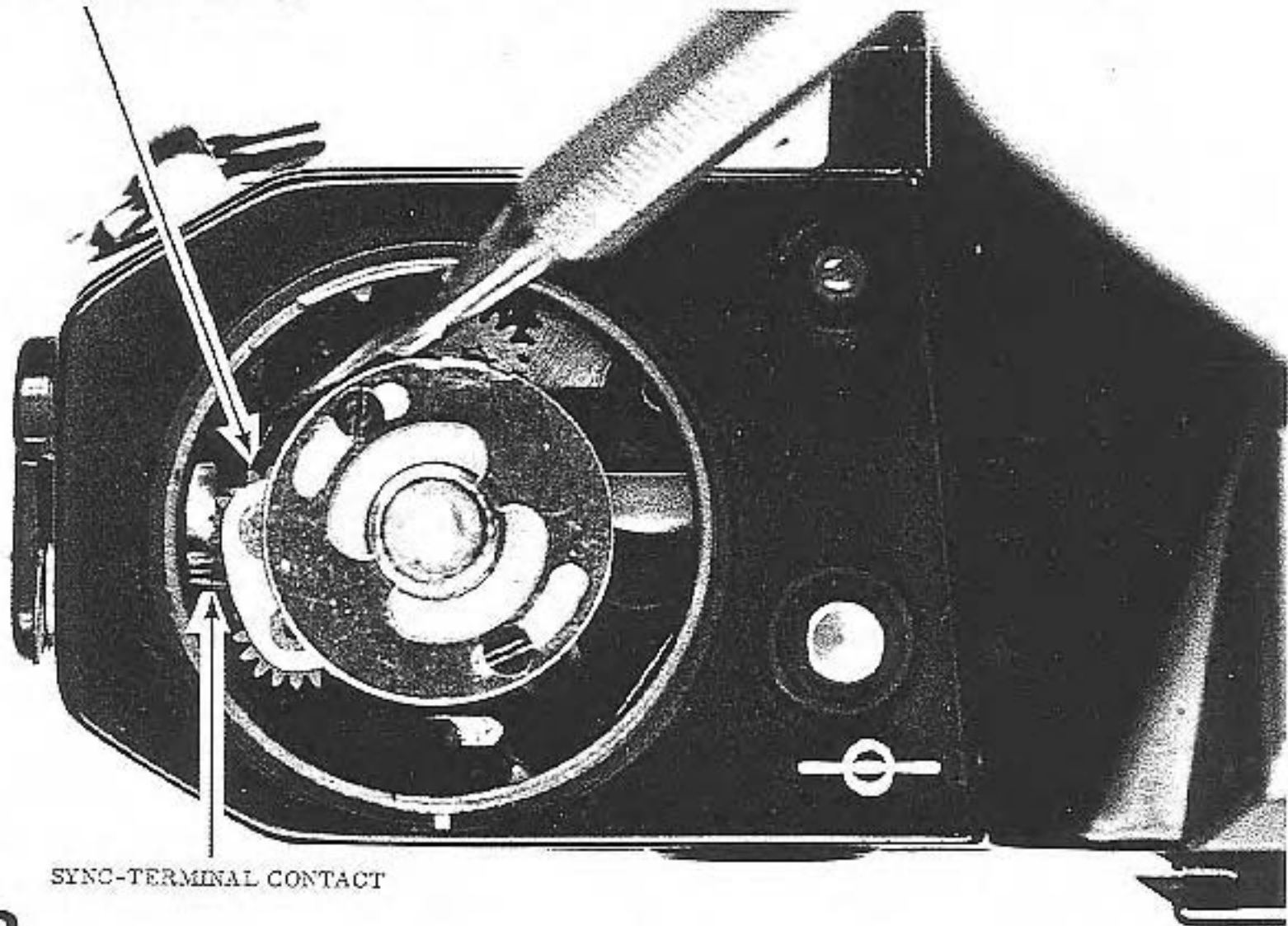
LED

THE LED SHOULD GLOW WITH 2 VOLTS
APPLIED ACROSS THE TERMINALS

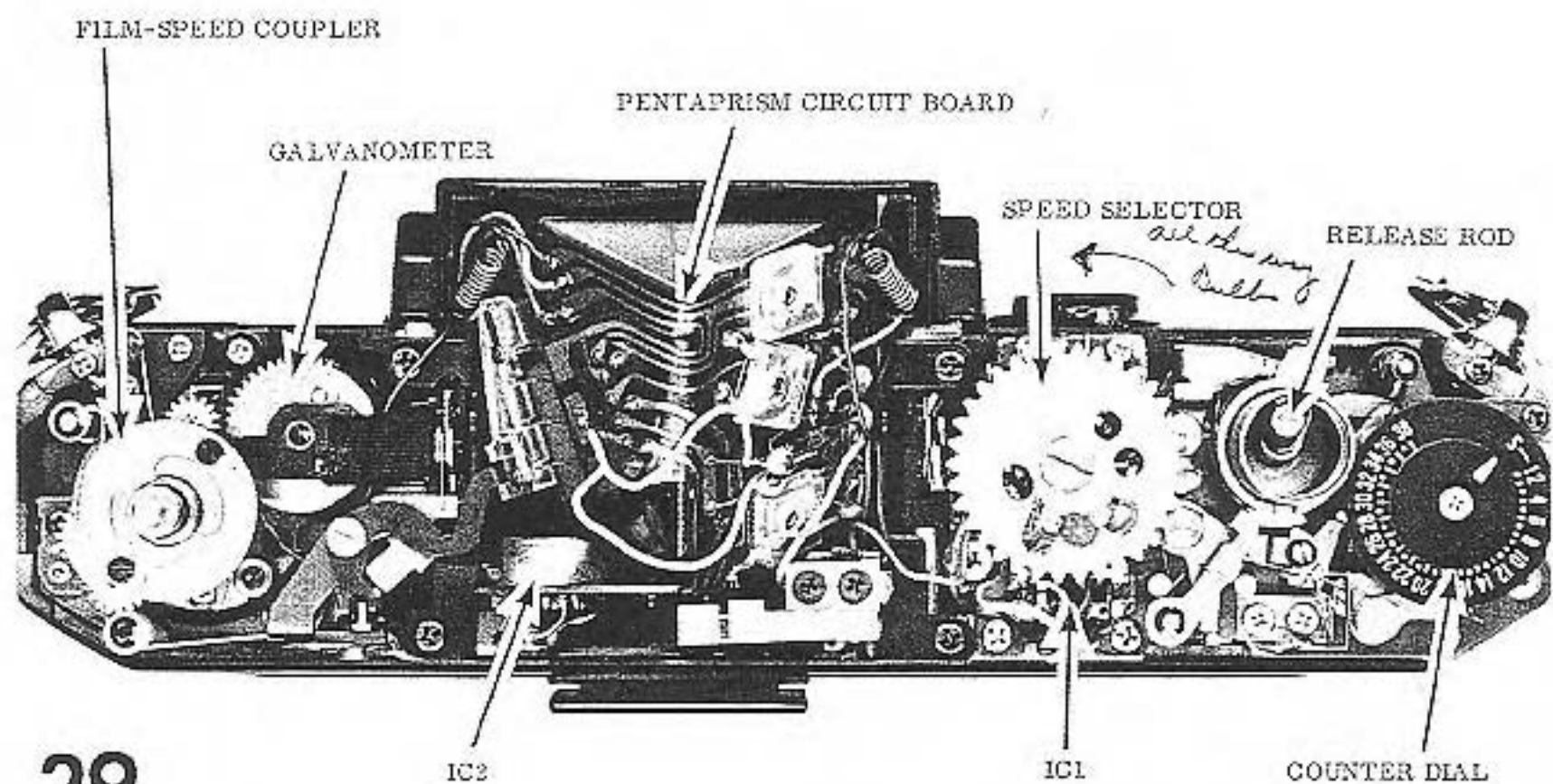
27



WHEN REPLACING THE TOP COVER, HOLD THE X-SYNC TOP-COVER CONTACT AWAY FROM THE SYNC-TERMINAL CONTACT



SYNC-TERMINAL CONTACT

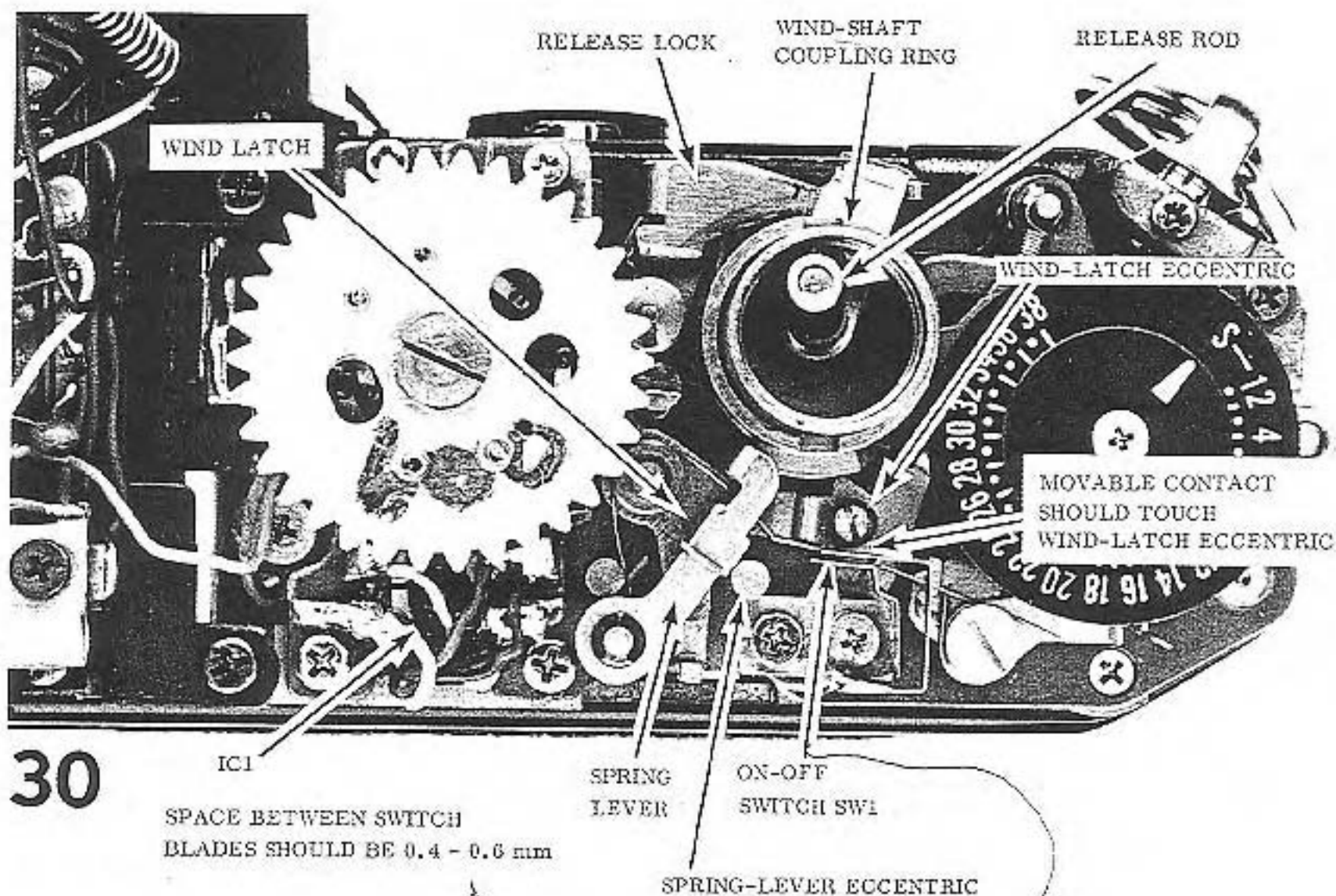


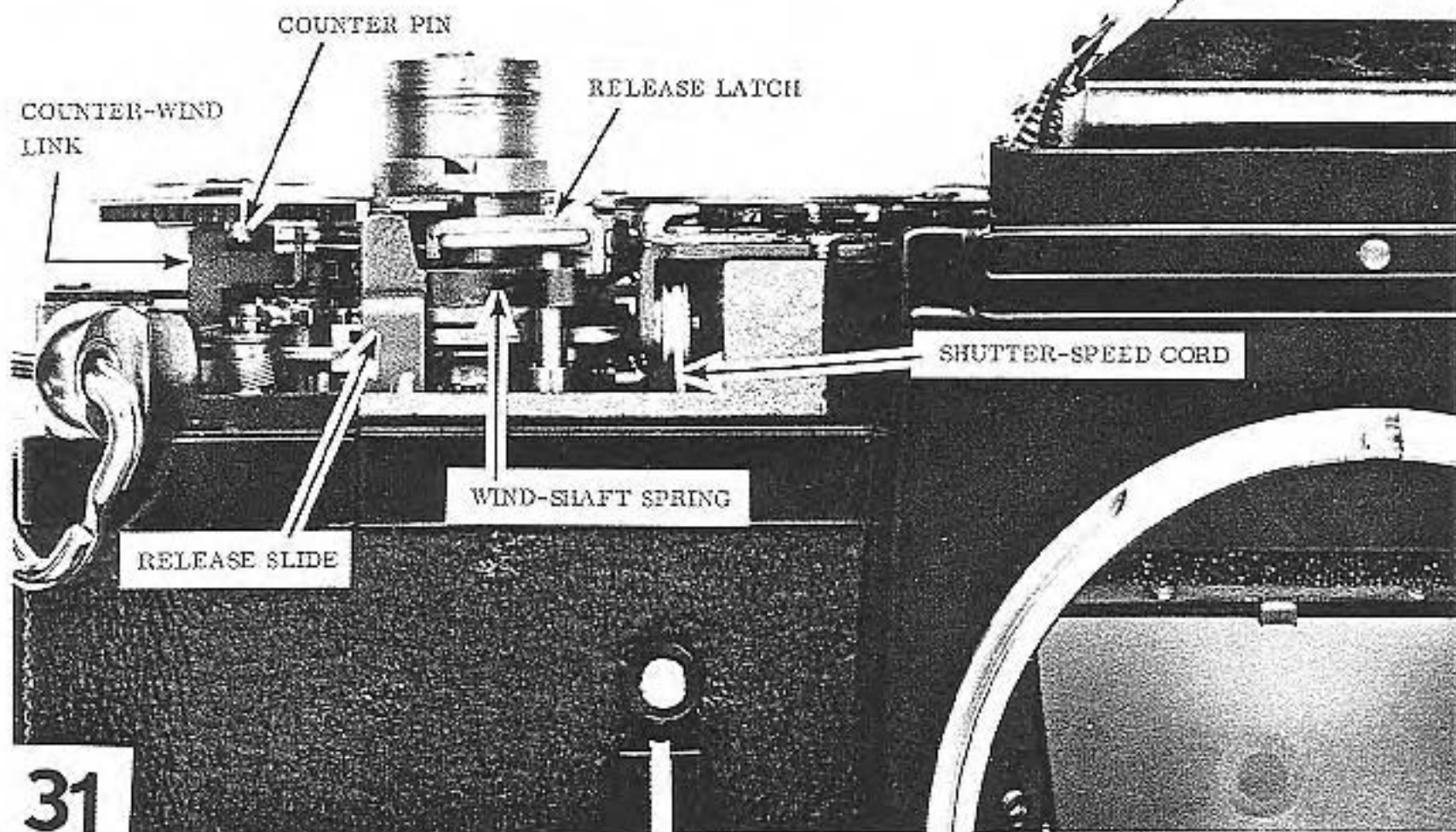
29

IC1 - Electromagnet switch

IC2 - magnet amplifier

when faulty - meter drops suddenly down

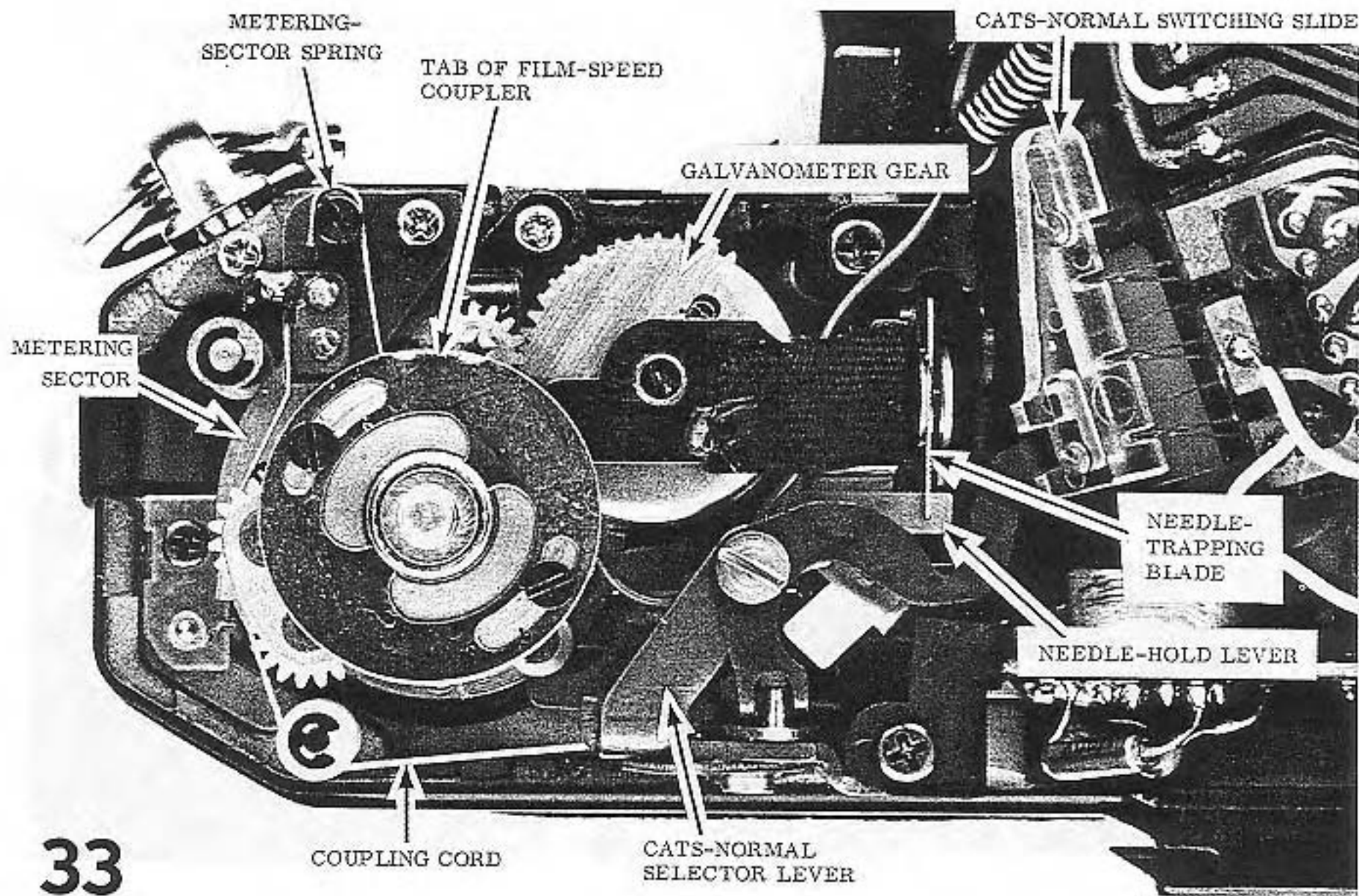


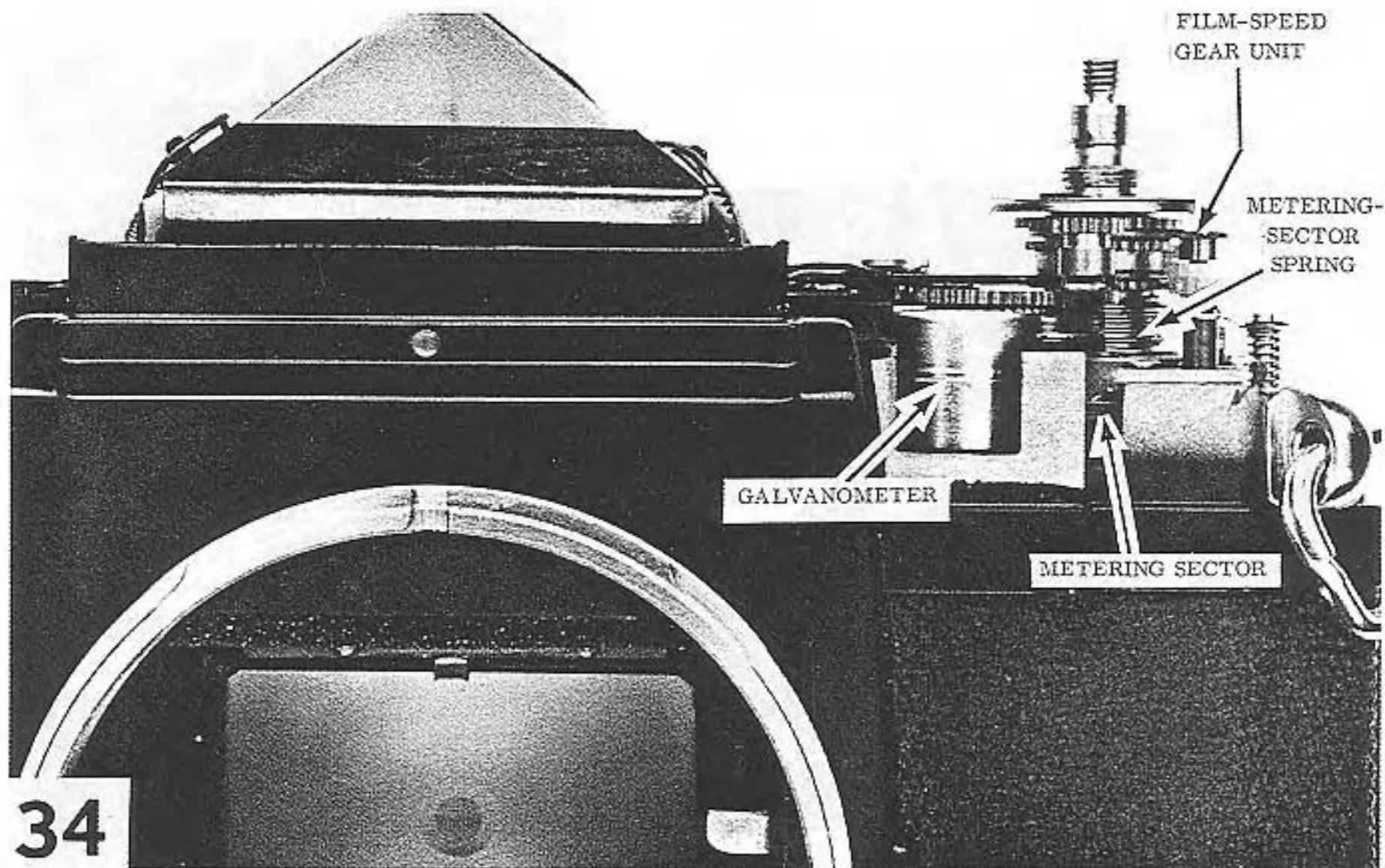


REPLACE WIND-LEVER PARTS TO OPERATE SHUTTER

PUSH WIND-LATCH TAB TO THE LEFT TO
DISENGAGE WIND-SHAFT COUPLING RING AND
COCK SHUTTER -- TO RELEASE SHUTTER,
PUSH DOWN RELEASE SLIDE

DOUBLE-EXPOSURE LEVER

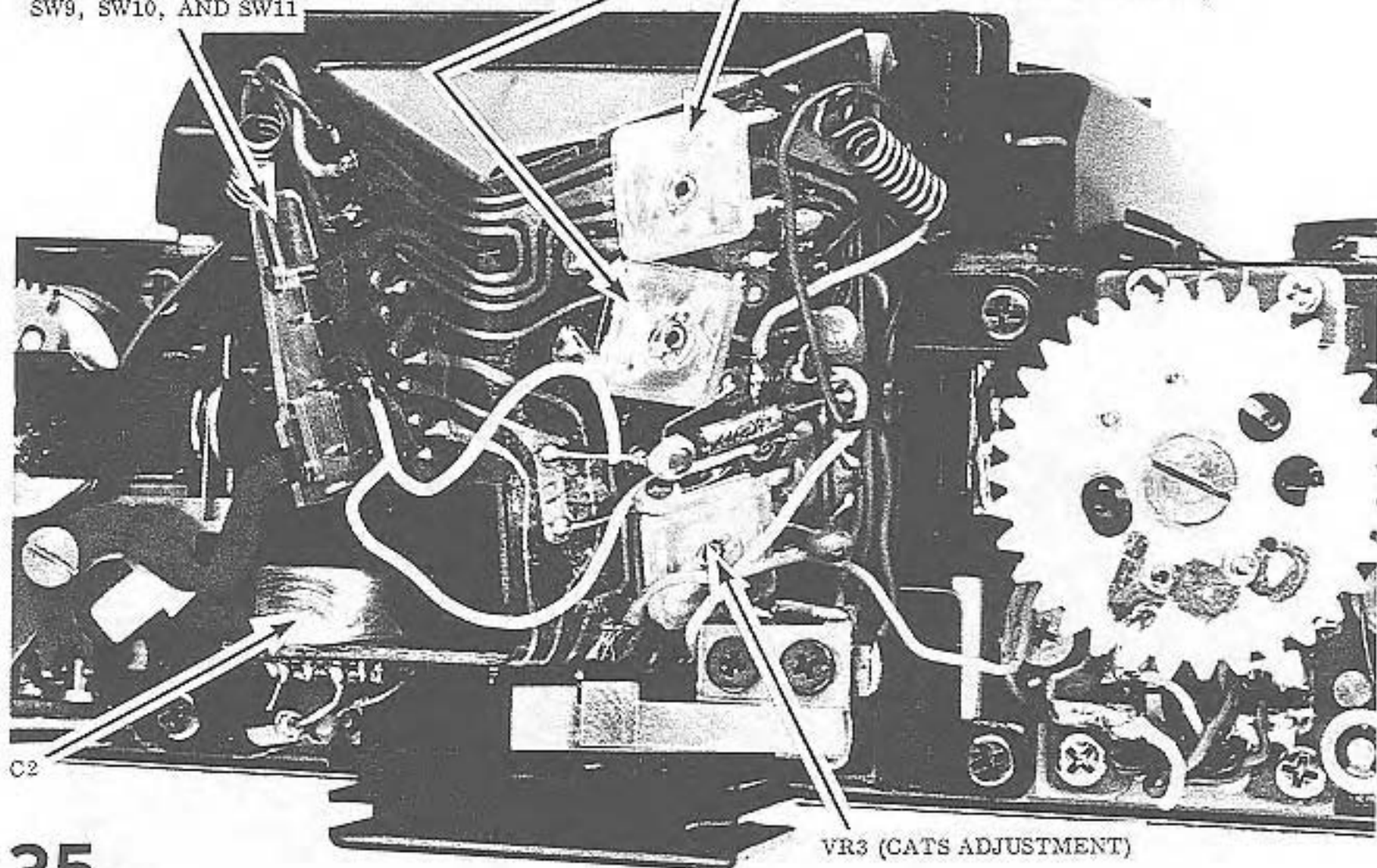


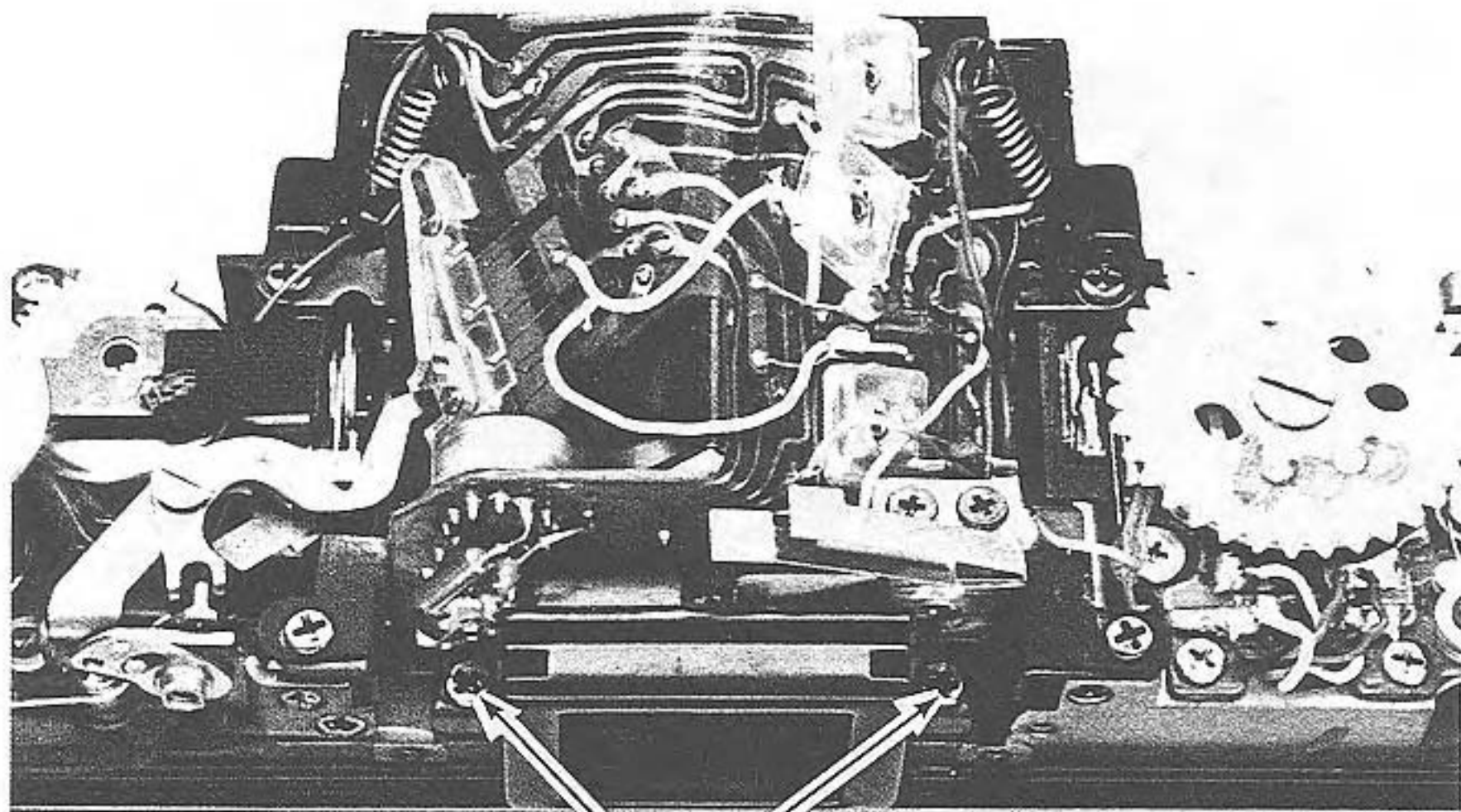


CATS-NORMAL SWITCHES
SW9, SW10, AND SW11

VR4 (METER RESPONSE ADJUSTMENT)

VR2 (METER LINEARITY ADJUSTMENT)





REMOVE TWO SCREWS AND LIFT OUT EYELENS

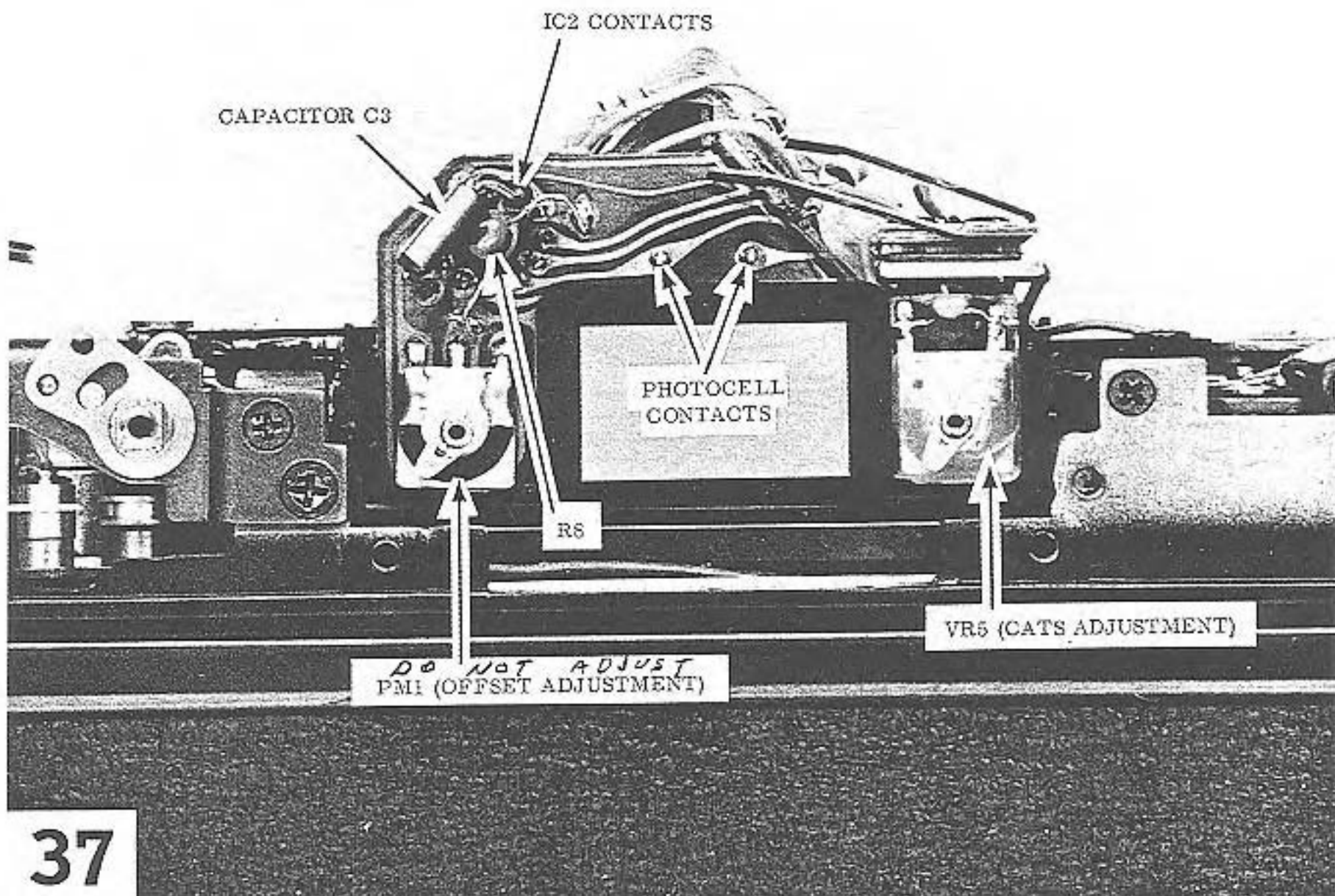
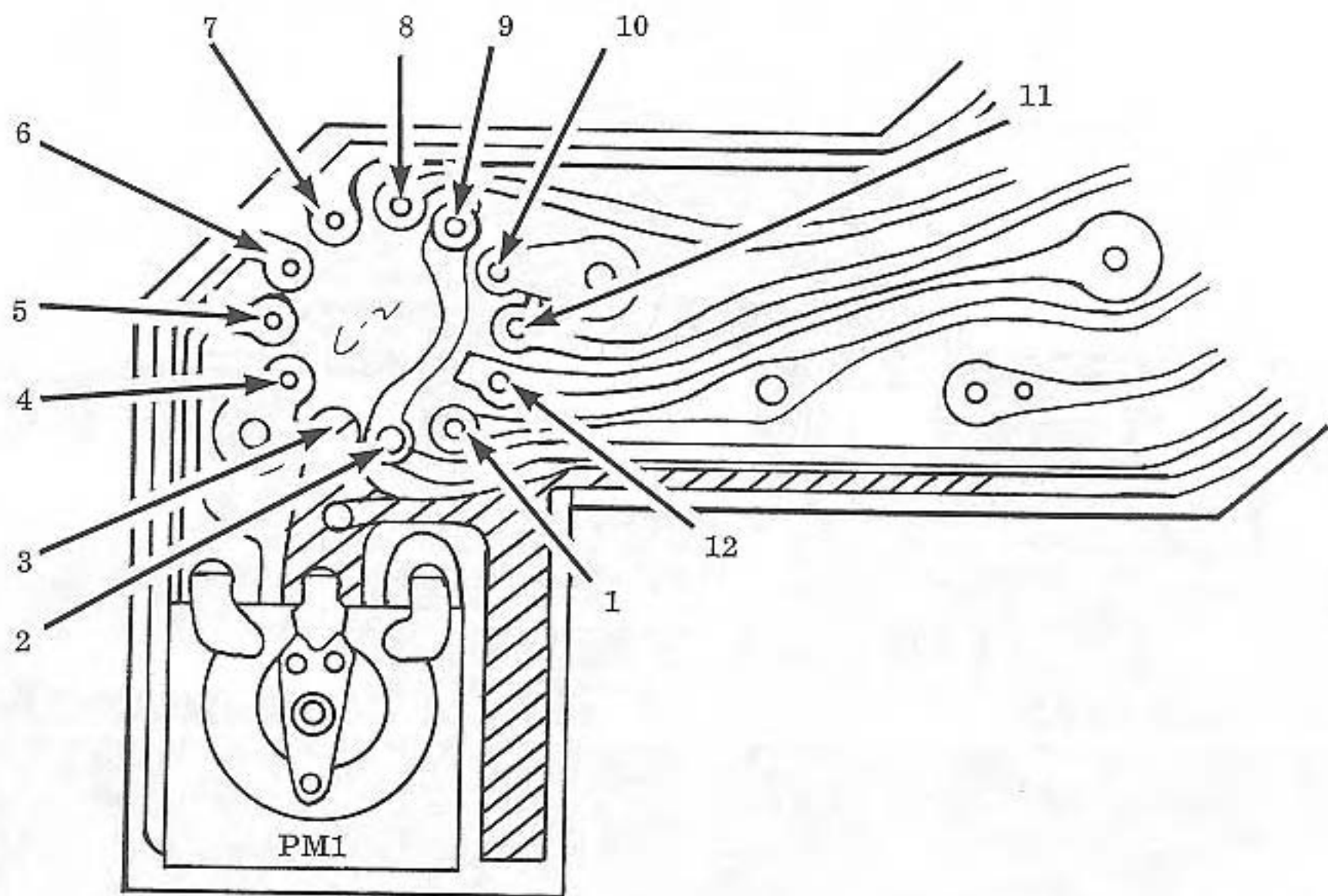


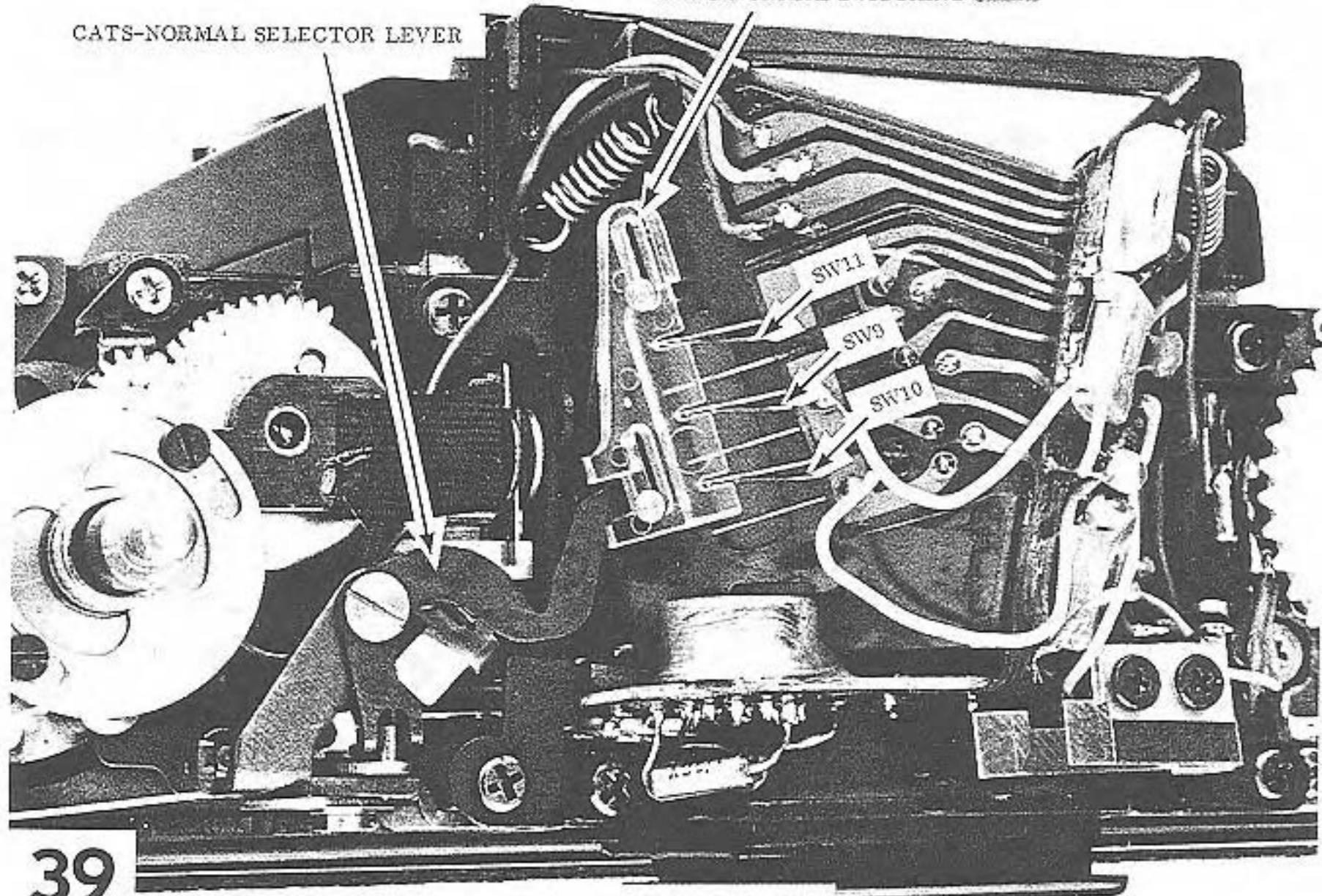
Photo cells





CATS-NORMAL SWITCHING SLIDE

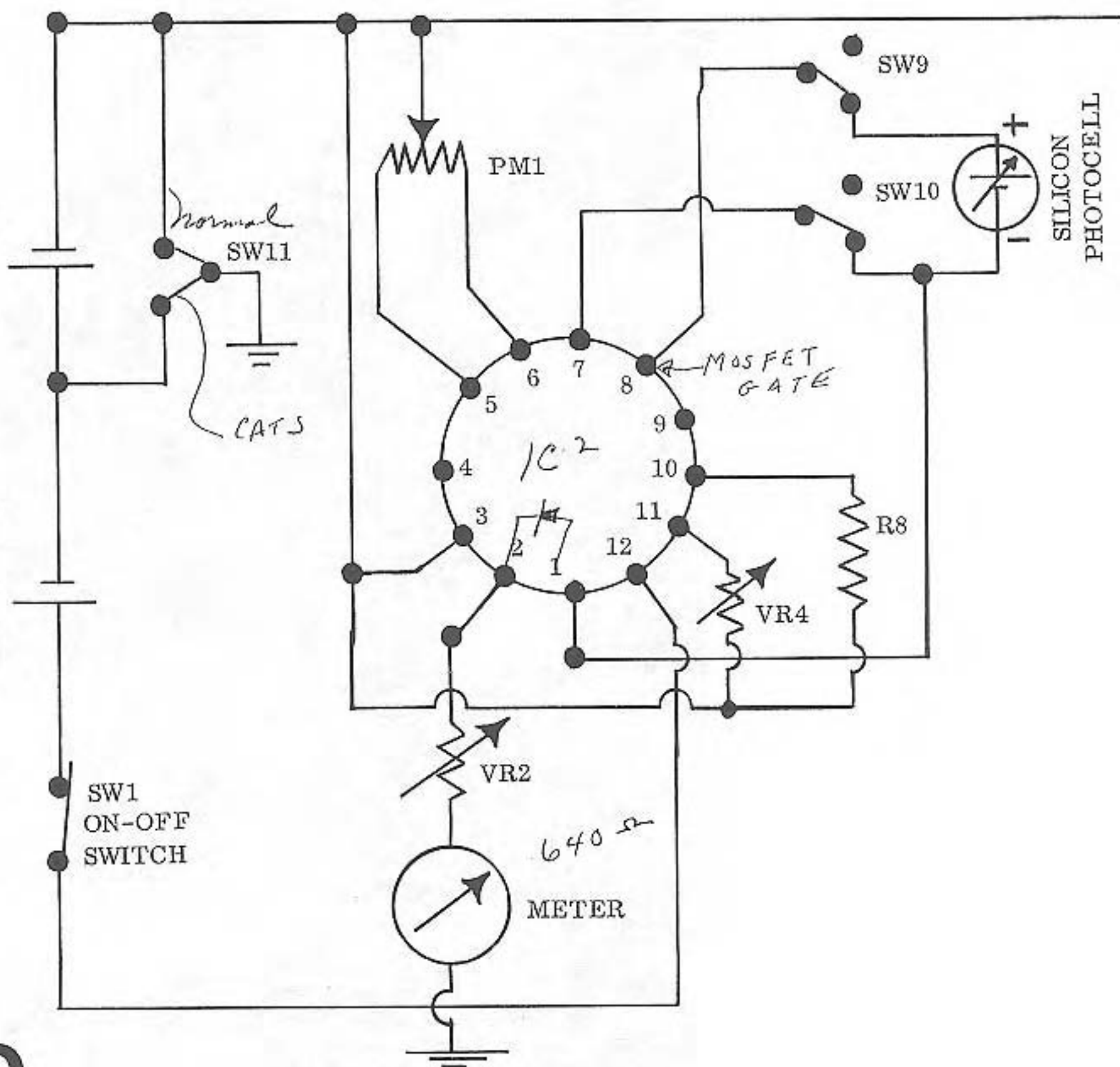
CATS-NORMAL SELECTOR LEVER

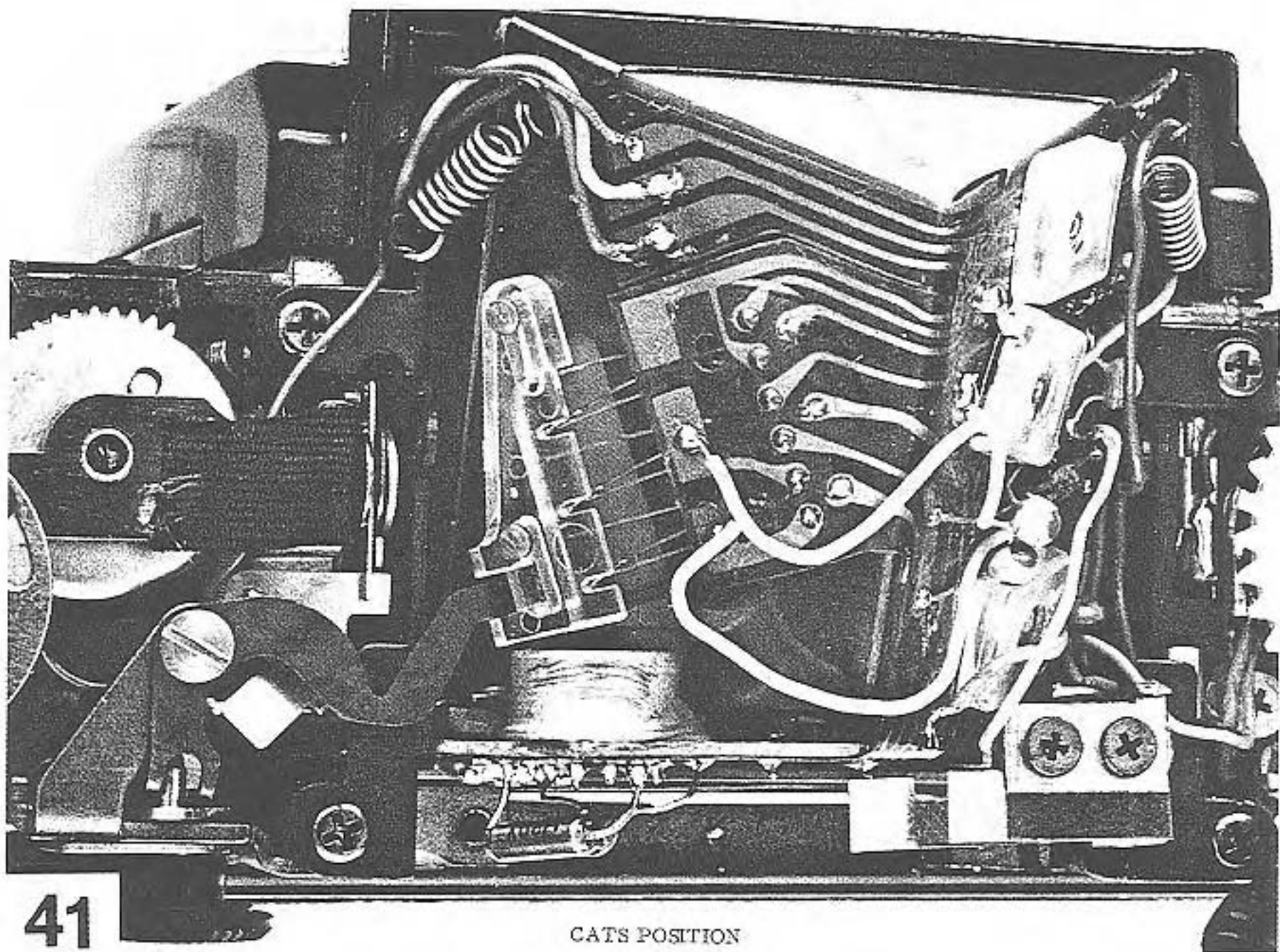


"NORMAL" POSITION

BATTERY #1

BATTERY #2

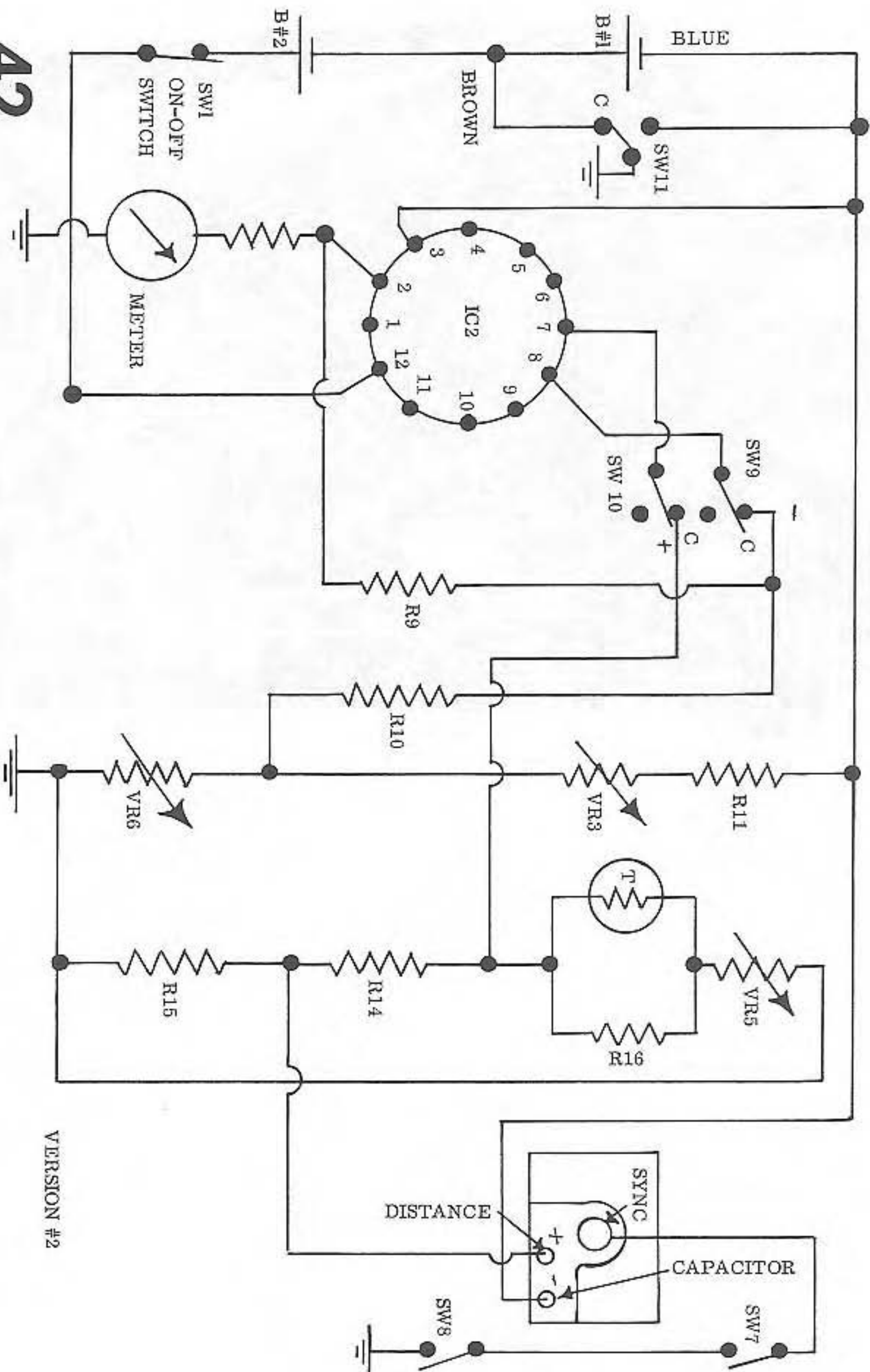




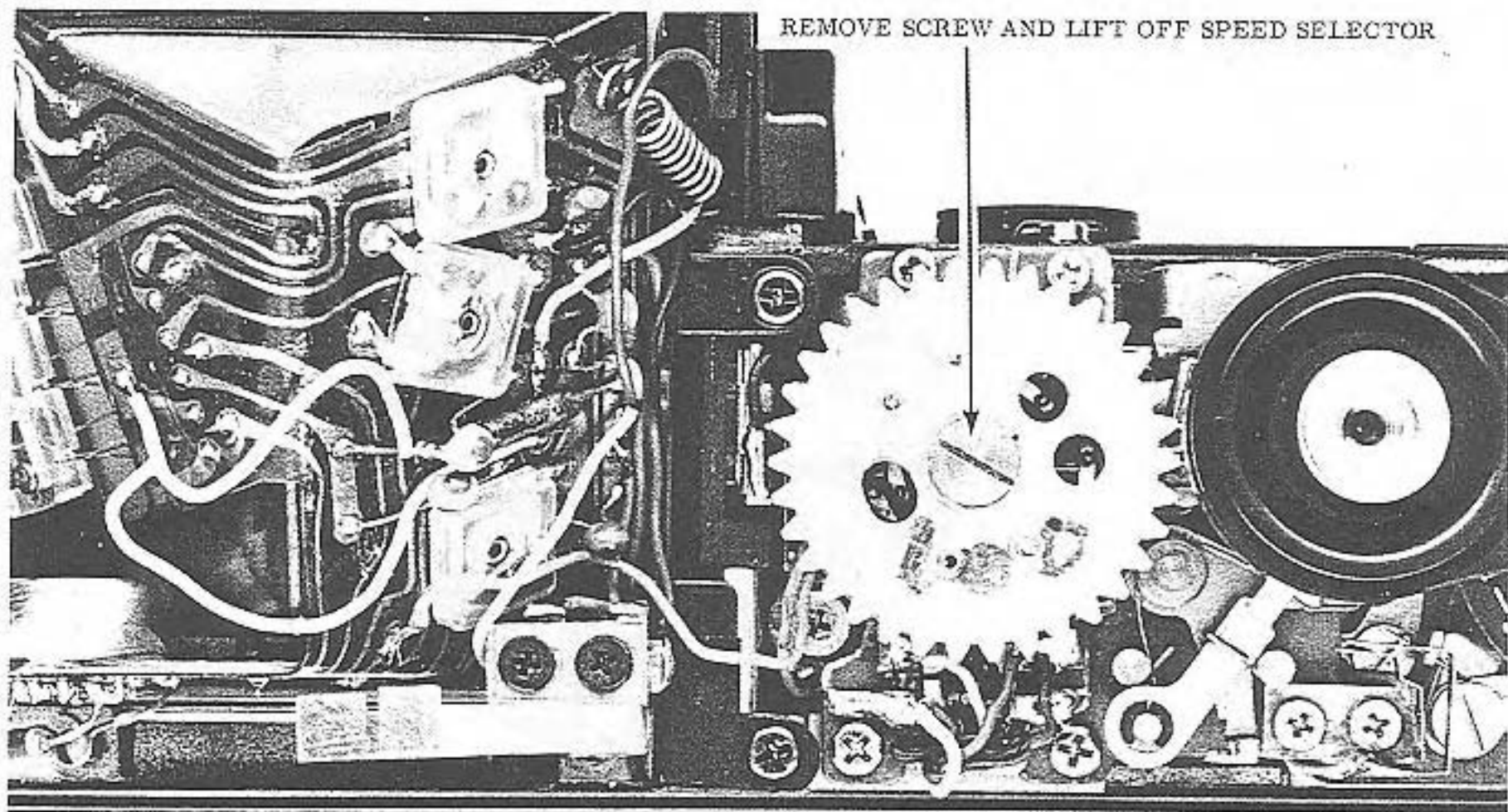
41

CATS POSITION

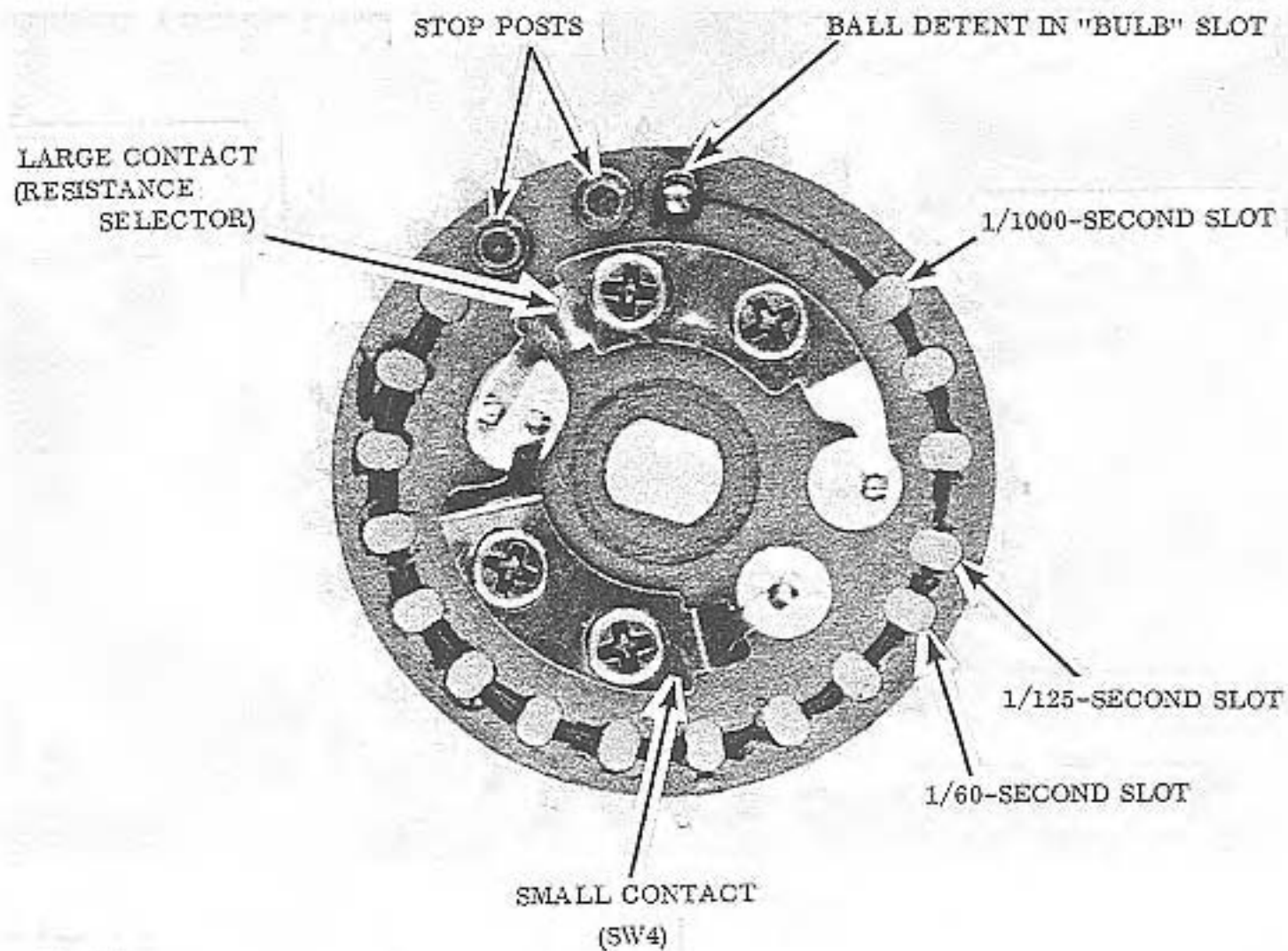
CATS CIRCUIT



REMOVE SCREW AND LIFT OFF SPEED SELECTOR

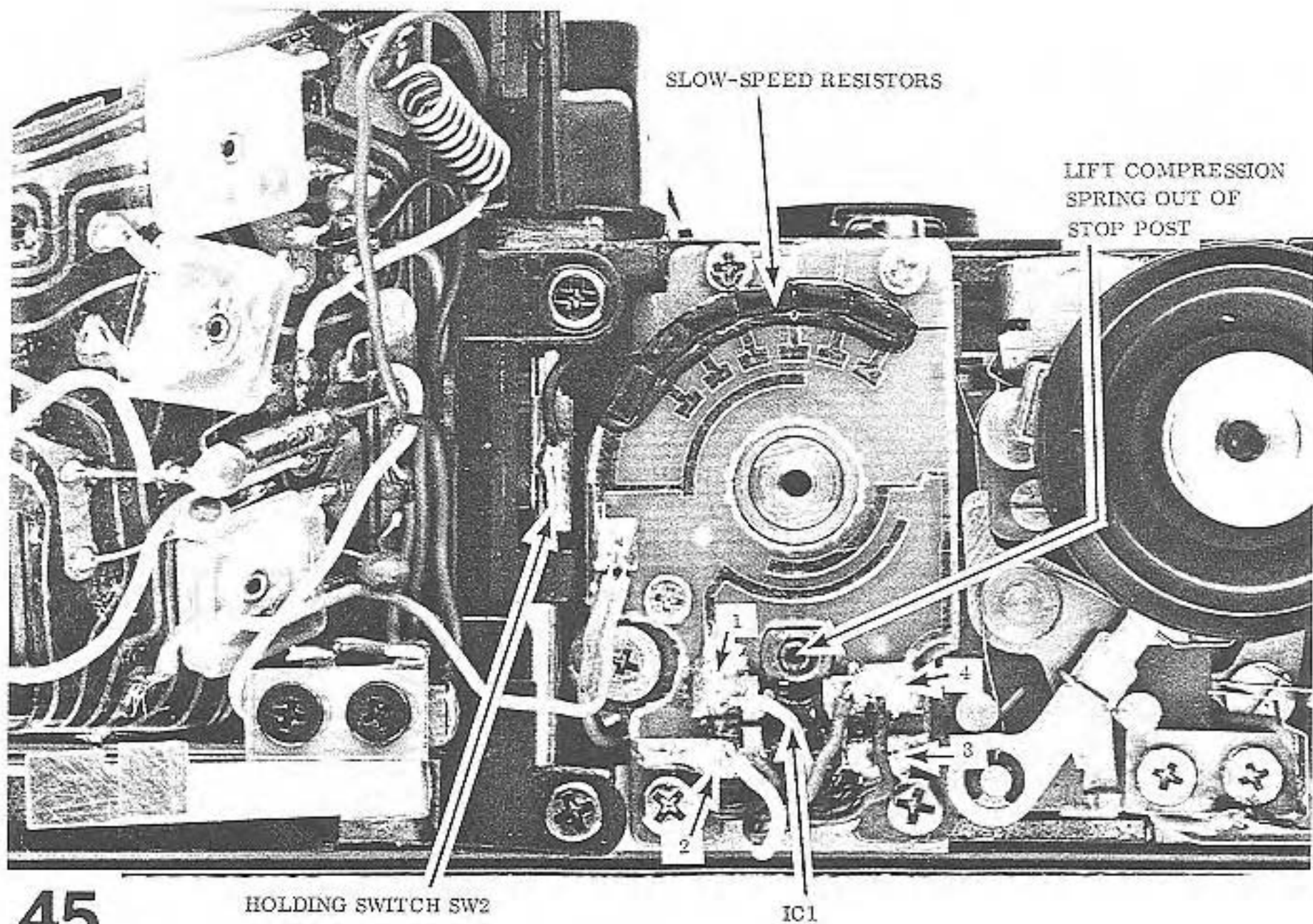


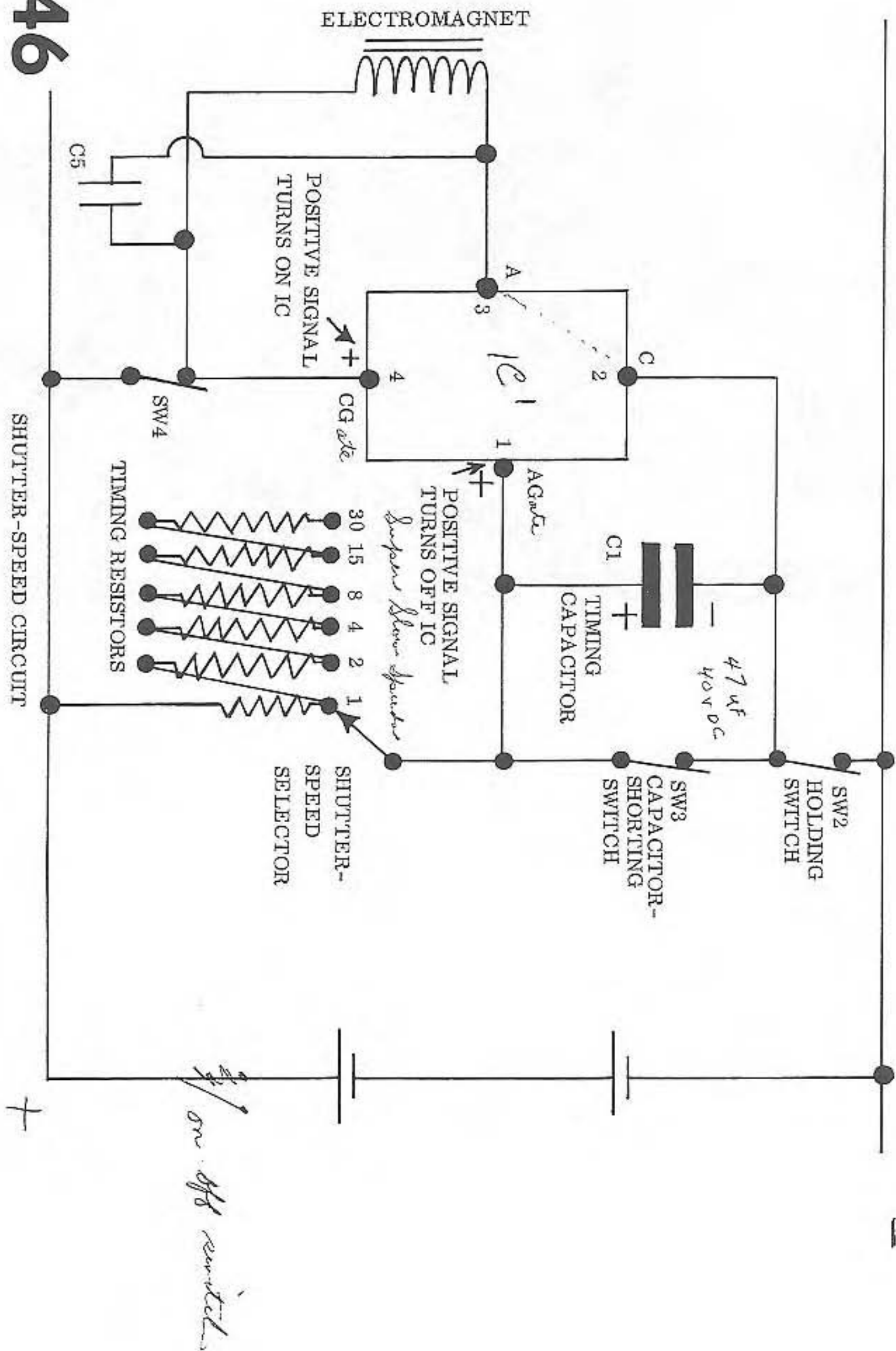
CAUTION: SPEED-SELECTOR BALL DETENT
WILL BE LOOSE WHEN YOU LIFT OFF SPEED
SELECTOR

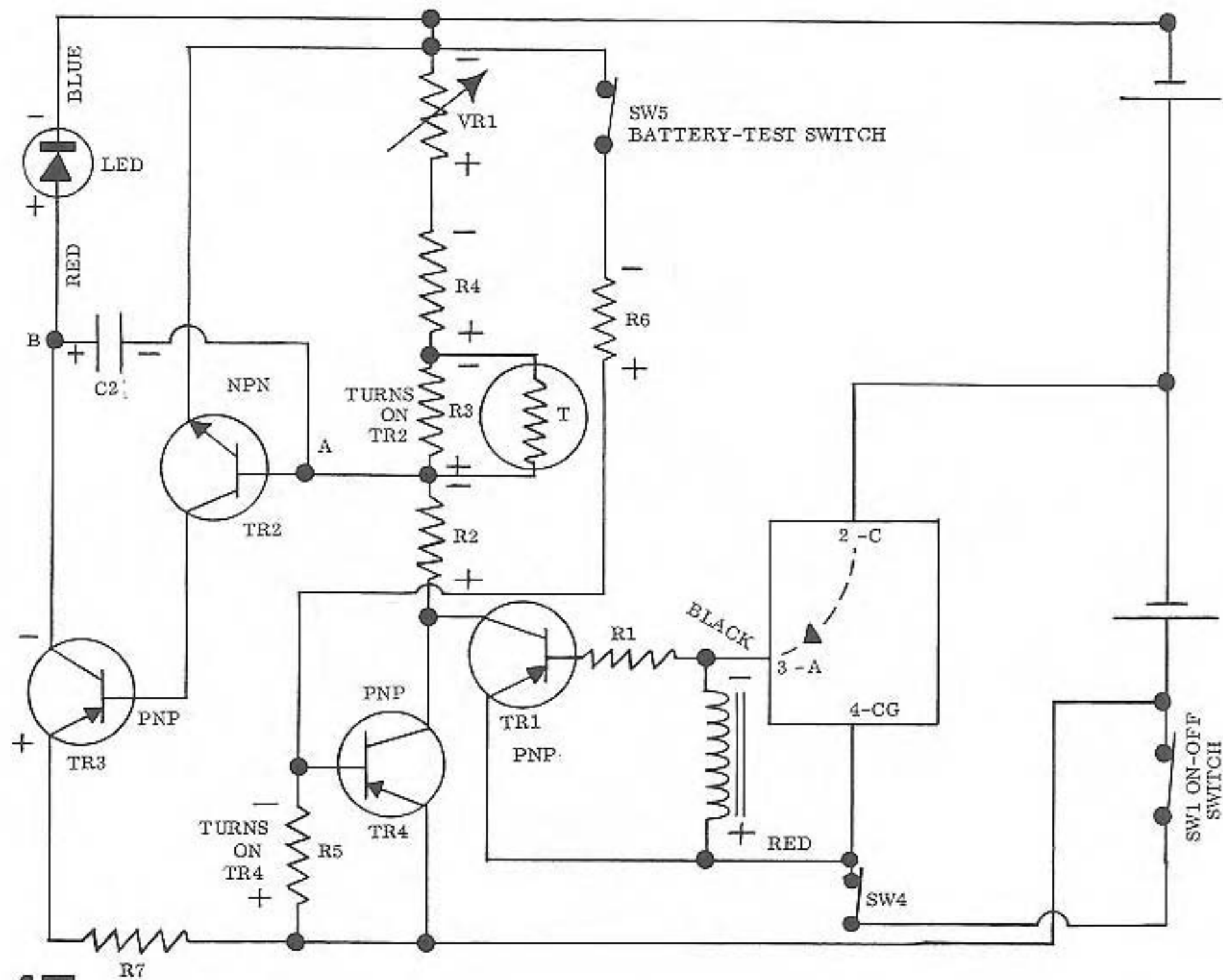


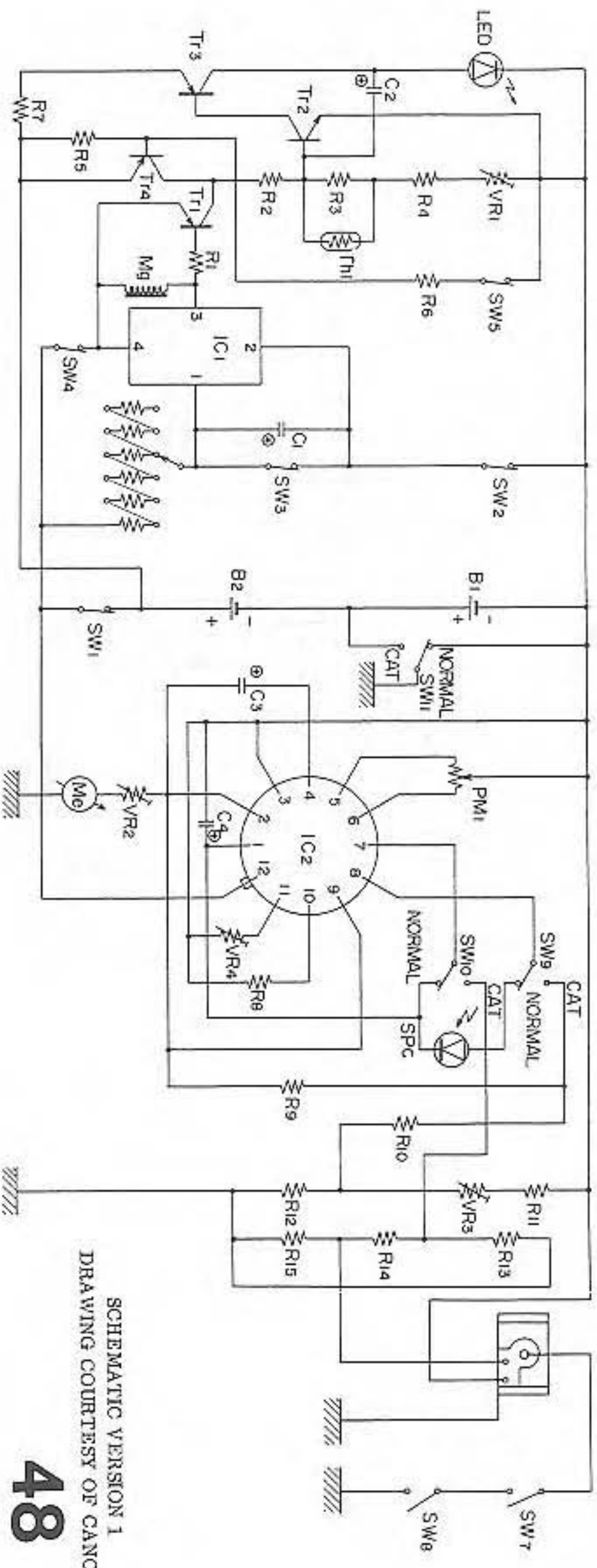
44

UNDERSIDE OF SPEED SELECTOR

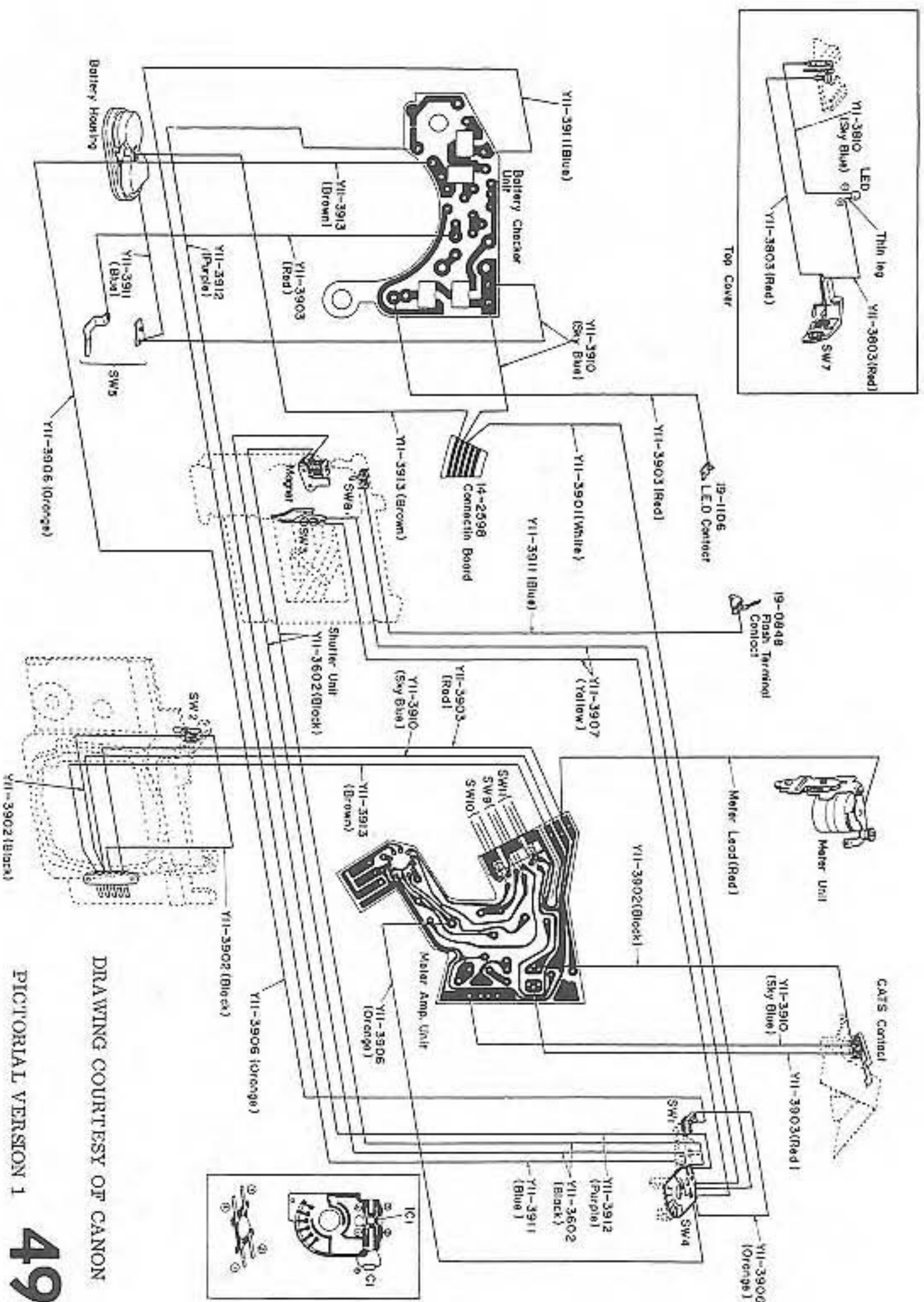


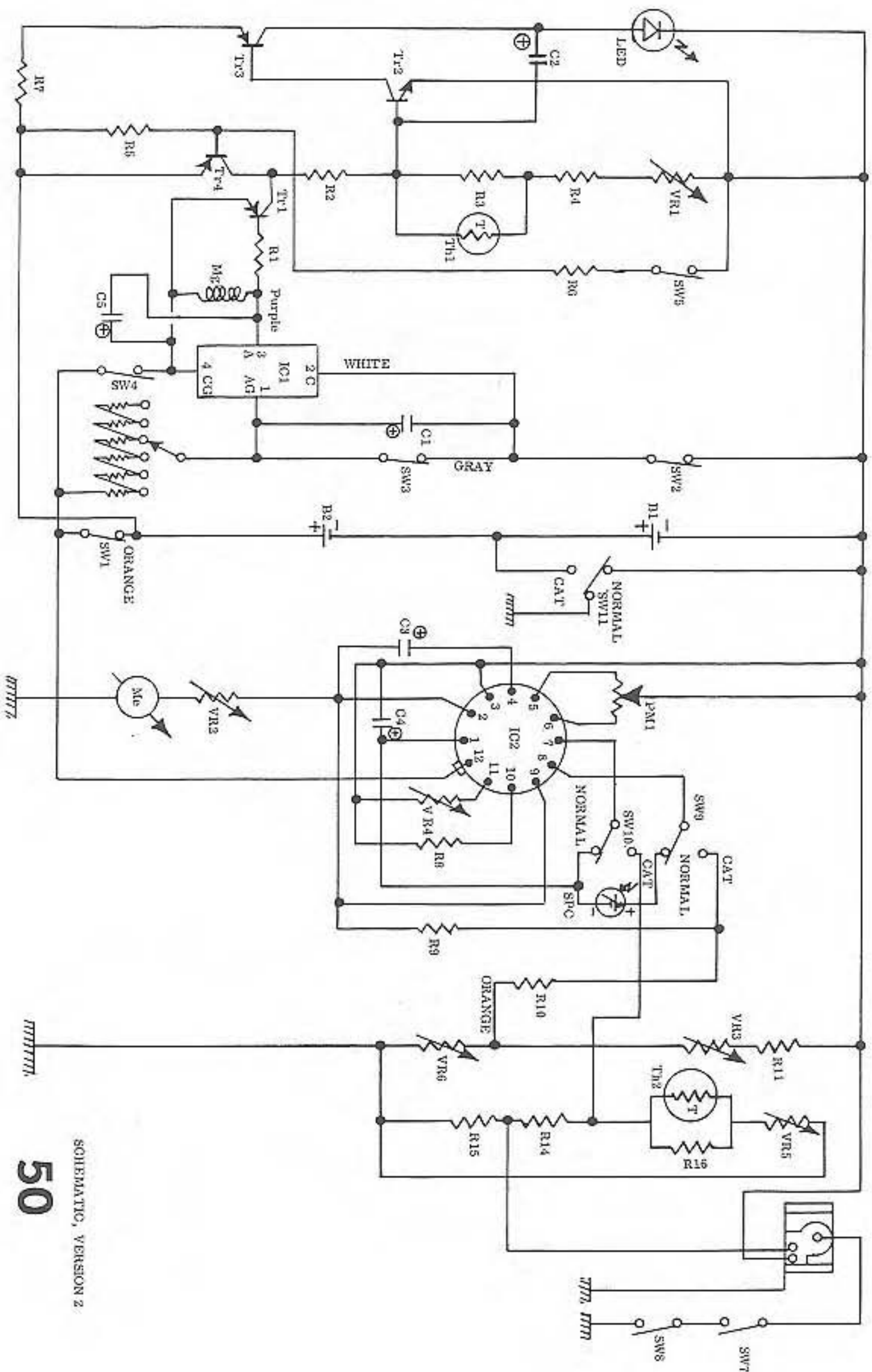


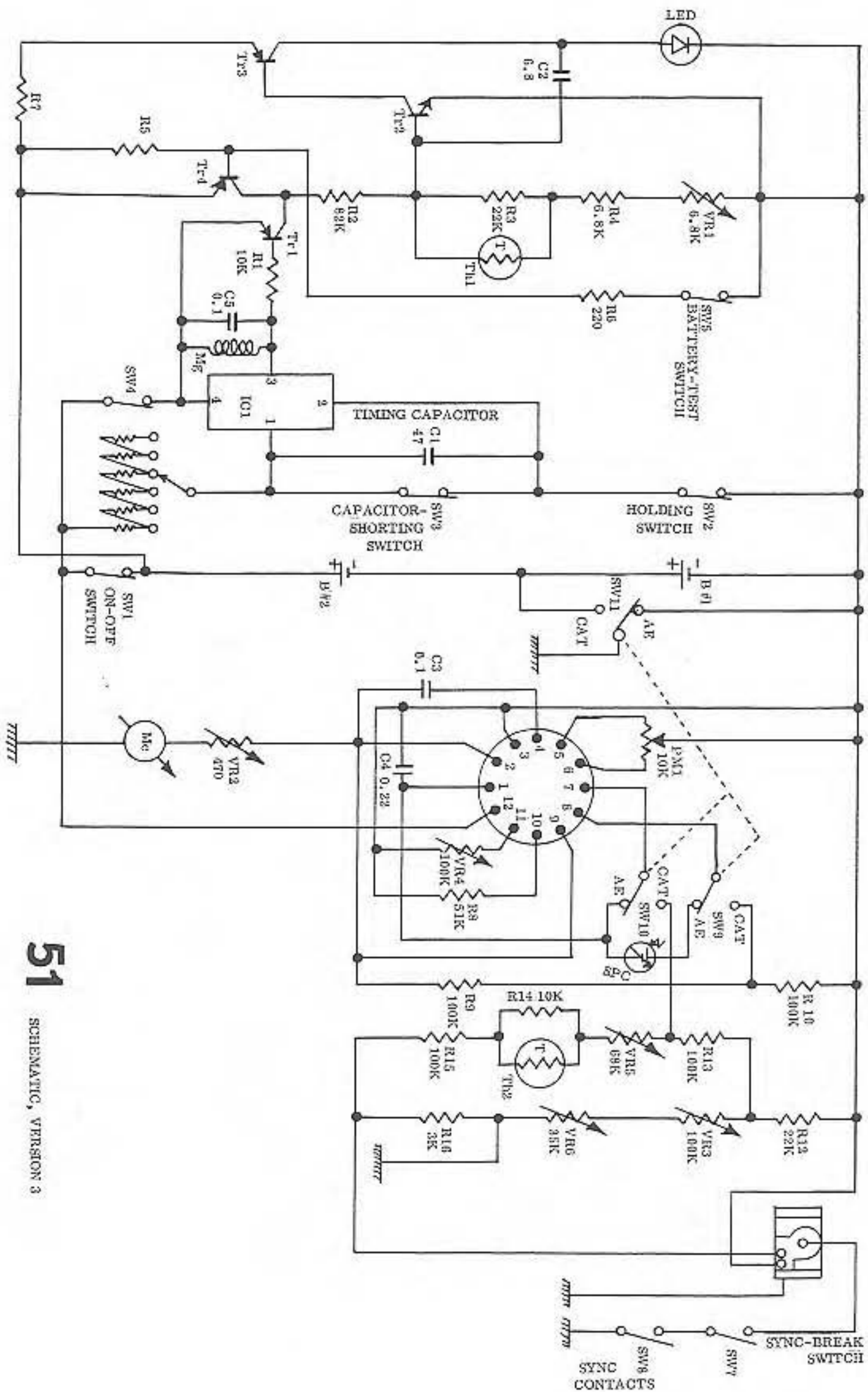




SCHEMATIC VERSION 1
DRAWING COURTESY OF CANON



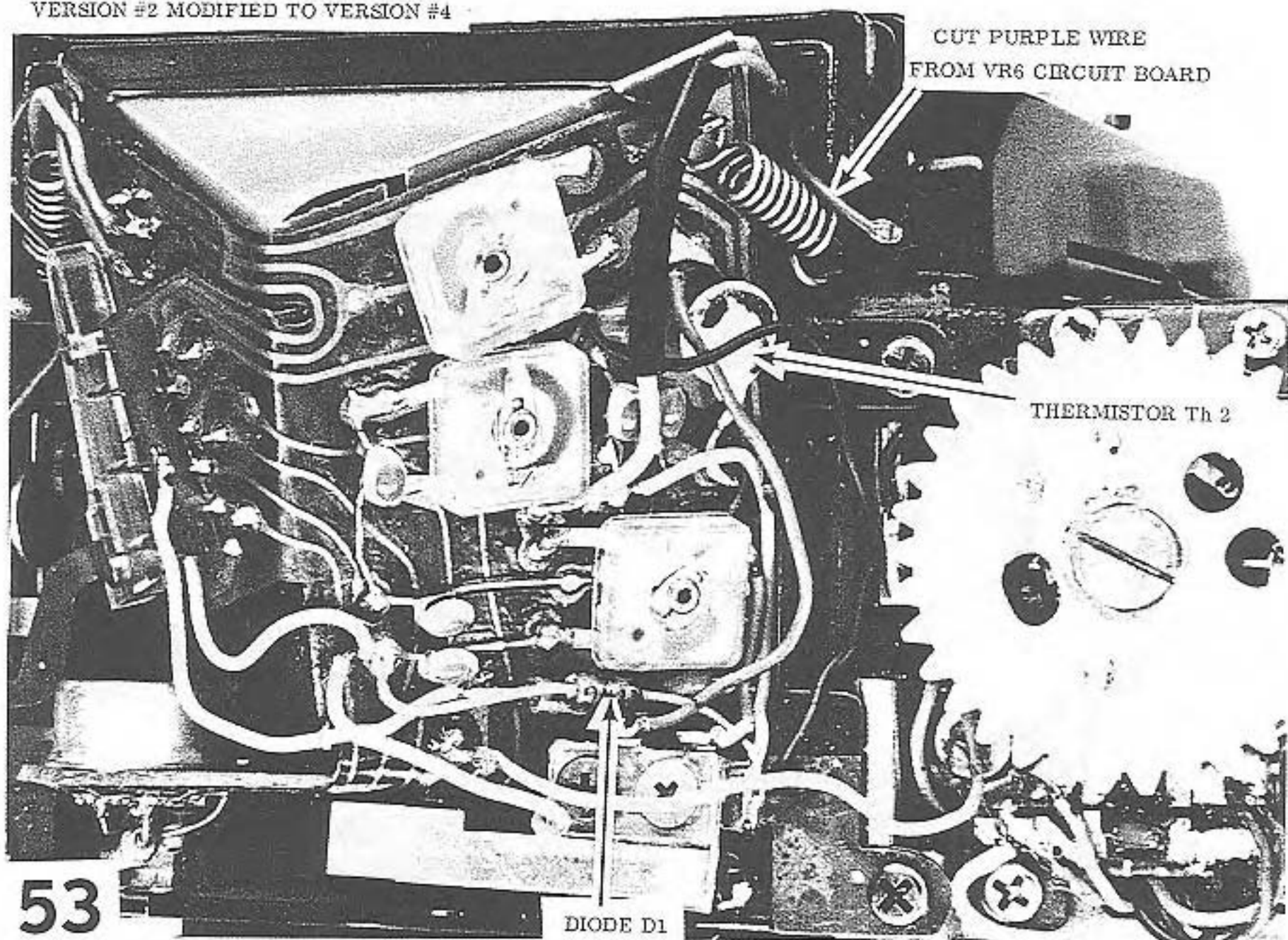




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SCHEMATIC, VERSION 3

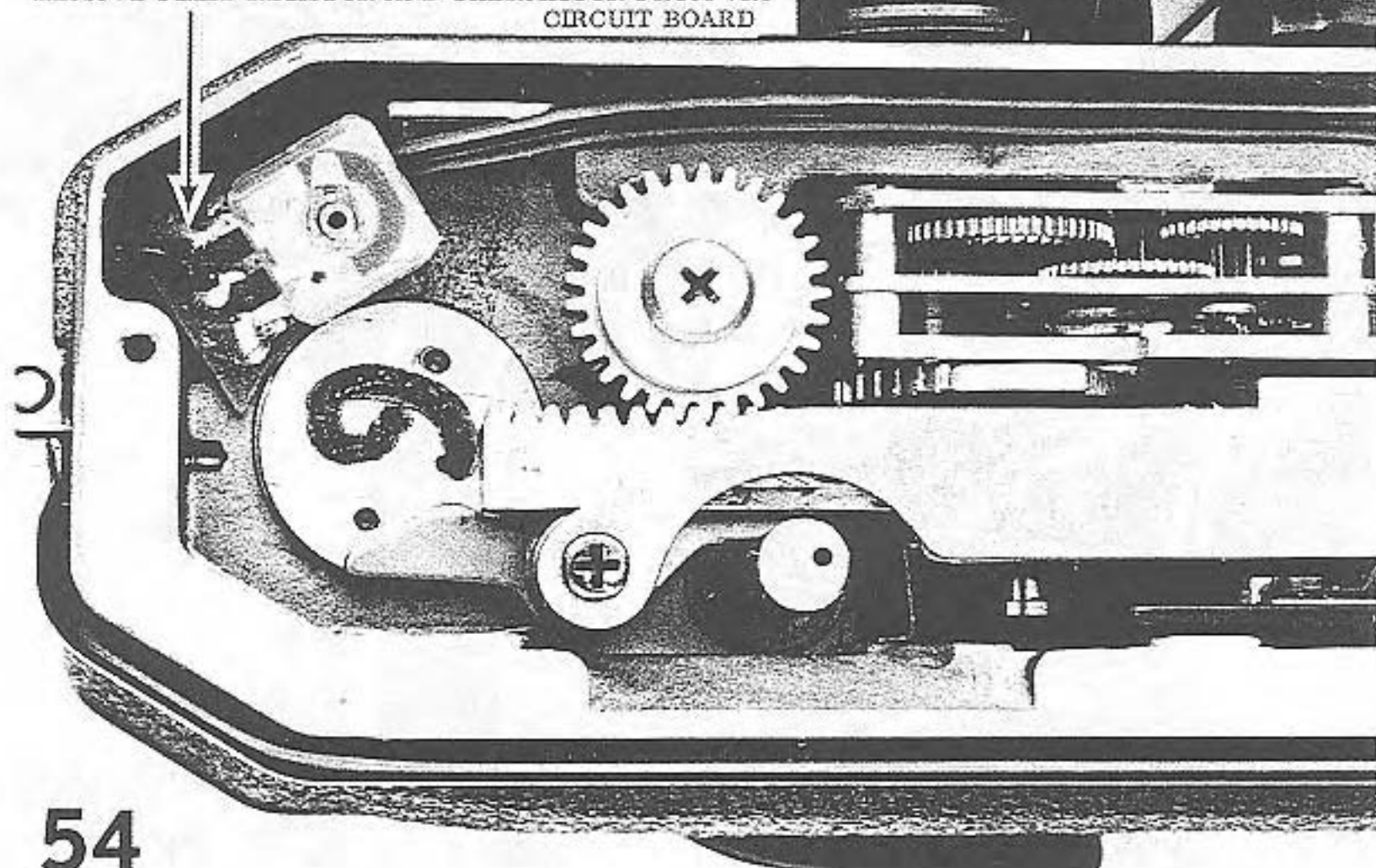
VERSION #2 MODIFIED TO VERSION #4



Reference

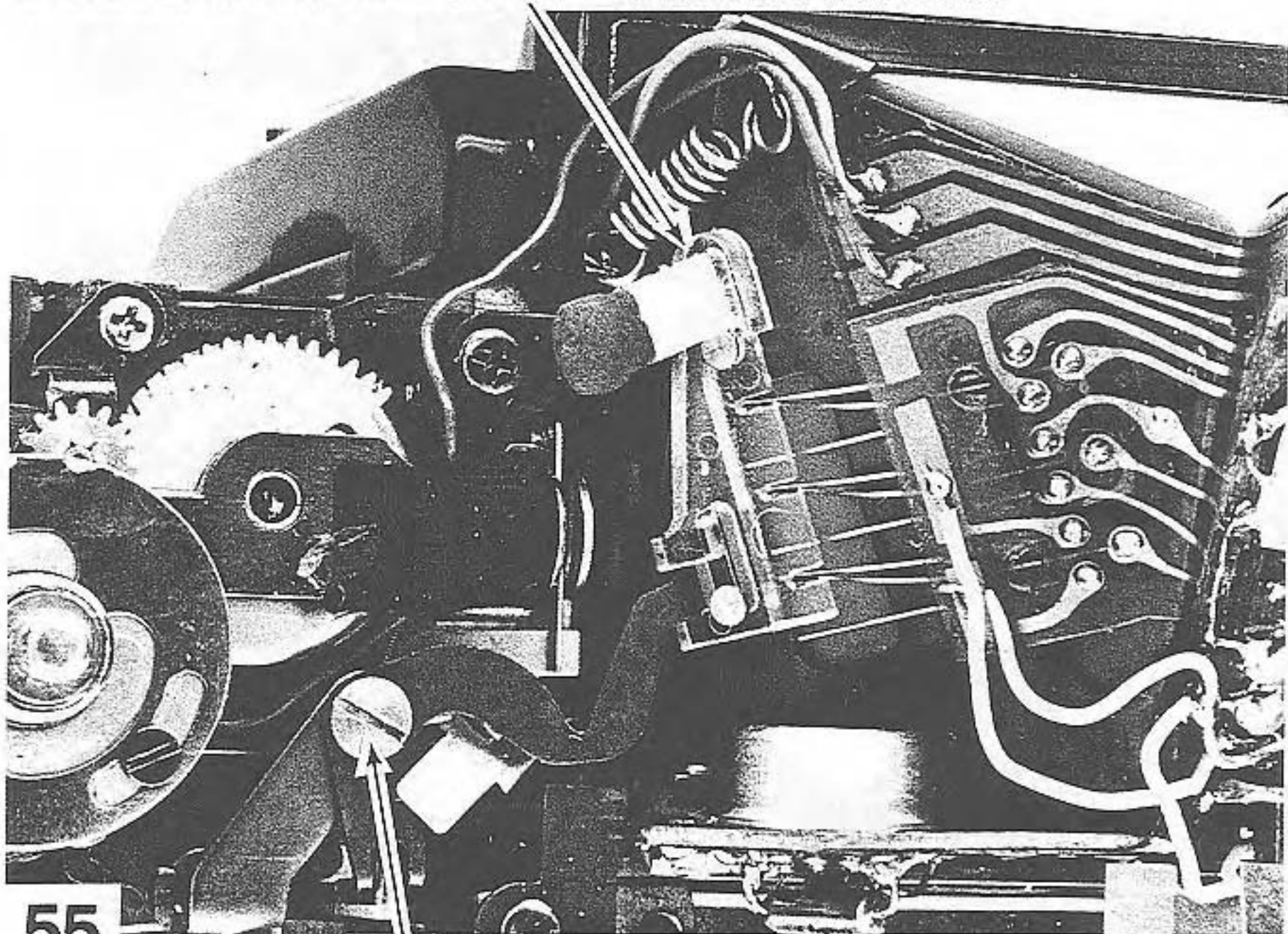
VERSION #2 MODIFIED TO VERSION #4

REMOVE FIXED RESISTOR AND THERMISTOR FROM VR6
CIRCUIT BOARD



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1. WEDGE CATS-NORMAL SWITCHING SLIDE TO KEEP CATS-NORMAL SWITCHES CLOSED



55

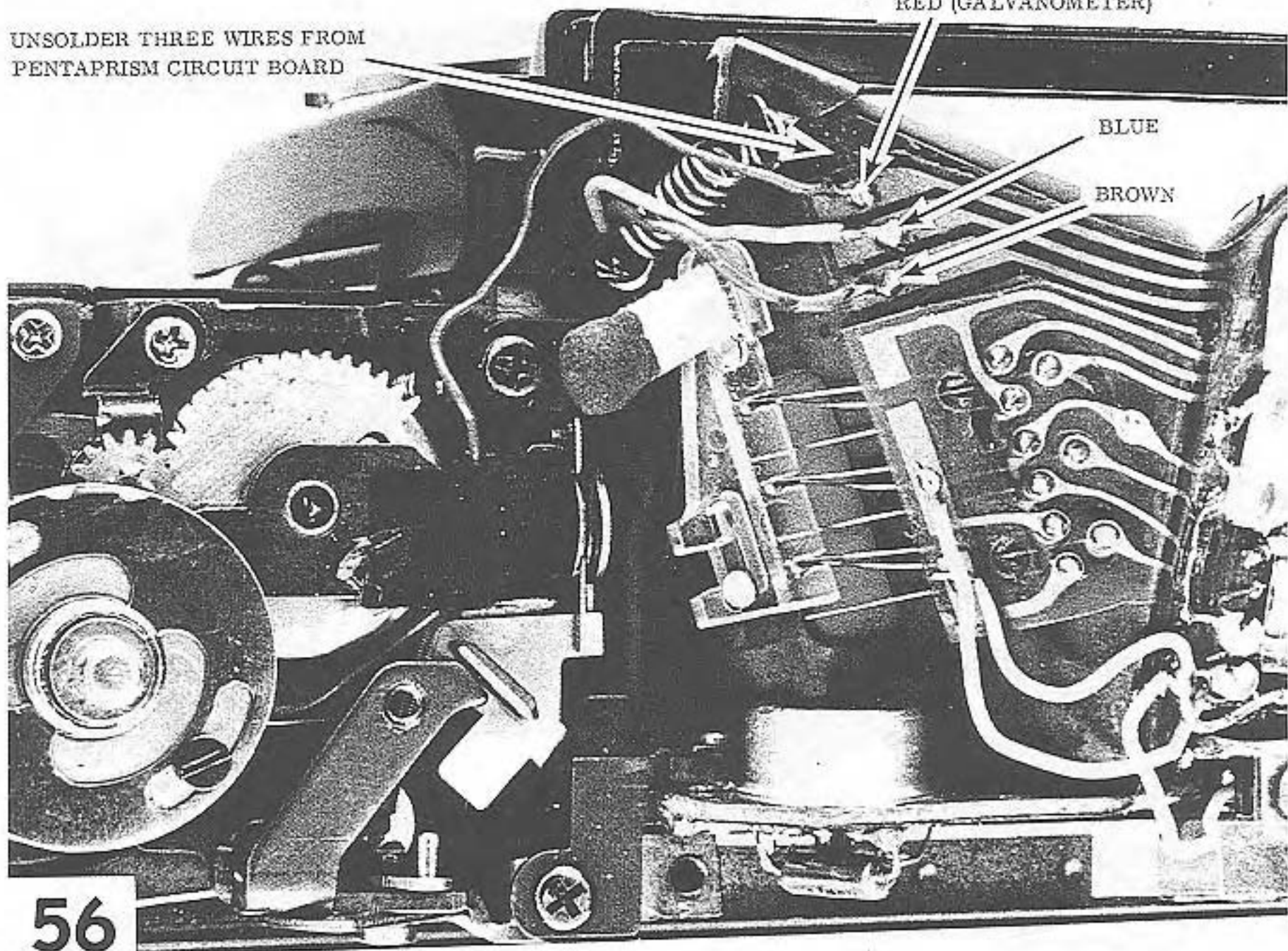
2. REMOVE SHOULDER SCREW AND TAKE OUT CATS-NORMAL SELECTOR LEVER

UNSOLDER THREE WIRES FROM
PENTAPRISM CIRCUIT BOARD

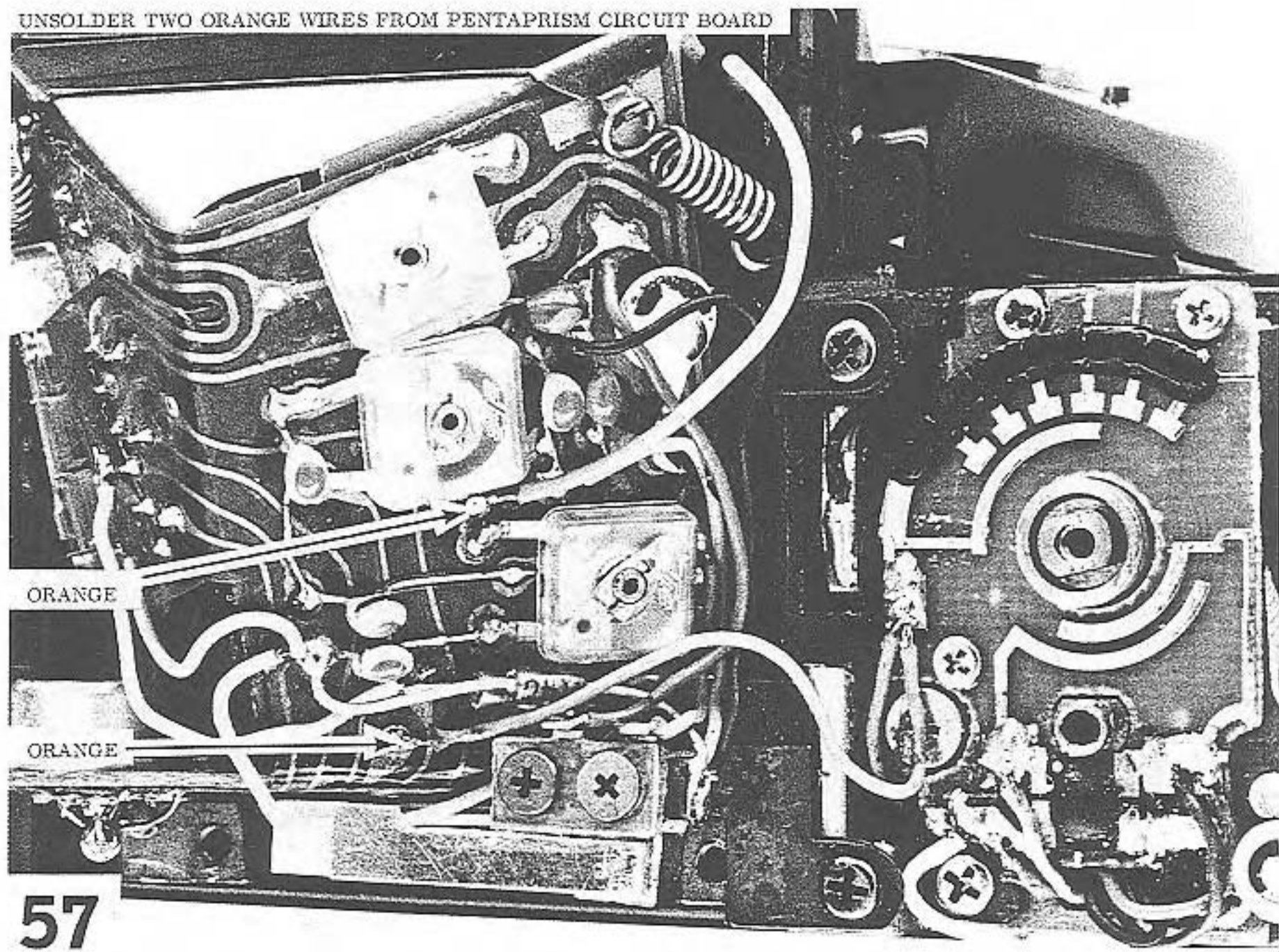
RED (GALVANOMETER)

BLUE

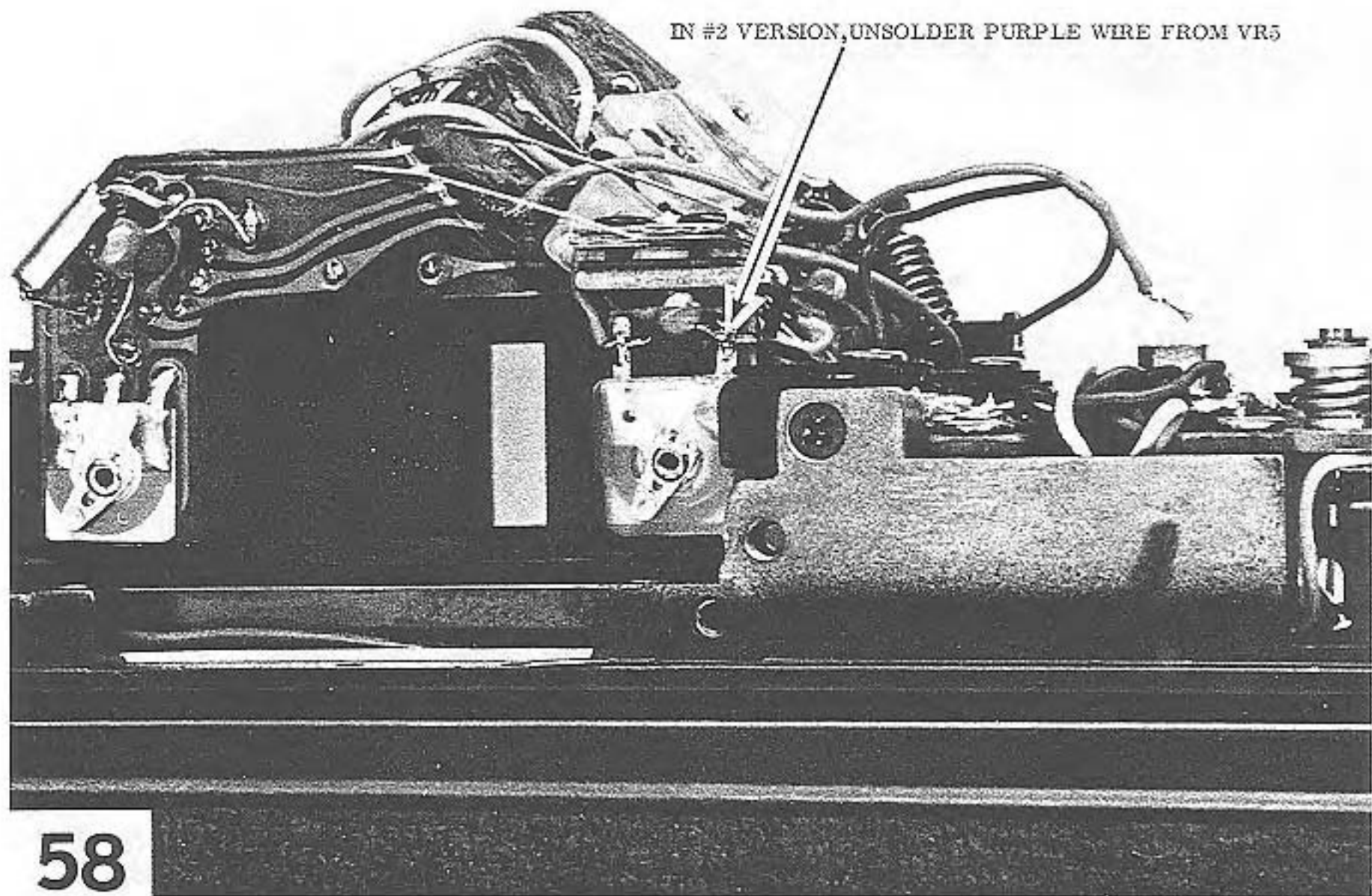
BROWN



UNSOLDER TWO ORANGE WIRES FROM PENTAPRISM CIRCUIT BOARD

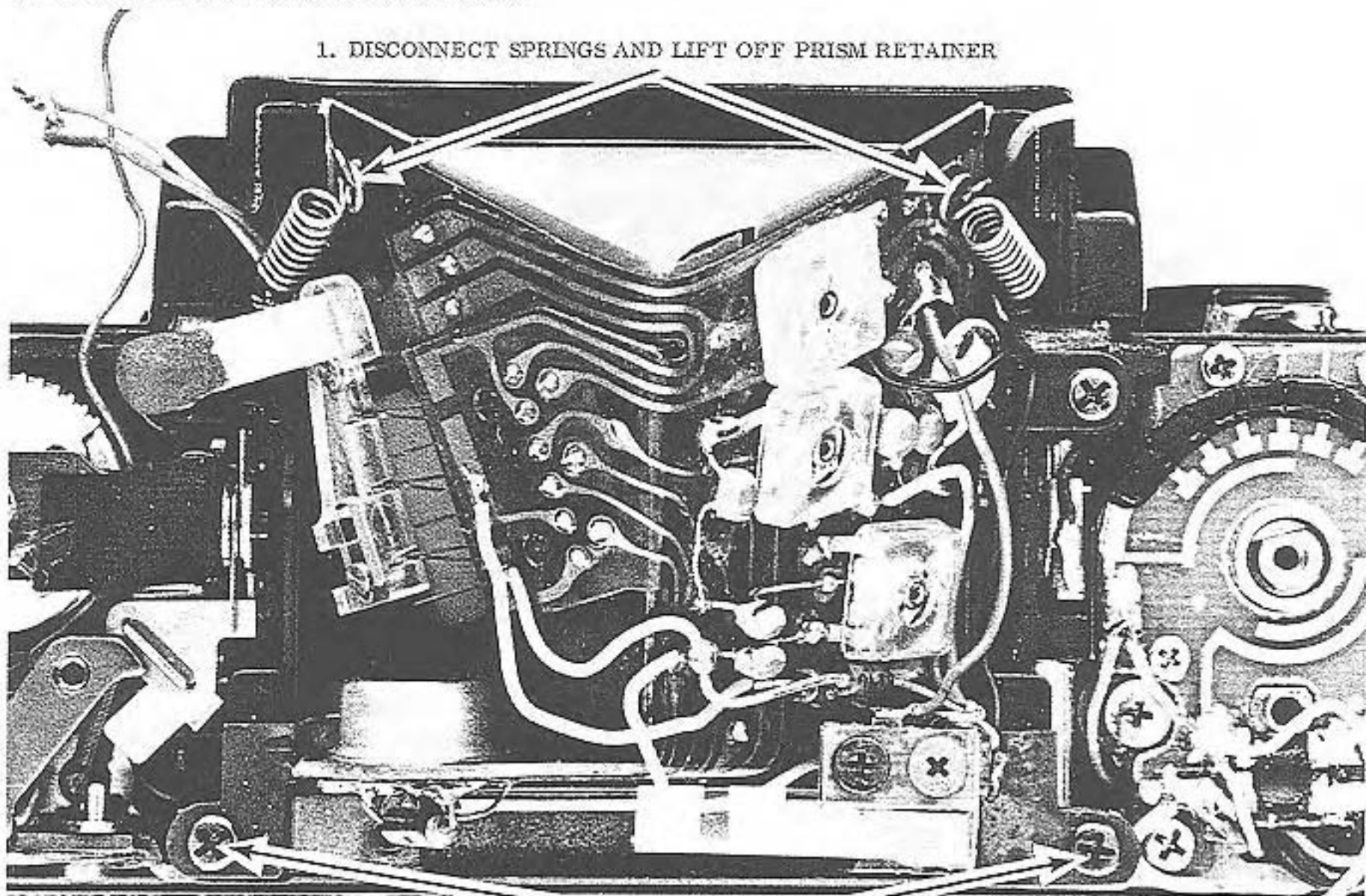


IN #2 VERSION, UNSOLDER PURPLE WIRE FROM VR5



TO REMOVE PENTAPRISM CIRCUIT BOARD:

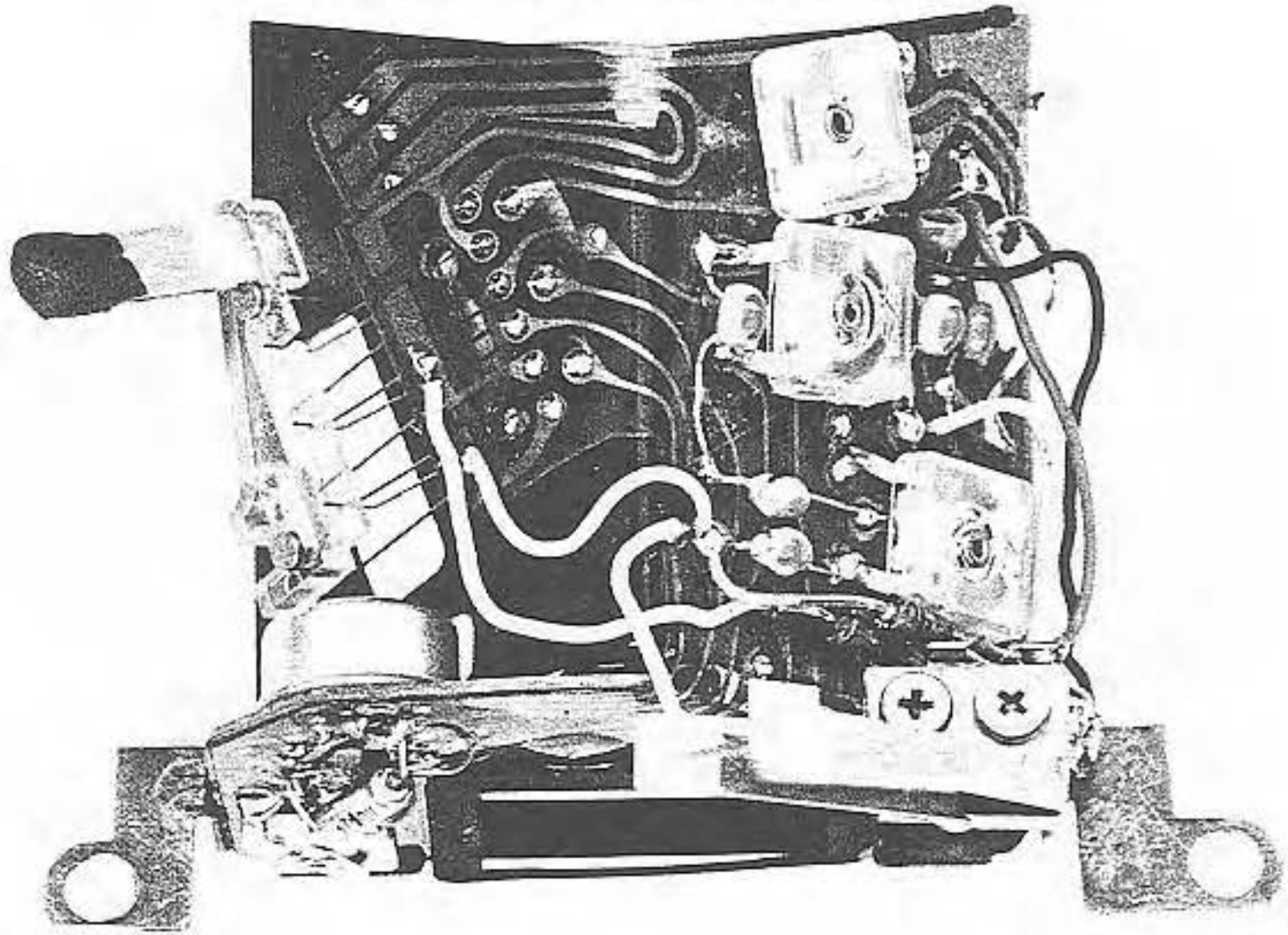
1. DISCONNECT SPRINGS AND LIFT OFF PRISM RETAINER



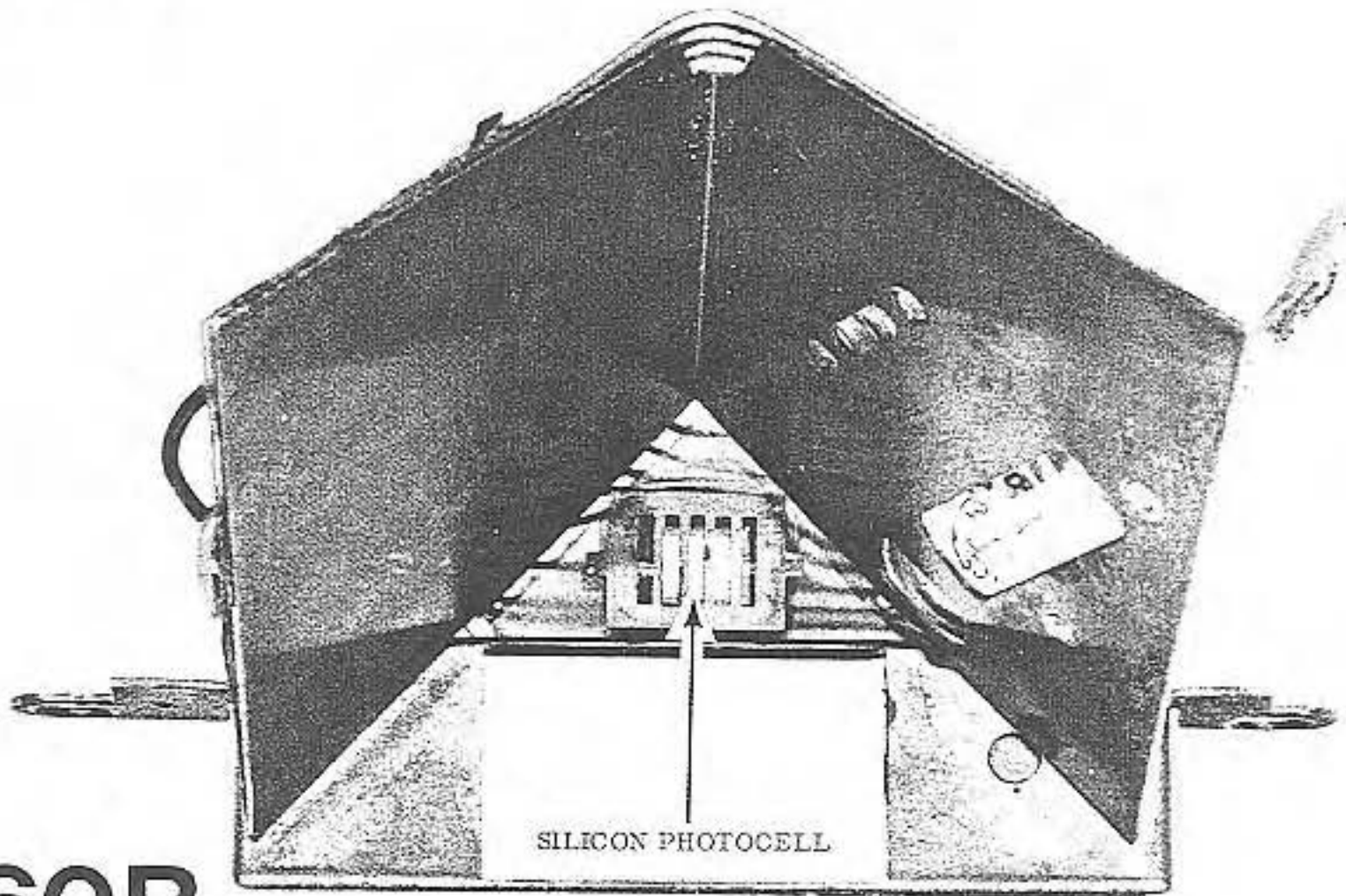
2. REMOVE TWO CIRCUIT-BOARD SCREWS

3. LIFT OFF PENTAPRISM CIRCUIT BOARD

PENTAPRISM CIRCUIT BOARD (VERSION #4)

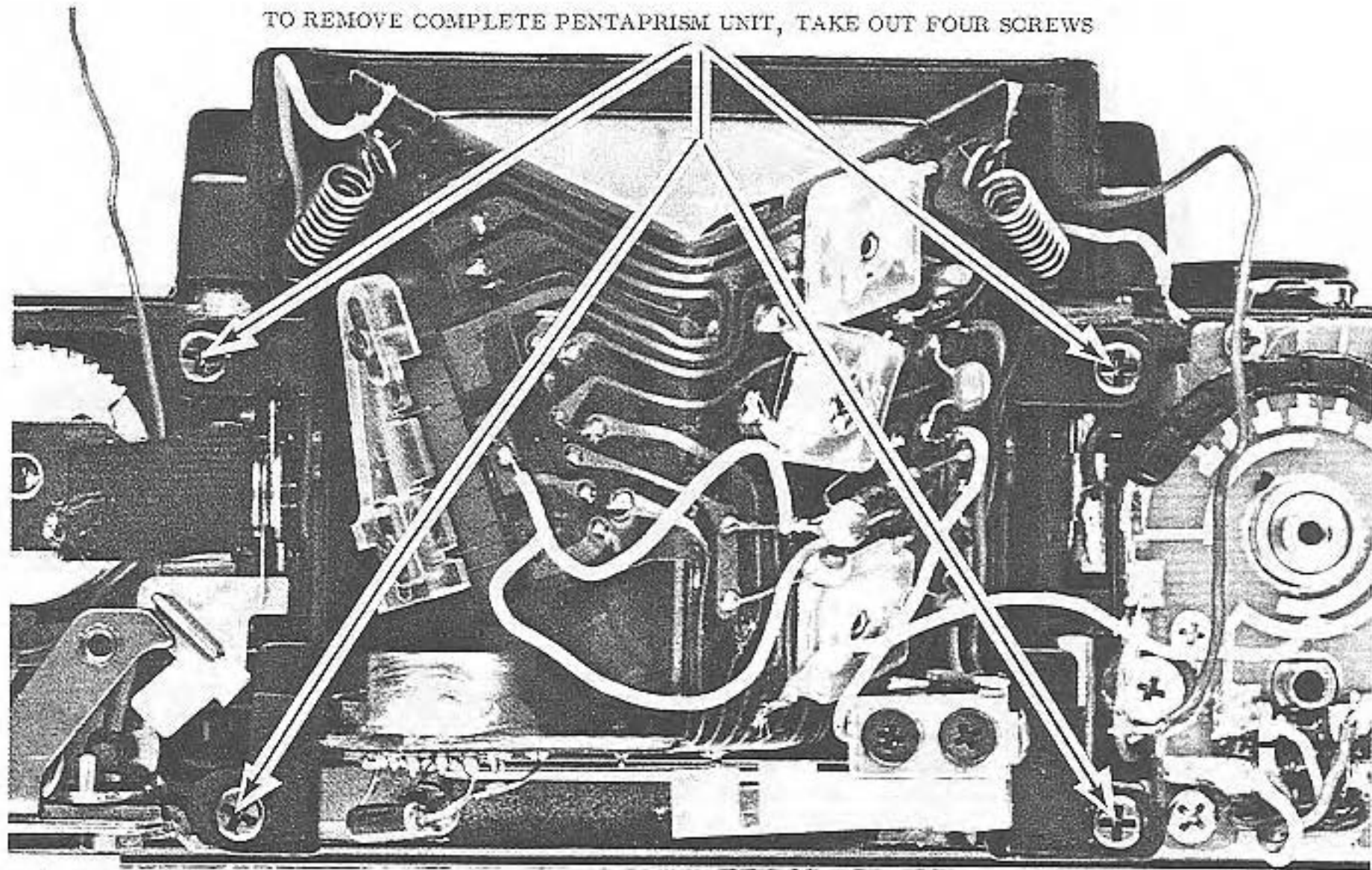


60A

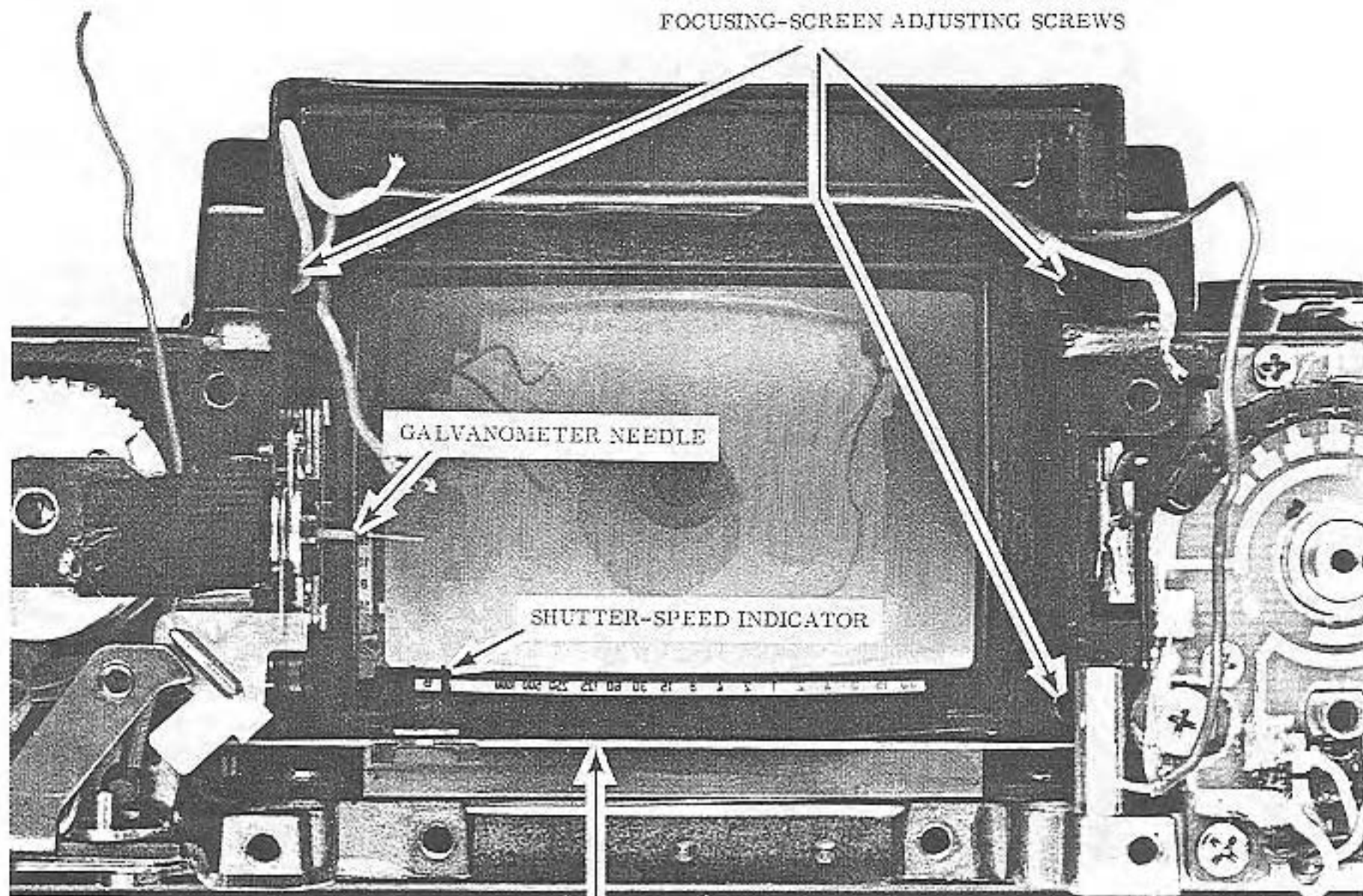


60B

TO REMOVE COMPLETE PENTAPRISM UNIT, TAKE OUT FOUR SCREWS



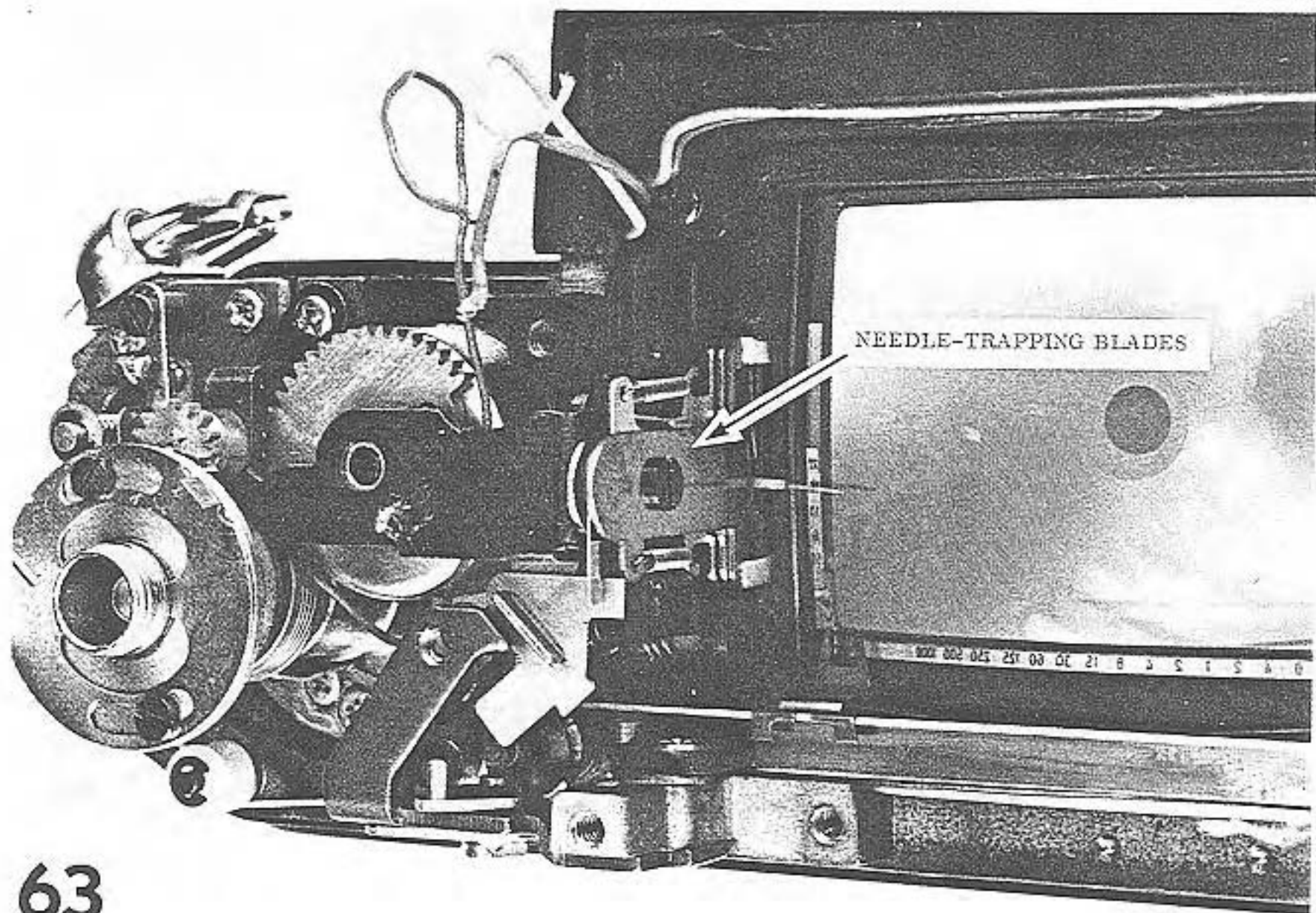
FOCUSING-SCREEN ADJUSTING SCREWS

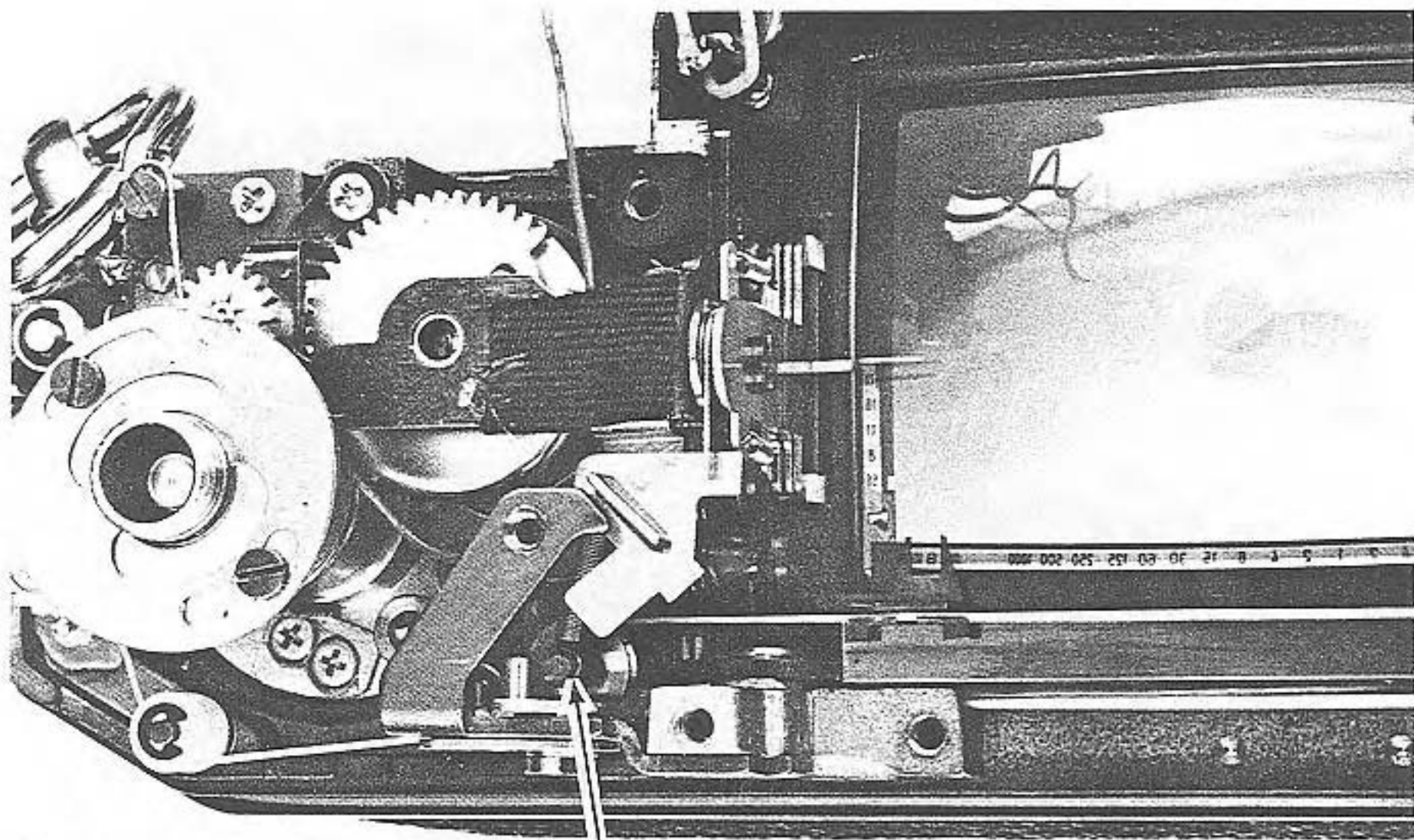


GALVANOMETER NEEDLE

SHUTTER-SPEED INDICATOR

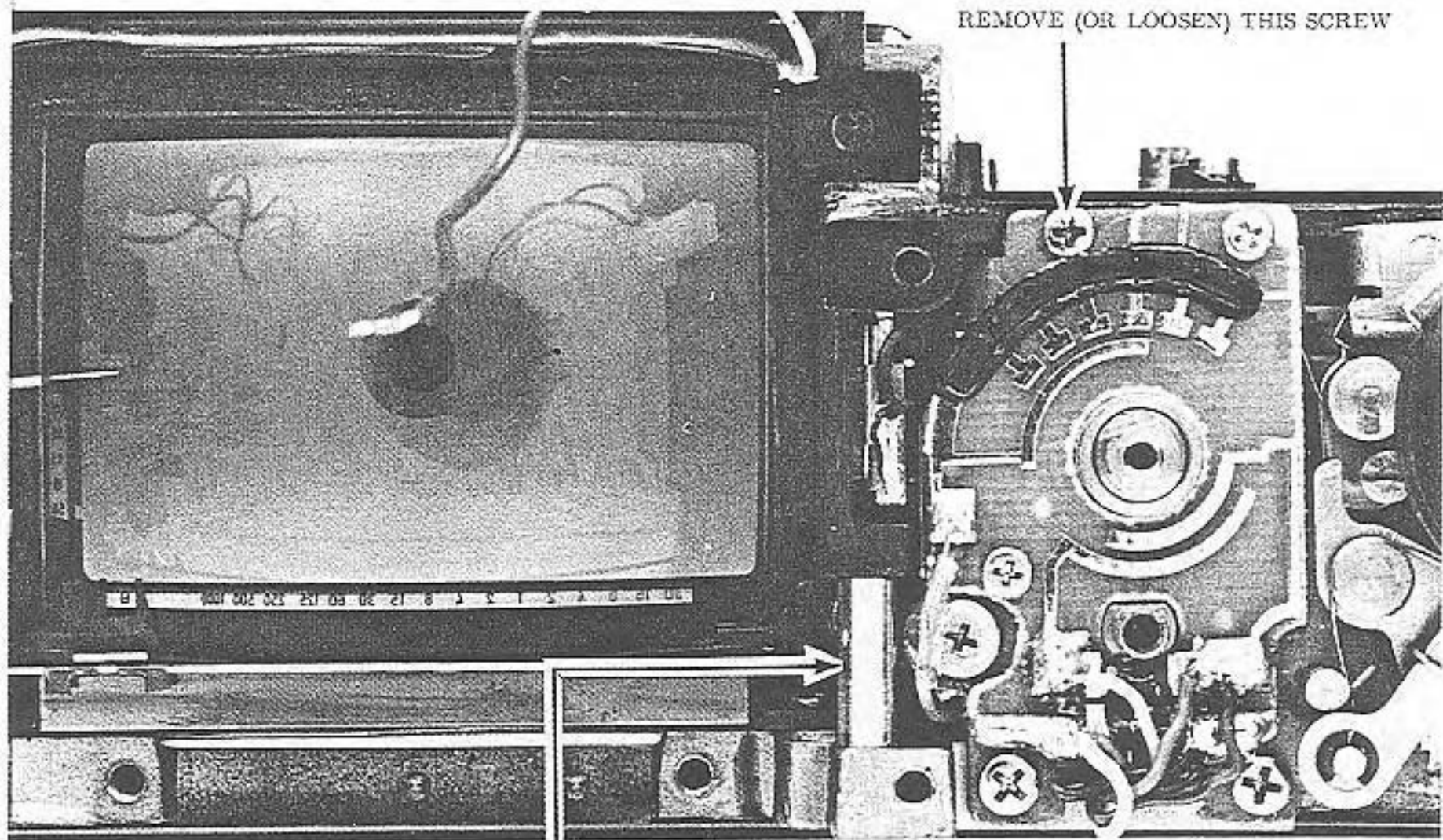
COUPLING CORD





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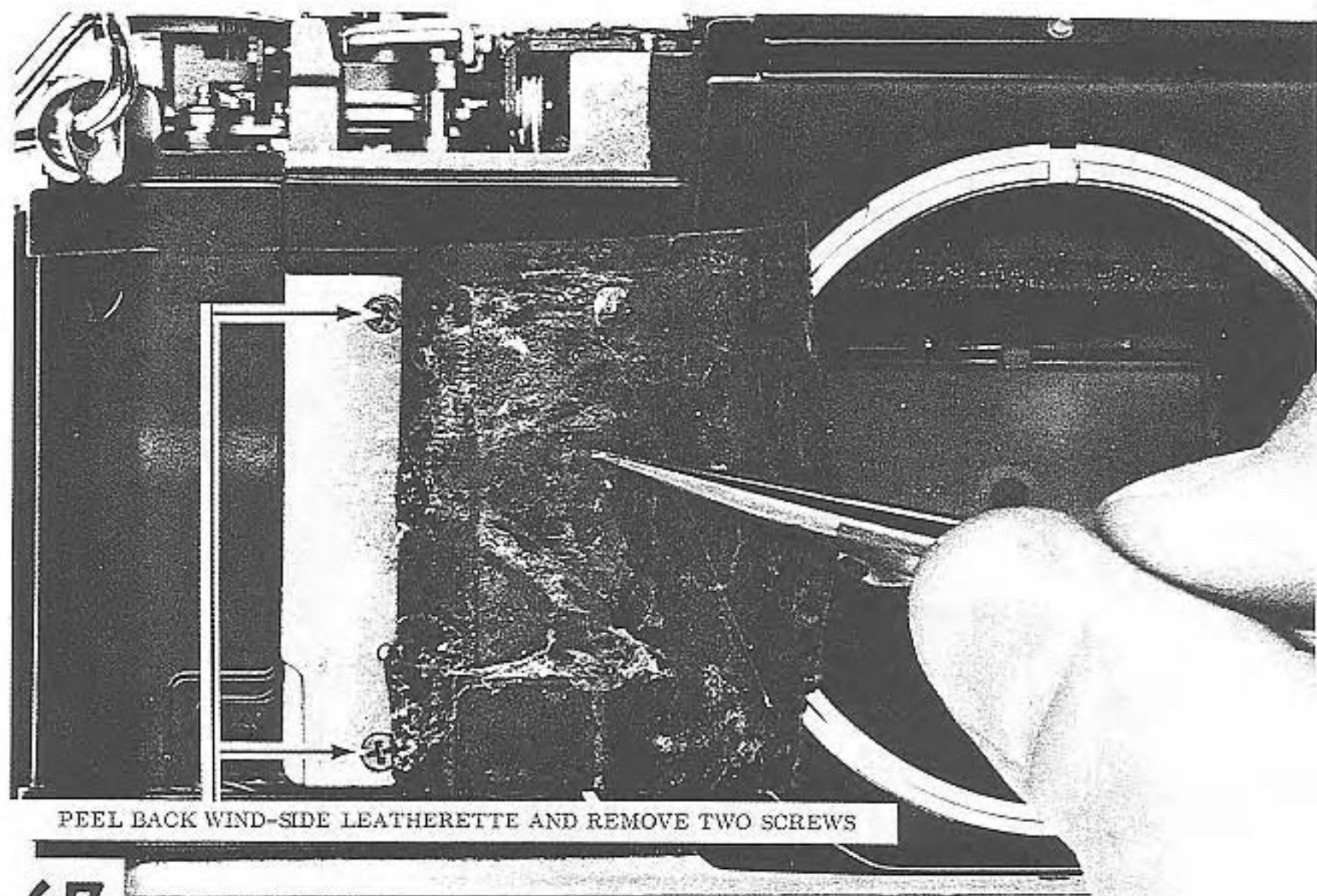
DISCONNECT GALVANOMETER SPRING



65

NOTE SPACER BETWEEN MIRROR CAGE AND CAMERA BODY -- SPACER WILL BE LOOSE WHEN YOU REMOVE THE SCREW SHOWN IN THE NEXT ILLUSTRATION





PEEL BACK WIND-SIDE LEATHERETTE AND REMOVE TWO SCREWS

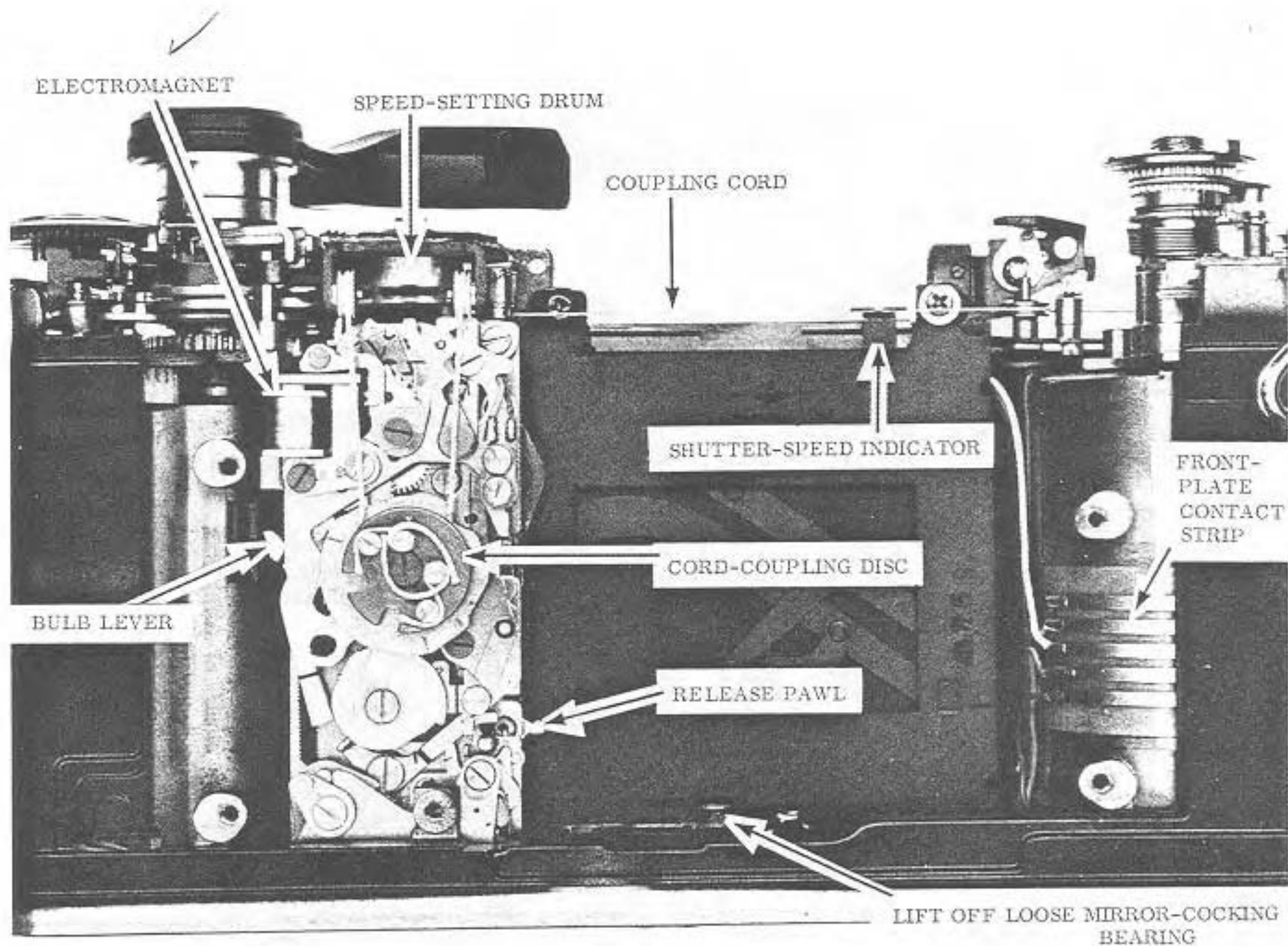
1. PEEL BACK CORNER OF WIND-SIDE LEATHERETTE (SHOWN CUTAWAY HERE) AND REMOVE SCREW

2. PEEL BACK REWIND-SIDE LEATHERETTE AND REMOVE TWO SCREWS

3. LIFT OUT FRONT-PLATE/MIRROR-CAGE ASSEMBLY

68

Shutter can be released when replacing front plate



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SHUTTER SET TO "BULB"

Check for stuck elec magnet if shutter is open

PULLEYS FOR SHUTTER-SETTING CORDS

ADJUSTMENT PULLEY FOR COUPLING CORD

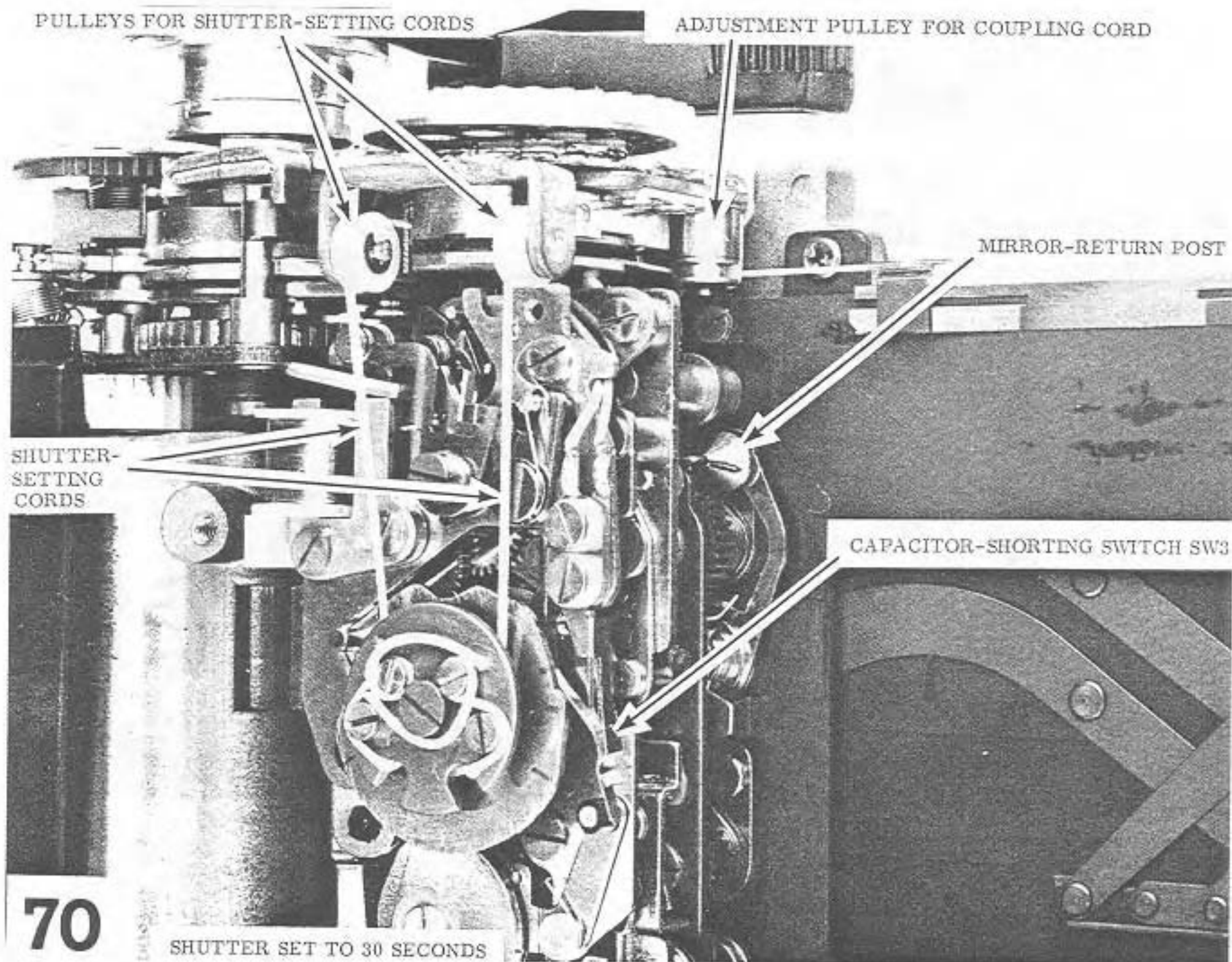
MIRROR-RETURN POST

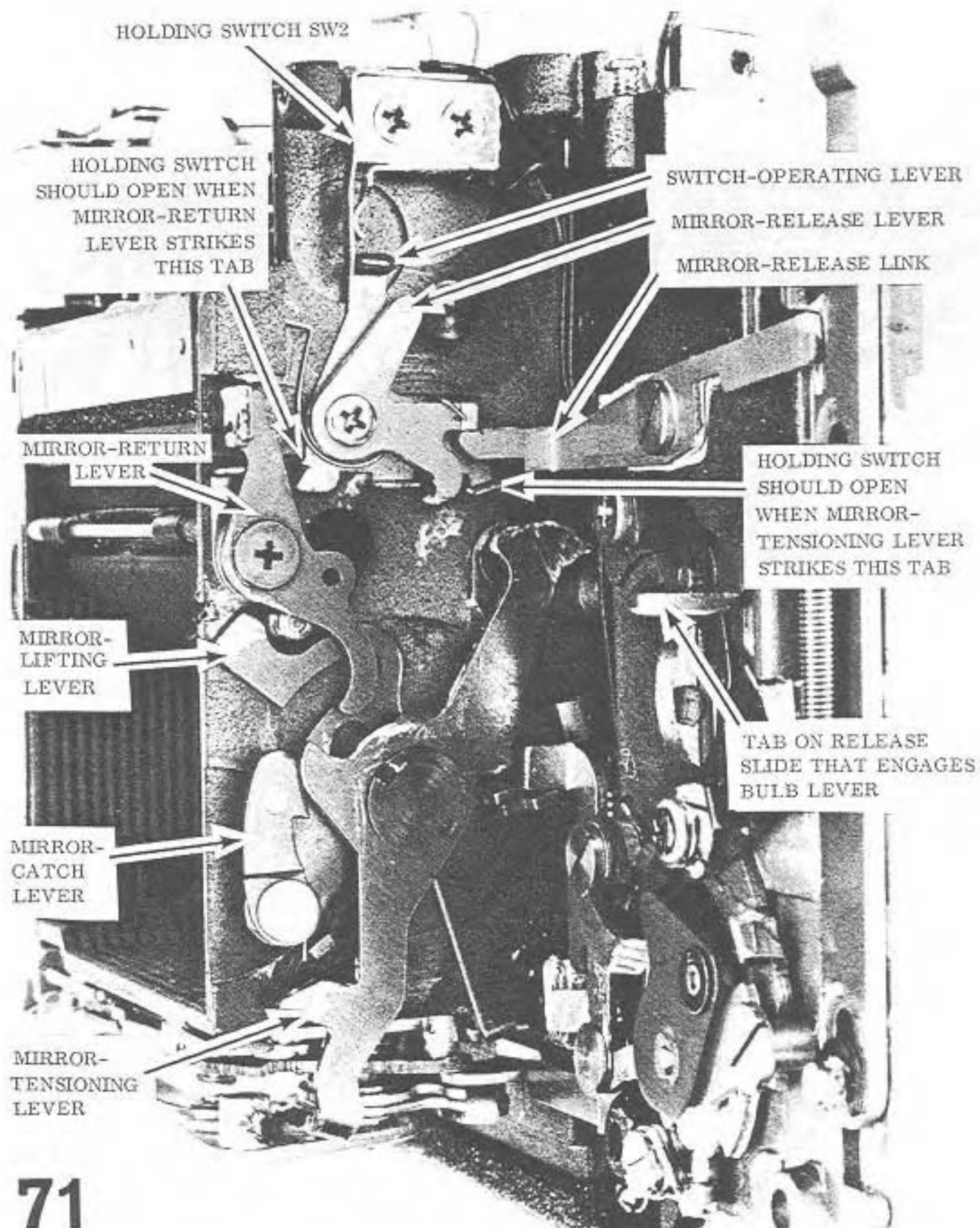
SHUTTER-
SETTING
CORDS

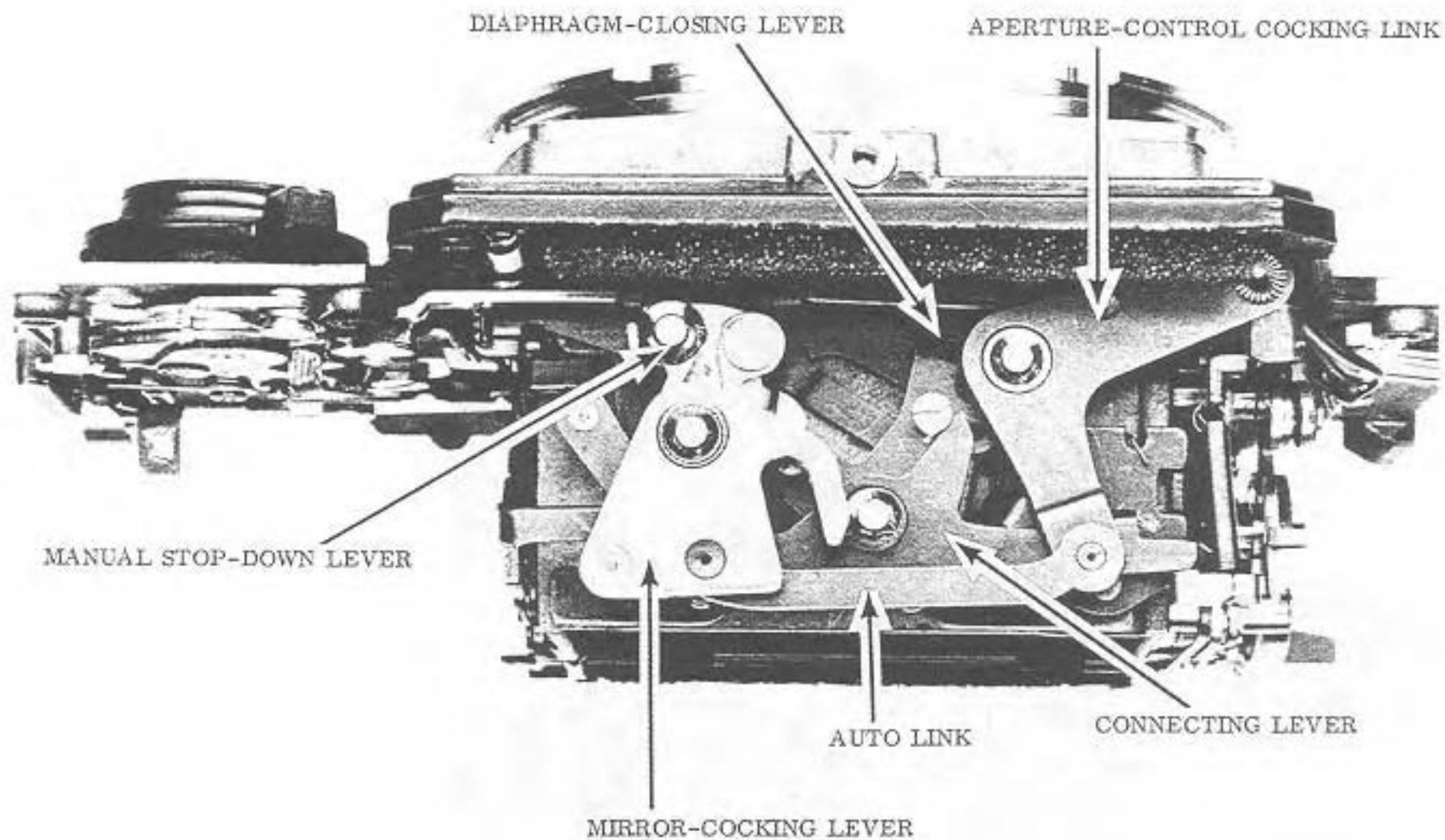
CAPACITOR-SHORTING SWITCH SW3

70

SHUTTER SET TO 30 SECONDS

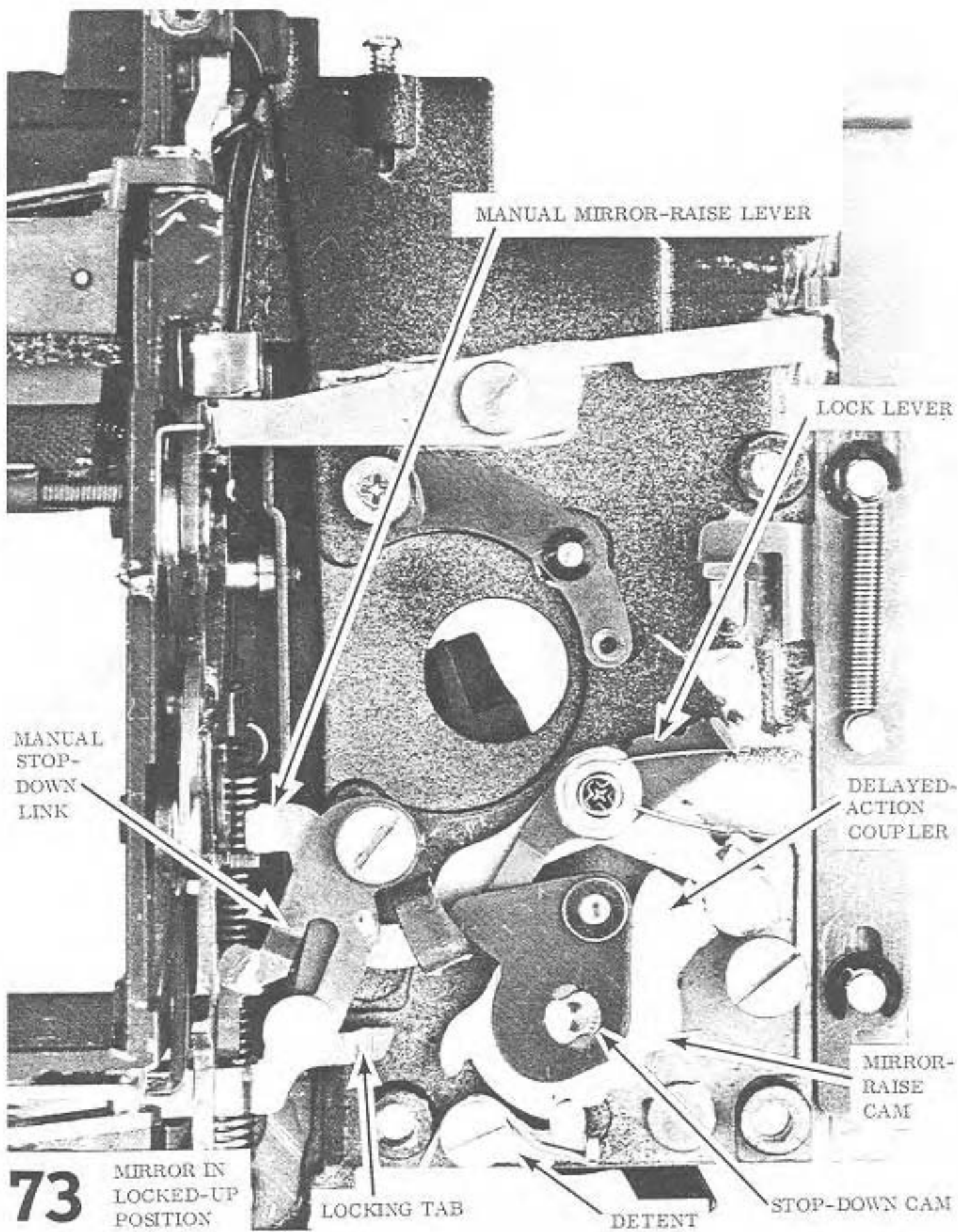






72

BOTTOM OF MIRROR CAGE



73

MIRROR IN
LOCKED-UP
POSITION

LOCKING TAB

DETENT

STOP-DOWN CAM

MANUAL MIRROR-RAISE LEVER

LOCK LEVER

DELAYED-
ACTION
COUPLER

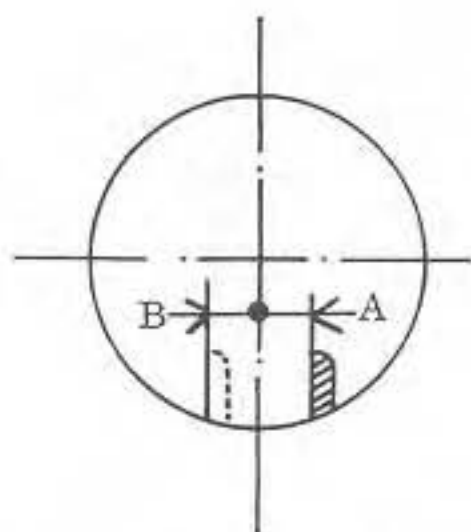
MIRROR-
RAISE
CAM

MANUAL
STOP-
DOWN
LINK

ECCENTRIC FOR ADJUSTING POSITION OF
DIAPHRAGM-CLOSING LEVER ON MANUAL
(DEPTH-OF-FIELD PREVIEW) OPERATION

ECCENTRIC FOR ADJUSTING POSITION
OF DIAPHRAGM-CLOSING LEVER ON
NORMAL OPERATION

74



A = more than 5.5 mm

B = 1.8 — 3.2 mm

MAXIMUM-APERTURE
CORRECTION LEVER

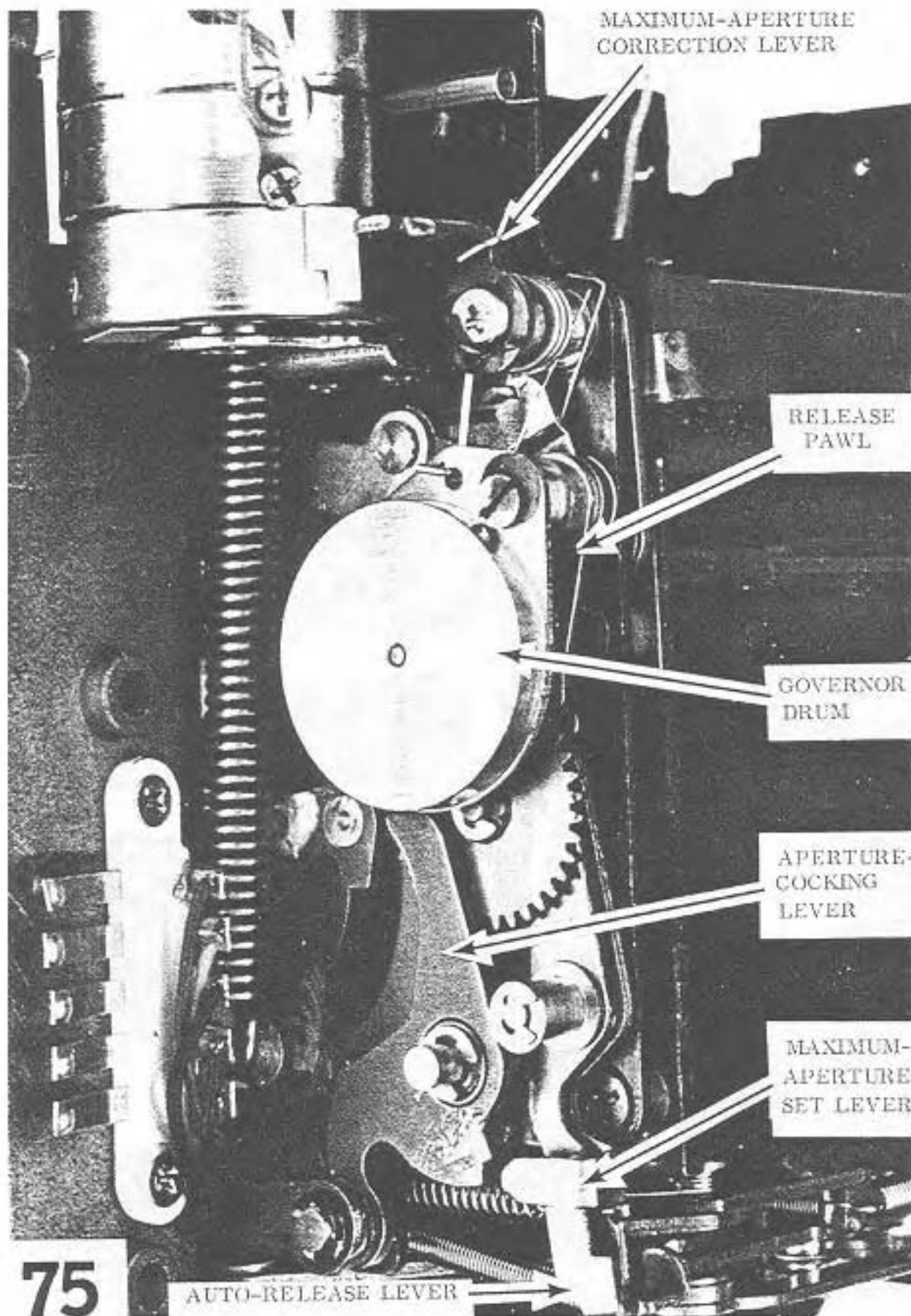
RELEASE
PAWL

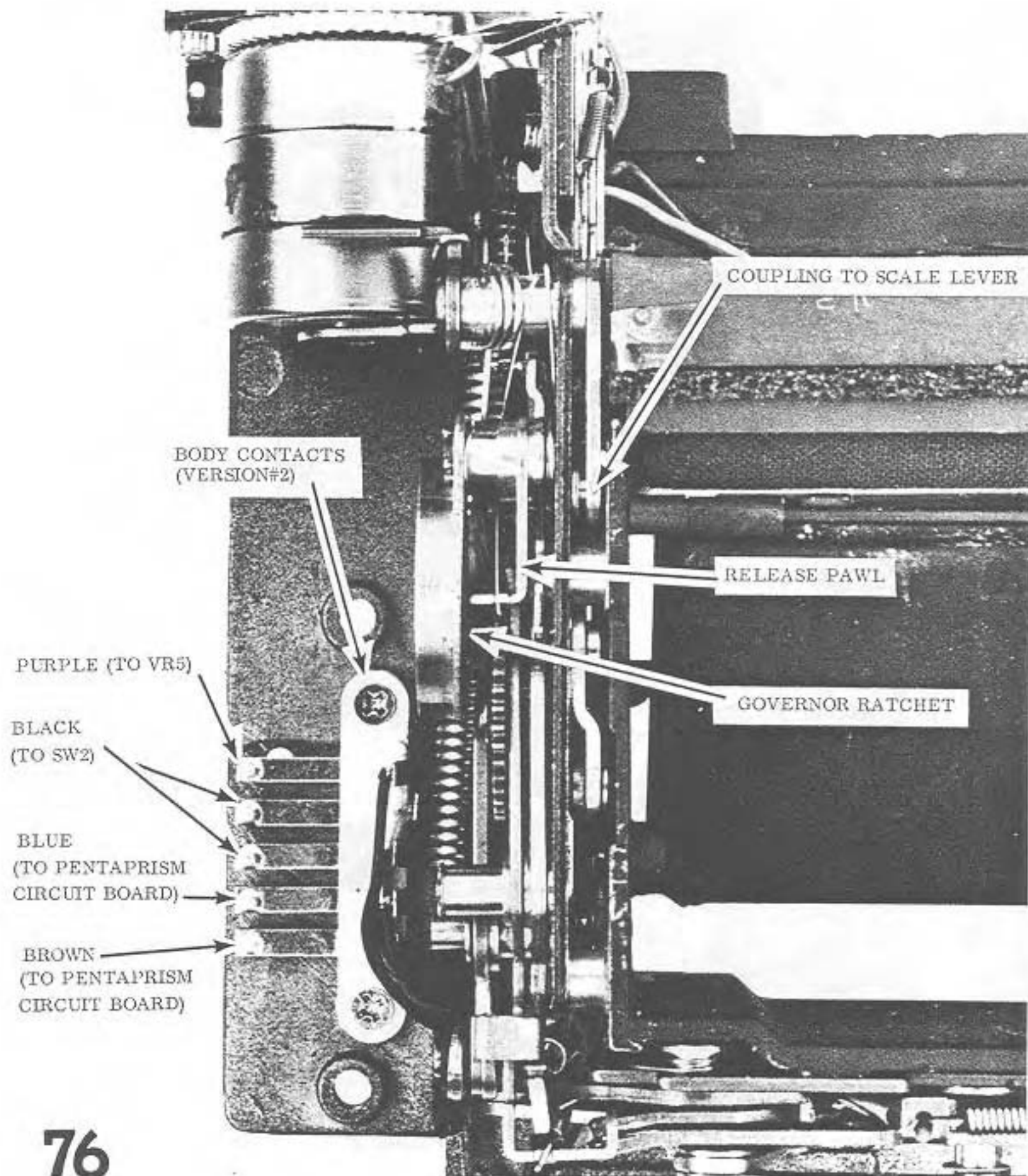
GOVERNOR
DRUM

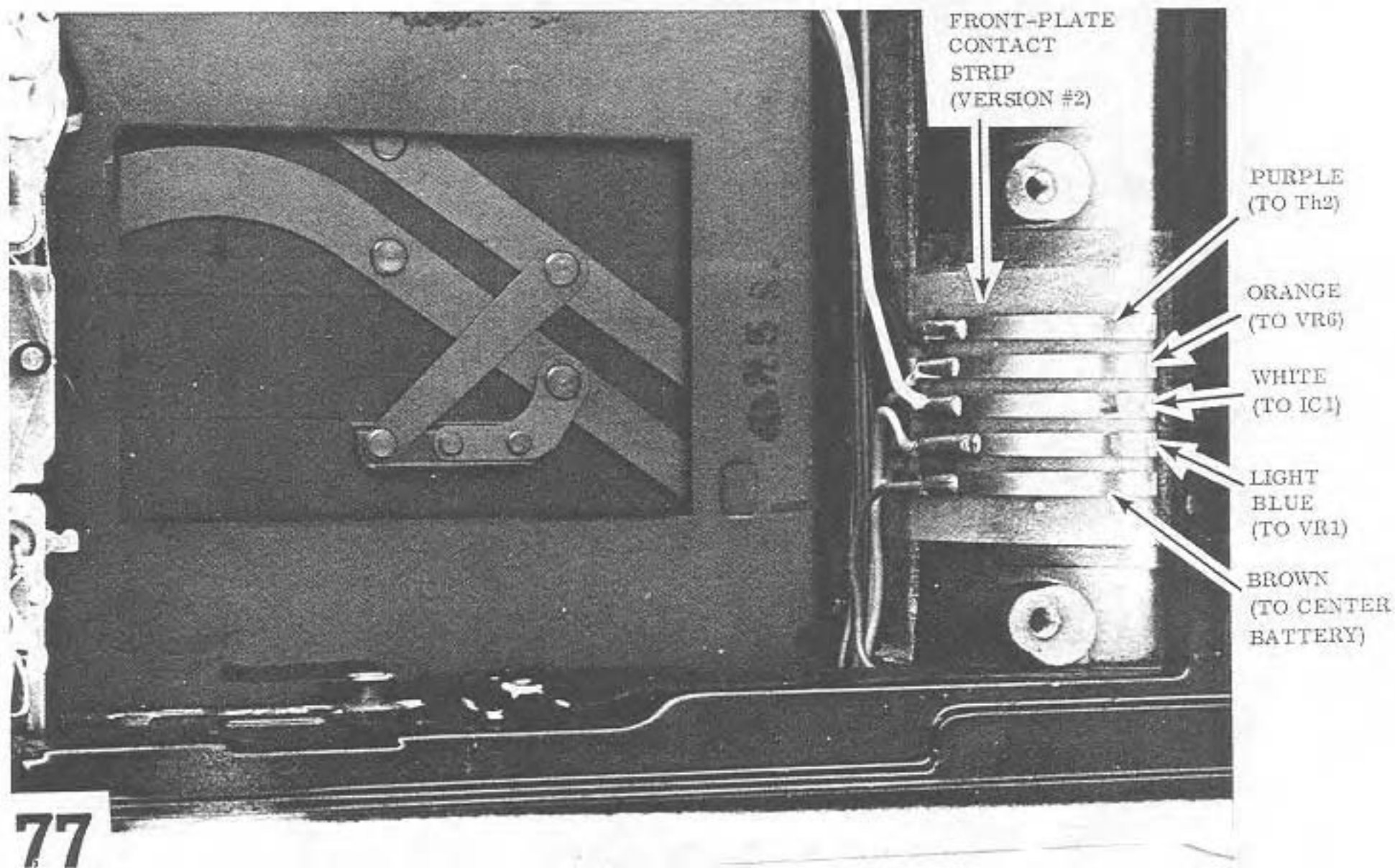
APERTURE-
COCKING
LEVER

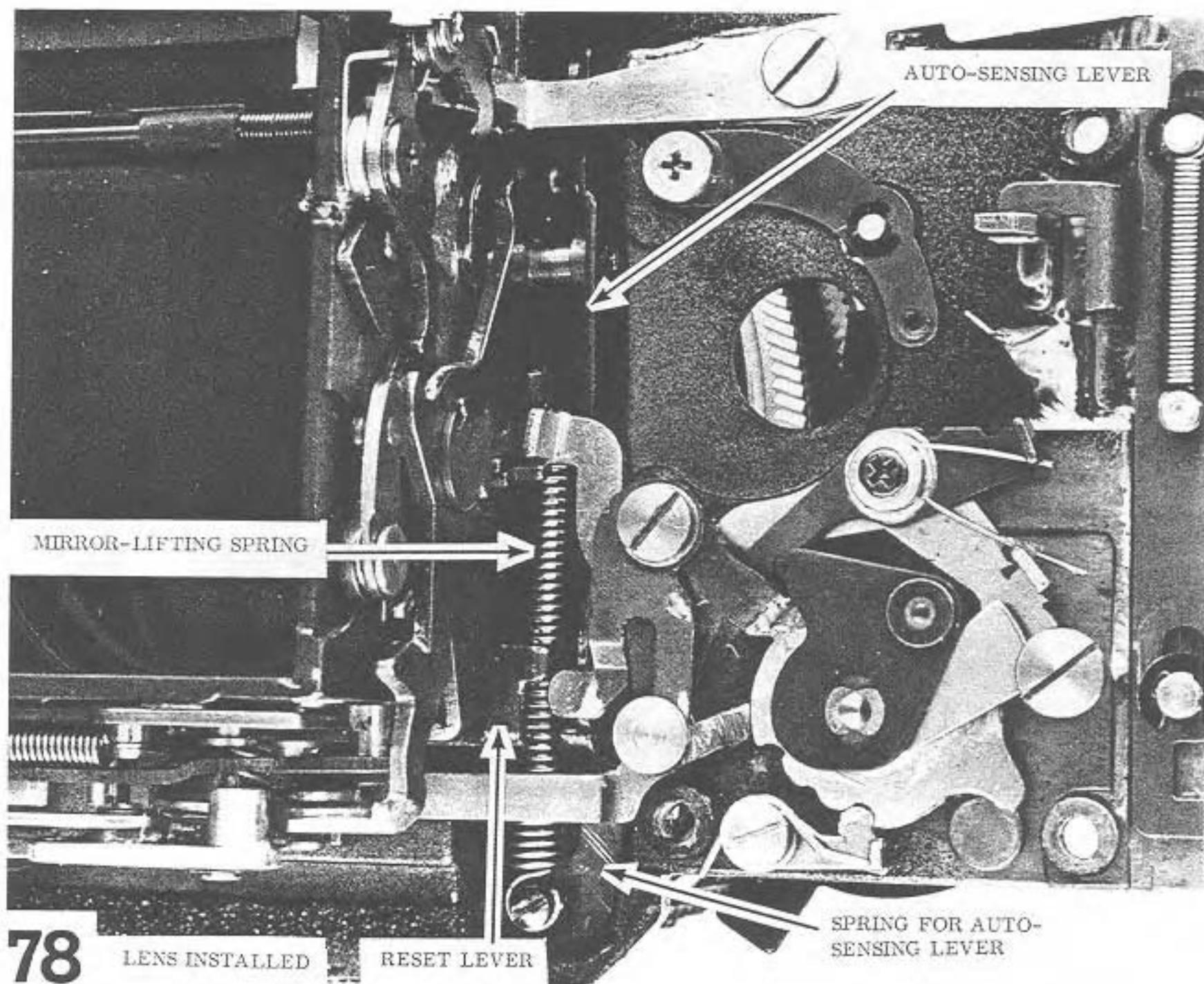
MAXIMUM-
APERTURE
SET LEVER

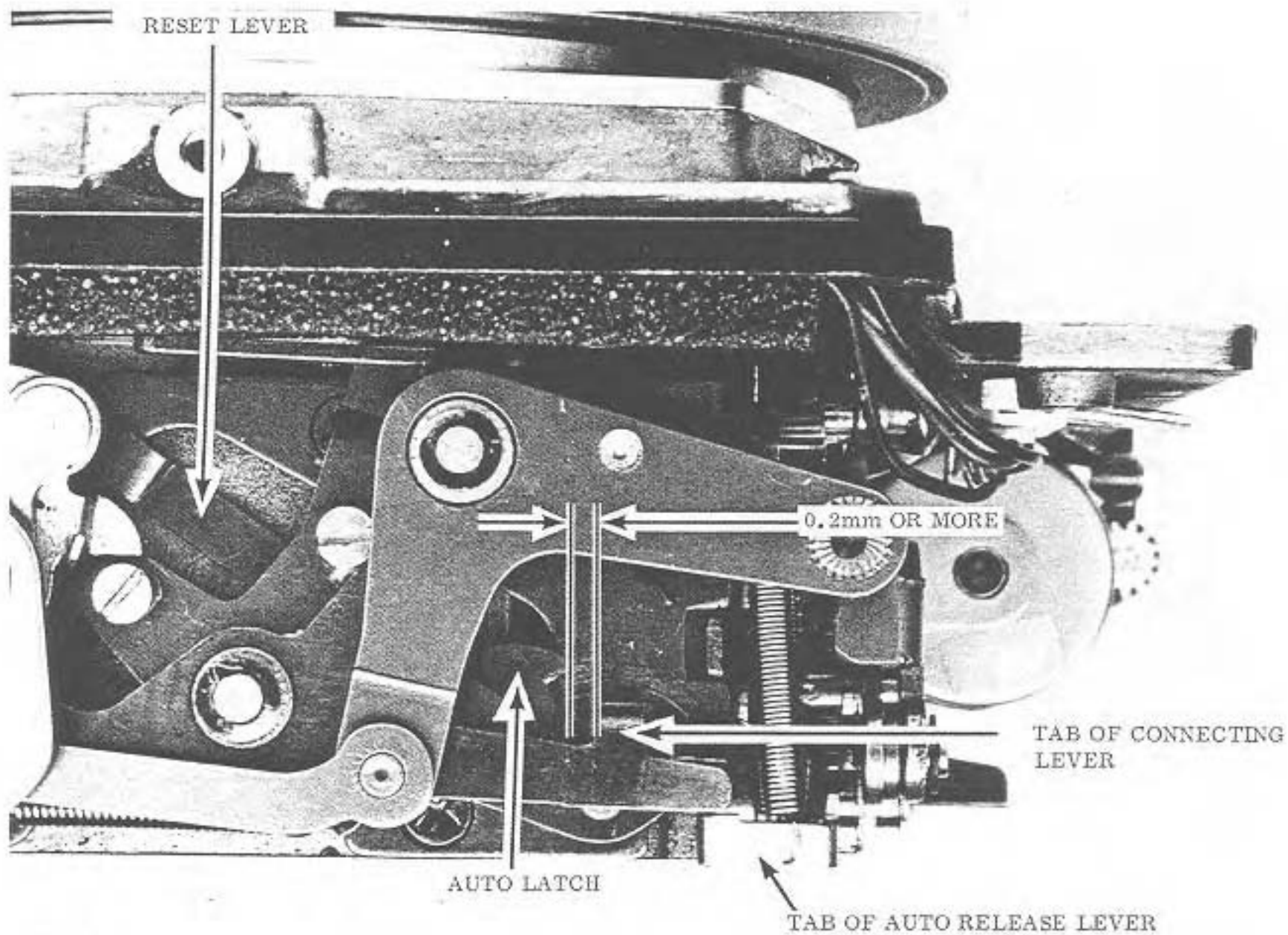
AUTO-RELEASE LEVER







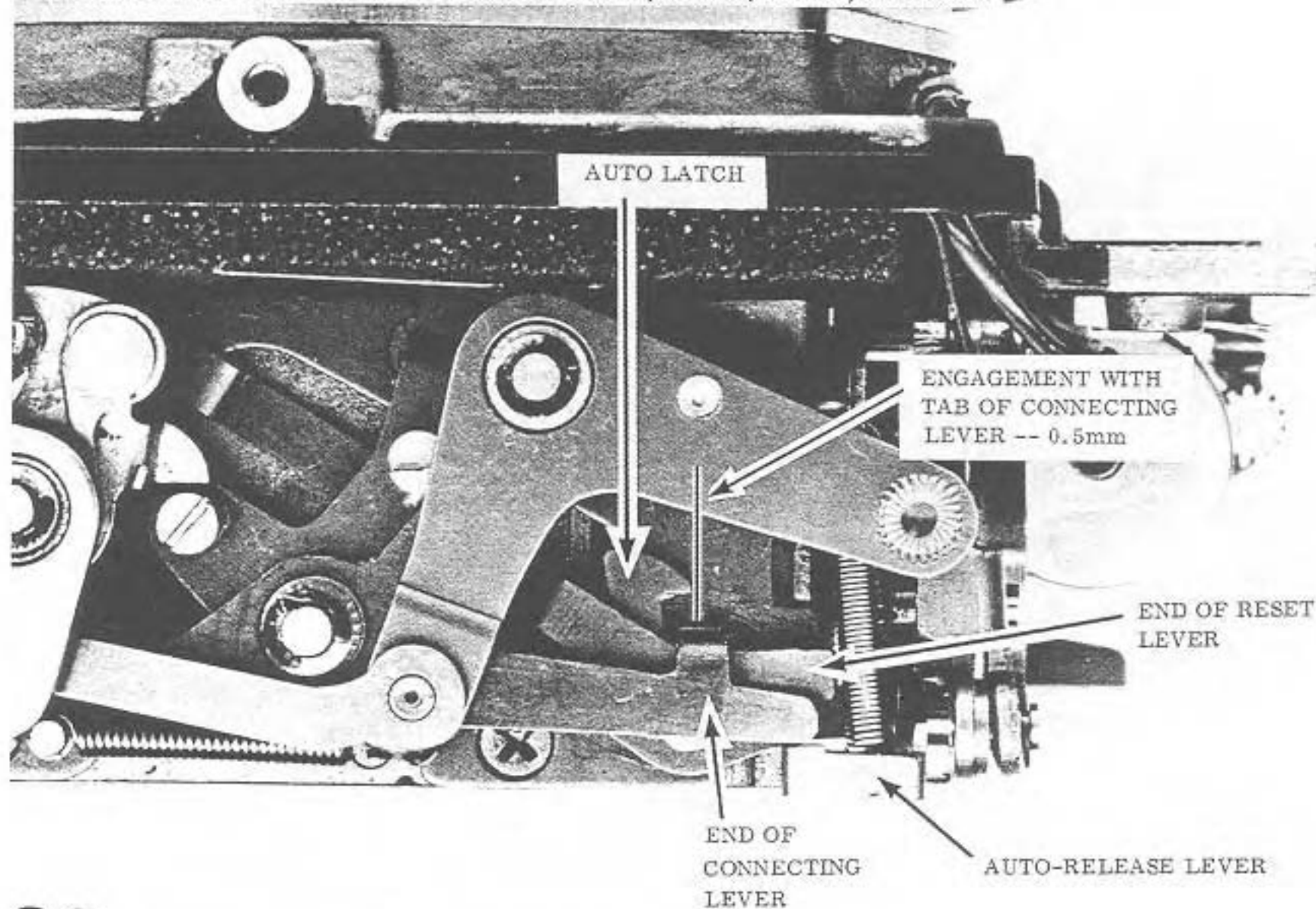




79

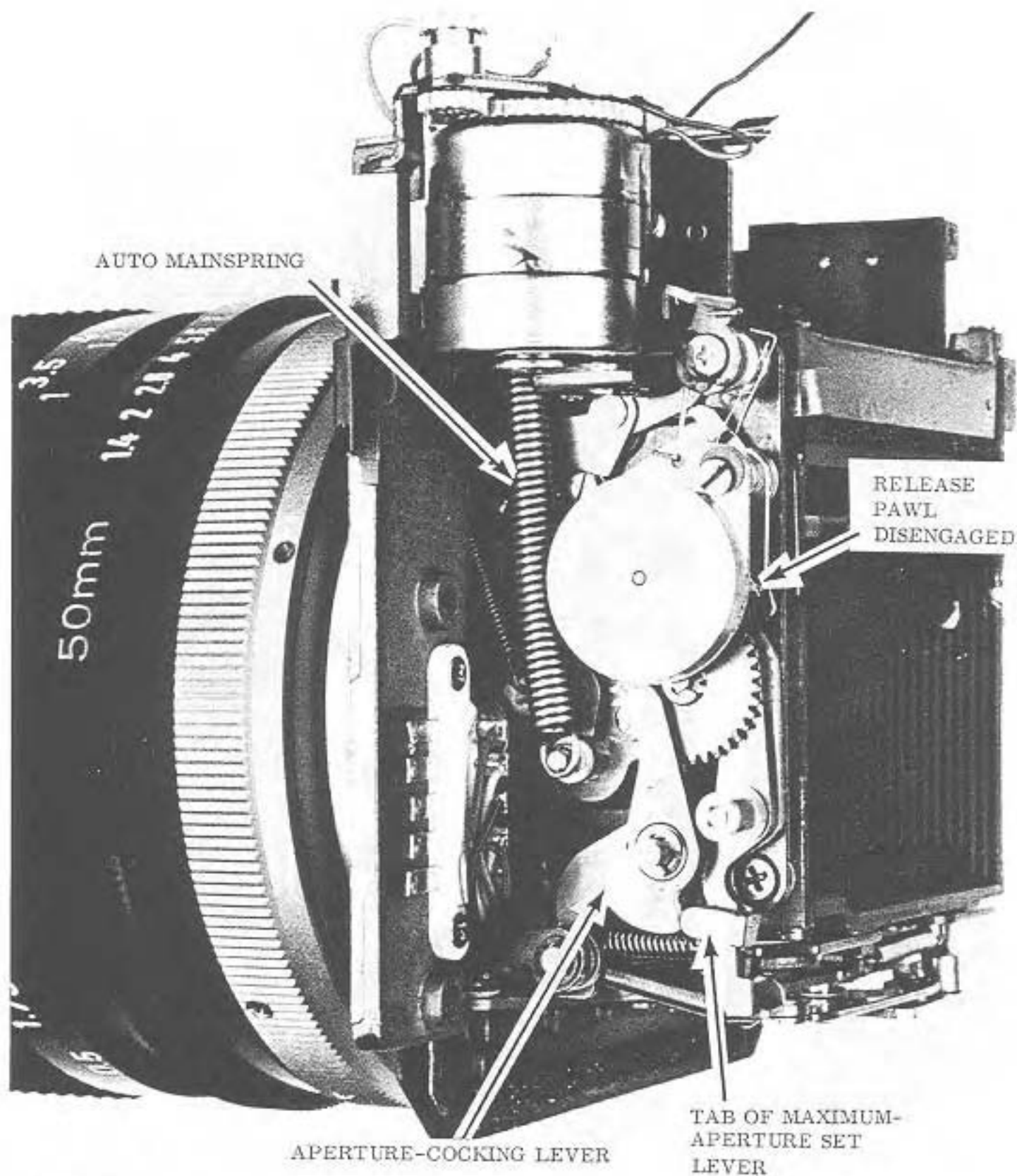
DIAPHRAGM-SETTING RING AT MANUAL SETTING

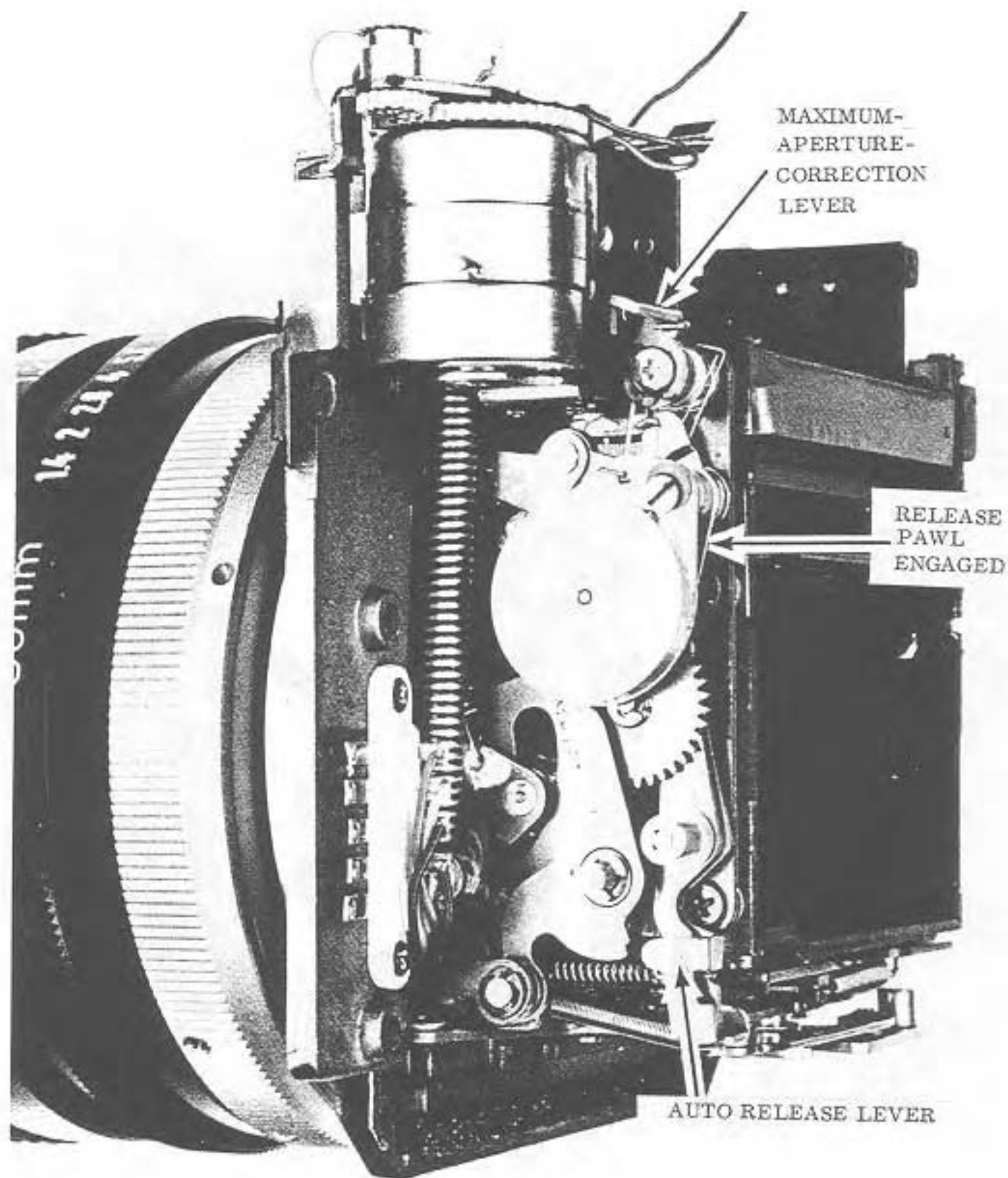
ADJUST AUTO-LATCH ENGAGEMENT WITH E-M CHANGE PIN (PART #19-0807) --
AVAILABLE WITH SHOULDER LENGTHS OF 3.3mm, 3.5mm, 3.7mm, and 3.9mm



80

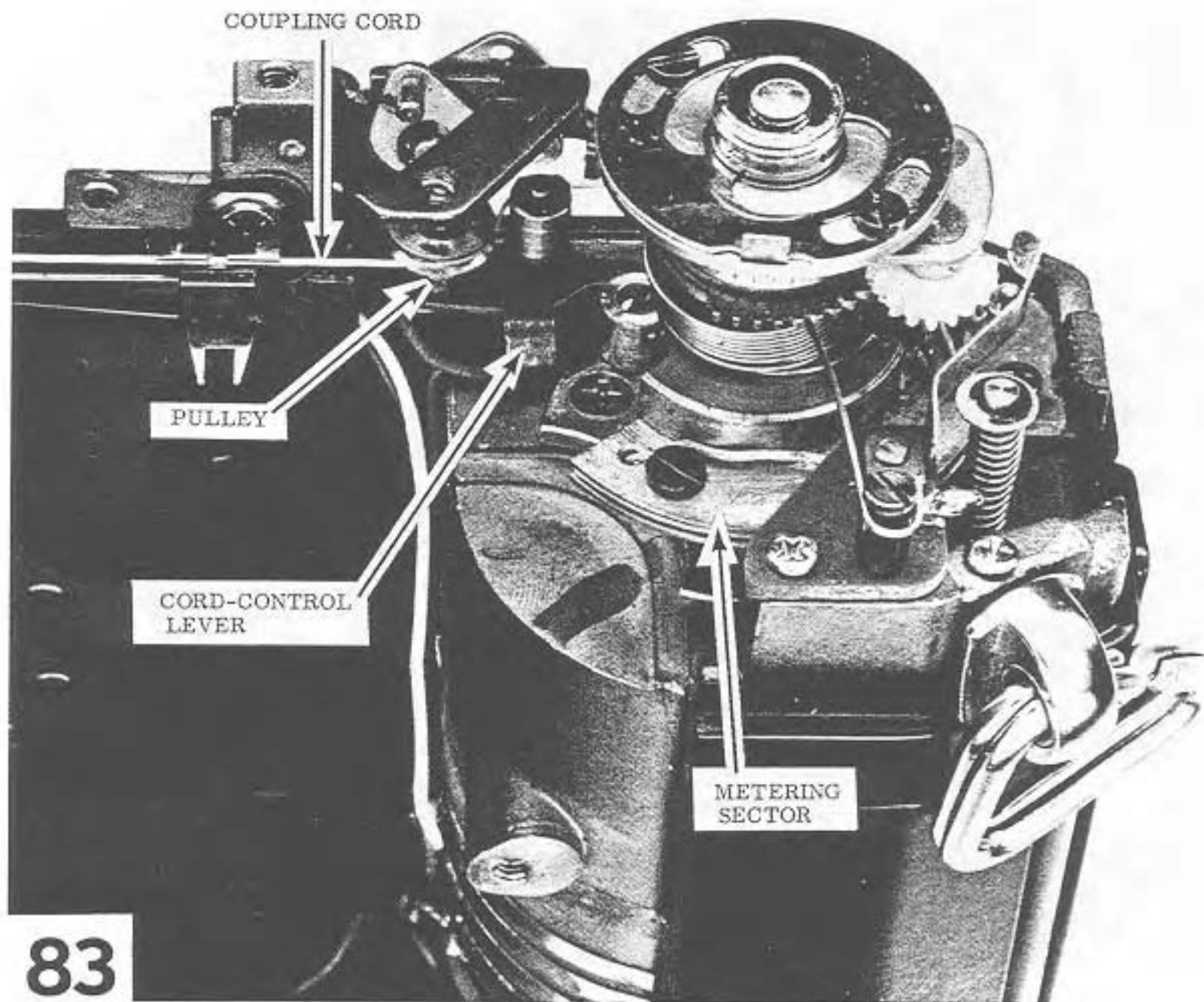
DIAPHRAGM-SETTING RING AT AUTOMATIC SETTING

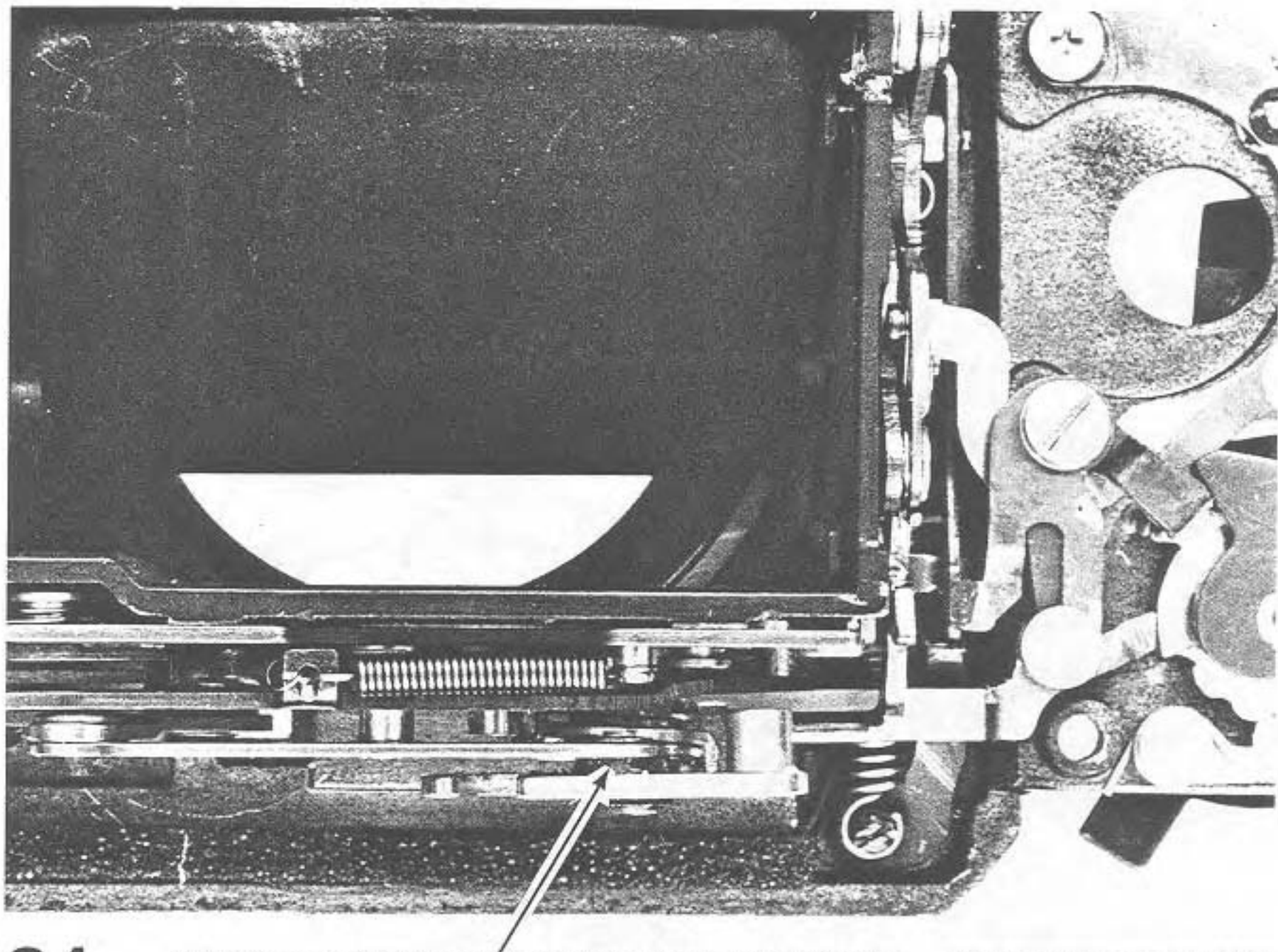




82

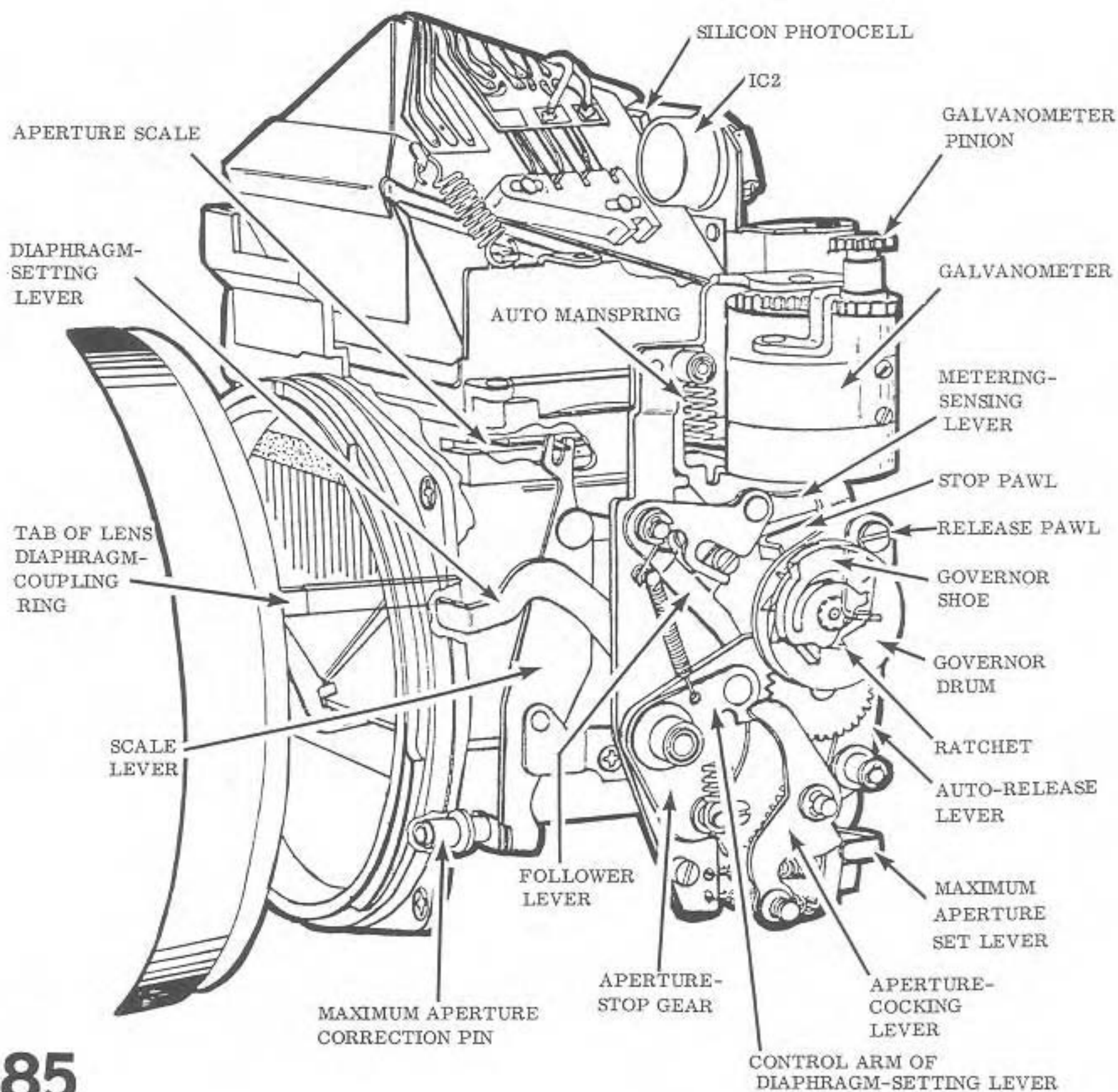
AUTO DIAPHRAGM-CONTROL UNIT TENSIONED

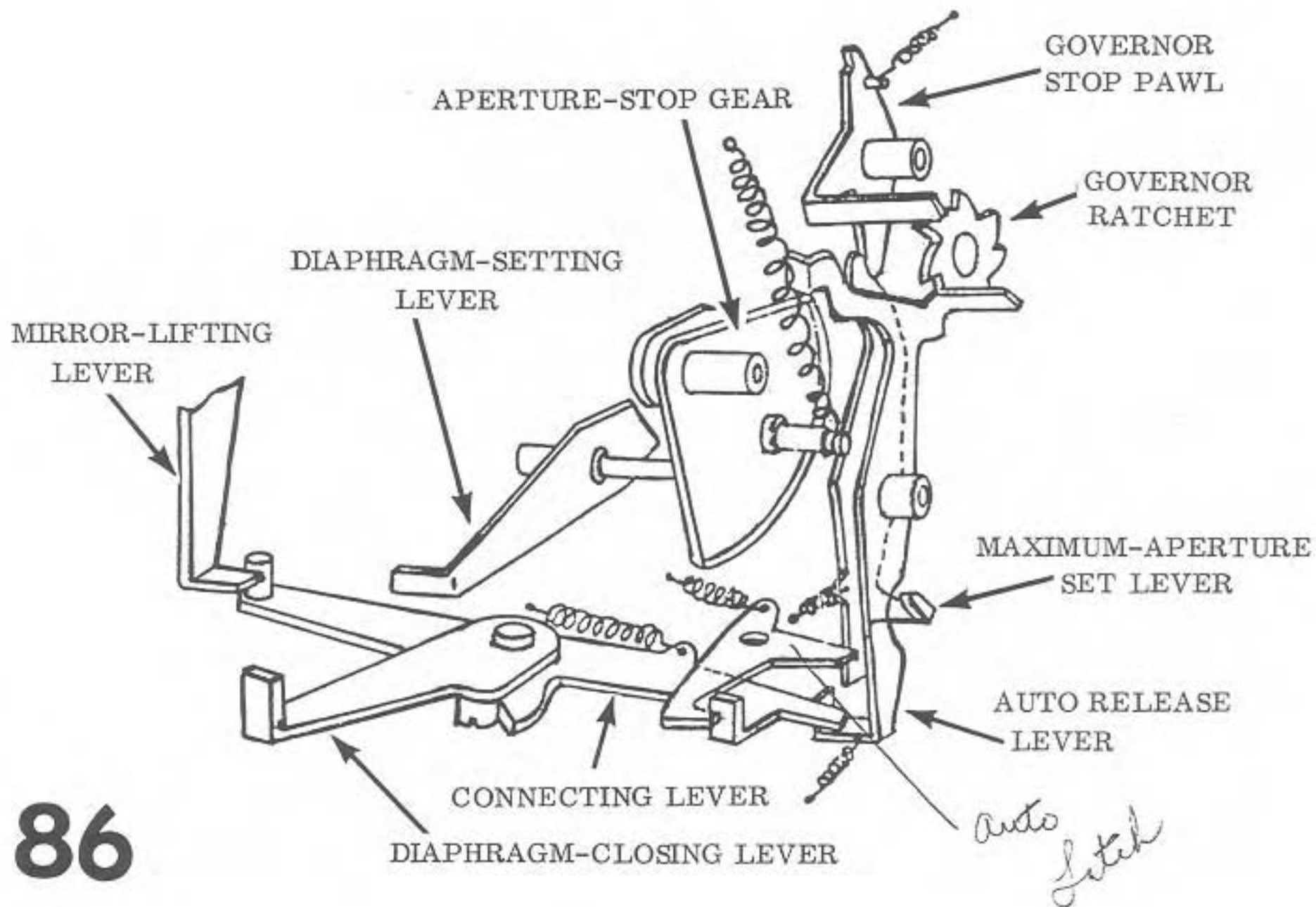


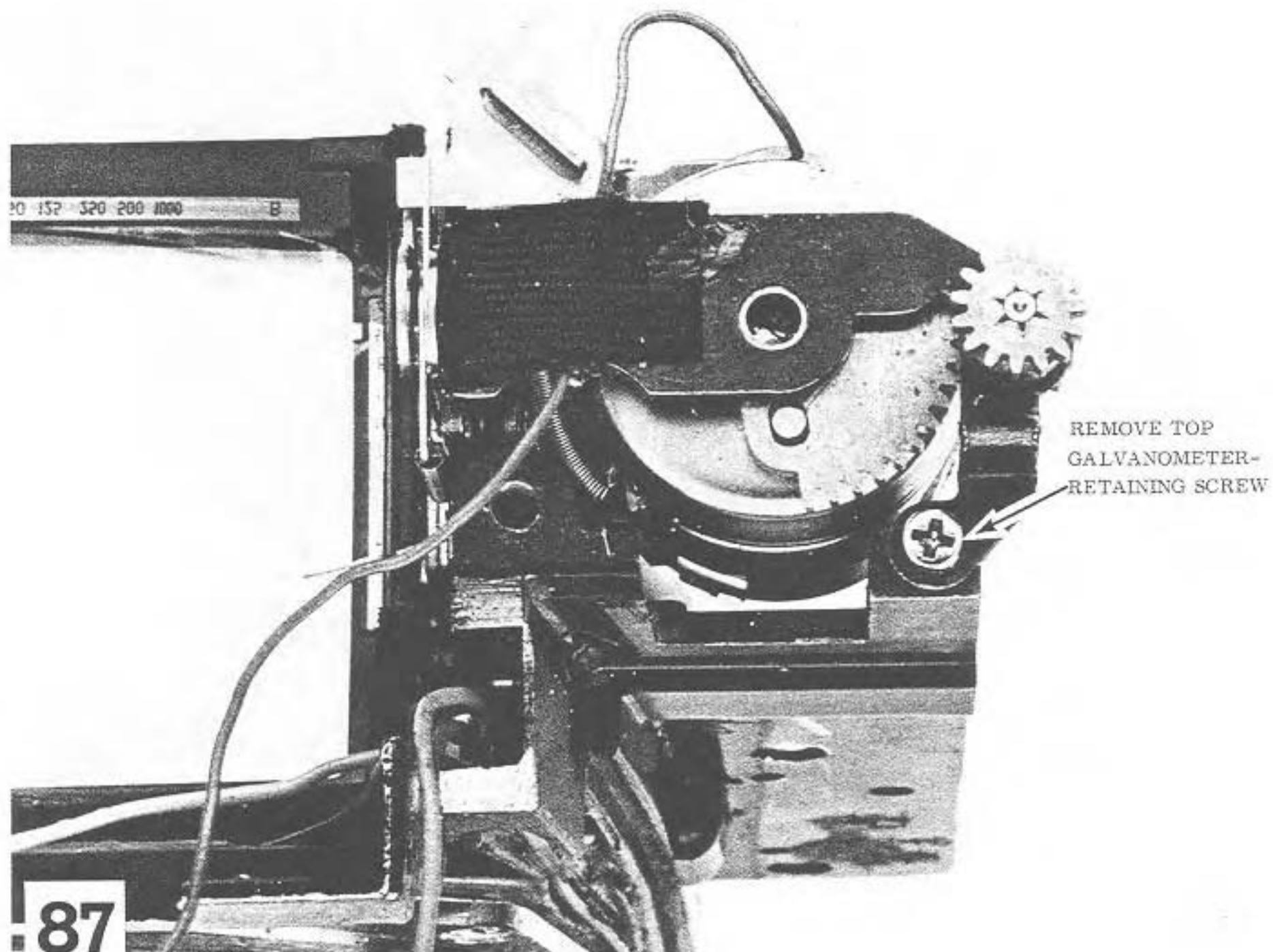


84

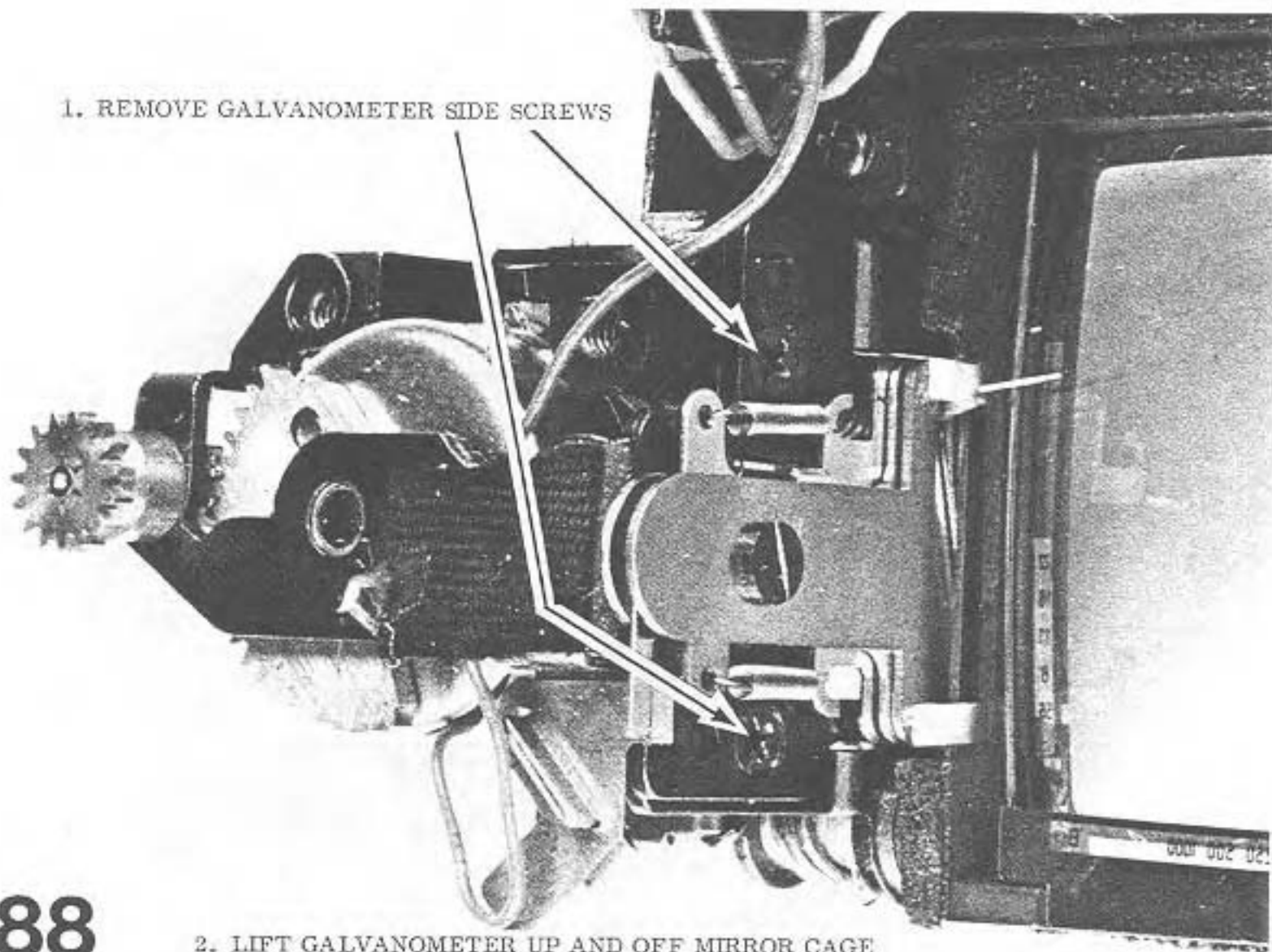
ECCENTRIC BETWEEN MIRROR-COCKING LEVER AND AUTO LINK -- ADJUST UNTIL THE RELEASE PAWL AND THE MIRROR-RELEASE LEVER ENGAGE SIMULTANEOUSLY





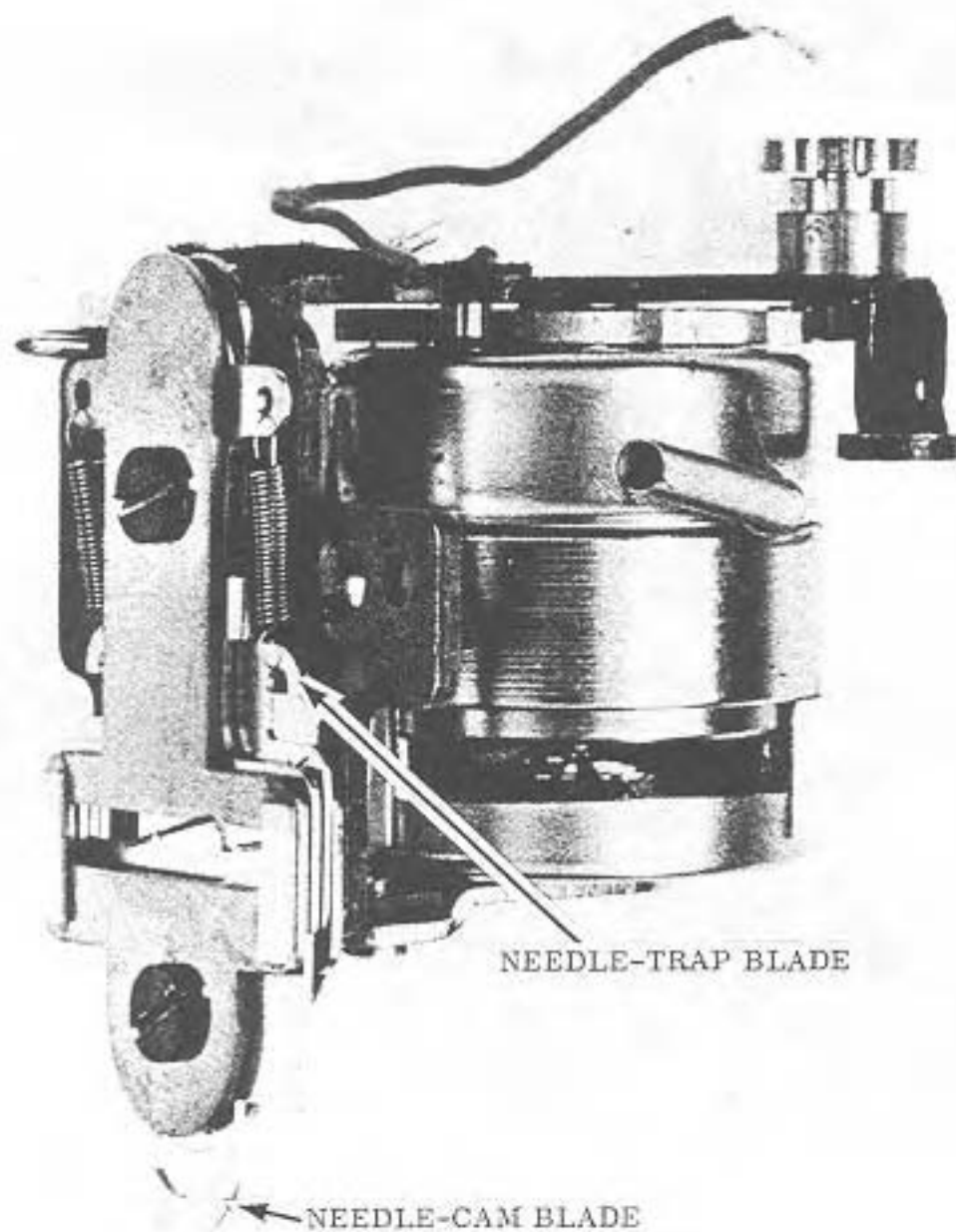


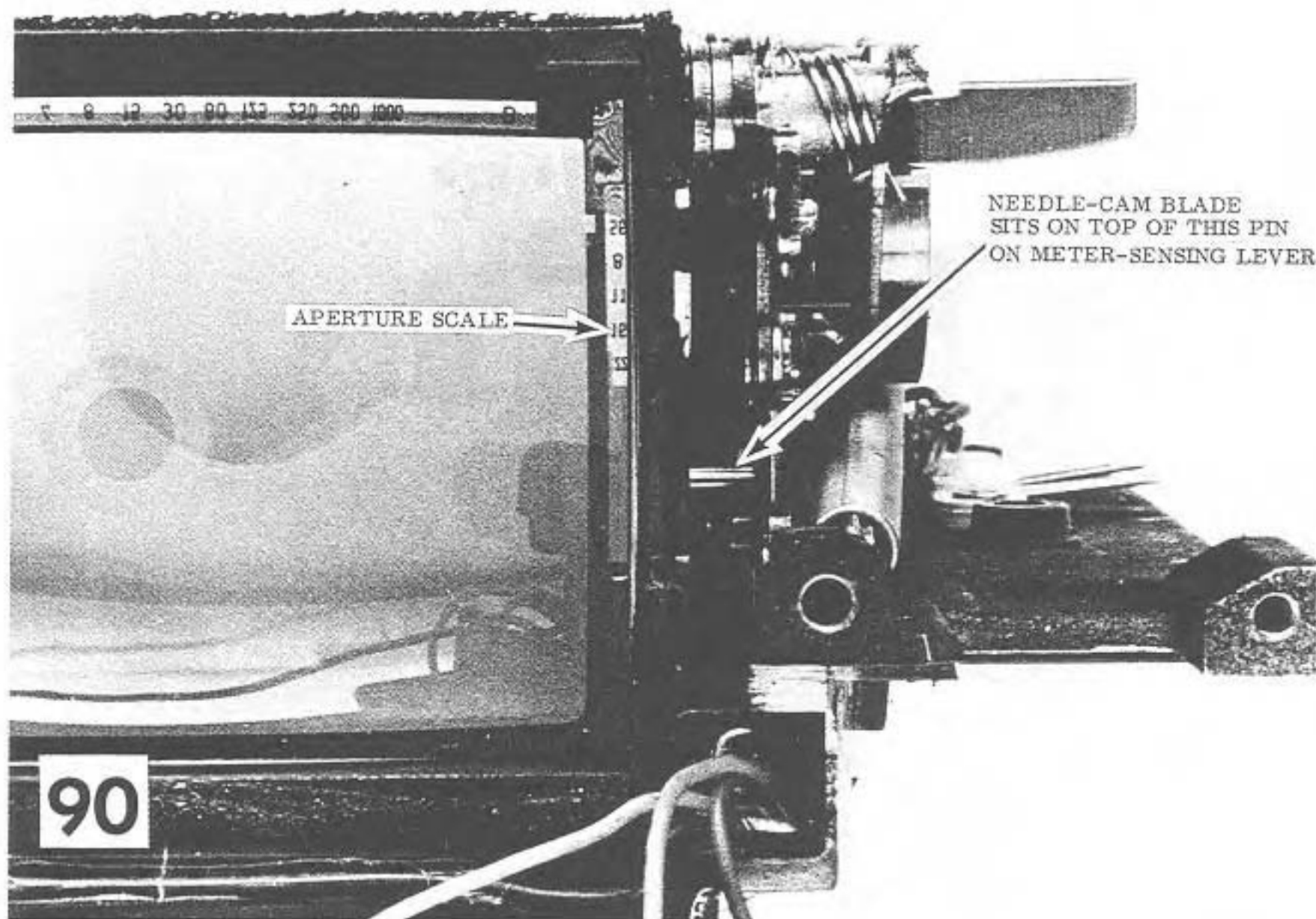
1. REMOVE GALVANOMETER SIDE SCREWS



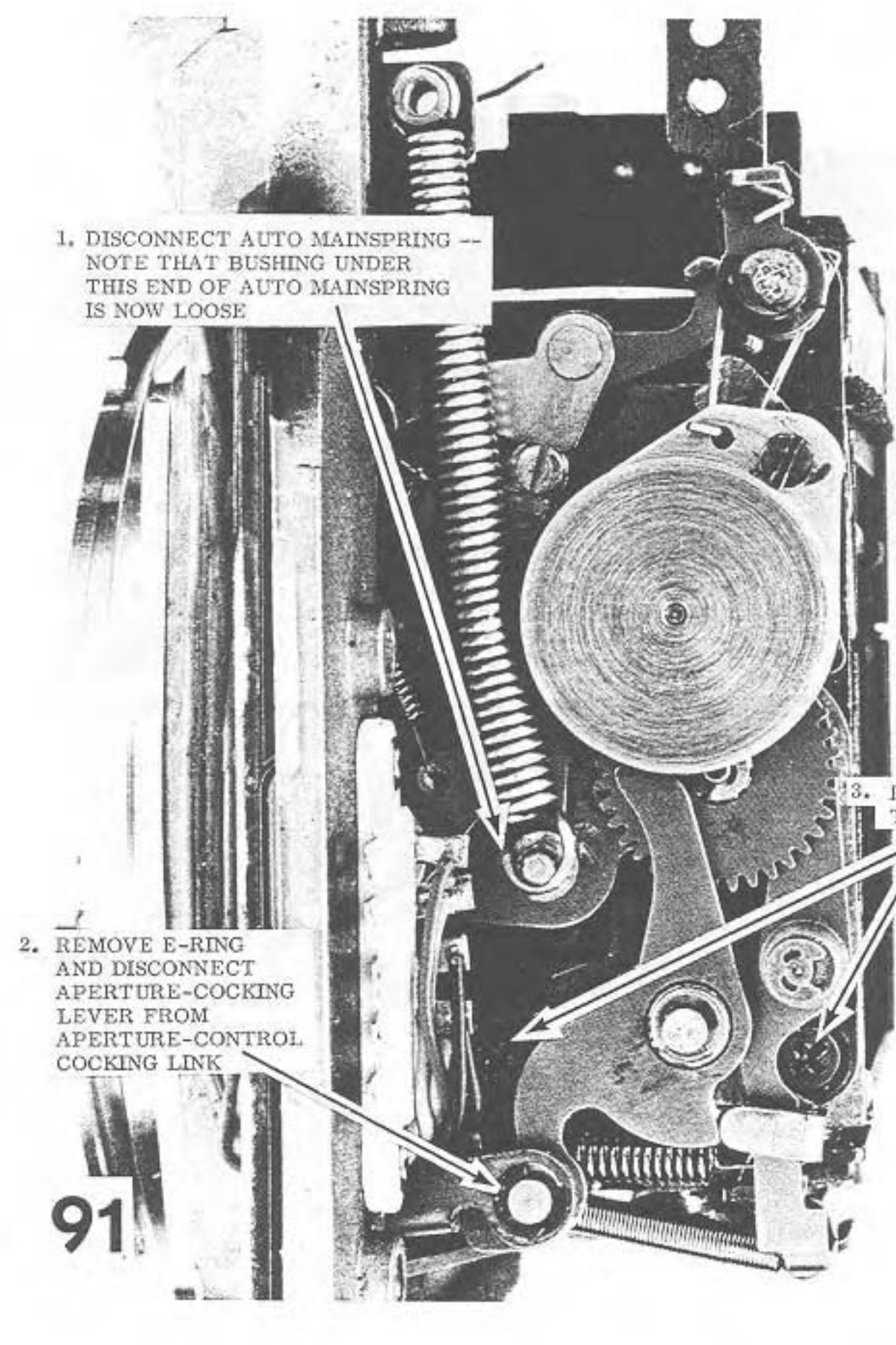
88

2. LIFT GALVANOMETER UP AND OFF MIRROR CAGE





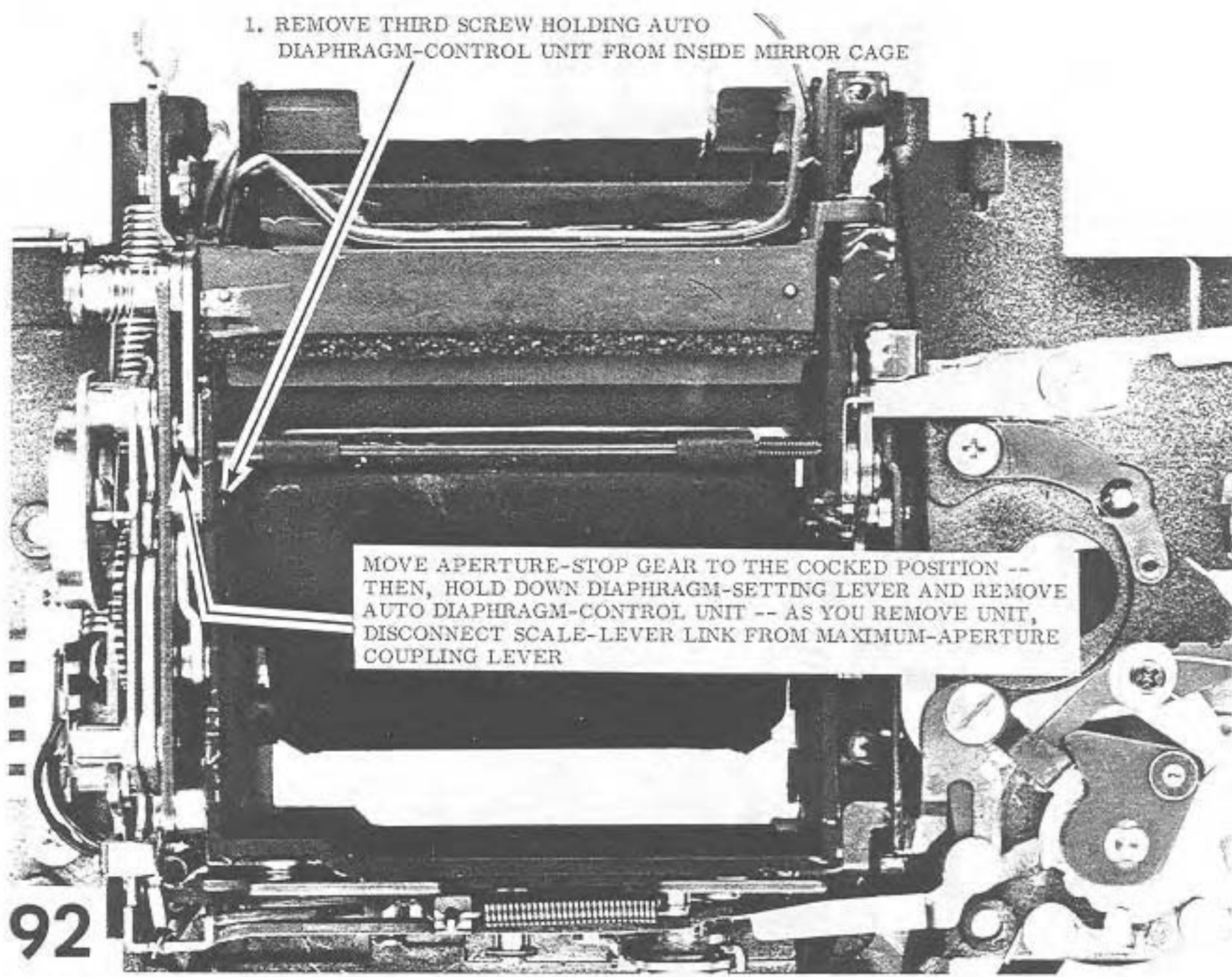
90



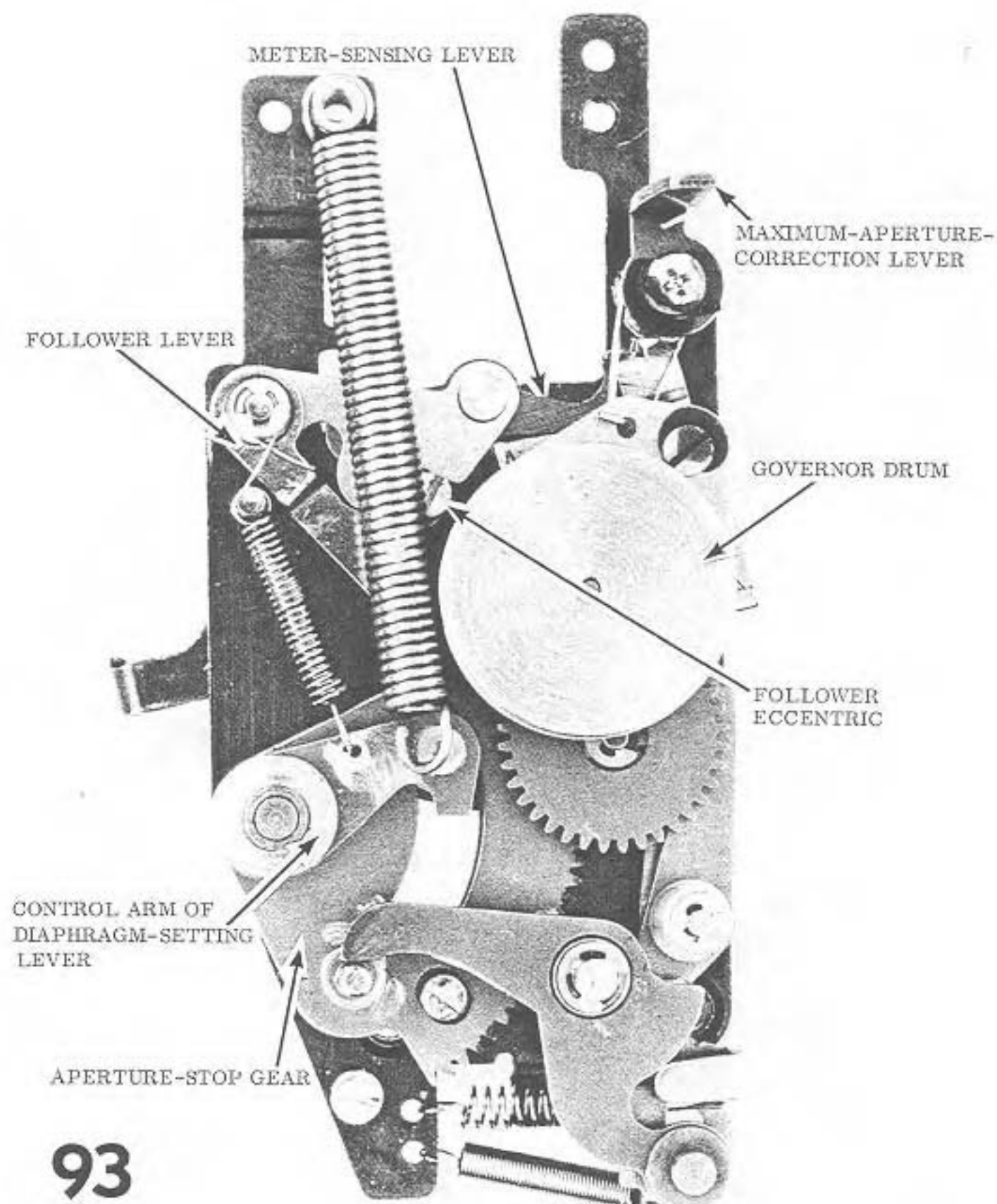
1. DISCONNECT AUTO MAINSPRING --
NOTE THAT BUSHING UNDER
THIS END OF AUTO MAINSPRING
IS NOW LOOSE

2. REMOVE E-RING
AND DISCONNECT
APERTURE-COCKING
LEVER FROM
APERTURE-CONTROL
COCKING LINK

3. REMOVE
TWO SCREWS

- 
1. REMOVE THIRD SCREW HOLDING AUTO
DIAPHRAGM-CONTROL UNIT FROM INSIDE MIRROR CAGE

MOVE APERTURE-STOP GEAR TO THE COCKED POSITION --
THEN, HOLD DOWN DIAPHRAGM-SETTING LEVER AND REMOVE
AUTO DIAPHRAGM-CONTROL UNIT -- AS YOU REMOVE UNIT,
DISCONNECT SCALE-LEVER LINK FROM MAXIMUM-APERTURE
COUPLING LEVER



Clear the Assembly

MAXIMUM-APERTURE
COUPLING LEVER THAT
HOOKS TO LINK OF
SCALE LEVER

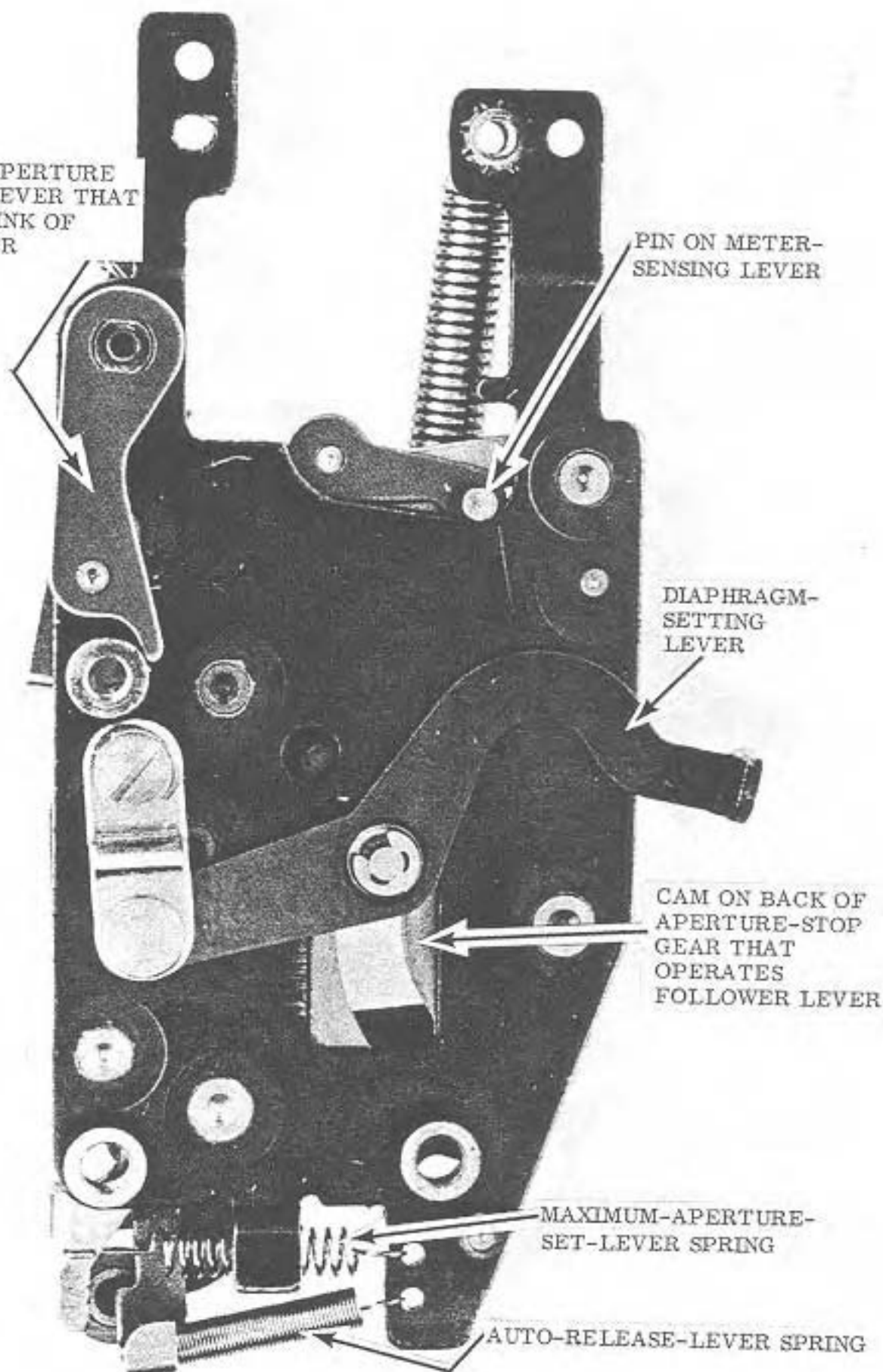
PIN ON METER-
SENSING LEVER

DIAPHRAGM-
SETTING
LEVER

CAM ON BACK OF
APERTURE-STOP
GEAR THAT
OPERATES
FOLLOWER LEVER

MAXIMUM-APERTURE-
SET-LEVER SPRING

AUTO-RELEASE-LEVER SPRING



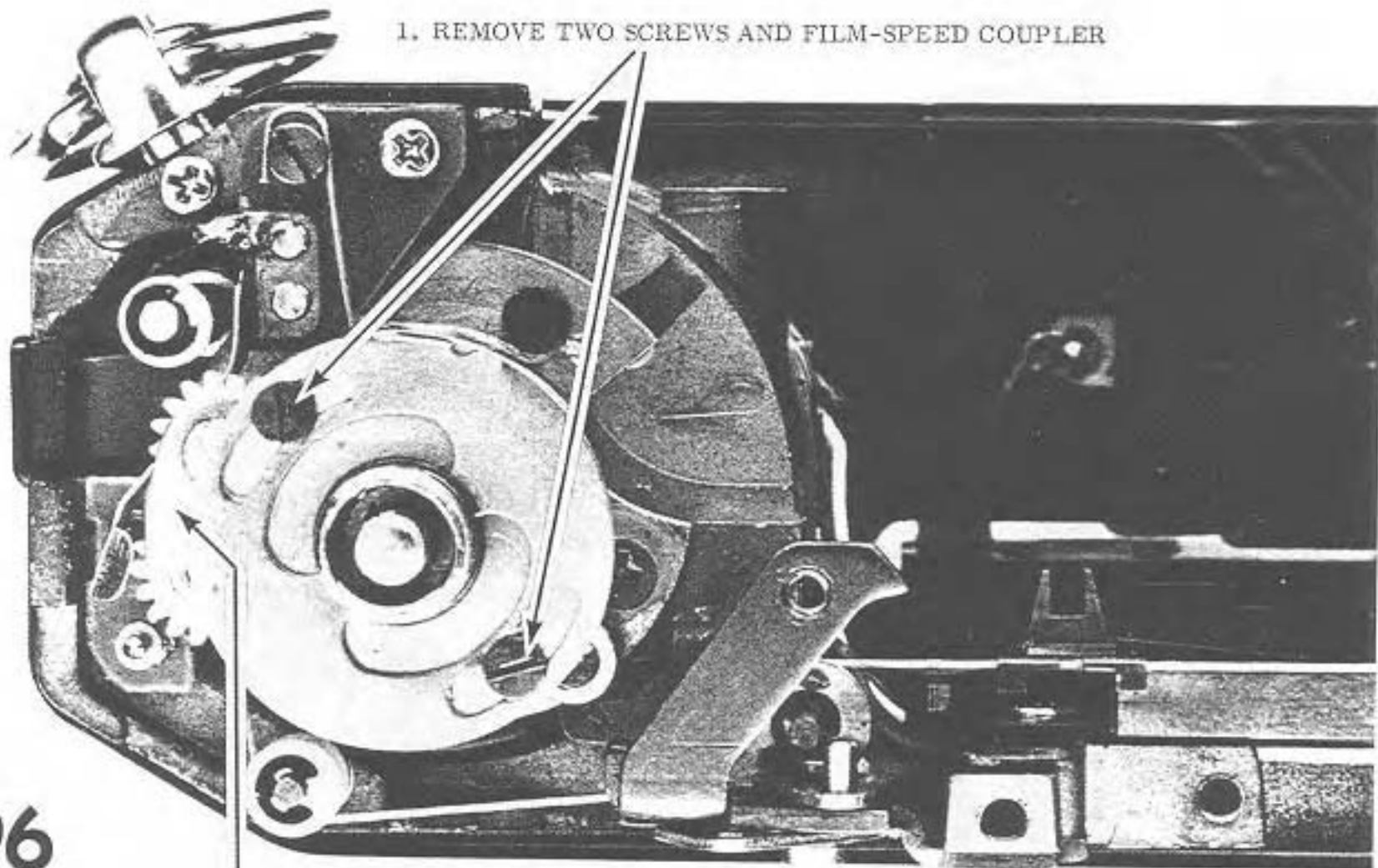
SCALE LEVER COUPLES TO
APERTURE SCALE HERE

SCALE-LEVER LINK

SCALE LEVER

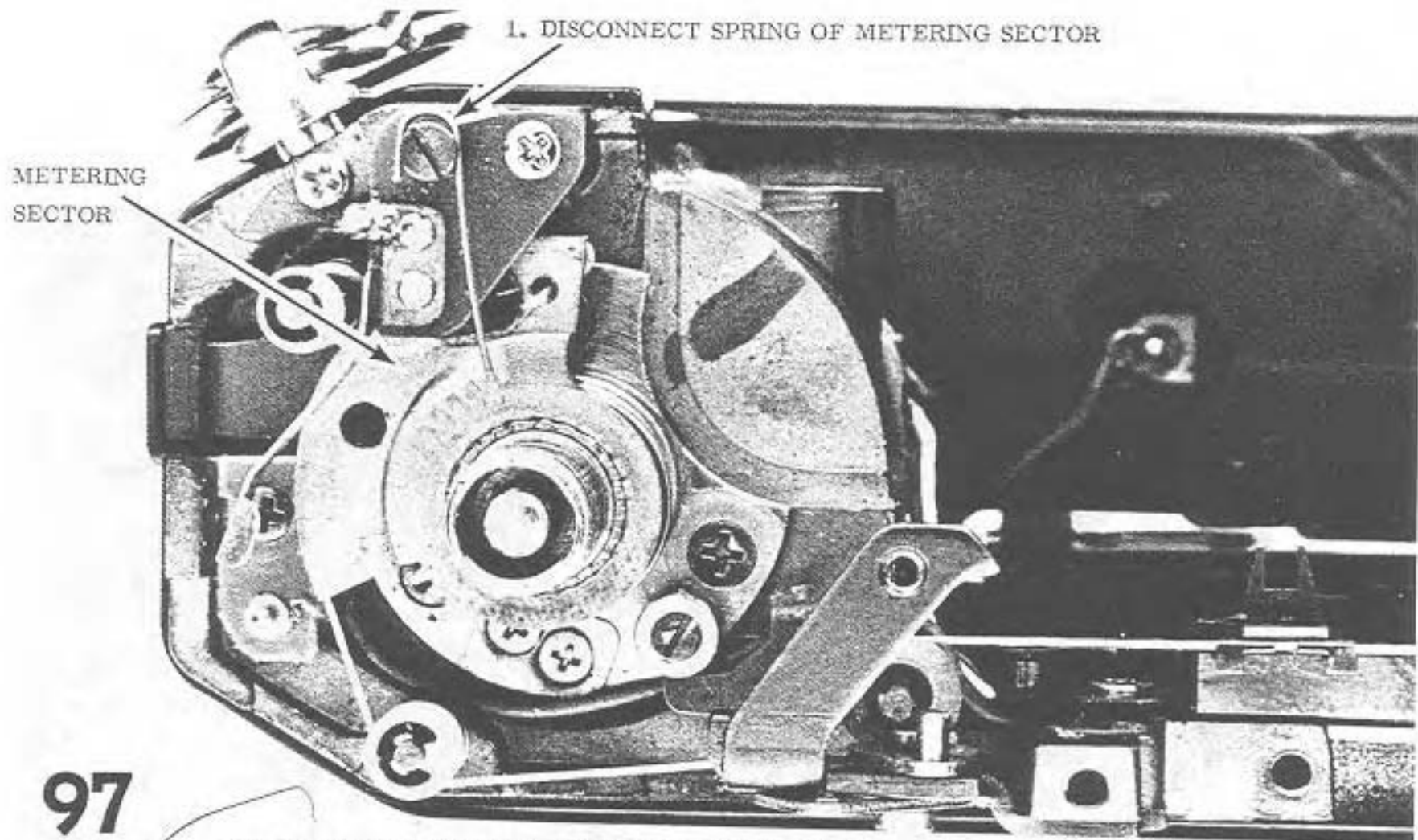
*Scribe
bracket before
removing*

1. REMOVE TWO SCREWS AND FILM-SPEED COUPLER



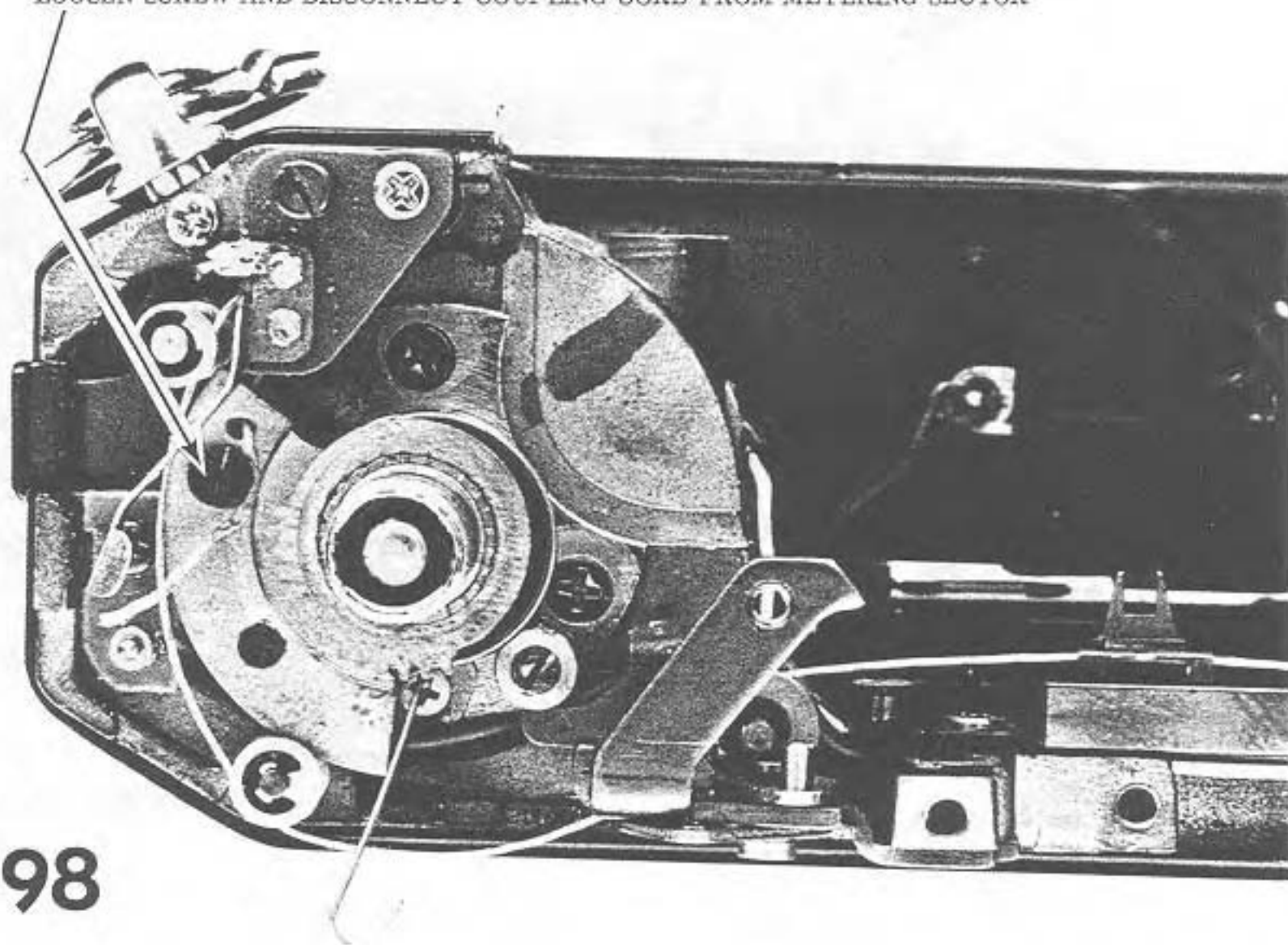
96

2. LIFT OFF FILM-SPEED GEAR UNIT
(SPACER UNDERNEATH)

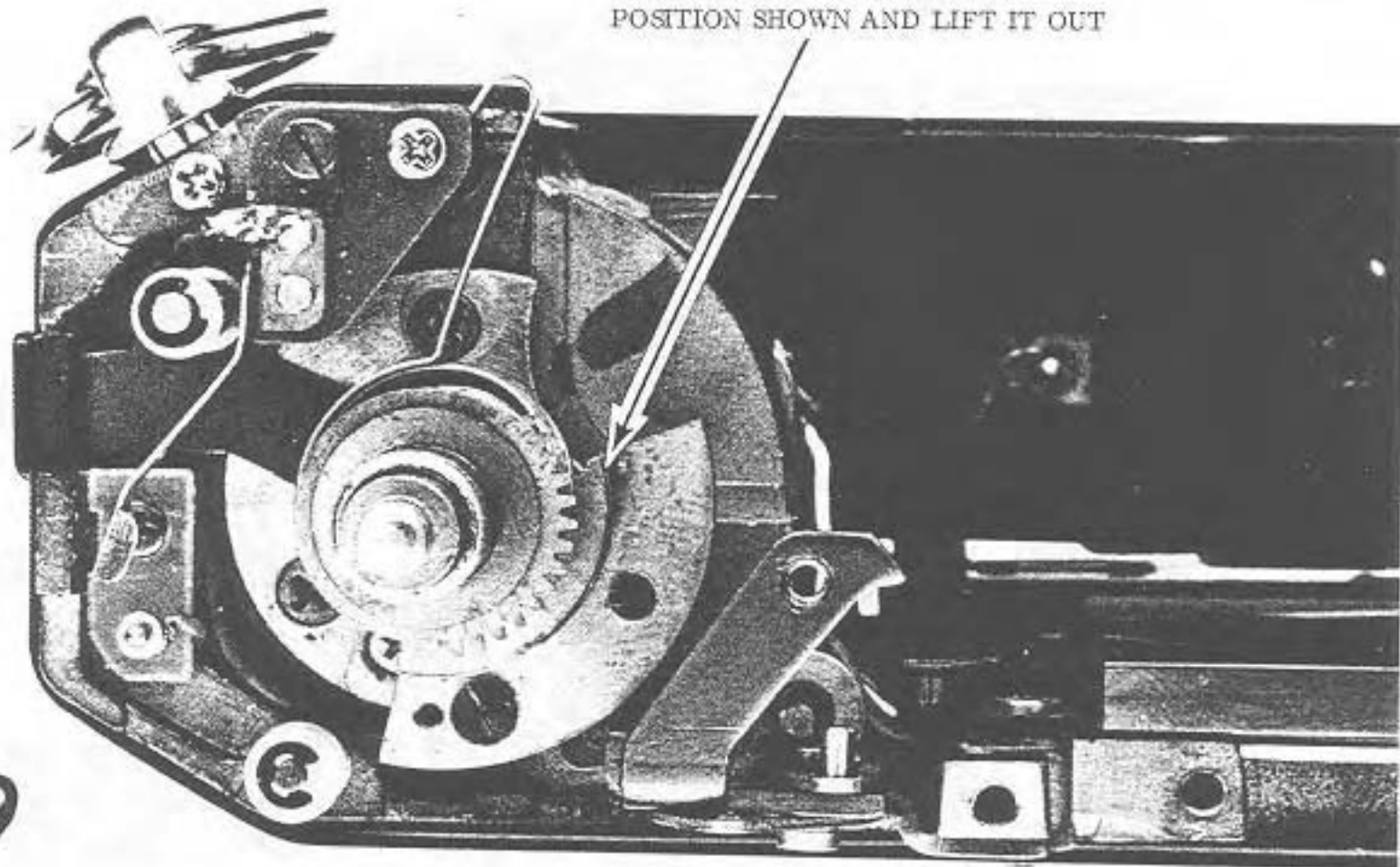


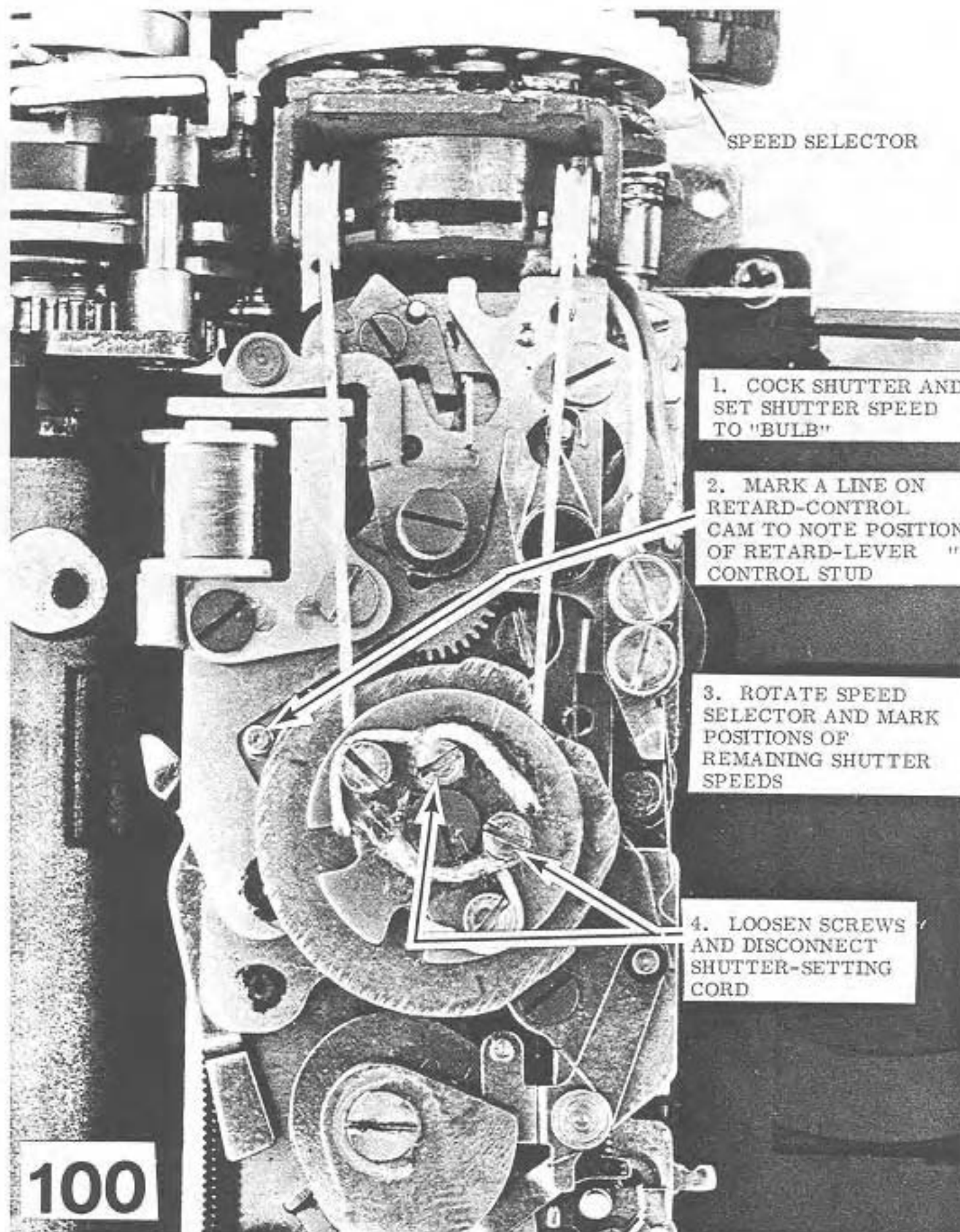
NOTE: ON REASSEMBLY, APPLY ONE FULL TURN
OF TENSION TO THE METERING-SECTOR SPRING

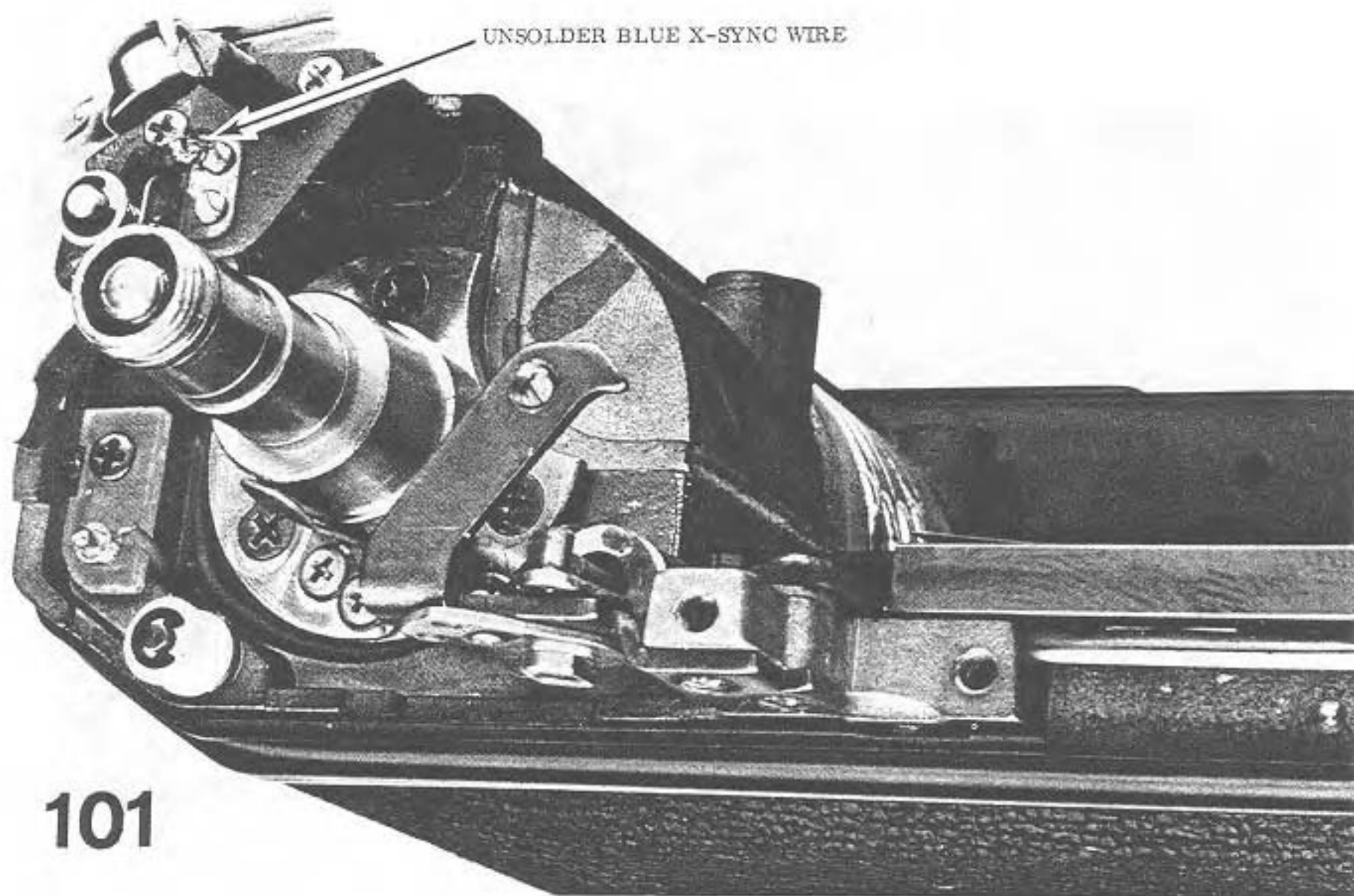
LOOSEN SCREW AND DISCONNECT COUPLING CORD FROM METERING SECTOR



TURN METERING SECTOR TO
POSITION SHOWN AND LIFT IT OUT



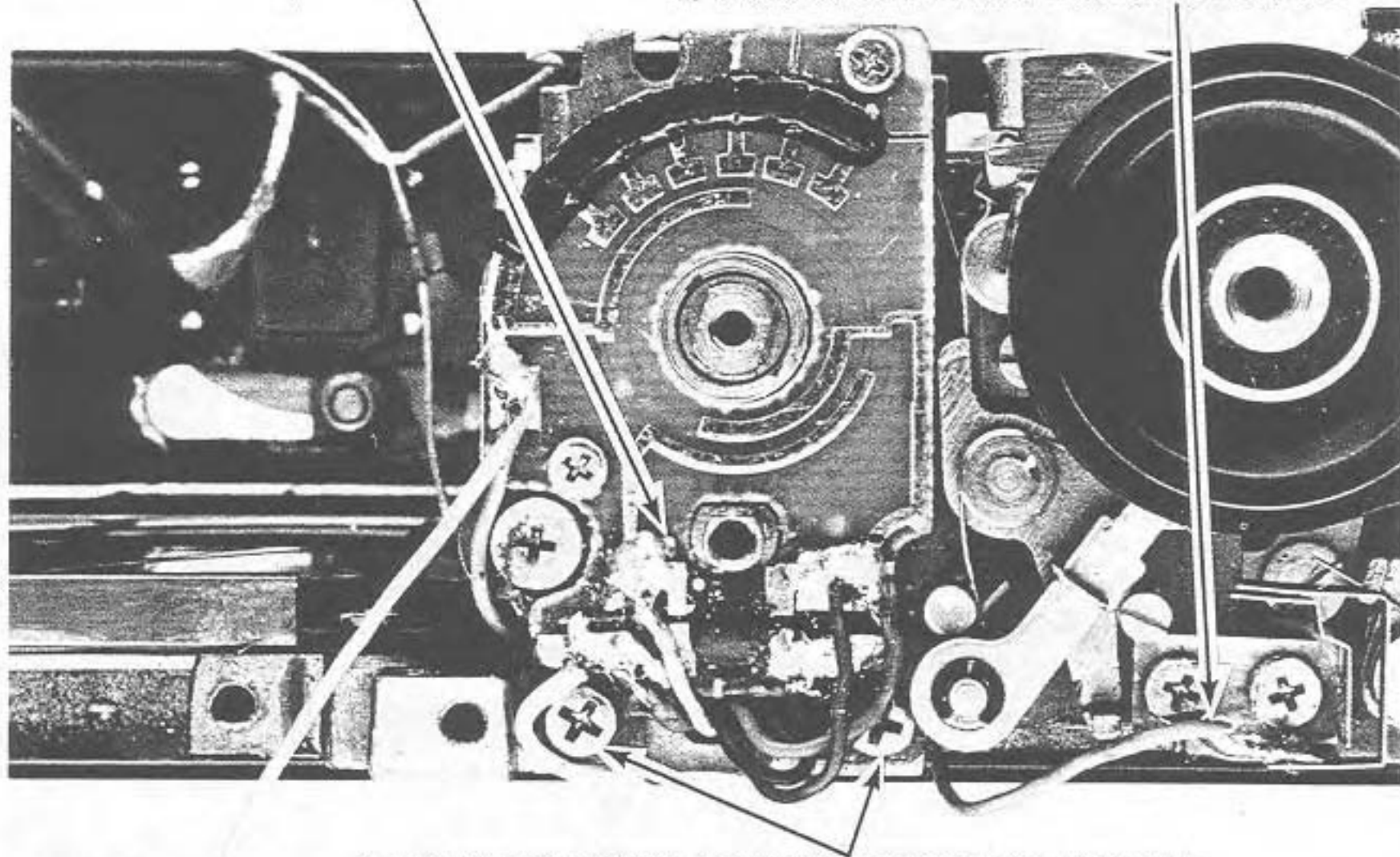




101

1. UNSOLDER WIRES FROM IC1 (SEE NEXT ILLUSTRATION)

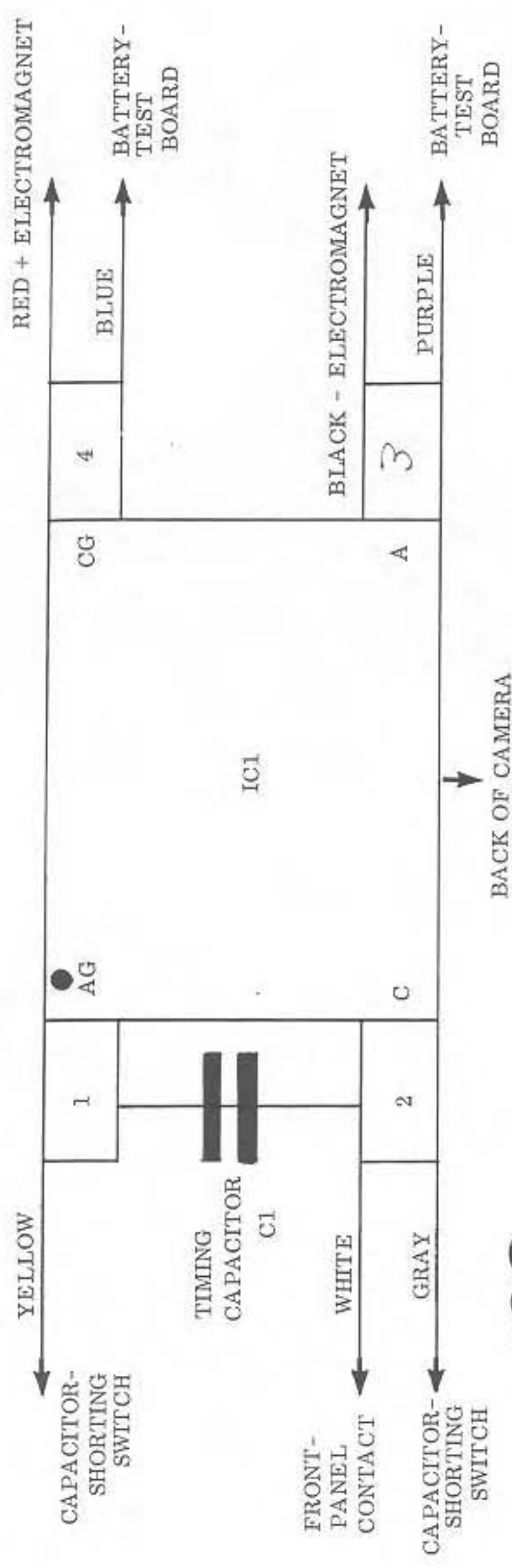
2. UNSOLDER ORANGE WIRE FROM ON-OFF SWITCH

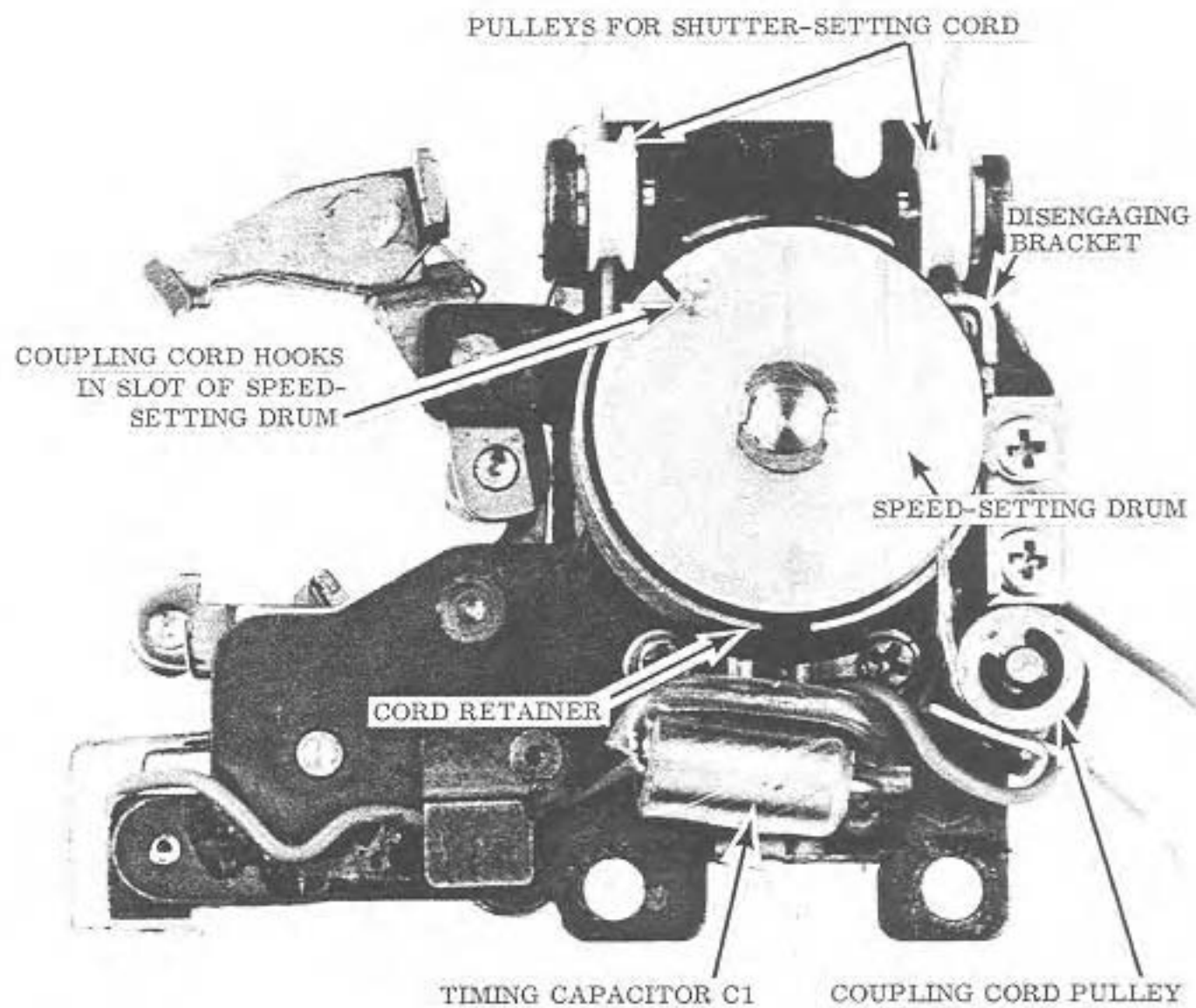


3. REMOVE TWO SCREWS AND LIFT OUT SPEED-DRUM ASSEMBLY

102

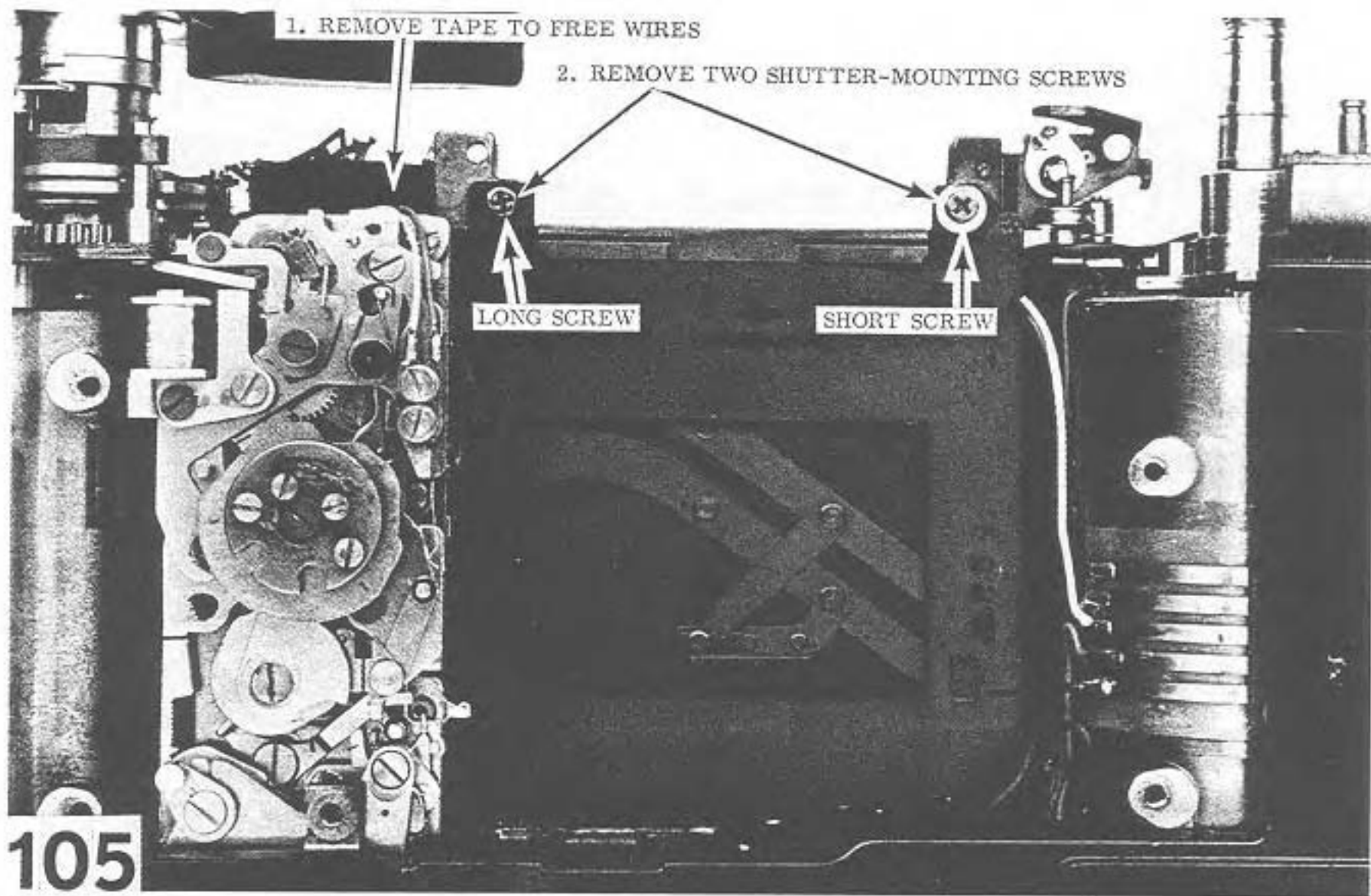
NOTE: SPEED SELECTOR DOES NOT HAVE TO BE REMOVED - WE'VE REMOVED IT HERE FOR ILLUSTRATION PURPOSES

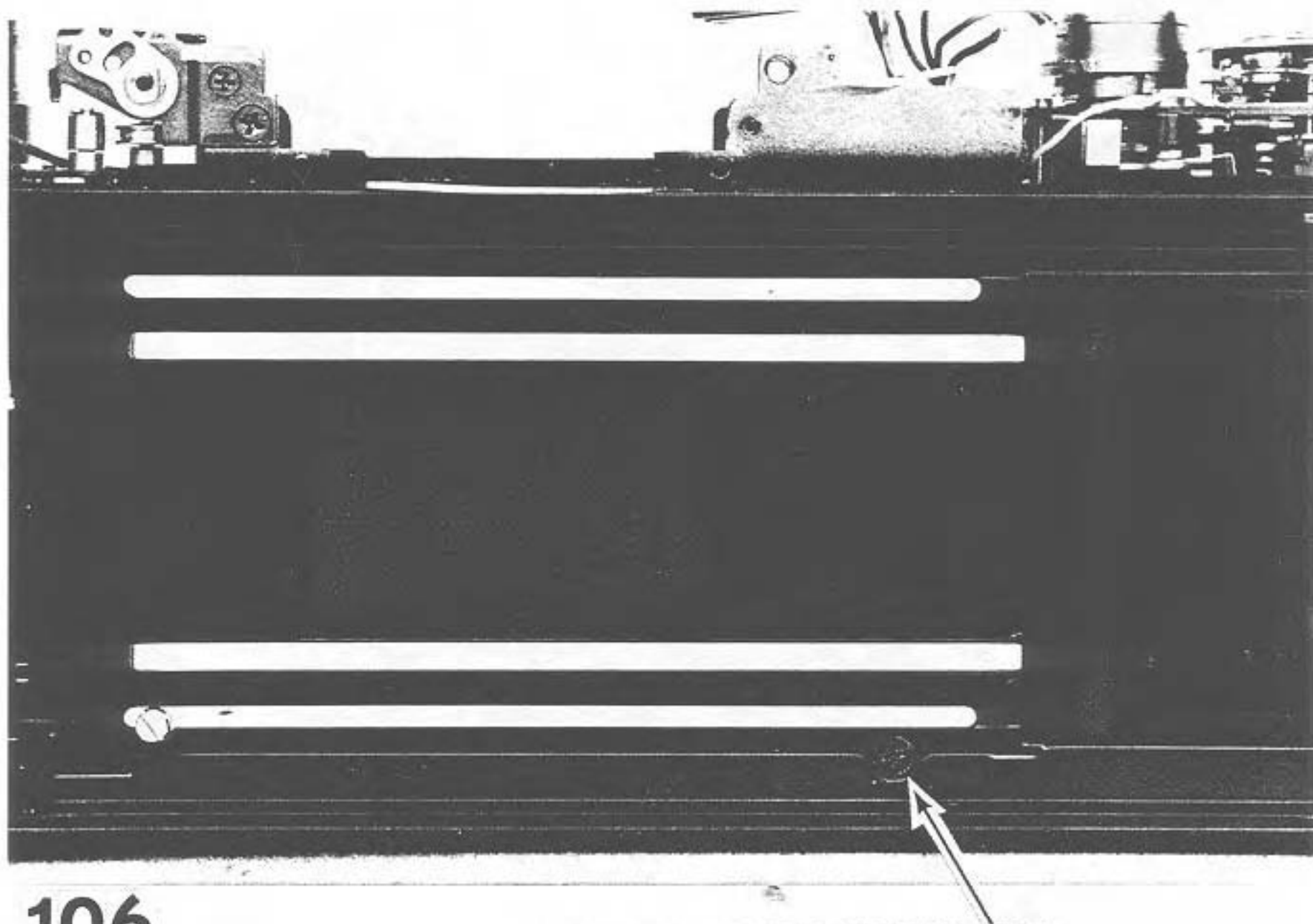




SHUTTER-SPEED INDICATOR





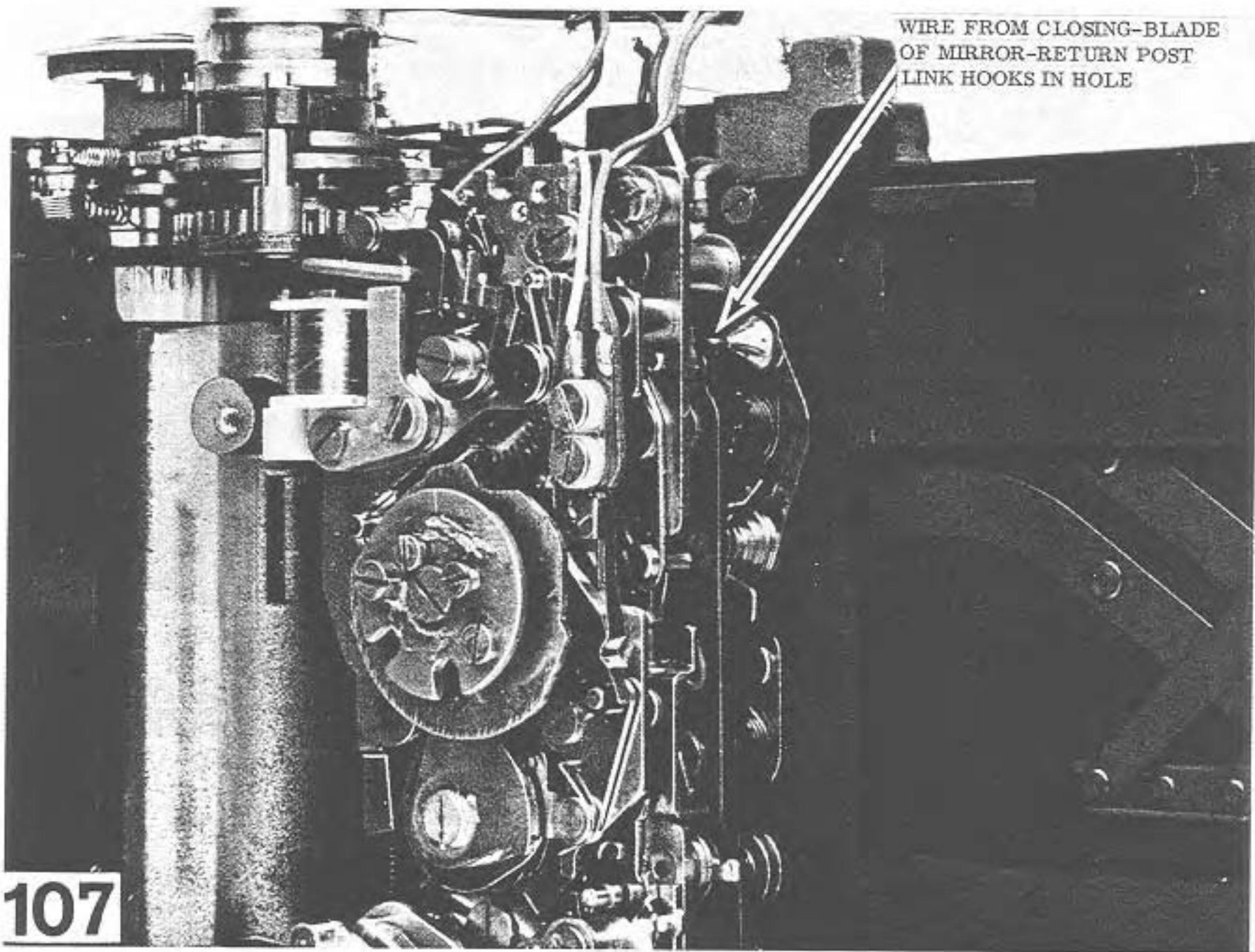


106

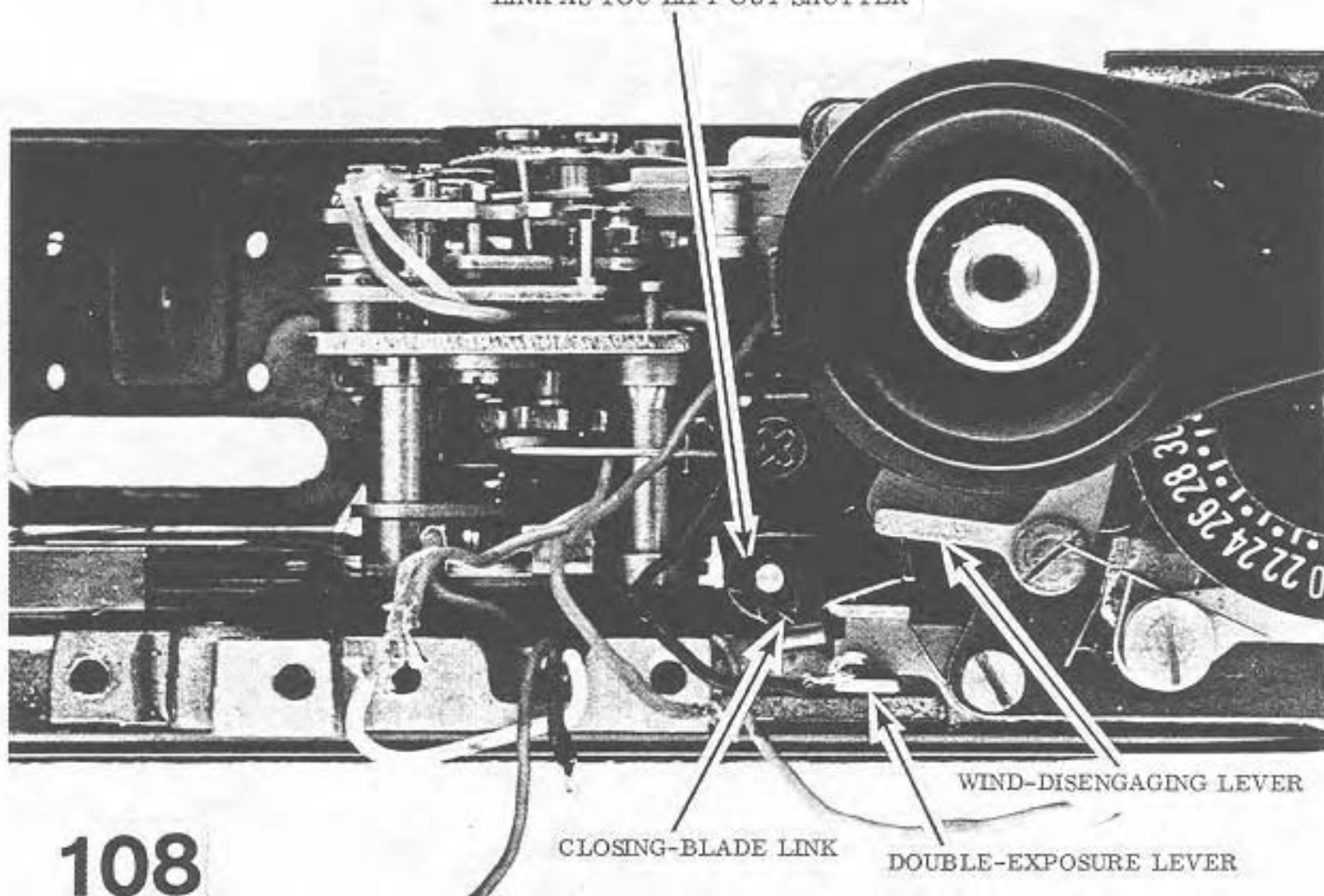
REMOVE REAR SHUTTER-MOUNTING SCREW

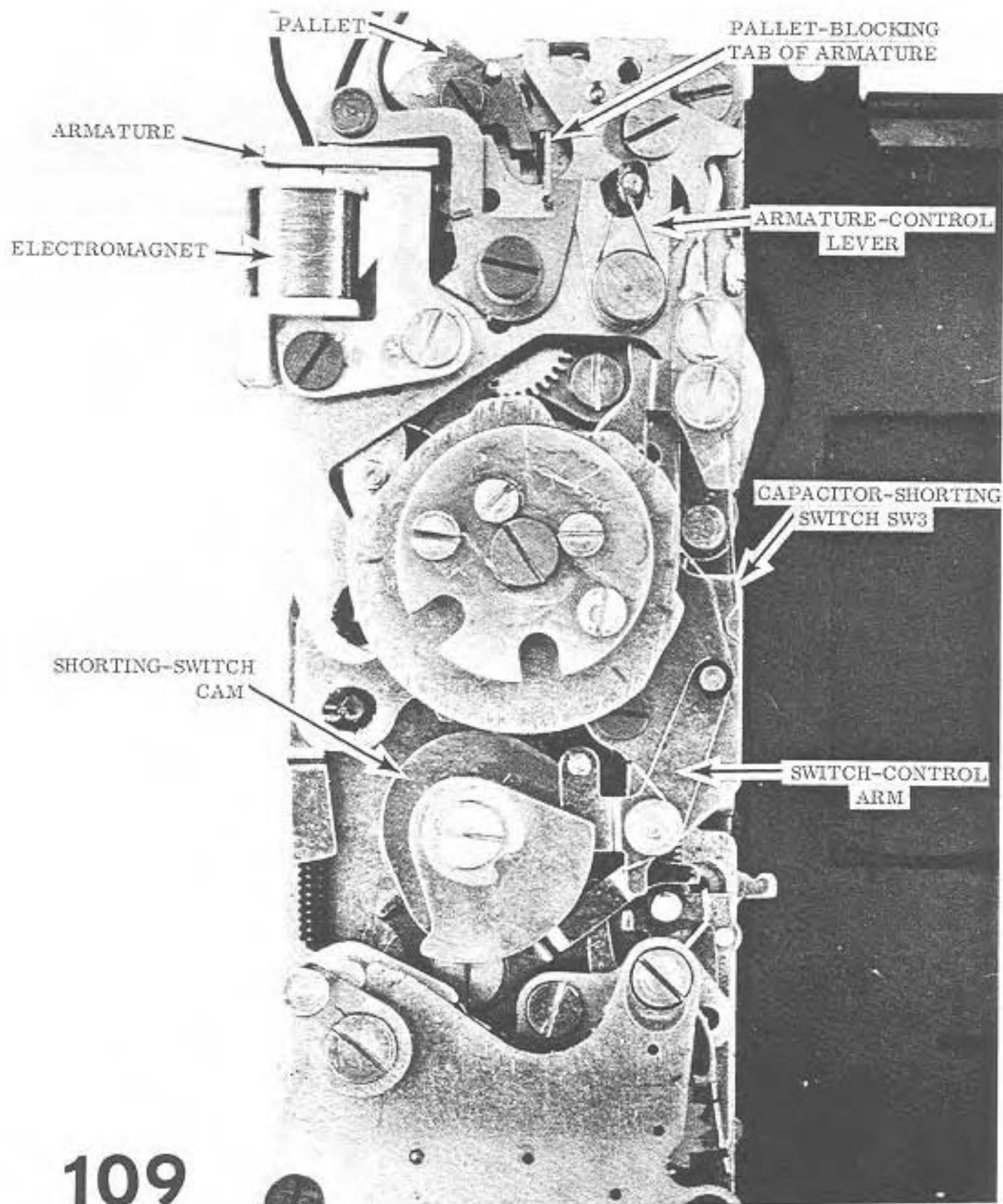
WIRE FROM CLOSING-BLADE
OF MIRROR-RETURN POST
LINK HOOKS IN HOLE

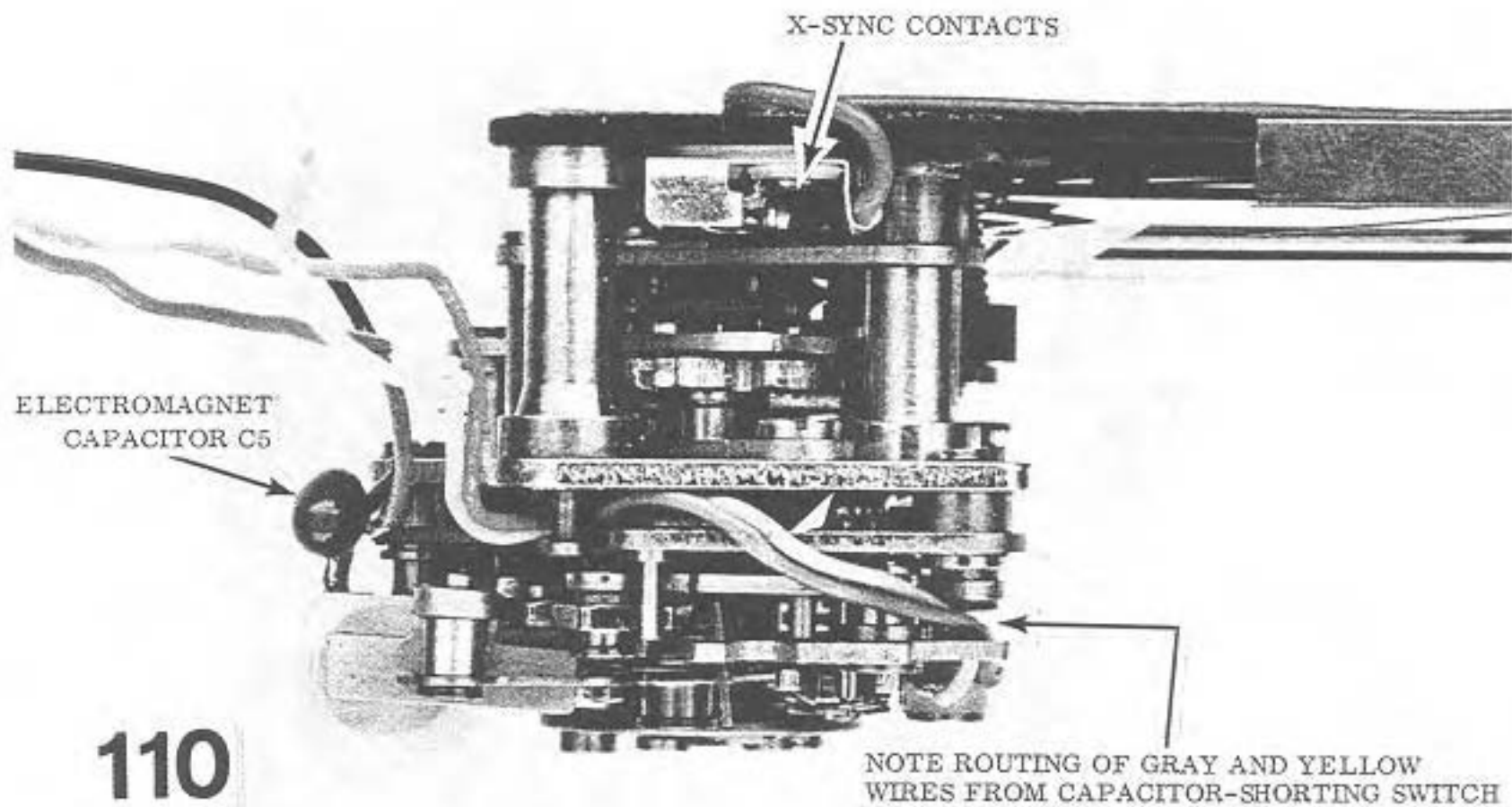
107



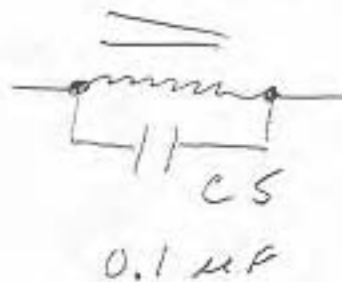
REMOVE E-RING AND LIFT OFF CLOSING-BLADE
LINK AS YOU LIFT OUT SHUTTER





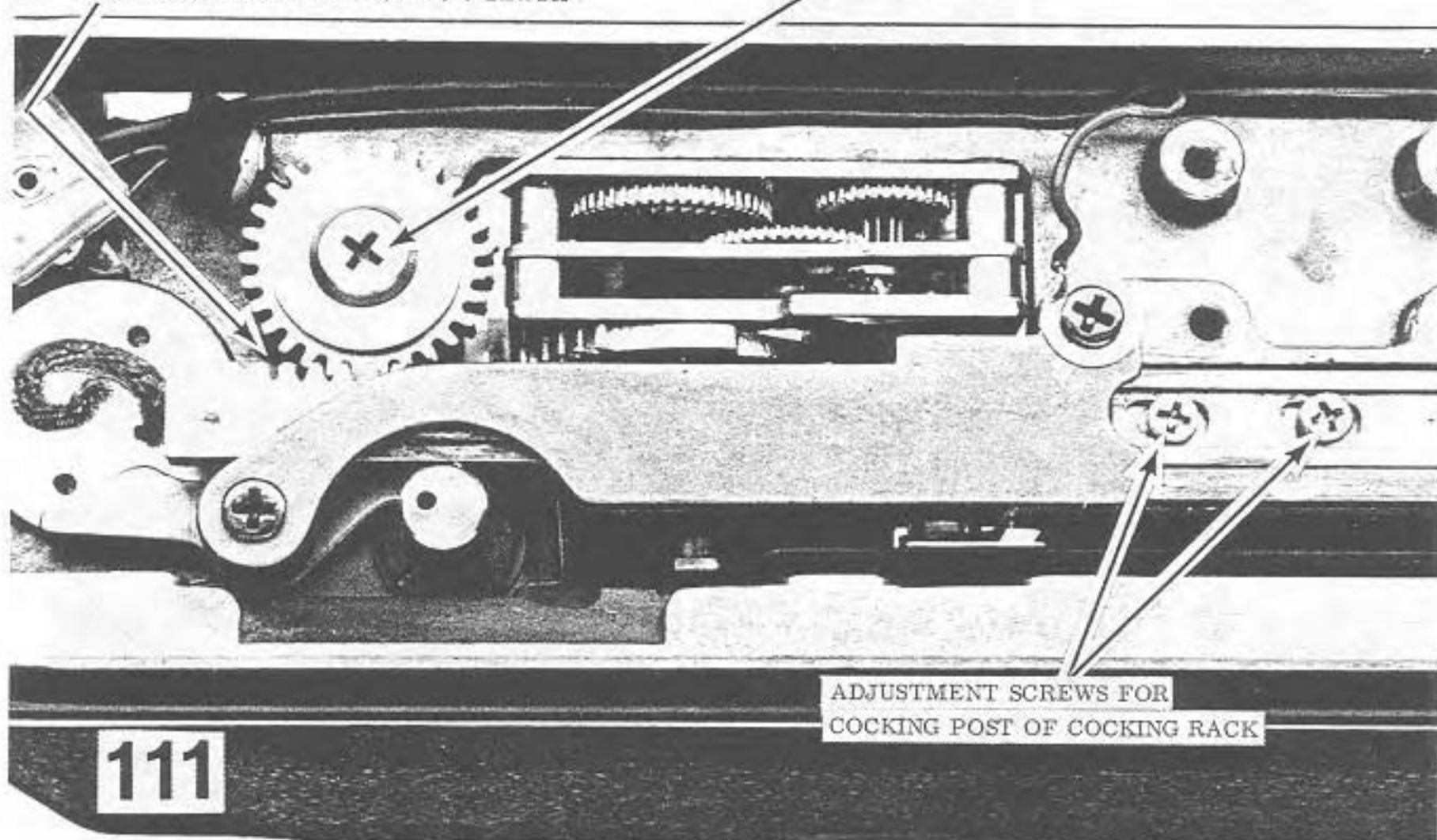


Modification



ENGAGEMENT OF COCKING RACK WITH
WIND-SHAFT GEAR -- 7 1/2 TO 8 TEETH

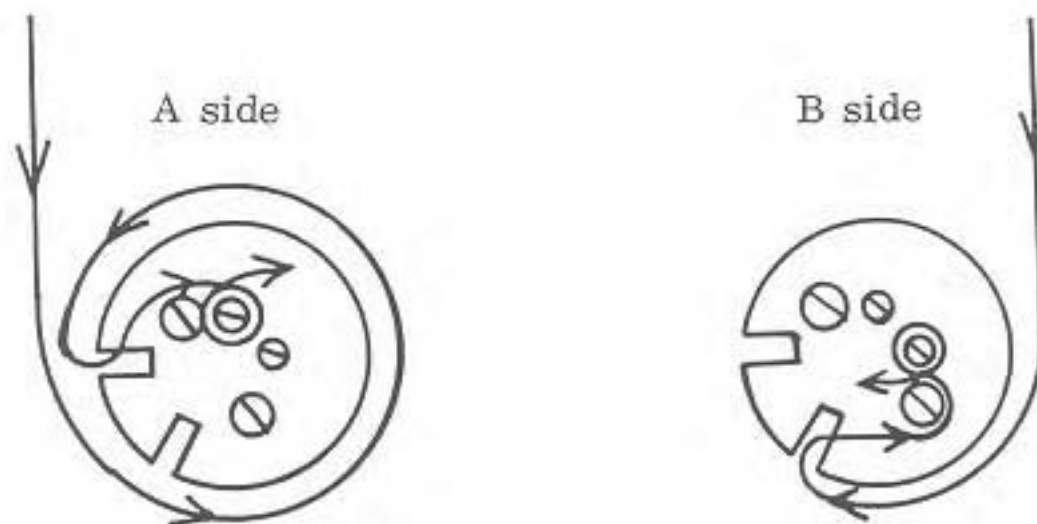
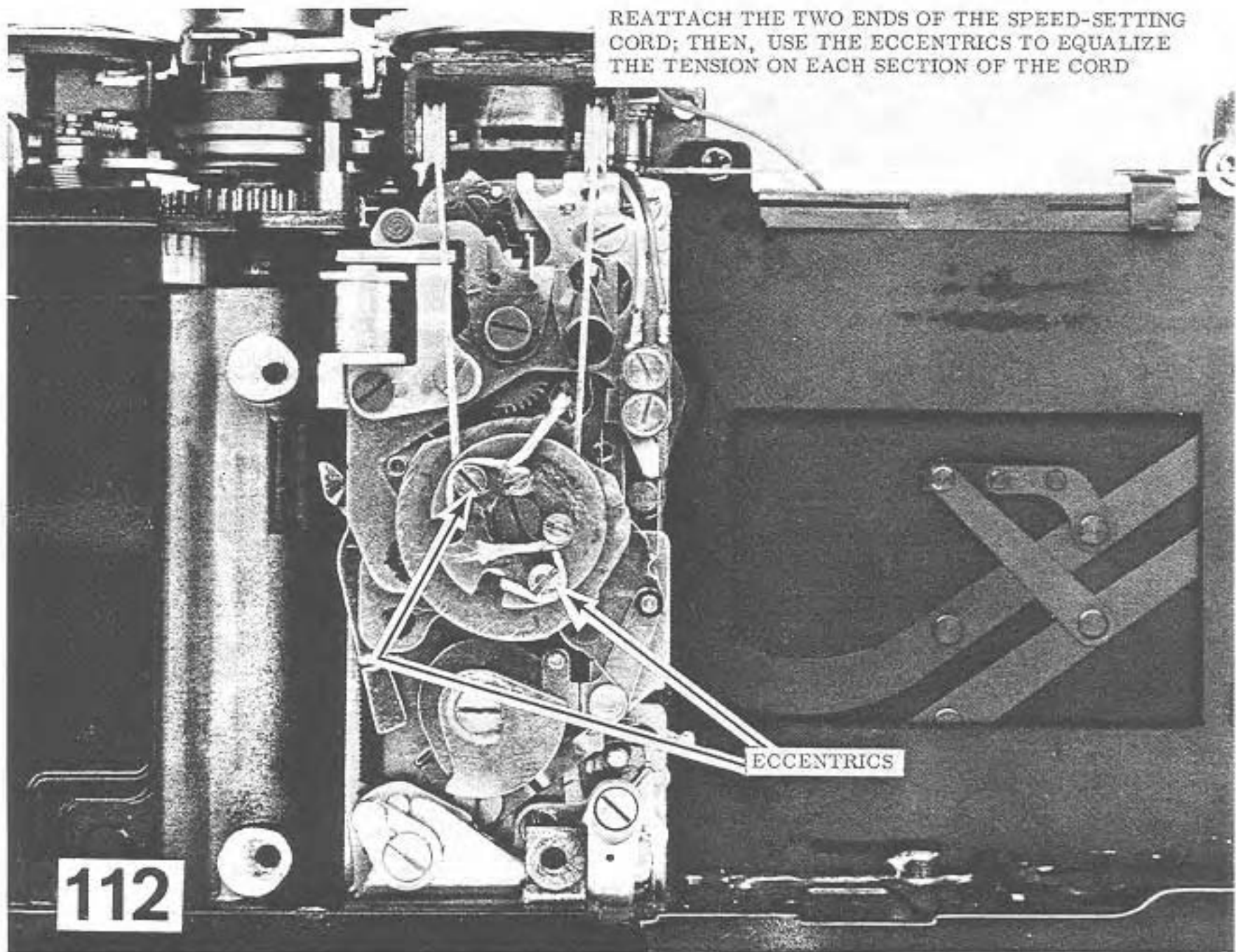
LEFT-HAND SCREW



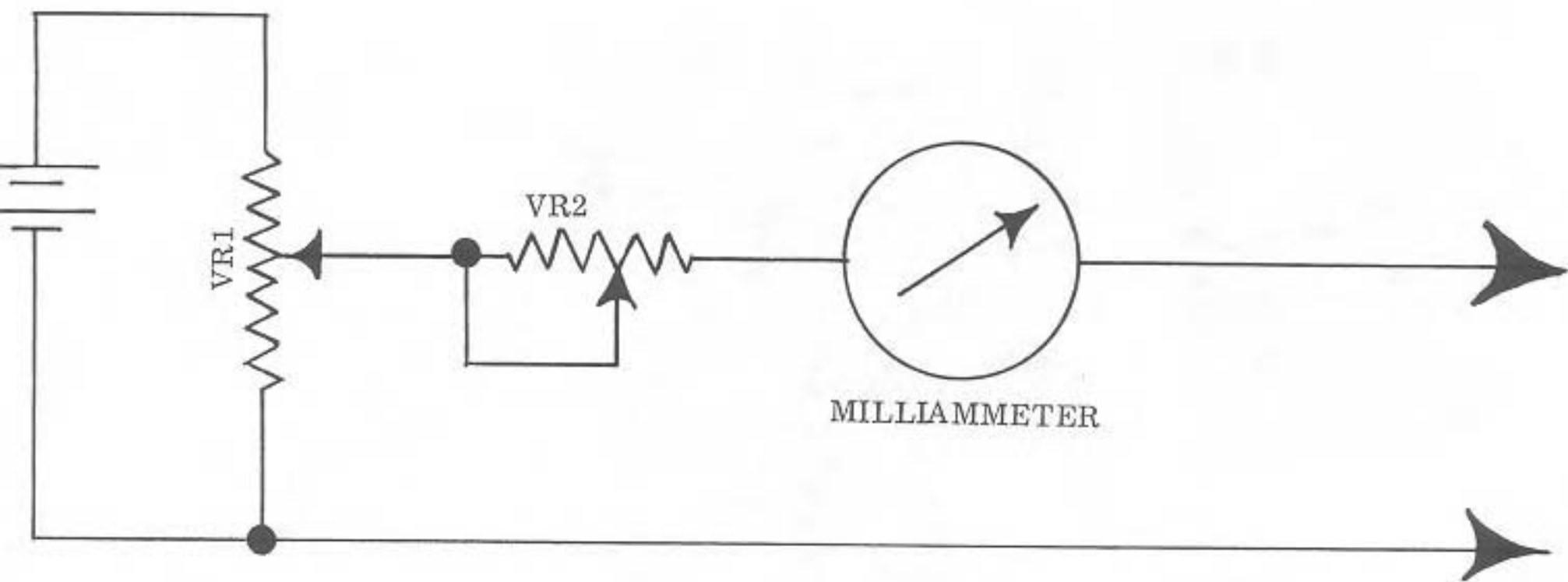
ADJUSTMENT SCREWS FOR
COCKING POST OF COCKING RACK

if shutter doesn't cock on advance won't come
back Take off left hand screw, take off
gear + replace 180° make 1/2 tooth adjustment

REATTACH THE TWO ENDS OF THE SPEED-SETTING
CORD; THEN, USE THE ECCENTRICS TO EQUALIZE
THE TENSION ON EACH SECTION OF THE CORD

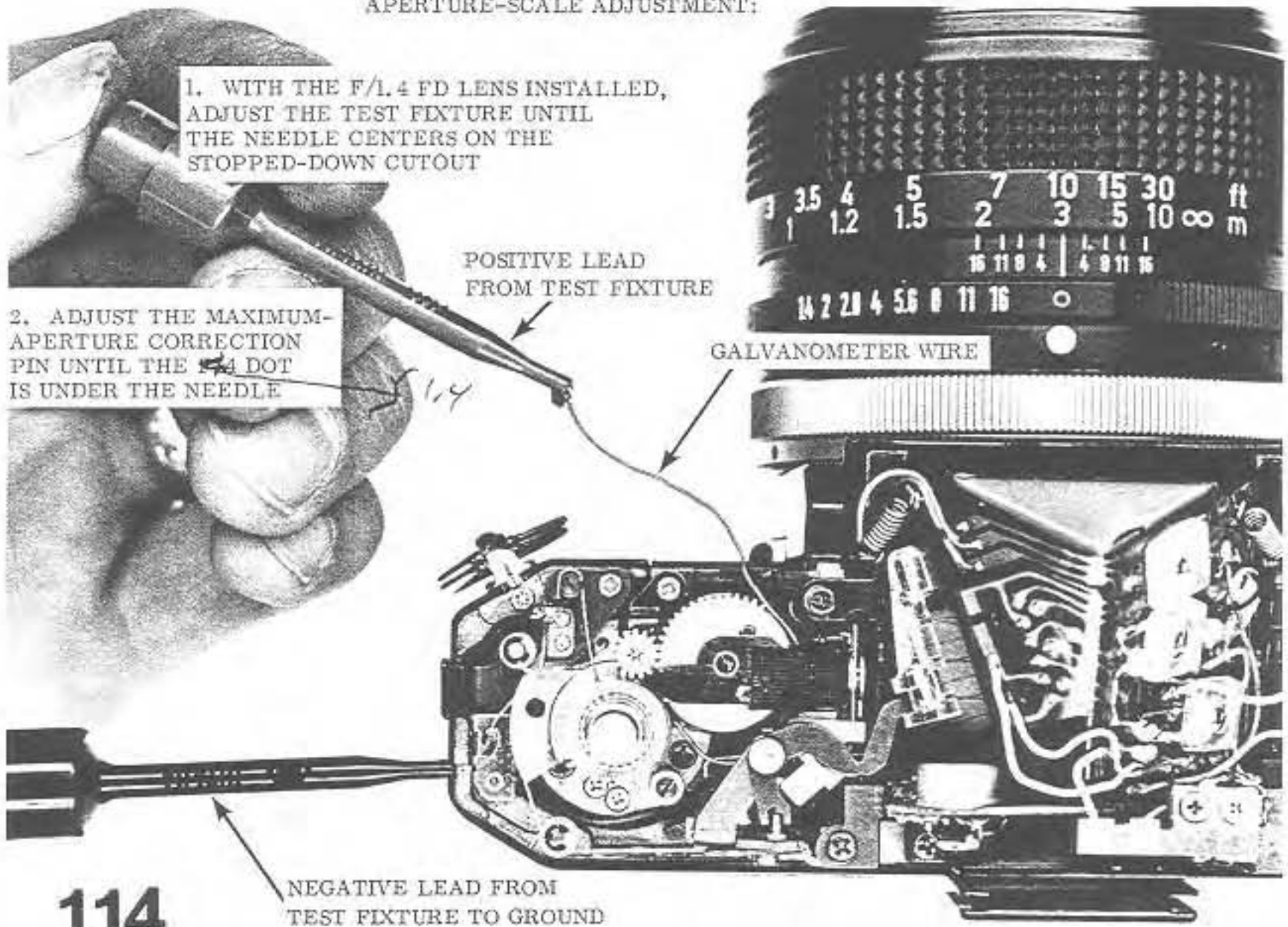


Set at 100



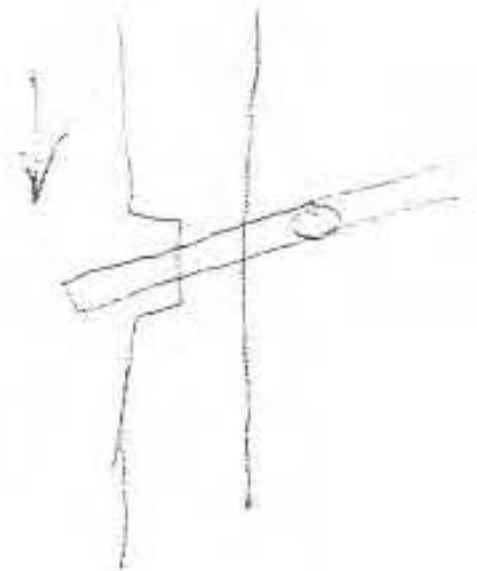
113

APERTURE-SCALE ADJUSTMENT:



114

1. adjust aperture scale ↑
- (115) - 2. " maximum aperture x position of metering sector
- (116) - 3. " "
- (117) - 4. Mount film speed gear unit
- (118) - 5. Adjust meter
- (119) - 6. " Cds circuit
- (120) - 7. " Diaphragm opening



Scale moves
down when
you turn pin
clockwise

MAXIMUM-APERTURE ADJUSTMENT:

WITH F/2.8 FD LENS INSTALLED,
MAXIMUM-APERTURE CORRECTION
LEVER SHOULD JUST TOUCH
CORD-CONTROL LEVER -- MAXIMUM-
APERTURE CORRECTION LEVER MOVES
AWAY FROM CORD-CONTROL LEVER
WHEN YOU INSTALL F/1.4 FD LENS
(AS SHOWN); MAKE ADJUSTMENT WITH
ECCENTRIC

MAXIMUM-APERTURE
CORRECTION LEVER

ECCENTRIC

CORD-CONTROL LEVER

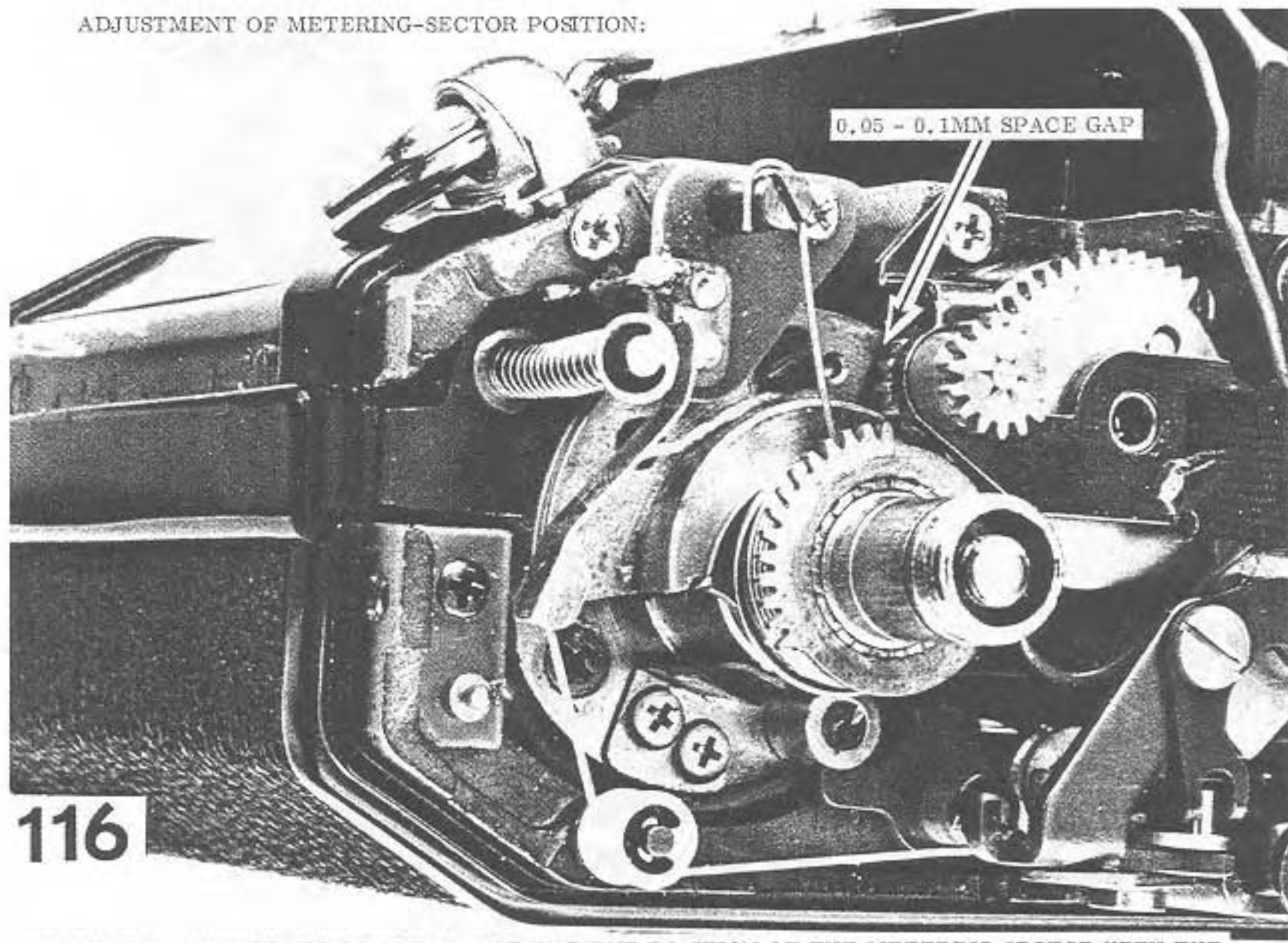
115

adjust maximum aperture

Lens on sub for 2.8 lens

Lens off

ADJUSTMENT OF METERING-SECTOR POSITION:

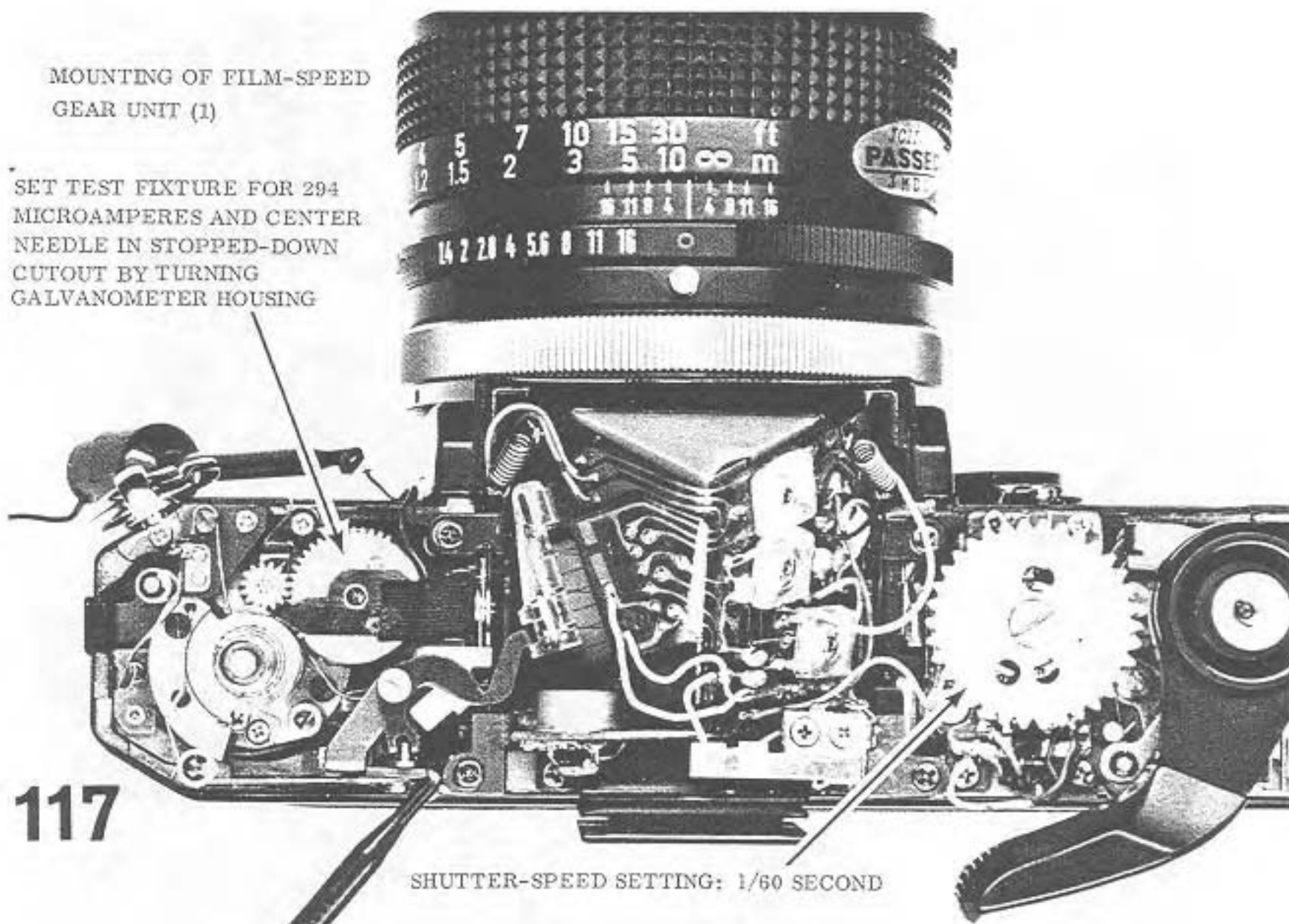


WITH THE SHUTTER SET TO "BULB," ADJUST THE POSITION OF THE METERING SECTOR WITH THE COUPLING CORD

adjust position of metering sector

MOUNTING OF FILM-SPEED
GEAR UNIT (1)

SET TEST FIXTURE FOR 294
MICROAMPERES AND CENTER
NEEDLE IN STOPPED-DOWN
CUTOUT BY TURNING
GALVANOMETER HOUSING



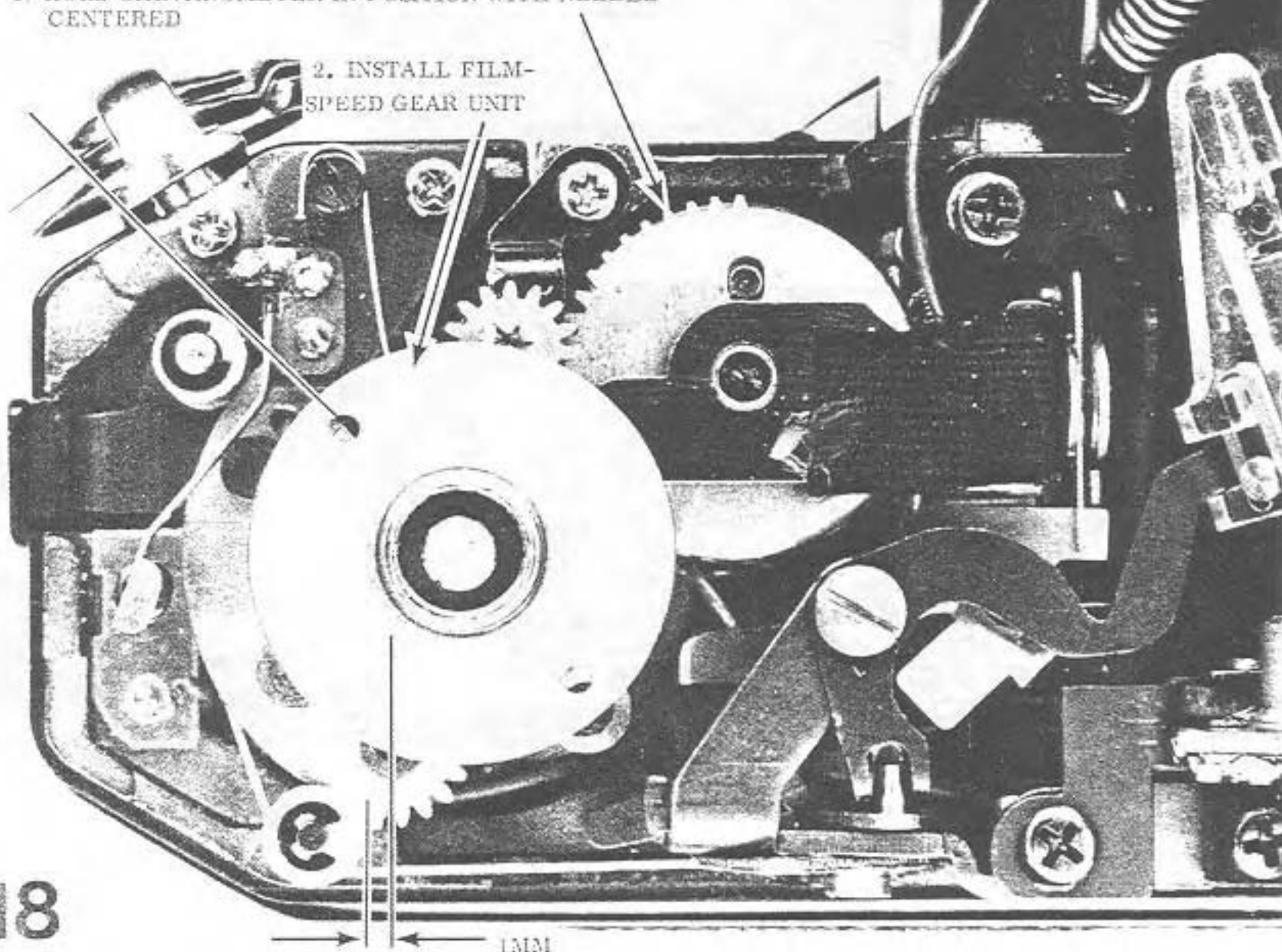
SHUTTER-SPEED SETTING: 1/60 SECOND

mount film speed gear unit

MOUNTING OF FILM-SPEED GEAR UNIT (2)

1. HOLD GALVANOMETER IN POSITION WITH NEEDLE CENTERED

2. INSTALL FILM-SPEED GEAR UNIT



118

1MM

Mount film speed gear unit

*See also 113 & 114
 12 30 sec*

MOUNTING OF FILM-SPEED GEAR UNIT (3)

1. REPLACE FILM-SPEED COUPLER WITH TAB
FACING FRONT OF CAMERA

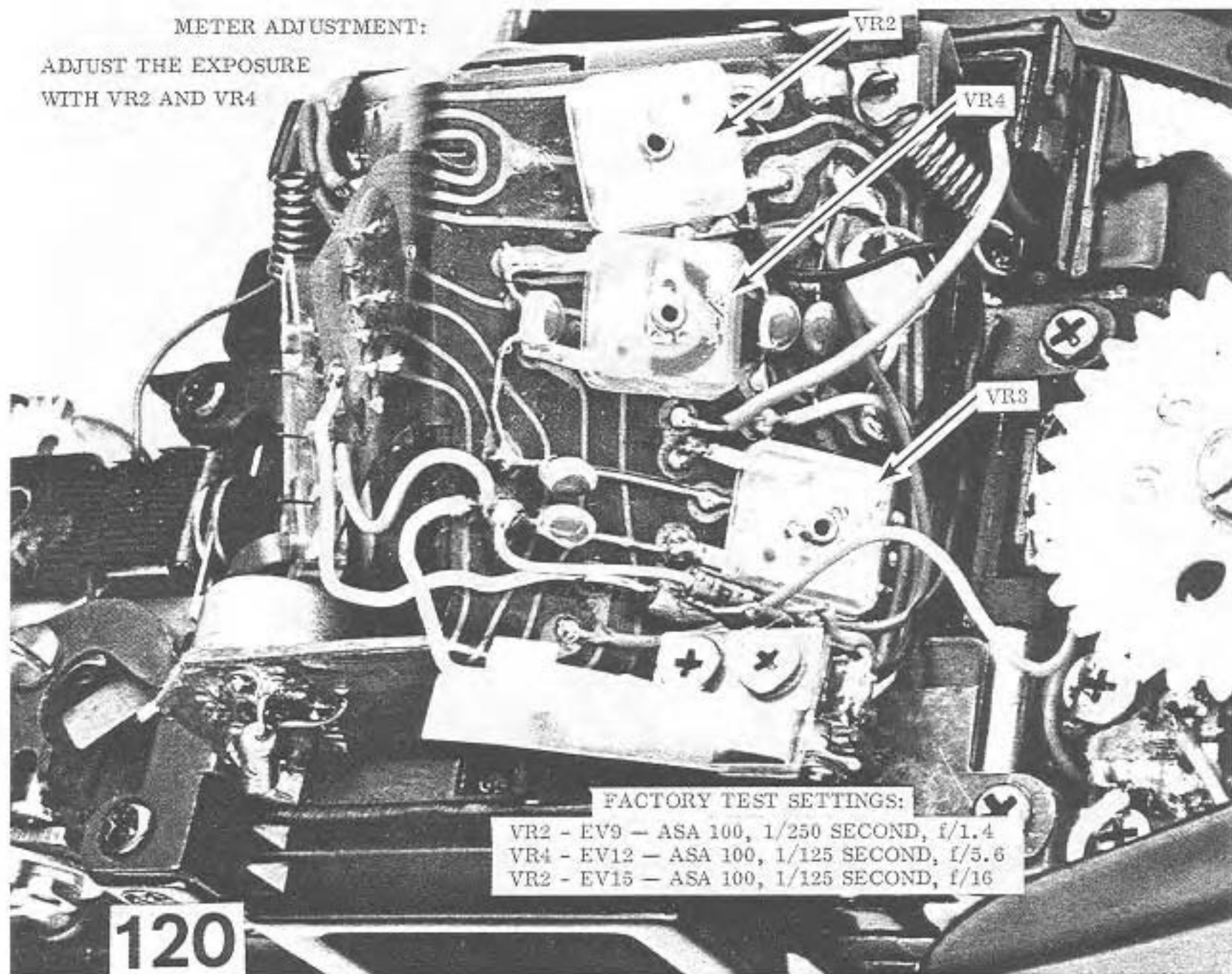
2. INSTALL SPECIAL TOOL
TO HOLD ASA 100 POSITION

3. RESOLDER GALVANOMETER WIRE

119

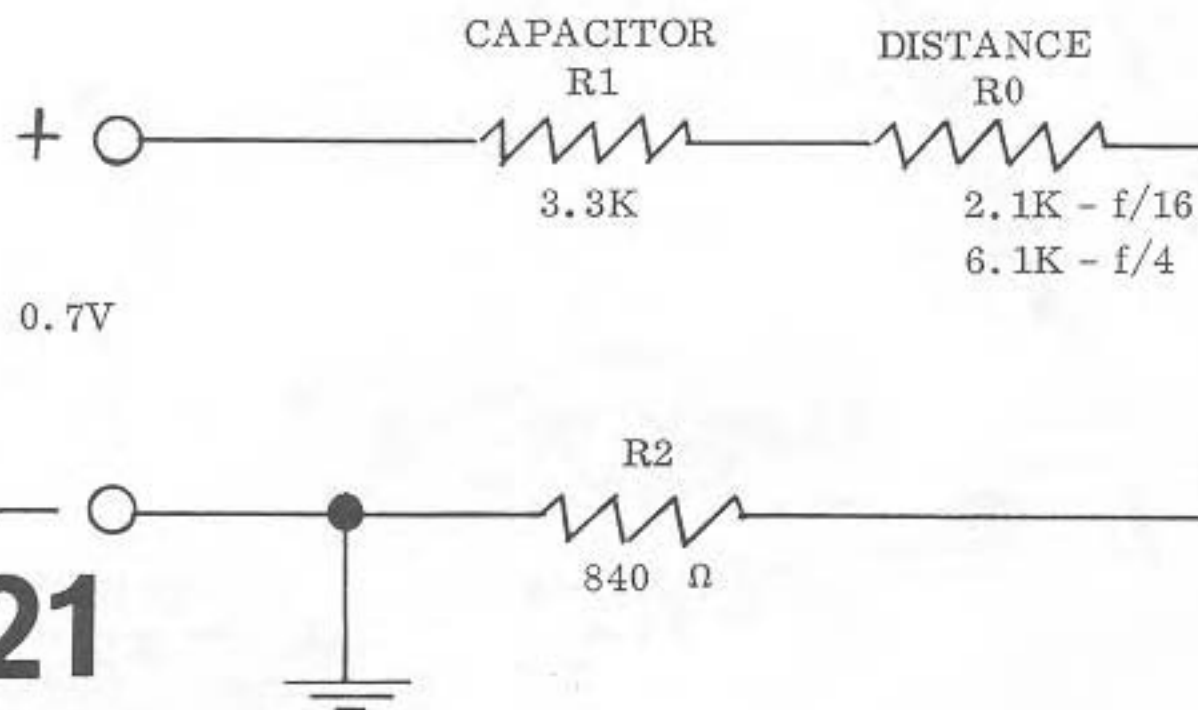
Mount film speed gear unit

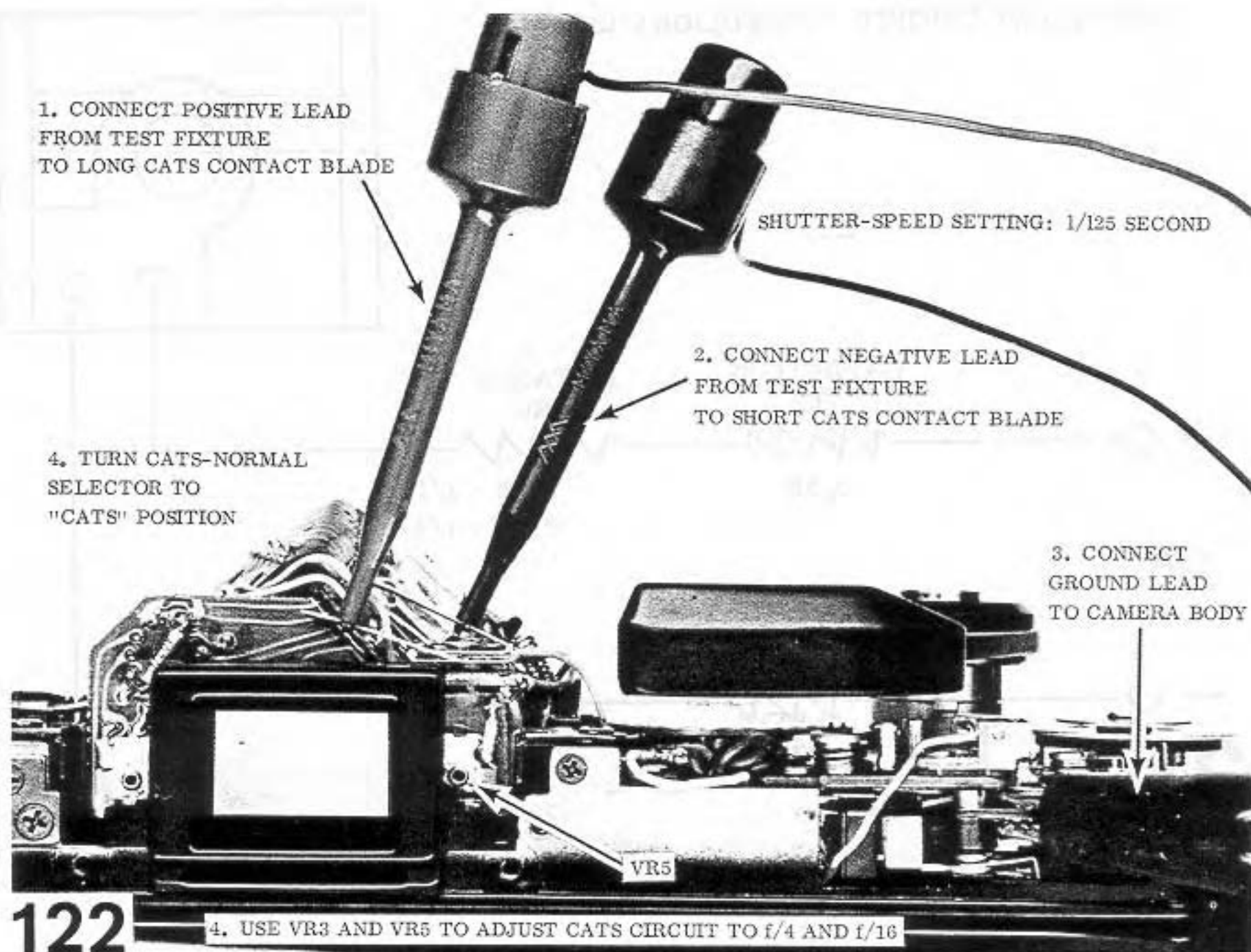
METER ADJUSTMENT:
ADJUST THE EXPOSURE
WITH VR2 AND VR4



EQUIVALENT CIRCUIT - SPEEDLIGHT 133D

121





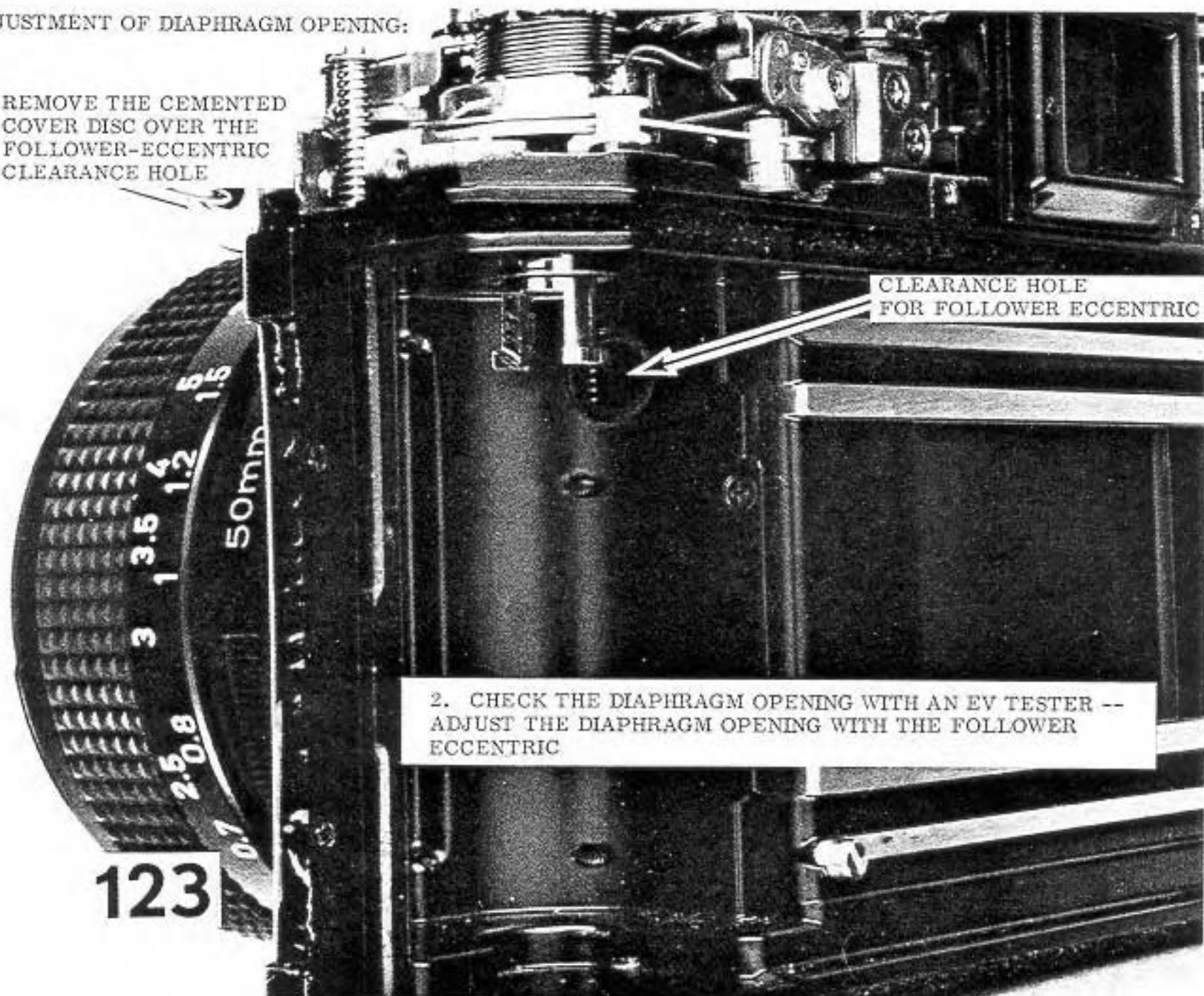
adjust cats circuit

VR3 - level adj. +4

VR5 - slope adj. 5.0

ADJUSTMENT OF DIAPHRAGM OPENING:

1. REMOVE THE CEMENTED COVER DISC OVER THE FOLLOWER-ECCENTRIC CLEARANCE HOLE



adjust diaphragm opening