



Canon
EF

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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



CATS-NORMAL SELECTOR

撮影時以外はメイン
スイッチを OFF にして
ください。

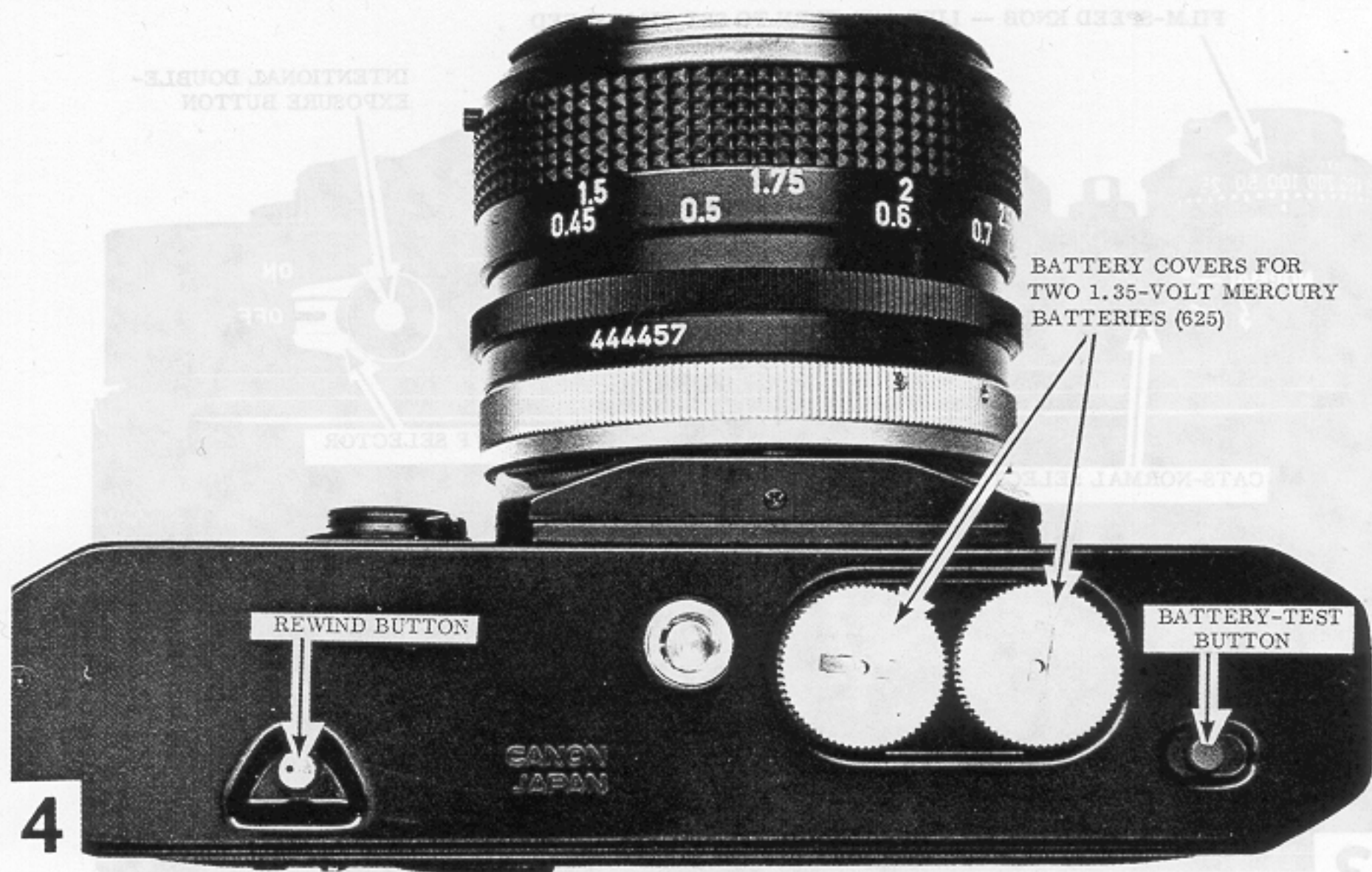
AFTER USING, TURN
THE CAMERA OFF.

ON

OFF

ON-OFF SELECTOR

3



INTENTIONAL DOUBLE-
EXPOSURE BUTTON

ON
OFF

MODE SELECTOR

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

CAUTION-NORMAL

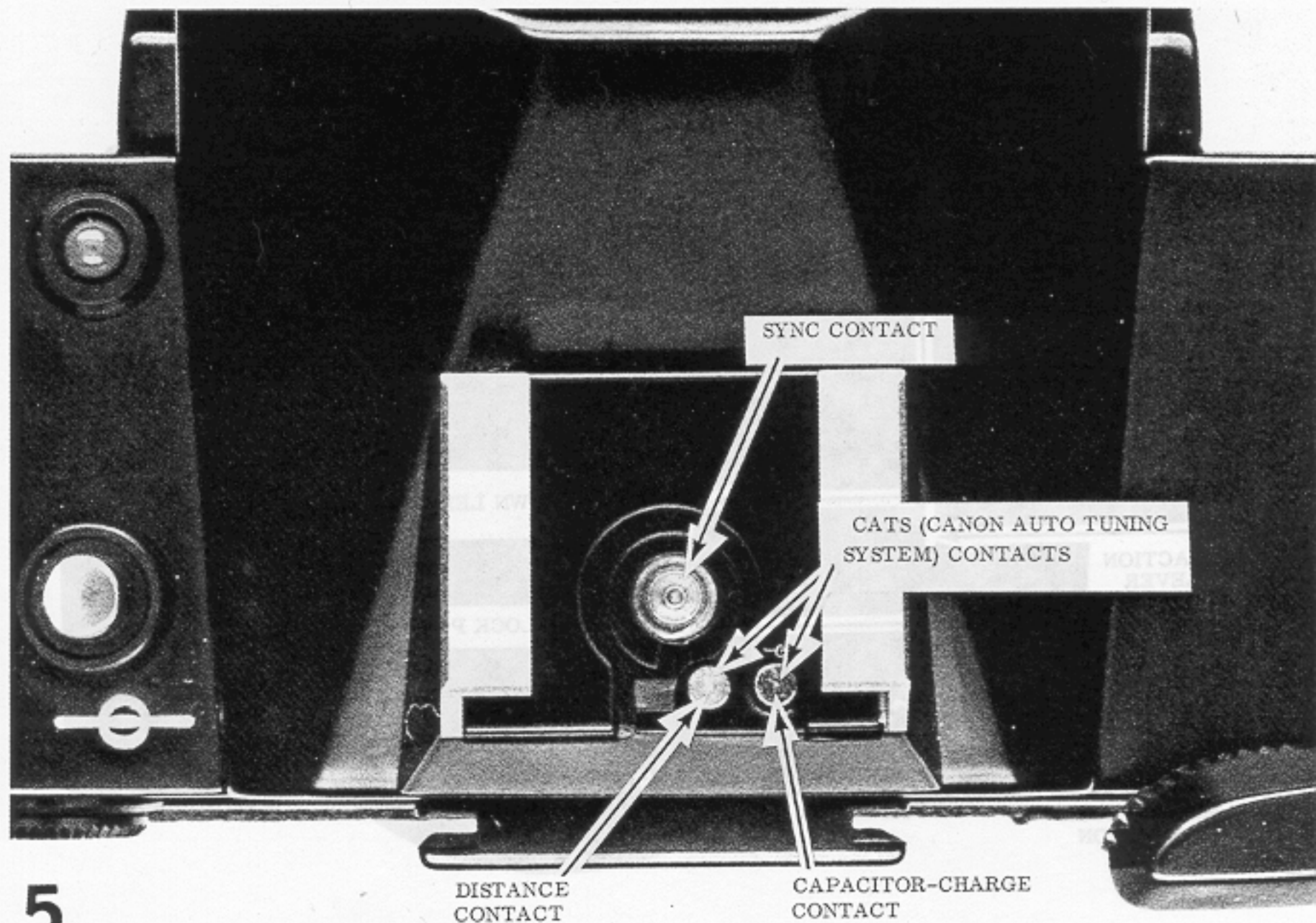
REWIND BUTTON

CANON
JAPAN

BATTERY-TEST
BUTTON

4

3

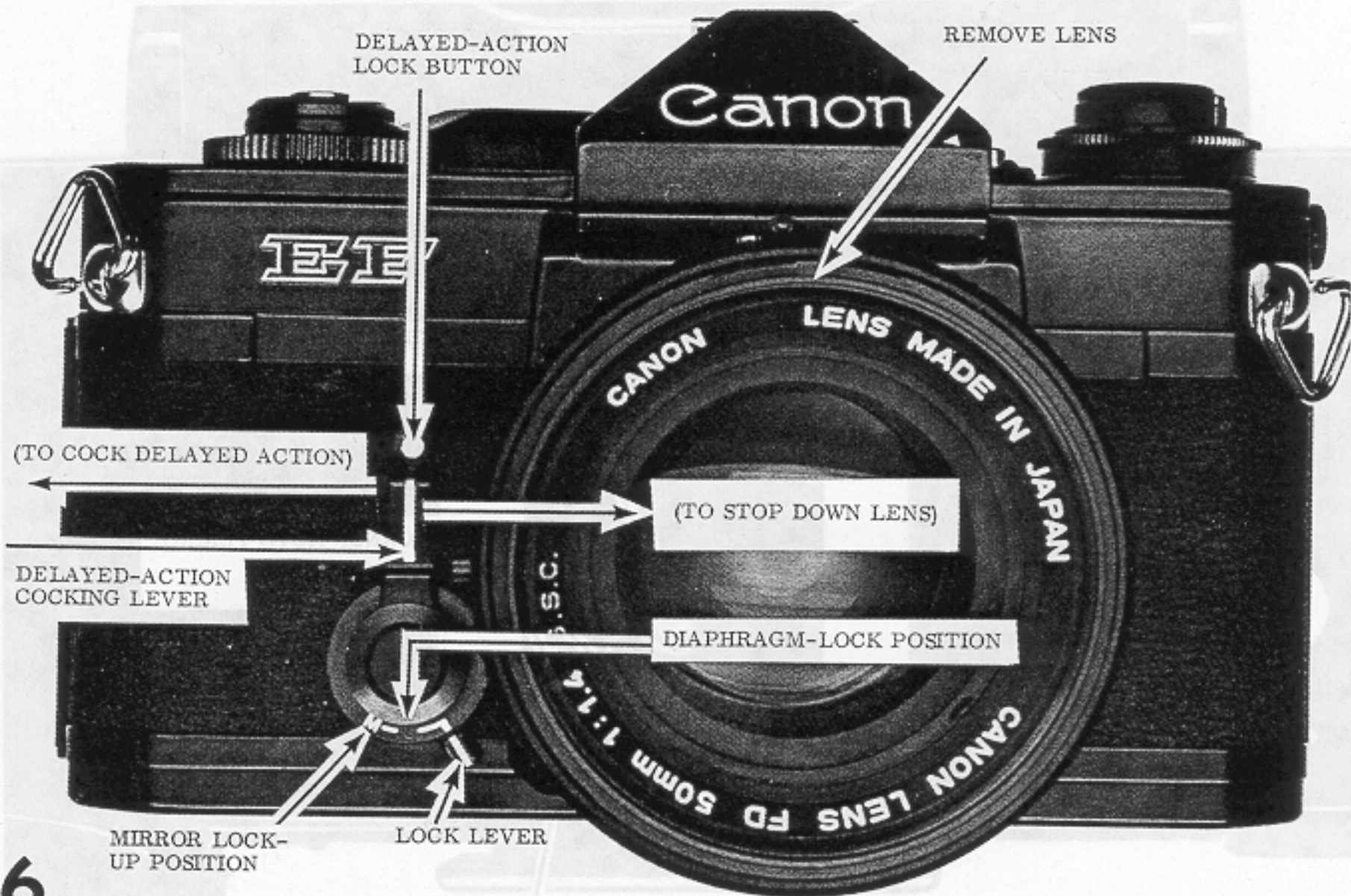


SYNC CONTACT

CATS (CANON AUTO TUNING
SYSTEM) CONTACTS

DISTANCE
CONTACT

CAPACITOR-CHARGE
CONTACT



DELAYED-ACTION
LOCK BUTTON

REMOVE LENS

Canon

EF

CANON

LENS MADE IN JAPAN

(TO COCK DELAYED ACTION)

(TO STOP DOWN LENS)

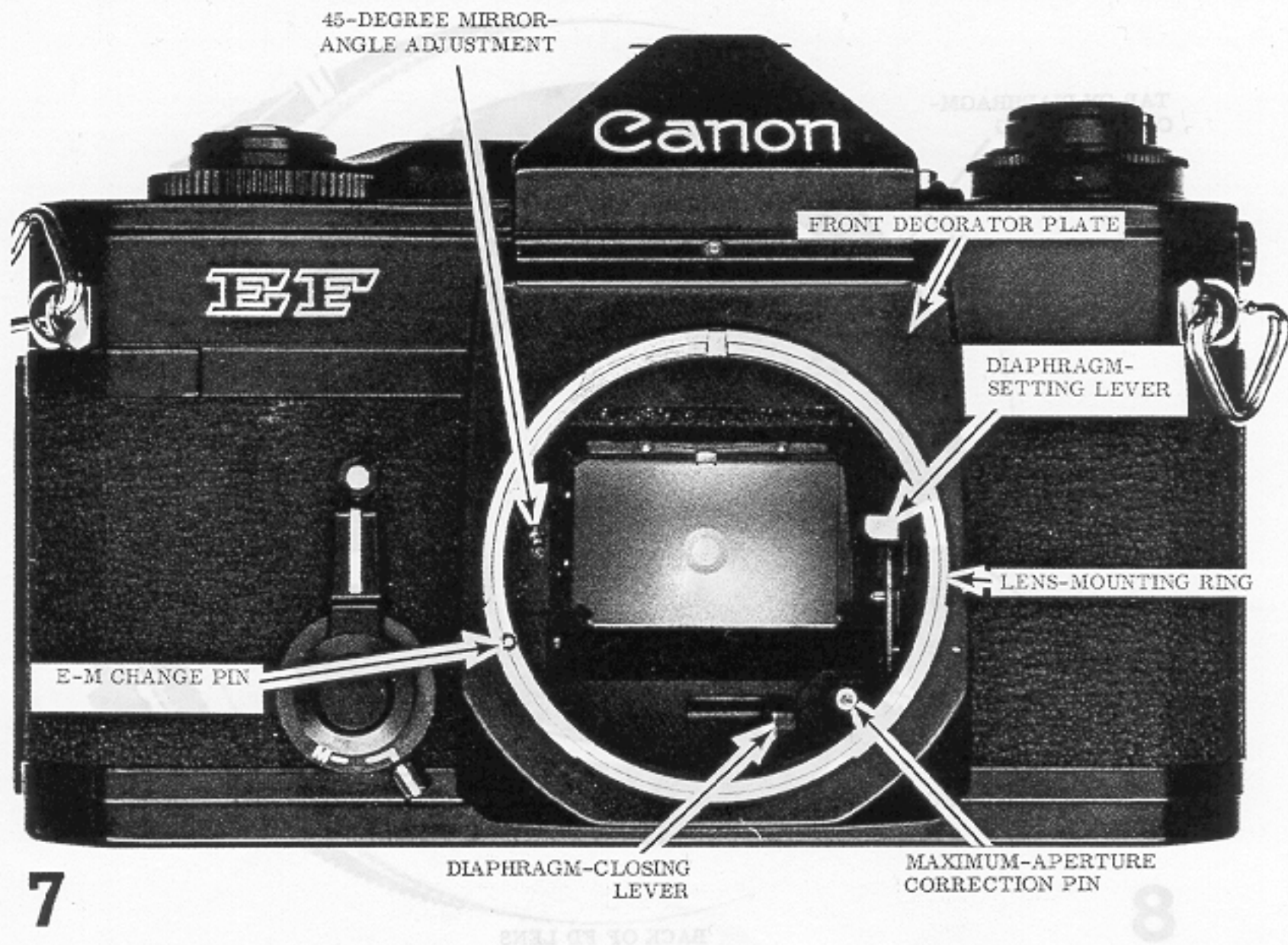
DELAYED-ACTION
COCKING LEVER

DIAPHRAGM-LOCK POSITION

MIRROR LOCK-
UP POSITION

LOCK LEVER

6



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

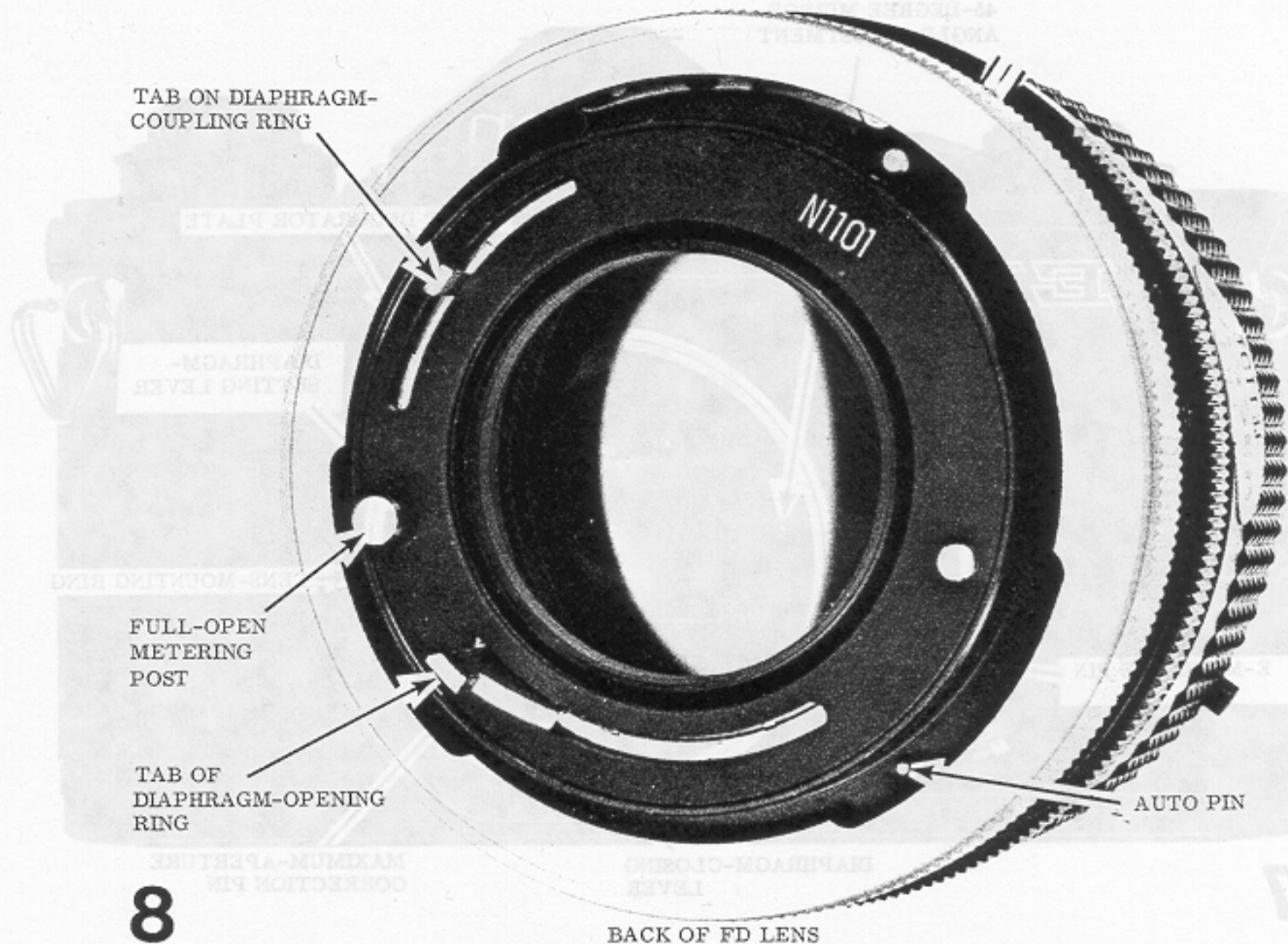
FULL-OPEN
METERING
POST

TAB OF
DIAPHRAGM-OPENING
RING

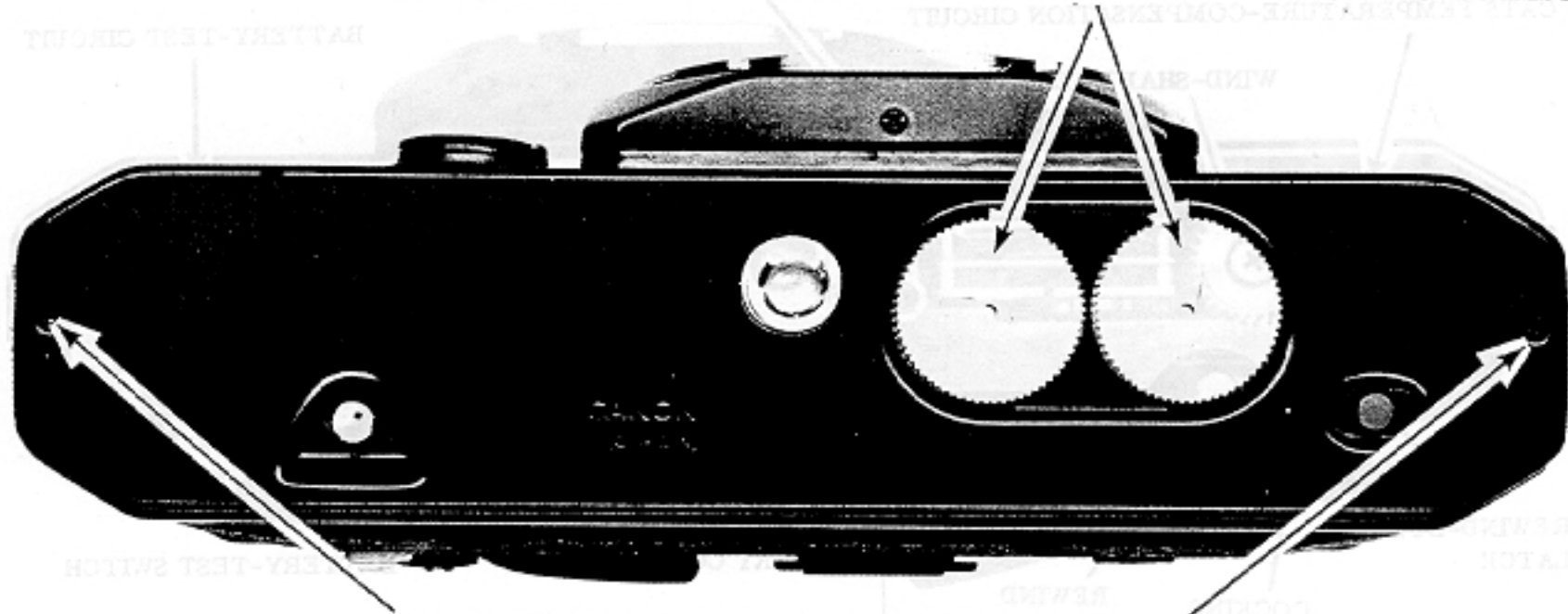
AUTO PIN

8

BACK OF FD LENS

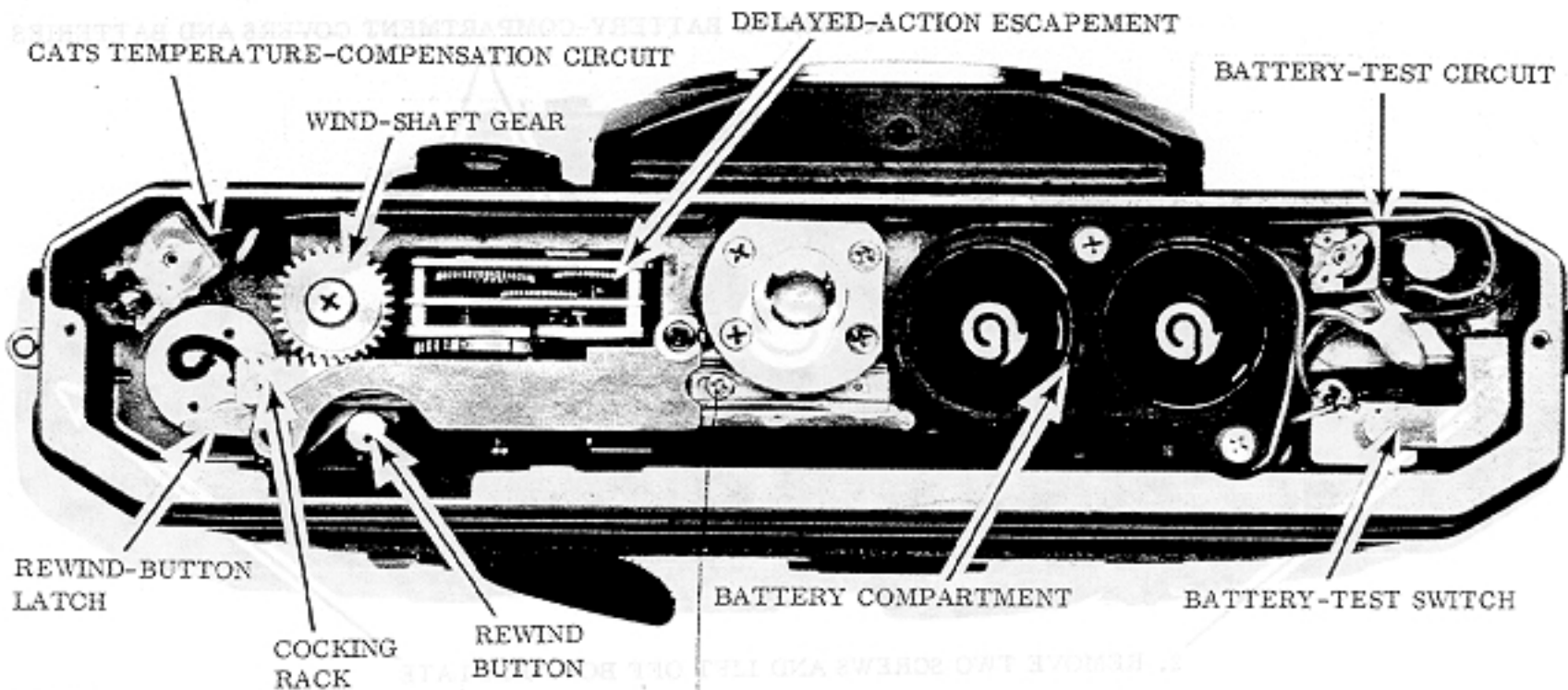


1. REMOVE BATTERY-COMPARTMENT COVERS AND BATTERIES



2. REMOVE TWO SCREWS AND LIFT OFF BOTTOM PLATE

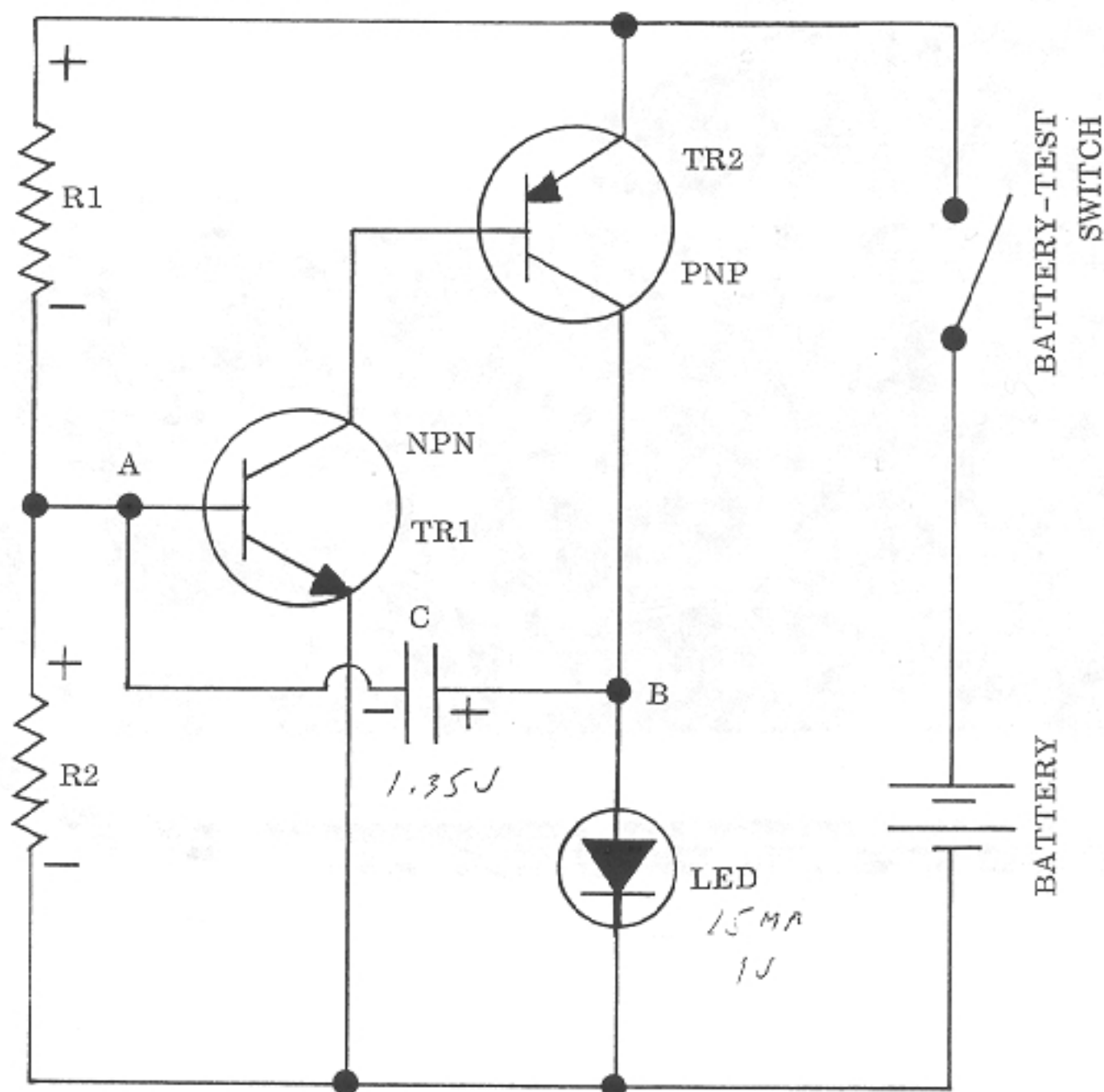
CAUTION: BATTERY-TEST BUTTON WILL BE LOOSE WHEN YOU LIFT OFF BOTTOM PLATE



10

adjustment for overtravel or undertake
(cocking)

BASIC LED CIRCUIT

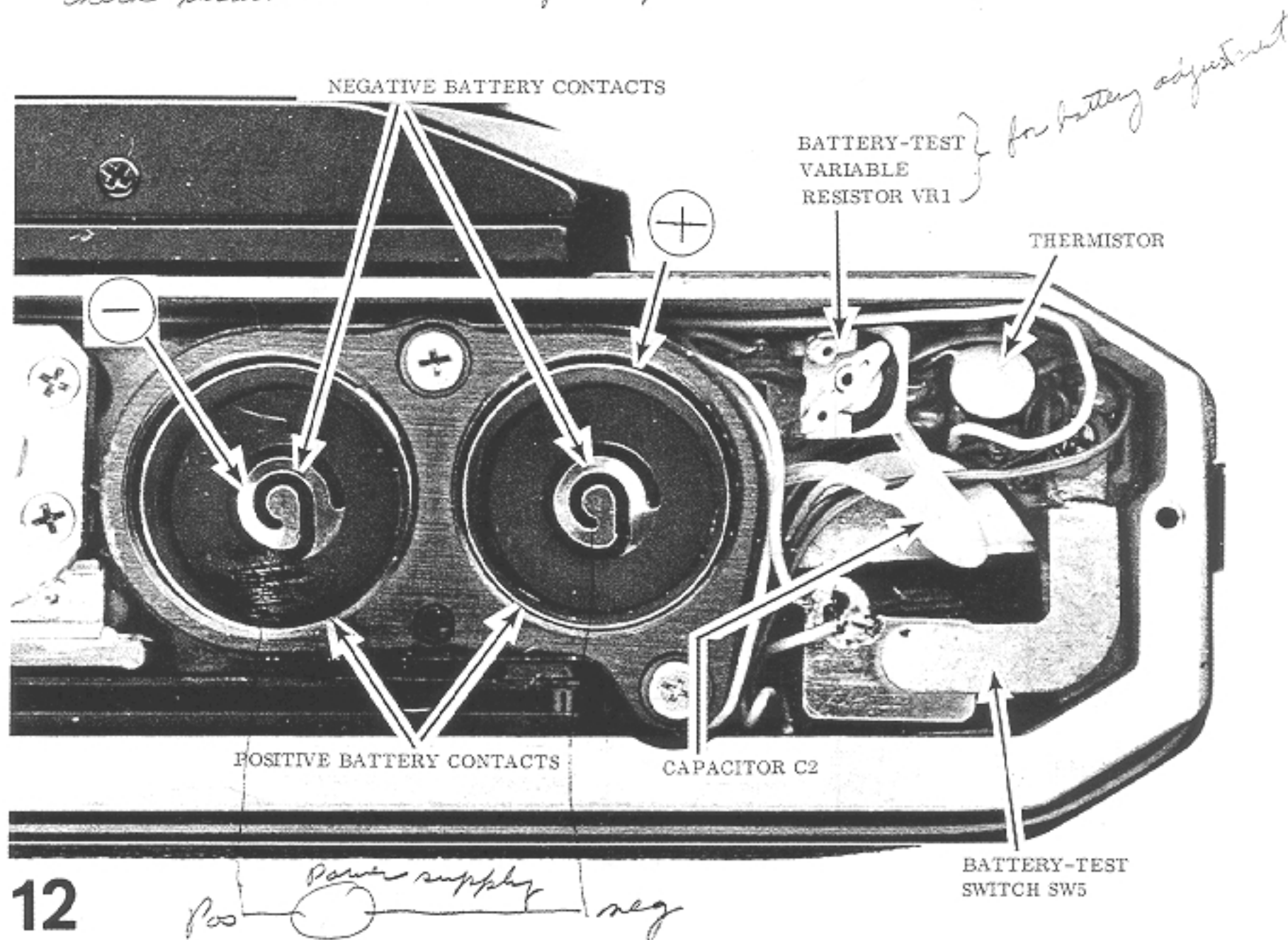


11

on-off Rates 8:1

Current drawn - 1.9 MA

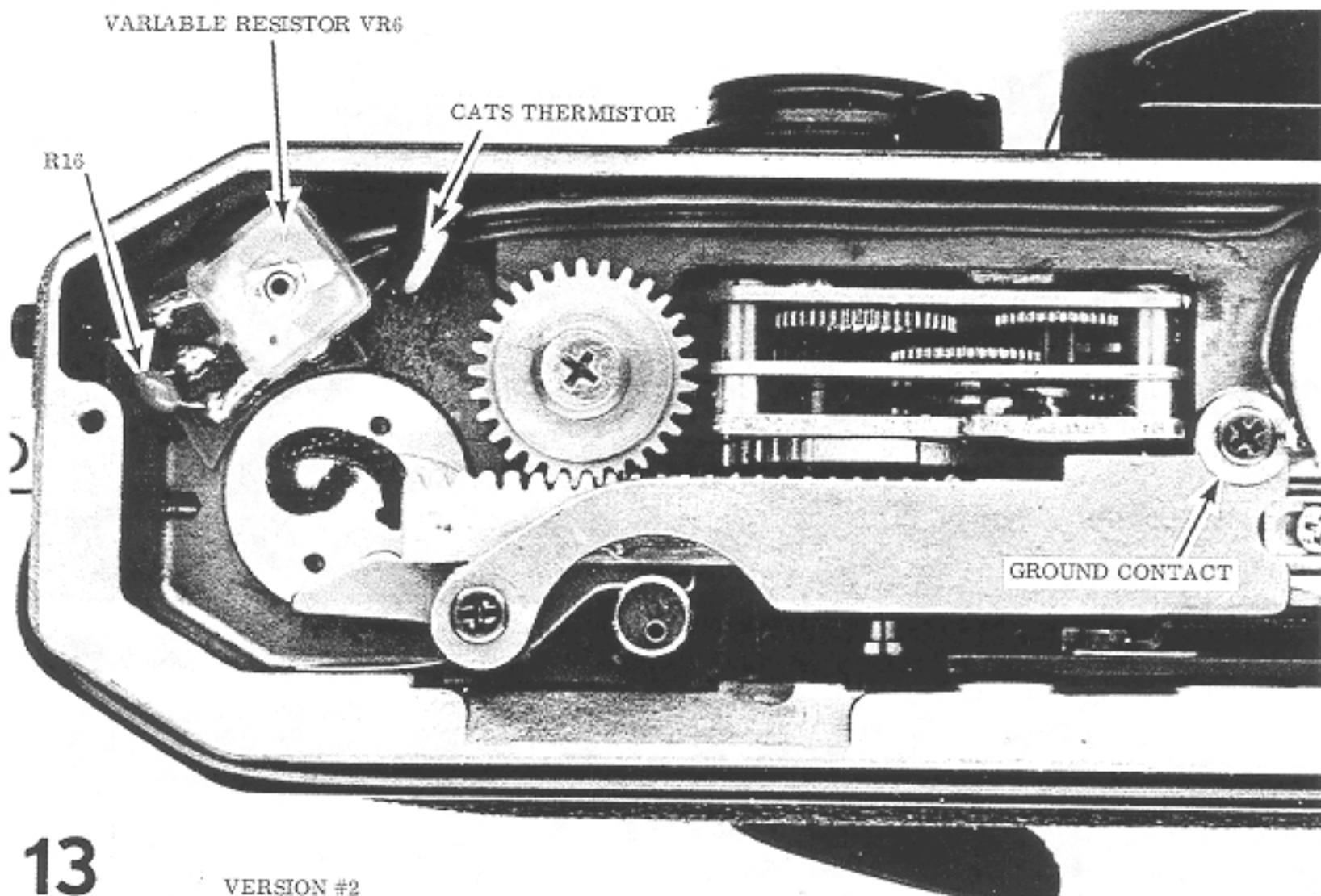
Check insulation on battery compartment



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 2.26 volts. Make the adjustment with the battery-test variable resistor VR1.

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

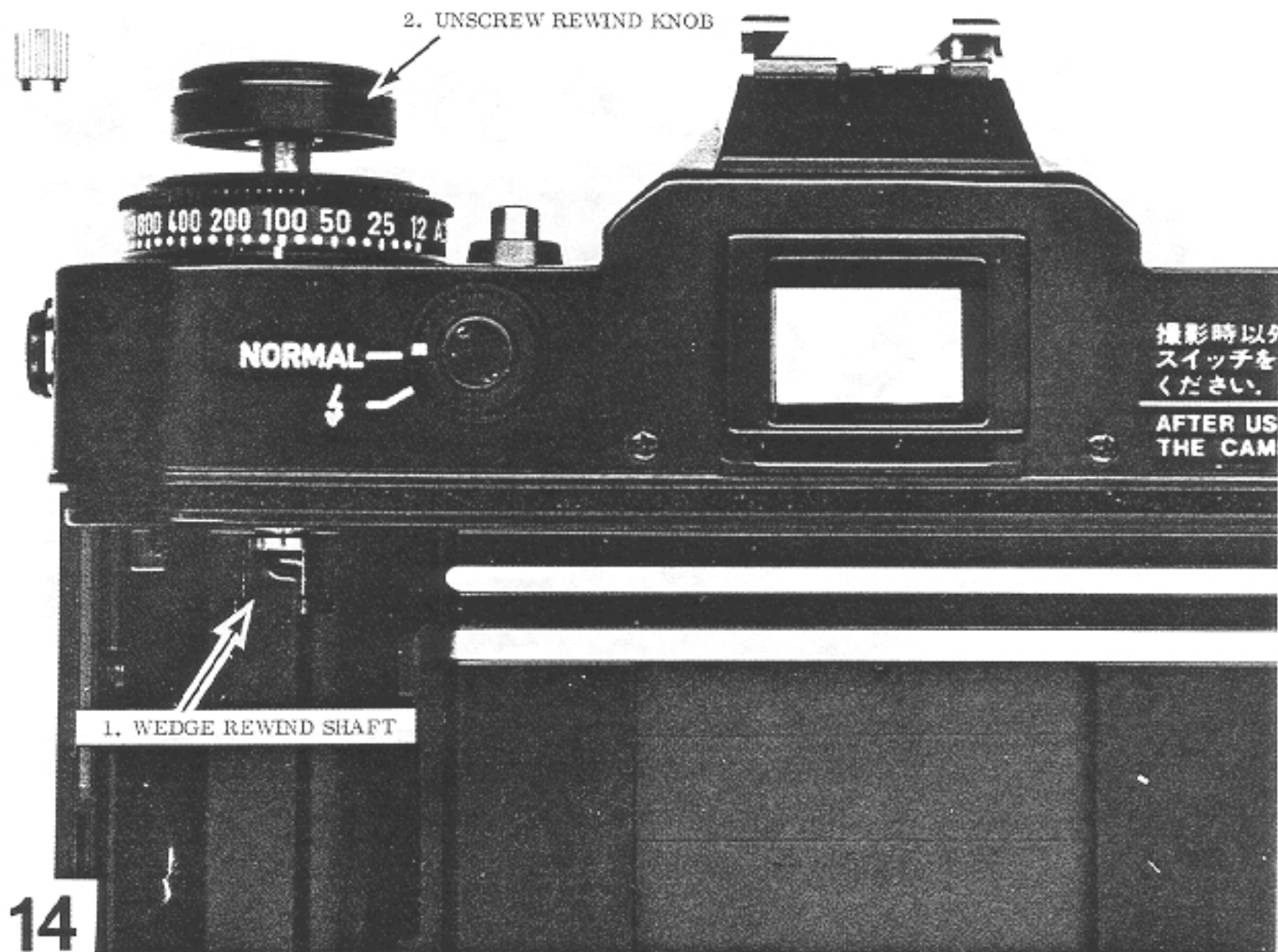




The original Canon EF (version #1) does not have the CATS temperature-compensation circuit. The temperature-compensation circuit was added as a modification to the model illustrated (version #2). Later models (versions #3 and #4) have the thermistor and the fixed resistor at the top of the camera; in 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

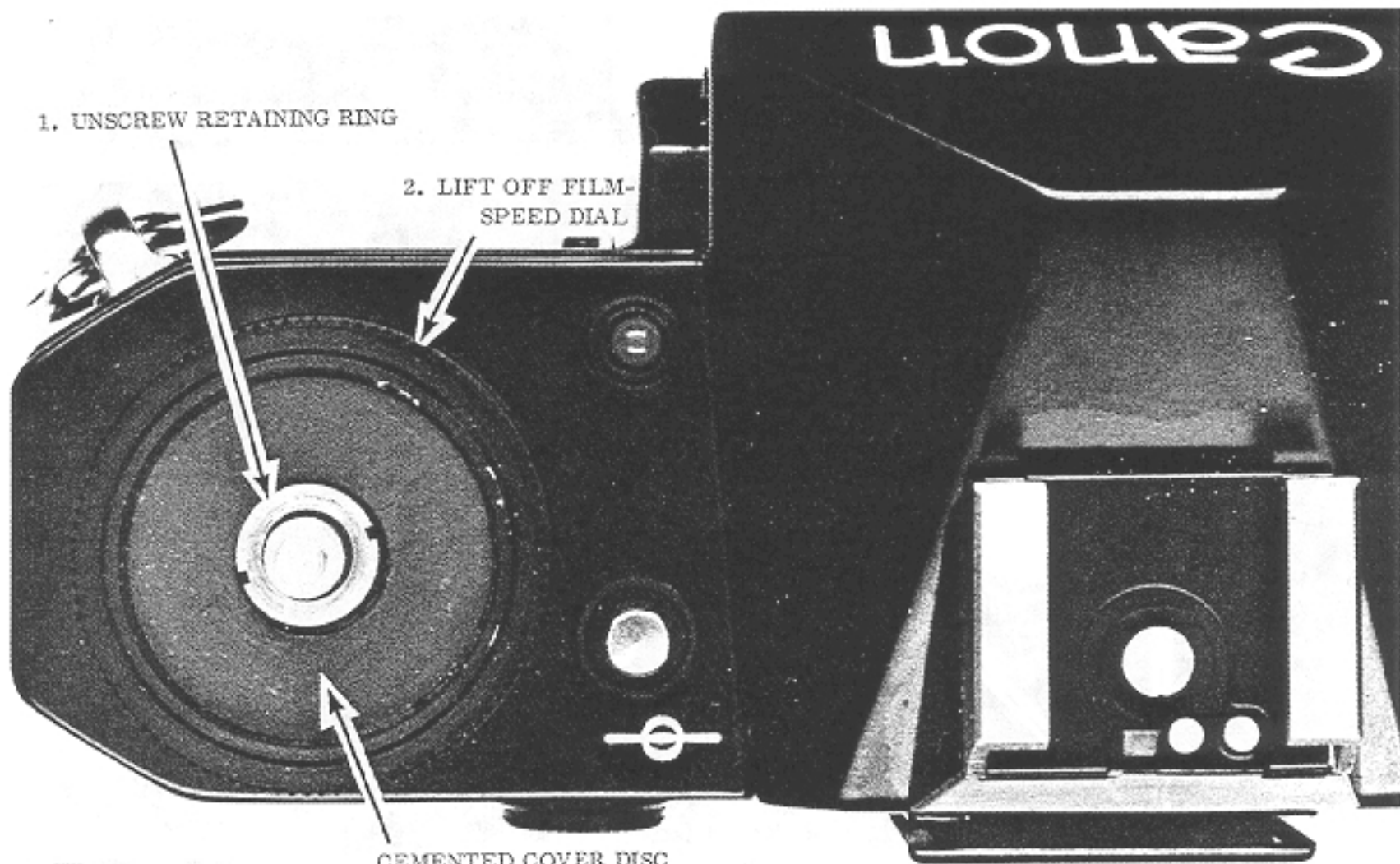
BULB

on-off selector off

1. UNSCREW RETAINING RING

2. LIFT OFF FILM-
SPEED DIAL

CEMENTED COVER DISC



FILM-SPEED DIAL WITH CEMENTED
COVER DISC REMOVED

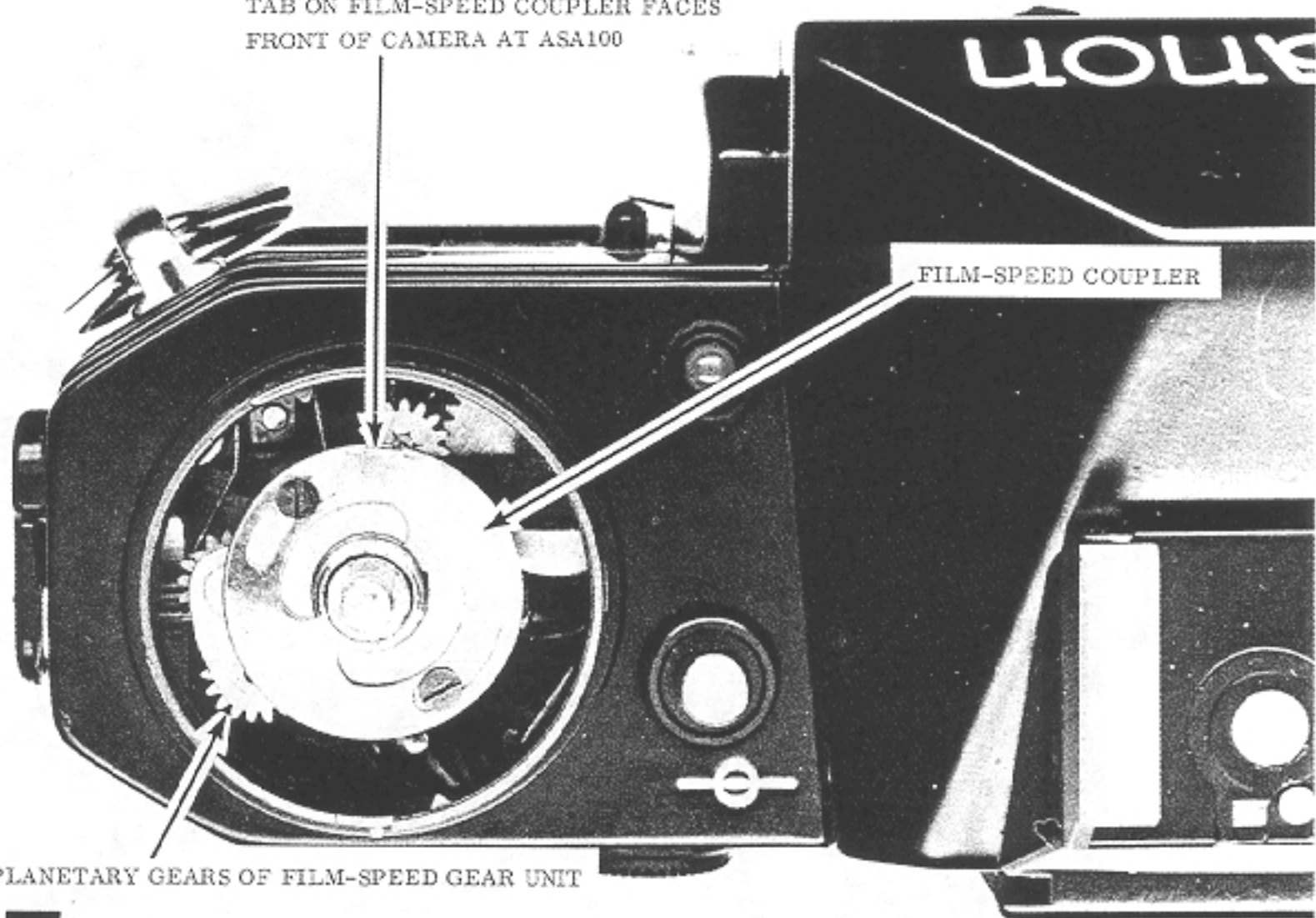
FORK ON FILM-SPEED DIAL STRADDLES TAB ON FILM-SPEED COUPLER

SCREWS FOR MINOR ADJUSTMENTS ONCE TOP COVER IS INSTALLED

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

FILM-SPEED COUPLER

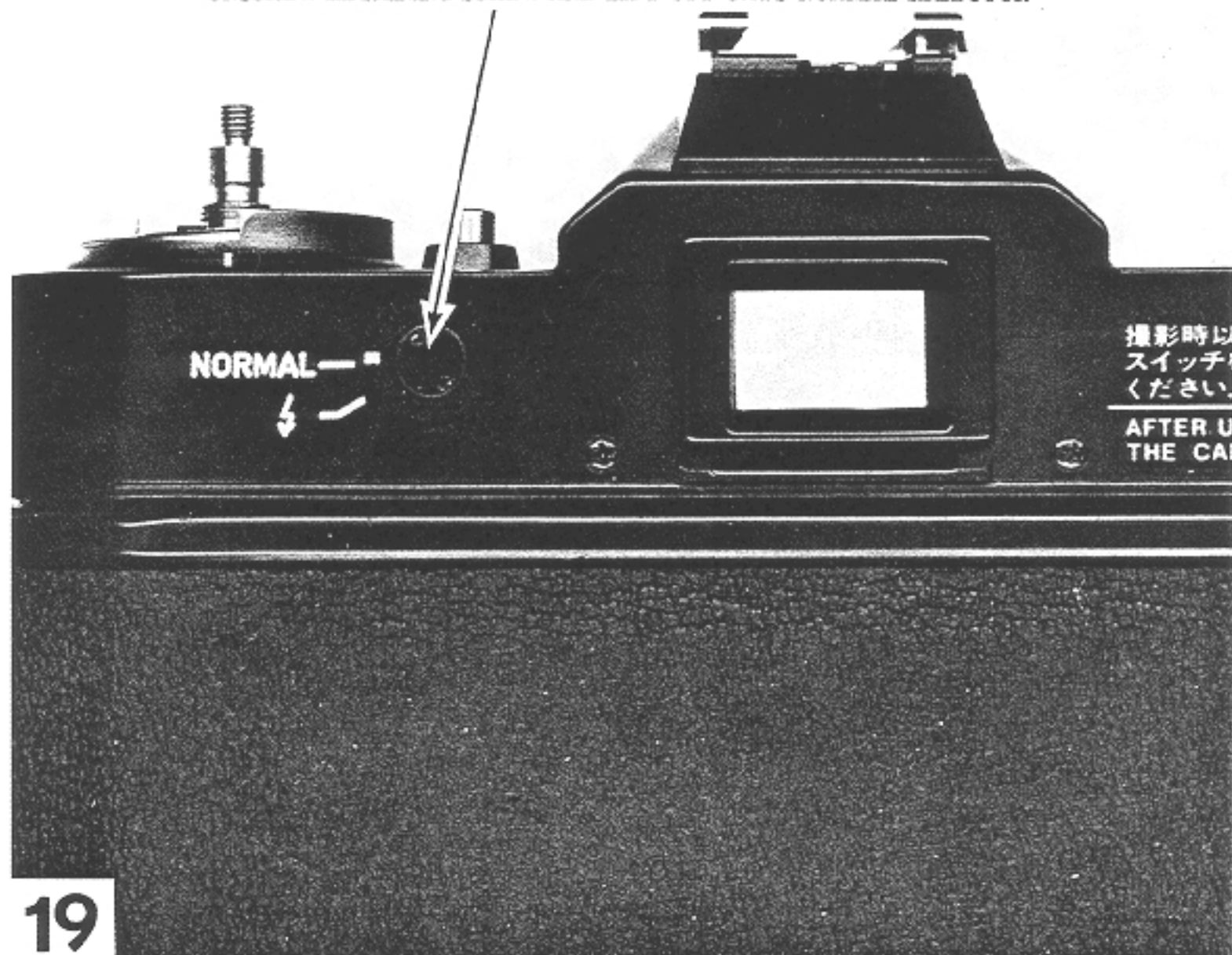
PLANETARY GEARS OF FILM-SPEED GEAR UNIT



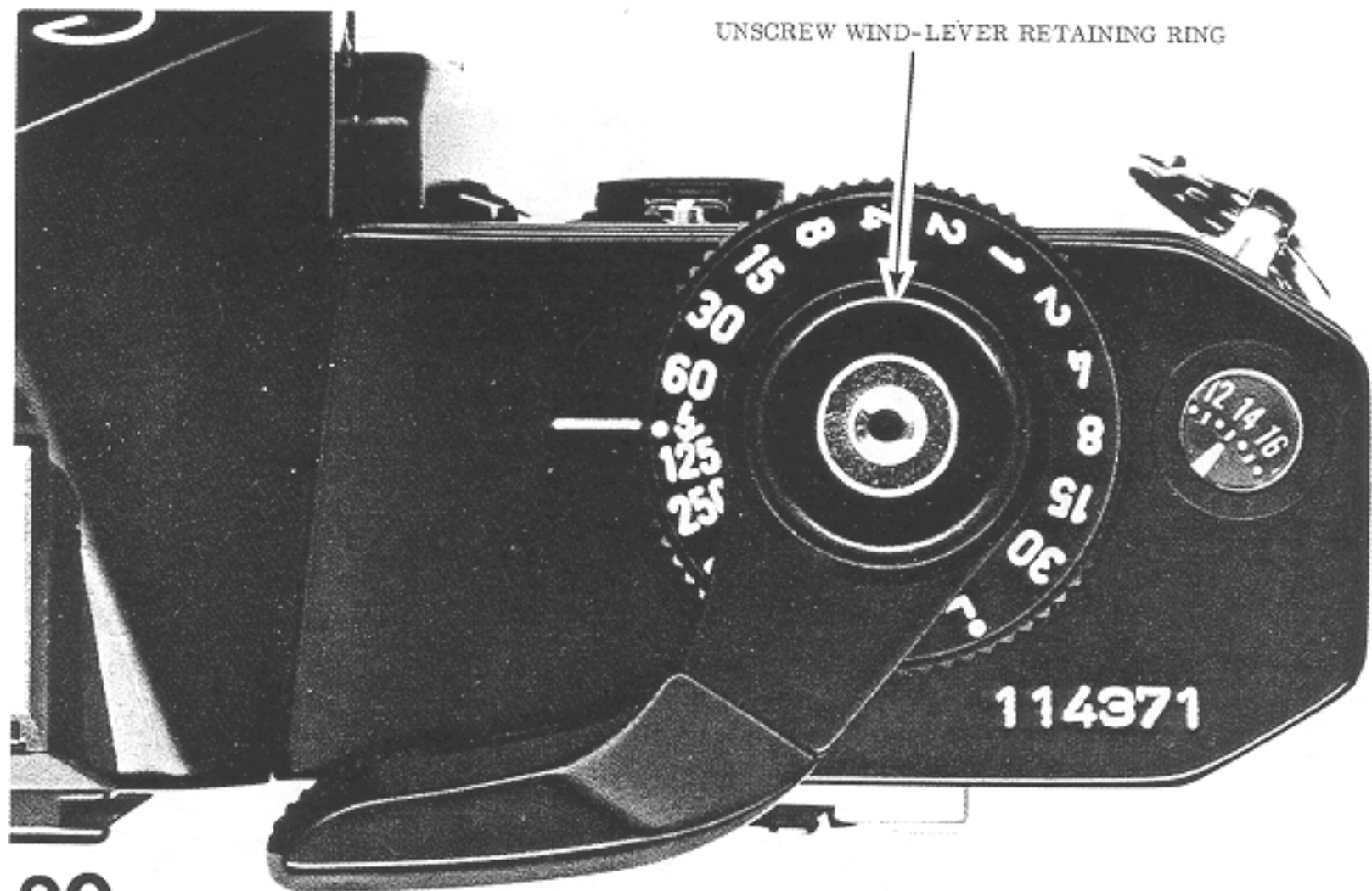
SPECIAL TOOL MAY BE SCREWED ONTO
RETAINING-RING THREADS TO HOLD
PARTS IN ASA100 POSITION

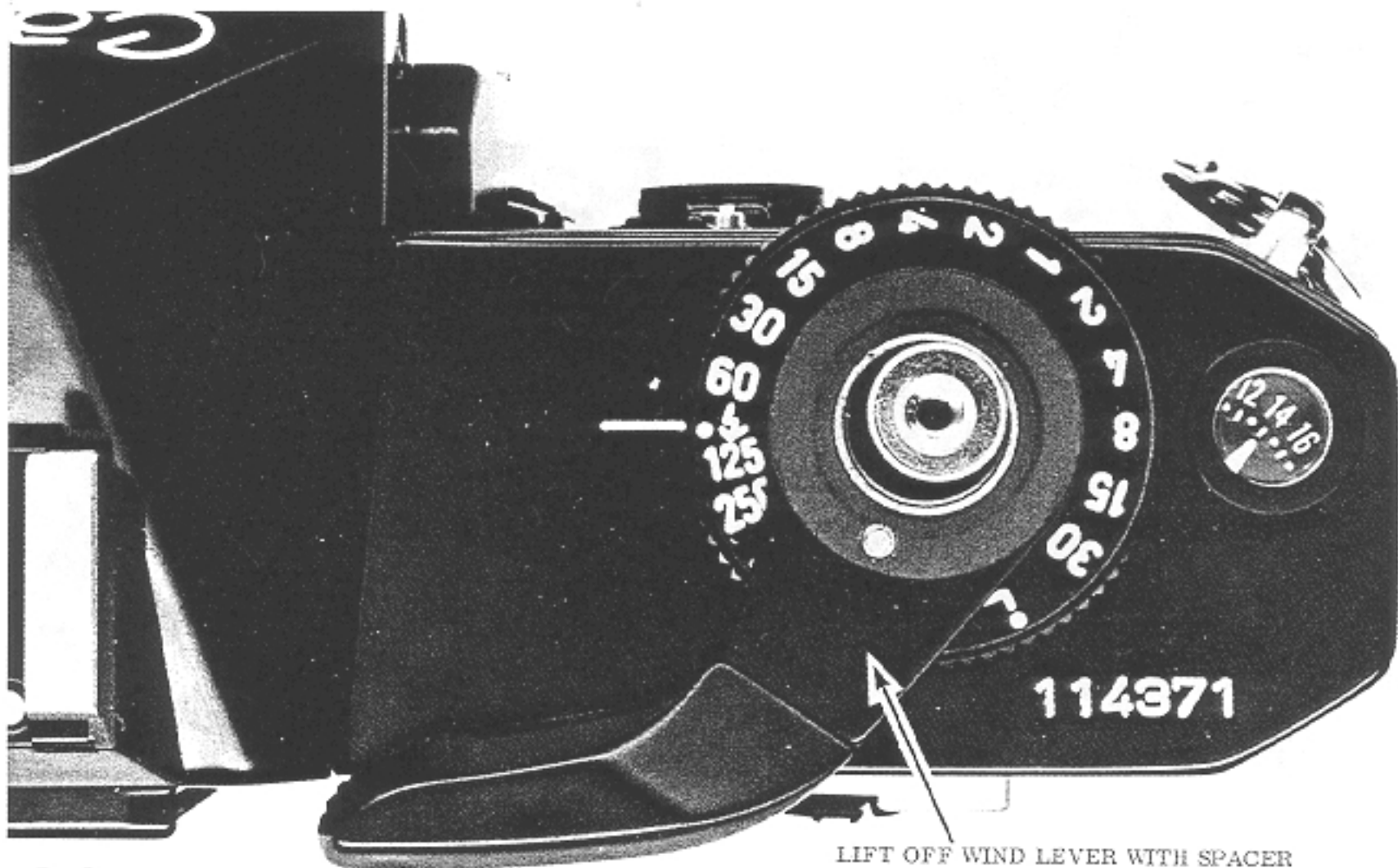


UNSCREW RETAINING SCREW AND LIFT OFF CATS-NORMAL SELECTOR



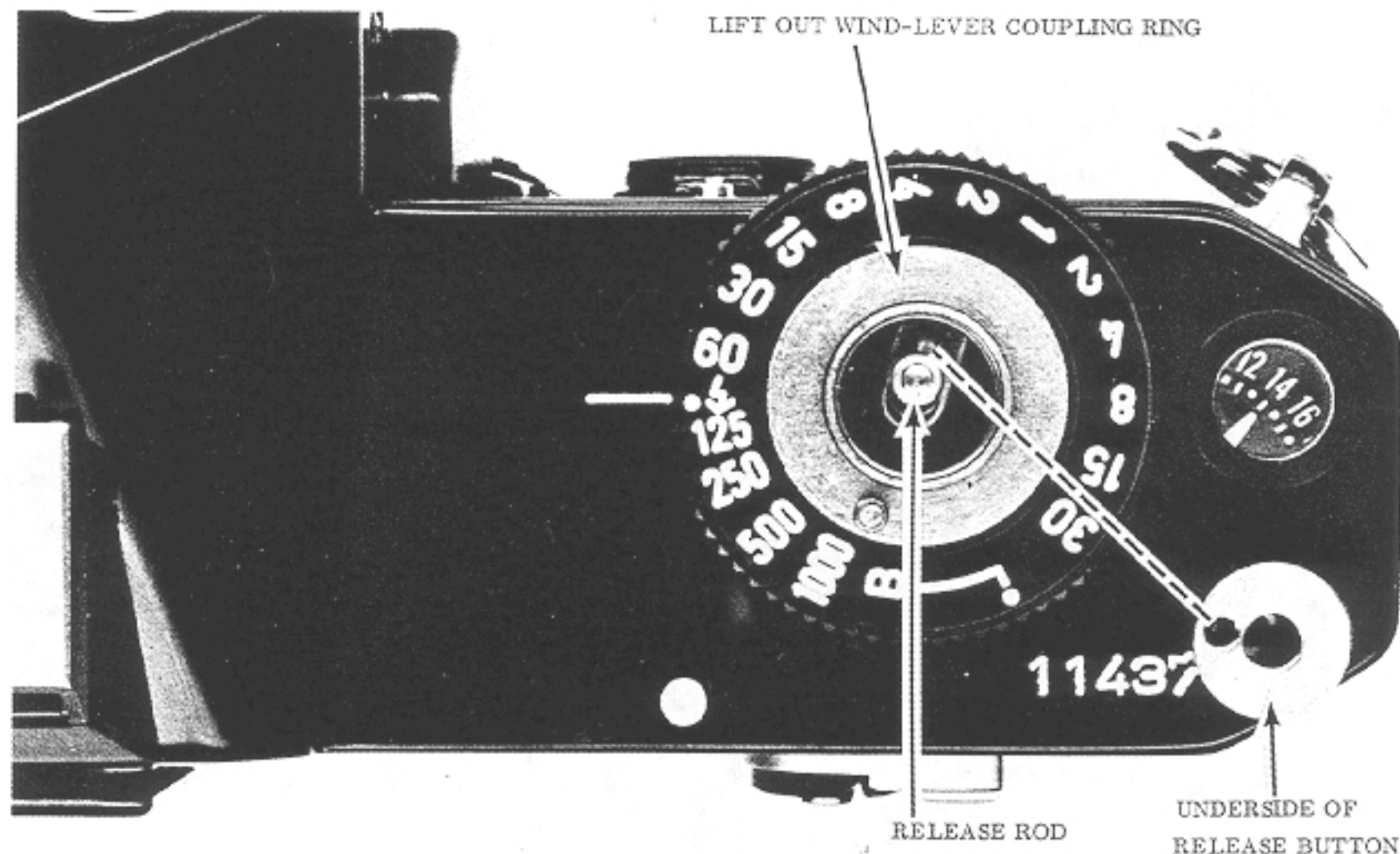
UNSCREW WIND-LEVER RETAINING RING





21

LIFT OUT WIND-LEVER COUPLING RING



RELEASE ROD

UNDERSIDE OF
RELEASE BUTTON

22

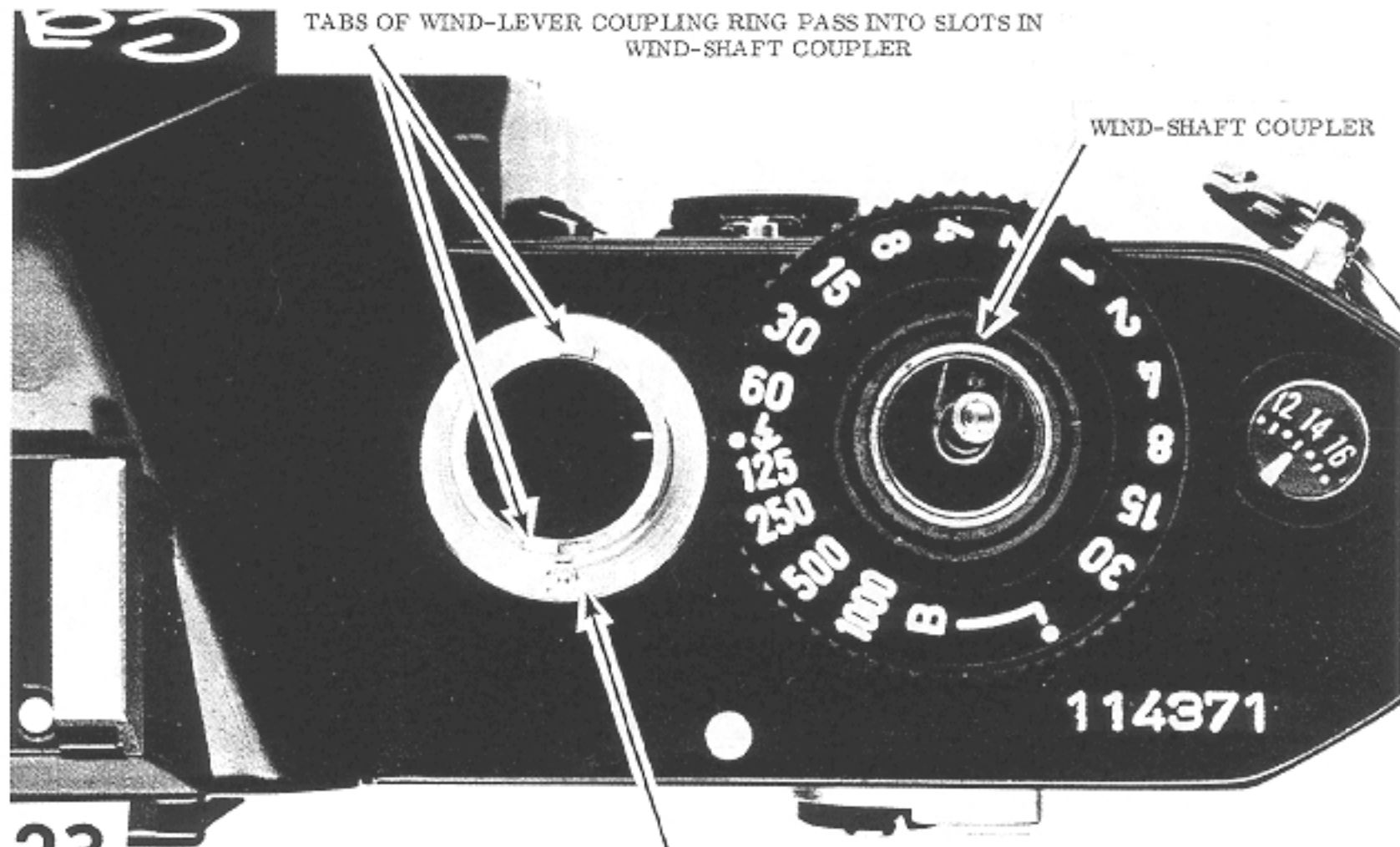
NOTE: IT'S NOT NECESSARY TO REMOVE THE
RELEASE BUTTON; IF YOU DO, NOTE THE HOLE
IN THE RELEASE BUTTON THAT FITS OVER THE
FIN ON THE RELEASE ROD

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

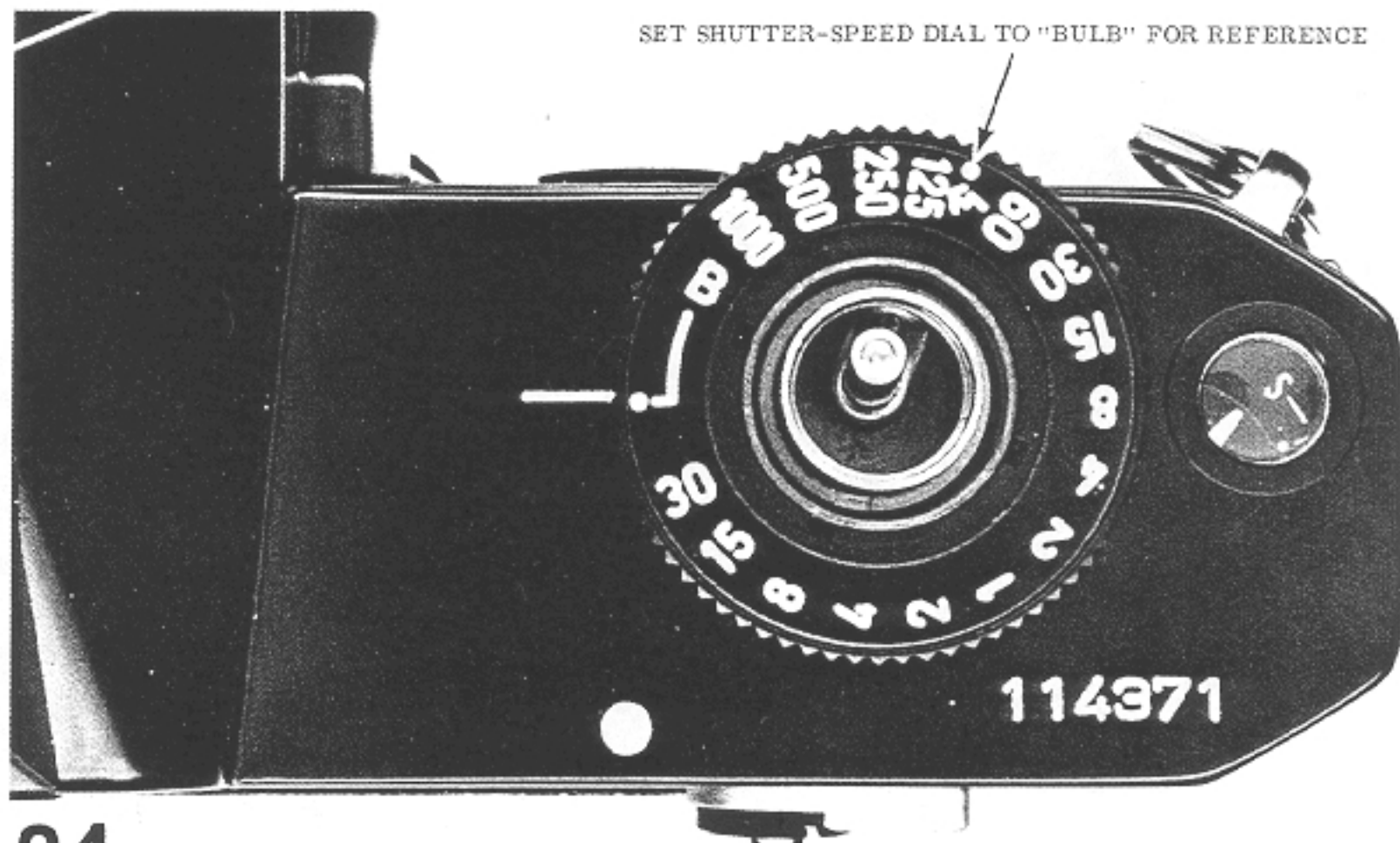
WIND-SHAFT COUPLER

UNDERSIDE OF WIND-LEVER COUPLING RING

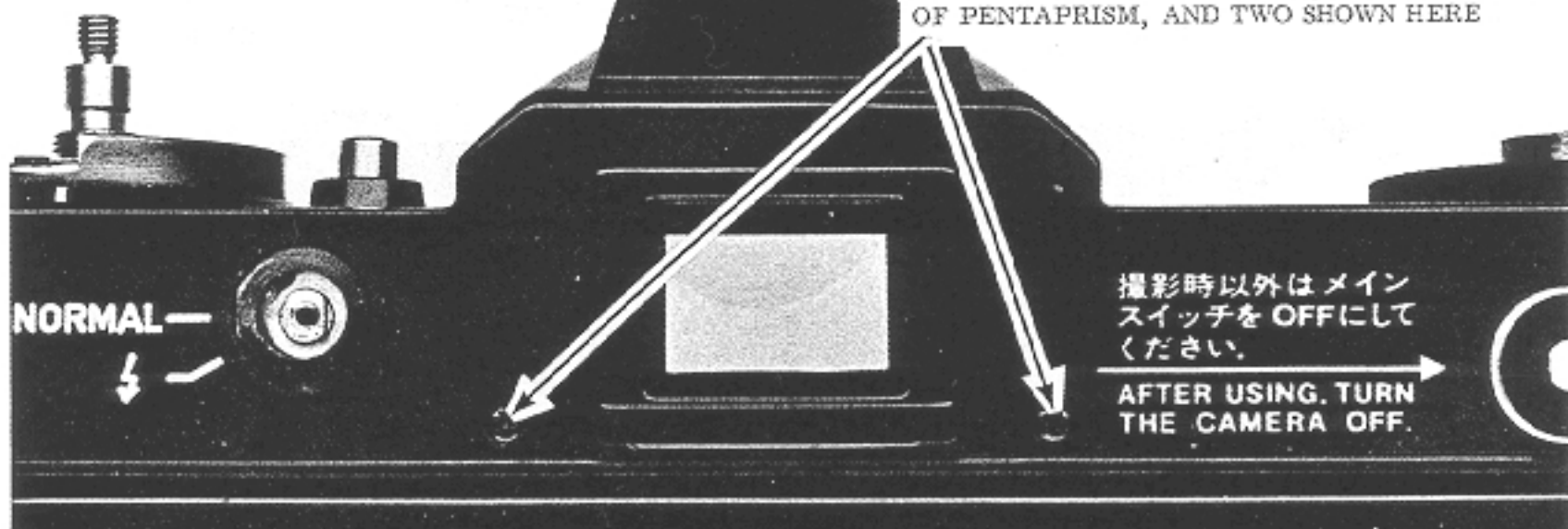
23



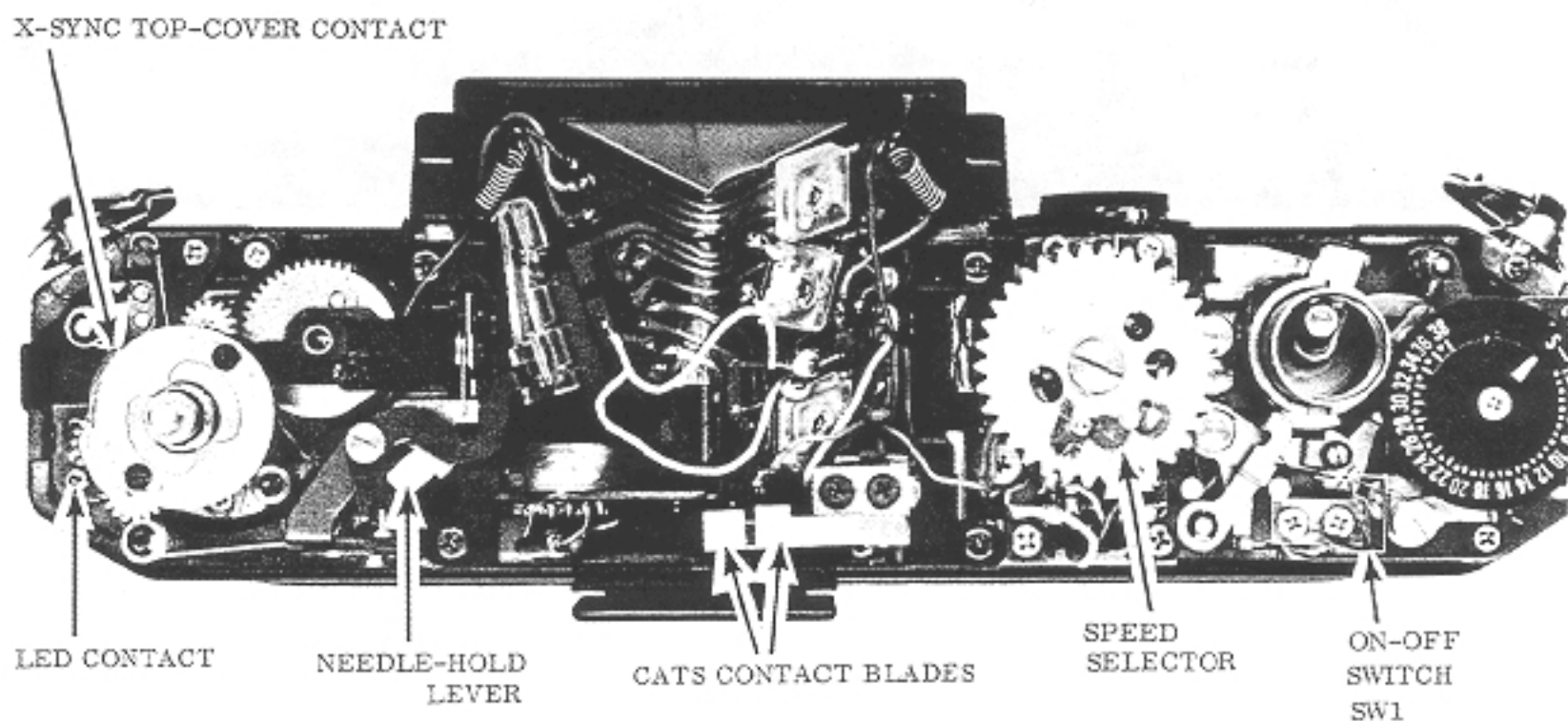
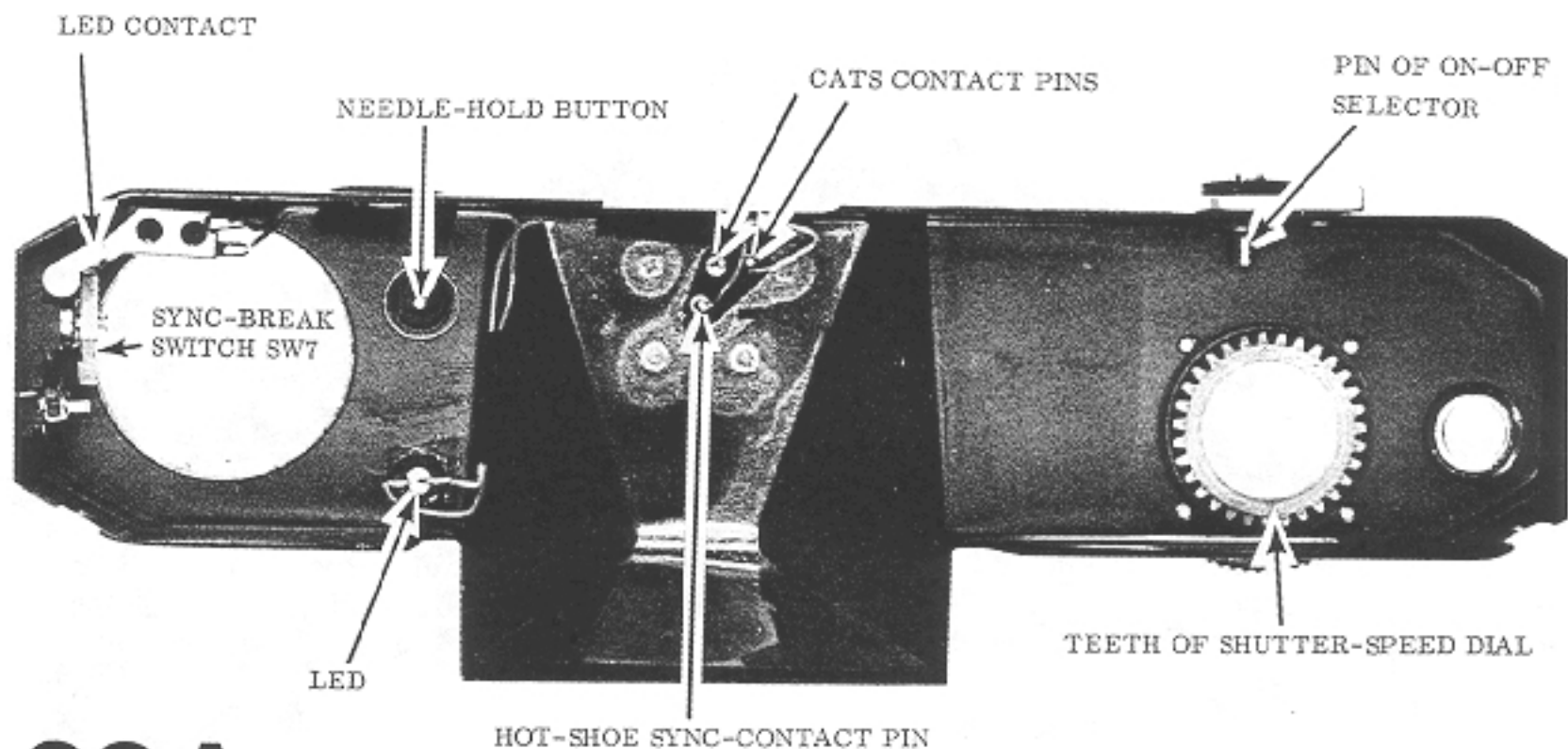
SET SHUTTER-SPEED DIAL TO "BULB" FOR REFERENCE



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



2. LIFT OFF TOP COVER

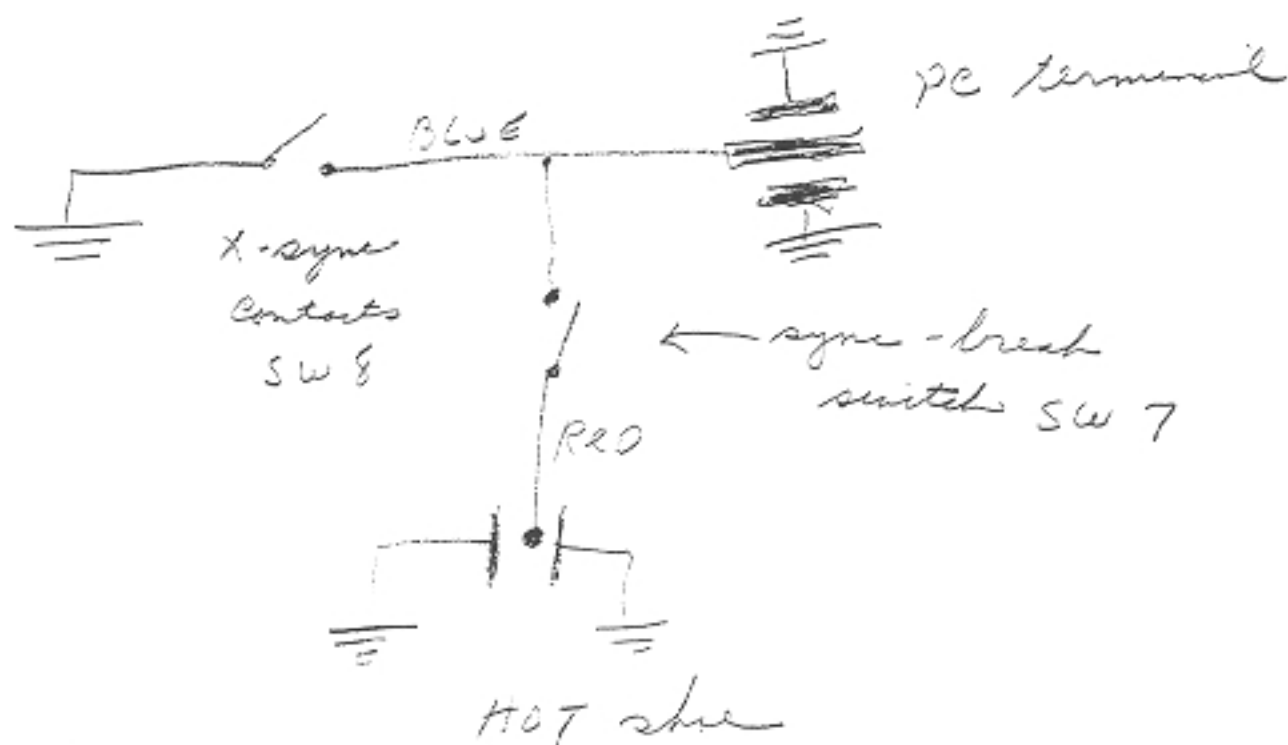




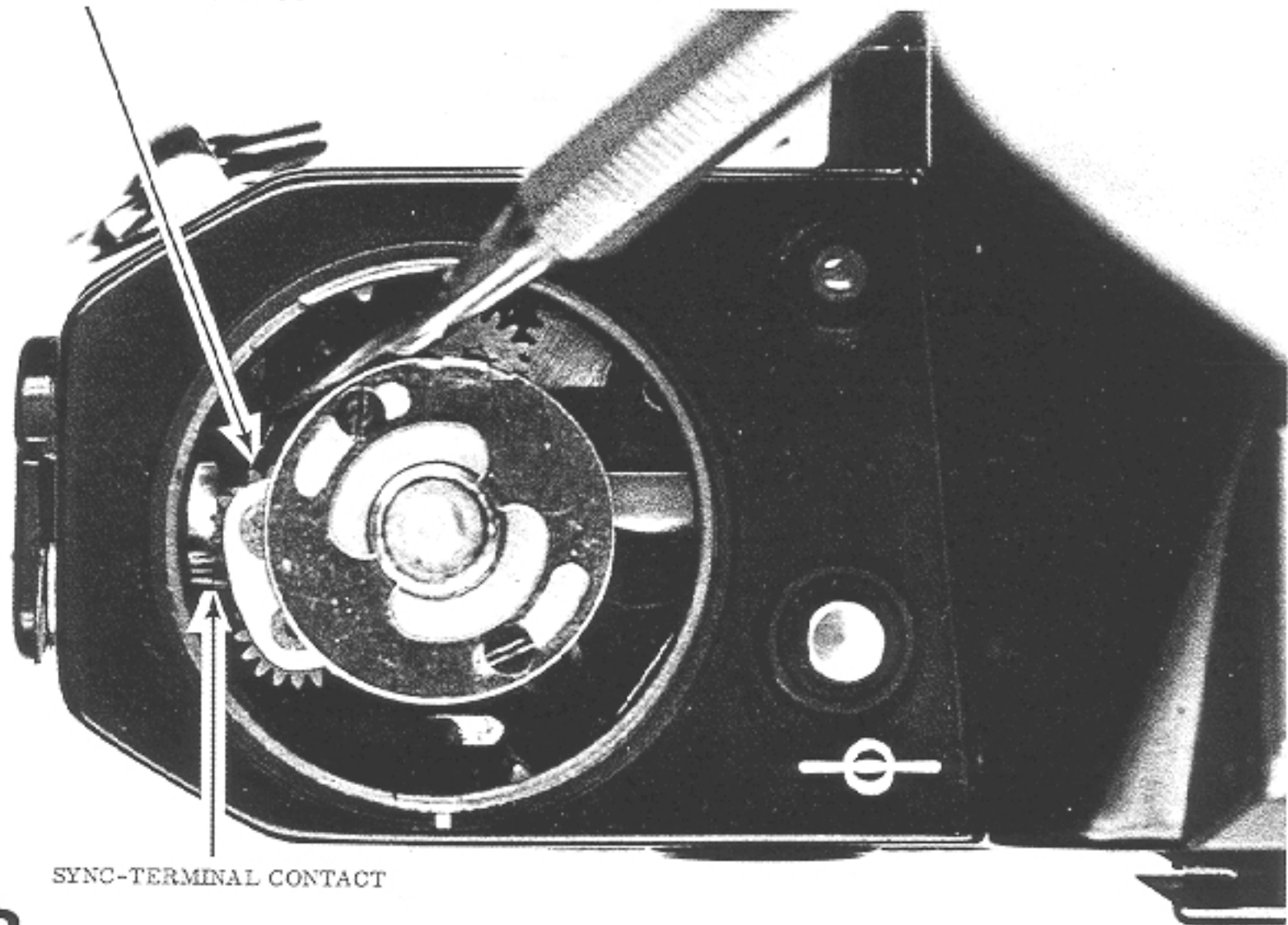
LED

THE LED SHOULD GLOW WITH 2 VOLTS
APPLIED ACROSS THE TERMINALS

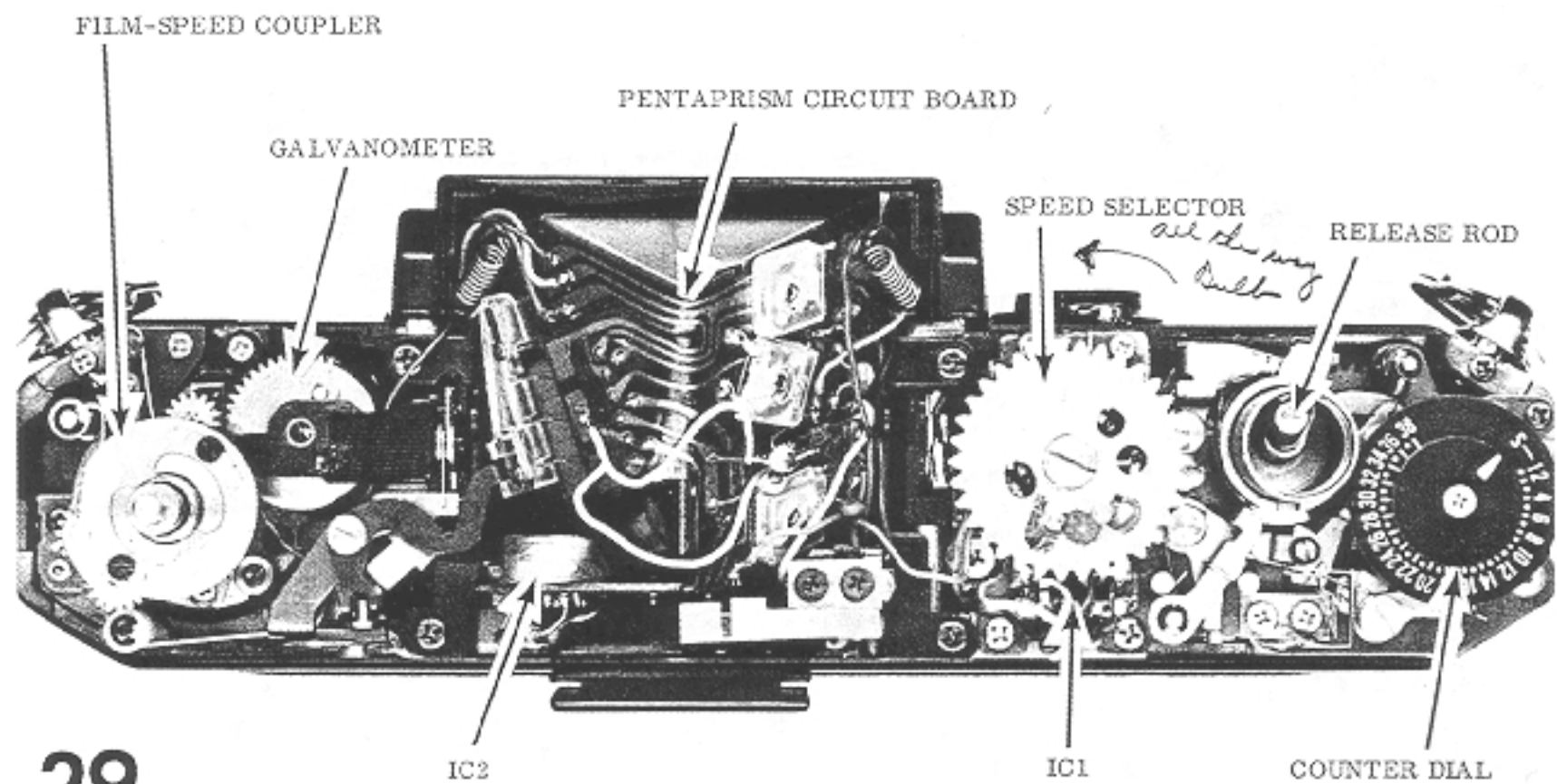
27



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



SYNC-TERMINAL CONTACT

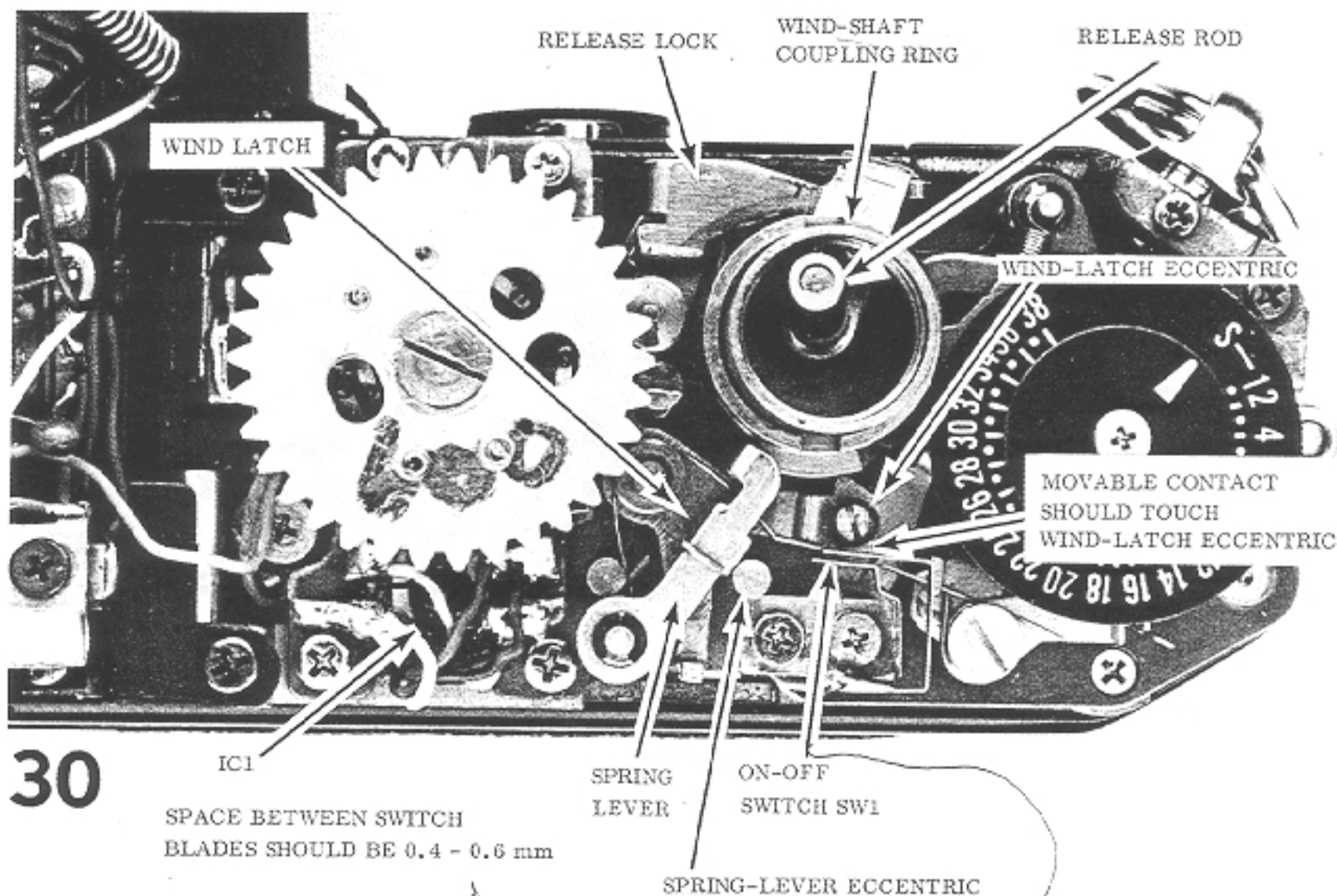


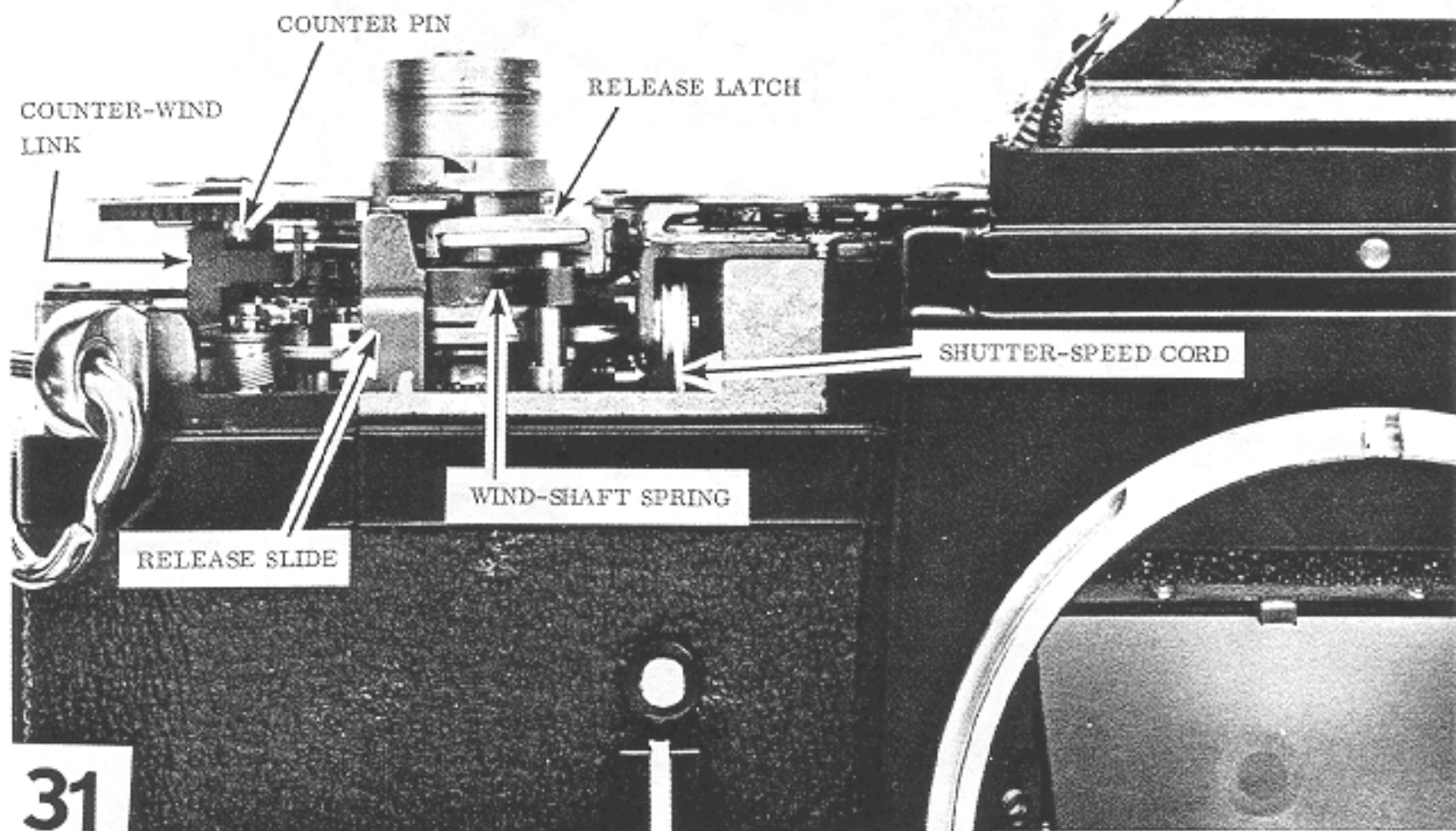
29

IC1 - Electromagnet switch

IC2 - mosfet amplifier

when faulty - meter drops suddenly down

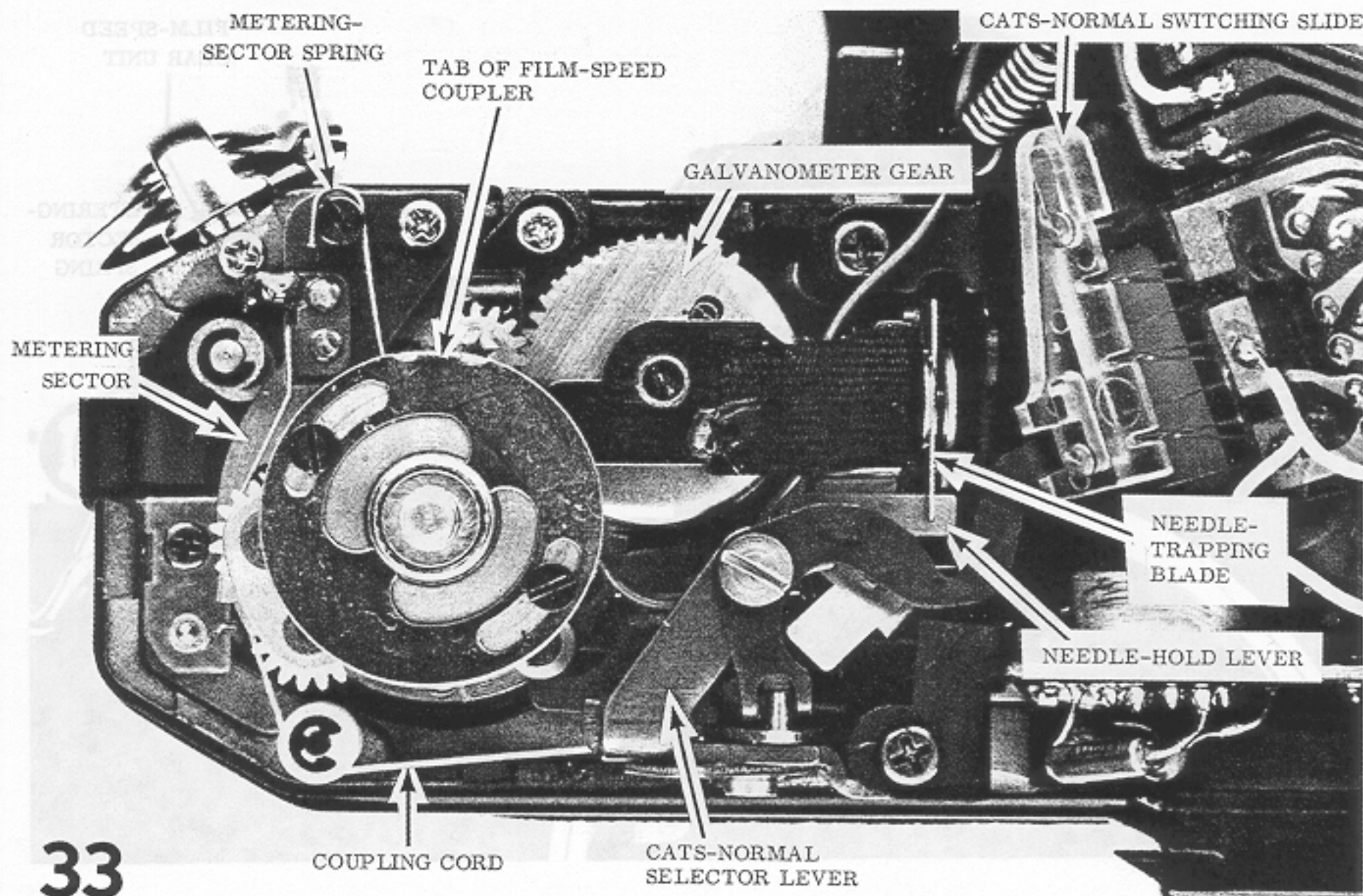


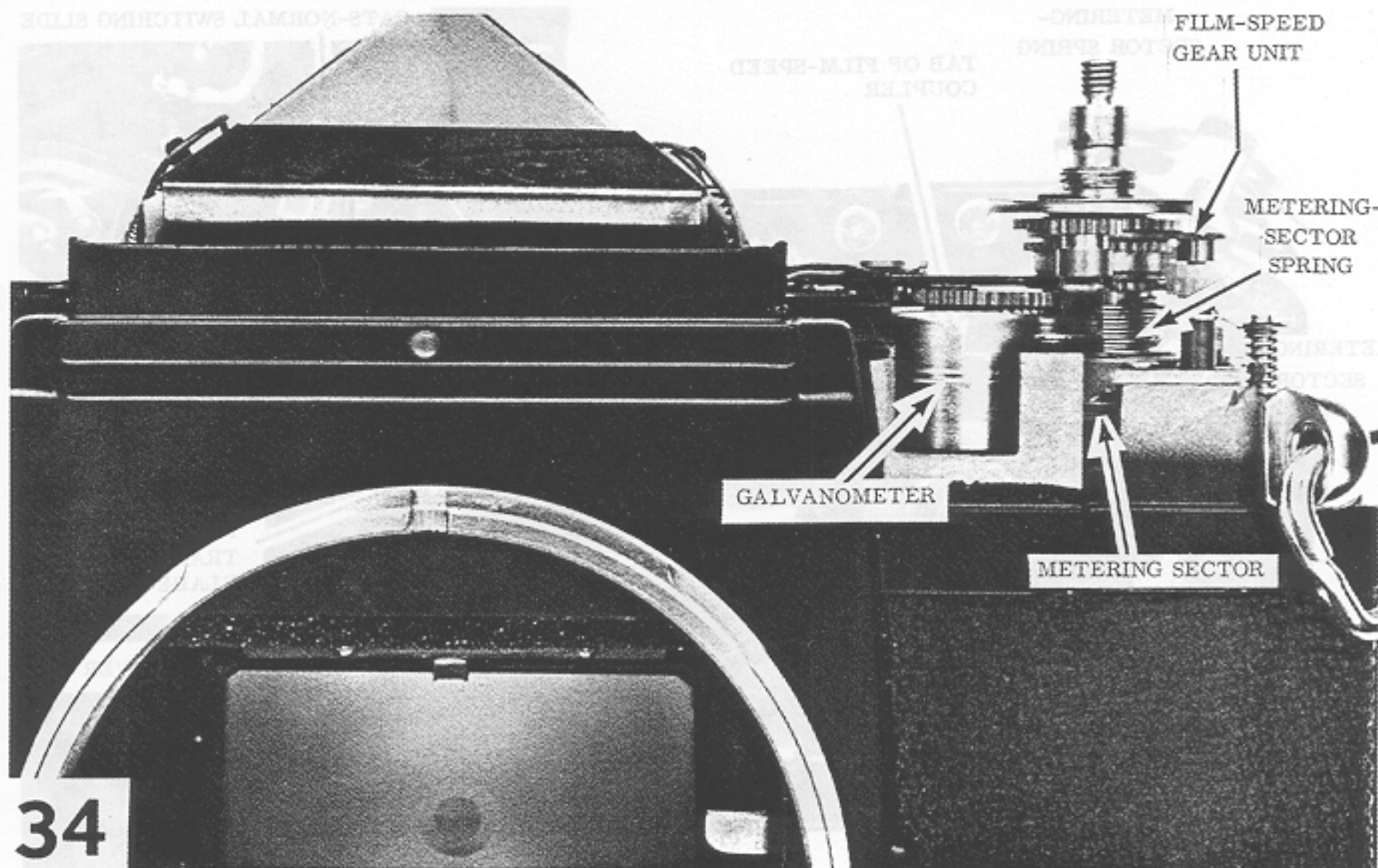


REPLACE WIND-LEVER PARTS TO OPERATE SHUTTER

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

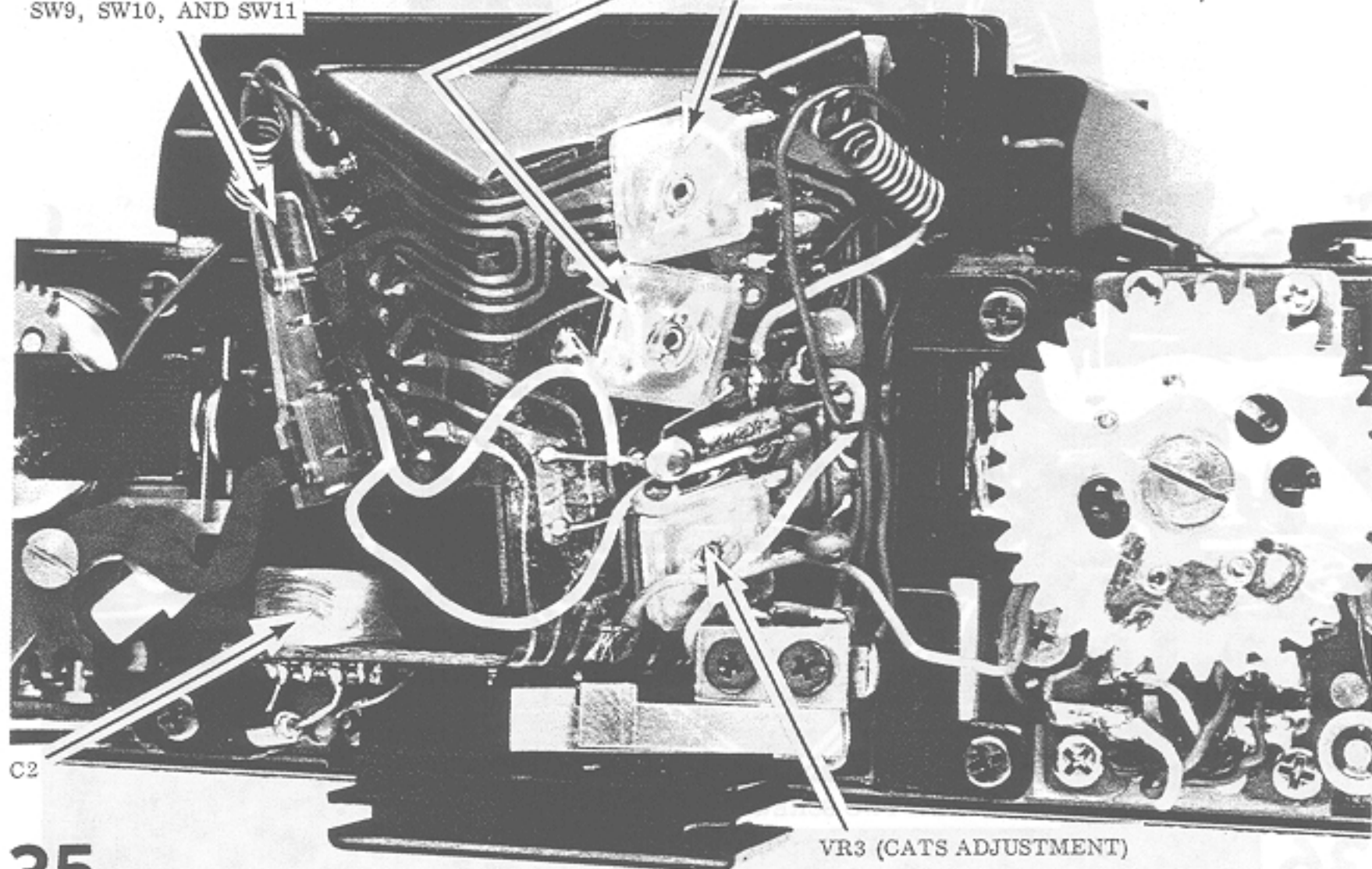




CATS-NORMAL SWITCHES
SW9, SW10, AND SW11

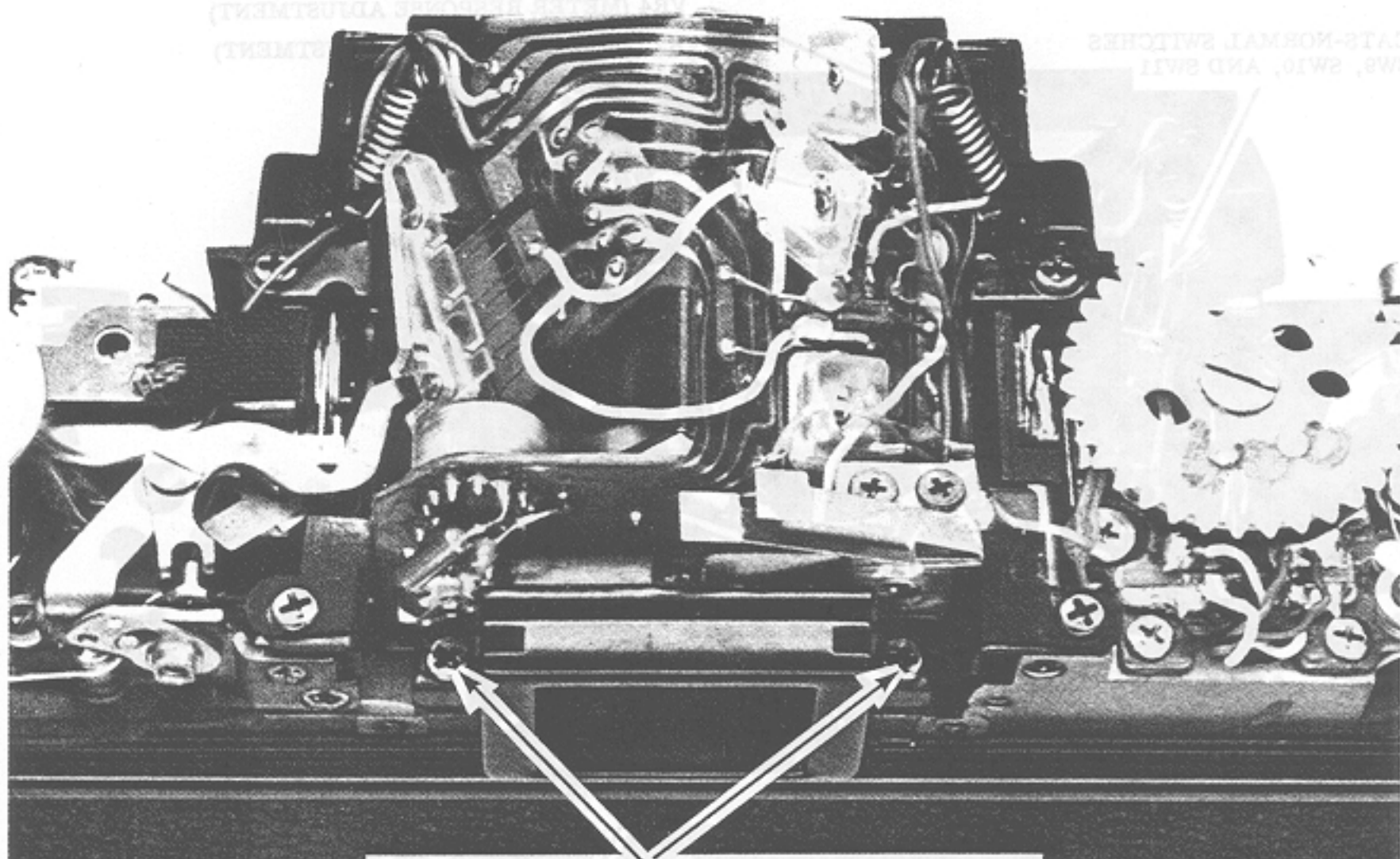
VR4 (METER RESPONSE ADJUSTMENT)

VR2 (METER LINEARITY ADJUSTMENT)



C2

VR3 (CATS ADJUSTMENT)



REMOVE TWO SCREWS AND LIFT OUT EYELENS

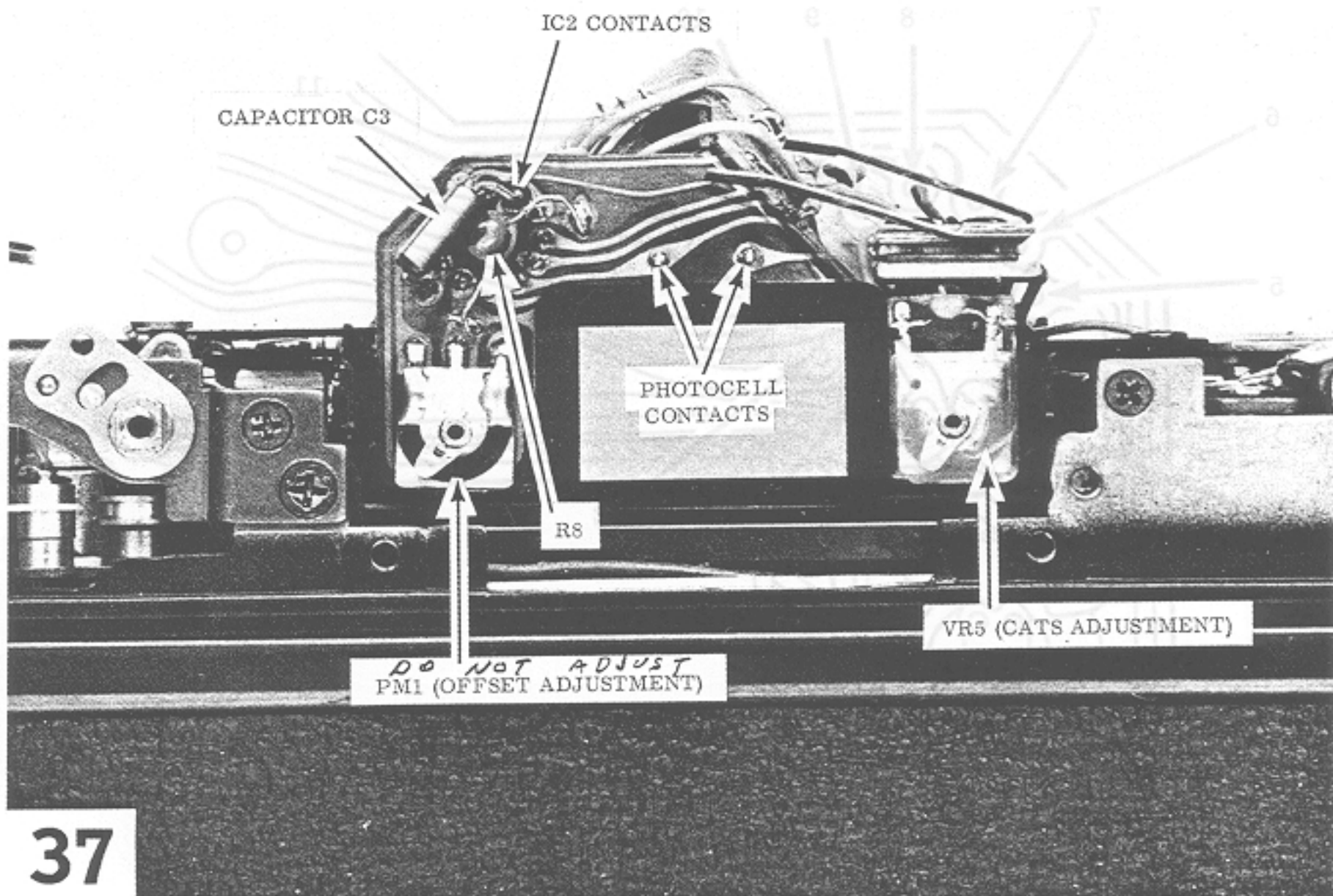
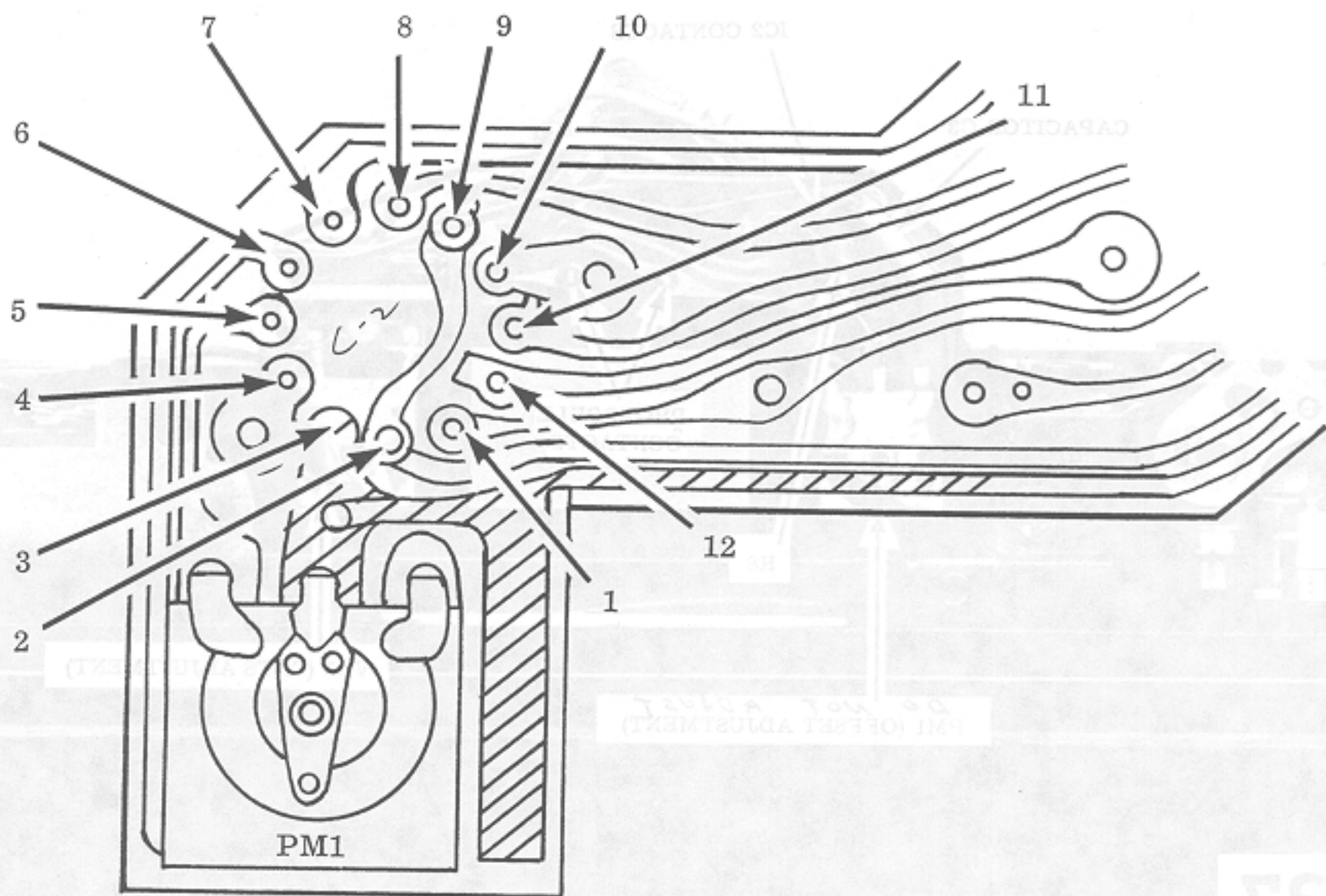


Photo cells

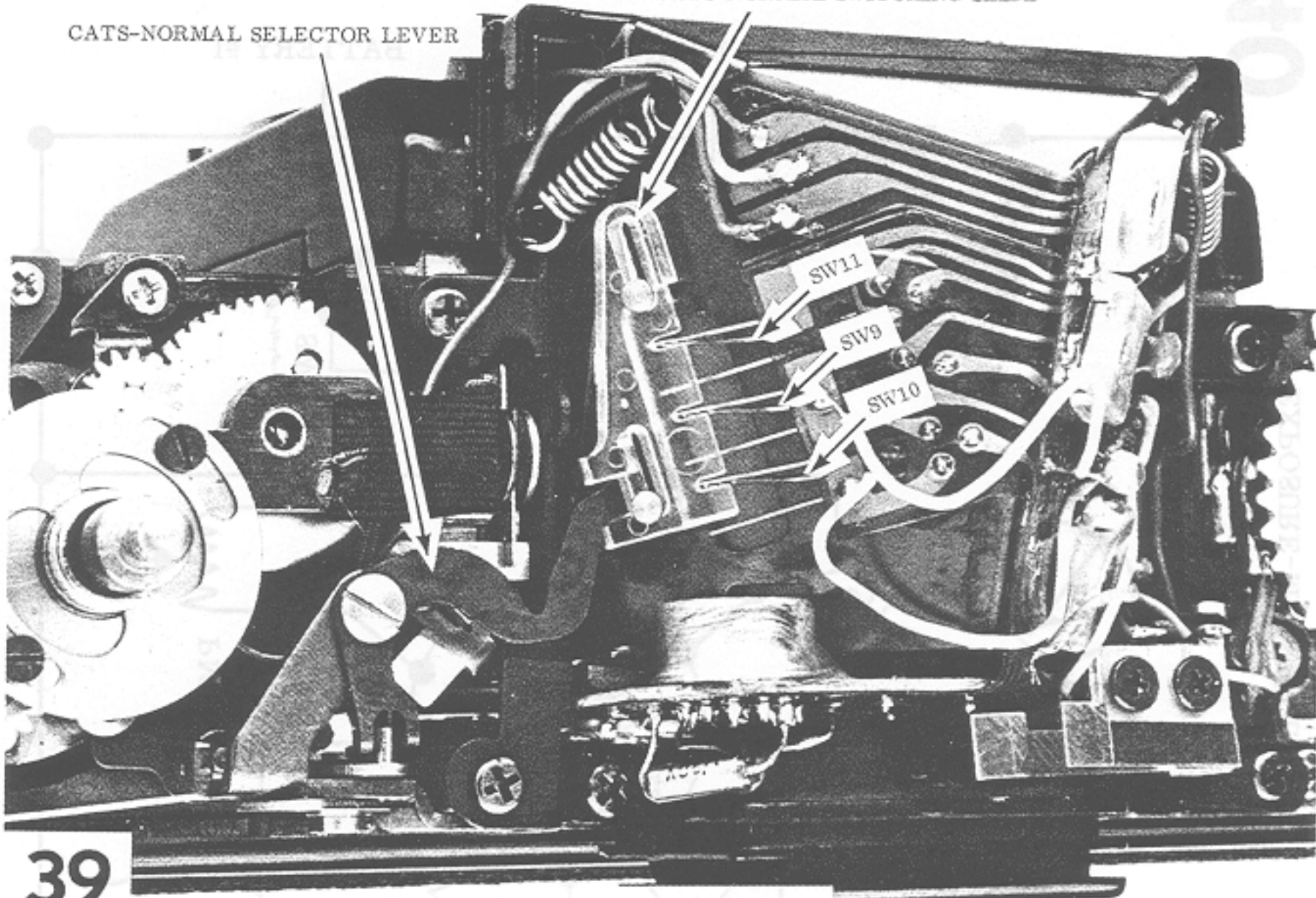




38

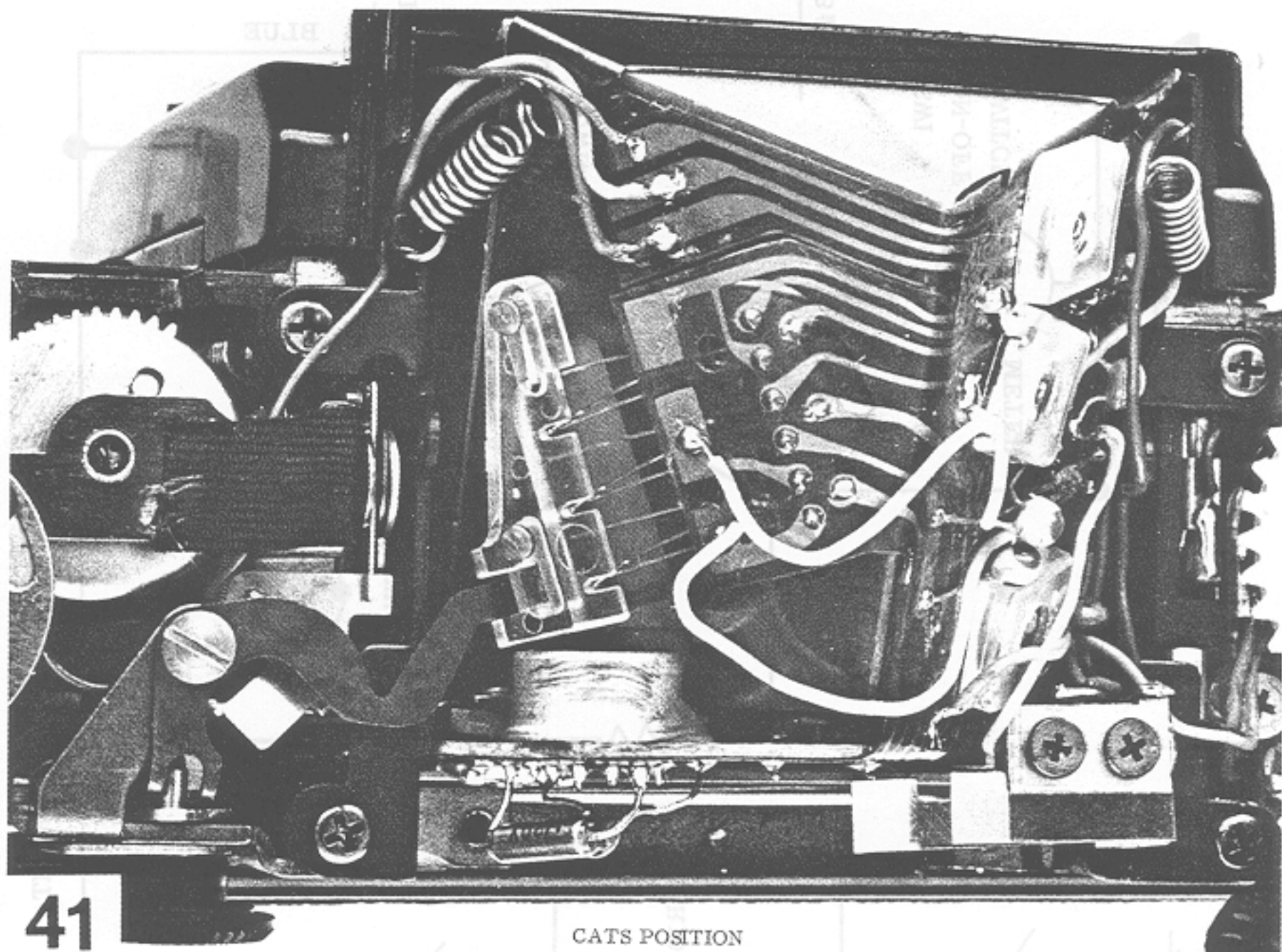
CATS-NORMAL SWITCHING SLIDE

CATS-NORMAL SELECTOR LEVER



39

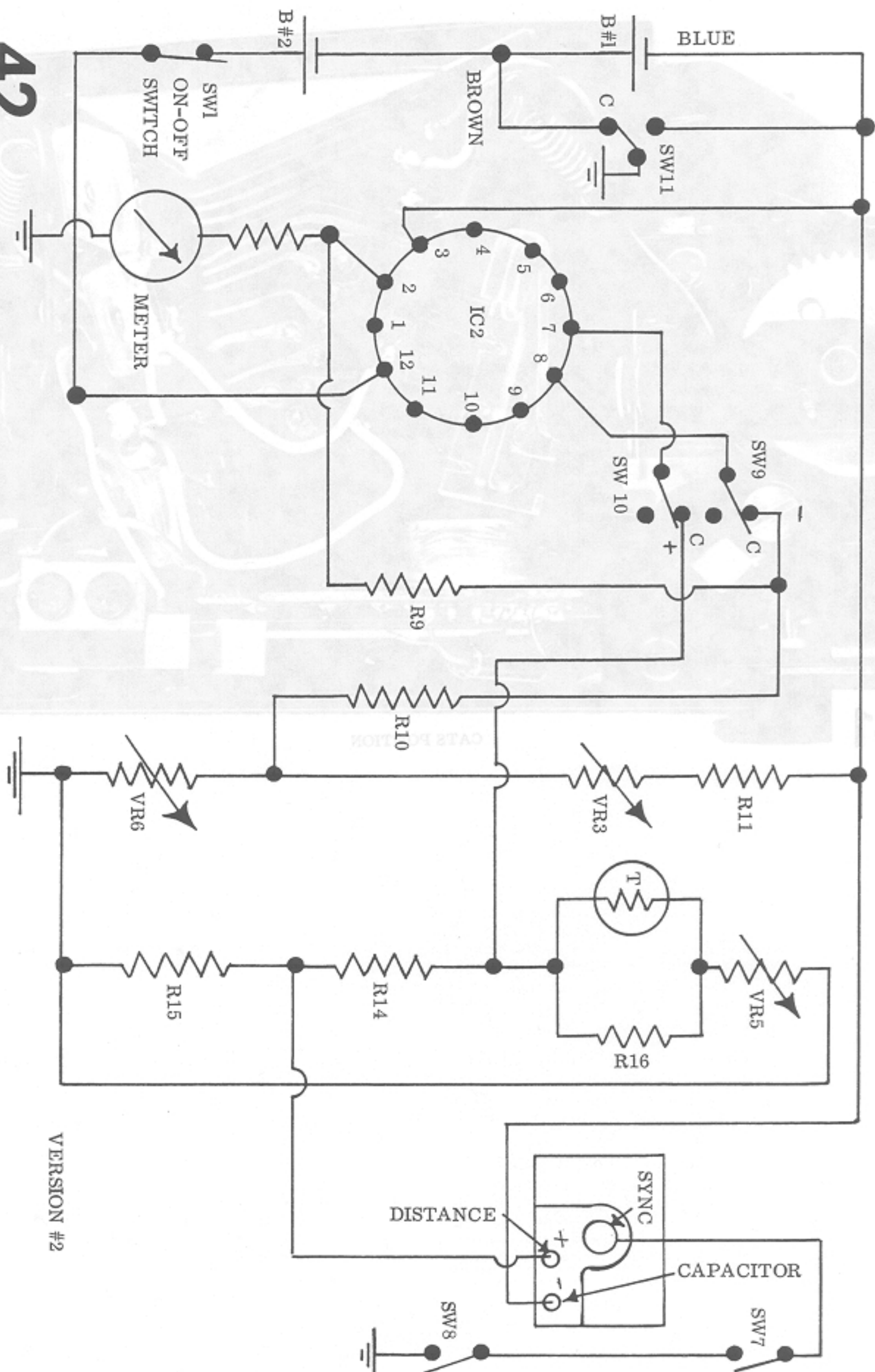
"NORMAL" POSITION



41

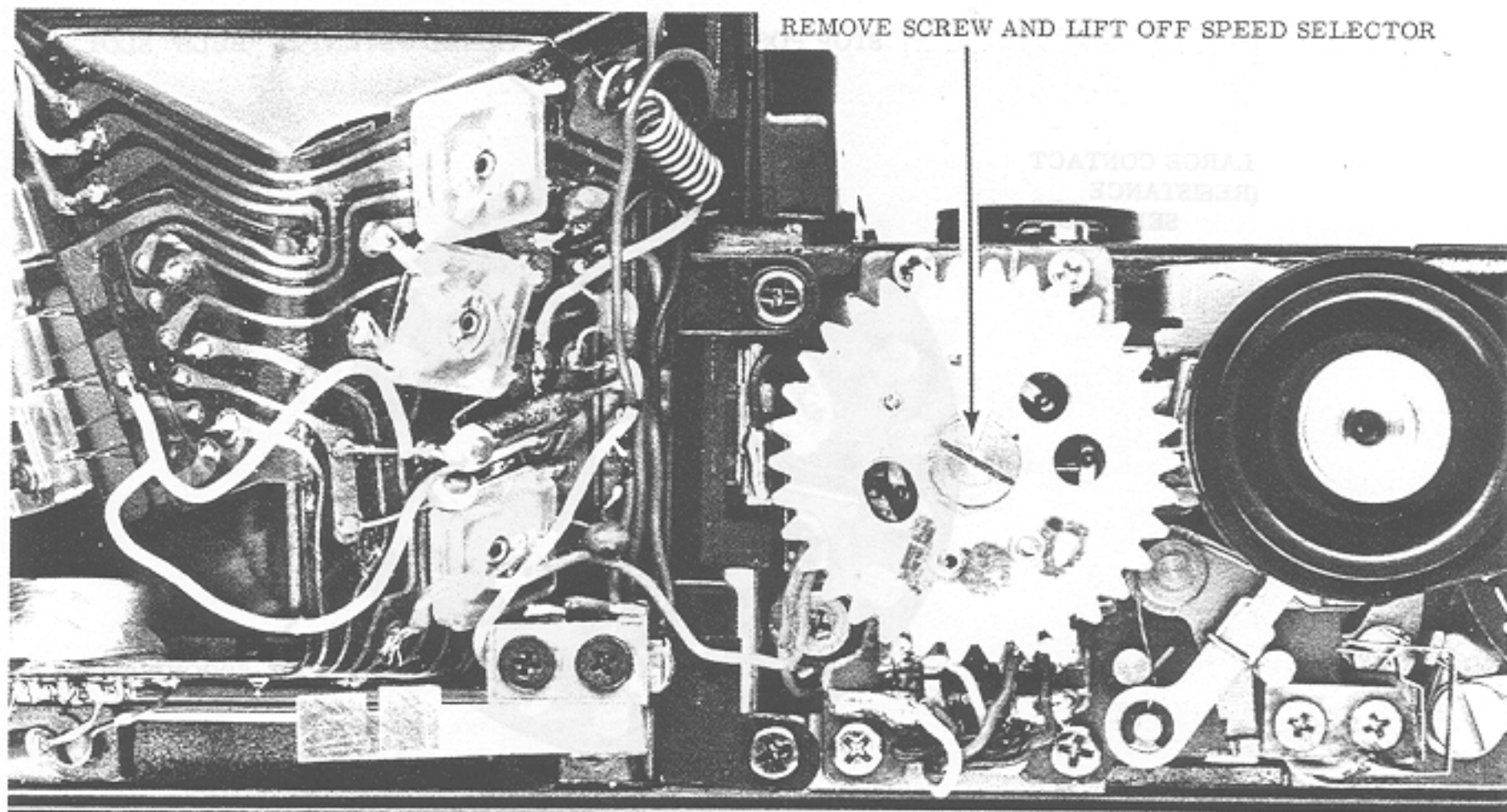
CATS POSITION

CATS CIRCUIT

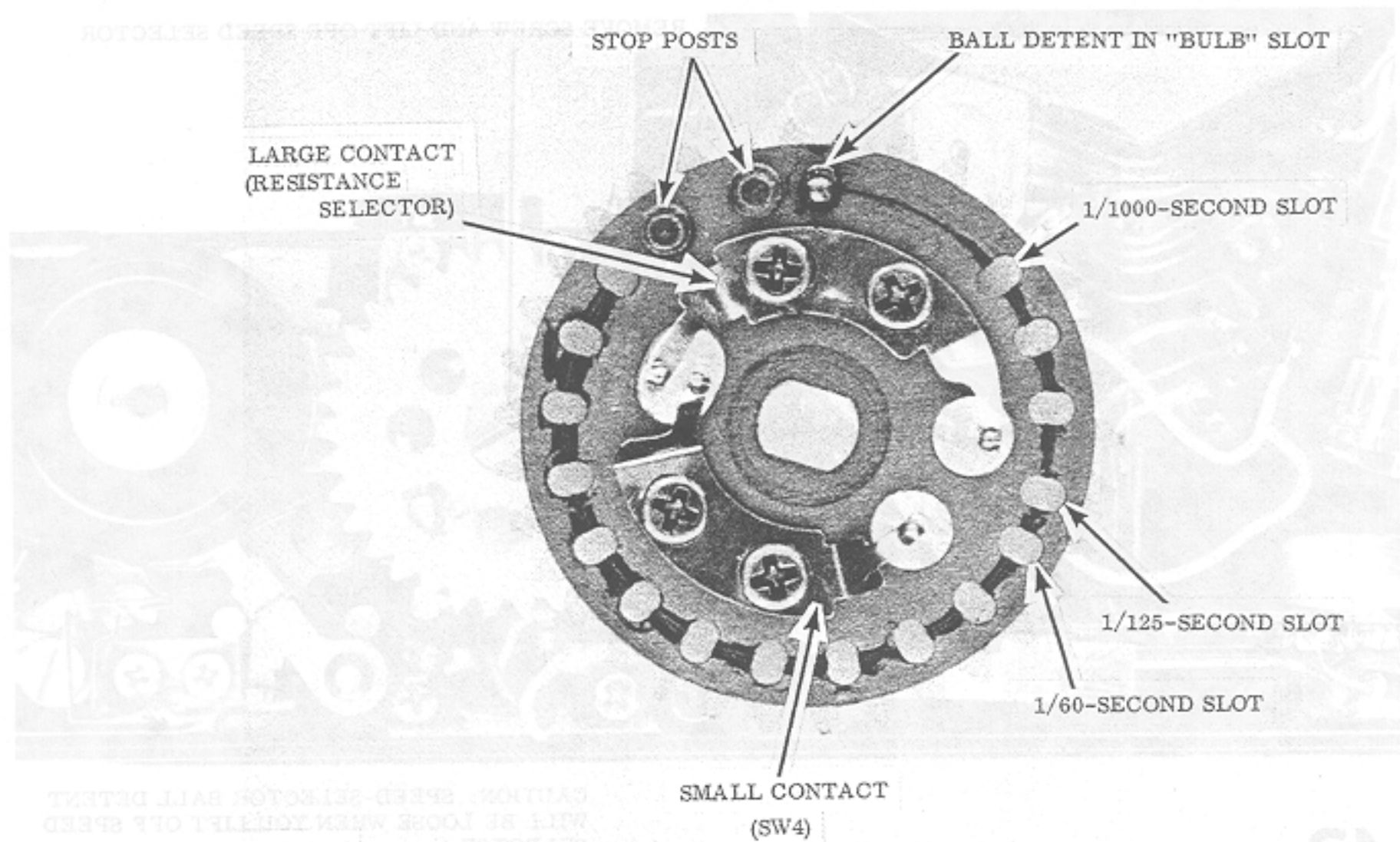


VERSION #2

REMOVE SCREW AND LIFT OFF SPEED SELECTOR

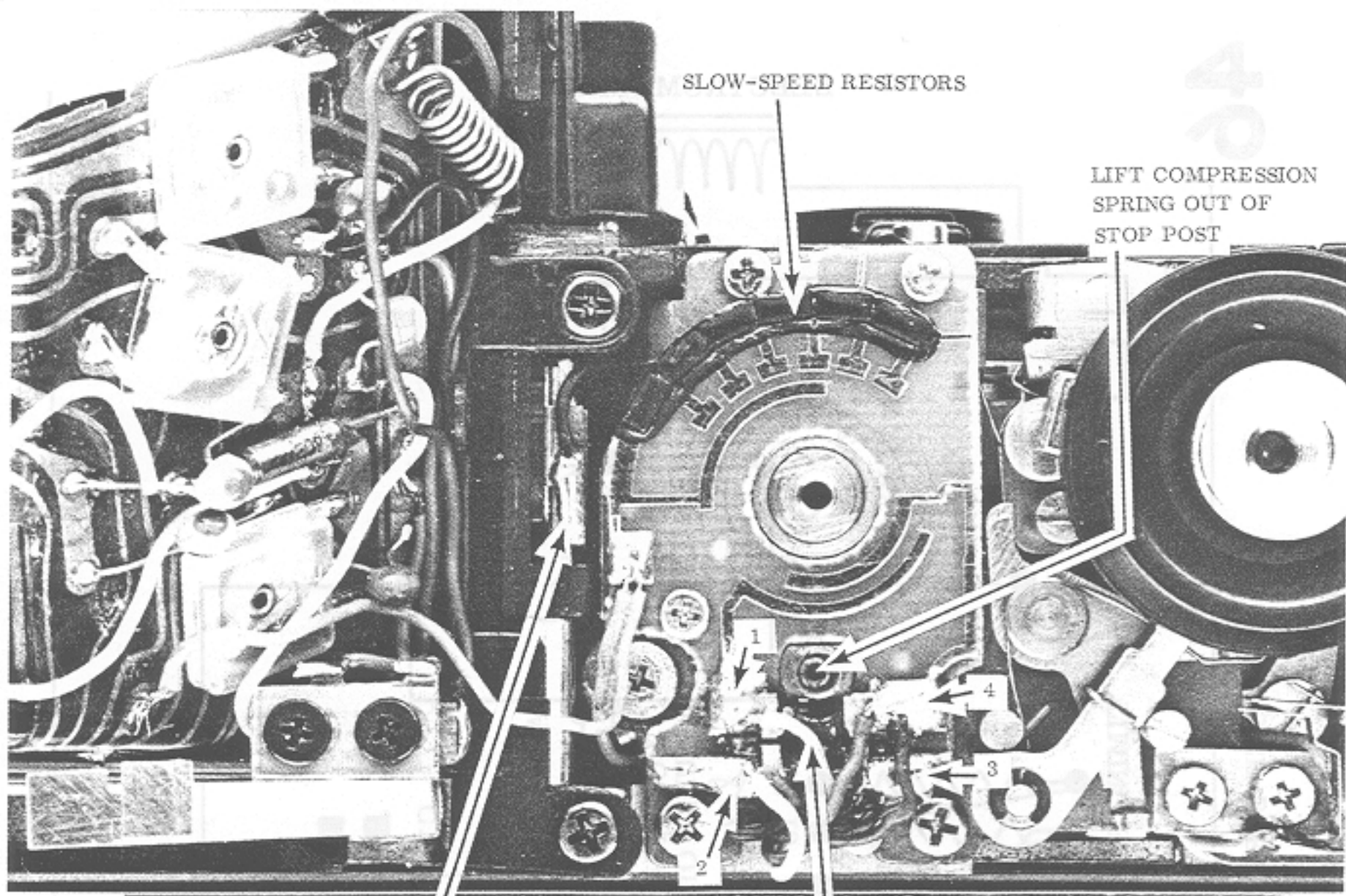


CAUTION: SPEED-SELECTOR BALL DETENT
WILL BE LOOSE WHEN YOU LIFT OFF SPEED
SELECTOR



44

UNDERSIDE OF SPEED SELECTOR



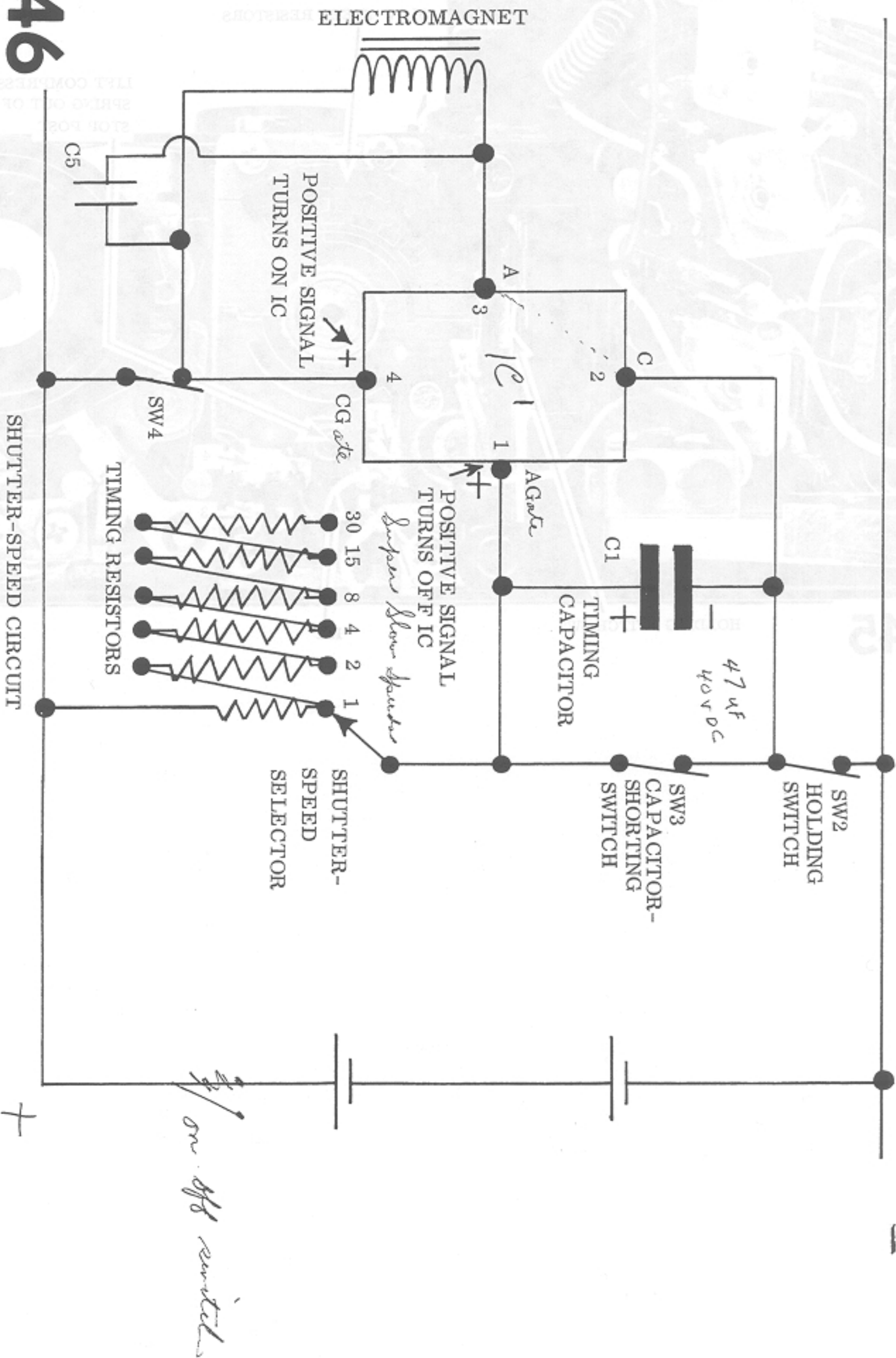
SLOW-SPEED RESISTORS

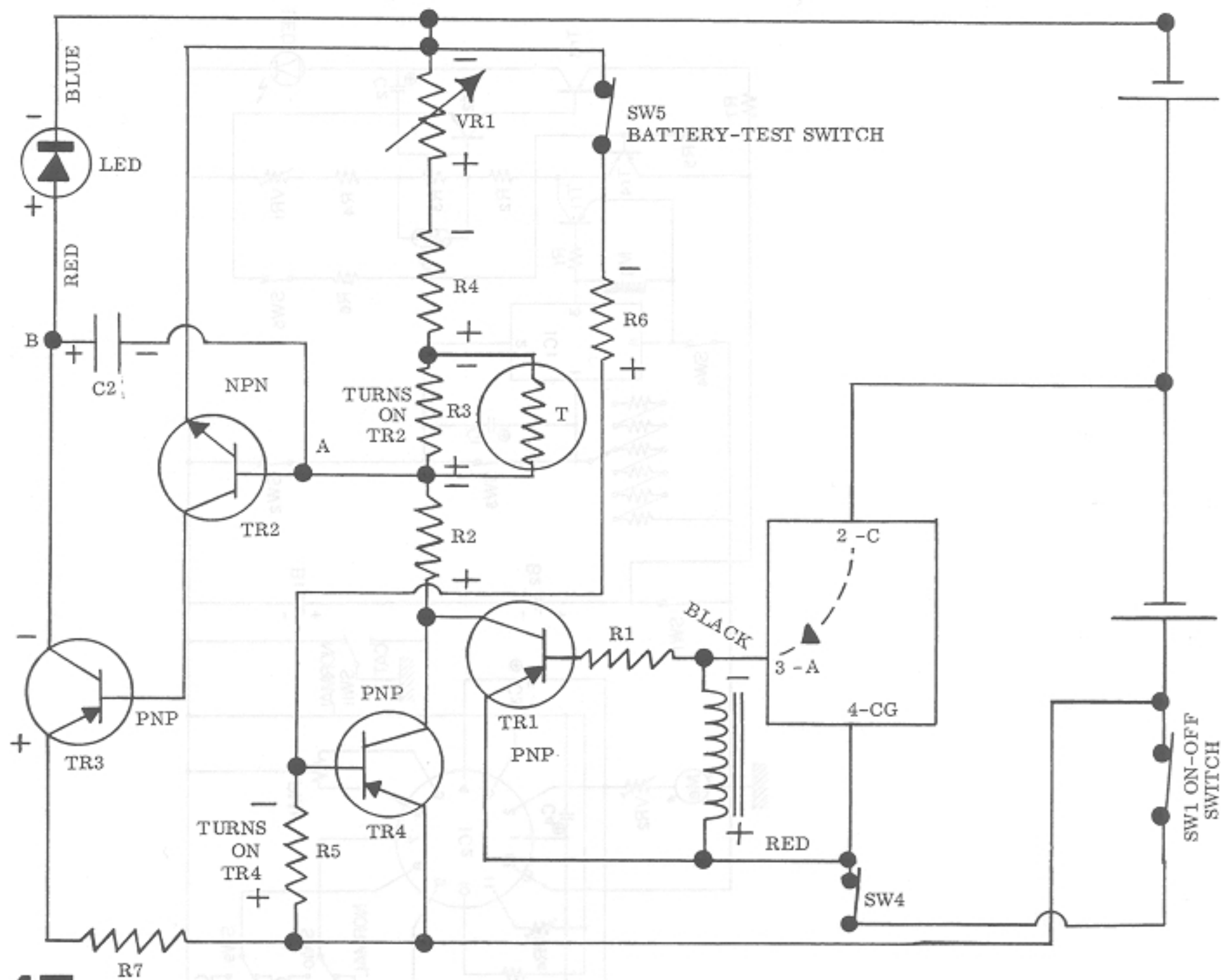
LIFT COMPRESSION
SPRING OUT OF
STOP POST

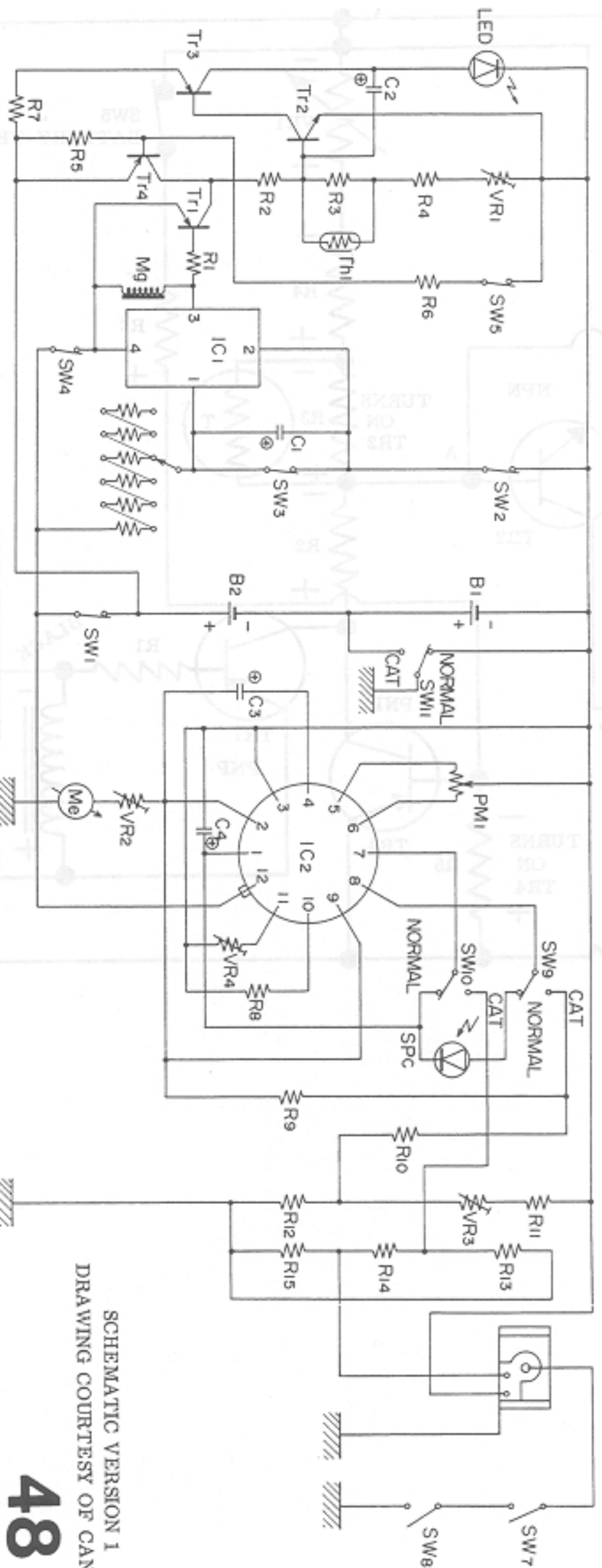
45

HOLDING SWITCH SW2

IC1

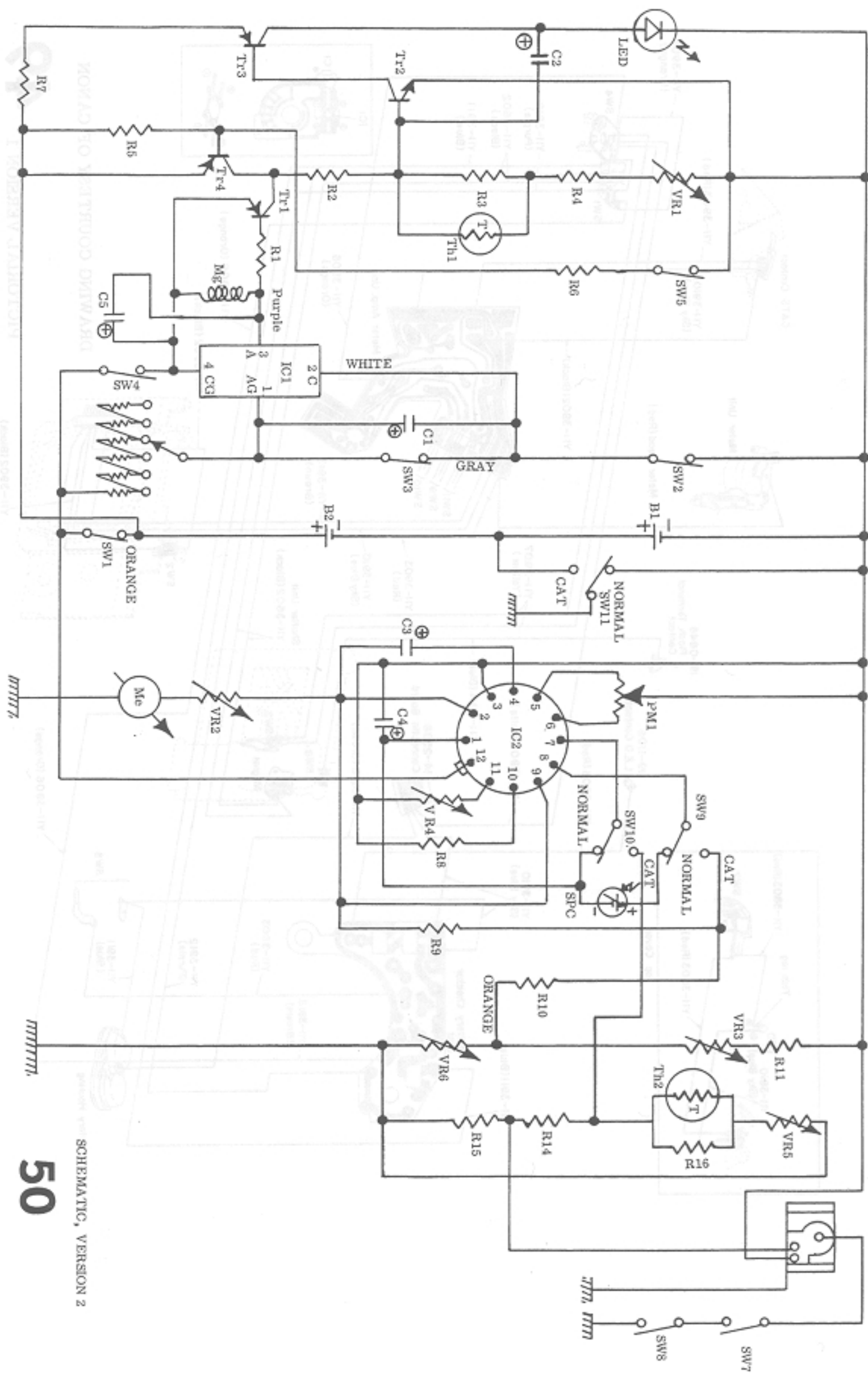




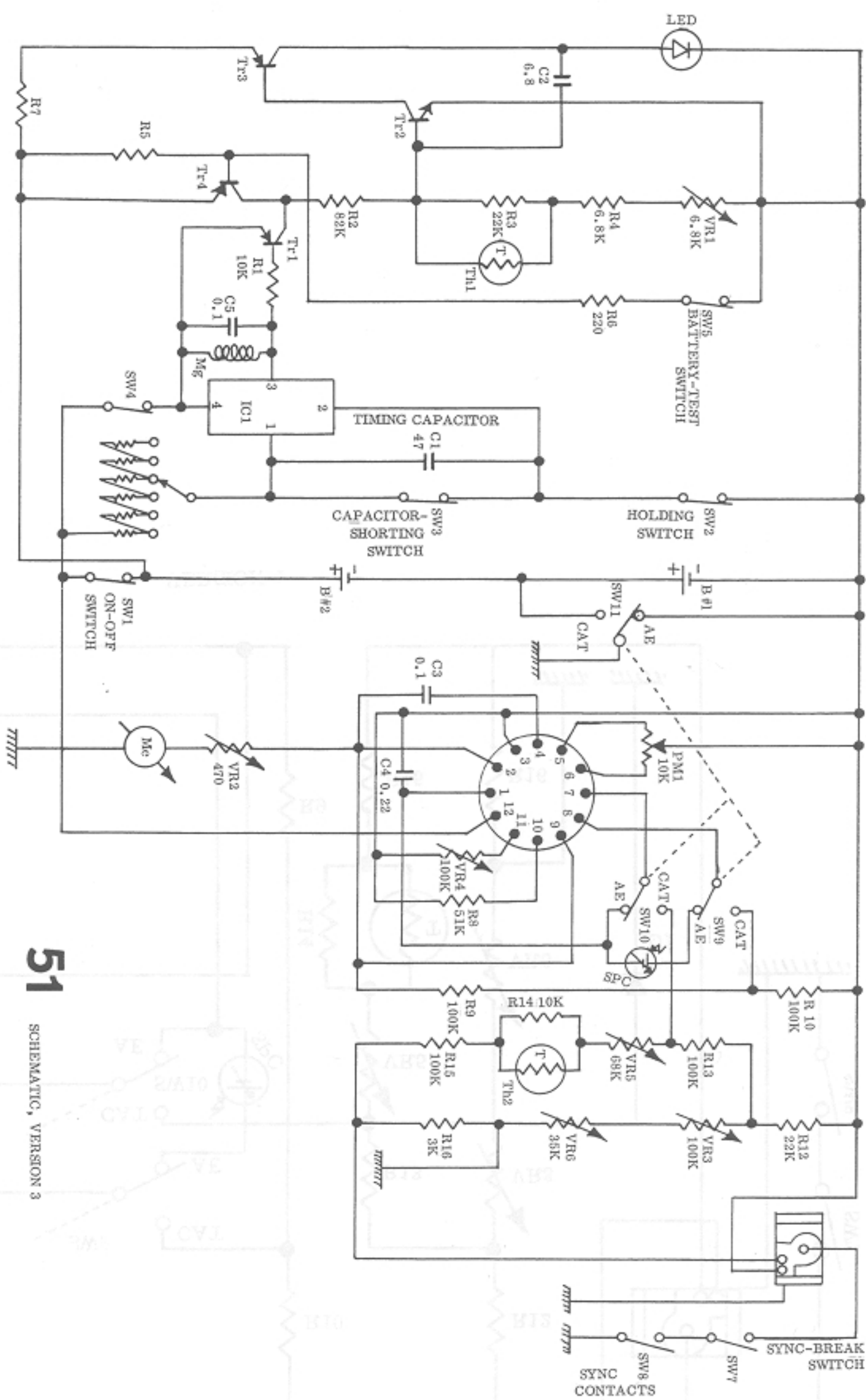


SCHEMATIC VERSION 1
DRAWING COURTESY OF CANON

PICTORIAL VERSION 1

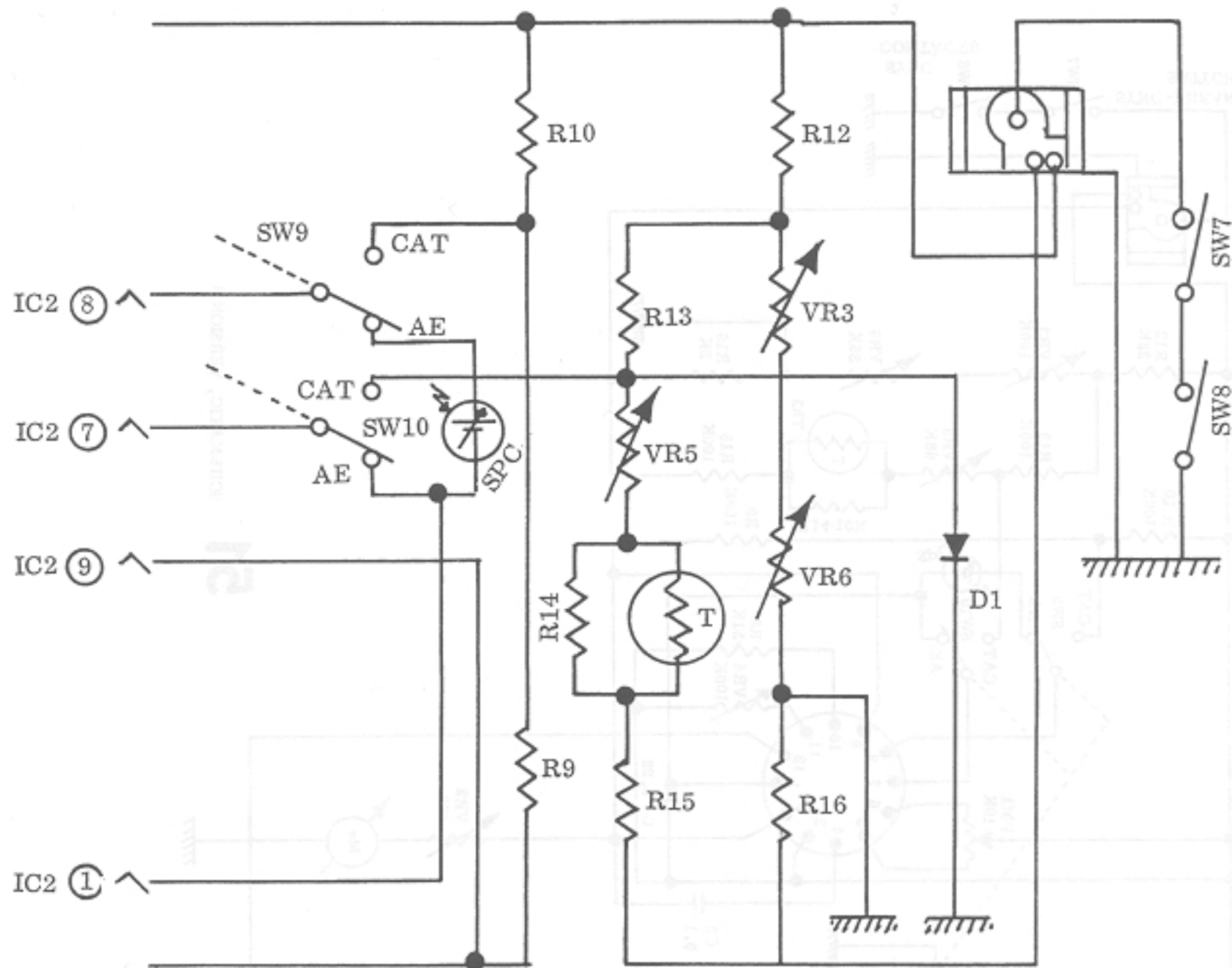


SCHEMATIC, VERSION 2



51

SCHEMATIC, VERSION 3



52

VERSION 4

VERSION #2 MODIFIED TO VERSION #4

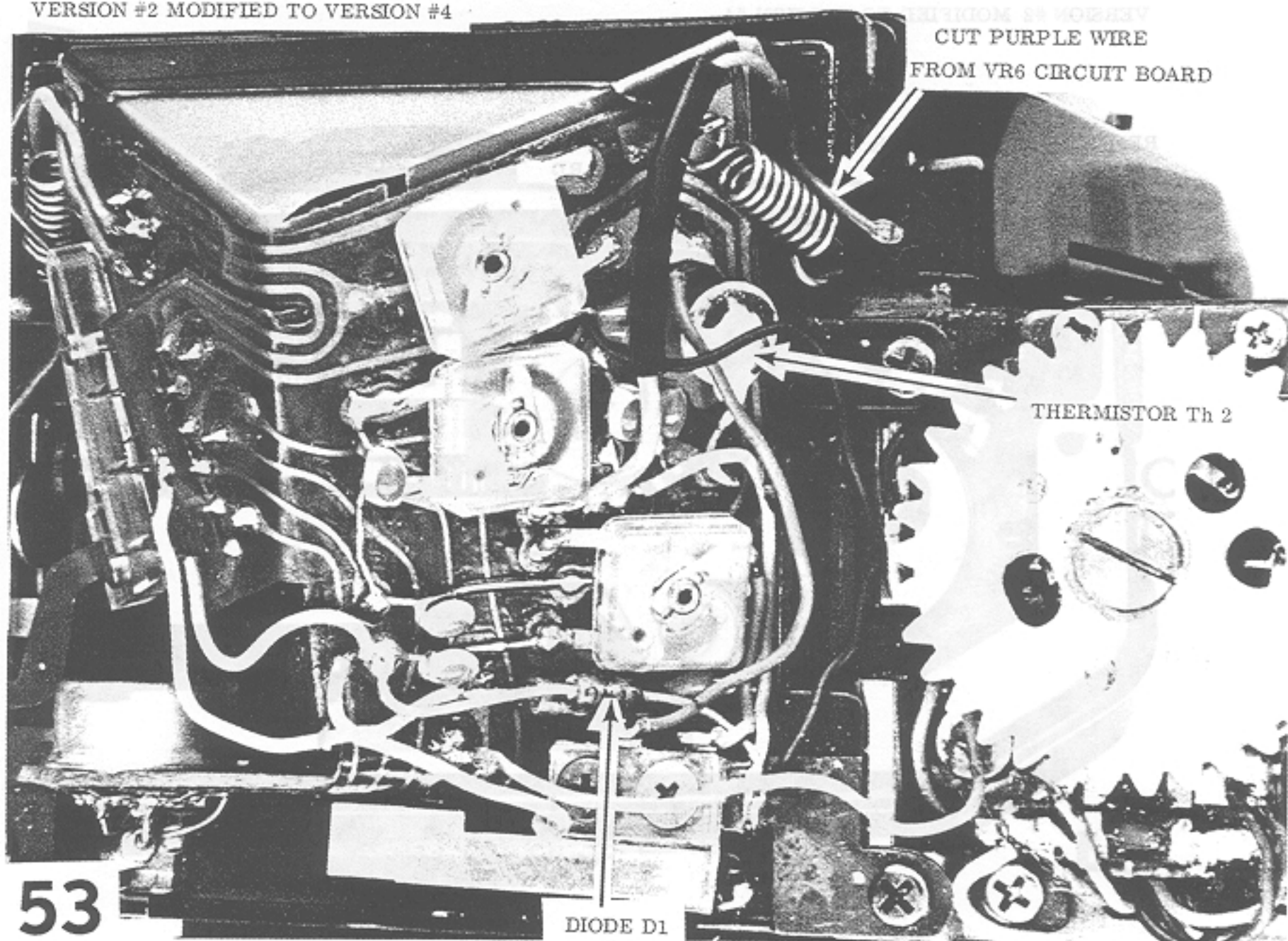
CUT PURPLE WIRE
FROM VR6 CIRCUIT BOARD

THERMISTOR Th 2

DIODE D1

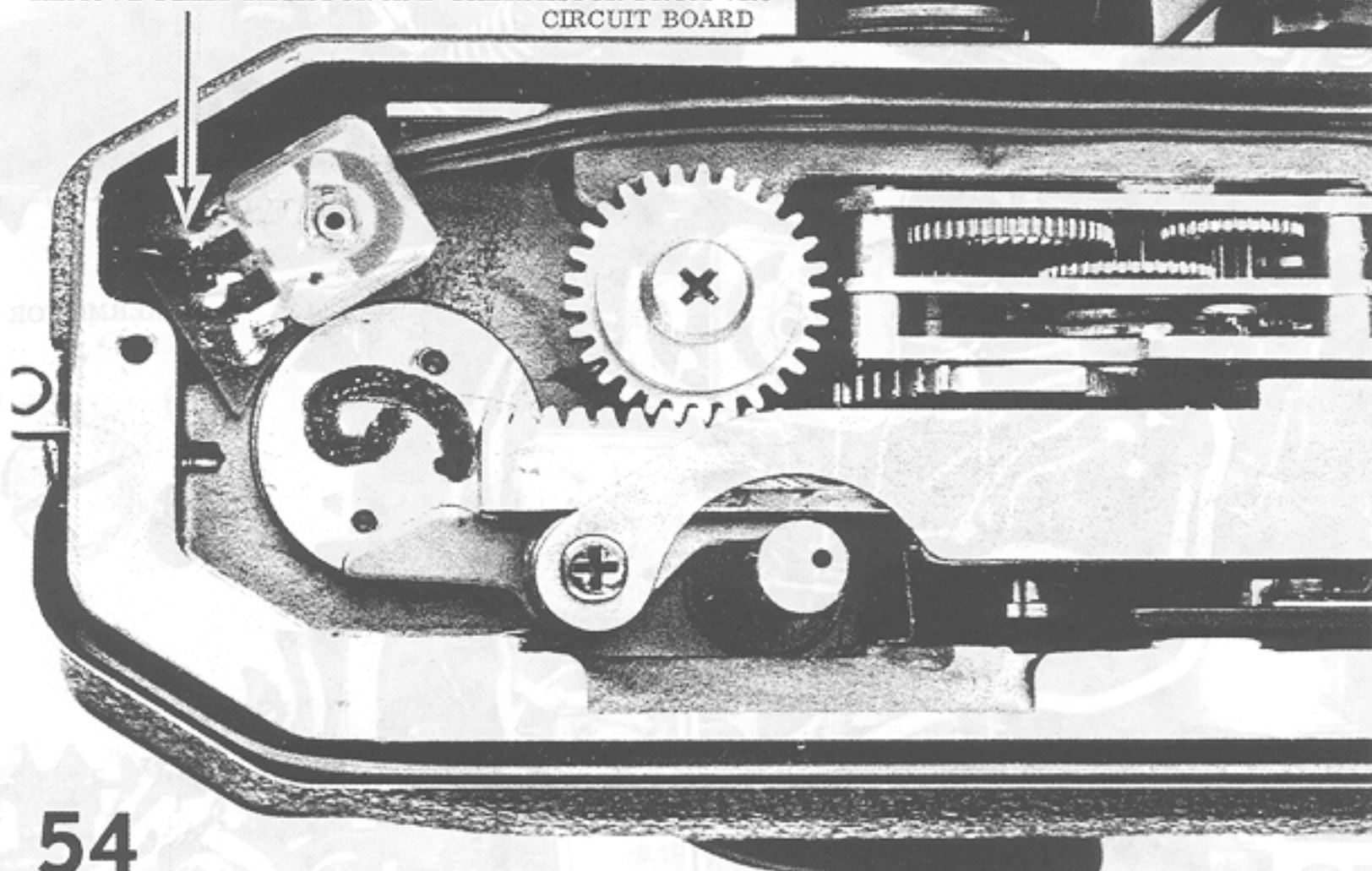
Reference

53



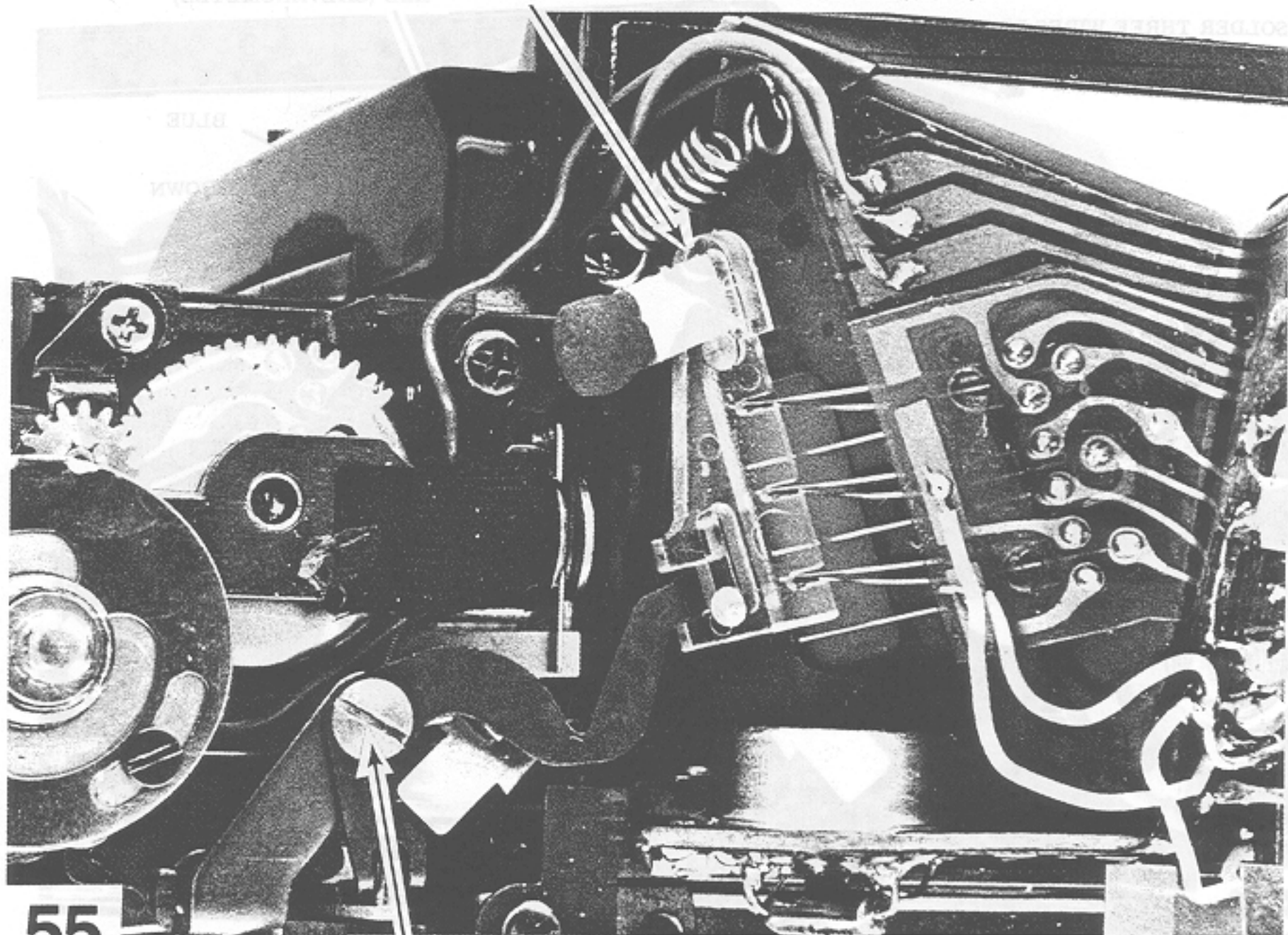
VERSION #2 MODIFIED TO VERSION #4

REMOVE FIXED RESISTOR AND THERMISTOR FROM VR6
CIRCUIT BOARD



54

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



55

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

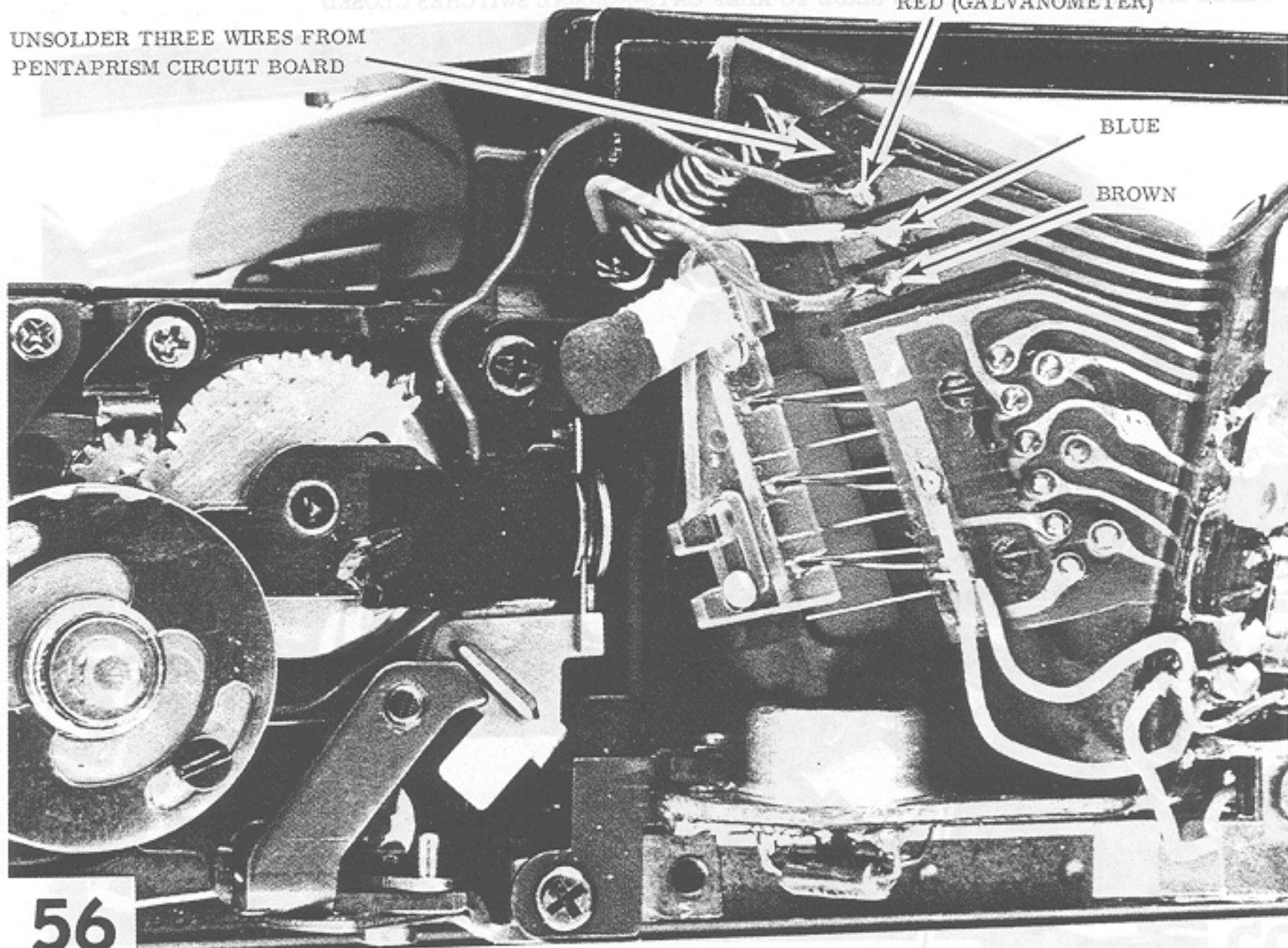
UNWELD THREE WIRES FROM
PENTAPRISM CIRCUIT BOARD

RED (GALVANOMETER)

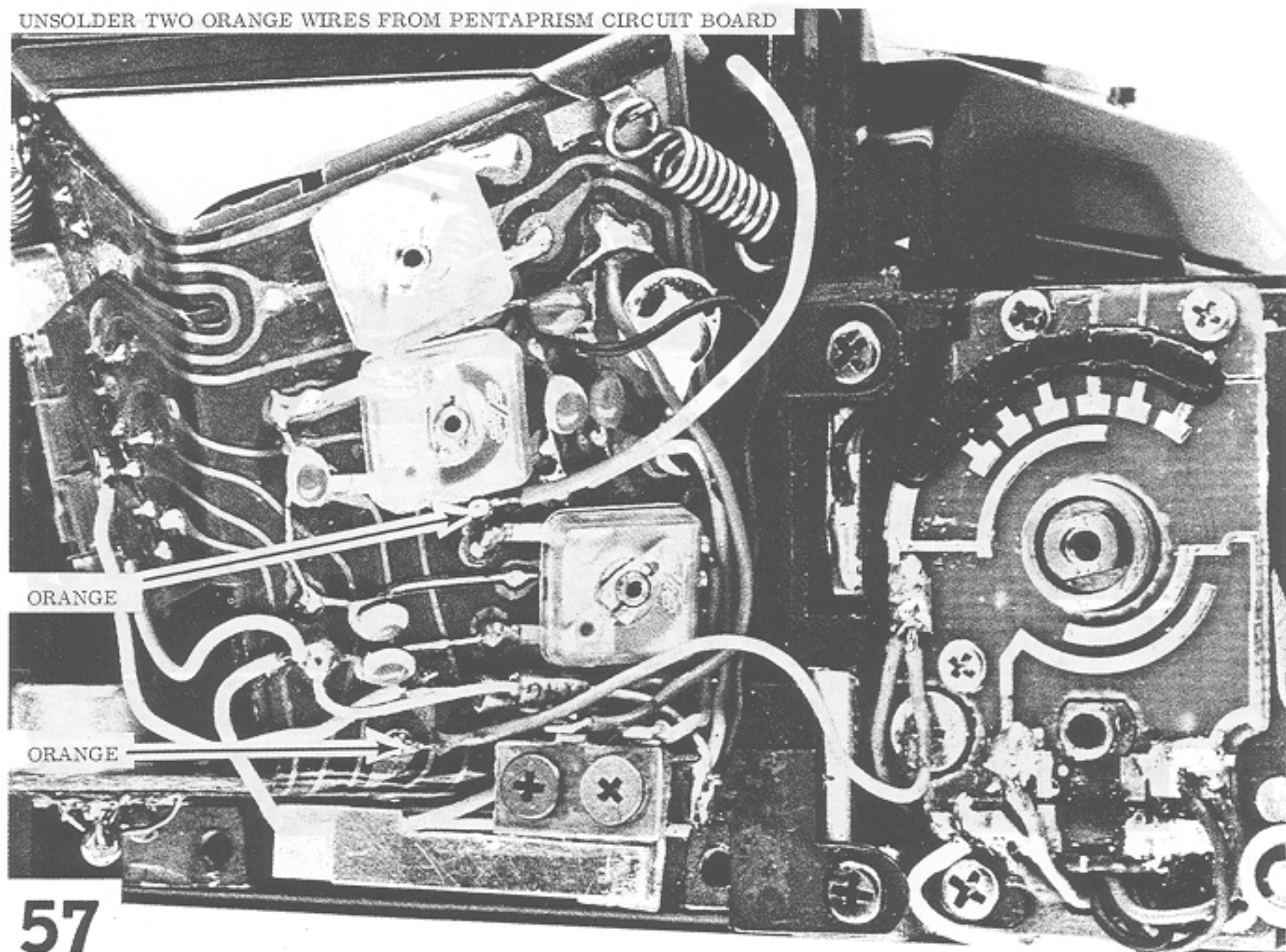
BLUE

BROWN

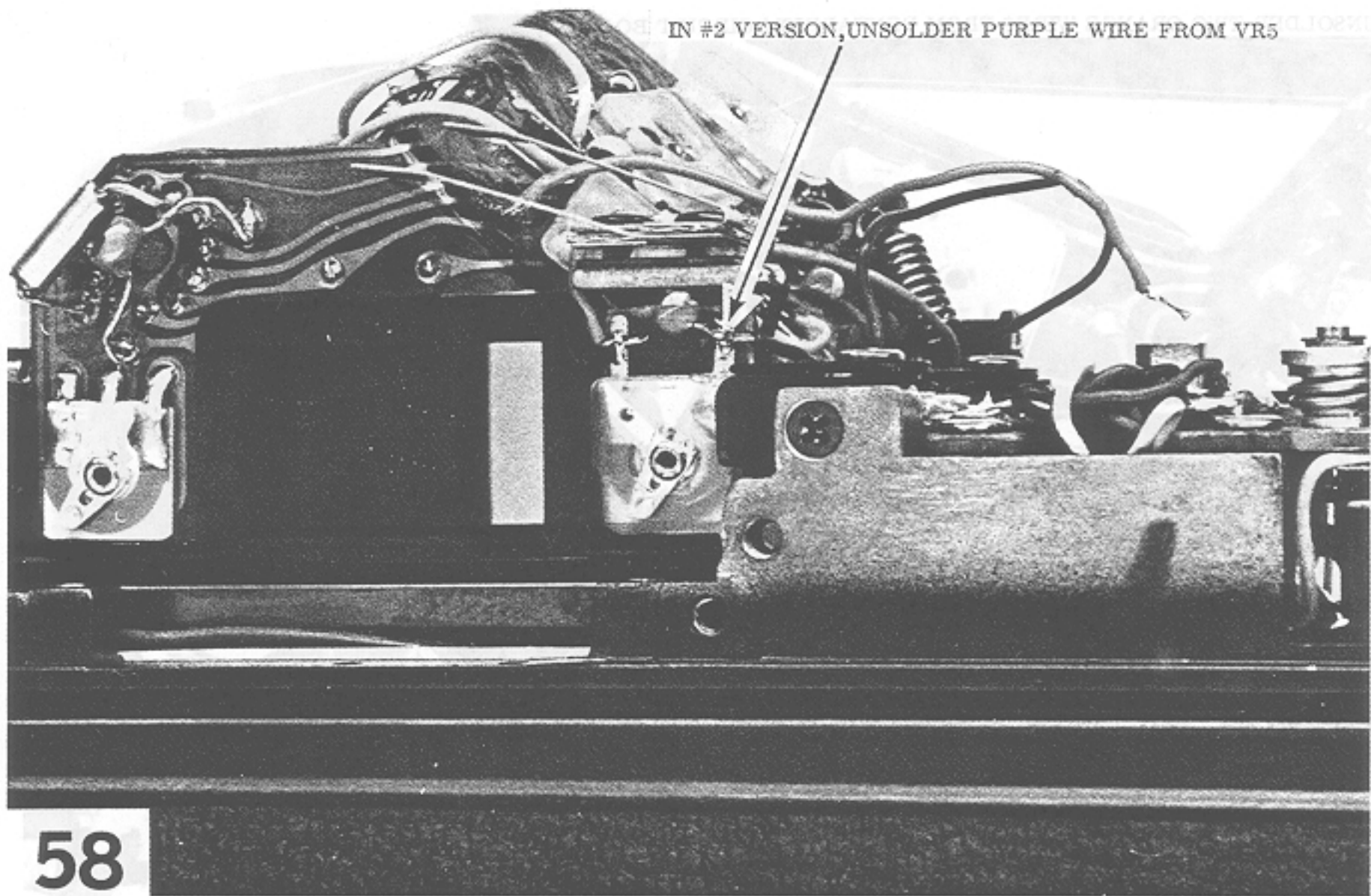
56



UNSOLDER TWO ORANGE WIRES FROM PENTAPRISM CIRCUIT BOARD



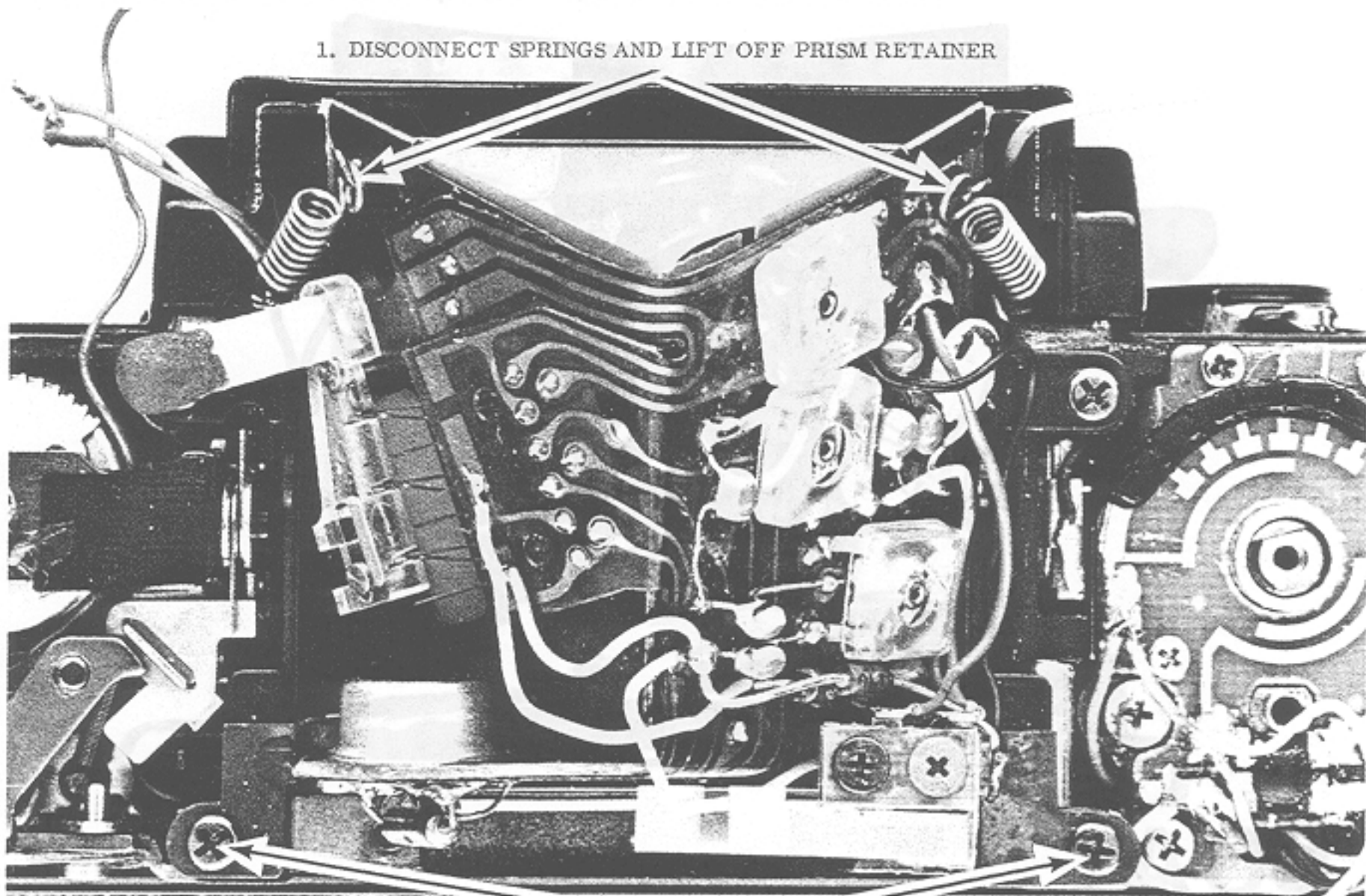
IN #2 VERSION, UNSOLDER PURPLE WIRE FROM VR5



58

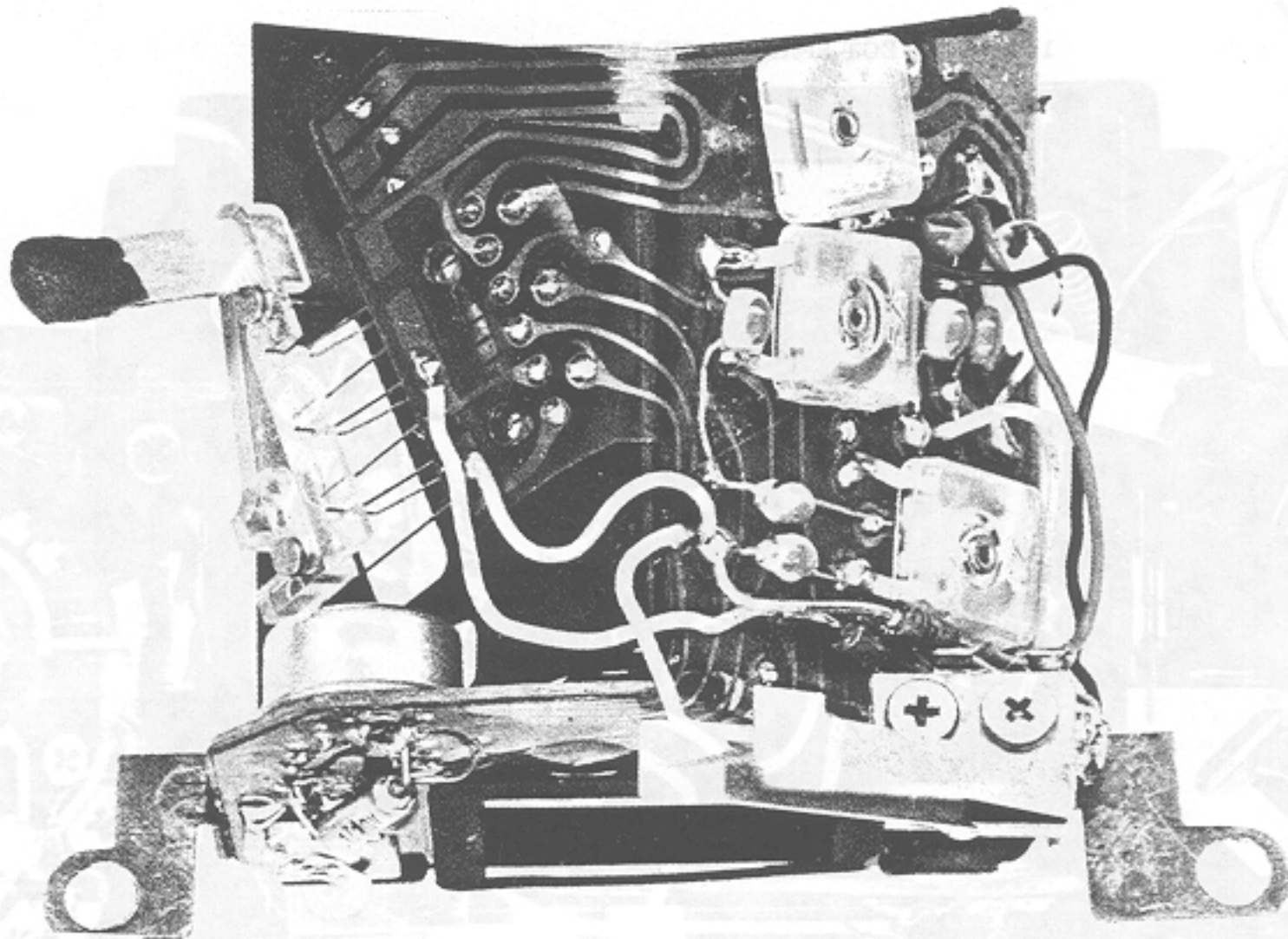
TO REMOVE PENTAPRISM CIRCUIT BOARD:

1. DISCONNECT SPRINGS AND LIFT OFF PRISM RETAINER

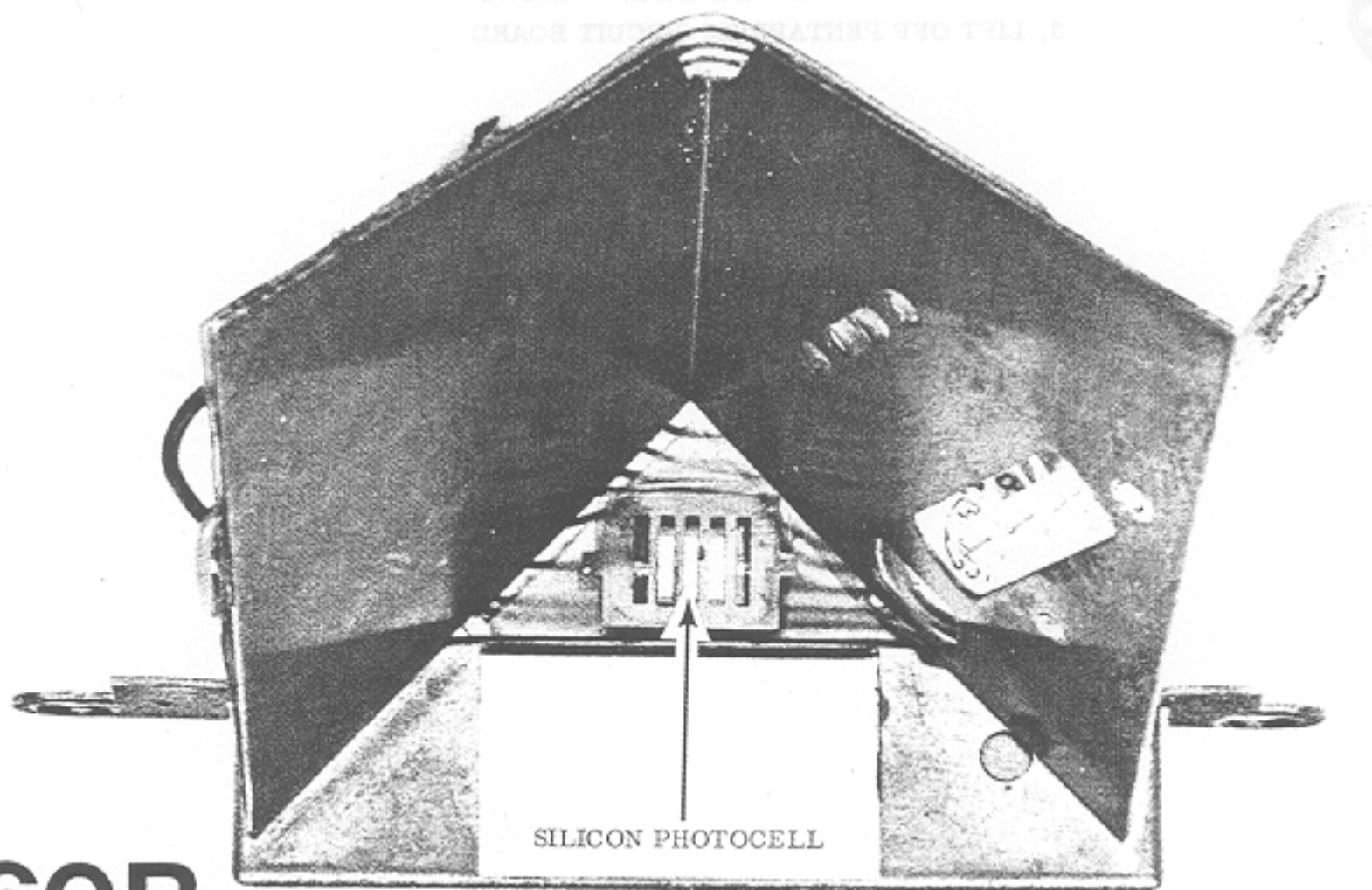


2. REMOVE TWO CIRCUIT-BOARD SCREWS

3. LIFT OFF PENTAPRISM CIRCUIT BOARD

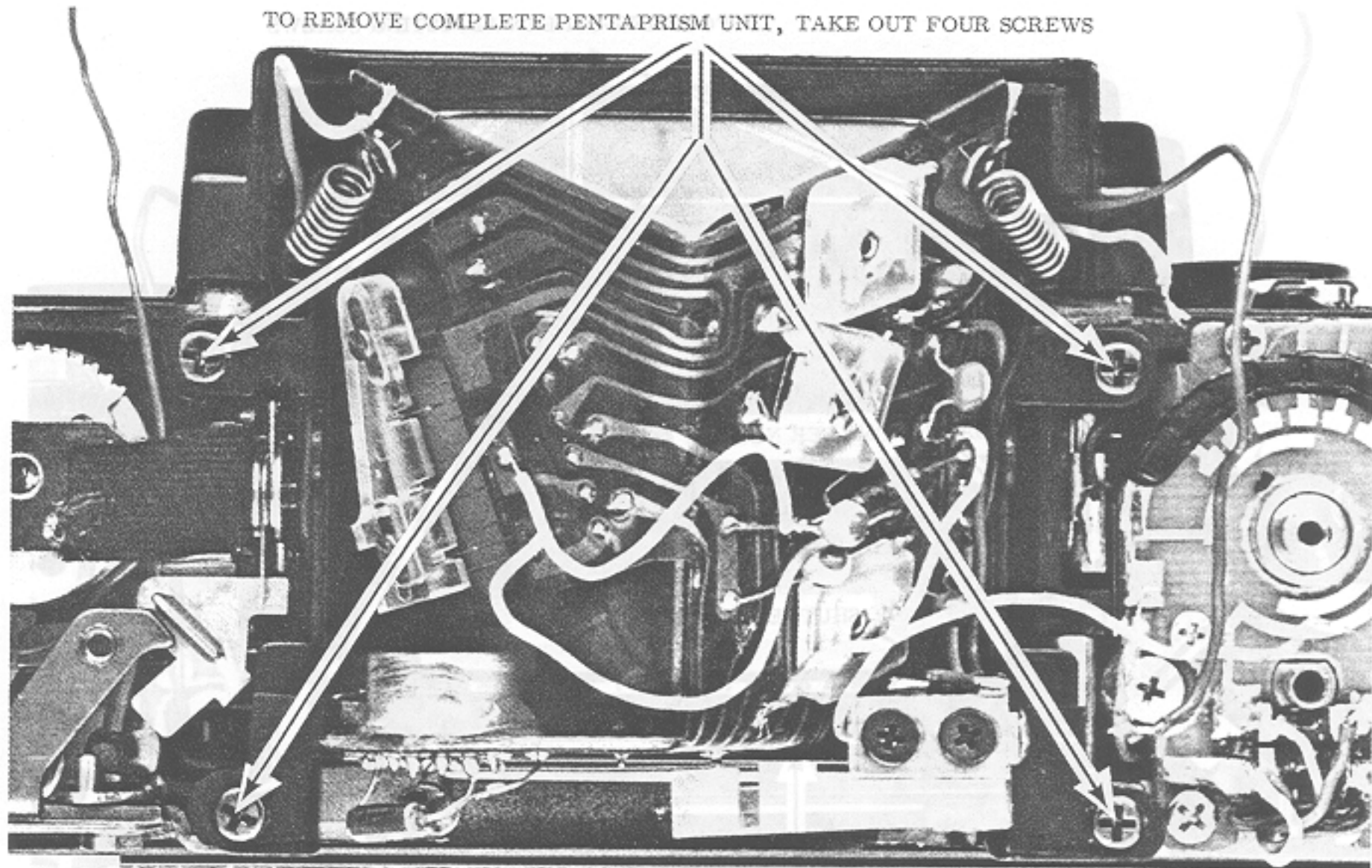


60A



60B

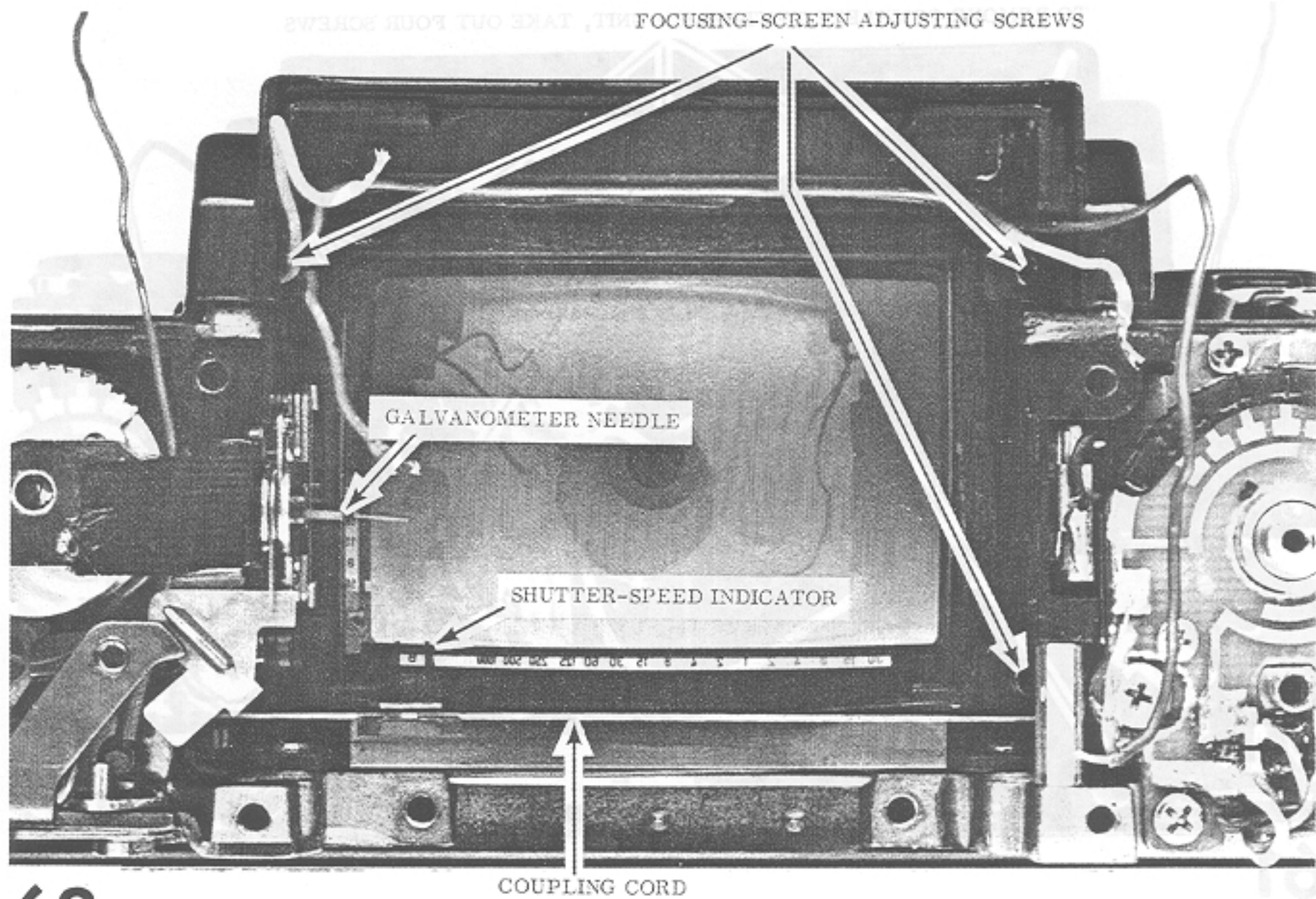
TO REMOVE COMPLETE PENTAPRISM UNIT, TAKE OUT FOUR SCREWS

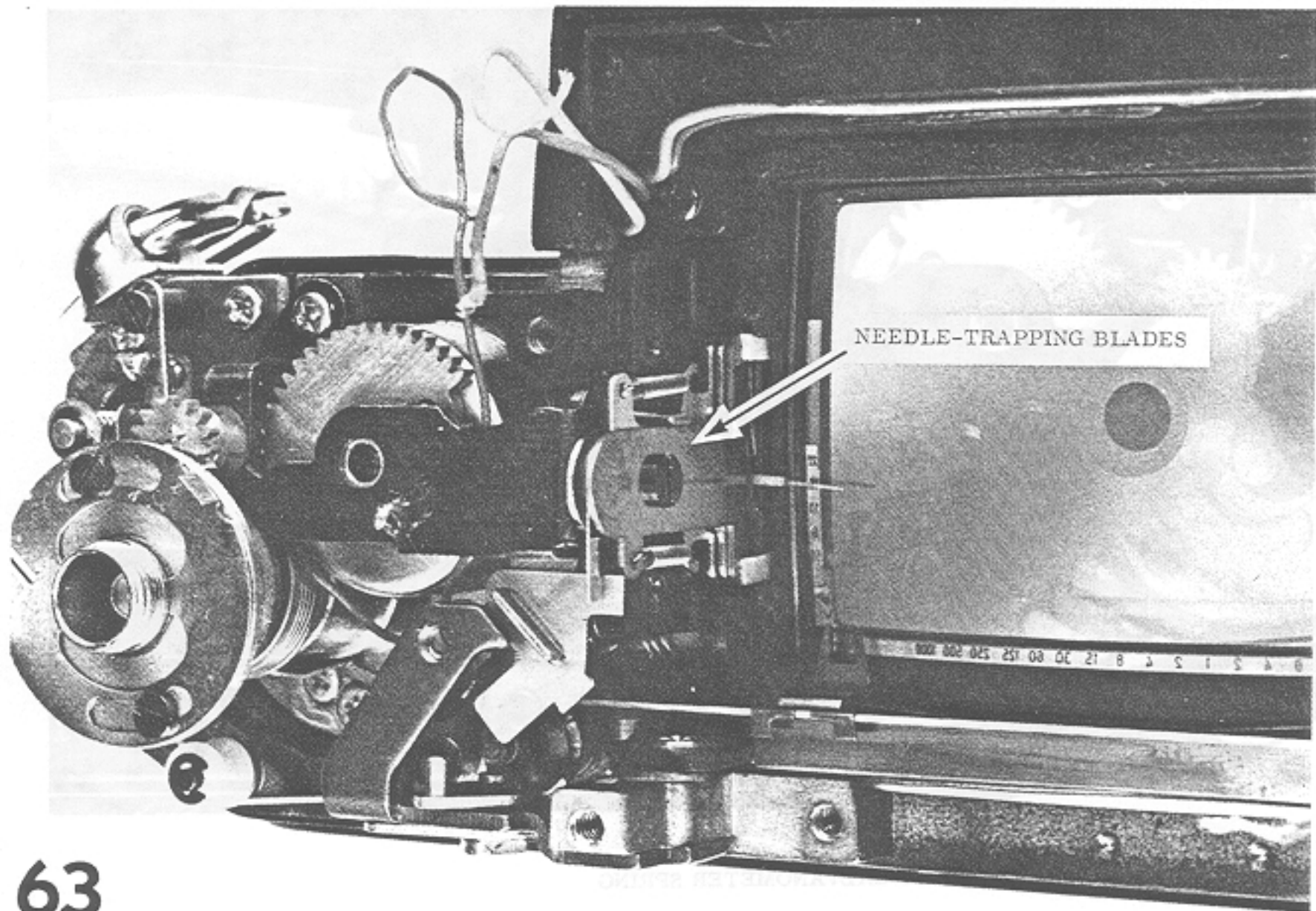


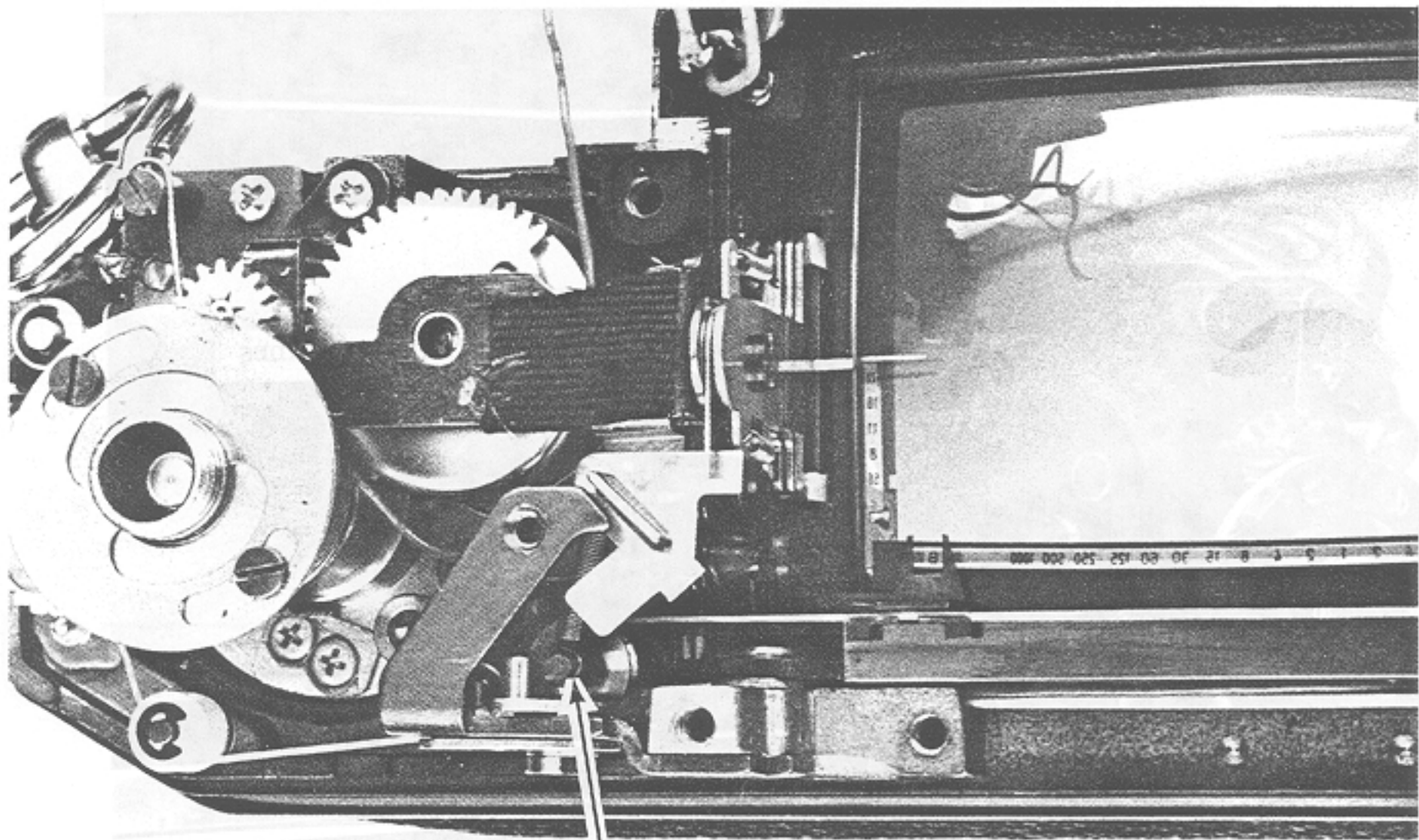
61

COUPLING CORD

62

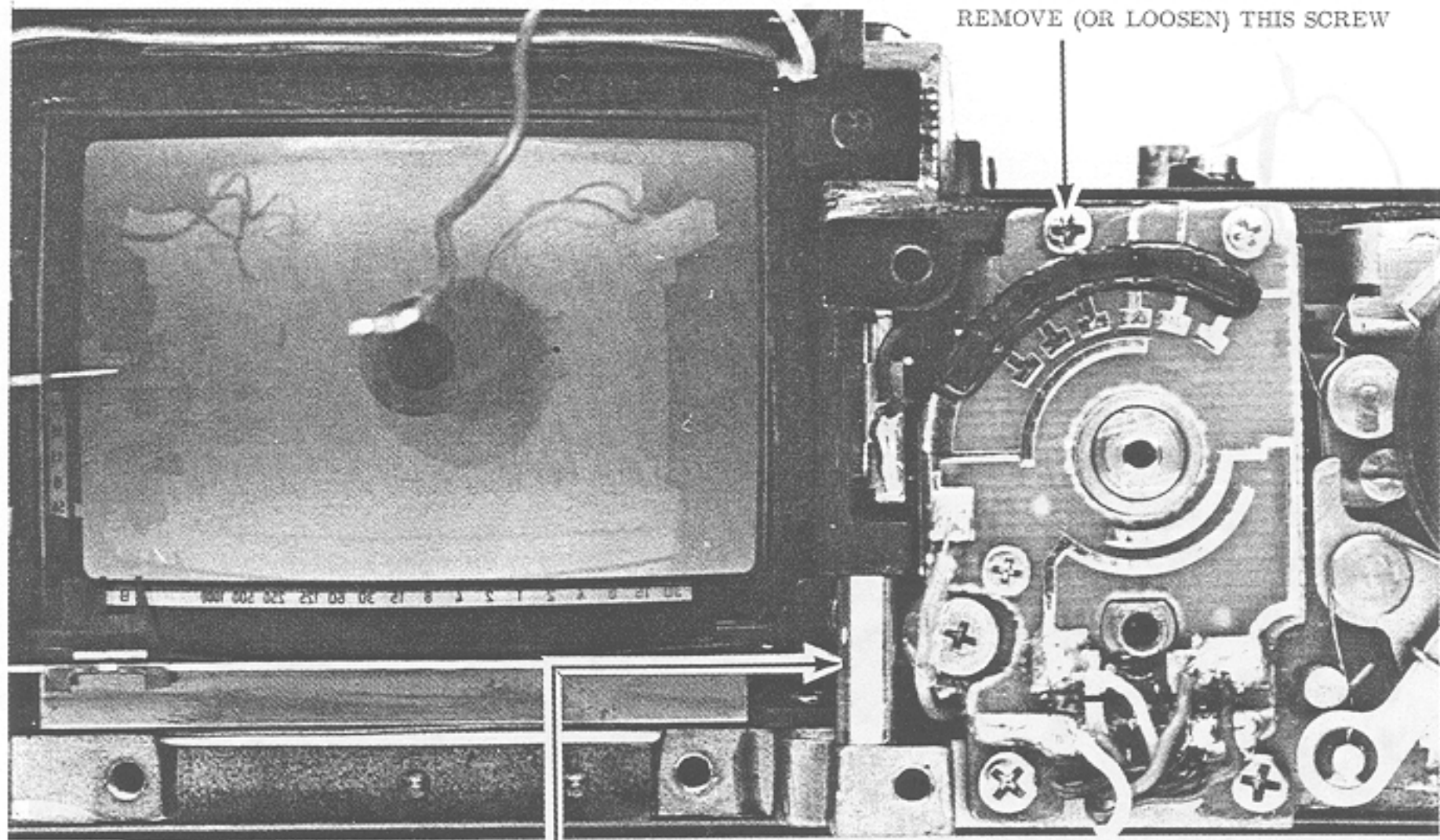






64

DISCONNECT GALVANOMETER SPRING



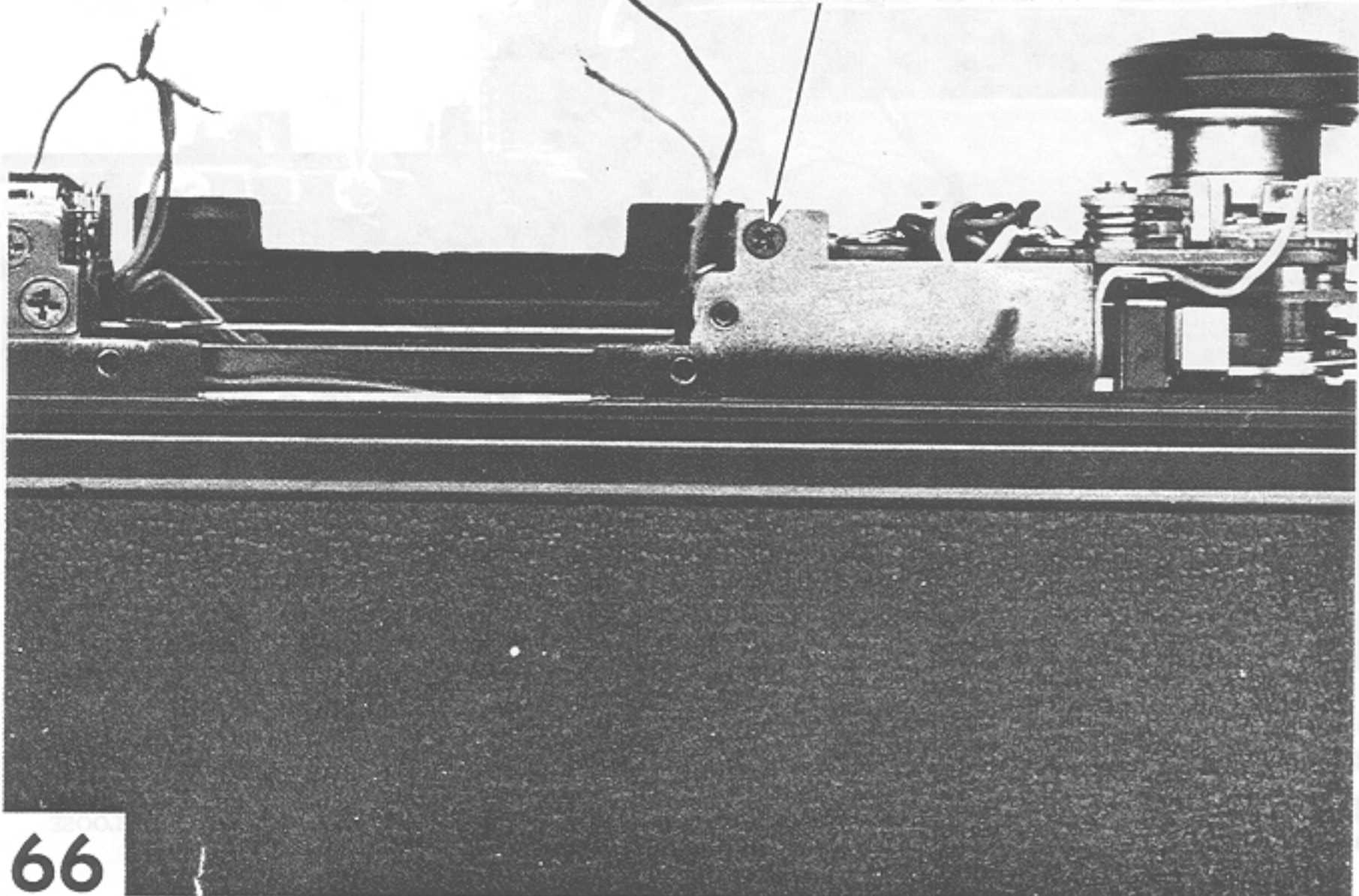
REMOVE (OR LOOSEN) THIS SCREW

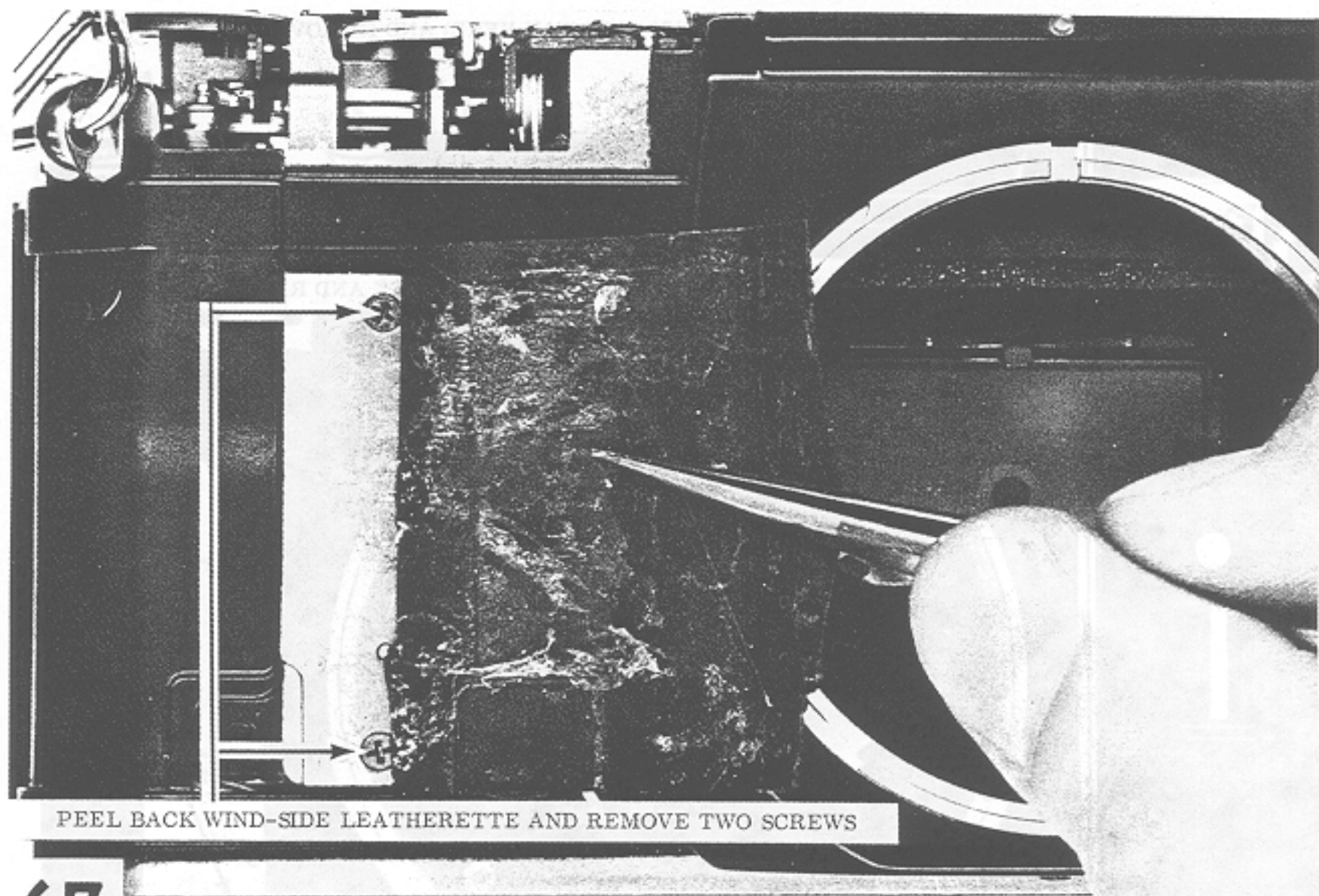
65

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

REMOVE (OR LOOSEN) THIS SCREW

REMOVE SCREW AND SPACER





PEEL BACK WIND-SIDE LEATHERETTE AND REMOVE TWO SCREWS

67

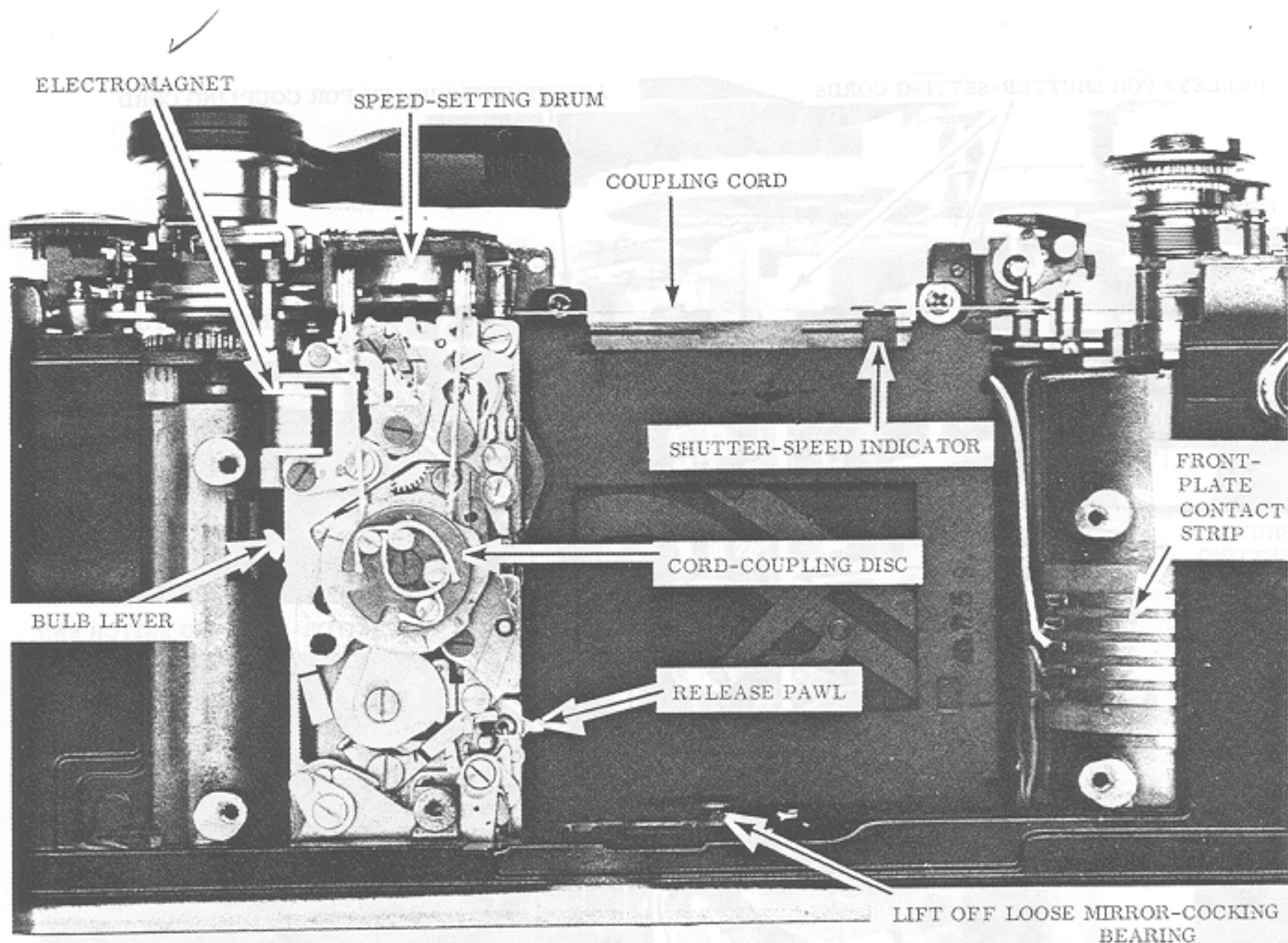
1. PEEL BACK CORNER OF WIND-SIDE LEATHERETTE (SHOWN CUTAWAY HERE) AND REMOVE SCREW

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

68

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

Shutter can be released when replacing front plate



69

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

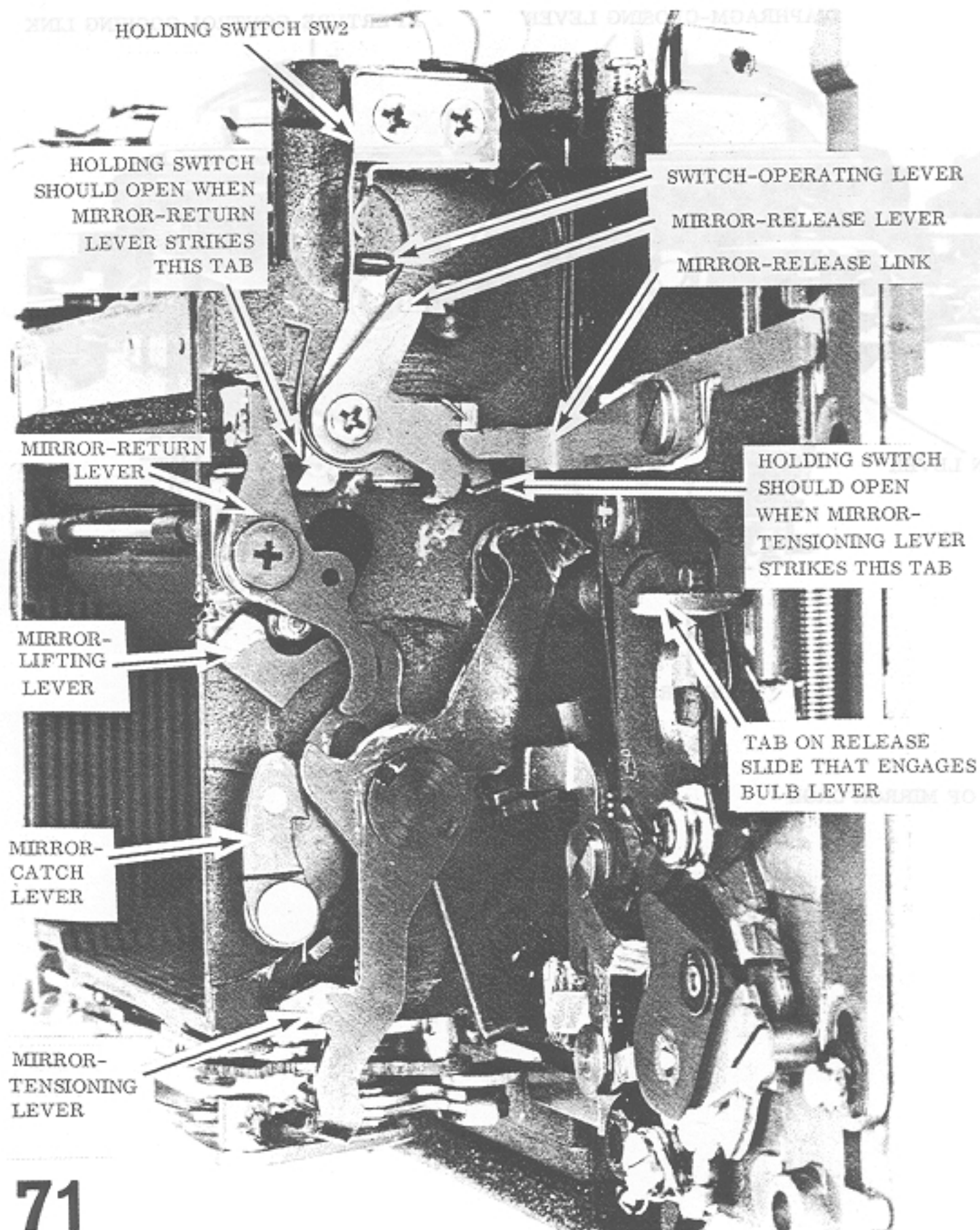
SHUTTER-
SETTING
CORDS

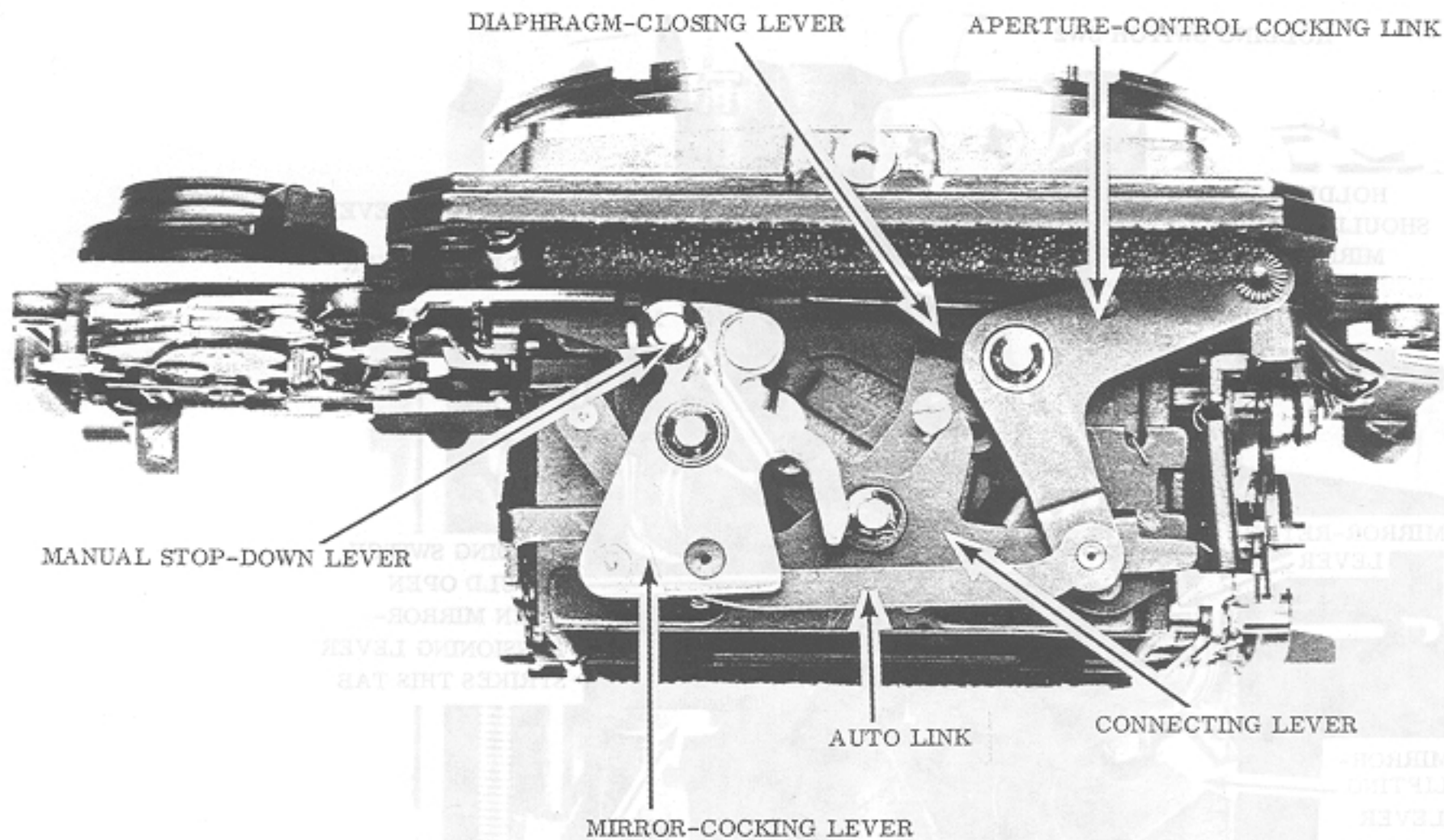
CAPACITOR-SHORTING SWITCH SW3

70

SHUTTER SET TO 30 SECONDS

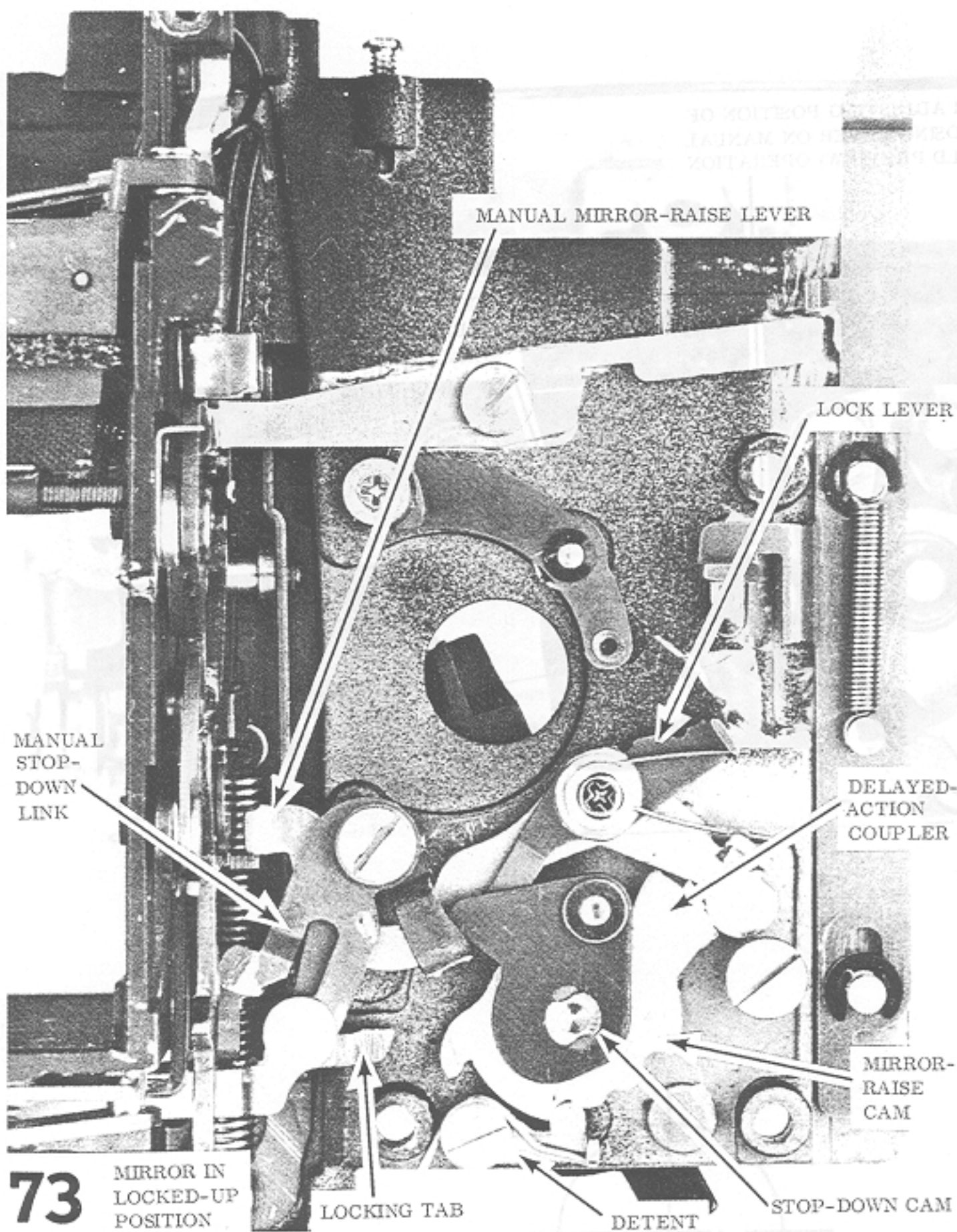
Check for correct shutter speed before taking photo





72

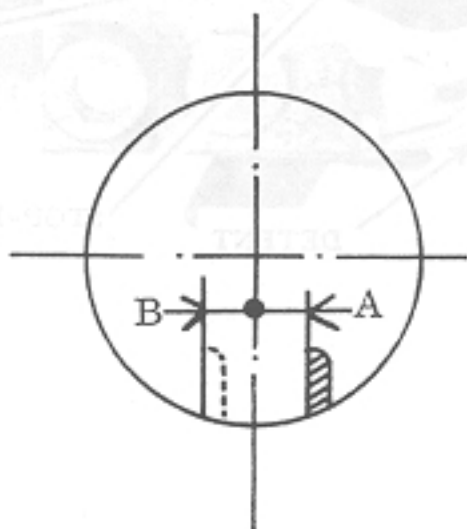
BOTTOM OF MIRROR CAGE



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

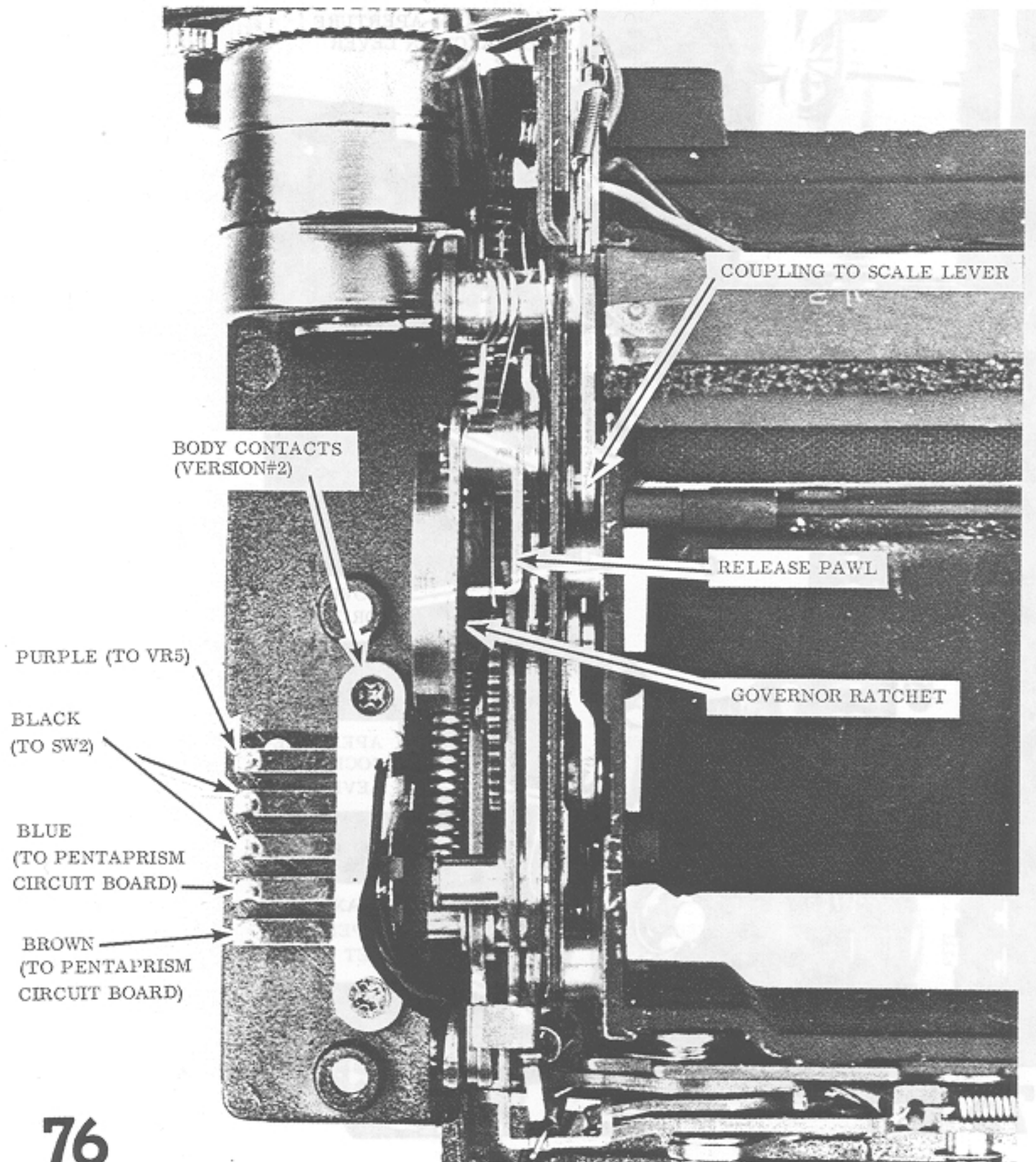
RELEASE
PAWL

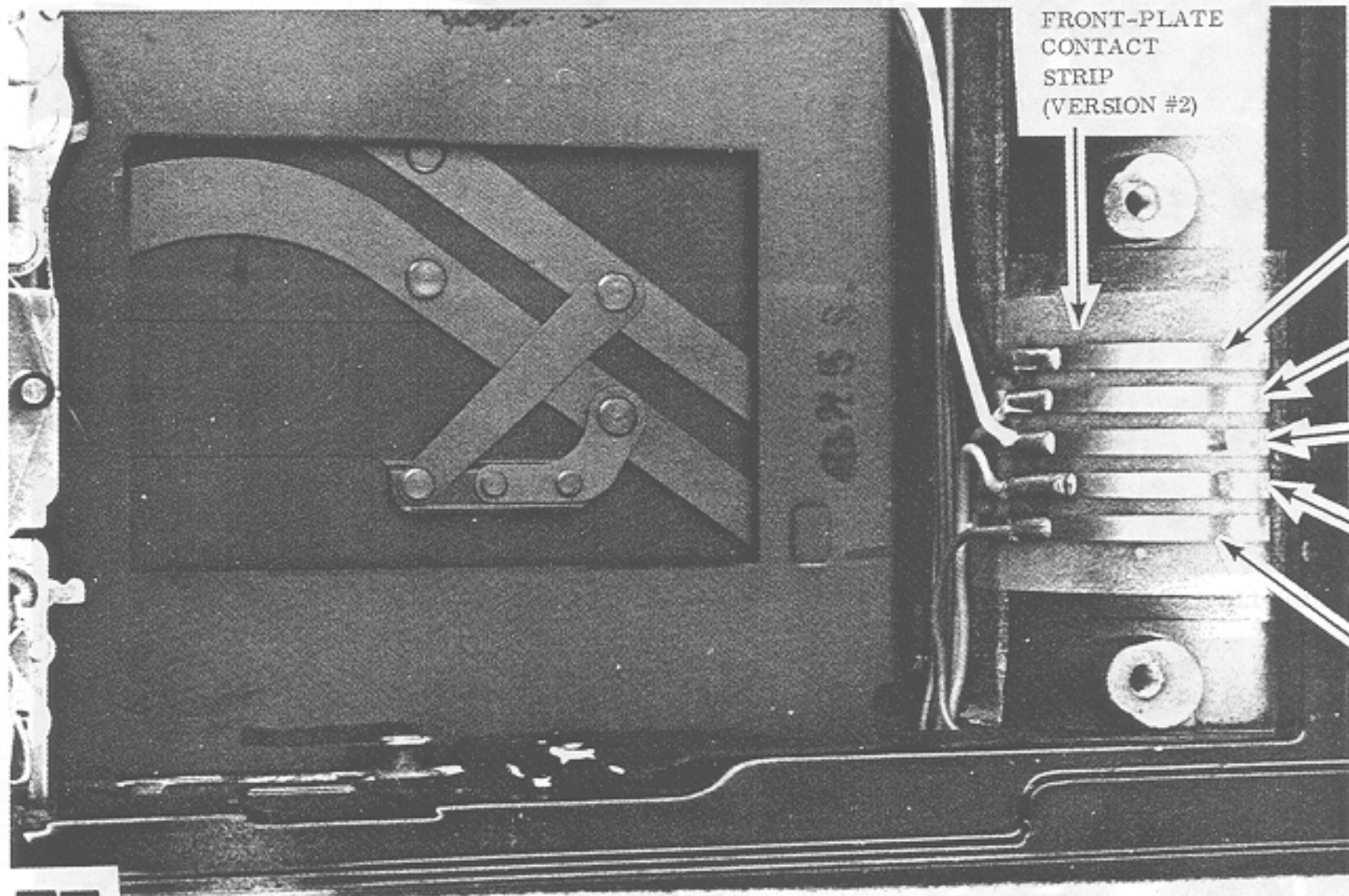
GOVERNOR
DRUM

APERTURE-
COCKING
LEVER

MAXIMUM-
APERTURE
SET LEVER

AUTO-RELEASE LEVER





FRONT-PLATE
CONTACT
STRIP
(VERSION #2)

PURPLE
(TO Th2)

ORANGE
(TO VR6)

WHITE
(TO IC1)

LIGHT
BLUE
(TO VR1)

BROWN
(TO CENTER
BATTERY)

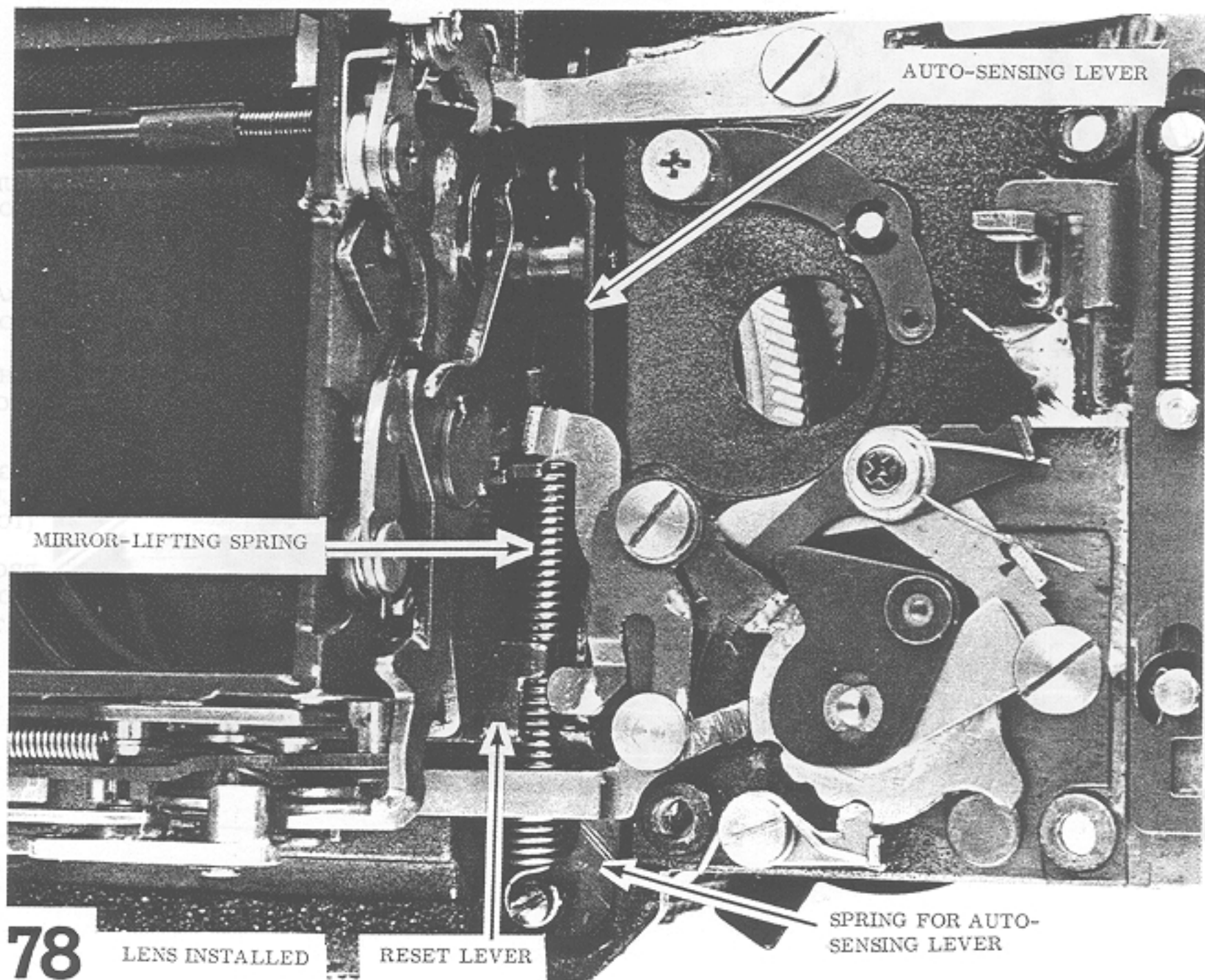
77

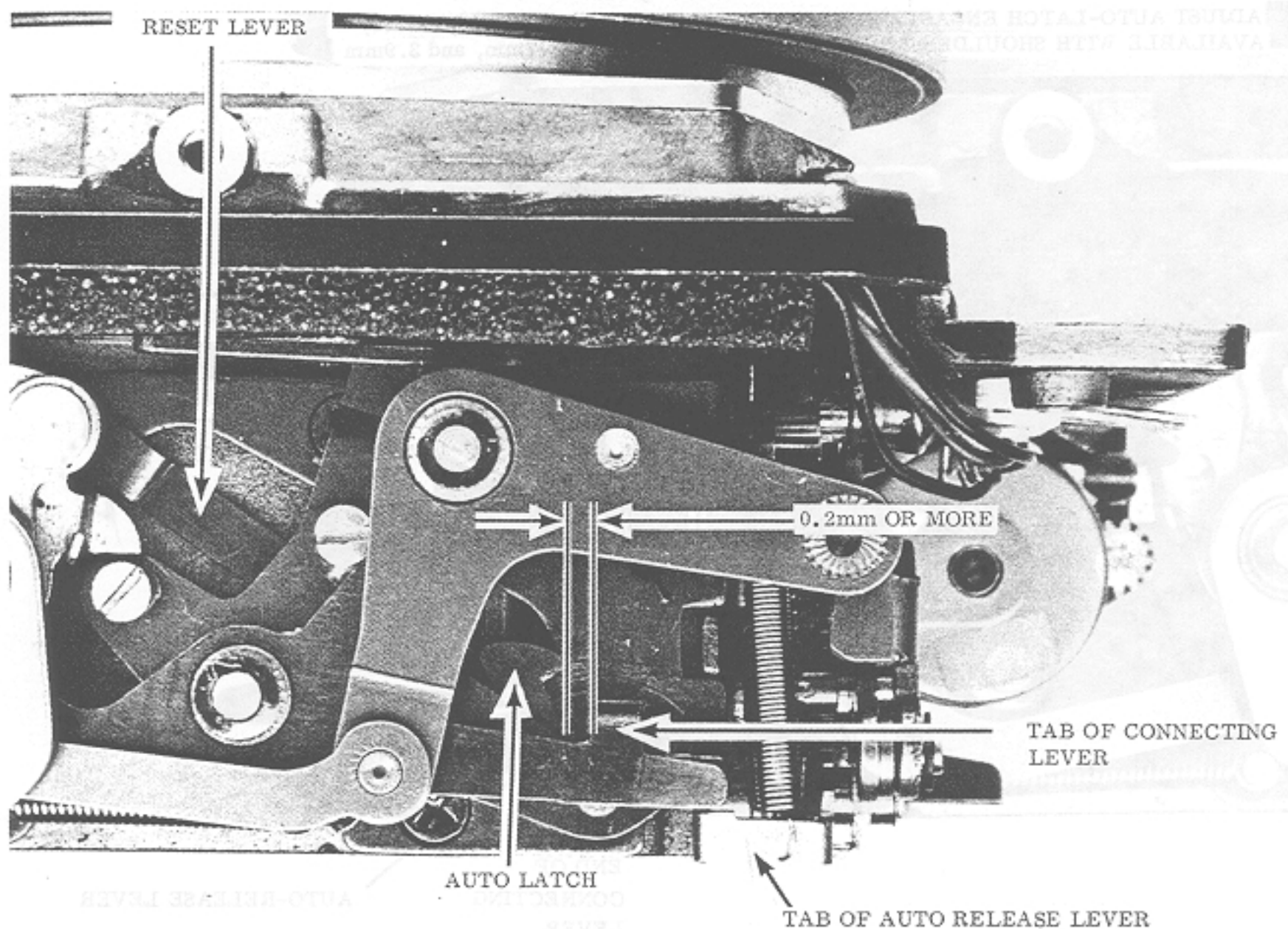
SPRING FOR AUTO
SENSING LEVER

RESET LEVER

LENS INSTALLED

78



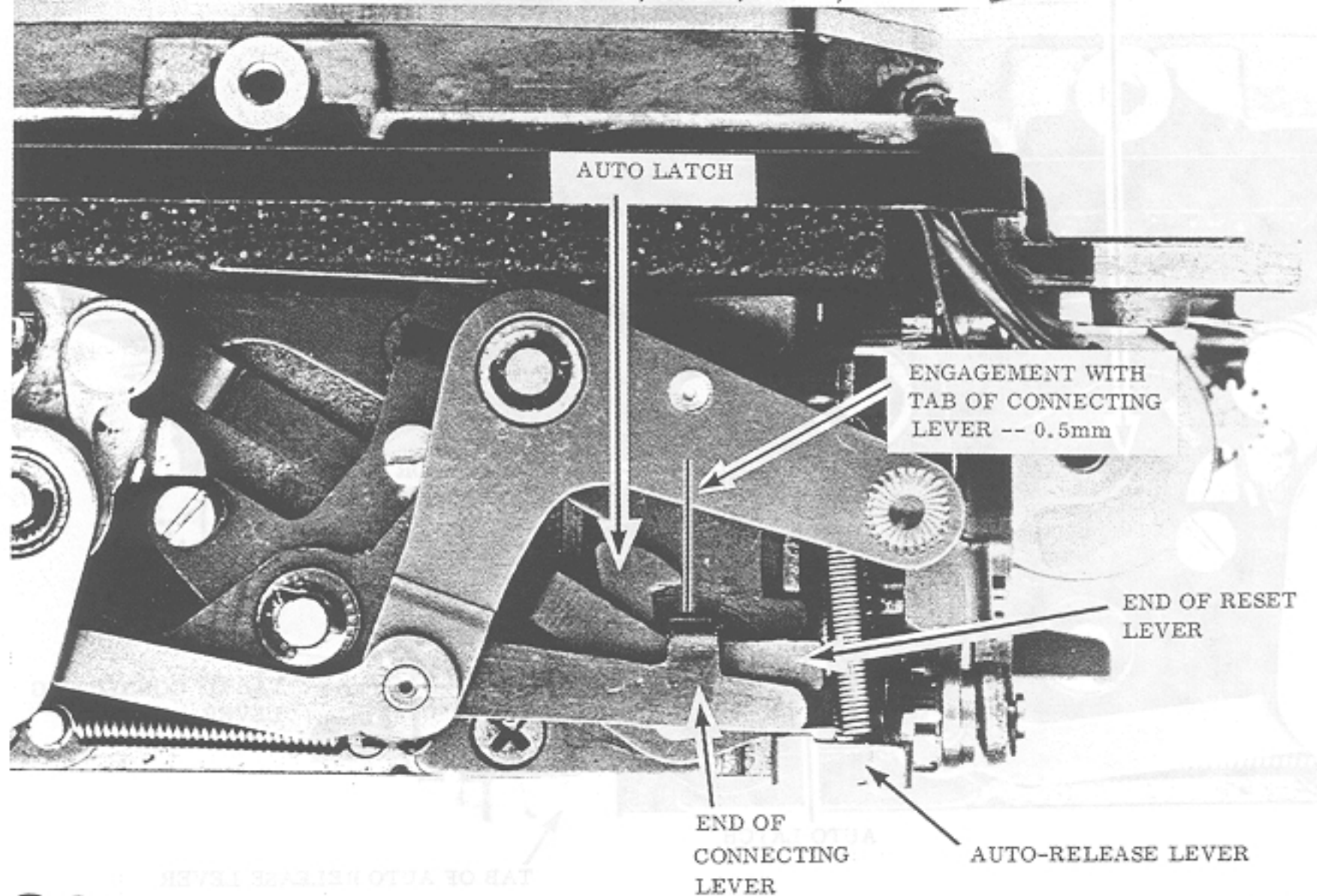


79

DIAPHRAGM-SETTING RING AT MANUAL SETTING

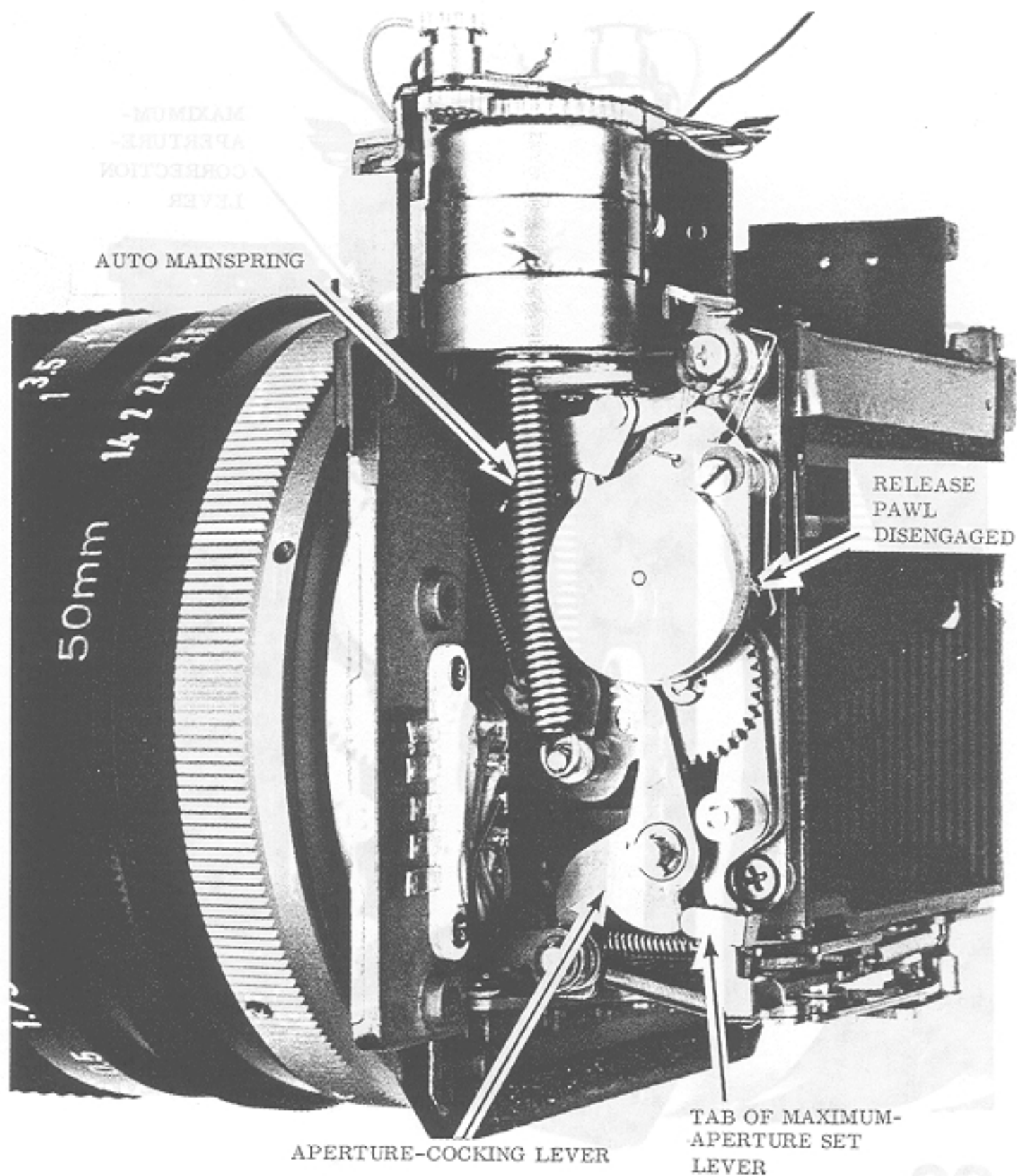
80

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

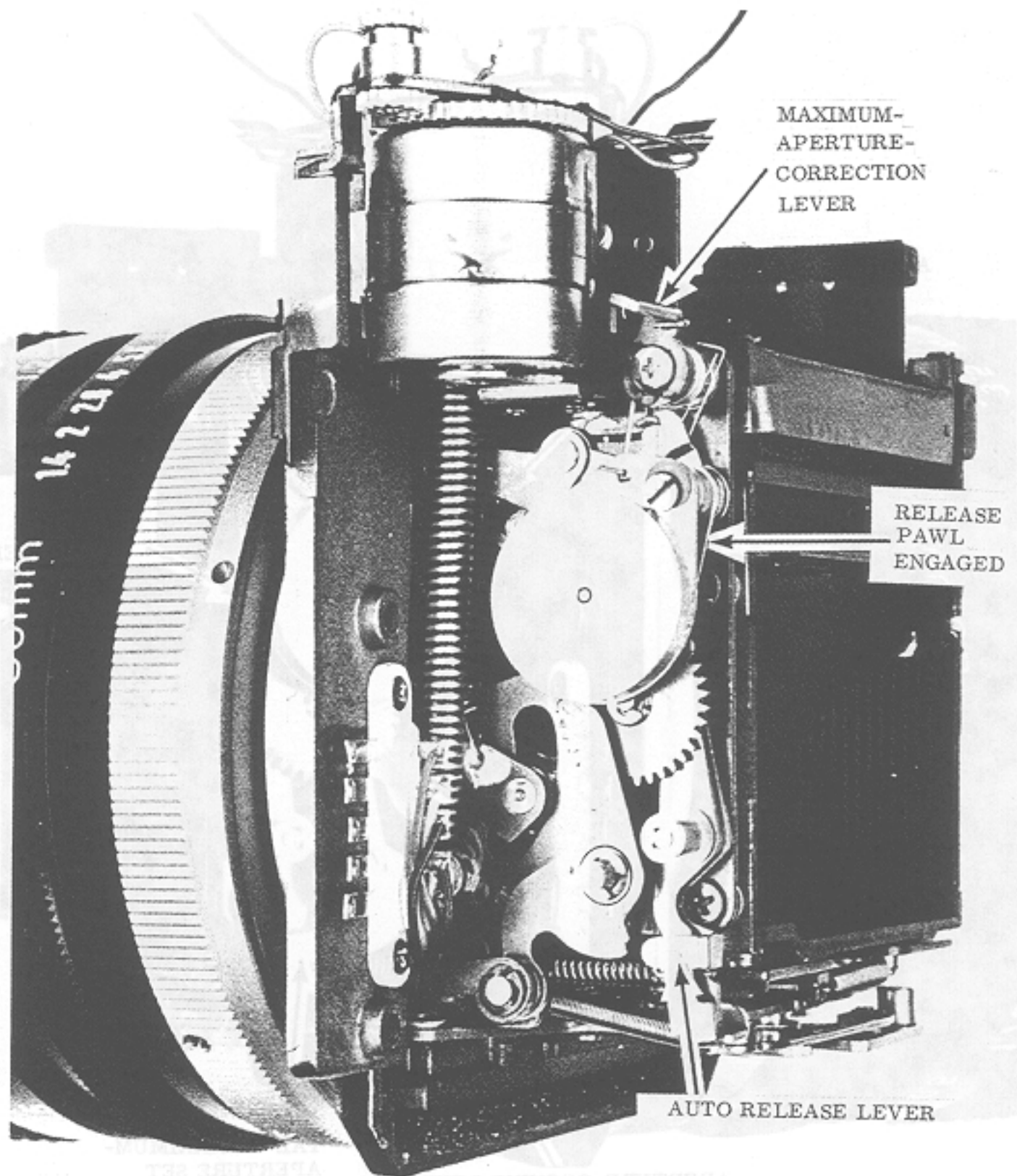
DIAPHRAGM-SETTING RING AT AUTOMATIC SETTING



APERTURE-COCKING LEVER

TAB OF MAXIMUM-
APERTURE SET
LEVER

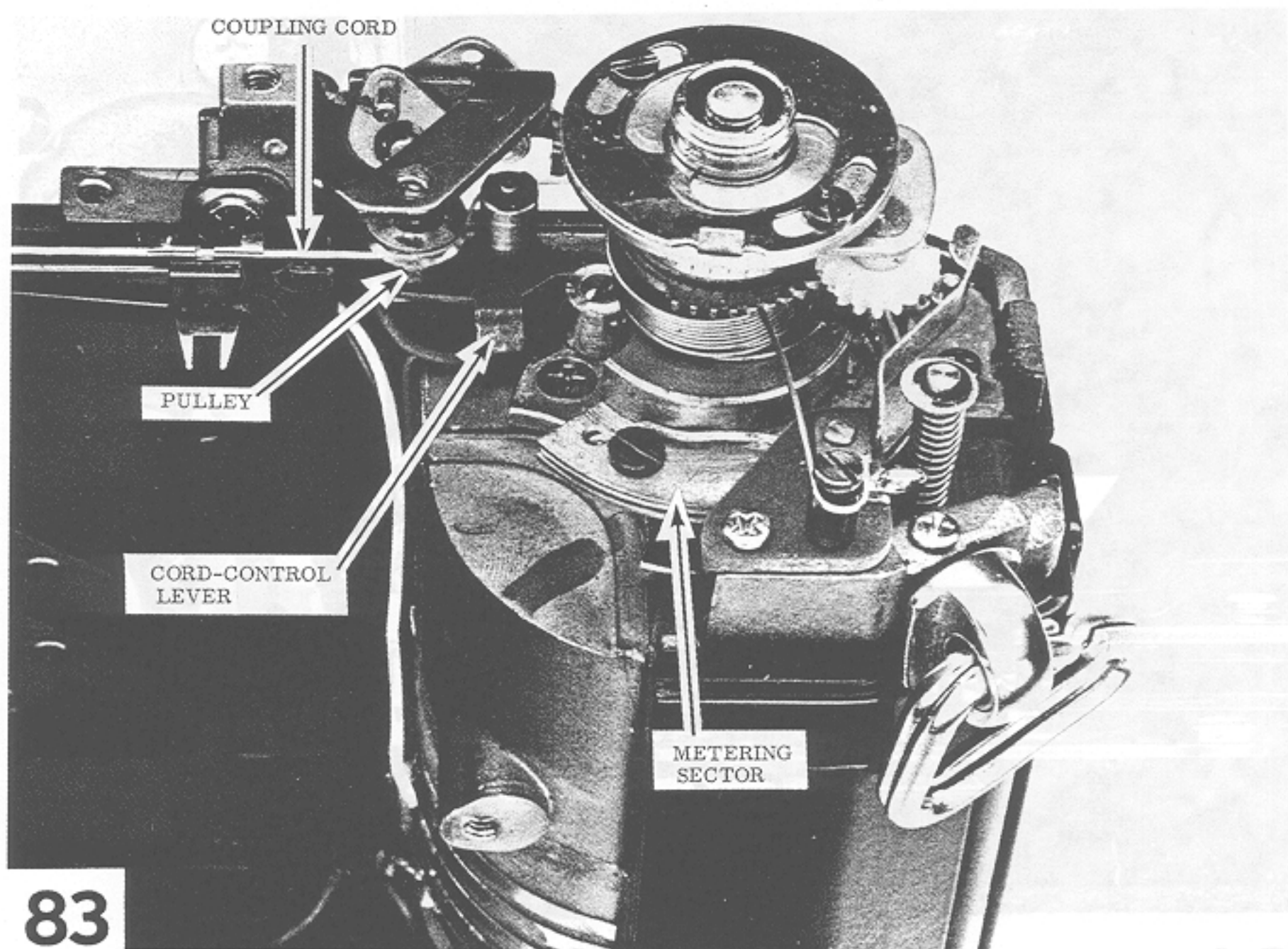
AUTO DIAPHRAGM-CONTROL UNIT RELEASED



82

AUTO DIAPHRAGM-CONTROL UNIT TENSIONED

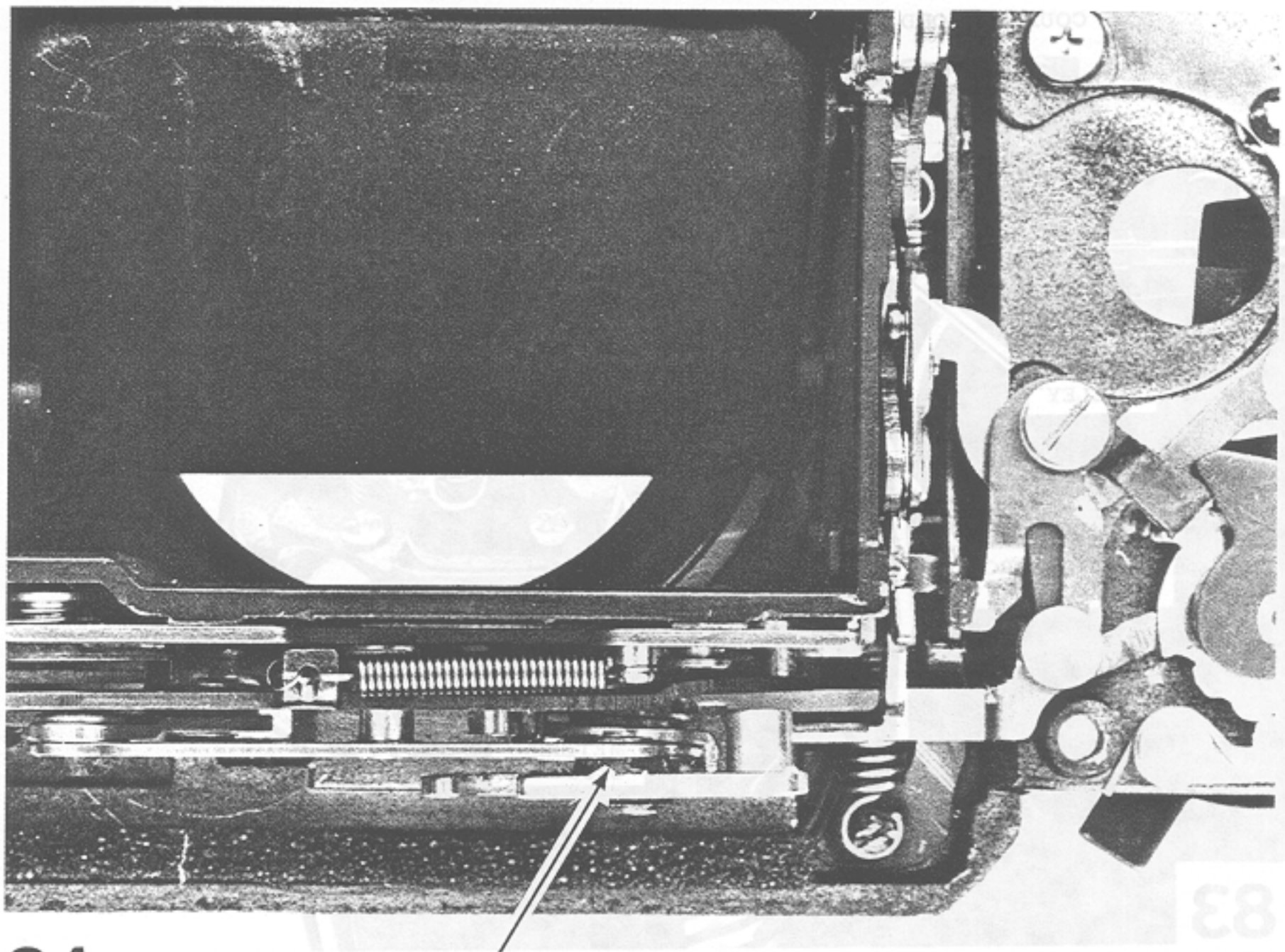
18



83

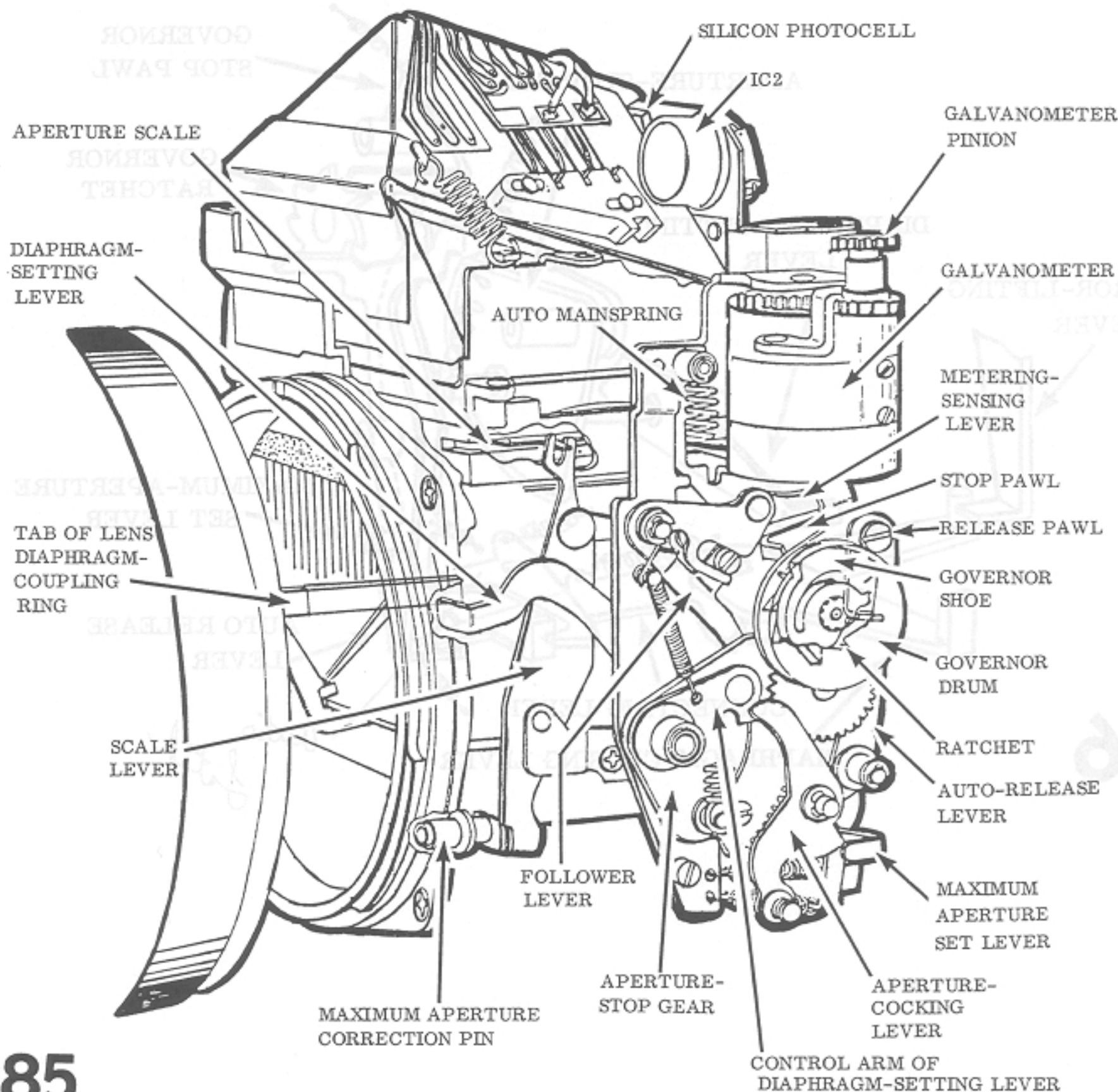
ADJUST UNTIL THE RELEASE LEVER ENGAGES THE METERING SECTOR — ADJUST UNTIL THE RELEASE LEVER ENGAGES THE METERING SECTOR

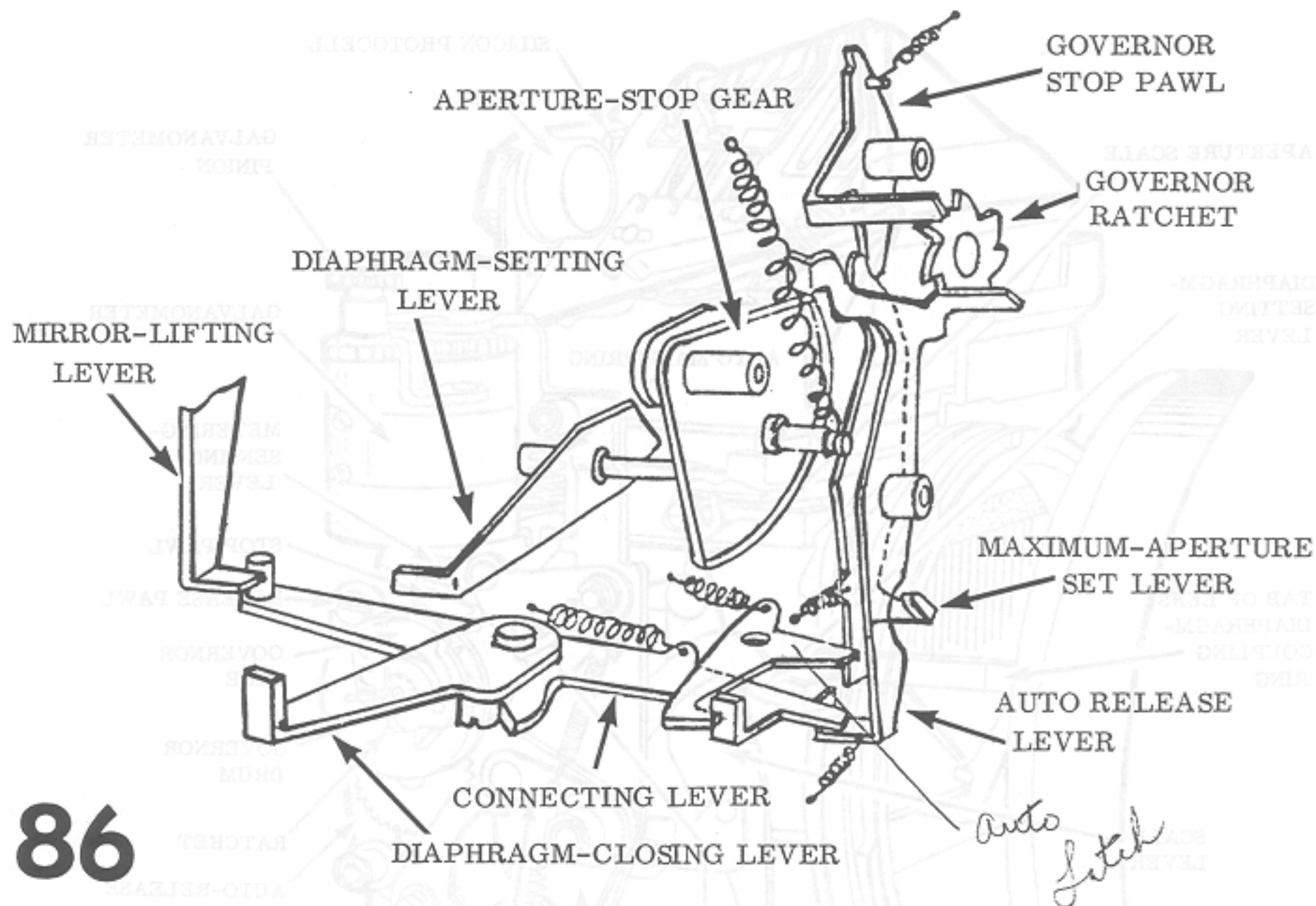
48



84

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





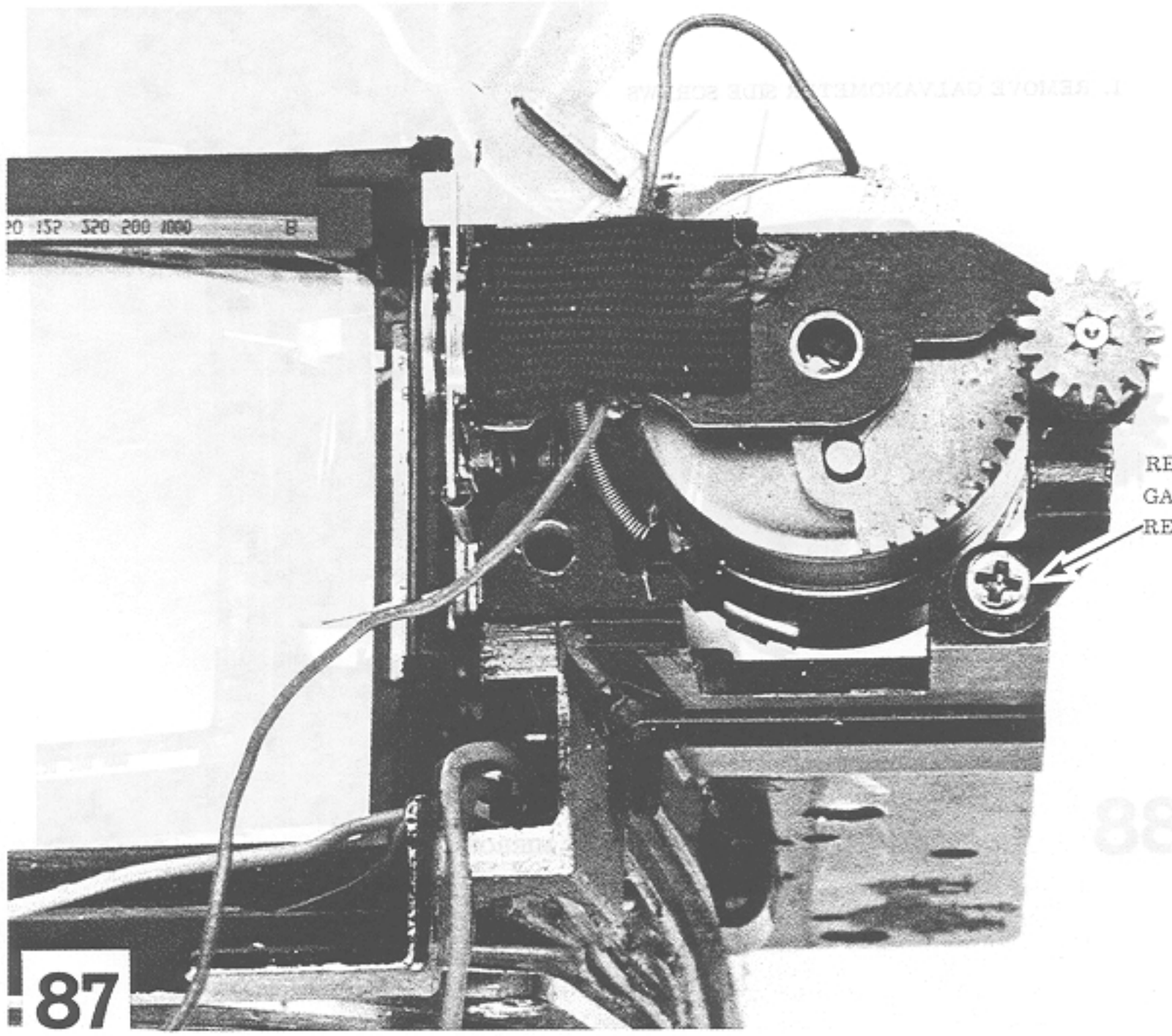
1. REMOVE GALVANOMETER SIDE SCREW

20 152 320 200 1000 8

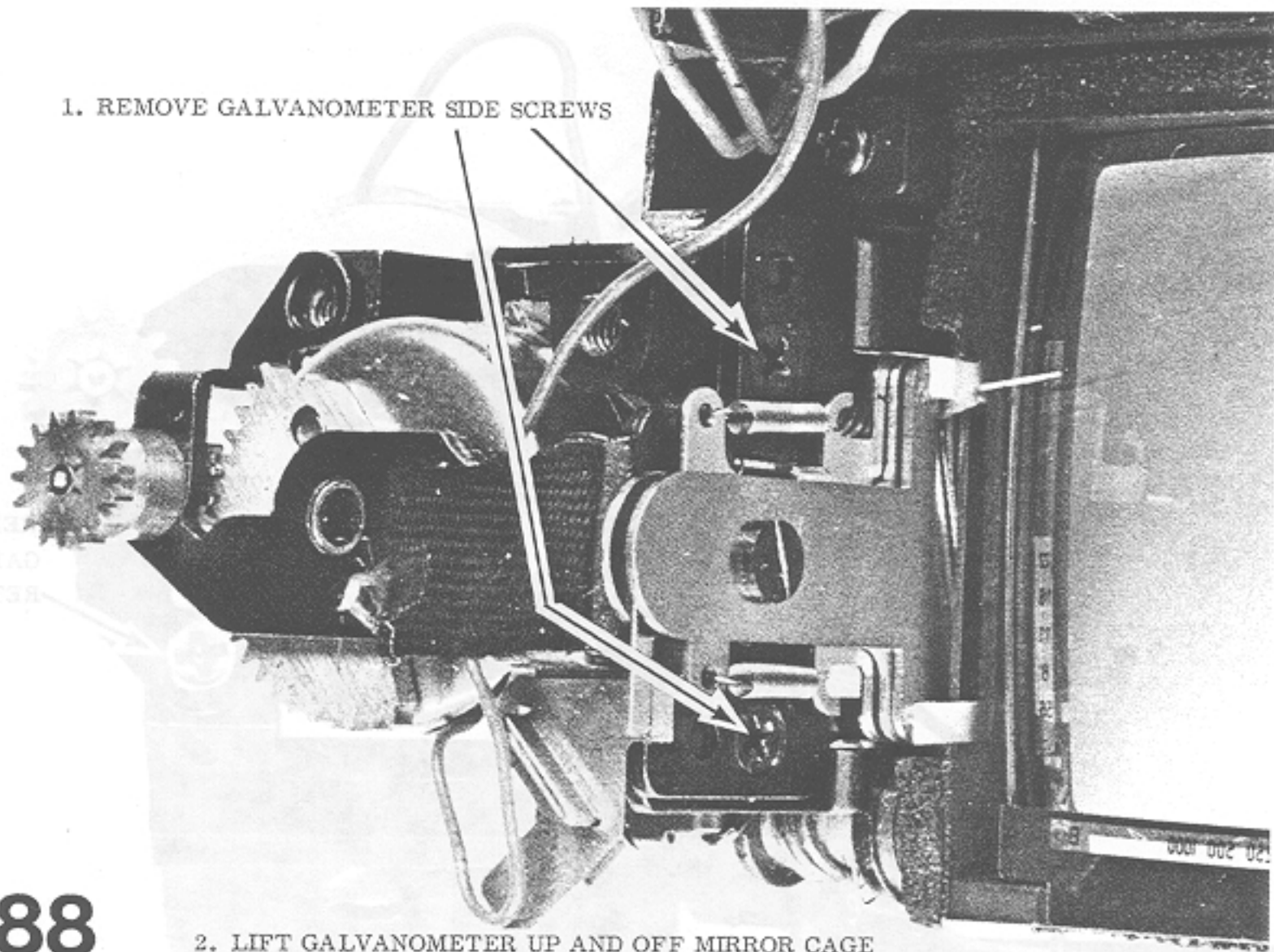
REMOVE TOP
GALVANOMETER-
RETAINING SCREW

88

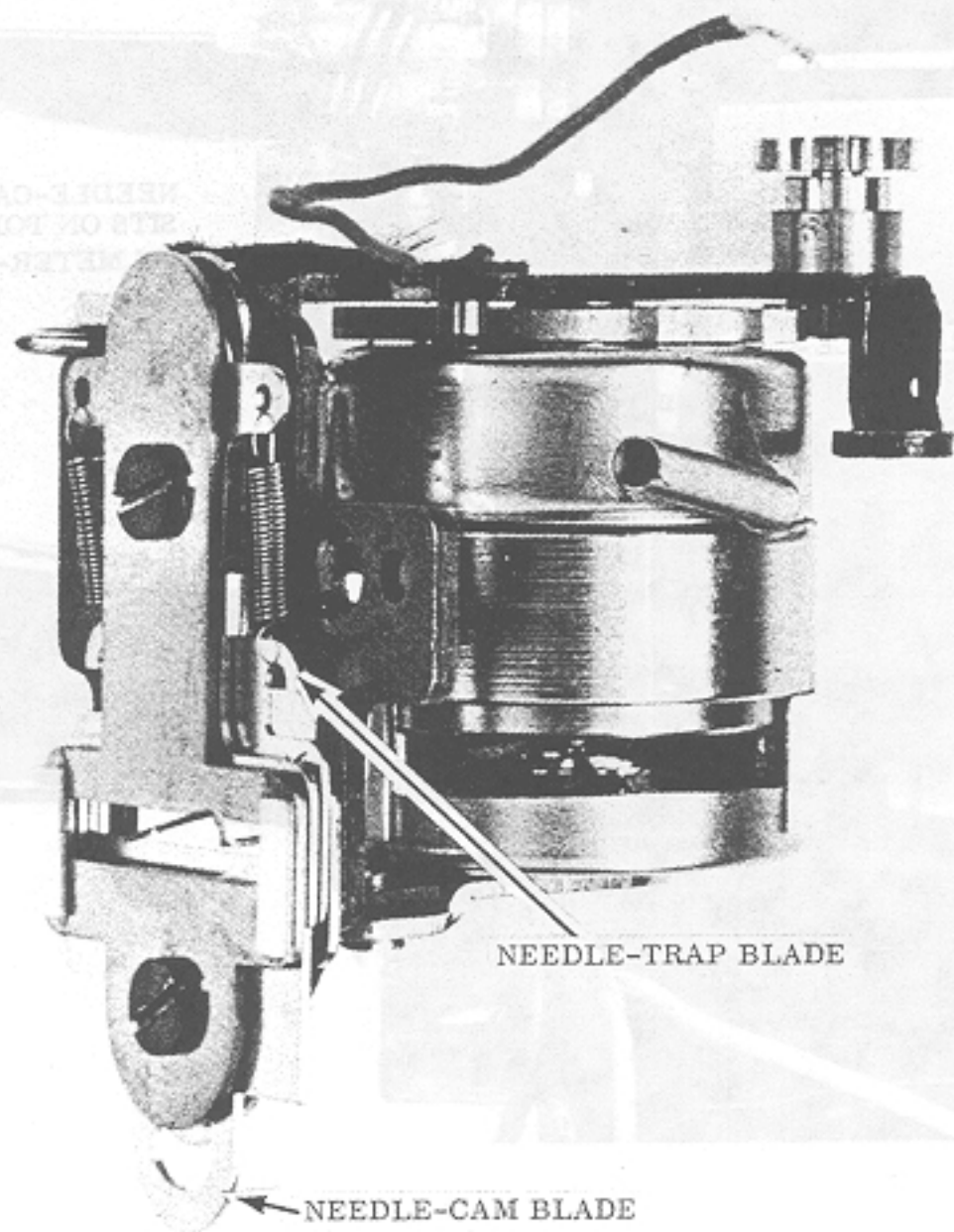
87



1. REMOVE GALVANOMETER SIDE SCREWS

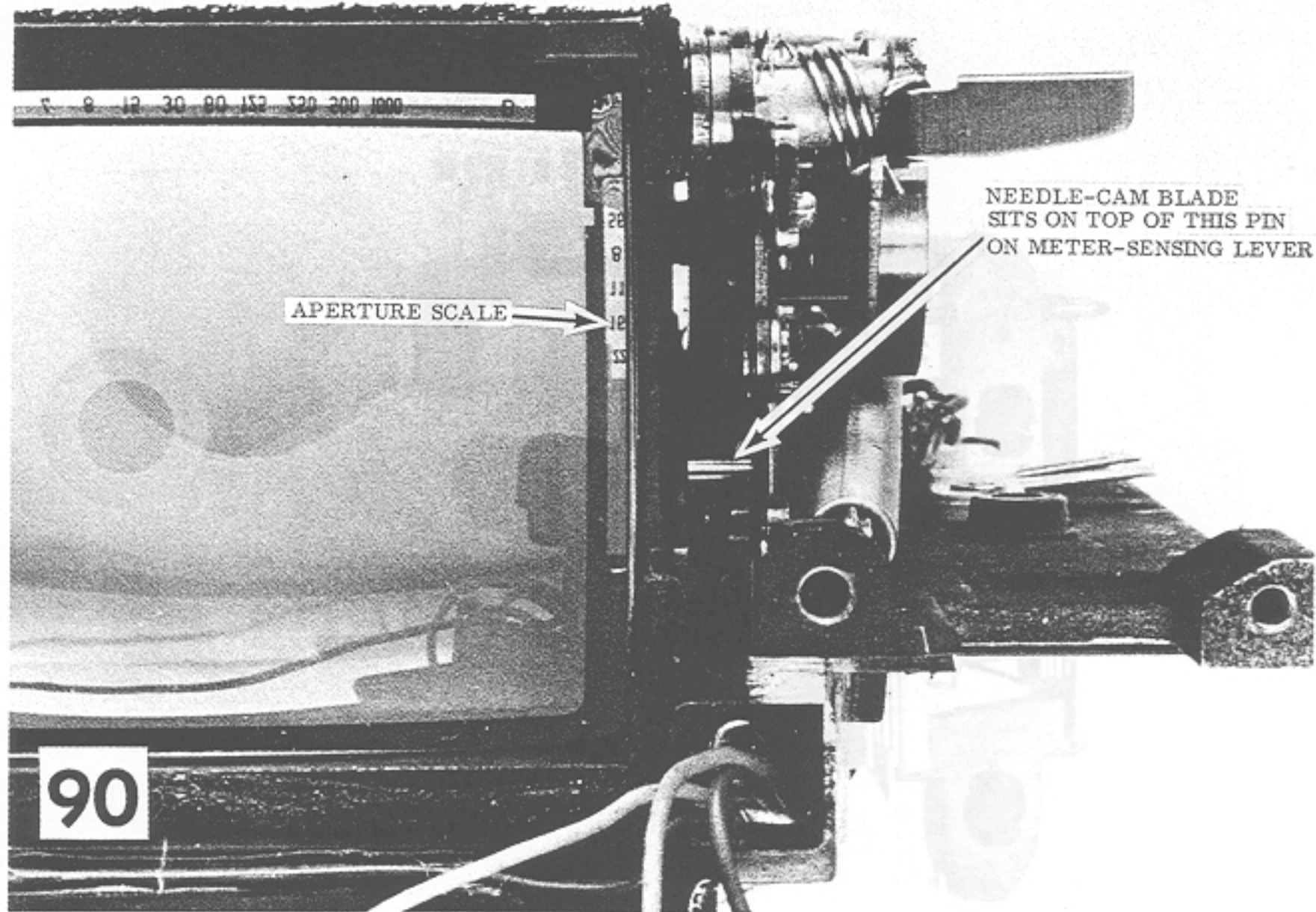


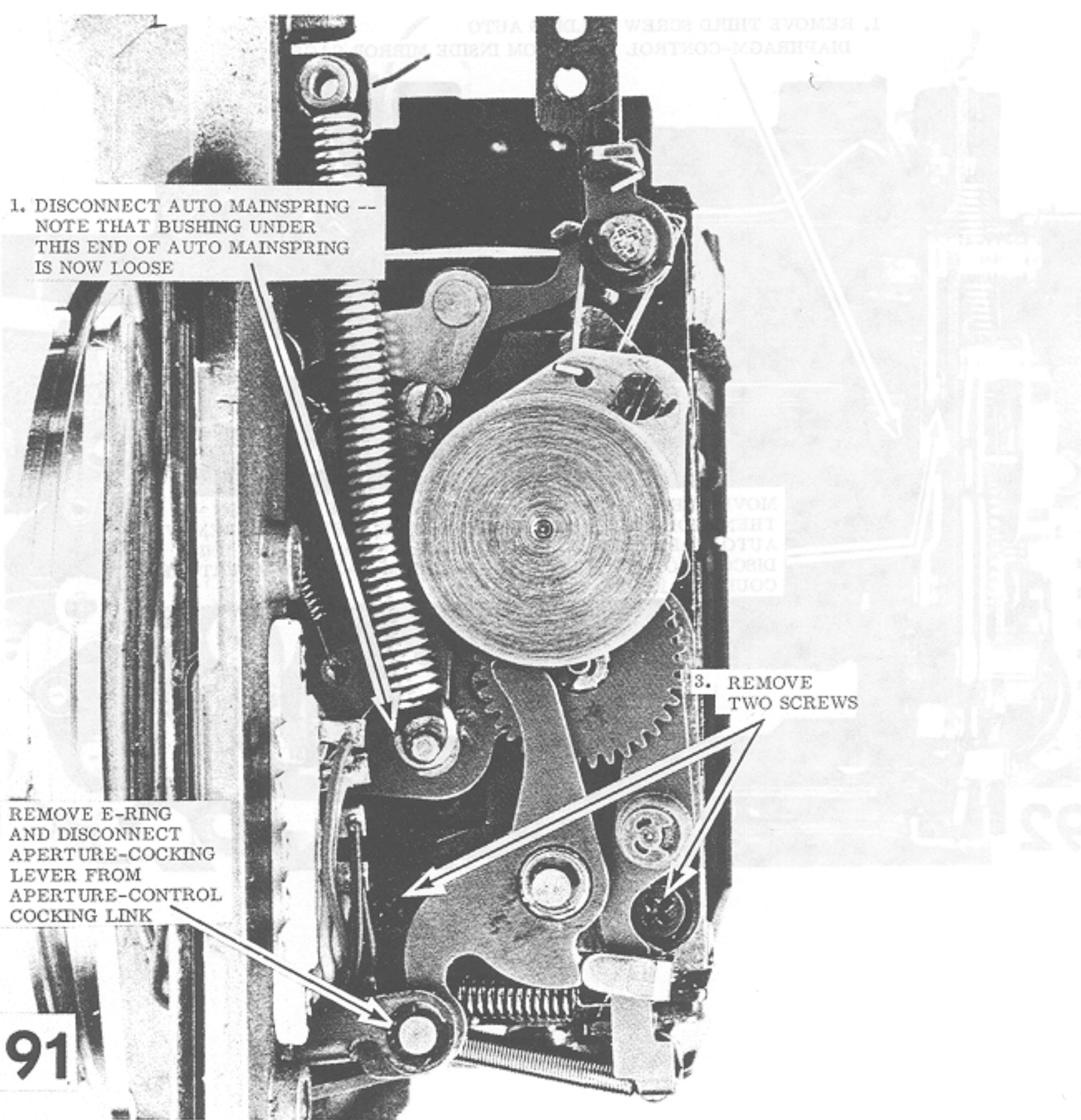
2. LIFT GALVANOMETER UP AND OFF MIRROR CAGE



NEEDLE-TRAP BLADE

NEEDLE-CAM BLADE

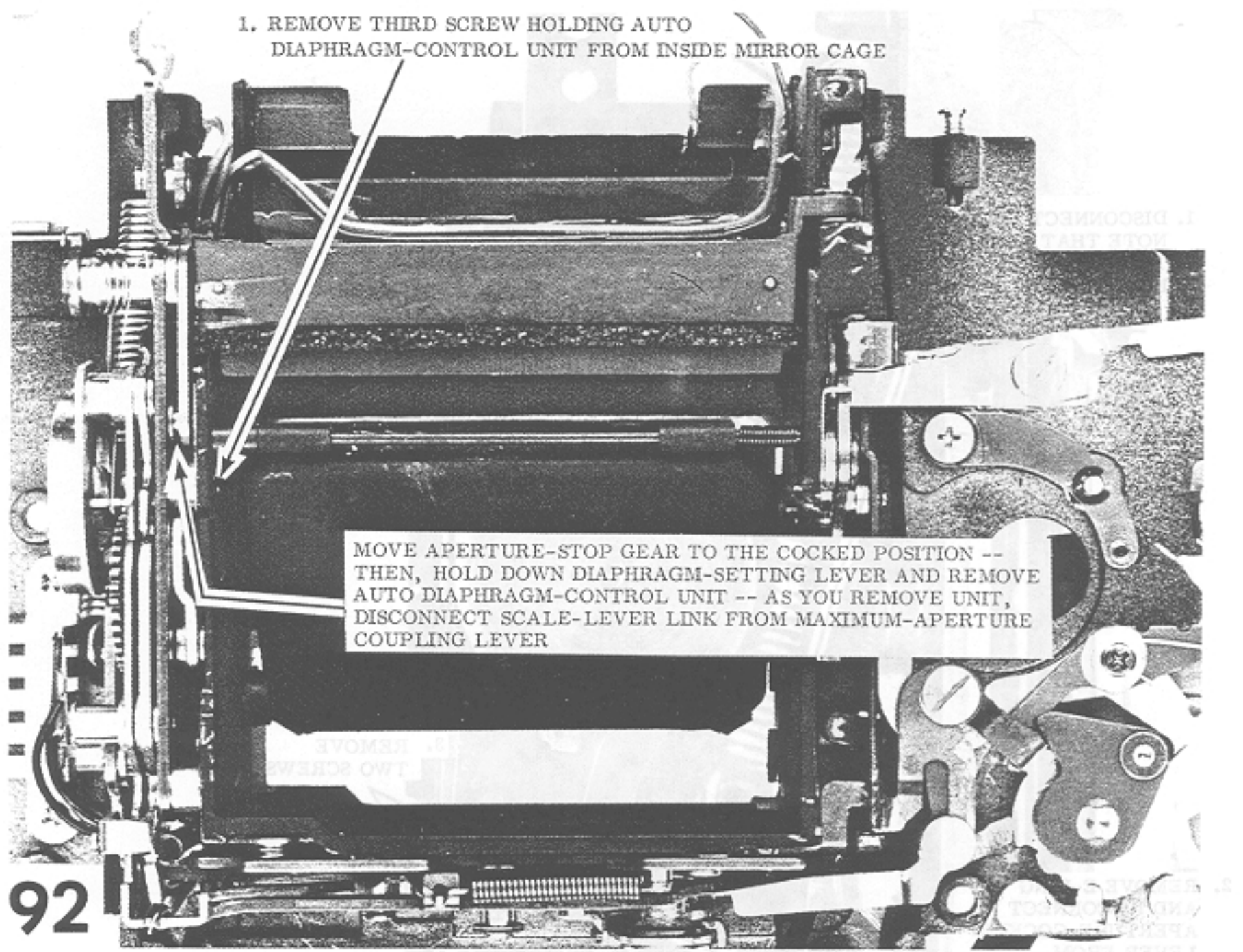




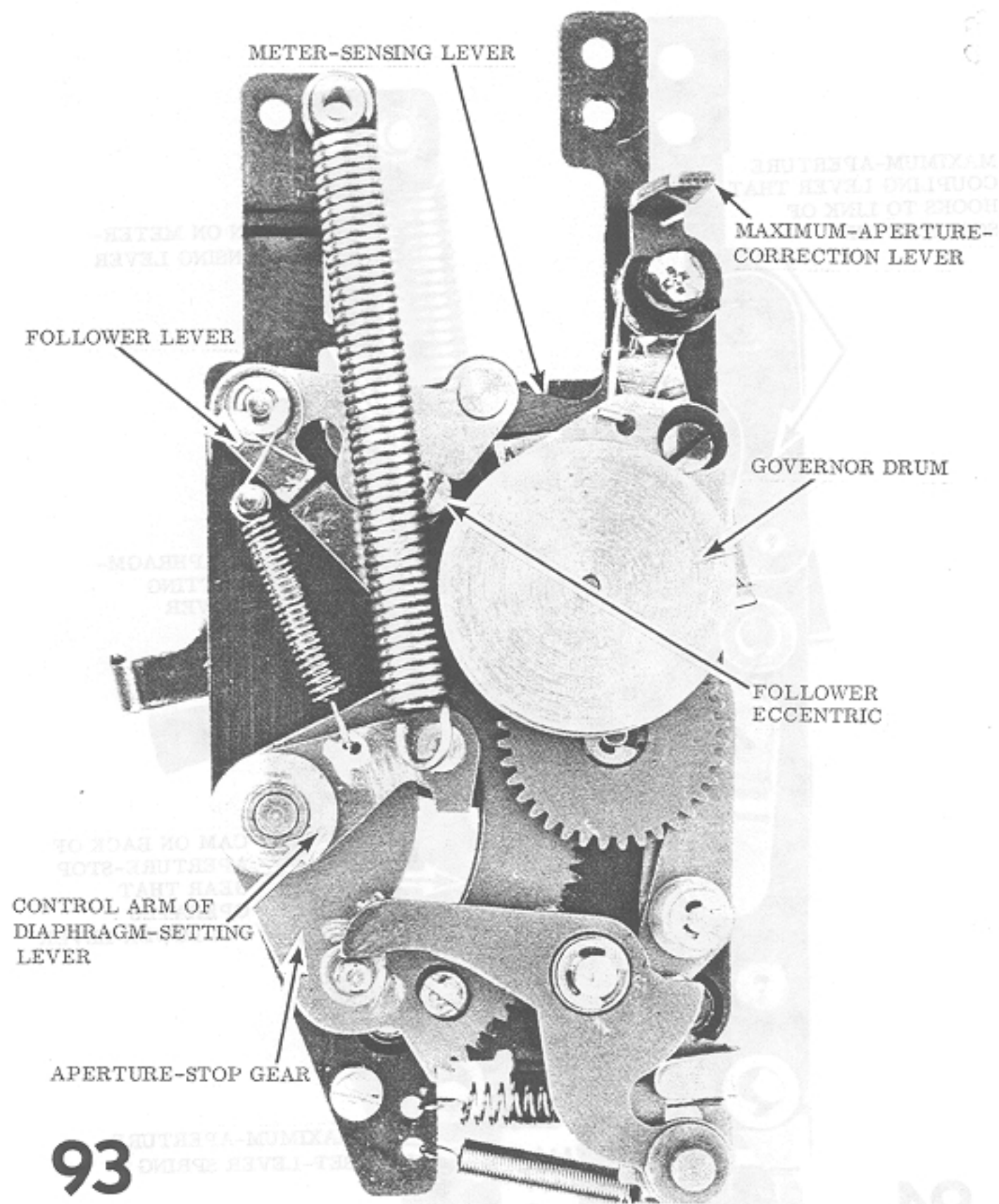
1. DISCONNECT AUTO MAINSPRING --
NOTE THAT BUSHING UNDER
THIS END OF AUTO MAINSPRING
IS NOW LOOSE

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



Clean 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

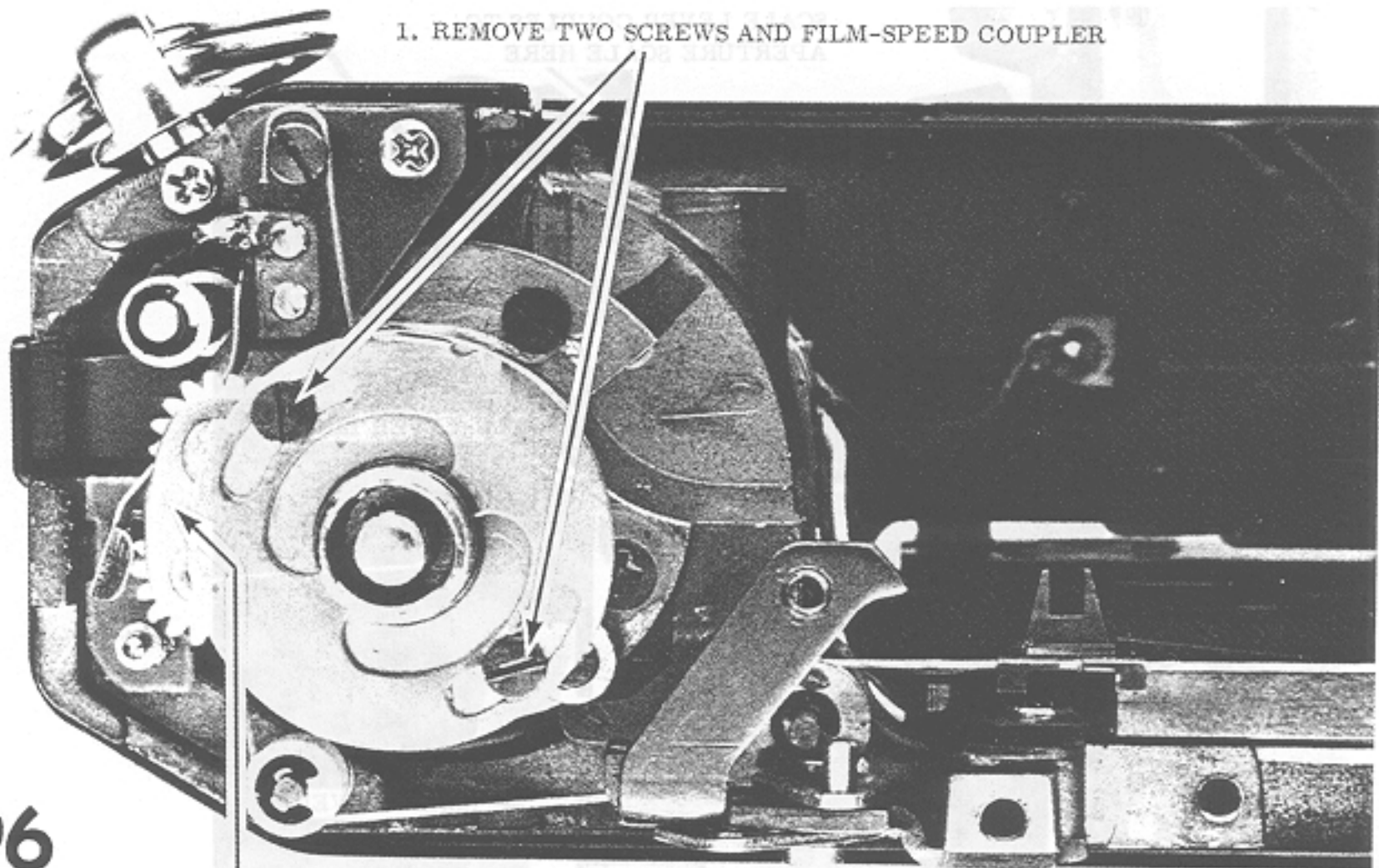
SCALE LEVER COUPLES TO
APERTURE SCALE HERE

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)

1. DISCONNECT SPRING OF METERING SECTOR

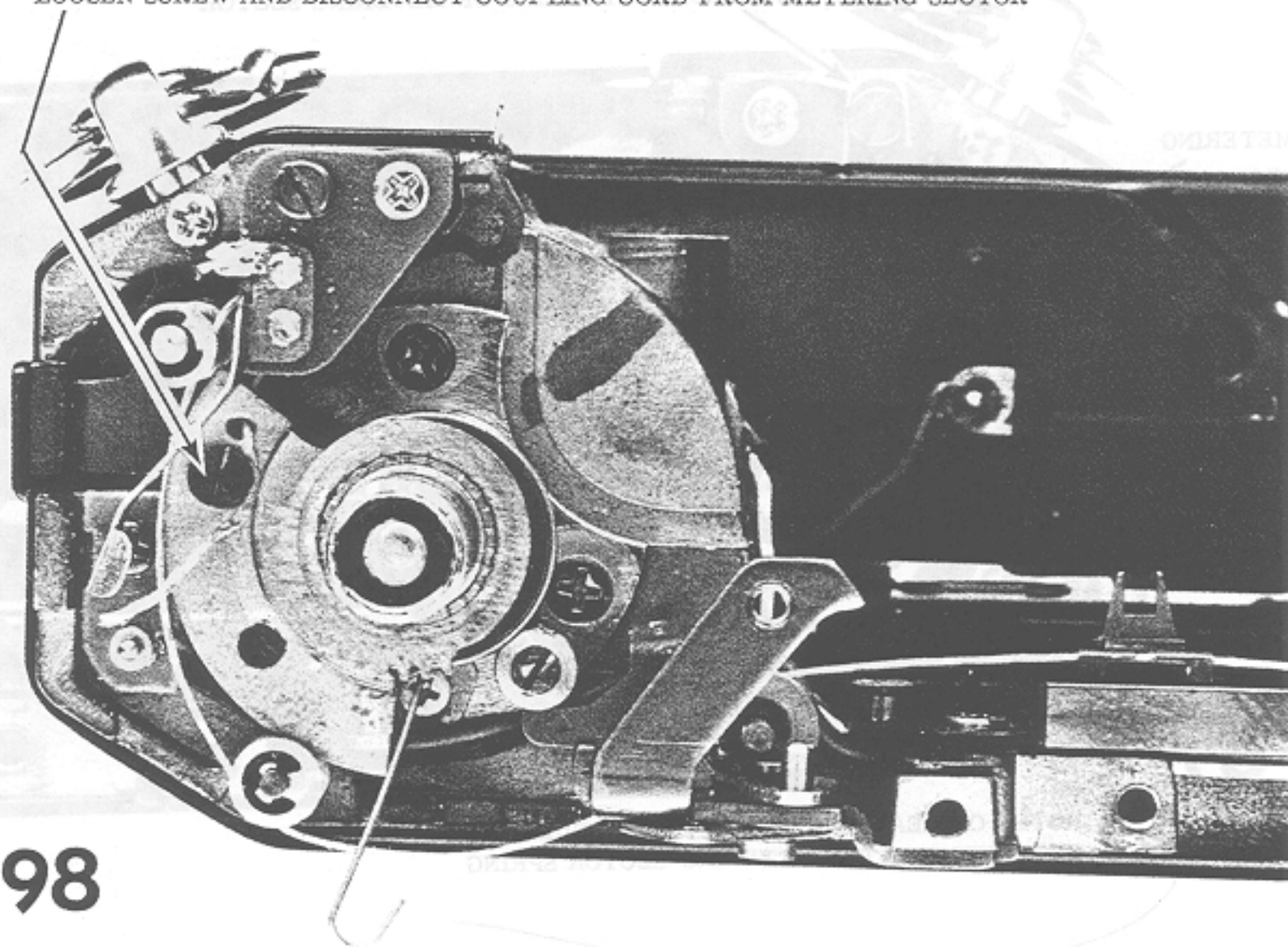
METERING
SECTOR

97

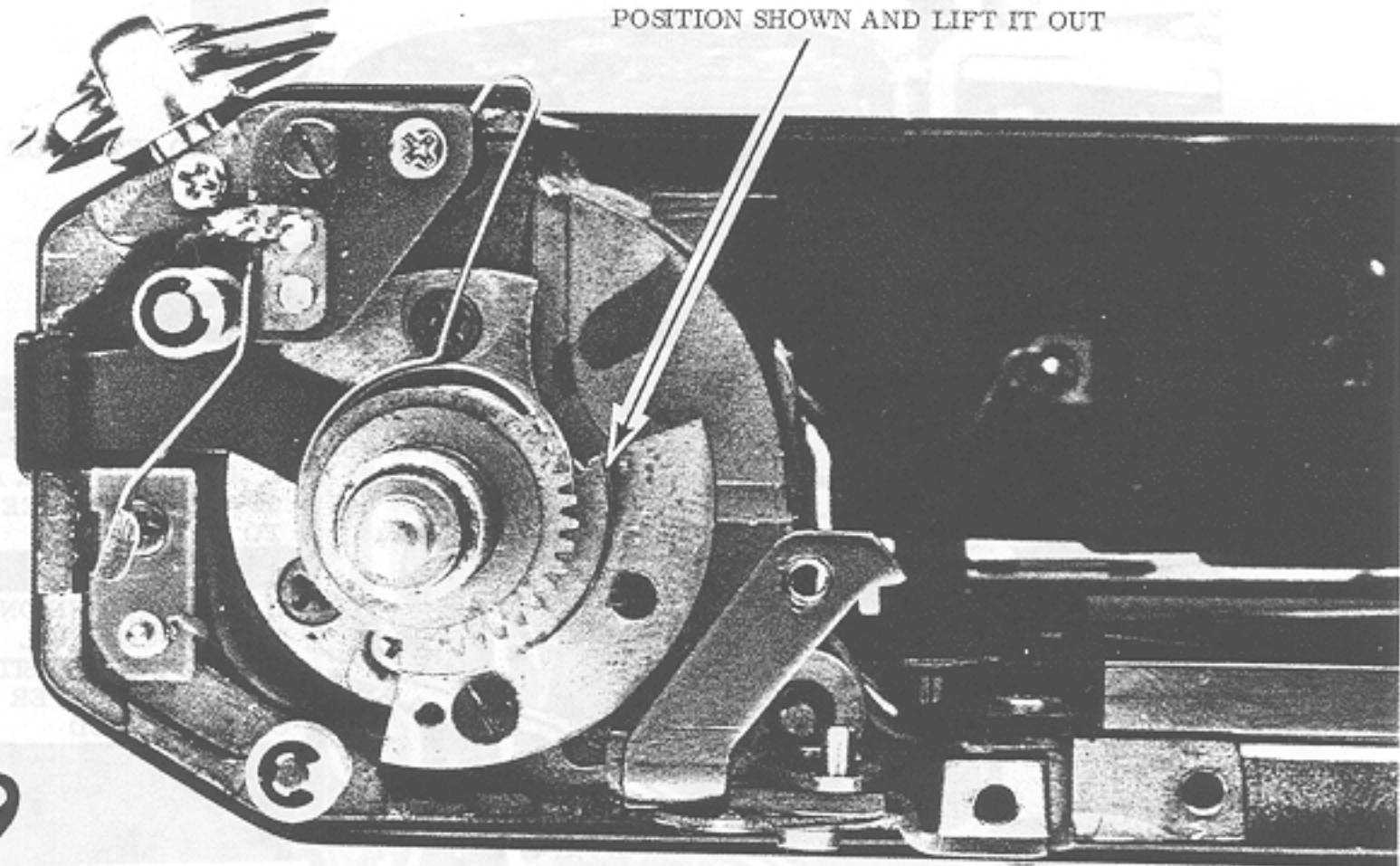
NOTE: ON REASSEMBLY, APPLY ONE FULL TURN
OF TENSION TO THE METERING-SECTOR SPRING

89

LOOSEN SCREW AND DISCONNECT COUPLING CORD FROM METERING SECTOR

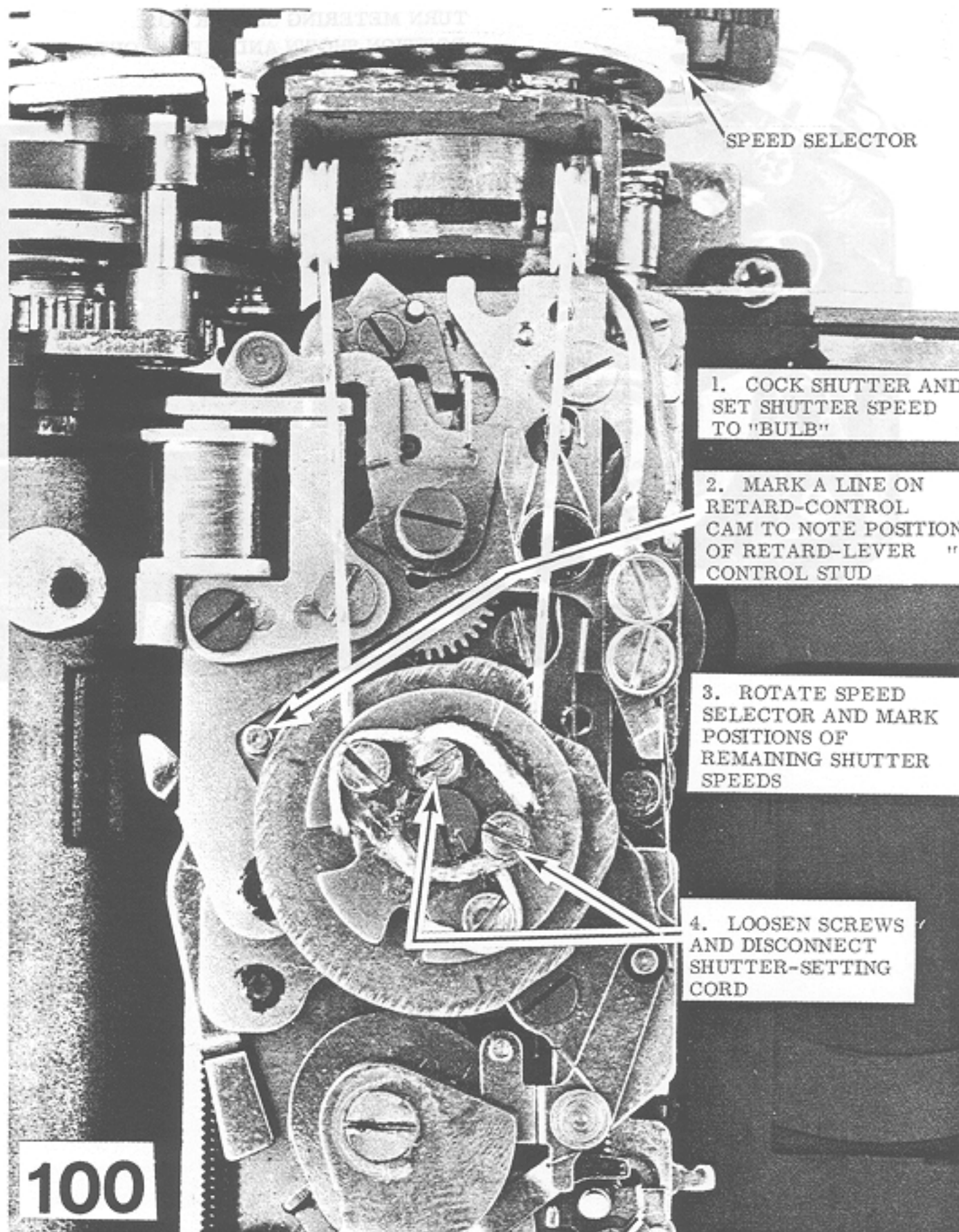


TURN METERING SECTOR TO
POSITION SHOWN AND LIFT IT OUT



99

3. ROTATE SPEED
SELECTOR AND MARK
POSITIONS OF
REMAINING SHUTTER
SPEEDS



SPEED SELECTOR

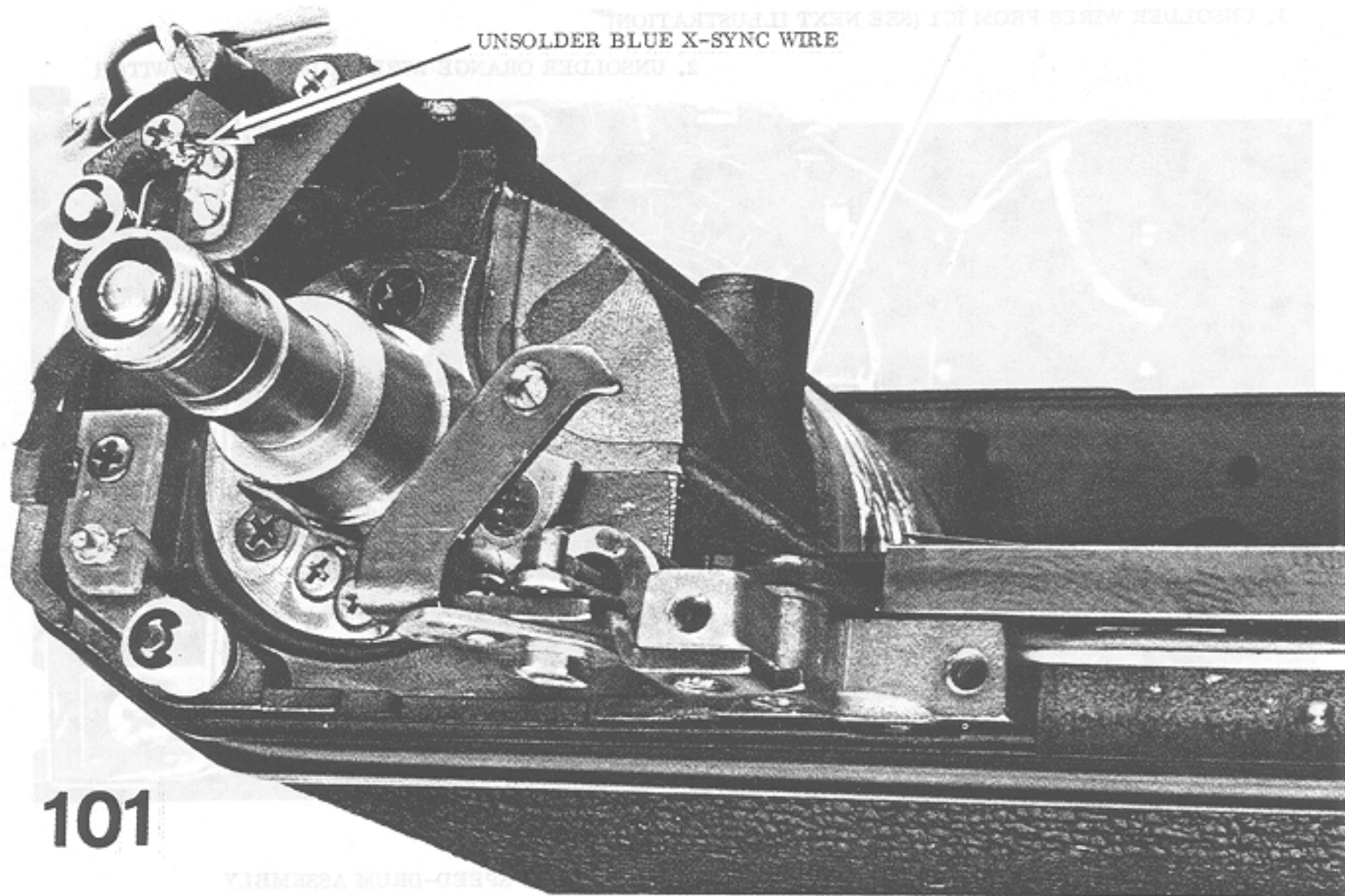
1. COCK SHUTTER AND
SET SHUTTER SPEED
TO "BULB"

2. MARK A LINE ON
RETARD-CONTROL
CAM TO NOTE POSITION
OF RETARD-LEVER " "
CONTROL STUD

3. ROTATE SPEED
SELECTOR AND MARK
POSITIONS OF
REMAINING SHUTTER
SPEEDS

4. LOOSEN SCREWS
AND DISCONNECT
SHUTTER-SETTING
CORD

1. UNSOLDER WIRE FROM JCI (SEE NEXT ILLUSTRATION)
2. UNSOLDER ORANGE WIRE FROM JCI
UNWIRE BLUE X-SYNC WIRE

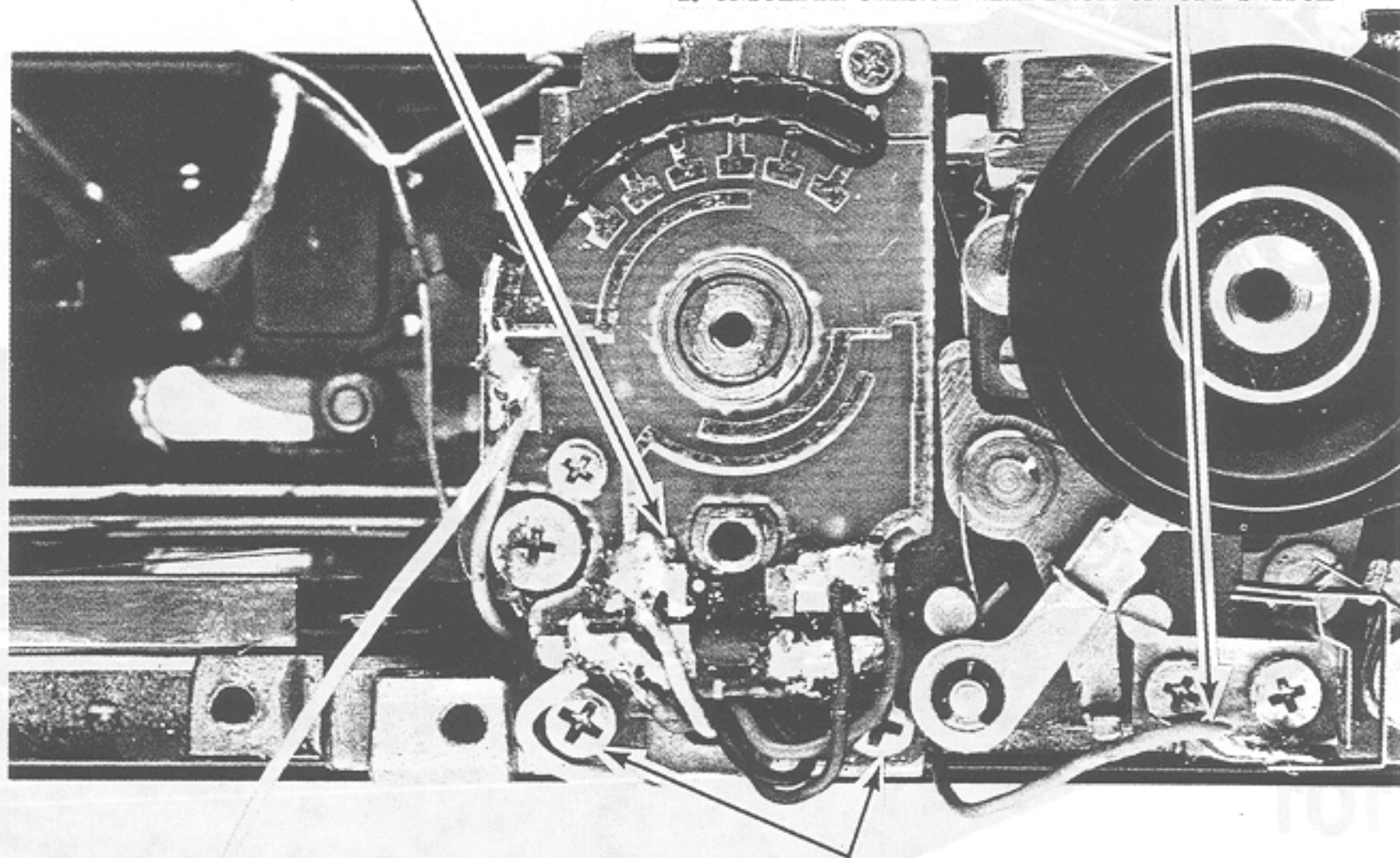


101

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

1. UNSOLDER WIRES FROM IC1 (SEE NEXT ILLUSTRATION)

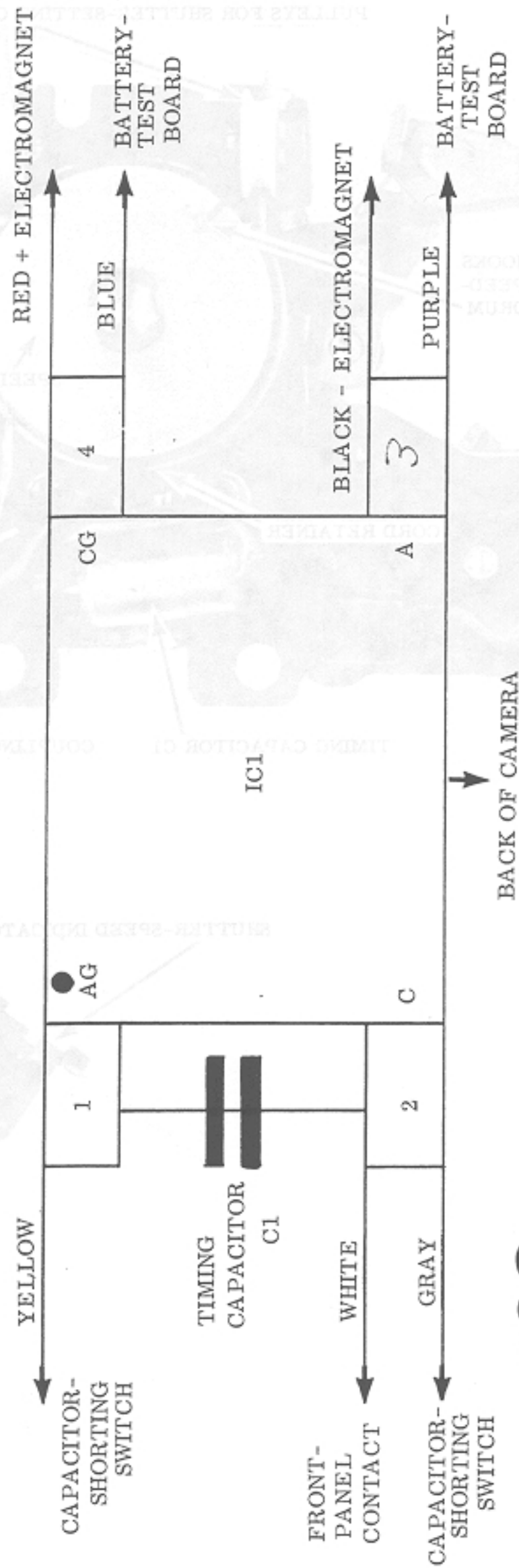
2. UNSOLDER ORANGE WIRE FROM ON-OFF SWITCH

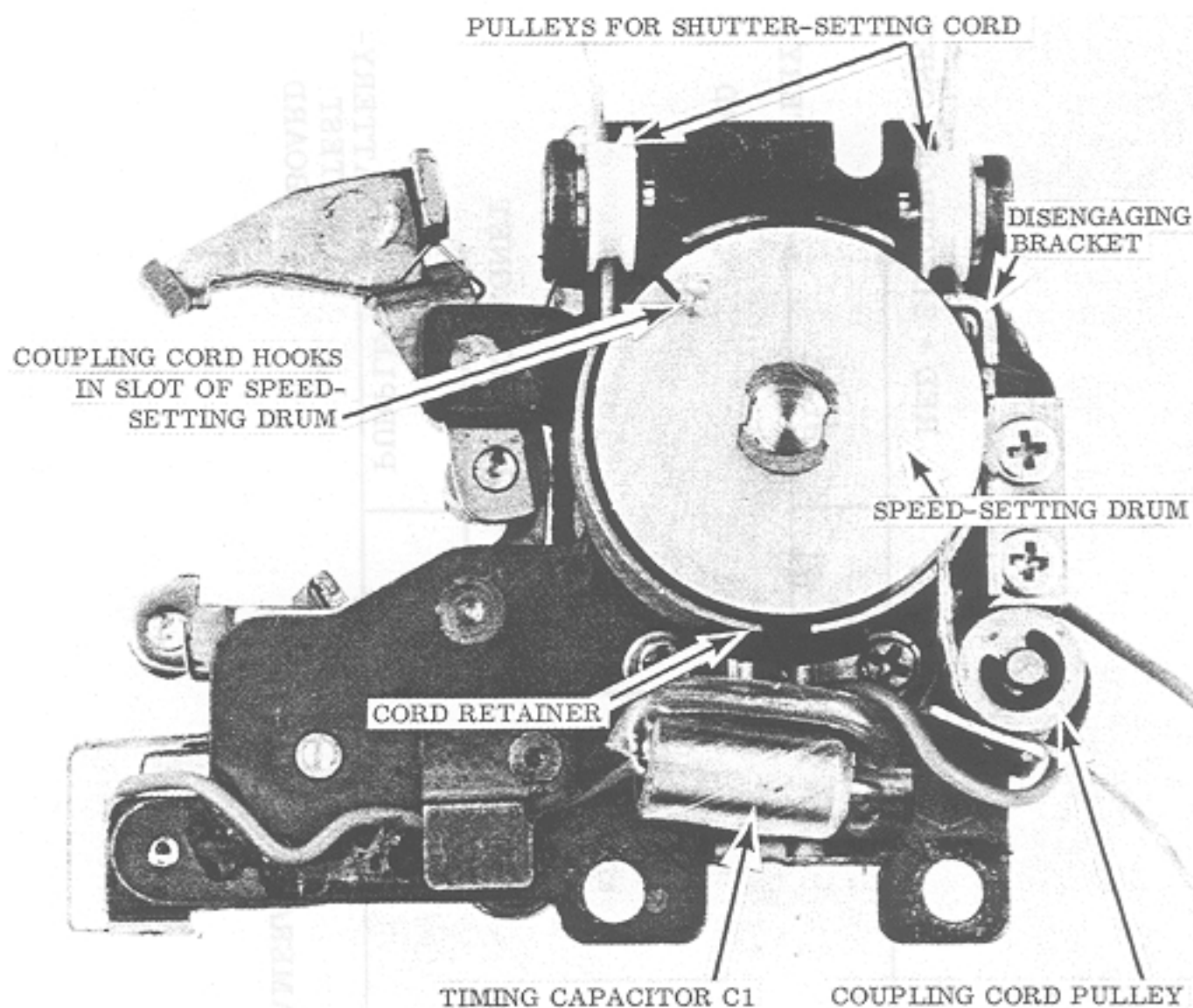


3. REMOVE TWO SCREWS AND LIFT OUT SPEED-DRUM ASSEMBLY

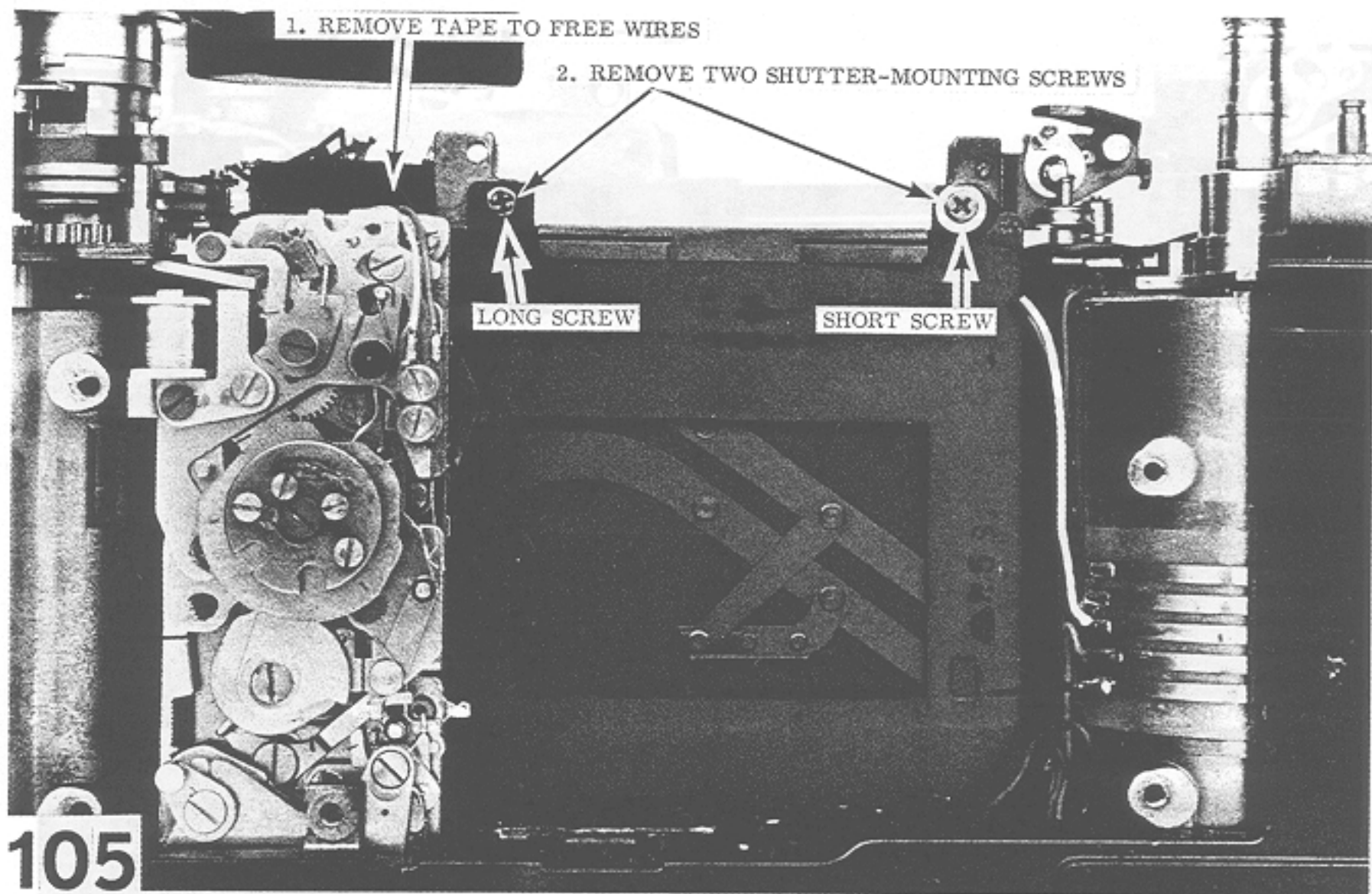
102

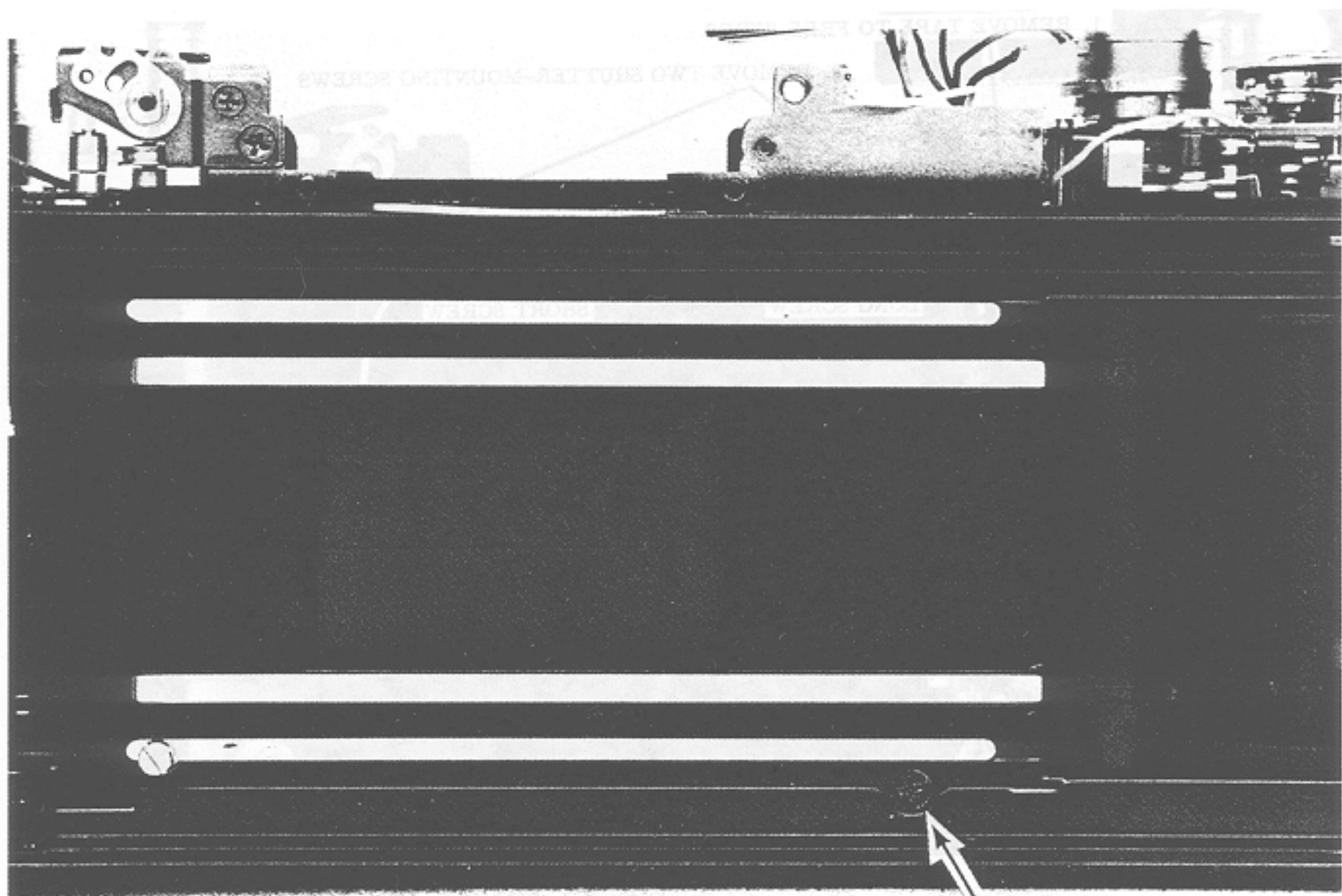
NOTE: SPEED SELECTOR DOES NOT HAVE TO BE REMOVED - WE'VE REMOVED IT HERE FOR ILLUSTRATION PURPOSES





104





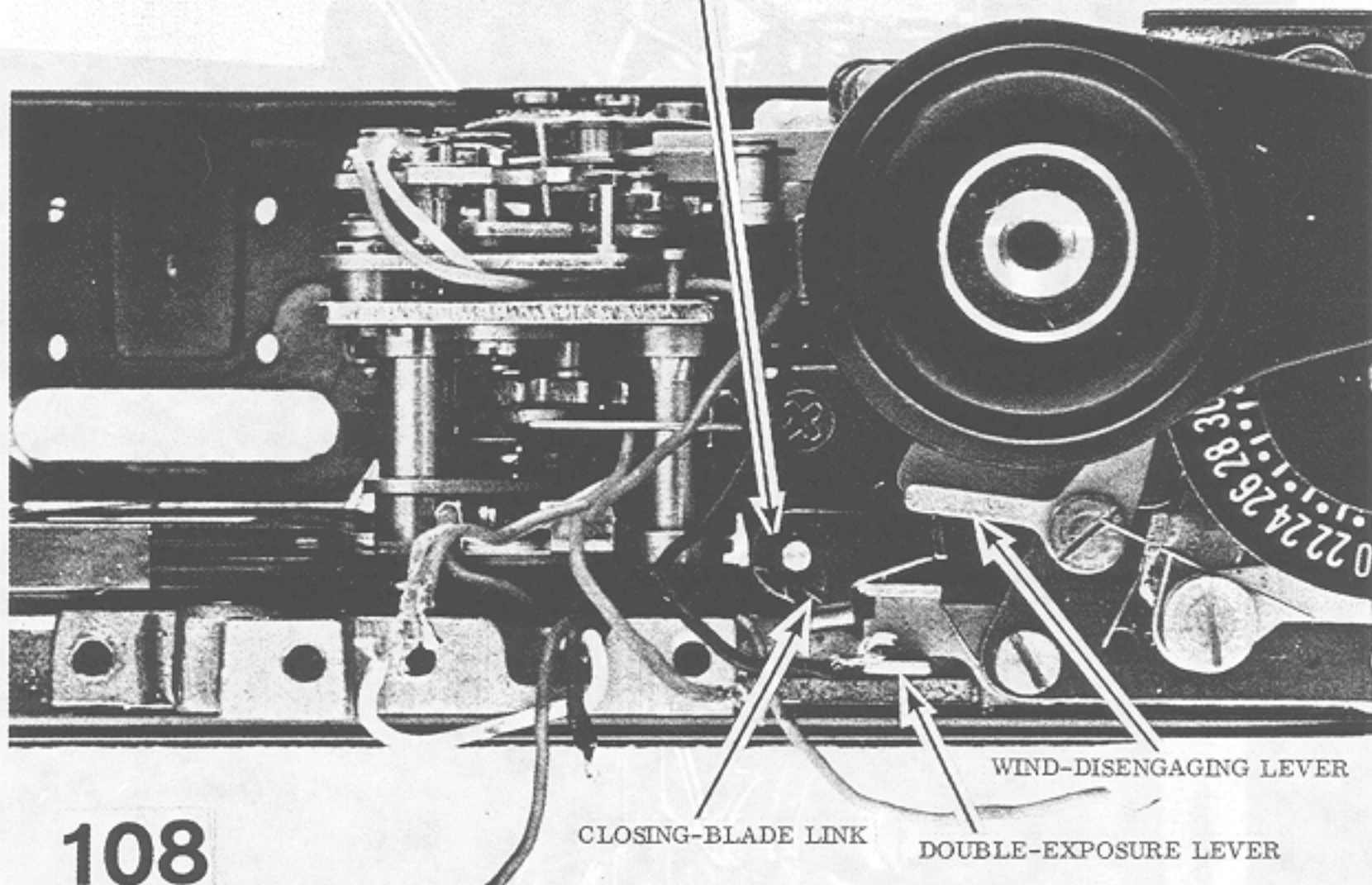
106

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

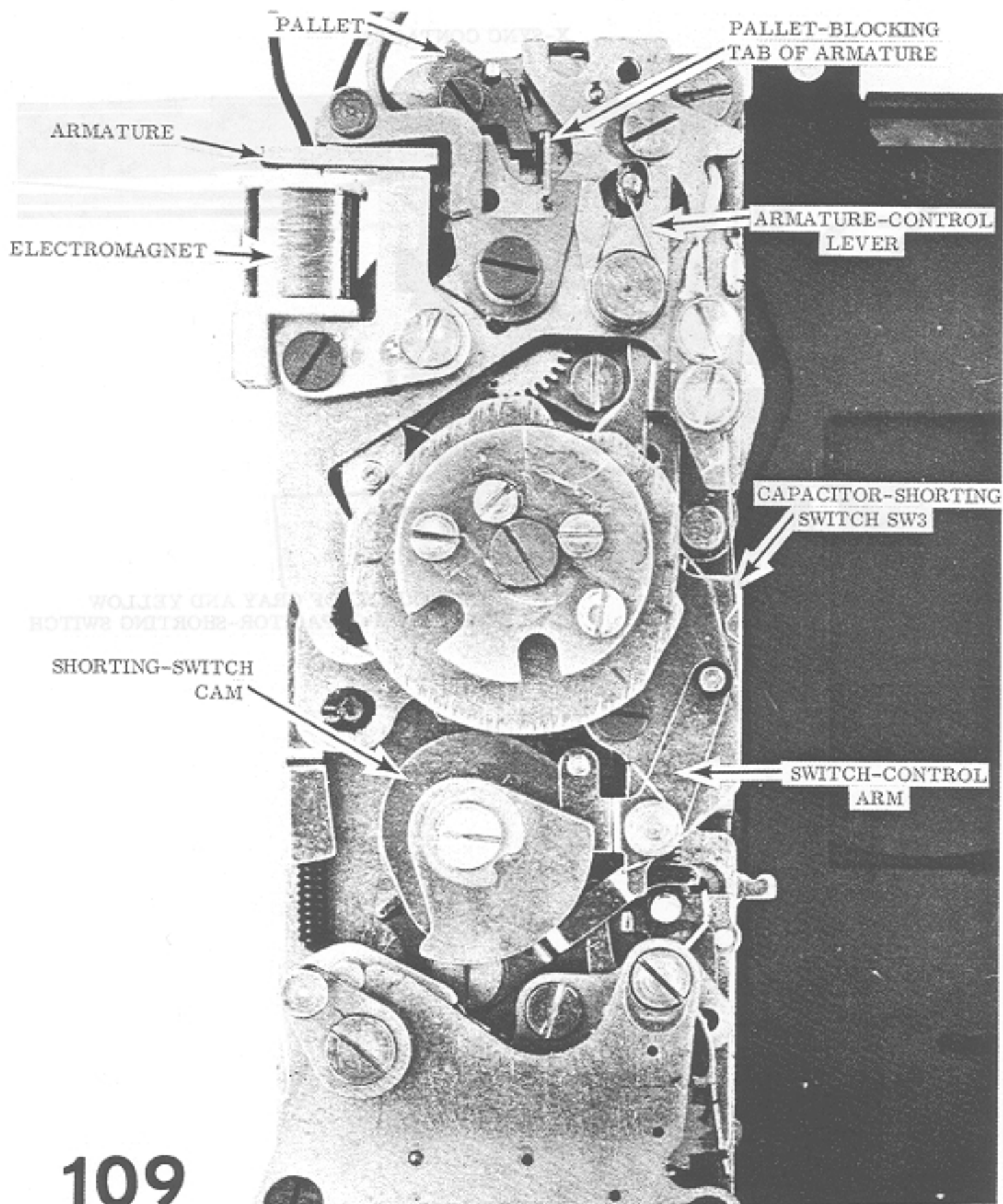


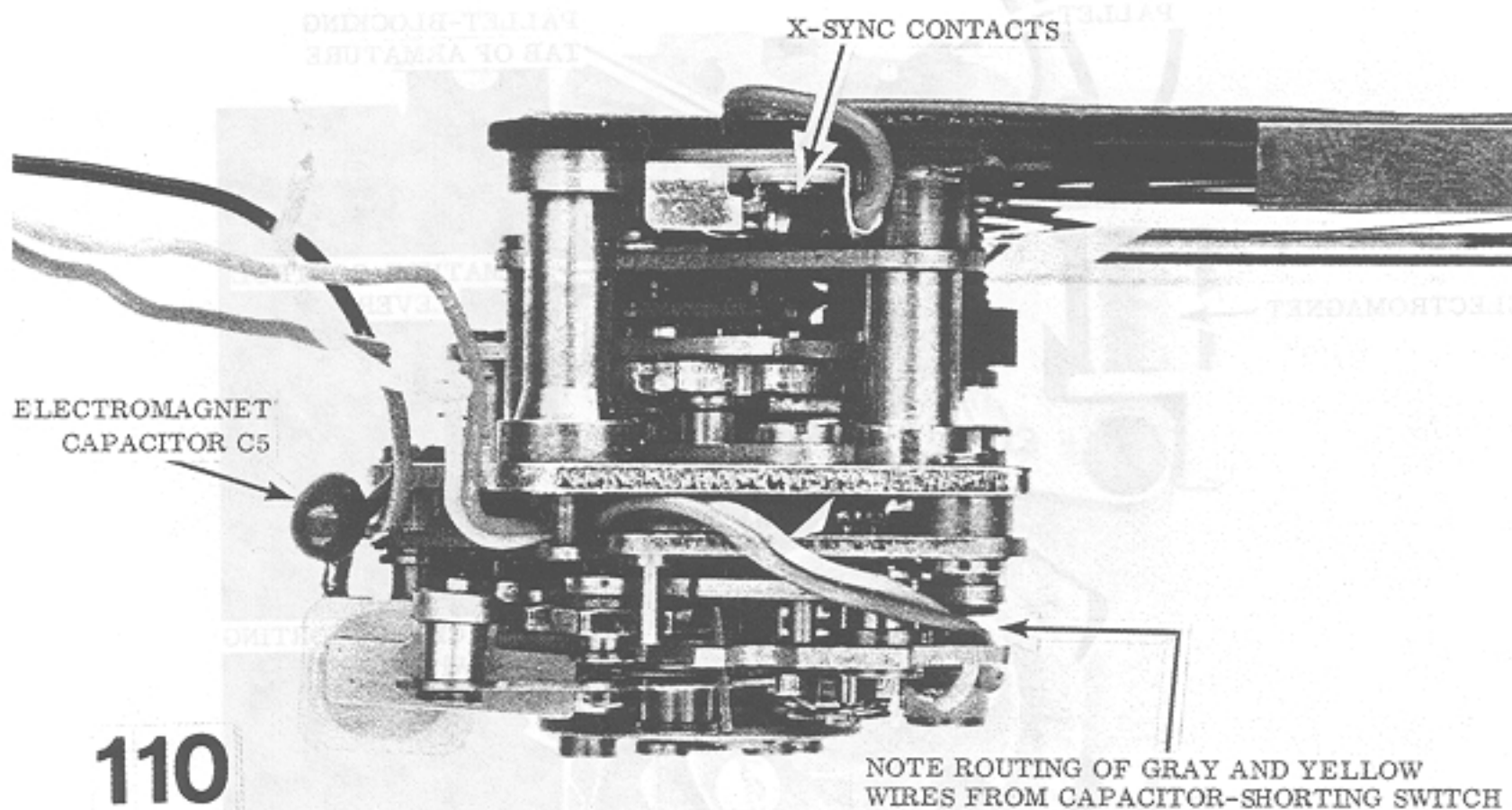
108

CLOSING-BLADE LINK

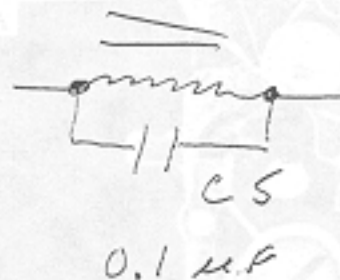
WIND-DISENGAGING LEVER

DOUBLE-EXPOSURE LEVER



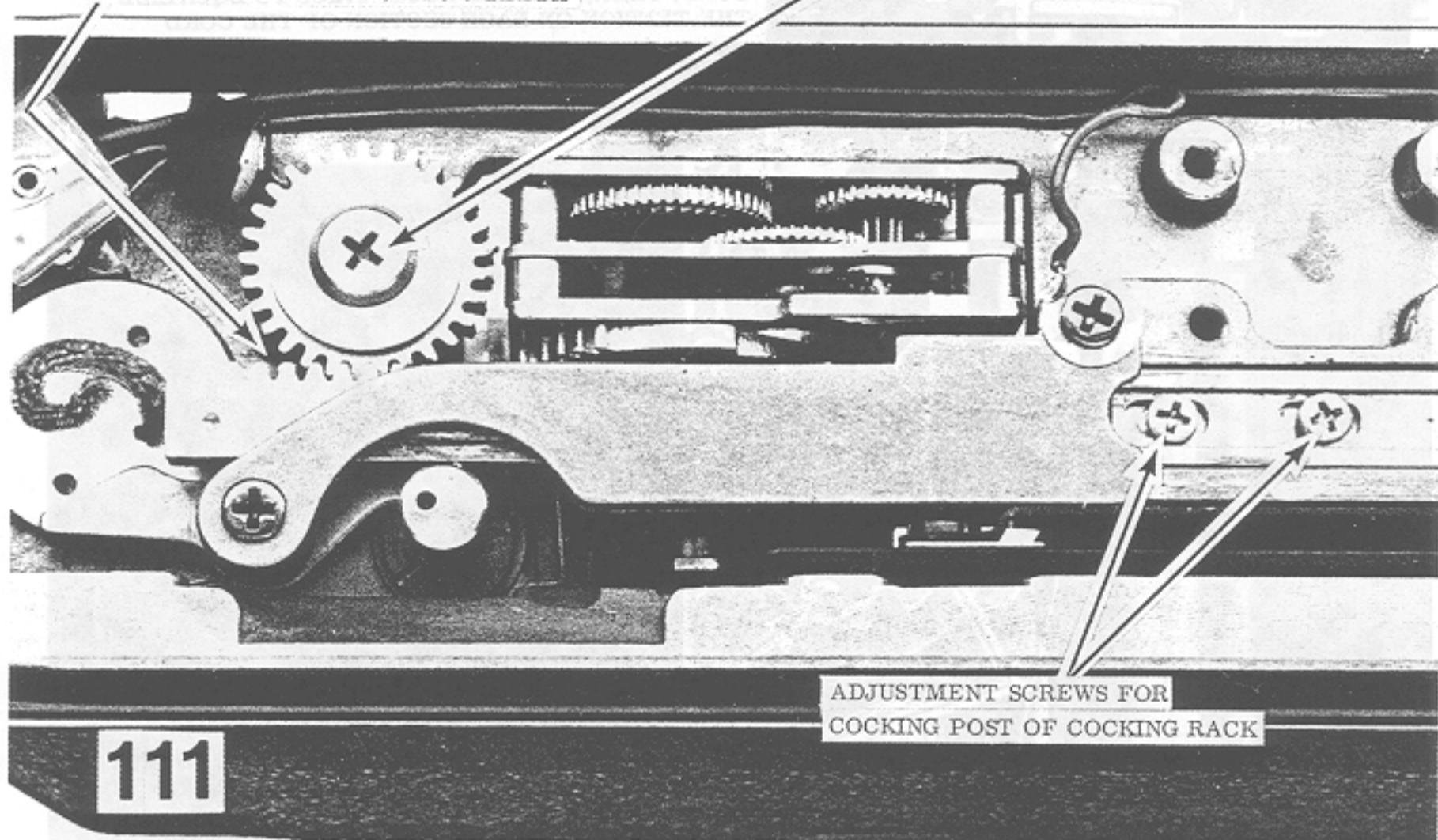


Modification



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

LEFT-HAND SCREW

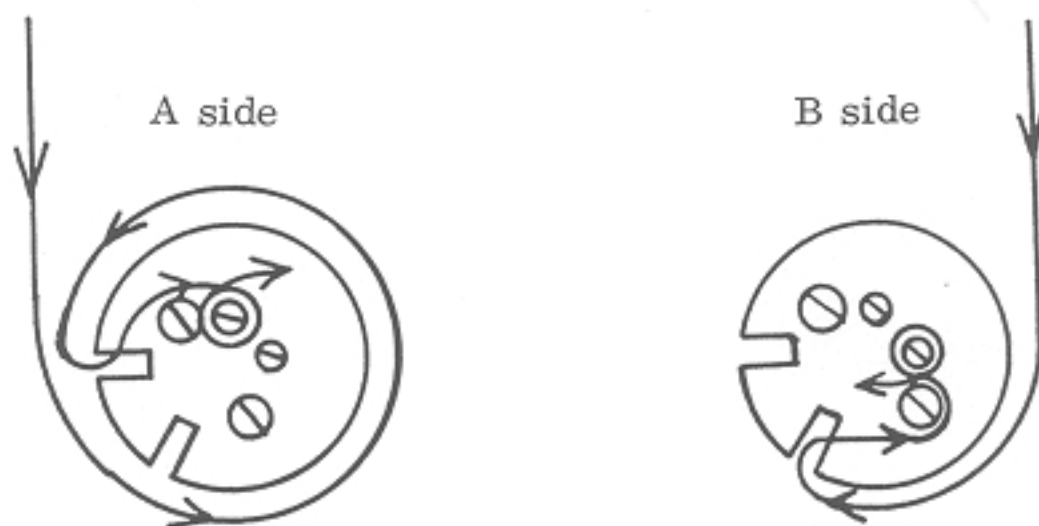
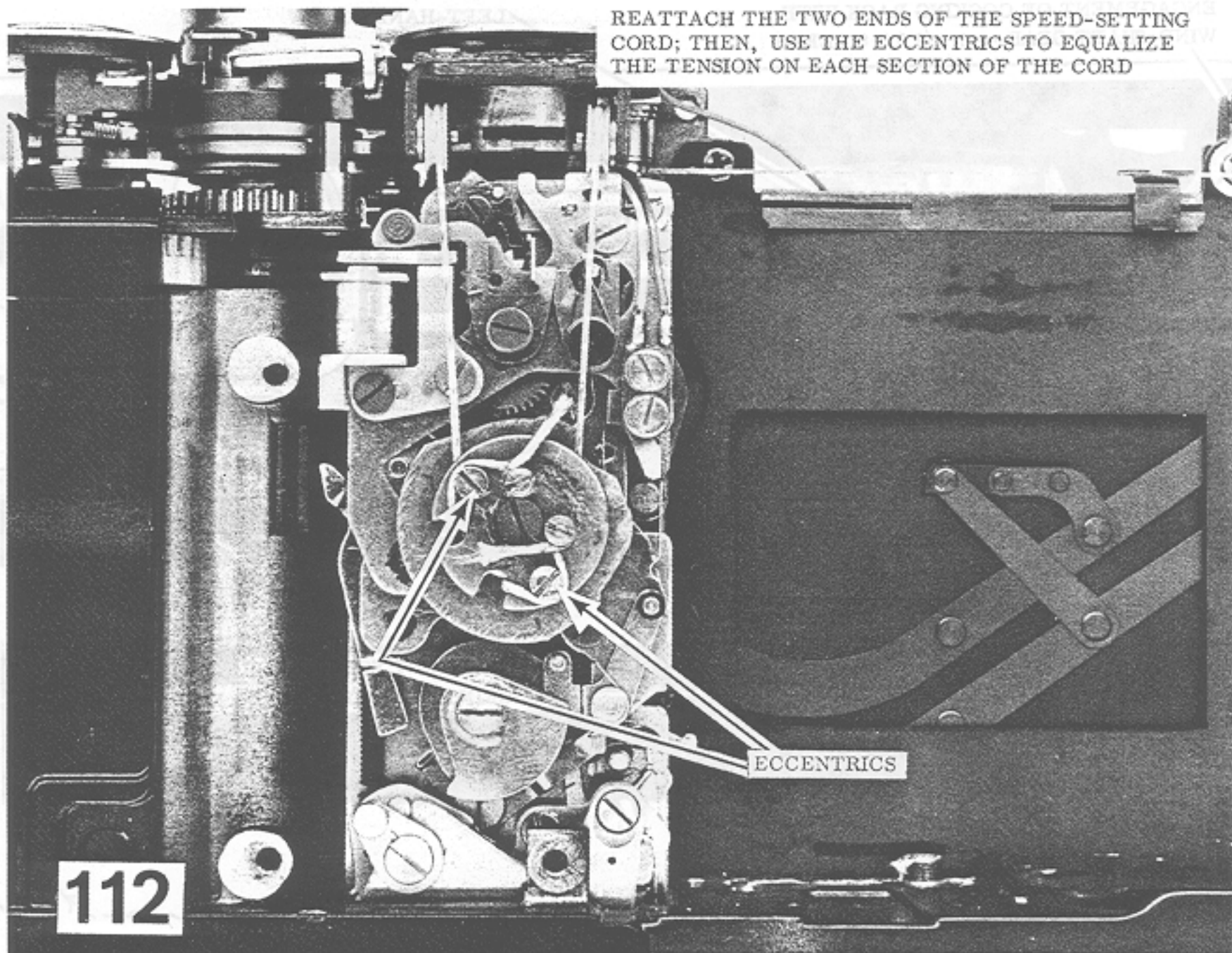


ADJUSTMENT SCREWS FOR
COCKING POST OF COCKING RACK

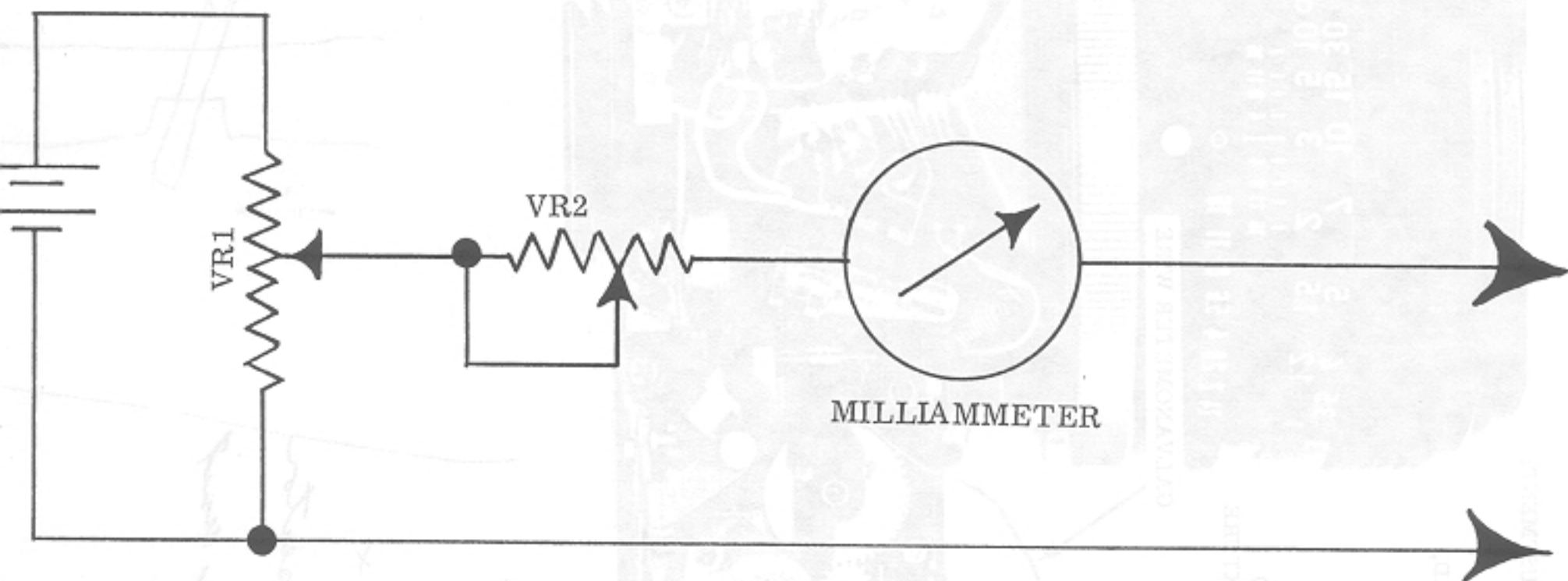
111

if shutter doesn't cock or 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



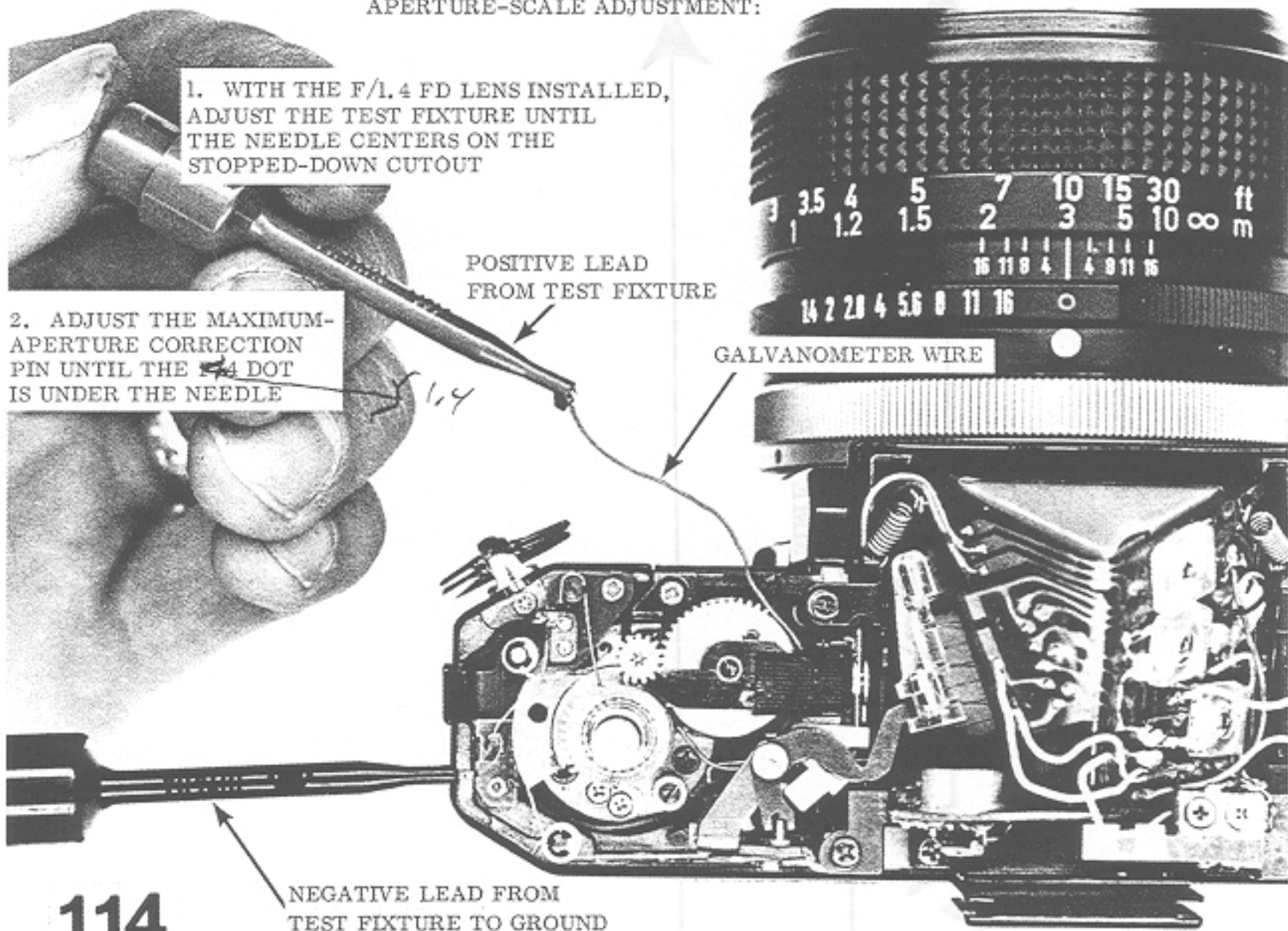
Set at Bulb



MILLIAMMETER

113

APERTURE-SCALE ADJUSTMENT:



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

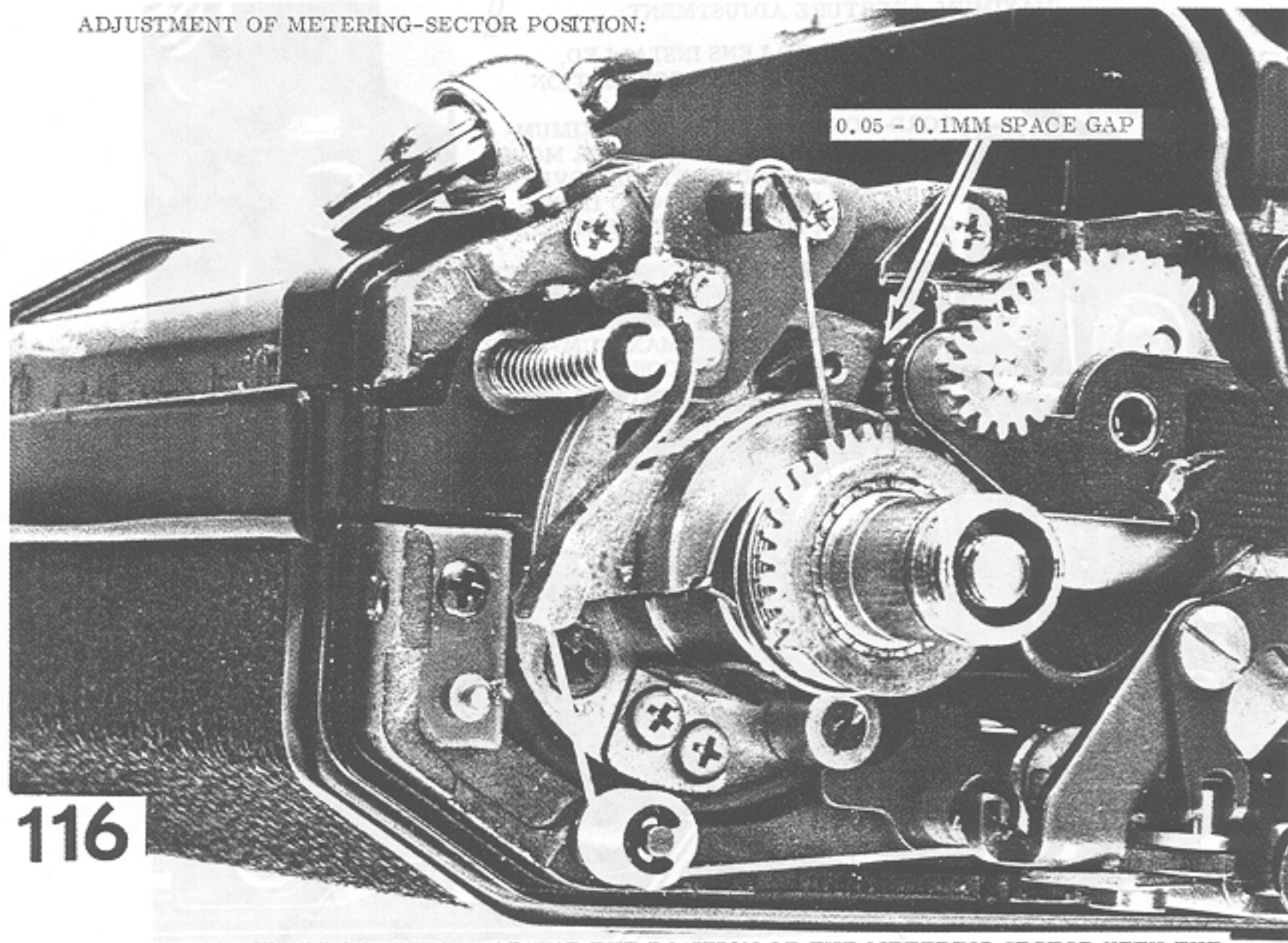
115

adjust maximum aperture

Lens on Sub for 2.8 lens

Lens off

ADJUSTMENT OF METERING-SECTOR POSITION:



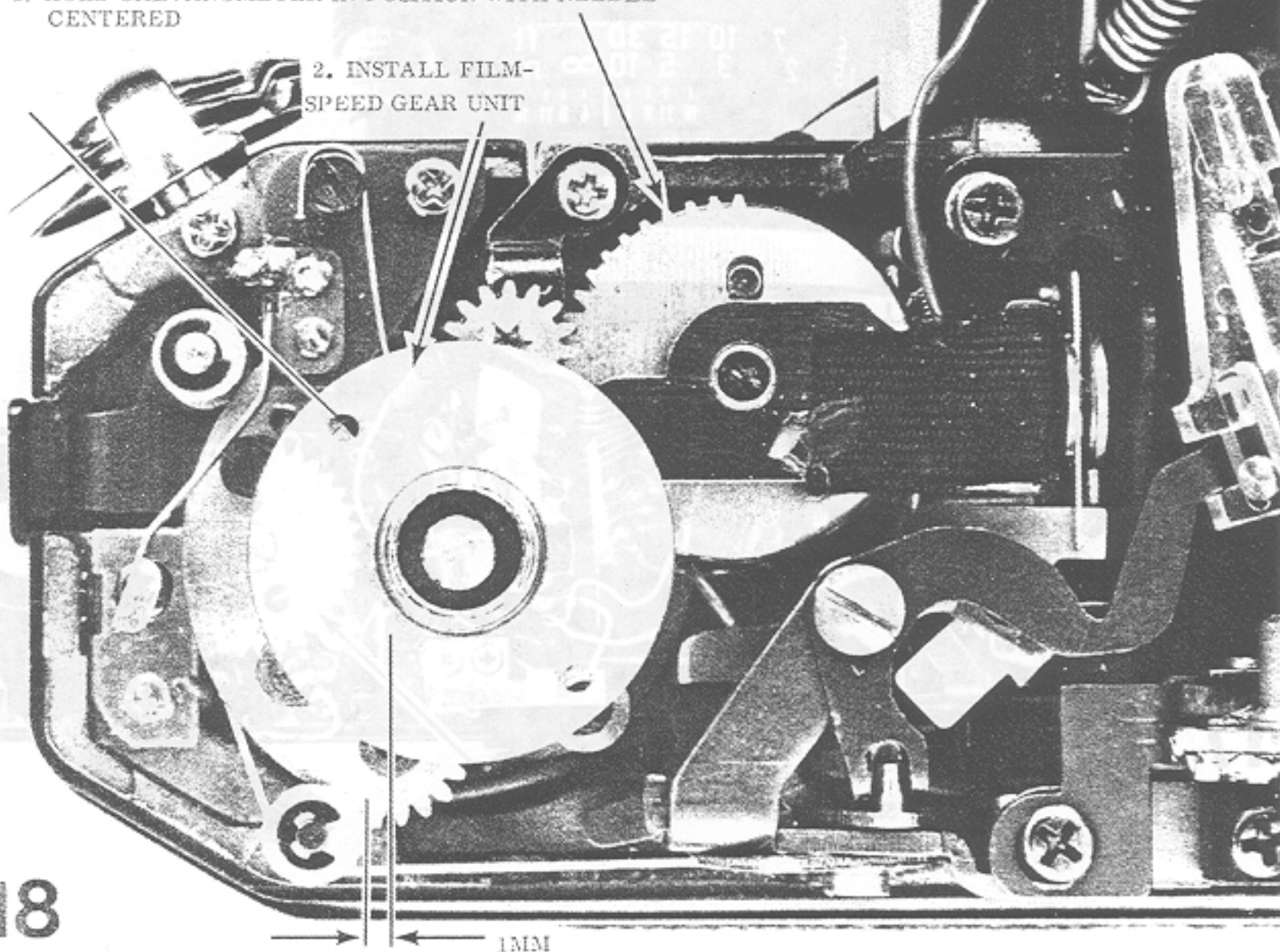
WITH THE SHUTTER SET TO "BULB," ADJUST THE POSITION OF THE METERING SECTOR WITH THE COUPLING CORD

adjust position of metering sector

MOUNTING OF FILM-SPEED GEAR UNIT (2)

1. HOLD GALVANOMETER IN POSITION WITH NEEDLE
CENTERED

2. INSTALL FILM-
SPEED GEAR UNIT



118

Mount film speed gear unit

No lens 12.5 12.00 18"
with lens 12 30 sec

MOUNTING OF FILM-SPEED GEAR UNIT (3)

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

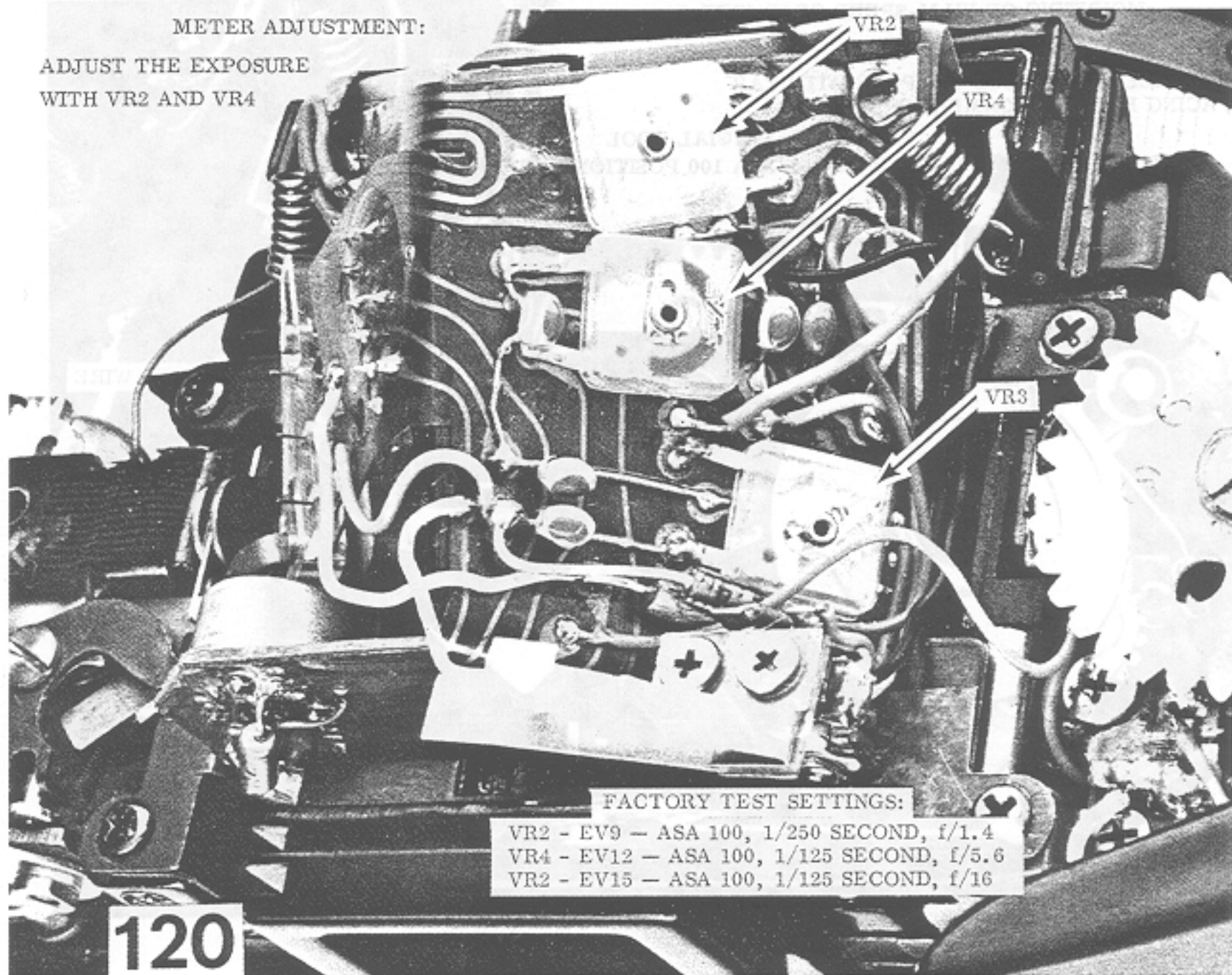
2. INSTALL SPECIAL TOOL
TO HOLD ASA 100 POSITION

3. RESOLDER GALVANOMETER WIRE

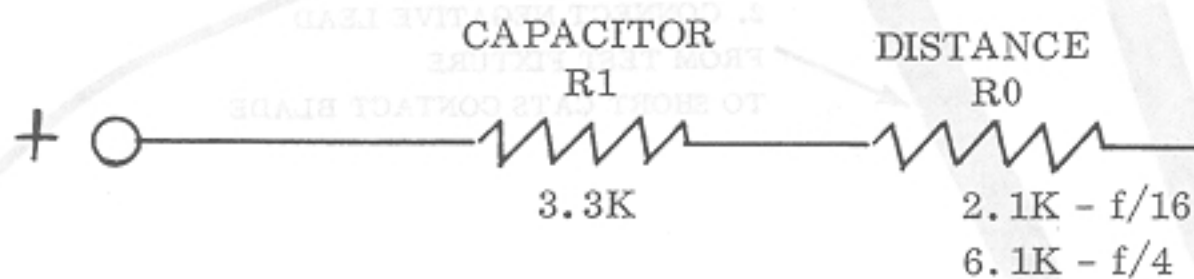
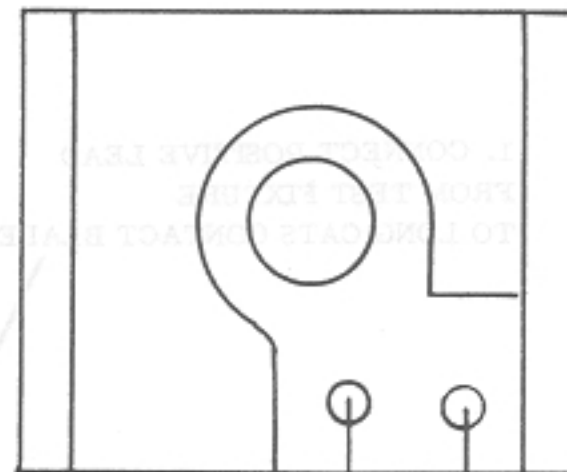
119

Insert film speed gear unit

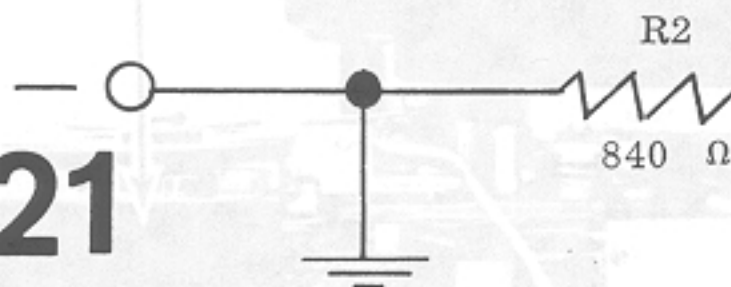
METER ADJUSTMENT:
ADJUST THE EXPOSURE
WITH VR2 AND VR4



EQUIVALENT CIRCUIT - SPEEDLIGHT 133D



0.7V



121

1. CONNECT POSITIVE LEAD
FROM TEST FIXTURE
TO LONG CATS CONTACT BLADE

SHUTTER-SPEED SETTING: 1/125 SECOND

2. CONNECT NEGATIVE LEAD
FROM TEST FIXTURE
TO SHORT CATS CONTACT BLADE

4. TURN CATS-NORMAL
SELECTOR TO
"CATS" POSITION

3. CONNECT
GROUND LEAD
TO CAMERA BODY

VR5

4. USE VR3 AND VR5 TO ADJUST CATS CIRCUIT TO f/4 AND f/16

122

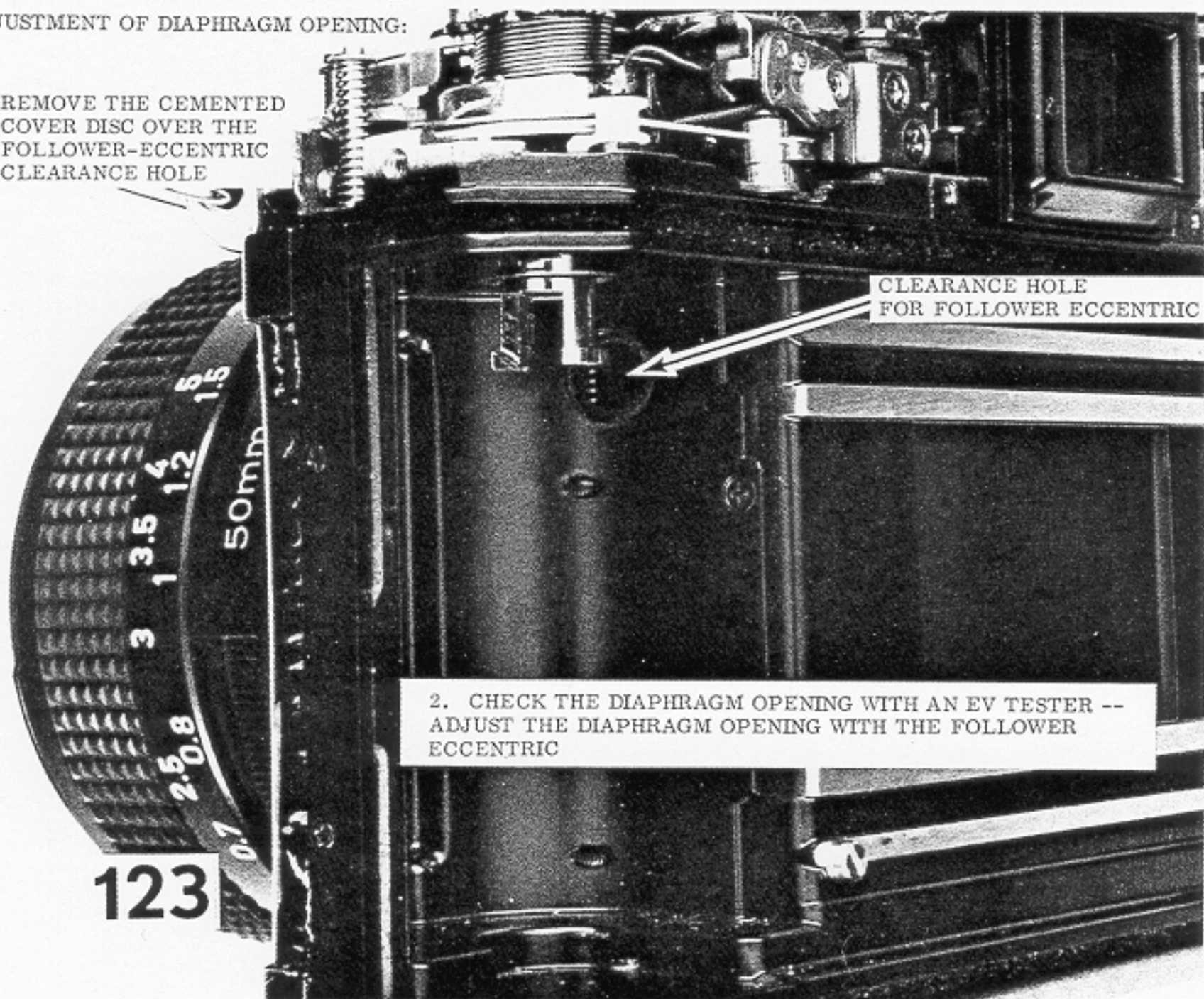
adjust cats circuit

VR3 - level adj. +4

VR5 - slope adj. +10

ADJUSTMENT OF DIAPHRAGM OPENING:

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



adjust diaphragm opening