15 TELETYPEWRITER

SPROCKET FEED, END-OF-LAST-FORM, AND PLATEN INDEXING MECHANISMS

REQUIREMENTS AND ADJUSTMENTS

CONTENTS

1. GENERAL

1.01 This section gives the requirements and adjusting procedures for the sprocket-feed mechanism, end-of-last-form indicating mechanism, and the platen-indexing mechanism. This section and the section covering general teletypewriter requirements provide the necessary information for the maintenance of these mechanisms.

1.02 Lubrication instructions for these mechanisms are covered in the section on 15 typing unit lubrication

2. SPROCKET-FEED MECHANISM REQUIREMENTS AND ADJUSTMENTS

2.01 Platen-roller Sprocket Rings should be firmly against the ends of the platen covering and should locate the paper so that the bottom of a typed line of letter N is 1/32 inch plus or minus 1/64 inch above a line tangent to the lower edge of the perforation in the paper as in Figure 1, or to type on a line to meet the requirements of the stationery used.

To Adjust: Reposition the sprocket rings. See Figure 1.

2.02 Left Pressure Roller should (1) rest against the platen when a wrench (.125 inch thick) is placed between the platen and the knurled surface of the right pressure roller, and (2) be located so that the center of its groove lines up with the center of the sprocket pins as in Figure 2 when the roller is at the midpoint of its end-play.

To Adjust: Reposition left pressure-roller lever. See Figure 2.

2.03 Right Pressure-roller Lever should have end-play not to exceed .002 inch and, when pressed against its spring collar, the center of the roller groove shall line up with the center of

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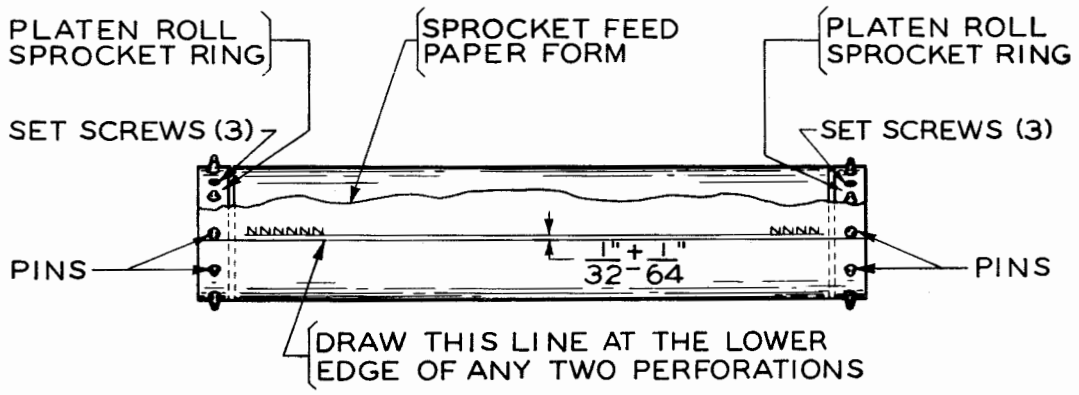

Figure 1

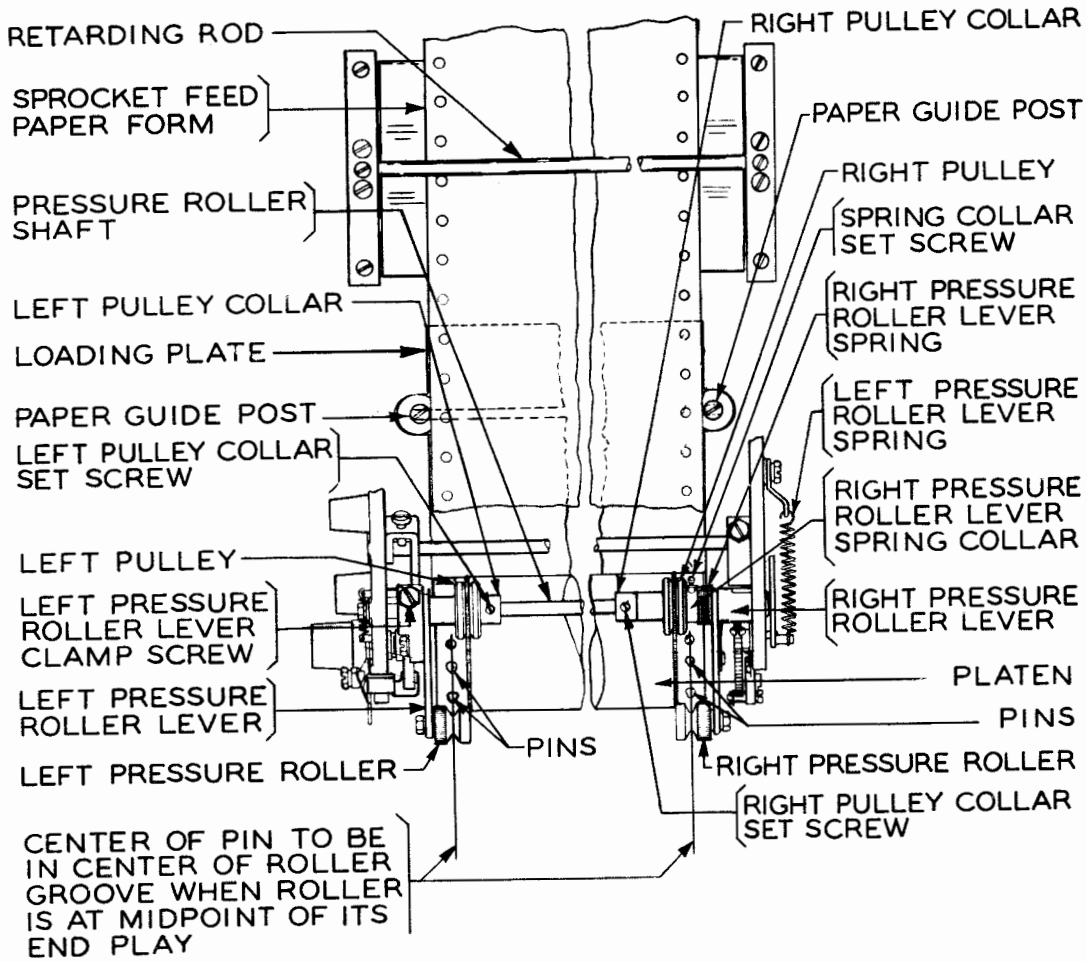

Figure 2

the sprocket pins as in Figure 2 when the roller is at the midpoint of its end-play.

To Adjust: Reposition right pressure-roller-lever spring collar. See Figure 2.

2.04 Left and Right Pressure-roller-lever Springs should have tensions of minimum 5 ounces, maximum 8 ounces measured at the left and right pressure bearing-screw nuts respectively, as in Figure 3, when their respective pressure rollers start to move from platen. See Figure 3.

To Adjust: Rotate right pressure-roller-lever spring collar on its shaft until tensions of both springs are within limits and then recheck 2.03.

Note: If tensions of springs cannot be brought within limits by adjusting right pressure-roller-lever spring collar replace left pressure-roller-lever spring.

2.05 Paper Carrier Belt Pulleys should have end-play not to exceed 0.010 inch.

To Adjust: Reposition pulley collars.

2.06 Wire Paper Stripper (an improved part superseding paper carrier belts of Figure 2 and Figure 3): There should be some clearance, not more than 0.020 inch, between the front projection of the strippers and the bottom of the platen groove when the rear projection is held against the platen groove.

To Adjust: Bend the strippers to meet the requirement.

2.07 Paper-stripper Locating Collars: There should be some clearance between the strippers and the rubber side of the grooves in the platen, when the strippers are held against their locating collars. Under these conditions there should also be some clearance between the strippers and the platen roll sprocket rings.

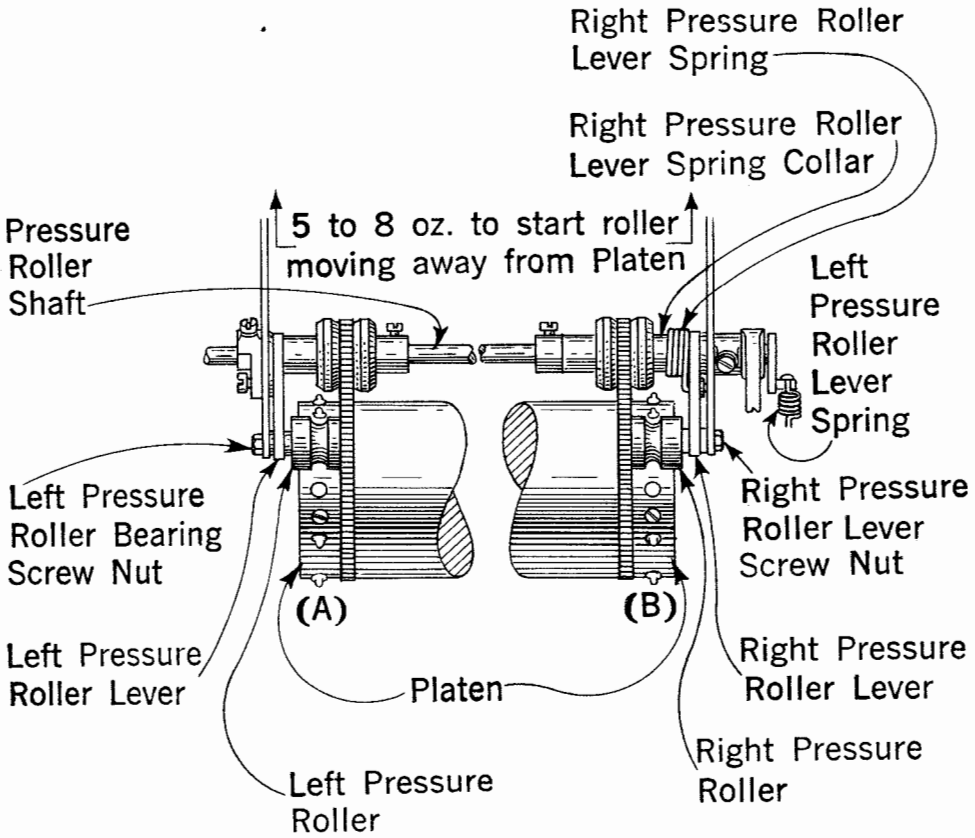

Figure 3

Check each stripper for one complete revolution of the platen.

To Adjust: Reposition the locating collars.

2.08 Left Margin: With the typebar carriage at the left end of the line and the carriage return clutch members fully engaged, the left end of the letter M should print 1/64 inch to 1/8 inch from the paper stripper groove adjacent to the left sprocket ring.

To Adjust: Turn the left margin adjusting screw in so that it will not interfere with positioning the carriage. Move the carriage to a position where the letter M will be printed at the left end of the line within the foregoing specified limits and engage the carriage return clutch by operating the dashpot lever to hold the carriage in this position. Make certain that the carriage return clutch members are fully engaged; then reposition the adjusting screw so that when the lock nut is slightly tightened to take up the end play in the threads, and a horizontal pull of 8 pounds, applied with a 12-pound scale at right angles to the curved surface 1/32 inch behind the margin adjusting screw, is exerted on the dashpot lever, there is a slight clearance of not more than 0.002 inch between the end of the screw and the dashpot lever. Turn the left margin adjusting screw one-sixth turn in a direction to eliminate this clearance and tighten the lock nut.

Note 1: The preceding adjustment applies to units having the new style dashpot levers. On units equipped with old style levers having a shoulder to the rear of the margin adjusting screw, a 10 pound pull instead of an 8 pound pull should be applied at right angles to the surface of the lever and just in front of the shoulder, when making the adjustment.

Note 2: When it is desired that the printing be located at a given point, with reference to a vertical line on the forms, the platen unit may be shifted as much as 0.030 inch to the left or right of its standard adjustment by means of its pilot screws, provided that care is taken to avoid interference by the platen with either side frame. If more than 0.030 inch is required, the printing point may be shifted 0.050 inch by shifting the spacing shaft gear one tooth with relation to the main shaft gear. To do this, place the carriage in its extreme left position, loosen the spacing shaft top bearing retaining plate, raise the spacing shaft until the gears are disengaged, turn the shaft clockwise one tooth, and re-engage the gears. Tighten the retaining plate mounting screws.

CAUTION: WHEN THE PRINTING POINT IS SHIFTED BY EITHER OR BOTH OF THE FOREGOING METHODS, RECHECK THE LEFT MARGIN ADJUSTMENT. ALSO MAKE CERTAIN THAT THE LINE FEED LINK AND THE SHIFT LINK DO NOT BIND.

2.09 Platen-friction Assembly should require a pull of minimum 14 ounces, maximum 16 ounces, applied as in Figure 4, to start the platen rotating when the pressure rollers are lifted off the platen, the line-feed detent-lever spring is unhooked, the platen-handle is placed vertically upward, and 1 to 3 copies of sprocket-feed paper forms are used. See Figure 4.

Note: When 4 to 6 copies are used, pull required should be minimum 10 ounces, maximum 12 ounces.

To Adjust: Reposition adjusting nuts of the friction assembly and replace the line feed detent lever spring and lower the pressure rollers against the platen.

Note: On units equipped with a handwheel in place of the platen crank, position the handwheel so that the 1/8-inch diameter hole is located vertically above the platen shaft. Hook the spring scale in the hole and pull horizontally toward the front of the typing unit. Under these conditions the preceding requirements should be met.

2.10 Right Margin: To check this requirement, refer to the section covering 15 typing unit requirements and adjustments.

Note: After all adjustments on the typing unit, base and keyboard have been made, place cover on teletypewriter.

2.11 Loading-plate Paper-guide Posts should just clear the edges of the forms. See Figure 2.

To Adjust: Reposition posts in slotted holes.

Note: Load teletypewriter with stationery as follows:

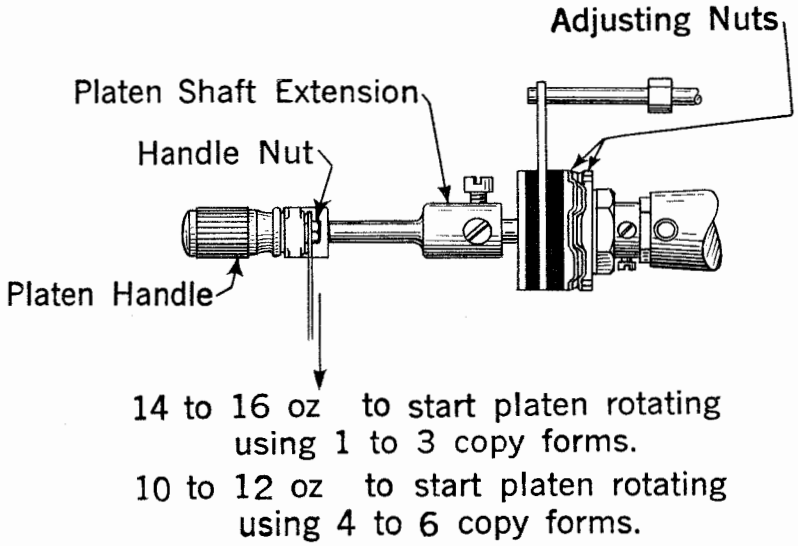

Figure 4

Stapled Forms: Set the container of forms on the floor or in the 15A paper box at the rear of the teletypewriter. With a paper clip near each edge of the leading form set to hold the several sheets together, thread the forms between the paper guide strip and the cover paper guide, through the slot in the rear of the cover, under the retarding rod on the typing unit, over the loading plate and push the leading edge under the platen. Standing at the right side of the machine, with the index finger of the left hand, press the leading edge of the forms to the platen at a point near the ribbon guide and turn the platen crank with the right hand until the forms have emerged sufficiently to pull them through. Lift the pressure rollers and set the forms on the sprocket pins. Lower the pressure rollers. Go to the rear of the machine and pull the form assembly down lightly to remove slack.

Loose Forms: Stationery in which sprocket holes are the sole means for maintaining alignment between the carbons and the several sheets requires different treatment for feeding through the machine. Forms of this type should not be fed from the floor but should emerge from the container which is at a height sufficient to bring the top just below the slot in the rear of the cover. These forms should feed into the cover over the top rounded portion of the cover guide plate, and instead of threading through the retarding rods, they should pass over them directly over the loading plate to the platen.

Special Forms: Some form assemblies are made up of combination loose and stapling design which may require different placement of the container. It is recommended that forms of special design be installed on a trial basis, cooperating with a representative of the stationery supplier under actual service conditions. If difficulty is encountered in securing satisfactory paper feed, the problem should be referred along the channels of organization.

2.12 Cover paper guide posts should just clear the edges of the forms when the sprocket pins are in the proper holes of the forms so as to hold the paper straight, and the slack in the forms is taken up by grasping them just below the paper guide. See Figure 5.

To Adjust: Reposition guide posts in cover paper guide. Recheck 2.11.

3. END-OF-LAST-FORM INDICATING MECHANISM REQUIREMENTS AND ADJUSTMENTS.

A. End-of-last-form Indicating Mechanism Mounted on Typing Unit

3.01 The TP115847 set of parts provides the 15 sprocket-feed typing unit with an alarm feature indicating when the end of the last form has reached the printing point. The alarm may be given in any one of numerous ways, by bell,

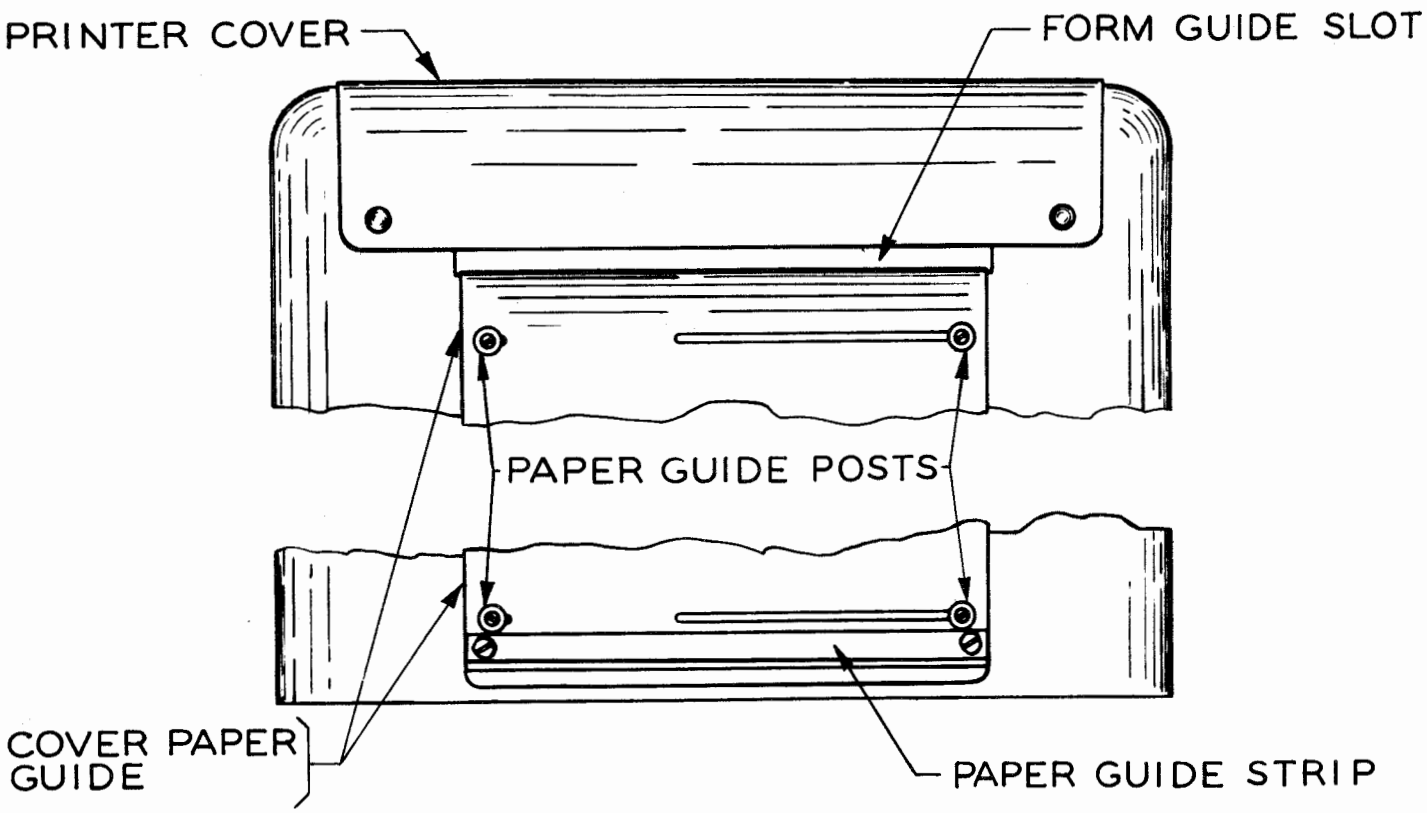

Figure 5

buzzer, or light. This set of parts consists essentially of a paper-out bail and a bracket on which is mounted a switch. The parts are designed so they can be attached to the right platen side frame. When the end of the last form clears the paper-out bail, the arm of the bail drops into a groove at the right end of the platen. The other end of the bail operates a switch which results in an alarm signal. An alarm signal also results when the pressure rollers are raised for the insertion of new forms. The switch may be wired to produce the alarm either by opening or closing an external circuit.

Note: A contact protection network should always be used where the TP124999 switch controls a dc circuit. In general, the protection should be connected across the load and the choice of the network to be used may be governed by the mounting arrangements available. The following networks are recommended for this purpose.

(a) For a Single Relay with a Resistance of 270 Ohms or Higher:

184A Network (510 ohms in series with 0.11 uf) or
185A Network (470 ohms in series with 0.11 uf)

(b) For a Single Relay with a Resistance of Less Than 270 Ohms or a Multiple Relay Load:

186A Network (120 ohms in series with 0.3 uf)

(c) For Heavier Loads:

177F Network (1000 ohms in series with 0.5 uf, or 1500 ohms in series with 0.5 uf)

3.02 Line-feed Detent-lever: To check this adjustment, refer to the section covering 15 typing unit requirements and adjustments.

3.03 Paper-out Bail: The vertical arm of the paper-out bail should drop freely into the platen groove.

To Adjust: Add or remove shims. See Figures 6 and 7.

3.04 Paper-out-bail Spring: The spring should be anchored in the center of the three holes in the bushing. See Figure 7.

3.05 Vertical-link-eccentric: See Figure 6.

END-OF-LAST-FORM INDICATING MECHANISM

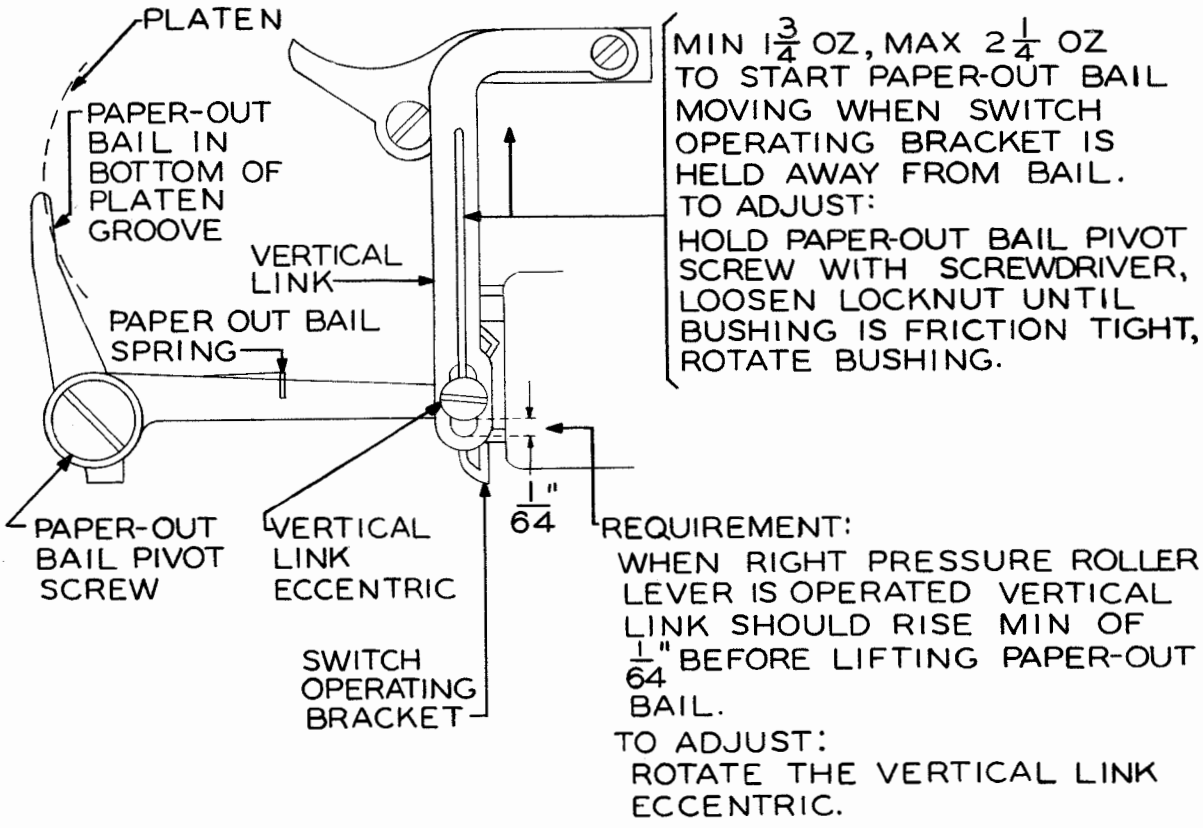

Figure 6

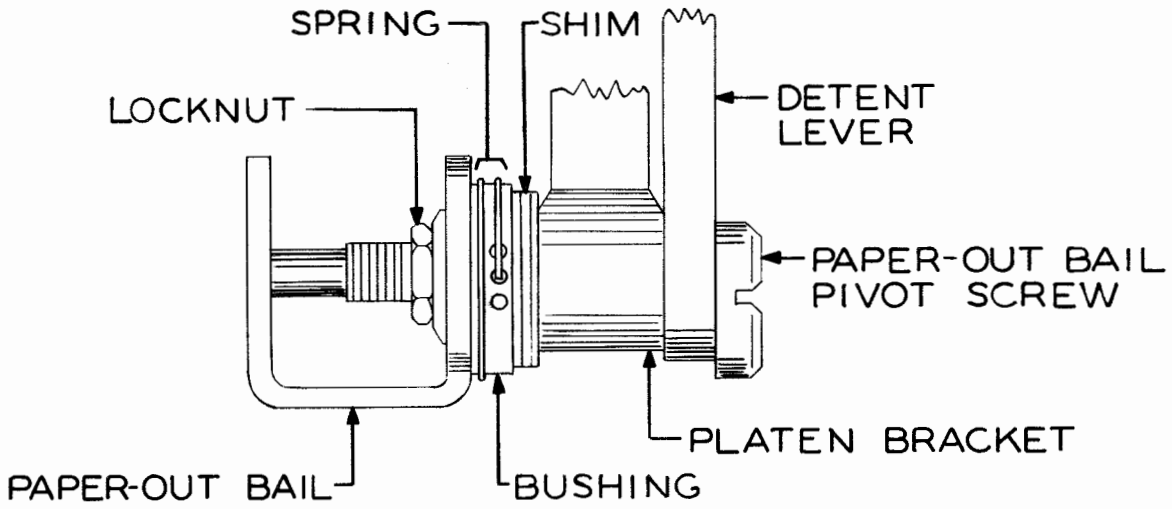

Figure 7

3.06 Switch Mounting-plate: When the vertical arm of the paper-out bail is on the outer paper surface, the bail camming surface should be on the flat of the switch-operating bracket and should push in the plunger to just operate the switch. The switch should be unoperated (plunger out) under either of two conditions:

(1) When the end of the last form clears the paper-out bail.

(2) When the pressure rollers are raised as for the insertion of new forms.

To Adjust: Loosen the switch-plate mounting-screws and position the plate.

Note: To prevent thin sheets of paper from tearing, the camming surface of the paper-out bail should never be below the peak of the projecting surface on the switch-operating bracket when the paper is in the machine.

B. End-of-last-form Indicating Mechanism Mounted on Teletypewriter Cover

3.07 Contact Spring Gap: There should be .010-inch to .020-inch clearance between the contacts.

To Adjust: Bend the short contact spring.

3.08 Contact Lever Spring Tension: Two to three ounces are required to move the lever out of the hole in the paper guide.

To Check: Apply a scale under the end of the contact lever and pull vertically at a right angle to the lever.

4. PLATEN-INDEXING MECHANISM REQUIREMENTS AND ADJUSTMENTS

4.01 Removable Gears: There should be a perceptible amount of backlash in the two outer gears.

To Adjust:

(1) Loosen the gear-adjusting-plate clamp-screw and rotate plate. See Figure 8.

(2) Retighten the clamp-screw.

Note: The backlash should be determined by holding the platen stationary and rotating the idler-gear-assembly. Check this adjustment for one full revolution of the larger removable gear.

4.02 Cam Clutch Torque: With the indent up and the left-hand stop-screw against the

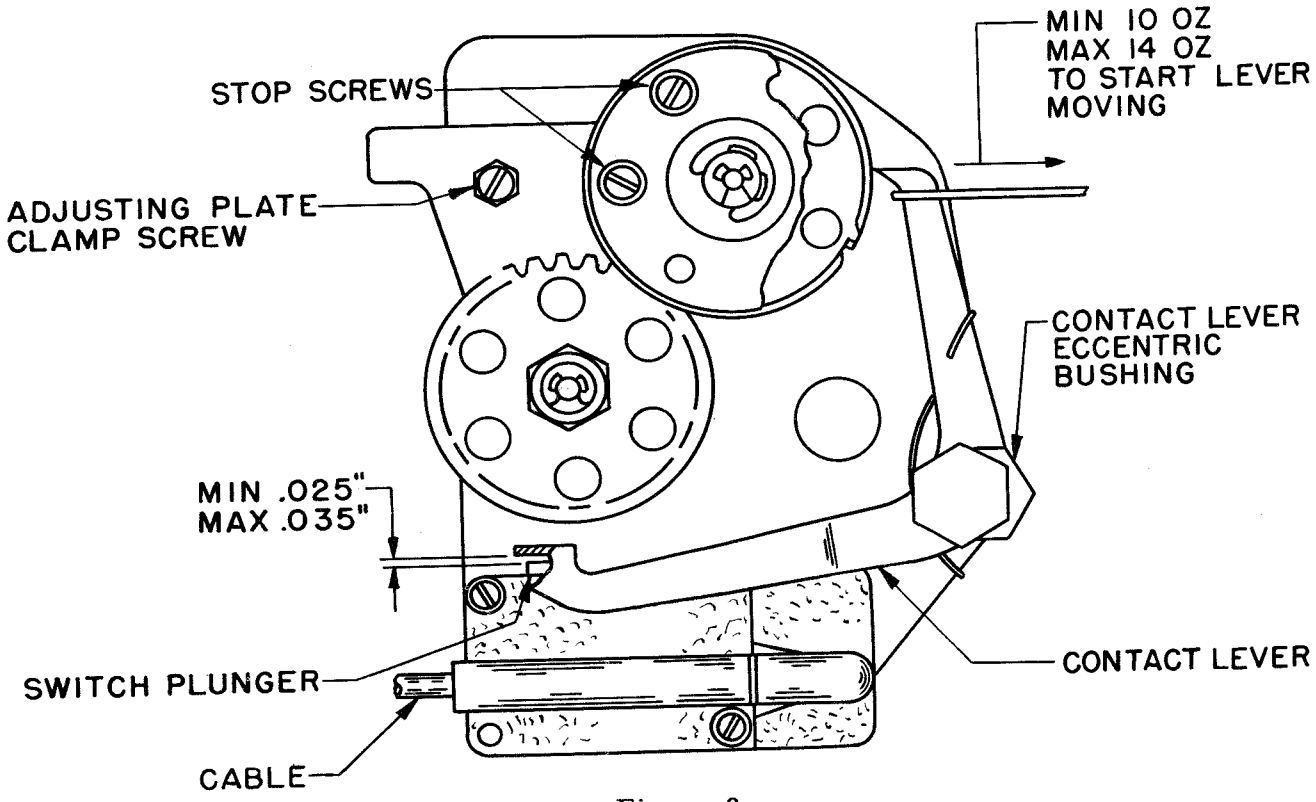

Figure 8

stop-pin, it should require minimum 44 ounces applied in a horizontal position at the drop-off point of the cam to rotate the cam counterclockwise.

To Adjust:

(1) Remove the two stop-screws from the thumb-wheel.

(2) Rotate the thumb-wheel counterclockwise until the cam surfaces are at the top (stop-pin at bottom).

(3) Hold the cam and rotate the thumb-wheel until it requires minimum 44 ounces tension to start the cam assembly rotating.

(4) Rotate the thumb-wheel clockwise (if necessary) until the first tapped hole passes the stop-pin.

(5) Mount the first stop-screw in this tapped hole.

(6) Recheck the minimum clutch torque requirement of 44 ounces.

(7) Mount the second stop-screw in the first tapped hole counterclockwise of the first stop-screw.

4.03 Contact-lever Spring Tension: With the contact lever on the high part of the cam, apply a scale to the contact lever just below the cam-following surface. When pulling in a horizontal direction, it should require minimum 10 ounces, maximum 14 ounces to start the lever moving. See Figure 8.