

*BS 774.799B*  
**1-TYPE MESSAGE TICKETER**

**PIECE-PART DATA AND REPLACEMENT PROCEDURES**

**1. GENERAL**

**1.01** This section covers the information necessary for ordering parts to be used in the maintenance of the 1-type message ticketer. It also covers approved procedures for replacing these parts.

**1.02** Part 2 of this section covers the piece-part numbers of the parts which it is practicable to replace in the field in the maintenance of the ticketers. No attempt shall be made in the field to replace parts not designated. Part 2 also contains explanatory figures showing the different parts. This information is called Piece-Part Data.

**1.03** Part 3 of this section covers the approved procedures for the replacement of the piece parts listed in Part 2. This information is called Replacement Procedures.

**2. PIECE-PART DATA**

**2.01** The figures included in this part show the various piece parts in their proper relation to other parts of the apparatus. The piece-part numbers of the various parts are given together with the names of the parts assigned by the manufacturer.

**2.02** When ordering piece parts for replacement purposes, give both the number and the name of the part. For example, TP-101686 holder. Do not refer to the section number or to any information shown in parentheses following the piece-part numbers.

**2.03** Information enclosed by parentheses ( ) is not ordering information. This information may be reference to notes, parts referred to in other portions of the section and not considered replaceable, or part names in general use in the field if these names differ from those assigned by the manufacturer.

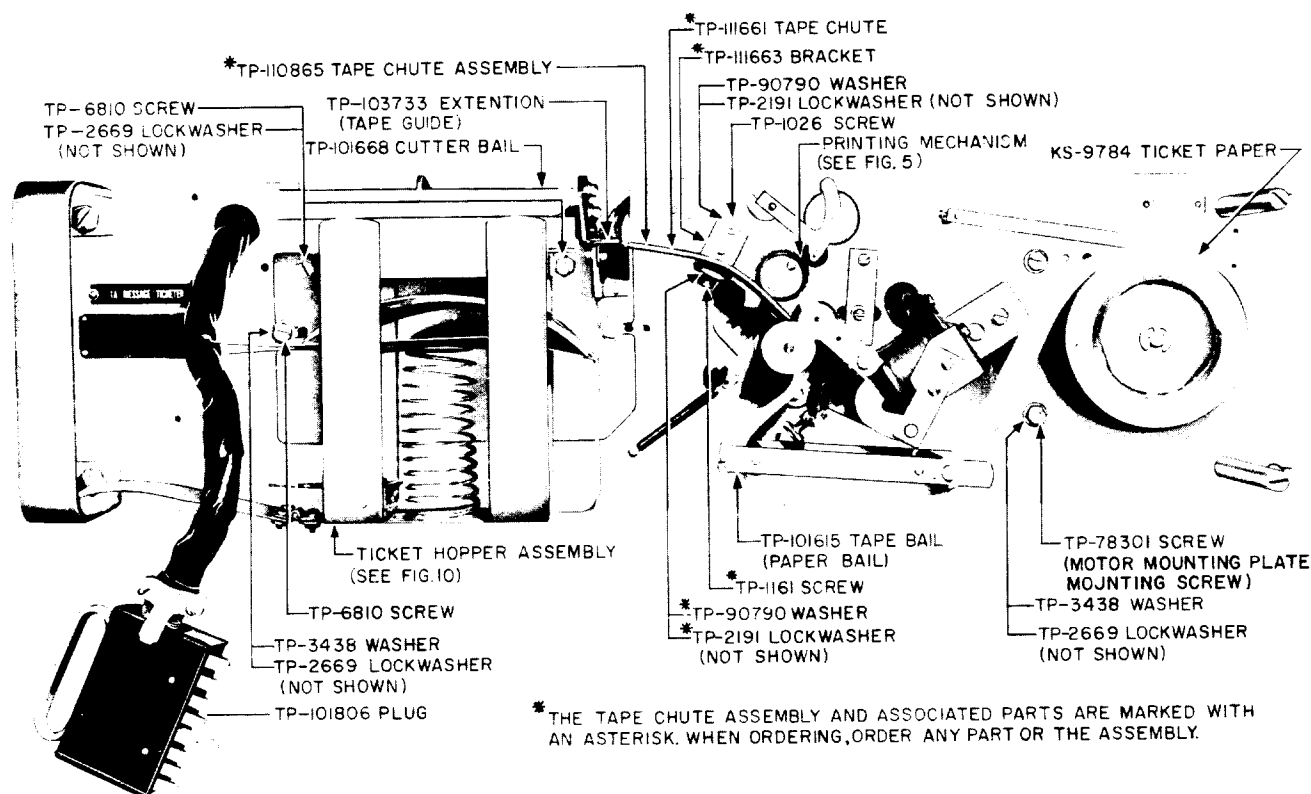


Fig. 1 — Front View of 1-Type Message Ticketer

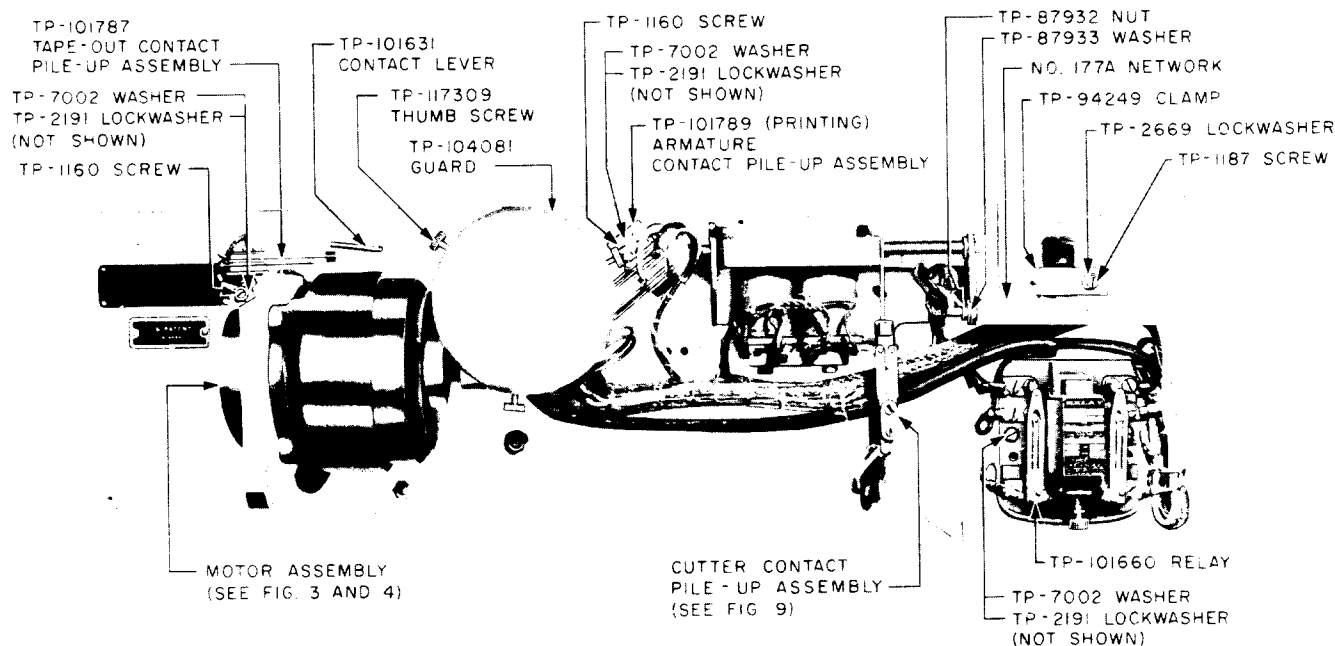


Fig. 2 — Back View of 1-Type Message Ticketer

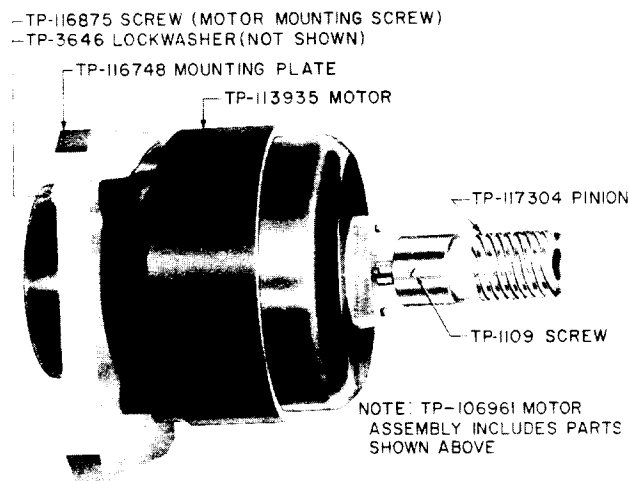


Fig. 3—Motor (without external thrust bracket)

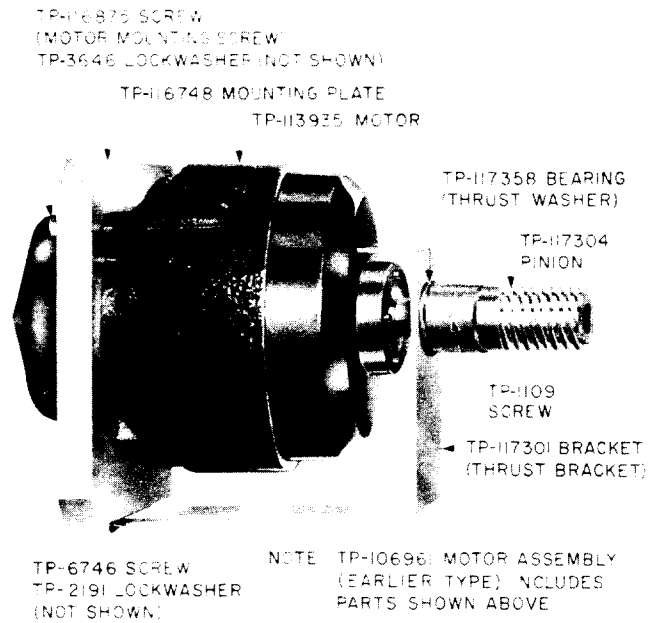


Fig. 4—Motor (with external thrust bracket) (earlier model)

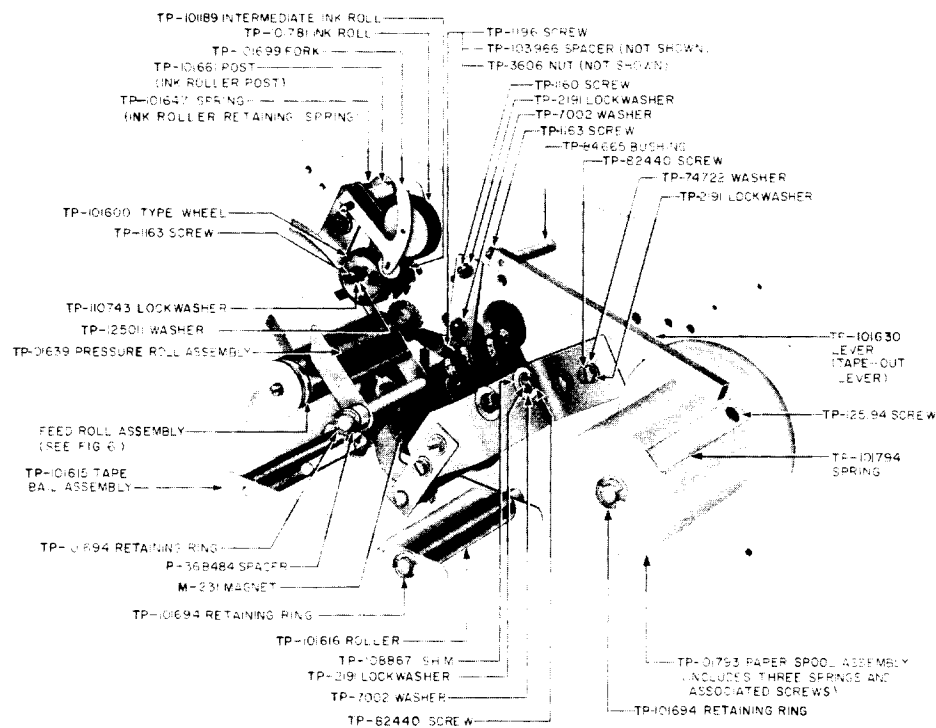


Fig. 5—Printing Mechanism (top view)

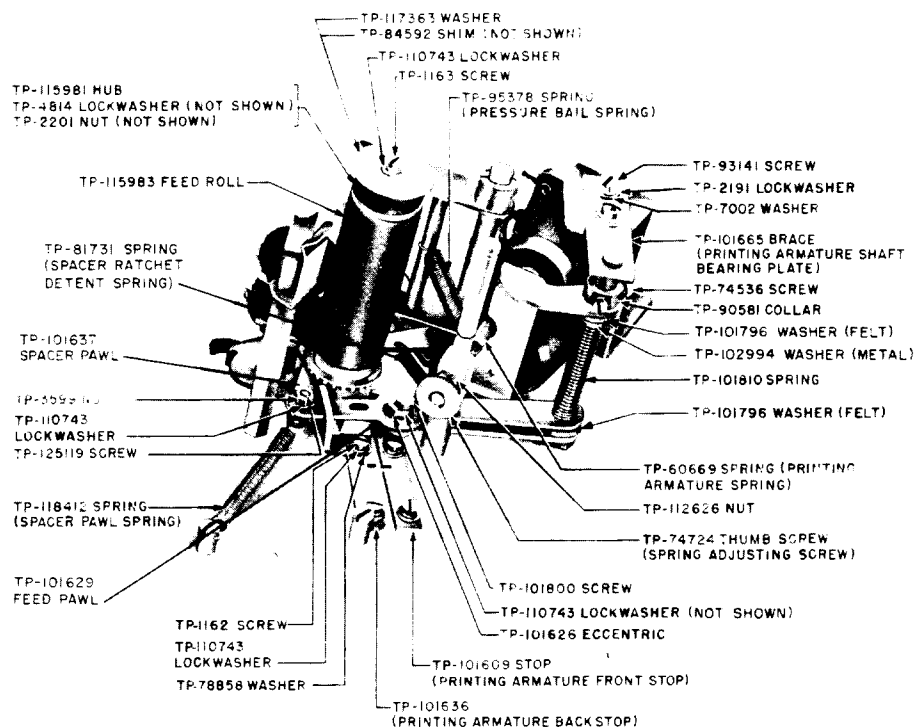


Fig. 6—Printing Mechanism (bottom view)

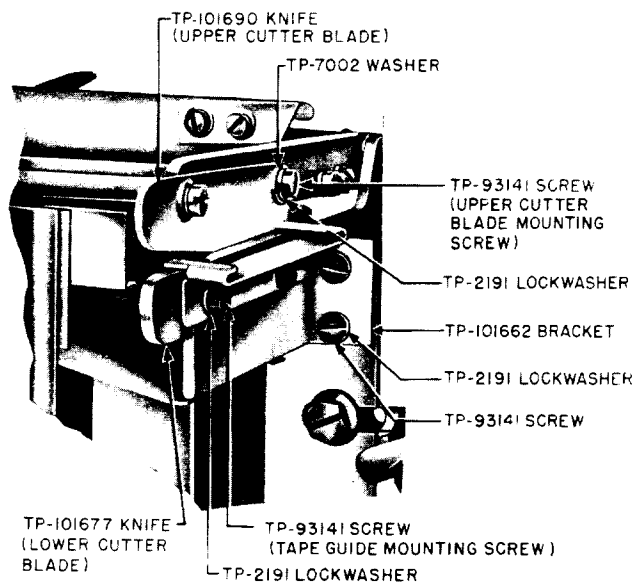


Fig. 7—Cutter Blade and Tape Guide

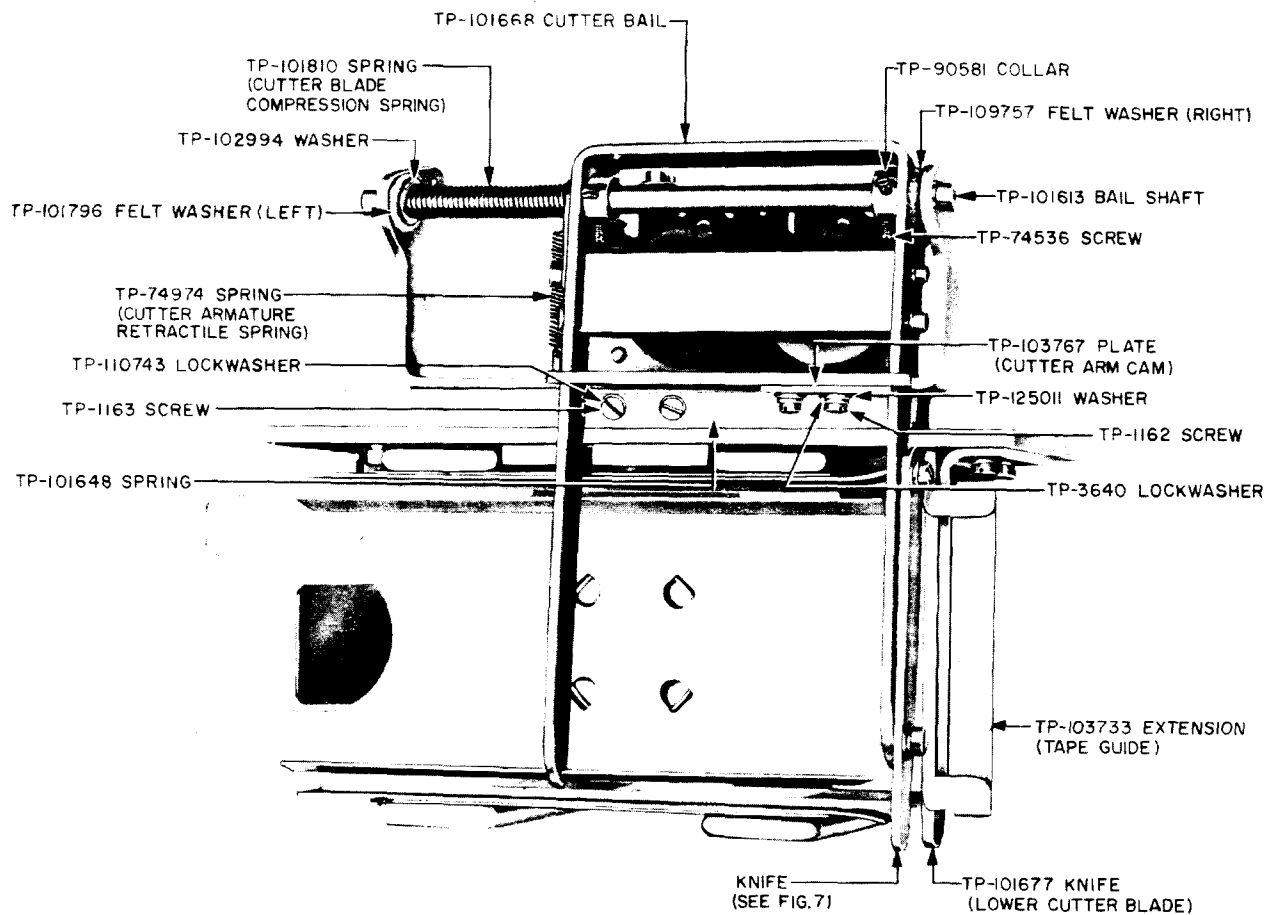


Fig. 8 – Cutter Bail and Associated Parts

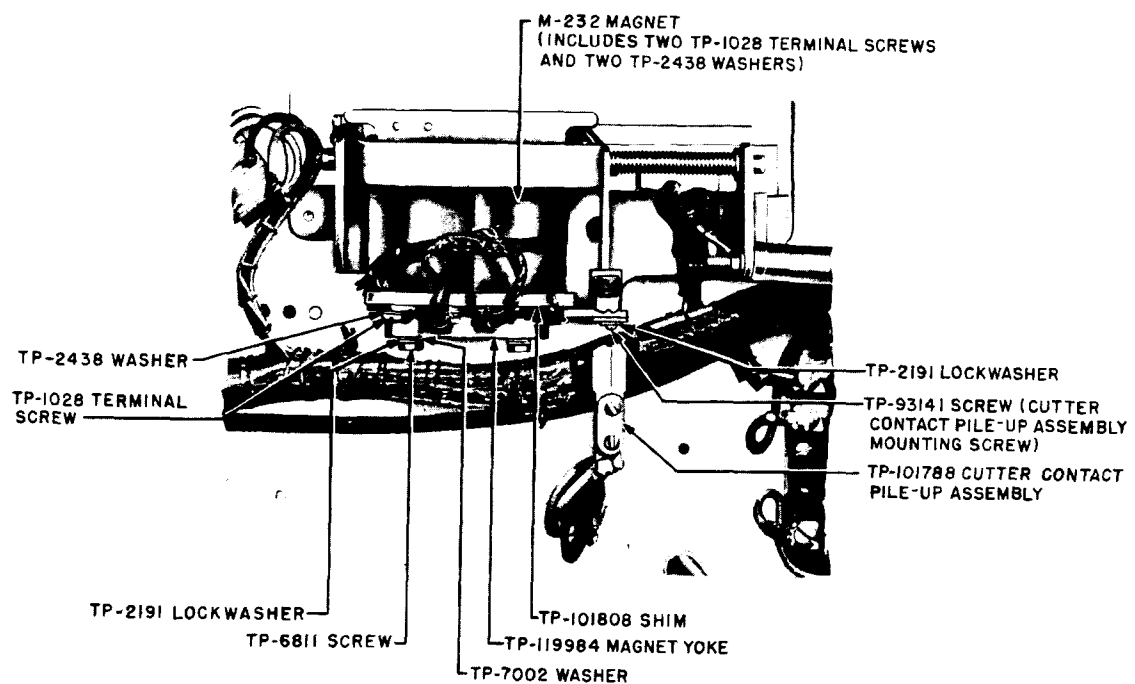


Fig. 9 – Cutter Magnets and Cutter Contact Spring Assembly

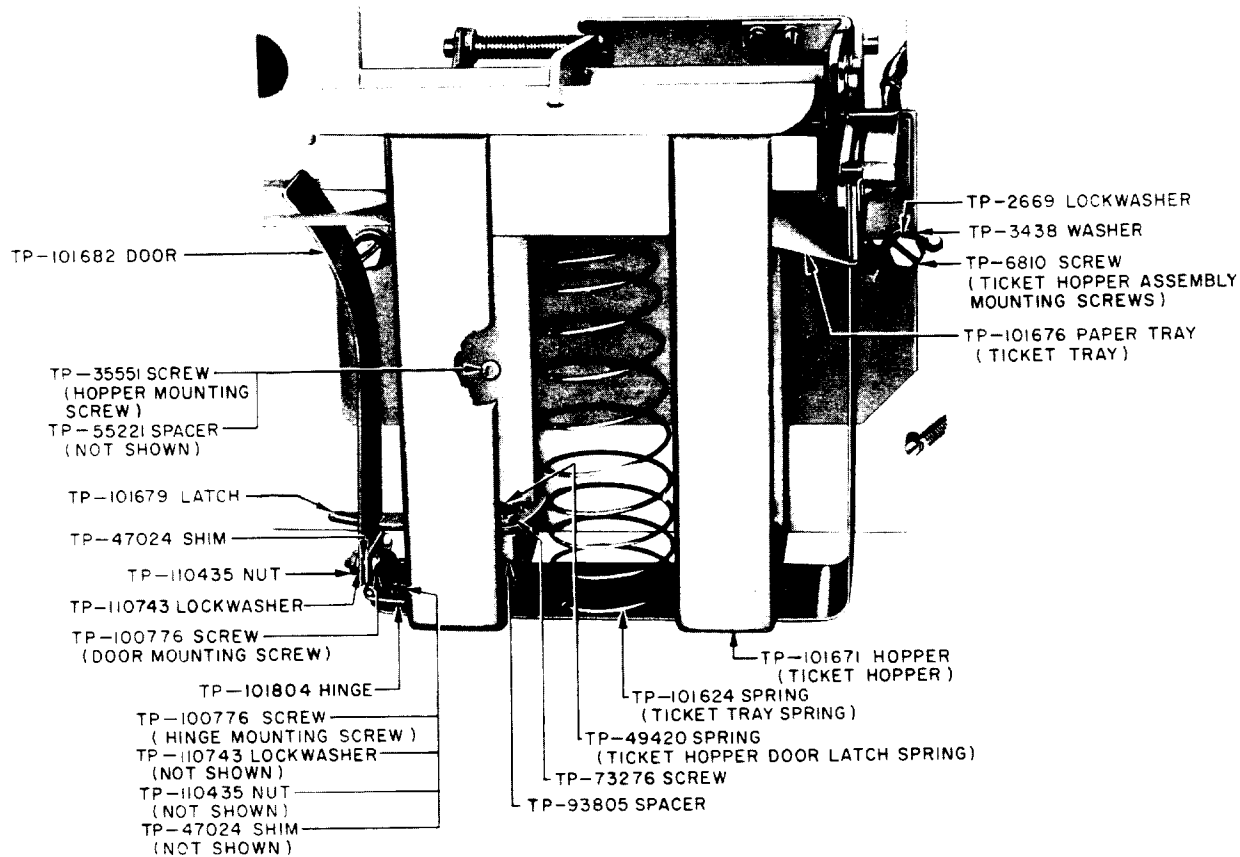
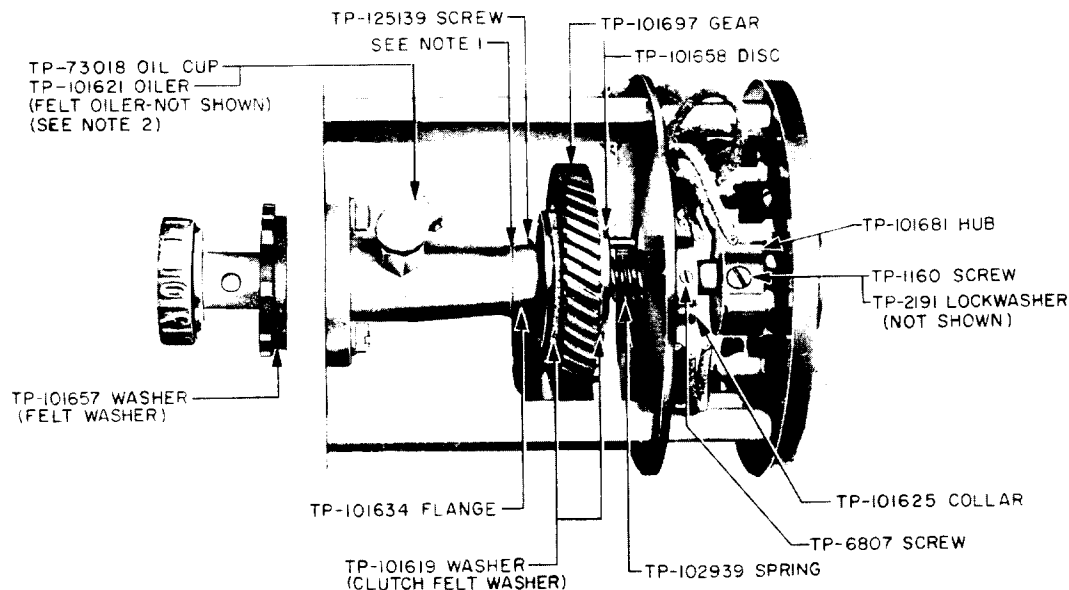
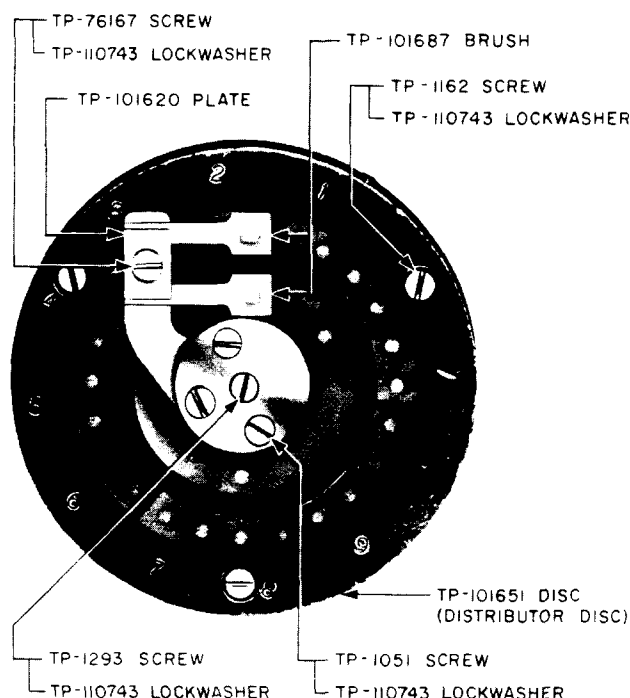


Fig. 10 — Ticket Hopper Assembly



- NOTES: 1. WHERE A SPACING WASHER IS PROVIDED ON THE INDEX WHEEL SHAFT BETWEEN THE FLANGE AND BEARING ORDER THE TP-35853 WASHER.
2. WHERE A LEATHER WASHER IS PROVIDED UNDER THE OIL CUP ORDER THE TP-74100 WASHER-LEATHER.

Fig. 11 — Index Wheel Shaft



**Fig. 12 – Distributor Disc Assembly and Brushes**

### 3. REPLACEMENT PROCEDURES

#### 3.01 List of Tools and Materials

CODE OR SPEC NO.	DESCRIPTION
<b>TOOLS</b>	
417A	Wrench
418A	Wrench
KS-6854	Screwdriver
KS-8511	Tweezers
—	E-25 Tru-arc Applicator
—	Long-Nose Pliers
—	3-Inch C Screwdriver
—	4-Inch E Screwdriver
—	7/16-Inch Thin Wall Socket
—	Wrench
<b>MATERIALS</b>	
KS-7470	Oil
—	Cream Soap, Old Town Corp., 1206 Maple Street, Los Angeles, California (or equivalent)

**3.02** Before proceeding with the replacement of parts, remove the Jones plug from its socket, remove the mounting screws, and remove the ticketer from the frame. Substitute another ticketer, if available.

**3.03** Care should be exercised when replacing any part not to damage the paper tape. If necessary, remove the tape. After the replacements have been made, remount the ticket paper as covered in 3.30(2) and (3).

**3.04** After making any replacement of parts of a message ticketer, the part or parts replaced shall meet the readjust requirements involved as specified in Section 030-360-701. Other parts, whose adjustments may have been disturbed by the replacing operations, shall be checked to meet the readjust requirements.

**3.05** No replacement procedures are specified for screws and other parts when the procedure consists of a simple operation.

**3.06** Ink which has adhered to the hands during these operations can be removed with Old Town Corp. Cream Soap. Care should be taken to avoid getting ink on clothing since it is extremely difficult to remove.

**3.07** If it is found necessary to cut any stitching or ties, restore to initial condition at completion of operation.

#### Printing Mechanism

#### 3.08 Pressure Roll Assembly and Pressure Bail Spring

(1) To replace the pressure roll assembly, disengage the end of the pressure bail spring from the bail shaft. Remove the retaining ring as follows. Lay the blade of the C screwdriver flat beside the ring so that its edge is against one or both points of the ring. Press the screwdriver toward the ring, causing the ring to spring off the post. Take care not to slip over the ring and damage any adjacent parts. If the ring fails to spring completely away from the post, press a corner of the screwdriver against one of the two points to remove the ring. Remove the spacer and the pressure roll assembly. Substitute the new pressure roll assembly on the shaft making sure that the teeth of the pressure roll ratchet mesh with the teeth of the feed roll gear. Remount the spacer. Remount the retaining ring as follows. Insert the ring in the recess of the

E-25 Tru-arc applicator with the points outward. Mount the ring in the grooved portion of the post by pushing it in place with the applicator. The ring will remain in place when the applicator is removed. Hook the end of the pressure bail spring in the groove of the bail shaft. Make sure that the other end of the spring is engaged in the groove of the post.

- (2) To replace the pressure bail spring, disengage the ends of the spring from the shaft and from the post with the KS-8511 tweezers or long-nose pliers. Substitute the new spring and hook one end in the groove of the shaft and the other end in the groove of the post.

### 3.09 Feed Roll

- (1) Remove the tape chute mounting screws using the 3-inch C screwdriver and remove the tape chute. Remove the feed roll mounting screw using the KS-6854 screwdriver. Disengage the end of the pressure bail spring from the post and swing the pressure roll away from the feed roll. Remove the feed roll assembly. Using the 7/16-inch thin wall socket wrench, remove the nut and associated lockwasher provided in the hub and remove the hub. Remove the feed roll from the shaft. Substitute the new feed roll and remount it on the feed roll shaft. Remount the hub, lockwasher, and nut and tighten the nut securely. Remount the feed roll assembly on the post so that the feed roll ratchet engages the spacer pawl and the spacer ratchet detent as shown in Fig. 13. Secure the roll in place with the mounting screw. Make sure when doing this that the two shims that were removed are between the hub and the washer.

- (2) Position the pressure roll next to the feed roll and hook the pressure roll bail spring in the groove of the post. Remount the tape chute securely with the mounting screws.

### 3.10 Spacer Pawl Spring and Spacer Ratchet Detent Spring:

To replace the spacer pawl spring or spacer ratchet detent spring, proceed as follows. Using the KS-8511 tweezers, disengage one end of the spring from the post and the other end from the spacer pawl or the spacer

ratchet detent as required. Substitute the new part as required. Hook one end of the new spring in the groove of the associated post and the other end in the spacer pawl or the spacer ratchet detent as applicable.

**3.11 Type Wheel:** To replace the type wheel, remove the ink roll fork and roll from the post. Remove the type wheel mounting screws and remove the type wheel. Substitute the new part. Remount the new type wheel on the shaft so that the No. 1 character on the type wheel is in alignment with the reference mark on the index wheel. See Fig. 13. Insert and tighten securely the mounting screws. Remount the ink roll fork and ink roll.

### 3.12 Ink Roll, Intermediate Ink Roll, and Ink Roll Retaining Spring:

Remove the ink roll fork and ink rolls from the post. If the retaining spring is to be replaced, remove the ink roll post with the 417A wrench and remove the post and retaining spring. Substitute the new spring. Remount the new retaining spring and post and tighten securely. If the ink roll or intermediate ink roll is to be replaced, substitute the new part as required. Remount the ink roll fork and ink rolls.

**3.13. Printing Magnets:** To replace the printing magnet, tag and unsolder the leads. Remove the magnet mounting screw using the 3-inch C screwdriver and remove the magnet and shims provided between the magnet and the

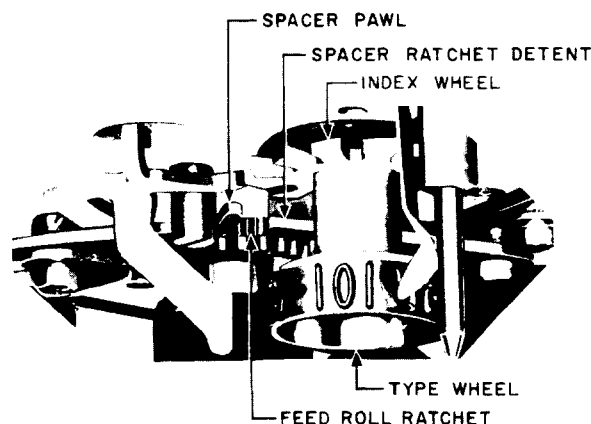


Fig. 13 — Spacer Pawl, Spacer Ratchet Detent and Feed Roll Ratchet



bracket. Substitute the new part. Hold the new magnet in position and slide the shims between the magnet and the bracket. Insert and tighten securely the mounting screw. Solder the leads to the proper terminals.

**3.14 *Printing Armature Spring:*** To replace the printing armature spring, disengage the ends of the spring with the KS-8511 tweezers from the armature and the spring adjusting screw. Substitute a new spring. Hook one end of the new spring in the armature and the other end in the spring adjusting screw.

**3.15 *Printing Armature Felts and Compression Spring***

(1) Remove the feed roll assembly as covered in 3.09. Using the KS-8511 tweezers, disengage the end of the printing armature spring from the armature and the spacer pawl spring from the stud. Remove the printing armature backstop mounting screws using the 3-inch C screwdriver and remove the backstop. After the replacements have been made as covered in (2), remount the parts in the reverse order of removal and tighten the mounting screws securely.

(2) Remove the printing armature shaft bearing plate mounting screws using the 3-inch C screwdriver and remove the bearing plate. Loosen the setscrews in the printing armature collar with the KS-6854 screwdriver and remove the collar. Remove the printing armature from the shaft, removing the first felt washer, metal washer, compression spring and the second felt washer. Make the necessary substitution of parts. However, if the felt washer is to be replaced, substitute the new felt washer after soaking it in KS-7470 oil. Remount the parts in the reverse order of removal tightening the screws securely.

**3.16 *Printing Armature and Tape-Out Contact Spring Assemblies:*** To replace the contact spring assembly, tag and unsolder the leads. Remove the mounting screws from the bracket using the 3-inch C screwdriver and remove the contact spring assembly. Substitute a new assembly. Remount the new contact spring assembly tightening the bracket mounting screws securely.

Connect and solder the leads to the proper terminals.

**3.17 *Paper Bail and Roller:*** To replace the paper bail or roller, remove the retaining ring as covered in 3.08(1) and remove the paper bail and roller from the post. Substitute the new part as required. Remount the parts making sure that the free end of the paper rests on the stud. Remount the retaining ring with the E-25 Tru-arc applicator as covered in 3.08(1).

**Distributor**

**3.18 *Index Wheel Shaft Felts and Gear***

(1) Loosen the tape chute bracket mounting screws with the 3-inch C screwdriver and position the chute to clear the index wheel. Remove the ink roll fork and roll. Loosen the three thumbscrews that secure the guard to the distributor disc. Remove the hub mounting screw and lockwasher using the 3-inch C screwdriver and remove the hub. Loosen the two setscrews in the collar with the KS-6854 screwdriver and remove the collar and spring from the shaft. Remove the oil cup with the 418A wrench. After the replacements have been made as covered in (2) and (3), remount the parts in the reverse order of removal and tighten the screws securely.

(2) Loosen the two setscrews in the flange with the KS-6854 screwdriver. Pull the index wheel shaft slowly out of the front of the mounting plate, removing the felt oiler, the disc, the first clutch felt washer, the gear, the second clutch felt washer, and flange as they become free. If the gear is to be replaced, substitute a new gear. If the clutch felt washer is to be replaced, substitute a new washer which has been soaked in KS-7470 oil. Where a washer is provided between the bearing and the flange and the washer is to be replaced, substitute a new washer. If the index wheel felt washer is to be replaced, proceed as covered in (3). Then remount the parts in the reverse order of removal and tighten the screws securely.

(3) If the index wheel felt washer is to be replaced, hold the pressure roll bail out of the way and pull the index wheel shaft

completely out of the mounting plate. Remove the washer and substitute a new felt washer soaked in KS-7470 oil. Mount it on the shaft. Hold the pressure roll bail out of the way and remount the index wheel shaft in the mounting plate.

**3.19 Distributor Brushes:** To replace the distributor brush, loosen the three thumbscrews that secure the guard to the disc and remove the guard. Loosen the distributor brush clamping screw with the KS-6854 screwdriver and remove the brush. Substitute a new brush and mount it in the groove in the distributor brush arm under the clamp. Tighten the clamping screw securely. Remount the guard and tighten the thumbscrews securely.

**3.20 Distributor Disc:** To replace the distributor disc, loosen the three thumbscrews that secure the guard to the disc and remove the guard. Remove the mounting screws from the hub with the 3-inch C screwdriver and remove the hub. Remove the mounting screws from the distributor disc with the KS-6854 screwdriver. Move the distributor to a position convenient for unsoldering the wires. Tag and unsolder the leads. Substitute the new part. Connect and solder the leads to the proper terminals. Remount the new distributor disc and insert and securely tighten the screws. Remount and securely tighten the hub. Remount the guard and tighten the thumbscrews securely.

#### Cutter Mechanism

**3.21 Cutter Magnet Contact Spring Assembly:** To replace the contact spring assembly, tag and unsolder the leads. Remove the mounting screws and lockwashers from the bracket using the 3-inch C screwdriver and remove the contact spring assembly. Substitute the new part. Remount the new contact spring assembly with the bracket mounting screws. Tighten the screws securely. Connect and solder the leads to the proper terminals.

**3.22 Cutter Magnets:** To replace the cutter magnet, tag the leads and remove the terminal screws and washers using the 3-inch C screwdriver. Remove the mounting screw, lockwasher, and washer from the magnet mounting

bracket using the 3-inch C screwdriver. Remove the magnet and shims where provided. Substitute the new part. Where shims are provided, insert them between the magnet and the mounting bracket. Insert and tighten securely the screw. Remount the leads, terminal screws, and washers on the proper terminals. Tighten the terminal screws securely.

**3.23 Cutter Armature Retractable Spring:** To replace the retractile spring, disengage the ends of the spring from the stud and the lever with the KS-8511 tweezers. Substitute the new spring and hook it in the holes of the stud and lever.

**3.24 Cutter Blade Compression Spring and Cutter Shaft Felts:** To replace the compression spring or felt washers, loosen the setscrews in both cutter arm collars with the KS-6854 screwdriver. If the compression spring or associated felt washer is to be replaced, slide the shaft through the cutter bail and bracket toward the distributor, removing the felt washer, metal washer, and compression spring as they become free. Substitute the new part as required and replace the parts on the shaft in the reverse order of removal. Make sure before remounting the new felt washer that it is soaked in KS-7470 oil. Remount the shaft. If the felt washer provided between the cutter bracket and the cutter bail is defective, slide the shaft through the cutter bail and bracket toward the network, removing the felt washer as it becomes free. Substitute the new felt washer soaked in KS-7470 oil. Remount the new felt washer on the shaft and remount the shaft. Tighten the cutter arm collar setscrews securely.

#### 3.25 Cutter Blades and Tape Guide

(1) To replace the upper cutter blade, remove the upper cutter blade mounting screws using the 3-inch C screwdriver and remove the blade. Substitute the new part. Hold the new upper cutter blade in position on the cutter arm and insert the screws. Tighten the screws securely.

(2) To replace the lower cutter blade or tape guide, proceed as follows. Remove the tape chute mounting screws using the 3-inch

C screwdriver and remove the tape chute. Remove the tape guide mounting screws with the 3-inch C screwdriver and remove the tape guide and blade. Substitute the new part as required. Place the guide and blade in position on each side of the mounting bracket so that the holes in the guide and blade line up with the holes in the bracket and insert and securely tighten the tape guide mounting screws. Remount the tape chute and tighten the mounting screws securely.

**3.26 Ticket Tray Spring:** To replace the ticket tray spring, remove it from the lugs of the ticket tray and bracket using the long-nose pliers. Substitute the new spring and remount it securely.

**3.27 Ticket Tray:** To replace the ticket tray, proceed as follows. Remove the ticket tray spring as covered in 3.26. Remove the two cutter bail mounting screws and washers from the ticket hopper mounting plate using the 4-inch E screwdriver. Remove the two ticket hopper assembly mounting screws using the 4-inch E screwdriver and remove the ticket hopper assembly. Place the ticket hopper with the mounting plate uppermost. Remove the four ticket hopper mounting screws using the 4-inch E screwdriver and remove the mounting plate. Take care not to lose the four spacers provided between the mounting plate and the ticket hopper. Notice the position of the ticket tray before removing it. Substitute the new part. Remount the new ticket tray. Position each spacer over the hole in the ticket hopper. Carefully remount the ticket hopper mounting plate with the countersunk holes uppermost and so that the holes in the mounting plate line up with the holes in the spacers and in the ticket hopper. Insert and tighten securely the four screws. Remount securely the ticket tray spring using the long-nose pliers. Hold the ticket hopper assembly in position on the message ticketer mounting plate and insert the ticket hopper assembly mounting screws, lockwashers, and washers, but do not tighten. Hold the cutter bail in position so that the threaded holes in the cutter bail bracket line up with the holes in the ticket hopper mounting plate. Insert and tighten securely the cutter bail mounting screws and lockwashers. Tighten the ticket hopper assembly mounting screws securely.

**3.28 Ticket Hopper Door Latch Spring:** To replace the door latch spring, disengage the ends of the spring from the latch and the stud with the KS-8511 tweezers. Substitute the new spring and hook one end in the hole in the latch and the other end in the groove in the stud.

### **3.29 Ticket Hopper Door and Hinge**

(1) To replace the ticket hopper door, remove the door mounting screws with the 3-inch C screwdriver while holding the nuts using the 417A wrench. Substitute the new door. Insert the mounting screws through the hinge, shims, and door. Securely tighten the lockwasher and nut.

(2) To replace the hinge, remove the ticket hopper door as covered in (1). Remove the hinge mounting screws using the 3-inch C screwdriver and the 417A wrench. Substitute the new hinge. Remount the hinge and ticket hopper door as covered in (1).

### **Paper Roll**

#### **3.30 Ticket Paper**

(1) To replace the ticket paper, remove the paper roll and pull out the free end of the tape which is threaded around the paper bail, feed roll, and tape chute.

(2) Substitute the new roll of KS-9784 ticket paper. Mount the roll on the tape reel so that the tape is fed over the top of the roll toward the printing mechanism and the tape-out lever rests on the roll.

(3) Loop the free end of the tape under the two rollers on the feed bail. Slightly raise the pressure roll and feed the tape over the paper feed roll. Make sure that the edge of the tape nearest the message ticketer mounting plate is between the feed roll and the eccentric. Then while holding the pressure roll raised, slide the tape between the lips of the tape chute. Take care in doing this that the tape is threaded under both lips nearest the mounting plate. Thread the tape along the entire length of the tape chute and tape guide and along the entire length of the ledges of the ticket hopper. Restore the pressure roll to

its normal position. After the tape has been threaded in place, take care that the tape does not snag on any of the projections of the unit. If the paper does snag, remove the paper from this position and permit it to assume a natural position over the rollers and between the lips of the chute and guide.

#### Motor and Associated Parts

**Caution:** *Operate motor only when the message ticketer is in the upright position in order to avoid loss of the permanent lubricant.*

#### 3.31 Motor (without external thrust bracket) and Motor Pinion

(1) To replace the motor or pinion, proceed as follows. Using the 4-inch E screwdriver, remove the motor mounting plate mounting screw from the bottom of the motor mounting plate and loosen the mounting screw at the top of the motor mounting plate. Loosen the setscrews in the motor pinion using the KS-6854 screwdriver. Swing the motor and mounting plate assembly in a clockwise direction away from the distributor and remove the motor pinion.

(2) If the pinion is to be replaced, substitute the new pinion and proceed as covered in (4).

(3) If the motor is to be replaced, remove the motor mounting screws using the 4-inch E screwdriver and remove the motor. Substitute the new motor. Mount it in position on the motor mounting plate and insert and tighten securely the motor mounting screws.

(4) Remount the pinion on the motor shaft.

Swing the motor and mounting plate assembly counterclockwise to its original position. Insert the motor mounting plate mounting screw at the bottom of the motor mounting plate and tighten both screws securely. Shift the position of the pinion on the shaft so that the center of the pinion gear teeth engages the index wheel shaft gear and so that the end of the pinion clears the adjacent distributor disc mounting post by minimum 0.020 inch. Then tighten both setscrews securely.

#### 3.32 Motor (with external thrust bracket), Motor Pinion, and Thrust Washer

(1) To replace the motor, pinion, or thrust washer, proceed as covered in 3.31(1).

(2) Remove the thrust washer from the pinion. If the pinion is to be replaced, substitute the new pinion. If the thrust washer is to be replaced, substitute the new washer soaked in KS-7470 oil. Then proceed as covered in (4).

(3) If the motor is to be replaced, remove the thrust bracket and the motor mounting screws using the 4-inch E screwdriver. Remove the thrust bracket from the motor shaft and remove the motor. Substitute the new motor. Mount it in position on the motor mounting plate and insert and tighten securely the motor mounting screws. To remount the thrust bracket, proceed as follows. Hold the bracket in position as shown in Fig. 4 so that the hole for the motor shaft is as concentric as possible to the shaft and the formed end rests against the motor dust cap. Then insert the thrust bracket mounting screws but do not tighten. Loosen the pinion setscrews and slide the pinion on the shaft until it rests against the bracket. Shift the bracket so that it rests flat against the end of the surface of the pinion at all points. While holding the bracket in this position, tighten the thrust bracket mounting screws securely. Remove the motor pinion from the shaft.

(4) Remount the thrust washer on the pinion.

Remount the motor pinion on the shaft so that there shall be perceptible clearance between the thrust washer and the bracket, but this clearance shall not exceed 0.002 inch when the motor is operated without load. To check this requirement, tighten both pinion set screws securely. Tighten securely the motor mounting plate mounting screw at the top of the motor mounting plate and operate the motor at no load. After the requirement is met, loosen the motor mounting plate mounting screw at the top of the motor mounting plate.

(5) Swing the motor and mounting plate assembly counterclockwise to its original position. Insert the motor mounting plate

mounting screw at the bottom of the motor mounting plate and tighten both screws securely.

**3.33 Motor Start Relay:** To replace the motor start relay, tag and remove the leads from the terminals with the 3-inch C screwdriver. Remove the mounting screws with the 3-inch C screwdriver and remove the relay. Substitute the new part. Remount the relay in position and insert and tighten securely the mounting screws. Connect the leads to the proper terminals and tighten the screws securely.

#### **Miscellaneous Parts**

**3.34 Filter Network:** To replace the 177A network, tag and unsolder the leads. Remove the nuts with the 417A wrench and remove the network. Substitute the new part. Remount the network and remount the nuts. Connect and solder the leads to the proper terminals.

**3.35 Howard B. Jones Plug:** To replace the plug, proceed as covered in Section 032-545-701.