BULLETIN 280B VOL. 1

TECHNICAL MANUAL MODEL 35
AUTOMATIC SEND-RECEIVE TELETYPEWRITER SET (ASR)



280B VOLUME 1

INTRODUCTION

Bulletin 280B is a technical manual that provides general and specific technical information about the Model 35 Automatic Send-Receive Teletypewriter Set and its component units.

The Bulletin is made up of two volumes. Volume 1 contains descriptions and principles of operation, installation, service and maintenance, lubrication, and disassembly and reassembly. Volume 2 contains adjustments.

Each volume is made up of a group of appropriate independent sections. The sections are complete within themselves; they are separately identified by title and section number and the pages of each section are numbered consecutively, independent of other sections.

The identifying number of a section, a 9-digit number, appears at the top of each page of the section, in the left corner of left-hand pages and the right corner of right-hand pages. The sections are placed in the manual in ascending numerical order.

To locate specific information refer to the table of contents on the following page. Find the name of the involved component in column one and the title of the section in column two. The correct 9-digit section number will then be found in column three. Turn to page one of the section indicated, where the contents of that section will be found (except where a section is small and does not require a listing of contents).

The sections comprising this bulletin are now stocked separately and may be individually ordered if the entire bulletin is not needed.

TABLE OF CONTENTS

FILING INSTRUCTIONS

- 1. The following filing instructions apply to changes sent to the field.
- 2. Asterisks (*) in the table of contents indicate changes.
- 3. When the issue of a section changes, replace the old issue with the attached new one.
- 4. In the case of addendums, turn to the affected section and follow the instructions on the first page of the attached addendum.
- 5. Replace the old table of contents with this new one.

Note: For information on motor units, see Bulletin 295B.

Equipment	Title	Section	Issue
Teletypewriter Set (ASR)	Description and Operation	574-202-100 TC	3
Typing Unit (LP) Typing Unit (LP) Typing Unit (LP)	Description and Operation	574-220-100 TC	4
	Lubrication	574-220-701 TC	4*
	Disassembly and Reassembly	574-220-702 TC	1
Keyboard (LAK)	Description and Operation	574-222-100 TC	5
Keyboard (LAK)	Lubrication	574-222-701 TC	4
Keyboard (LAK)	Disassembly and Reassembly	574-222-702 TC	1
Transmitter-Distributor Base (LCXB)	Description and Operation	574-223-100 TC	3
Nontyping Reperforator (LRPE)	Description and Operation	574-224-100 TC	3
Nontyping Reperforator (LRPE)	Lubrication	574-224-701 TC	5
Nontyping Reperforator (LRPE)	Disassembly and Reassembly	574-224-702 TC	2
Transmitter Distributor (LXD) Transmitter Distributor (LXD) Transmitter Distributor (LXD)	Description and Operation	574-225-100TC	2
	Lubrication	574-225-701TC	3
	Disassembly and Reassembly	574-225-702TC	1
Electrical Service Unit (LESU)	Description and Operation	574-226-100TC	4
Call Control Unit (LCCU)	Description and Operation	574-227-100 TC	2
Cabinet (LAAC)	Description and Operation	574-228-100TC	3
Cabinet (LAAC)	Lubrication	574-228-701TC	2
35 Reperforator Bases (LRB)	Description and Operation	574-232-101TC	1
35 Reperforator Bases (LRB)	Lubrication	574-232-704TC	1
Typing Reperforator (LPR) Typing Reperforator (LPR) Typing Reperforator (LPR)	Description and Operation	574-233-100TC	5
	Lubrication	574-233-701TC	5
	Disassembly and Reassembly	574-233-702TC	2
Answer-Back Unit (LABD)	Description and Operation	574-235-100 TC	3
Answer-Back Unit (LABD)	Installation	574-235-200 TC	2
Answer-Back Unit (LABD)	Lubrication	574-235-701 TC	5
Answer-Back Unit (LABD)	Disassembly and Reassembly	574-235-702 TC	1

35 TYPING UNIT (LP)

LUBRICATION

	CONTENTS	PAGE	CONTENTS	PAGE
1.	GENERAL	. 1	Track guide mechanism Typebox carriage mechanism	
2.	BASIC UNIT	. 5	Vertical positioning mechanism	
	Carriage return mechanism Code and print areas Codebar detents	7	3. VARIABLE FEATURES	37
	Codebar mechanism	7,15 22	Form-out mechanism	
	Function rocker shaft mechanism . Horizontal positioning drive		extension arm	40
	mechanism		lever	
	Line feed area Line feed mechanism (friction feed)	32	Horizontal tabulator — intermed bail	\dots 39
	Line feed mechanism (sprocket feed)		Horizontal tabulator — operating lever	38,39
	Main shaft (clutches, gears, etc).	28,29	Horizontal tabulator — slide arm Keyboard lock mechanism	46
	Oscillating mechanism Paper feed mechanism	•	Local backspace mechanism Low paper and paper-out alarm	
	(friction feed)	11	mechanism (sprocket feed) Paper jam alarm (sprocket feed)	
	Printing mechanism	5,6	Paper-out alarm mechanism (friction feed)	
	Print suppression mechanism Ribbon area Ribbon feed mechanism	9	Print-nonprint solenoid mechanis Spacing cut-out transfer bail	40
	Ribbon reverse mechanism Selector cam clutch assembly	19	Two color ribbon shift mechanism oscillating lever	44
	Selector mechanism	. 15, 16	Two color ribbon shift mechanism ribbon operating mechanism Typing unit (sprocket feed)	44
	Shift selector mechanism Single-double line feed mechanism	. 31,32	Vertical tabulator and transmitte distributor control mechanism.	r
	Spacing and drive area Spacing clutch trip cam		Vertical tabulator mechanism (for switched network service)	\mathbf{r}
	mechanism	23	1. GENERAL	
	Spacing drum mechanism Spacing mechanism Sprocket feed paper mechanism Stripper blade mechanism Stunt box area Stunt box mechanism Trip shaft mechanism	. 30, 31 36 18 16 17	1.01 This section provides lubricat 35 typing unit. It is reissued lubrication for the paper jam alar engineering information and to upda format. Since it is an extensive revis ginal arrows used to indicate changes omitted.	to include m, recent te general sion, mar-

- 1.02 Lubricate the 35 typing unit as directed in this section. The line drawings indicate points to be lubricated and the type and quantity of lubricant to be used. Figures 1 and 2 illustrate the general areas of lubrication on the friction feed unit and Figure 3 shows the lubrication areas on the sprocket feed unit. Lubricate the typing unit prior to placing it in service. Relubricate after a few weeks to make sure that all points have received proper lubrication. Thereafter, lubricate the typing unit at intervals of 1500 hours or six months, whichever occurs first.
- 1.03 Use KS7470 oil at all locations where the use of oil is indicated. Use KS7471 grease at all locations where the use of grease is indicated.
- 1.04 Saturate all spring wicks and felt oilers. Thoroughly lubricate the friction surfaces of all moving parts. However, avoid overlubrication which permits oil or grease to drip or be thrown on other parts. Take special care to prevent any oil or grease from getting between the selector armature and its magnetic pole faces. Keep all electrical contacts free of oil and grease.
- 1.05 Apply a thin film of grease to the teeth of the range scale knob assembly (knob and gear).
- 1.06 Apply a thick film of grease to all gears and the spacing trip lever bail cam plate.
- 1.07 Apply oil to all cams, including the camming surfaces of each clutch disc.
- 1.08 Grease the clutch shoe lever spring loops and completely saturate the internal mechanism of the clutch assembly with oil.

- 1.09 Apply a thin film of oil around the outer periphery of the dashpot cup and retainer. Avoid excessive lubrication that will obstruct the dashpot parts.
- 1.10 The photographs serve as a guide to mechanism locations on the unit. They are also keyed to the paragraph numbers of line drawings of particular mechanisms. Parts in the line drawings are shown in an upright position unless otherwise specified. References to left, right, top, bottom, front, rear, etc, apply to the unit in its normal operating position as viewed from the operator's position in front of the unit.
- 1.11 The illustration symbols indicate the following lubrication directions.

Symbol	Meaning		
01	Apply 1 drop of oil.		
O2	Apply 2 drops of oil.		
O3	Apply 3 drops of oil, etc.		
G	Apply thin film of grease.		
SAT	Saturate (felt oilers, washers, wicks) with oil.		

Note: During each lubrication period, check the following adjustments in Section 574-220-700TC.

- 1. Printing Carriage Position
- 2. Printing Hammer Bearing Stud
- 3. Printing Hammer Stop Bracket (Also see note following this adjustment.)
- 4. Lower Draw Wire Rope
- 5. Dashpot Vent Screw (Check Dashpot Transfer Slide for ease of movement.)

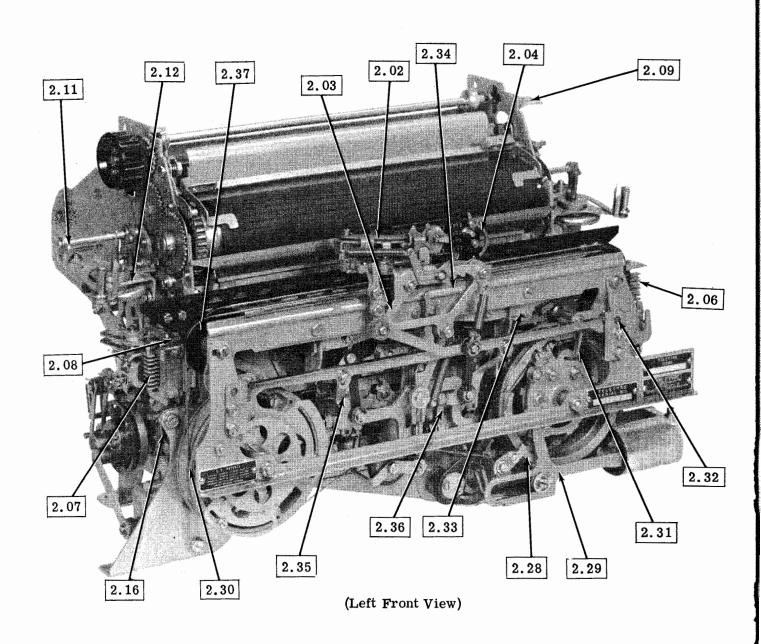


Figure 1 - 35 Typing Unit, Friction Feed

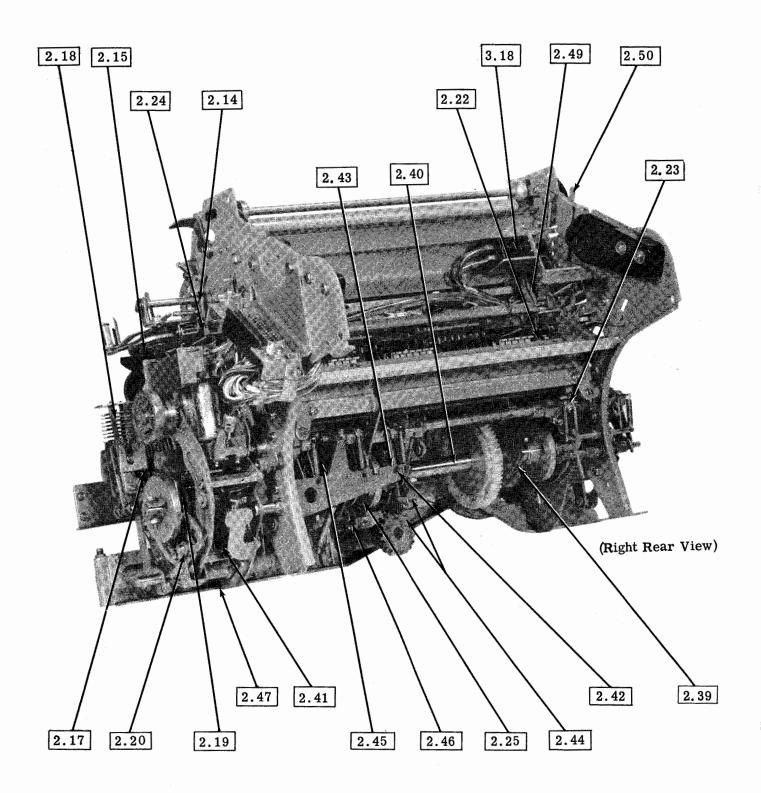
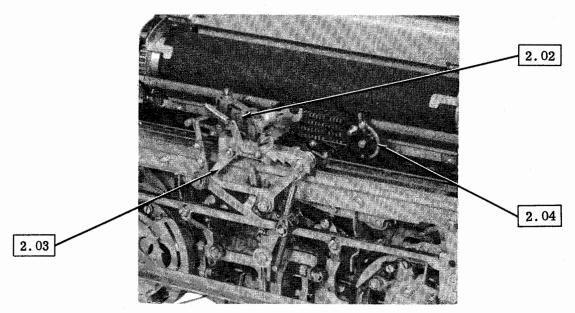


Figure 2 - 35 Typing Unit, Friction Feed

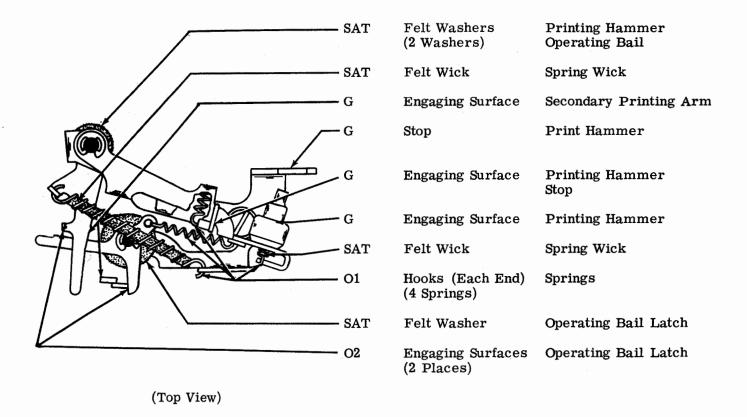
2. BASIC UNIT

2.01 Printing Area



(Front View)

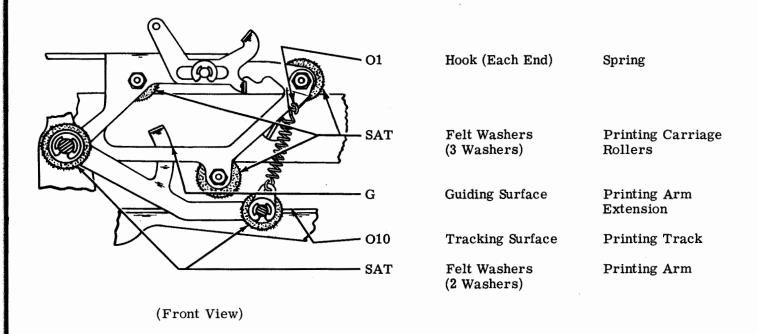
2.02 Printing Mechanism



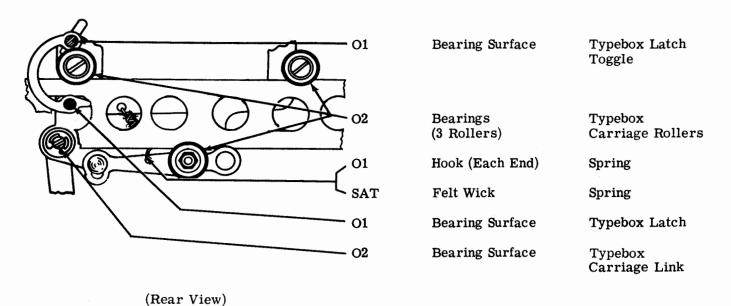
Page 5

SECTION 574-220-701TC

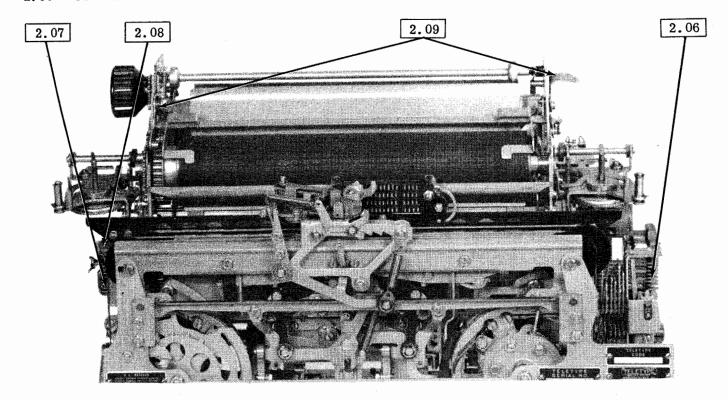
2.03 Printing Mechanism (continued)



2.04 Typebox Carriage Mechanism

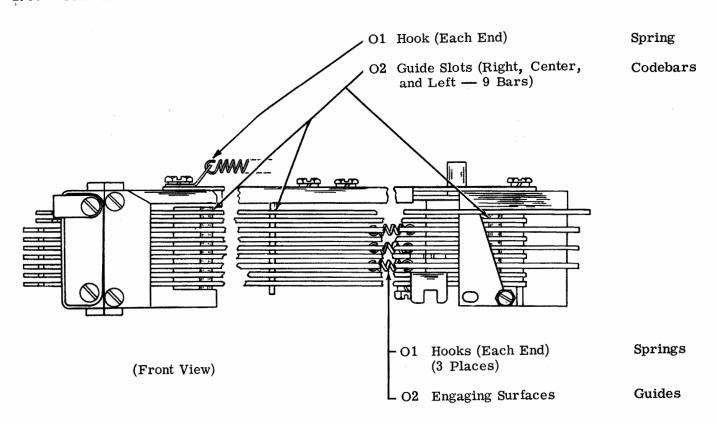


2.05 Code and Print Areas



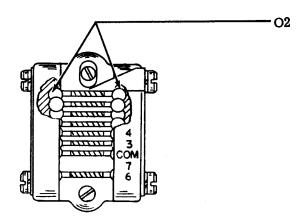
(Front View)

2.06 Codebar Mechanism



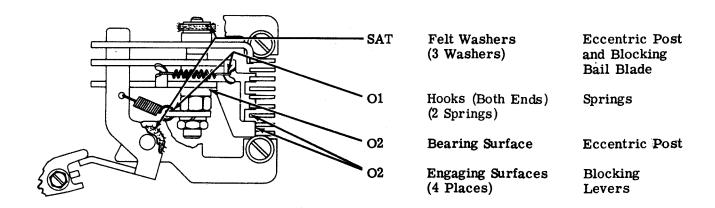
Page 7

2.07 Codebar Detents



(Left Side View)

2.08 Print Suppression Mechanism

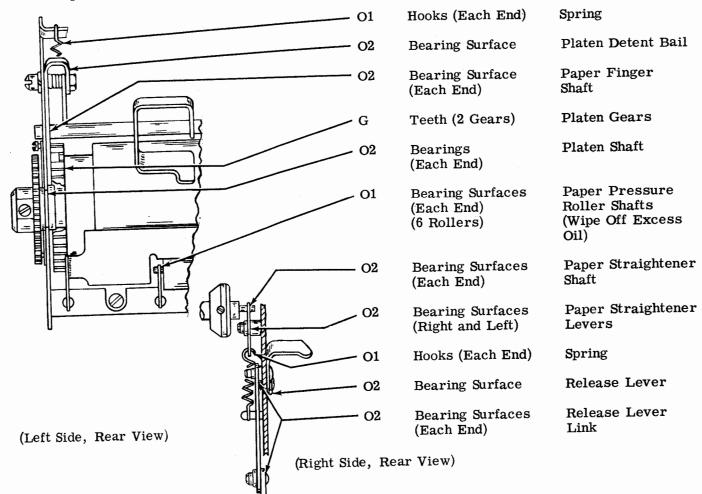


Bearing Balls

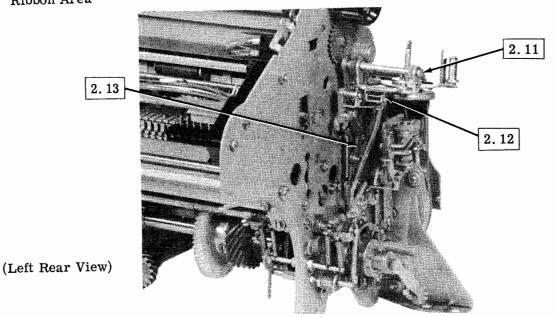
Codebar Detent

(Left Side View)

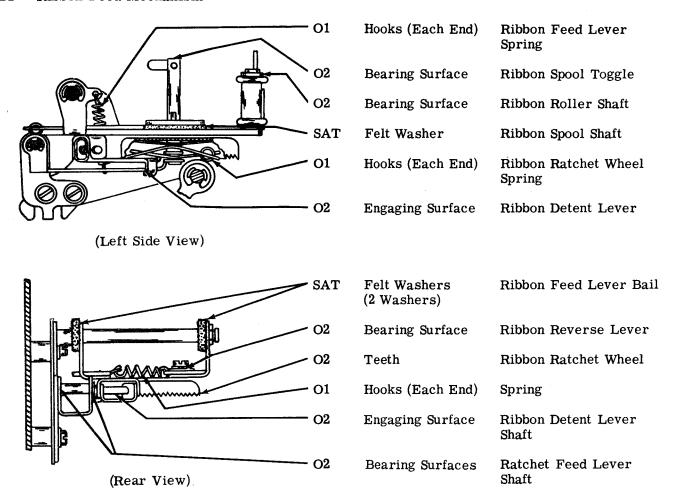
2.09 Paper Feed Mechanism (Friction Feed)



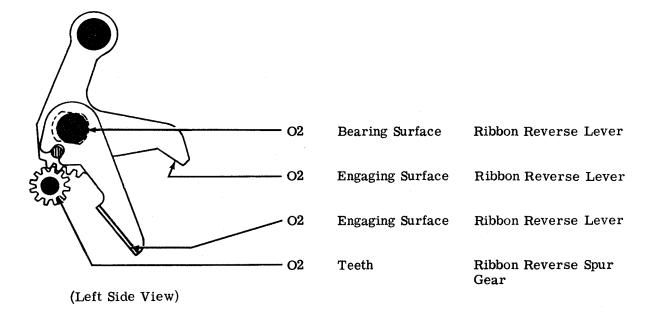
2.10 Ribbon Area



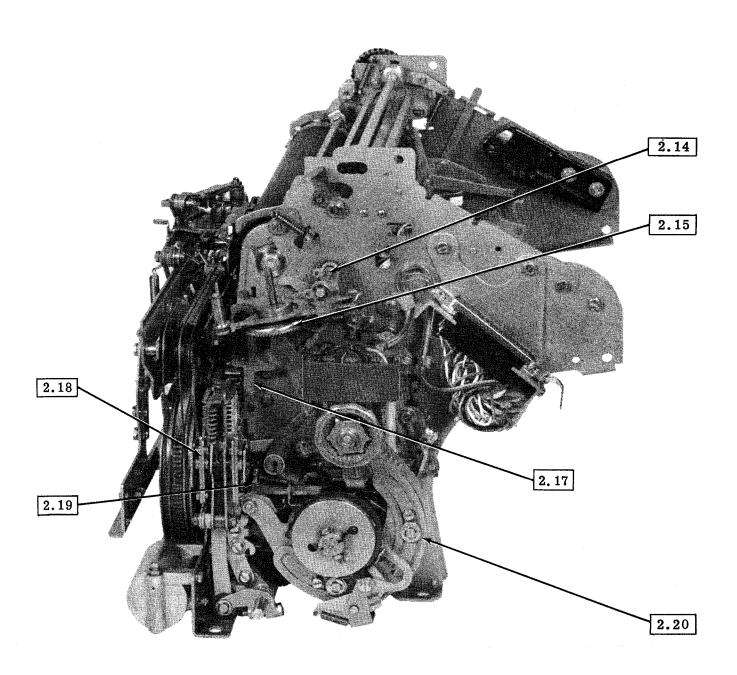
2.11 Ribbon Feed Mechanism



2.12 Ribbon Feed Mechanism (continued)

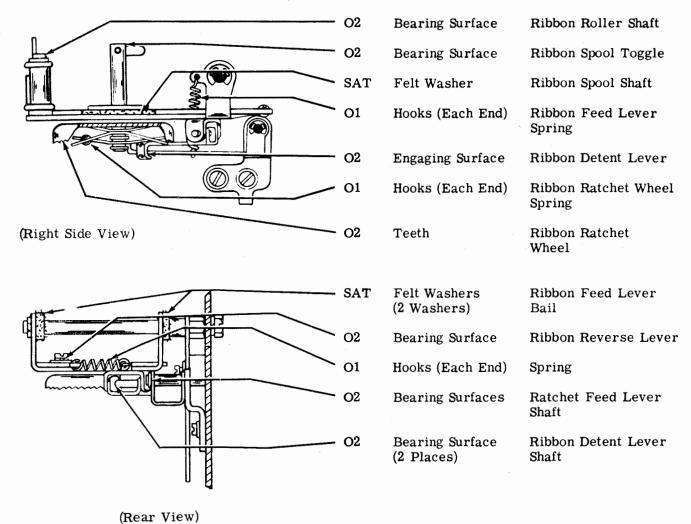


2.13 Positioning Area

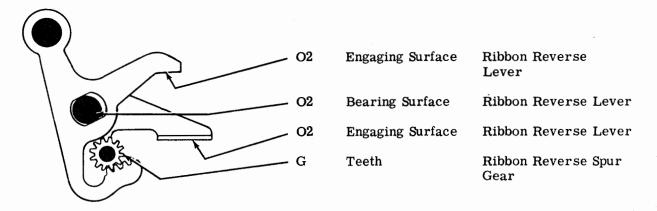


(Right Side View)

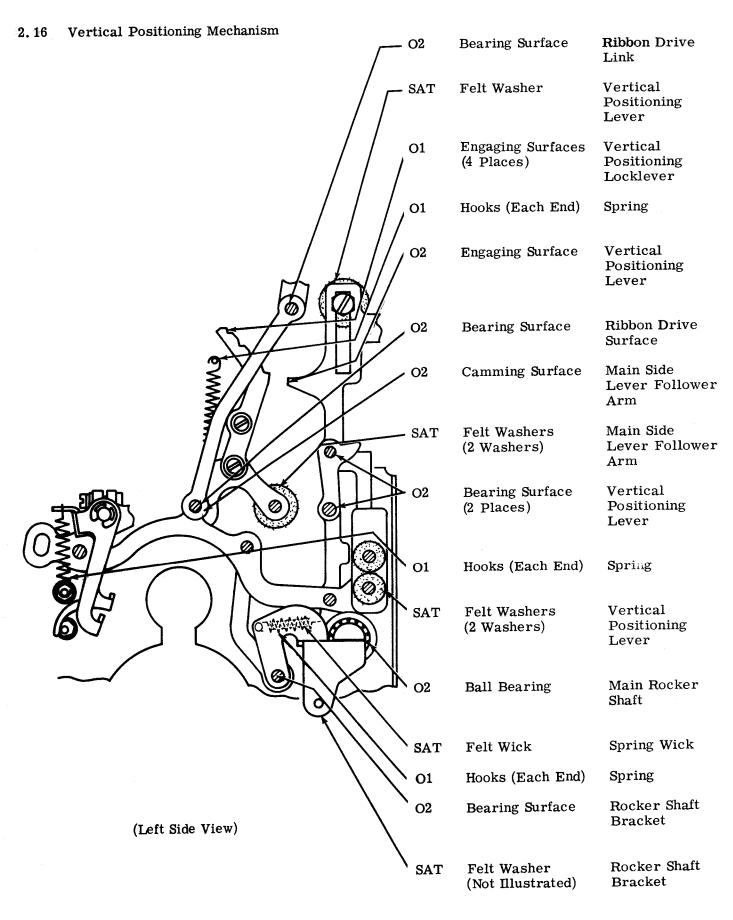
2.14 Ribbon Feed Mechanism (continued)



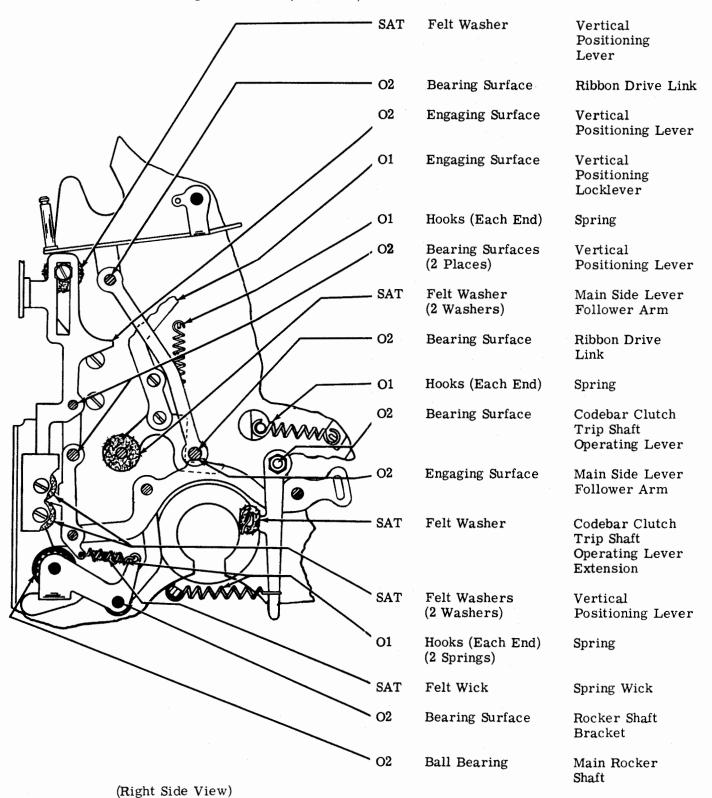
.15 Ribbon Feed Mechanism (continued)



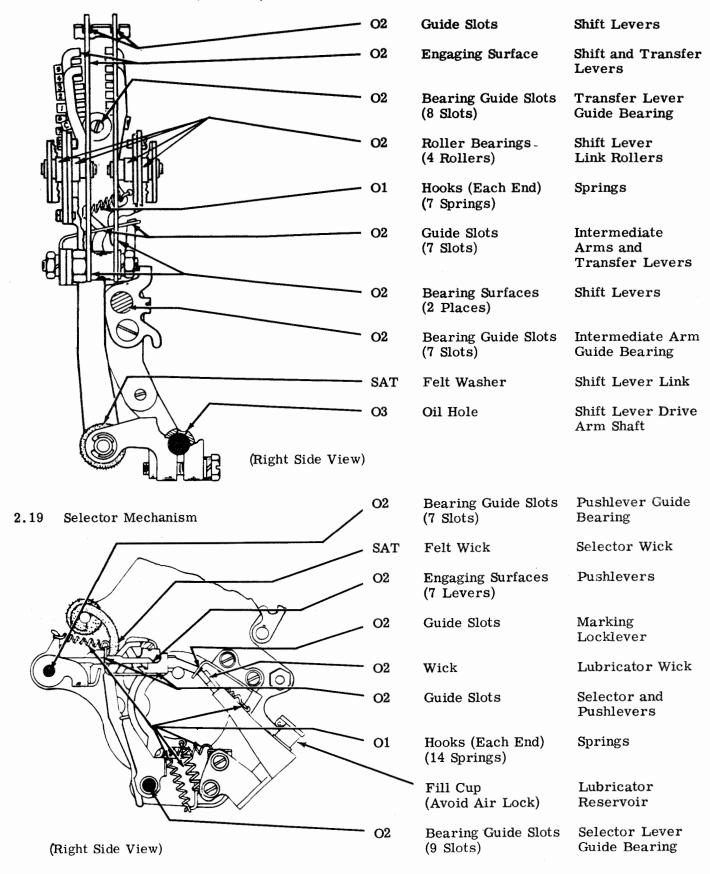
(Left Side View)



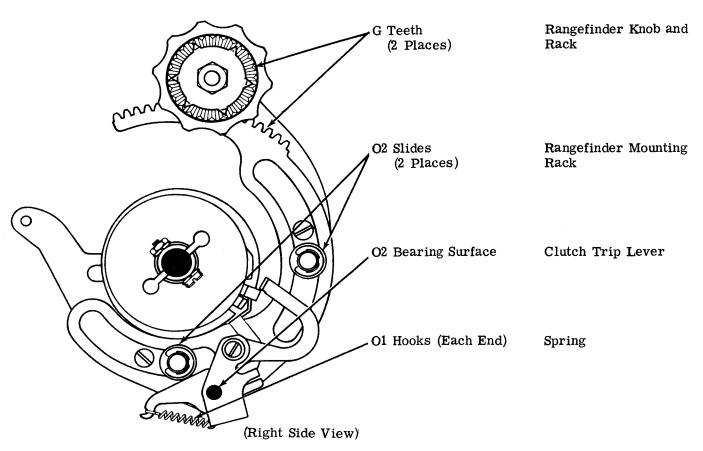
2.17 Vertical Positioning Mechanism (continued)

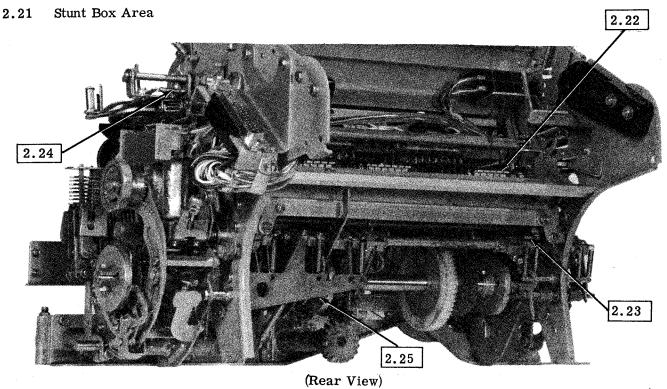


2.18 Codebar Mechanism (continued)



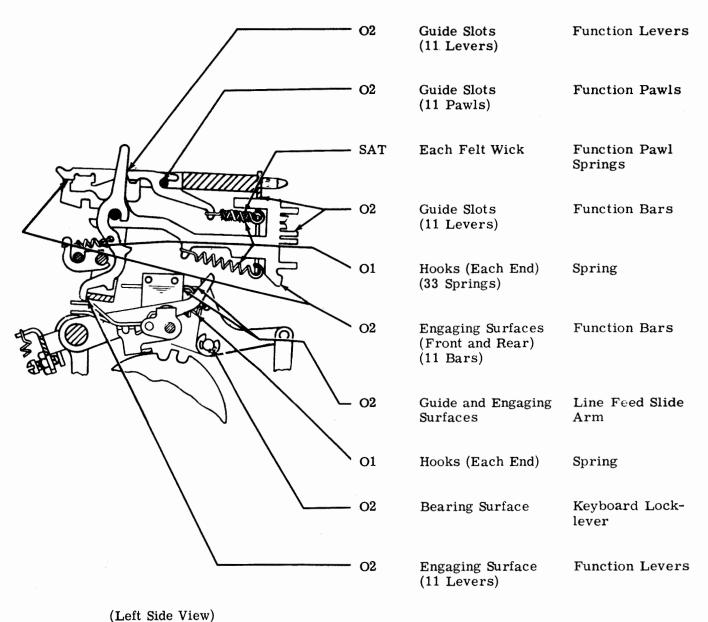
2.20 Selector Mechanism (continued)



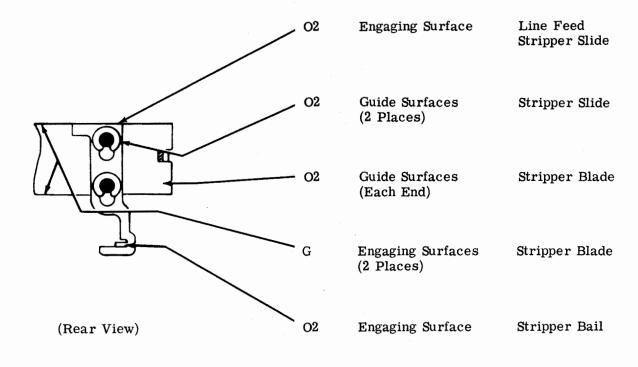


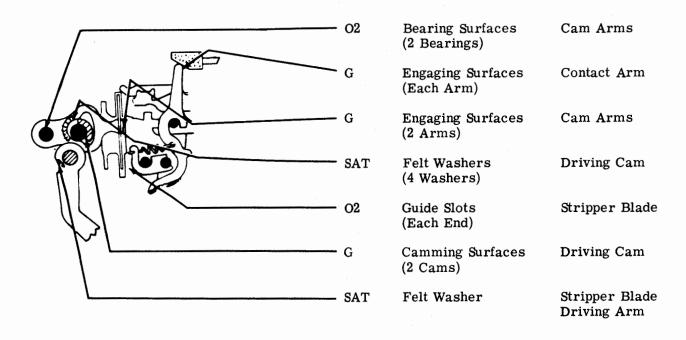
Page 16

2.22 Stunt Box Mechanism



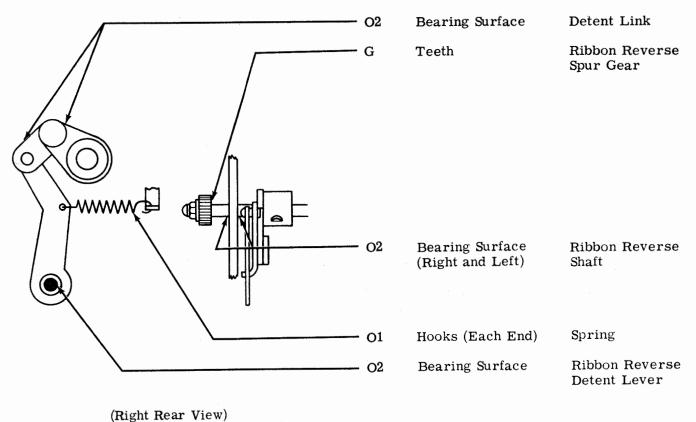
2.23 Stripper Blade Mechanism



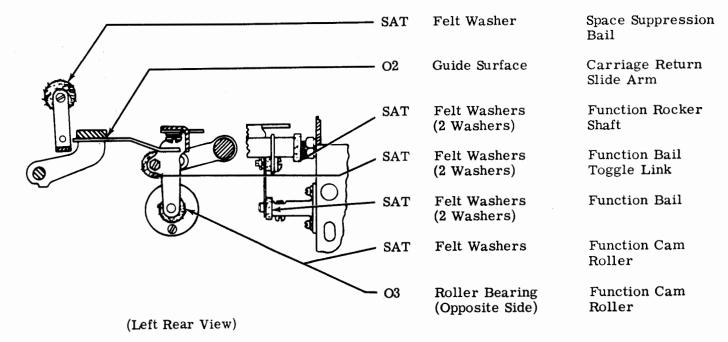


(Left Side View)

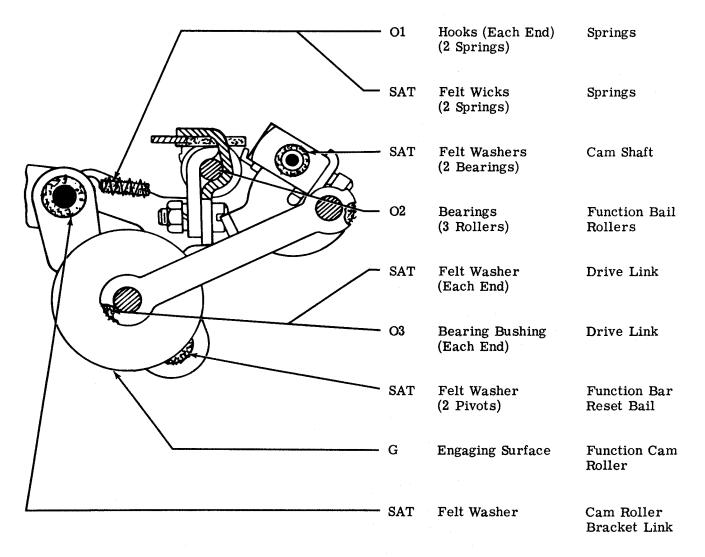
2.24 Ribbon Reverse Mechanism



2.25 Function Rocker Shaft Mechanism



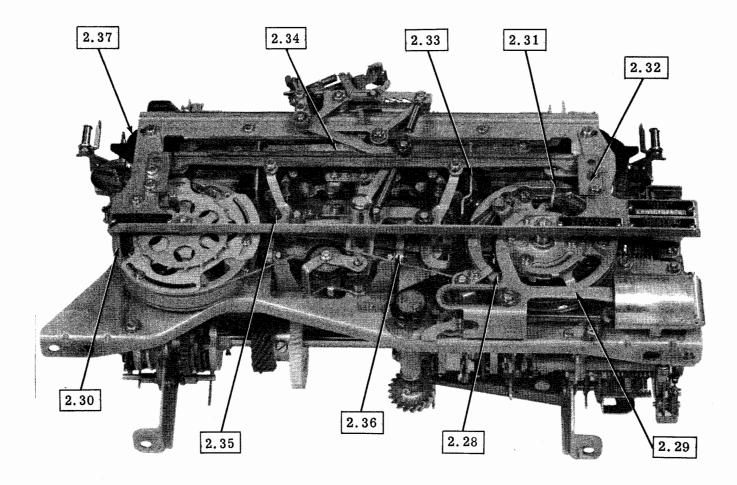
2.26 Function Reset Bail Mechanism



(Left Side View)

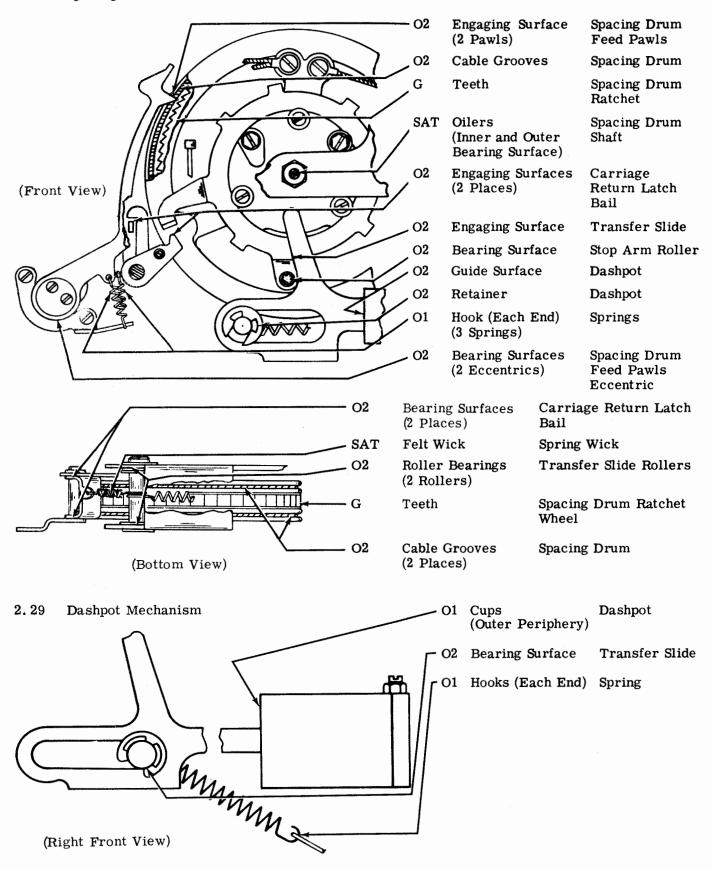
Note: See 2.38 for photograph of the location of this mechanism.

2.27 Spacing and Drive Area

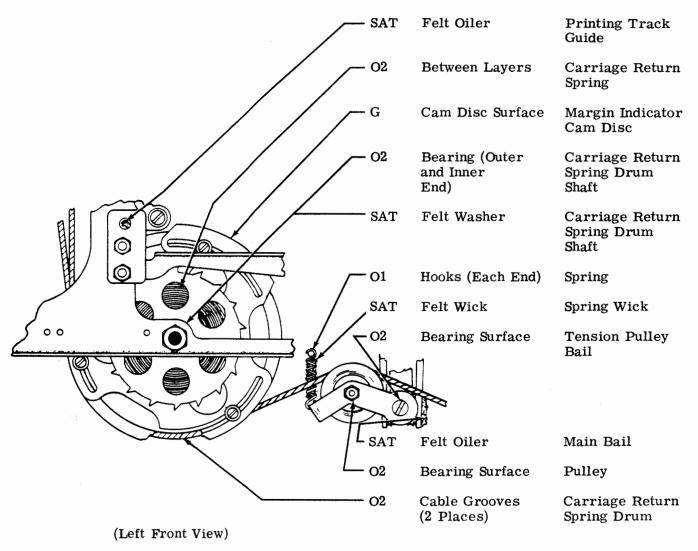


(Bottom Front View)

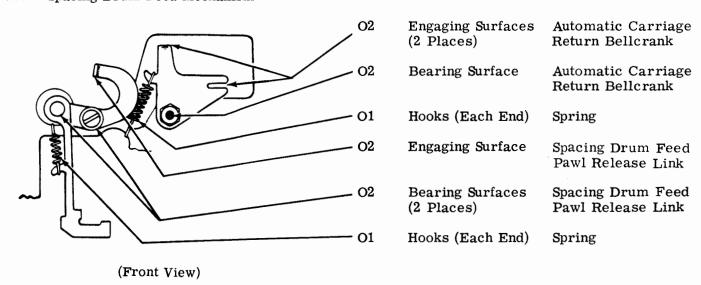
2.28 Spacing Drum Mechanism



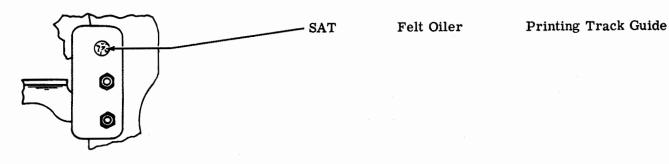
2.30 Carriage Return Mechanism



2.31 Spacing Drum Feed Mechanism

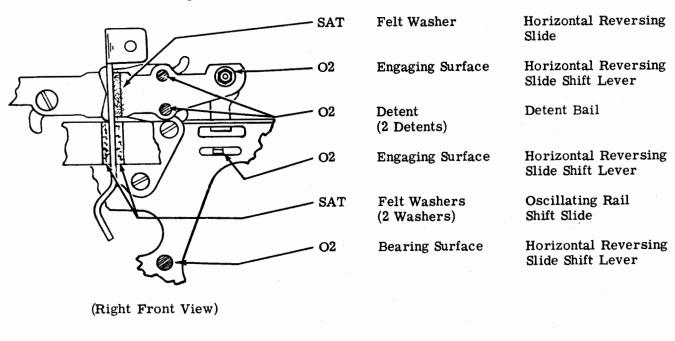


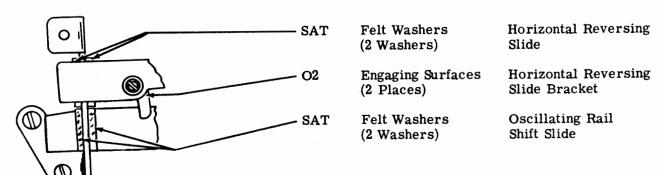
2.32 Track Guide Mechanism



(Right Front View)

2.33 Horizontal Positioning Mechanism

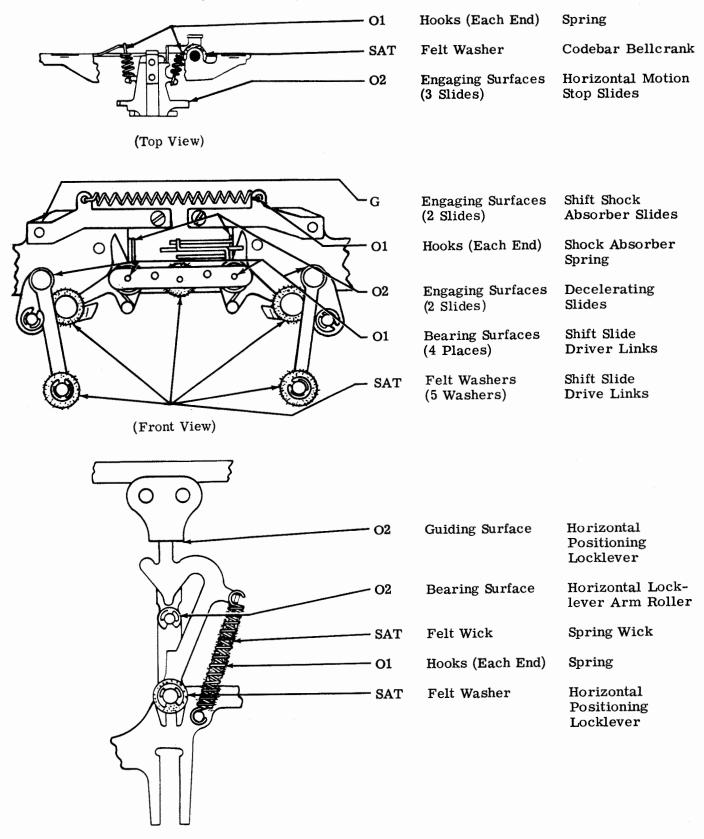




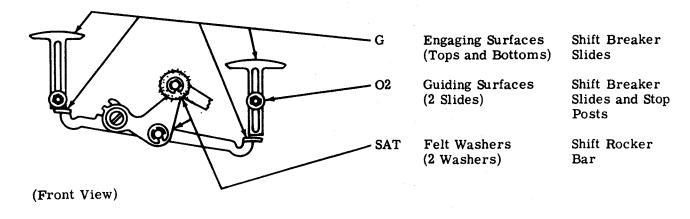
(Left Front View)

2.34 Horizontal Positioning Mechanism (continued)

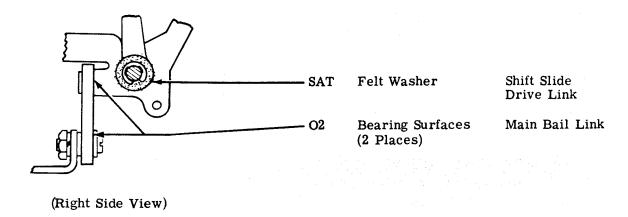
(Front View)

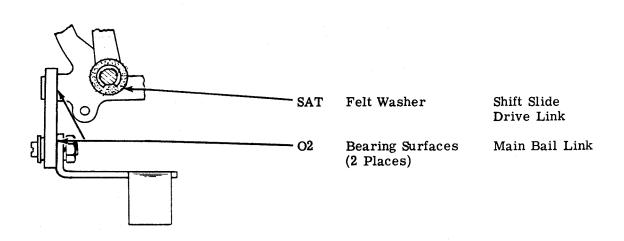


2.35 Horizontal Positioning Drive Mechanism



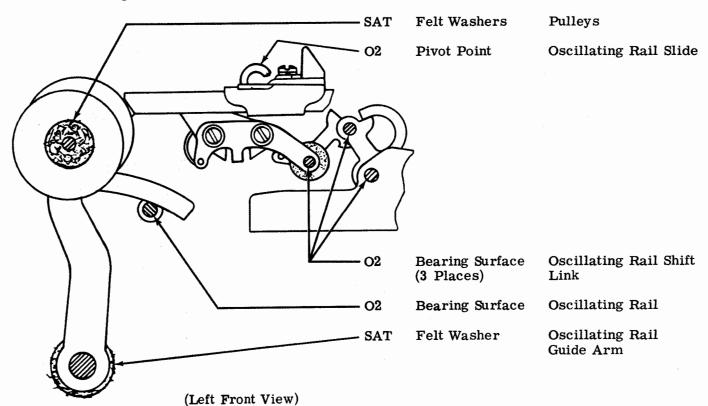
2.36 Shift Mechanism

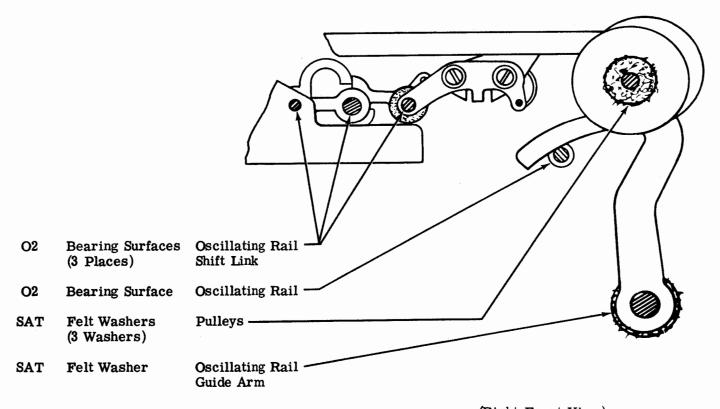




(Left Side View)

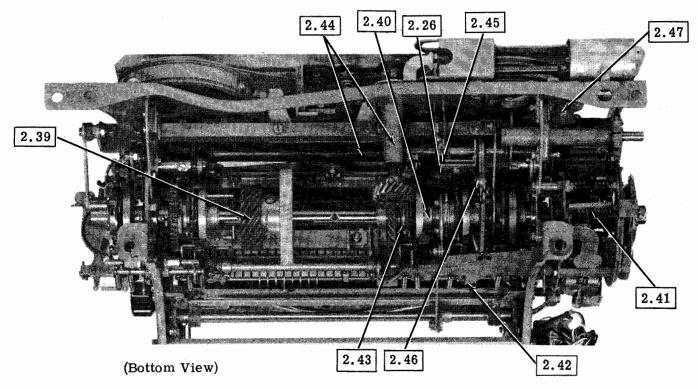
2.37 Oscillating Mechanism



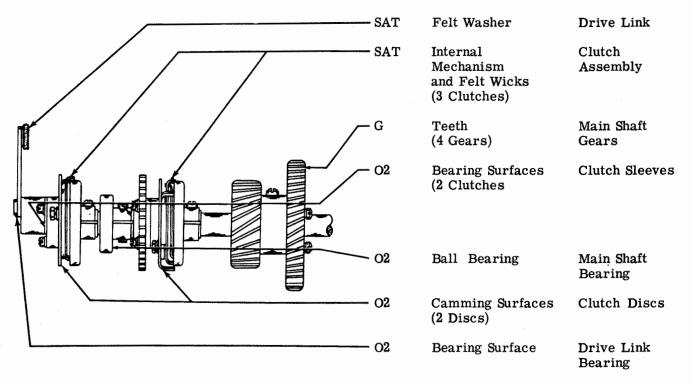


(Right Front View)

2.38 Main Shaft Area

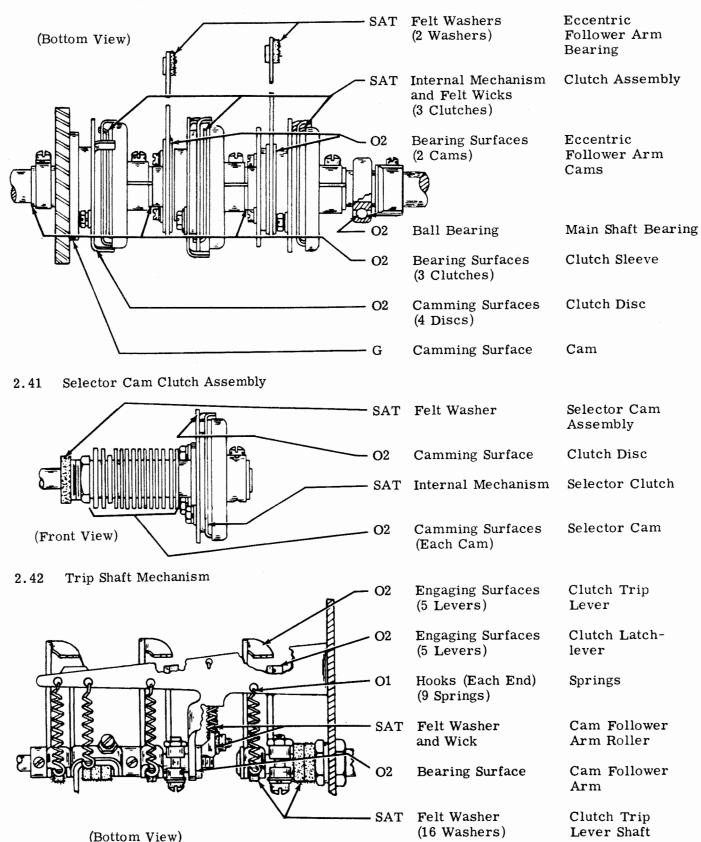


2.39 Main Shaft (Clutches, Gears, etc)

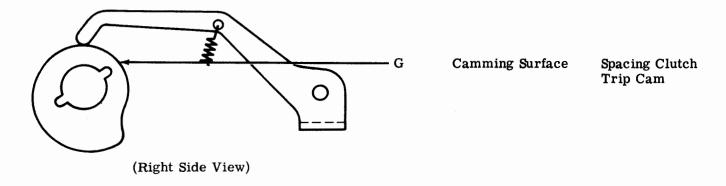


(Bottom View)

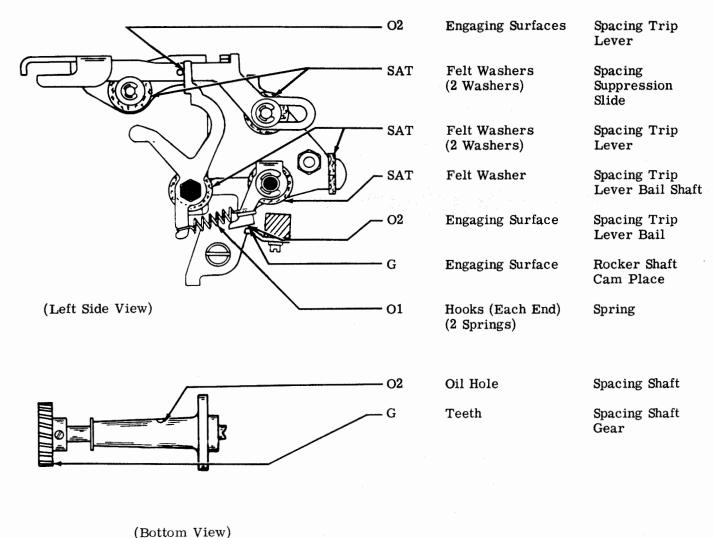
2.40 Main Shaft (Clutches, Gears, etc) (continued)



2.43 Spacing Clutch Trip Cam Mechanism

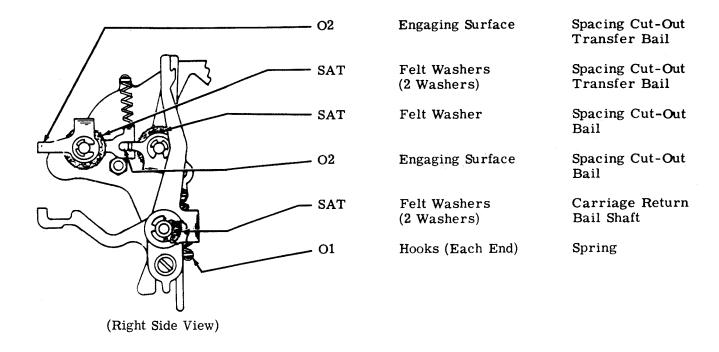


2.44 Spacing Mechanism

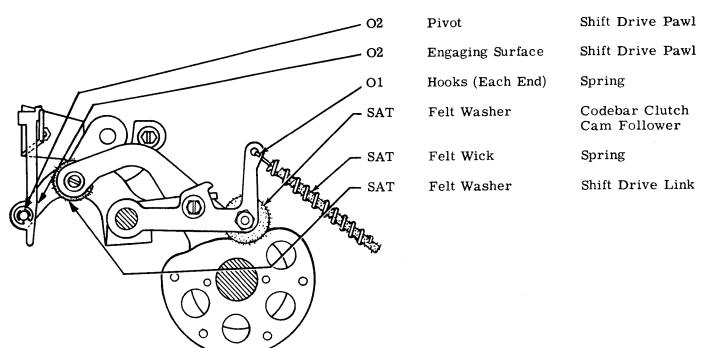


(Dottom view)

2.45 Spacing Mechanism (continued)

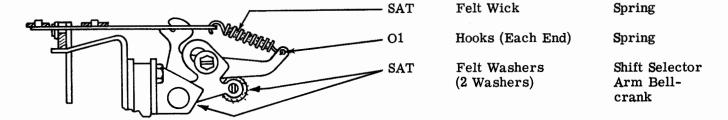


2.46 Shift Selector Mechanism

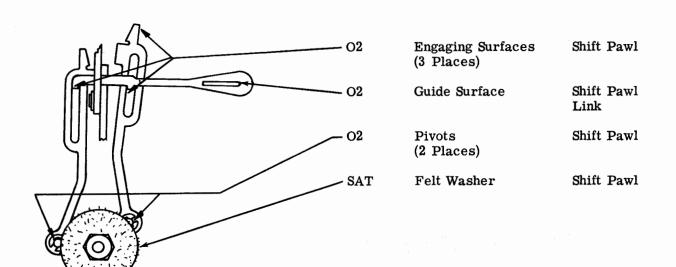


(Bottom Left View)

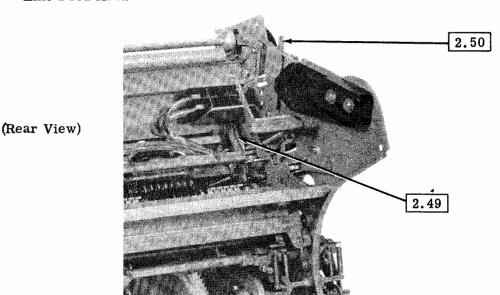
2.47 Shift Selector Mechanism (continued)



(Rear View)

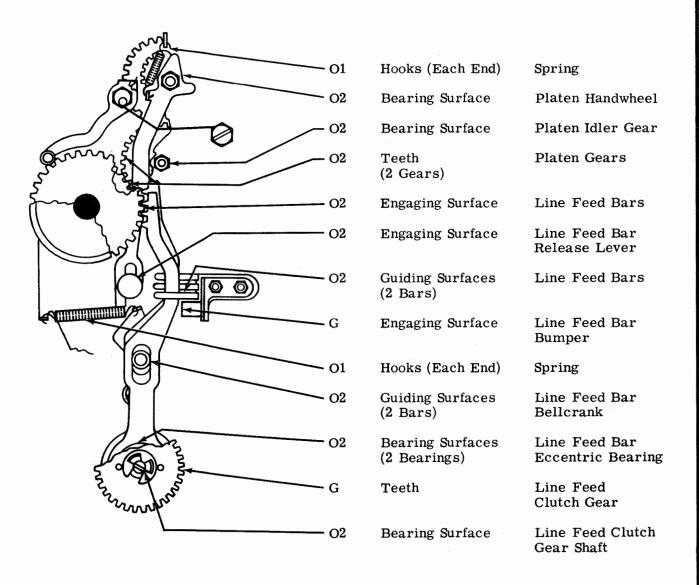


2.48 Line Feed Area



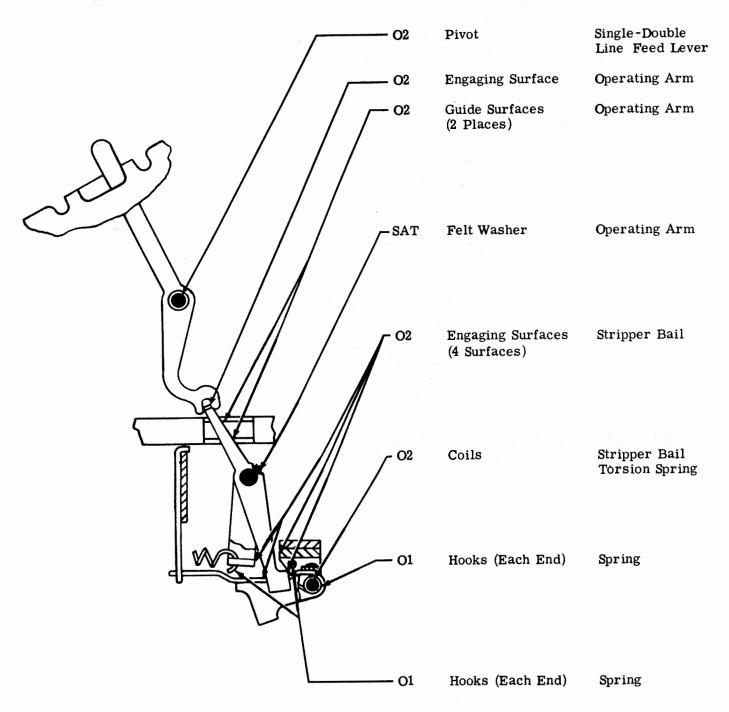
(Rear View)

2.49 Line Feed Mechanism (Friction Feed)



(Right Rear View)

2.50 Single-Double Line Feed Mechanism



(Left Side View)

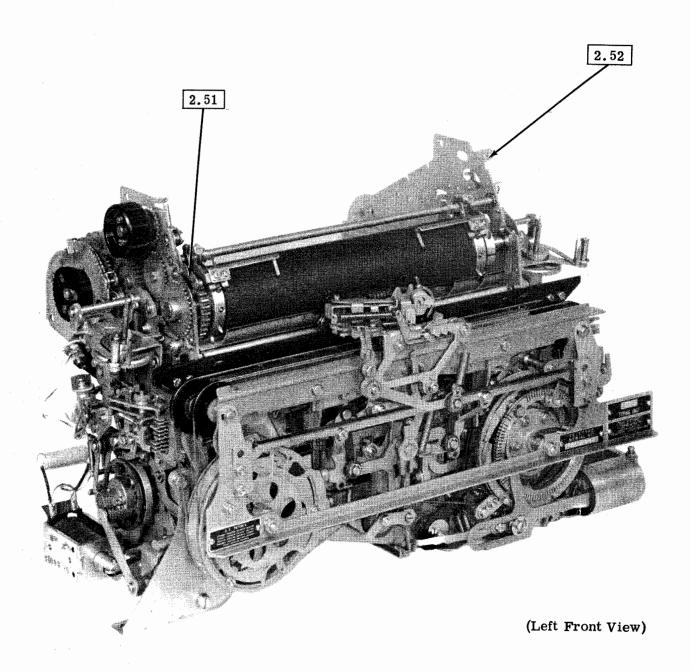
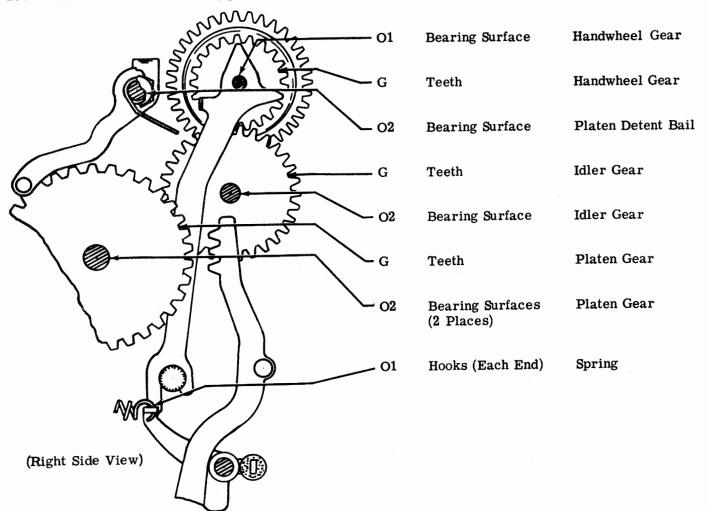
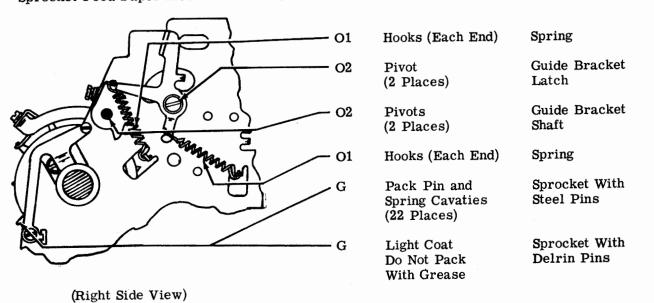


Figure 3 - 35 Typing Unit (Sprocket Feed)

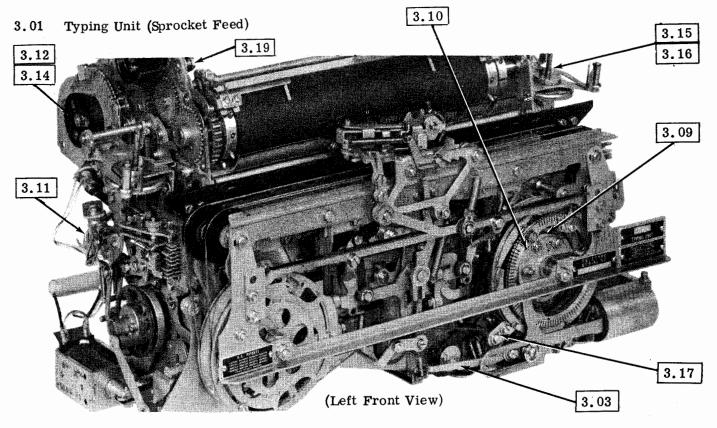
2.51 Line Feed Mechanism (Sprocket Feed)



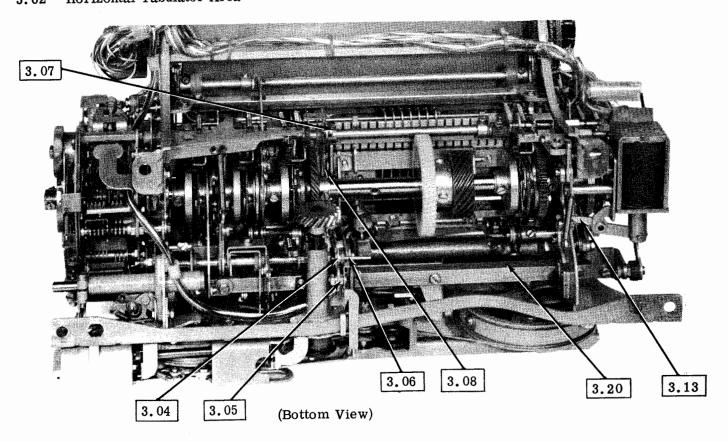
2.52 Sprocket Feed Paper Mechanism

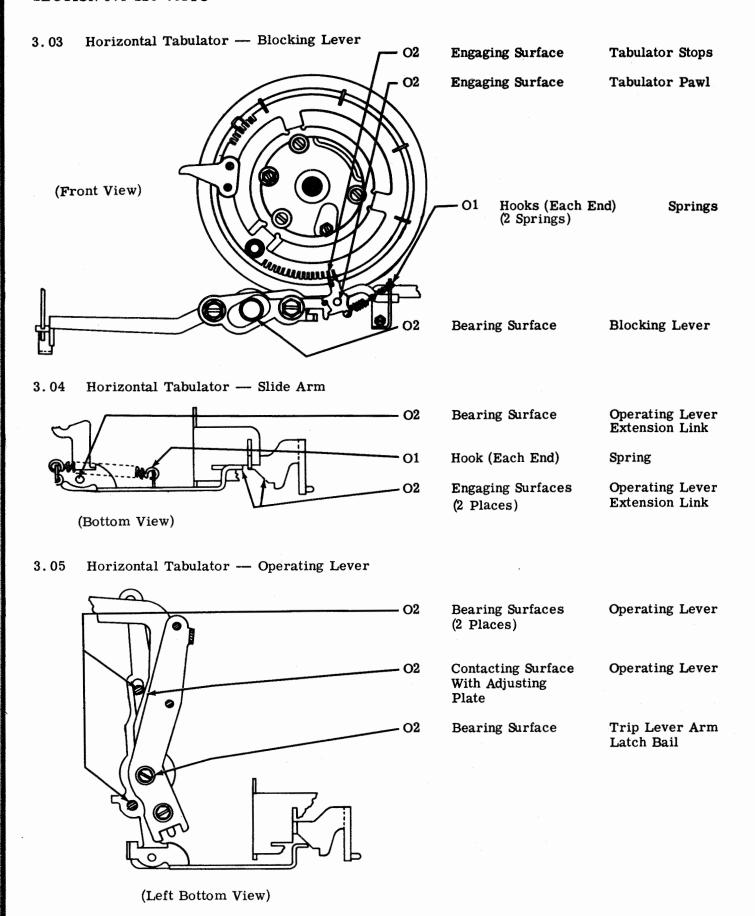


3. VARIABLE FEATURES

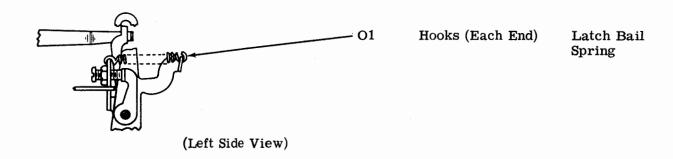


3.02 Horizontal Tabulator Area

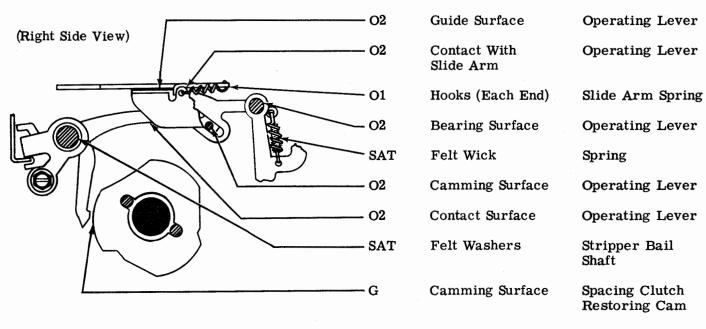




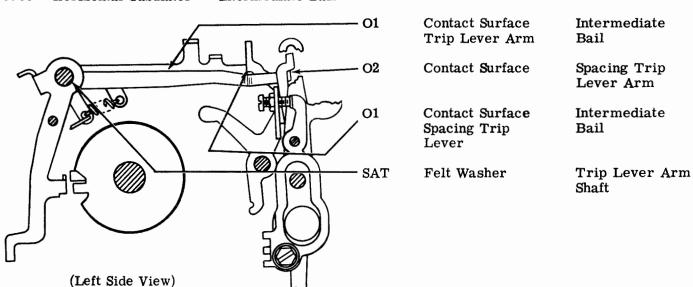
3.06 Horizontal Tabulator — Latch Bail



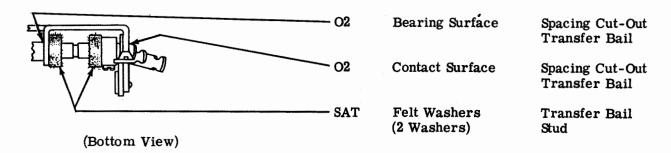
3.07 Horizontal Tabulator — Operating Lever (continued)



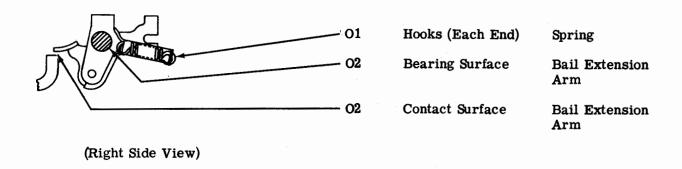
3.08 Horizontal Tabulator — Intermediate Bail



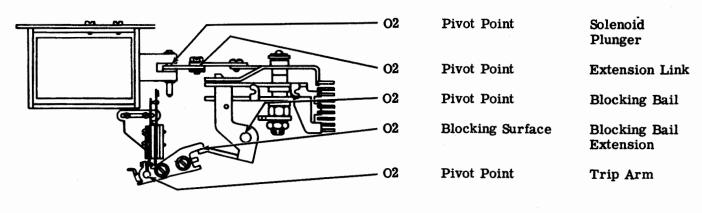
3.09 Horizontal Tabulator — Bail Extension Arm



3.10 Spacing Cut-Out Transfer Bail



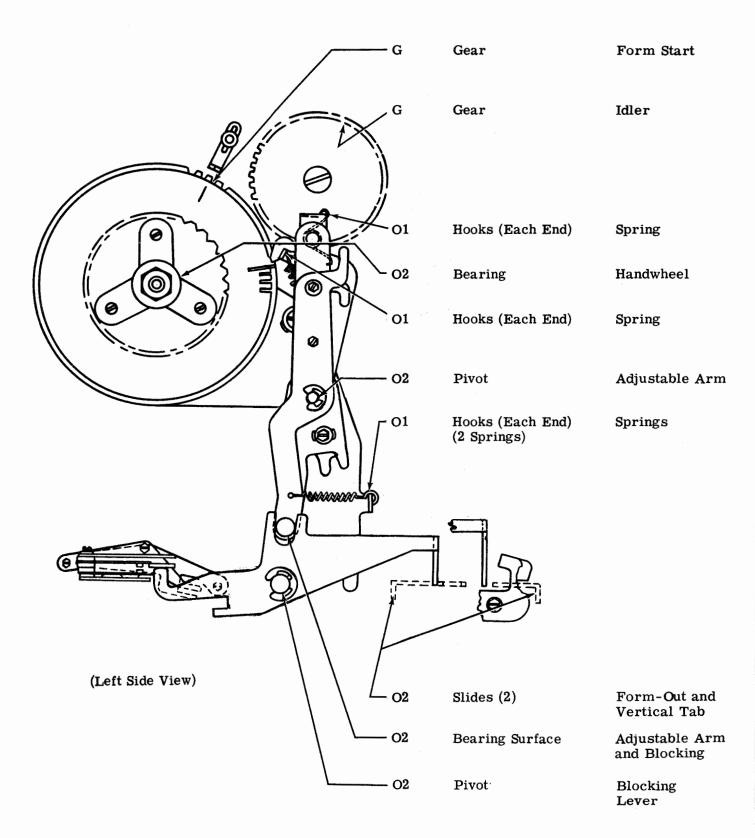
3.11 Print-Nonprint Solenoid Mechanism



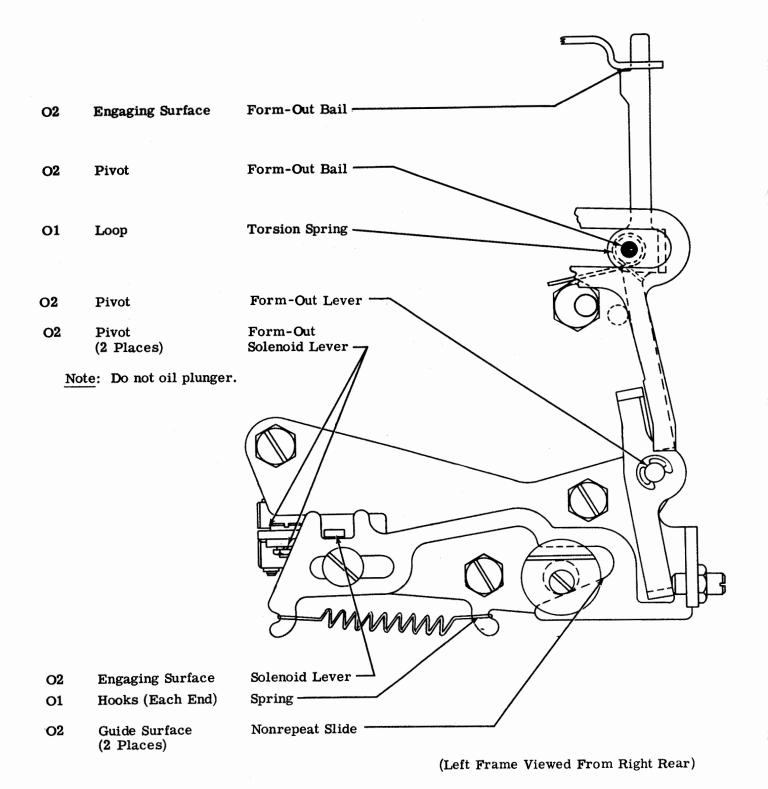
(Left Side View)

Note: Do not oil the cylindrical surface or pole face of solenoid plunger.

3.12 Vertical Tabulator and Transmitter Distributor Control Mechanism

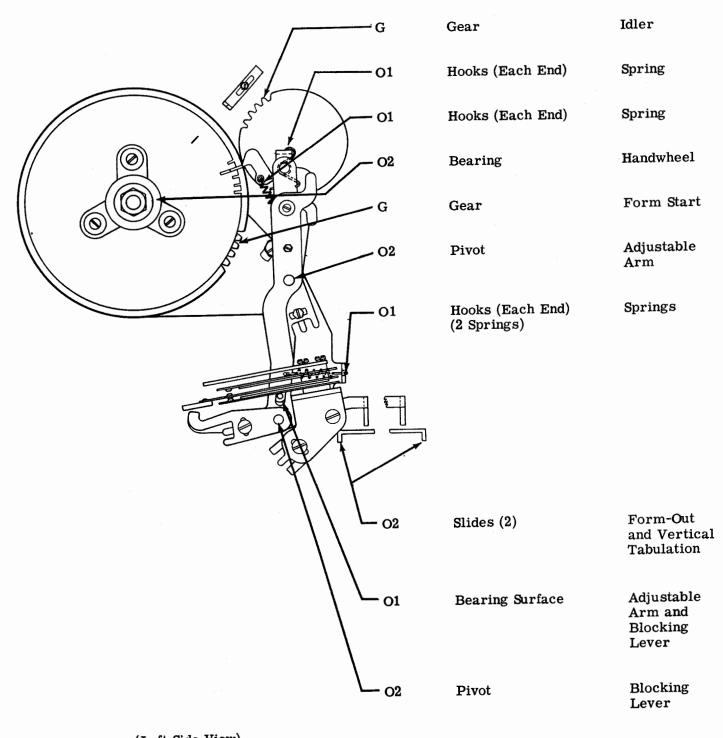


3.13 Form-Out Mechanism



Page 42

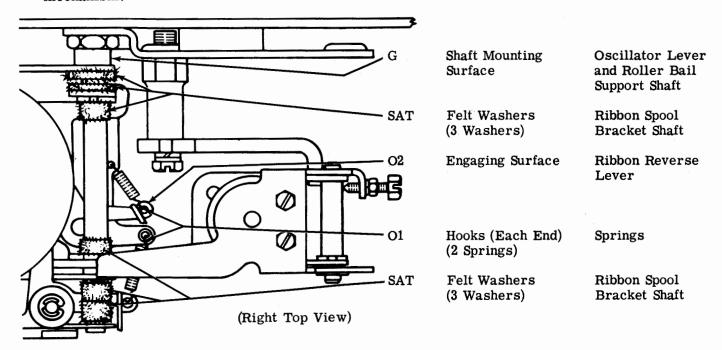
3.14 Vertical Tabulator Mechanism (For Switch Network Service)



(Left Side View)

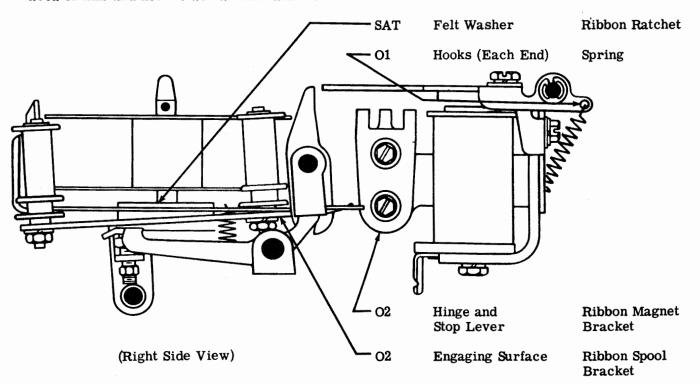
3.15 Two Color Ribbon Shift Mechanism — Oscillating Lever

Note: Photograph reference shows general area of this mechanism and not the actual mechanism.

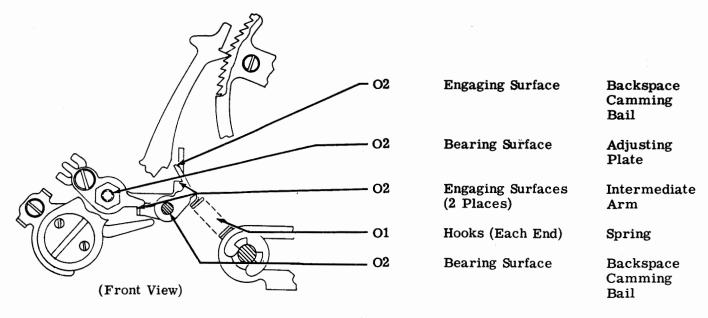


3.16 Two Color Ribbon Shift Mechanism — Ribbon Operating Mechanism

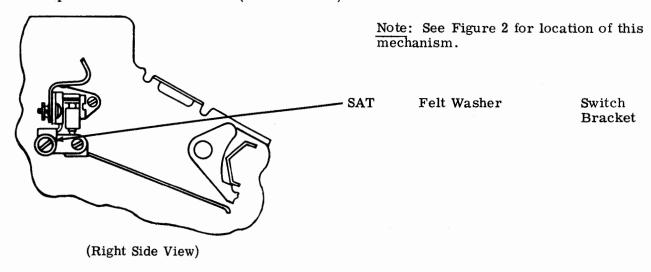
Note: Photograph reference shows general area of this and not the actual mechanism.

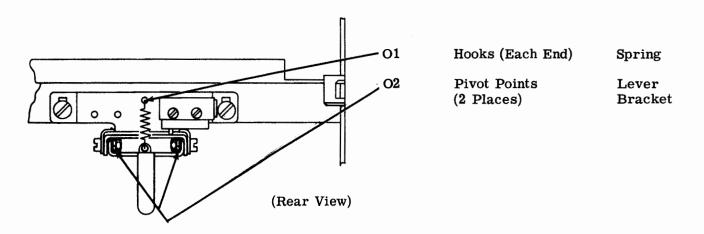


3.17 Local Backspace Mechanism

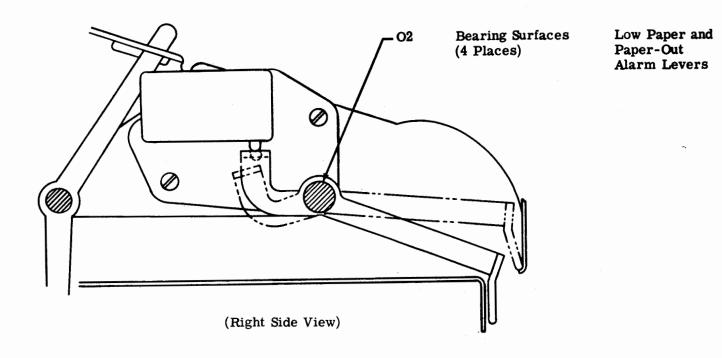


3.18 Paper-Out Alarm Mechanism (Friction Feed)



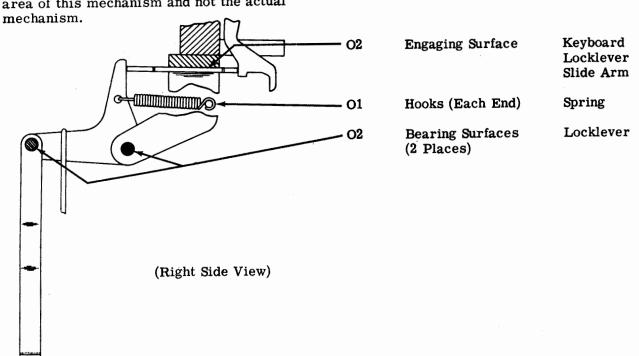


3.19 Low Paper and Paper-Out Alarm Mechanism (Sprocket Feed)

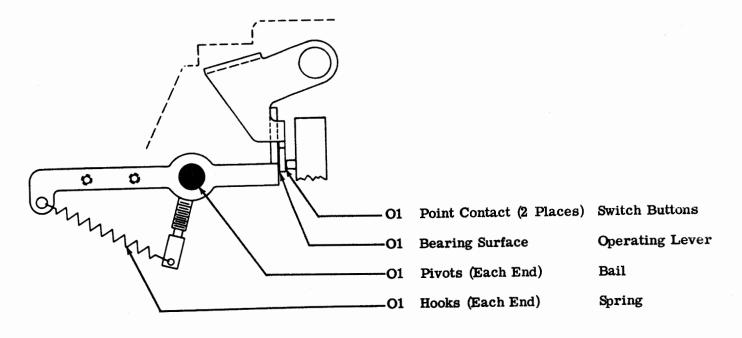


3.20 Keyboard Lock Mechanism

Note: Photograph reference shows general area of this mechanism and not the actual



3.21 Paper Jam Alarm (Sprocket Feed)



(Right Side View)