

28 TYPING UNIT

LUBRICATION

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1. GENERAL

1.01 This section provides lubrication requirements for the Model 28 typing unit. It is reissued to include the latest engineering changes. Because the changes are quite extensive, arrows normally used in the margin to indicate change have been omitted. To remove the typing unit from the teletypewriter set, refer to Section 573-115-702TC.

1.02 Lubrication of the typing unit is presented by mechanisms. Photographs show numbered callouts which correspond to paragraphs containing line drawings. These line drawings show the specific points of each mechanism to be lubricated.

1.03 References to front, rear, left, right, etc, apply to the typing unit as viewed by the operator facing the unit.

1.04 Lubricate the typing unit just prior to placing it in service. After 300 to 500 operating hours, relubricate the typing unit. Recheck all clutch gaps; reset if necessary. Thereafter, use the following lubrication interval:

LUBRICATION INTERVAL

(Based on 5-Day Week)

Daily Operation of Keyboard			
Speed (wpm)	0-8 hrs	8-16 hrs	16-24 hrs
60	52 wks	39 wks	26 wks
66	52 wks	39 wks	26 wks
75	52 wks	39 wks	26 wks
100	39 wks	26 wks	13 wks
Newly Installed Equipment (All Speeds)	3 wks	2 wks	1 wk

Note: For a 6-day week operation, reduce lubrication intervals 15 percent. For a 7-day week operation, reduce lubrication intervals 30 percent.

1.05 Apply KS7470 oil wherever the use of oil is indicated. Apply KS7471 grease on all surfaces wherever indicated. Whenever

clutches are disassembled, apply a thin coat of grease to the shoe lever spring loops, and oil to the internal mechanisms. Fill lubricator reservoir at indicated intervals.

CAUTION: DISCONNECT POWER BEFORE APPLYING ANY LUBRICANT.

1.06 Apply a thick film of grease to all gears and the spacing clutch trip cam plate. Apply oil to all cams, including the camming surfaces of each clutch disc. The following symbols apply to the lubrication points in each paragraph.

SYMBOL

MEANING

- O — Apply KS7470 oil
- G — Apply KS7471 grease
- SAT — Saturate with KS7470 oil

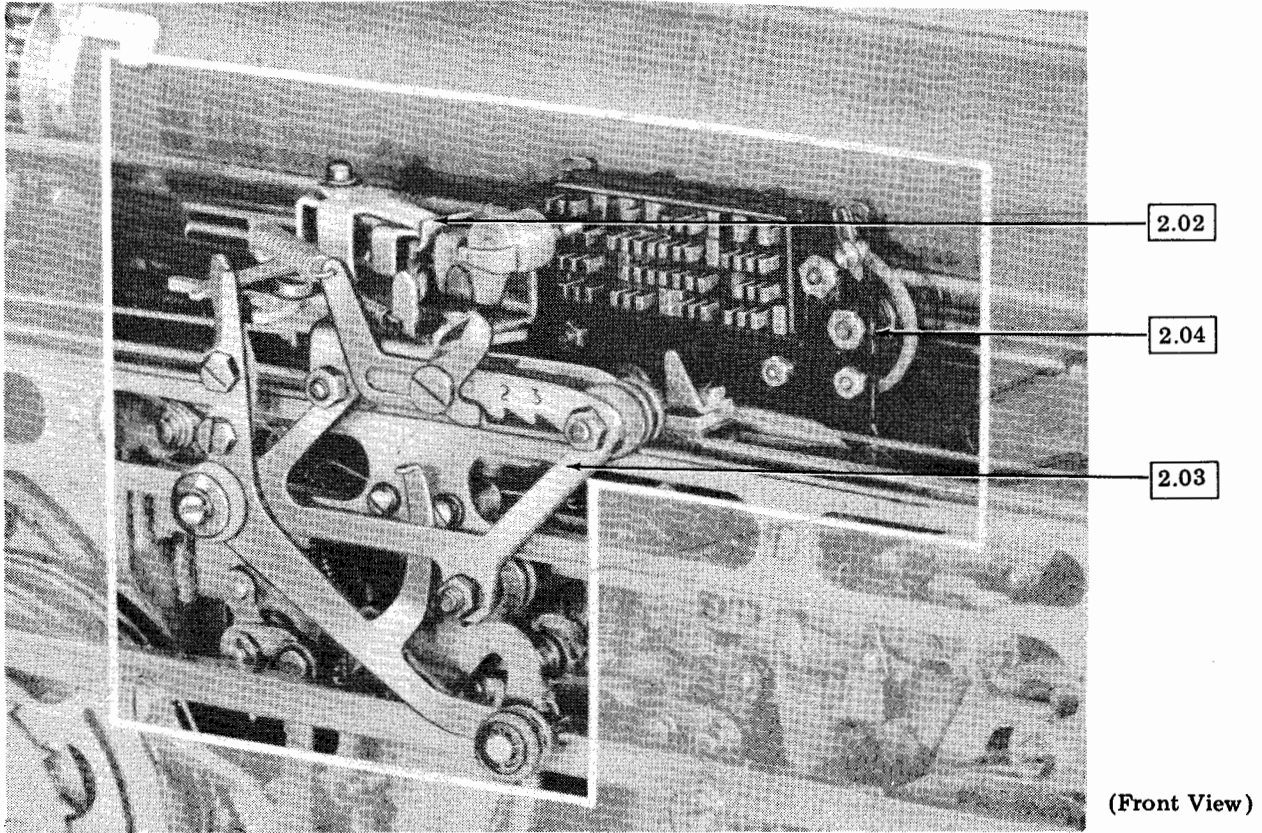
1.07 Lubricate the typing unit thoroughly. Saturate all felt washers and oilers, and apply oil to each end of all springs. Apply oil to points where it will adhere and not run off. Avoid overlubrication. Keep electrical contacts and wire insulations free of lubricants. In general, apply oil to all bearings, wicks, and locations where parts rub, slide, or move with respect to each other. Apply grease to gear teeth and points of heavy pressure.

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2. BASIC UNIT

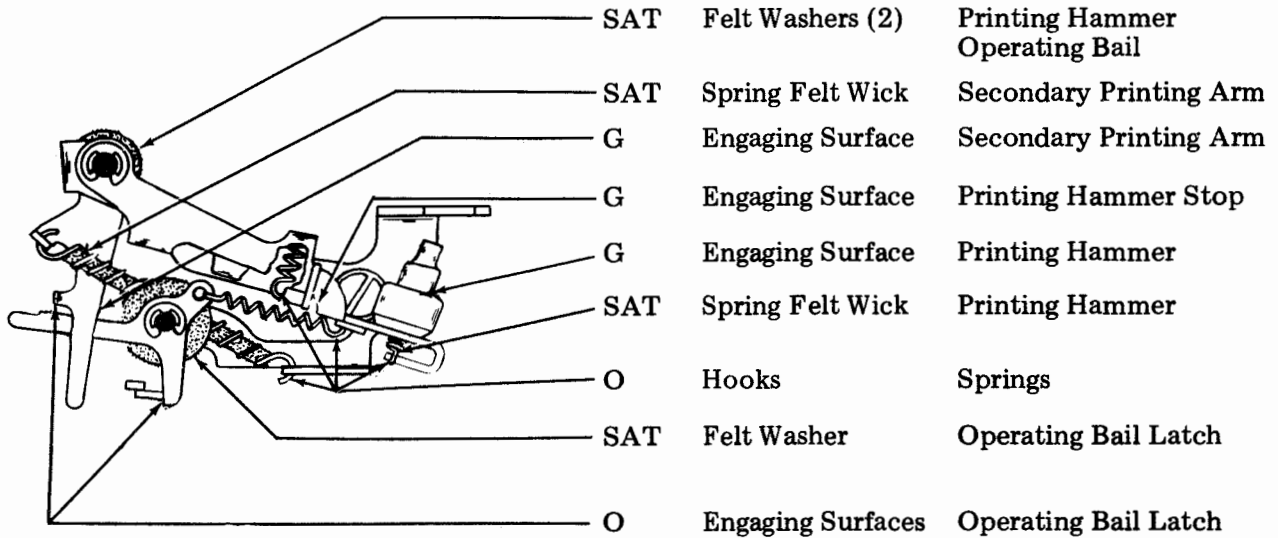
COMMON AREAS

2.01 Printing Area



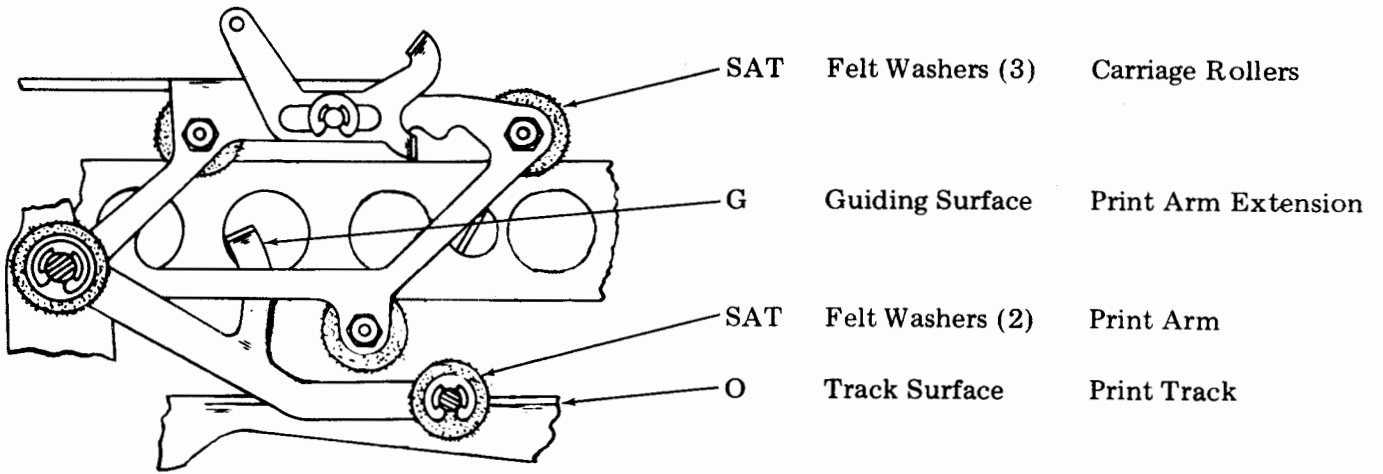
(Front View)

2.02 Printing Mechanism



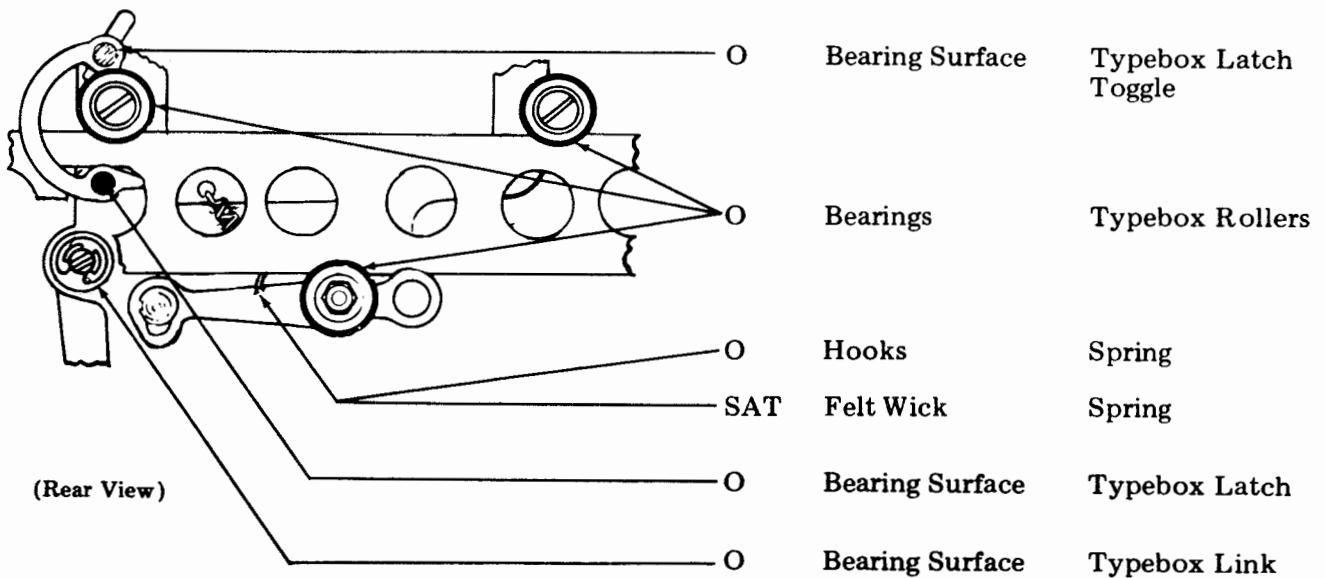
(Top View)

2.03 Printing Mechanism (continued)



(Front View)

2.04 Typebox Carriage Mechanism

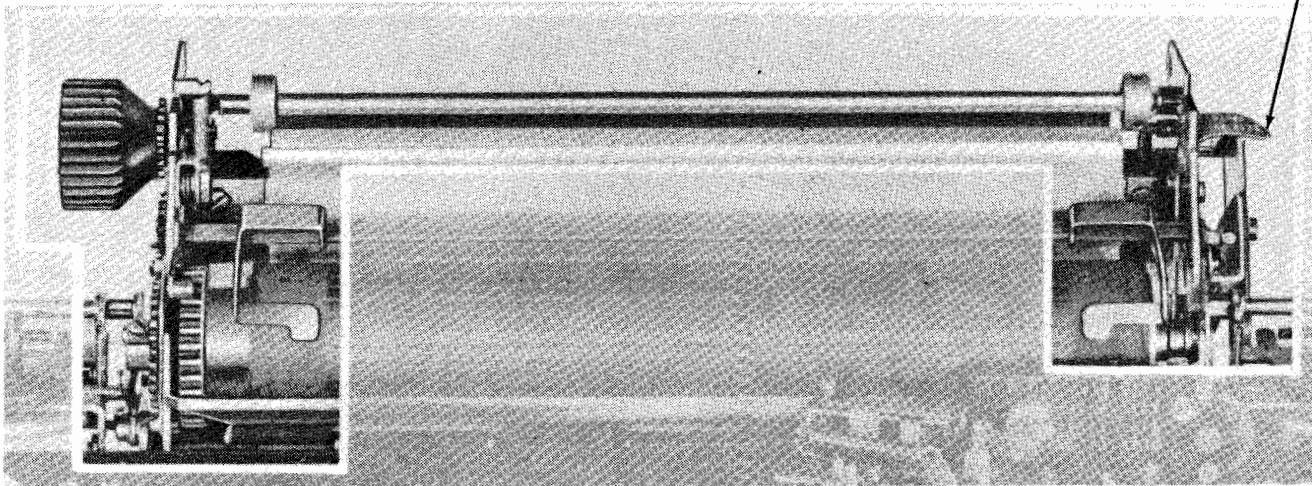


(Rear View)

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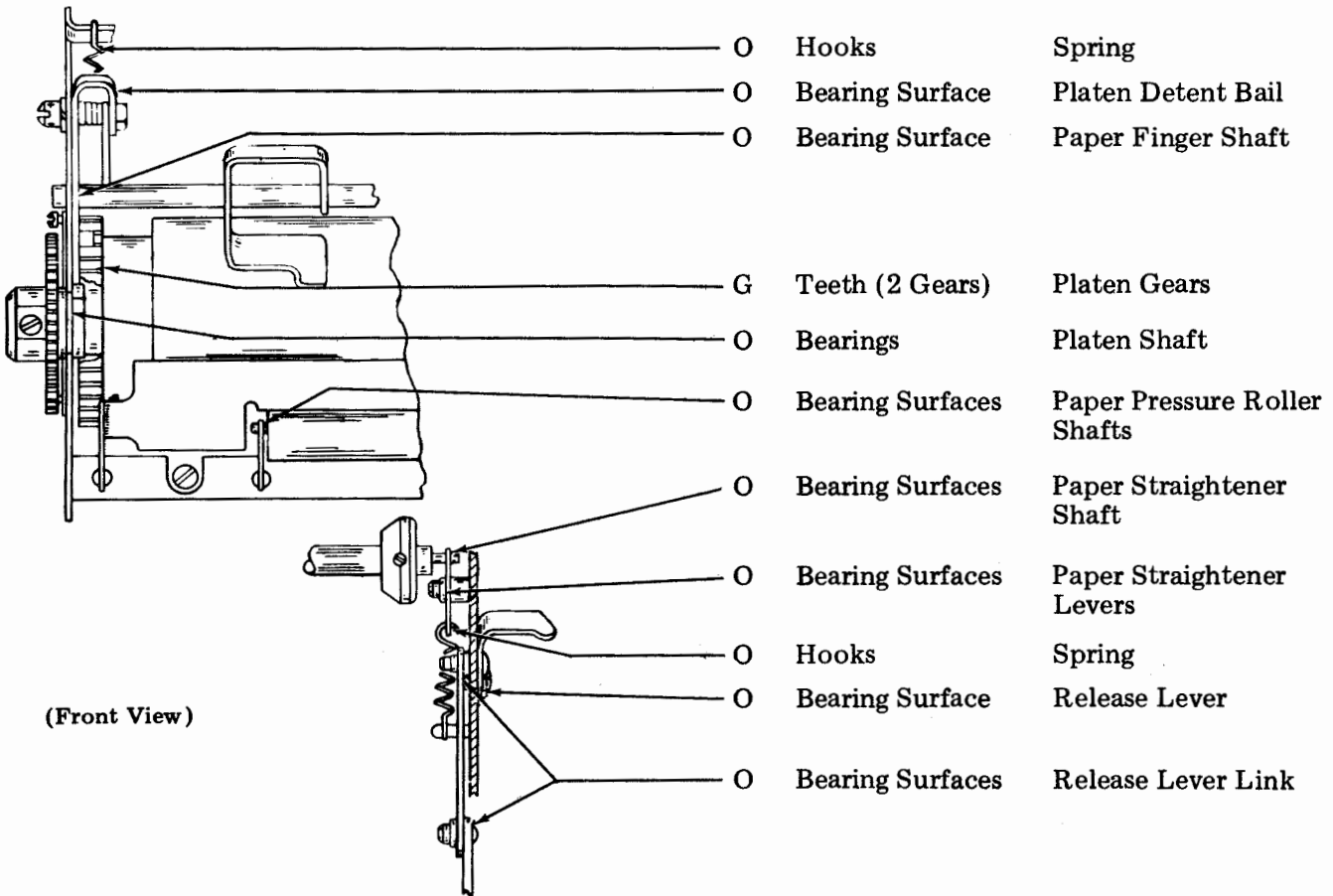
2.05 Paper Feed Area

2.06



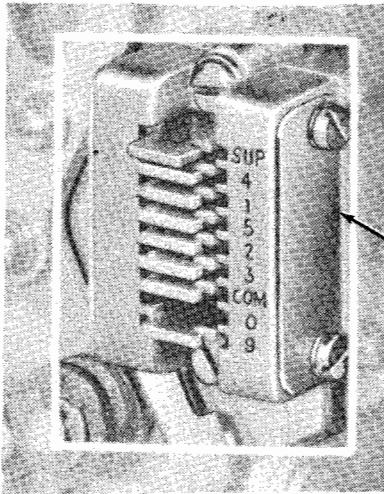
(Front View)

2.06 Paper Feed Mechanism

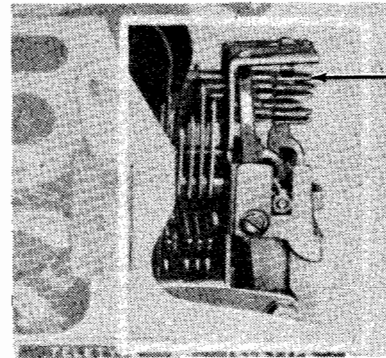


(Front View)

2.07 Codebar Area

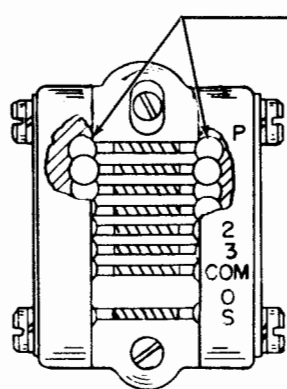


(Left Front View)



(Front View)

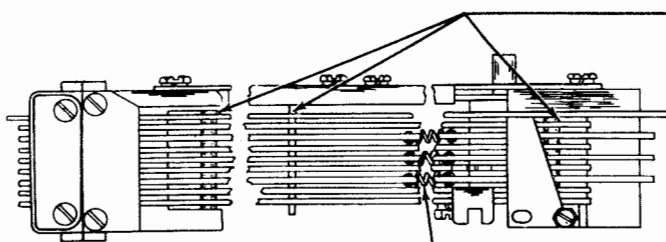
2.08 Codebar Detents



(Left Side View)

O Bearing Balls (9) Codebar Detent

2.09 Codebar Mechanism



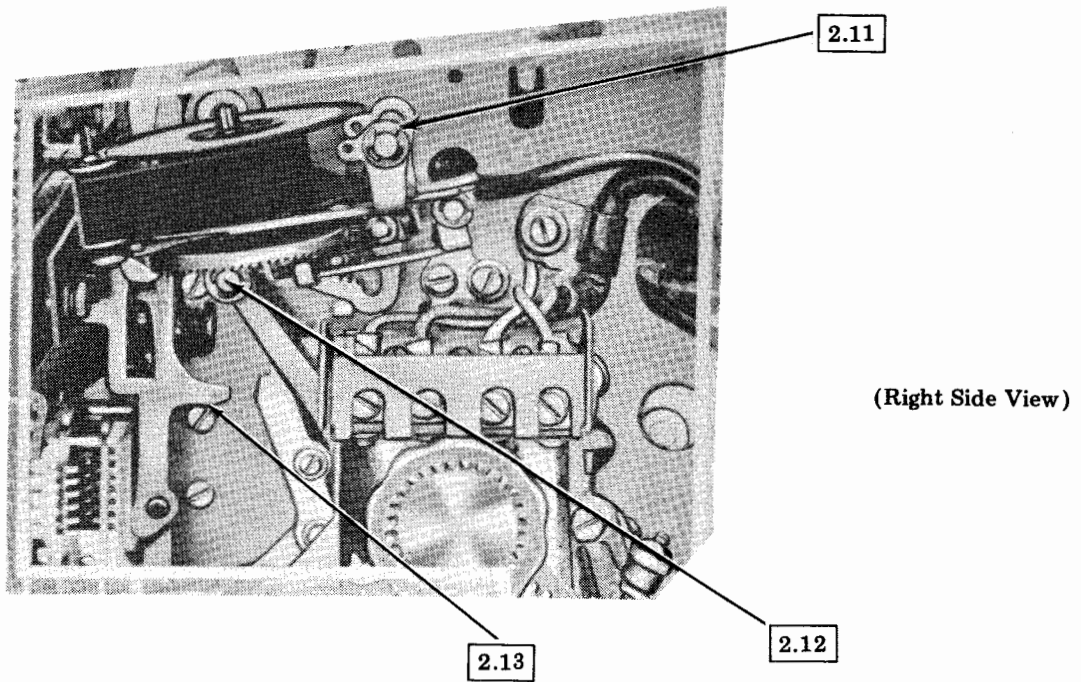
(Front View)

O Guide Slots (9) Codebars

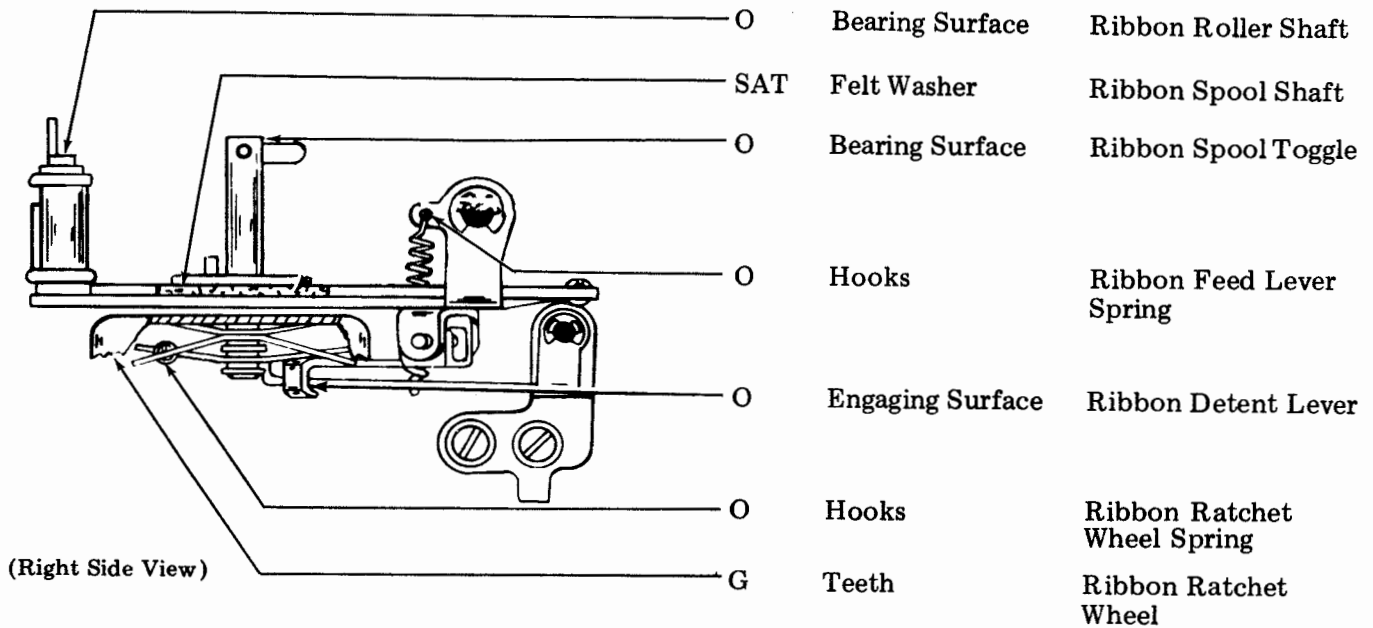
O Hooks Springs (3)

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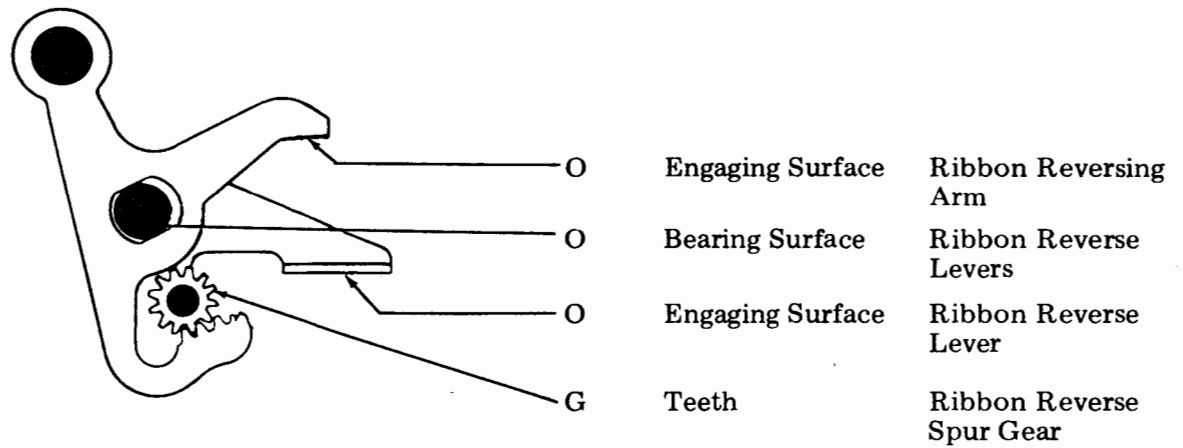
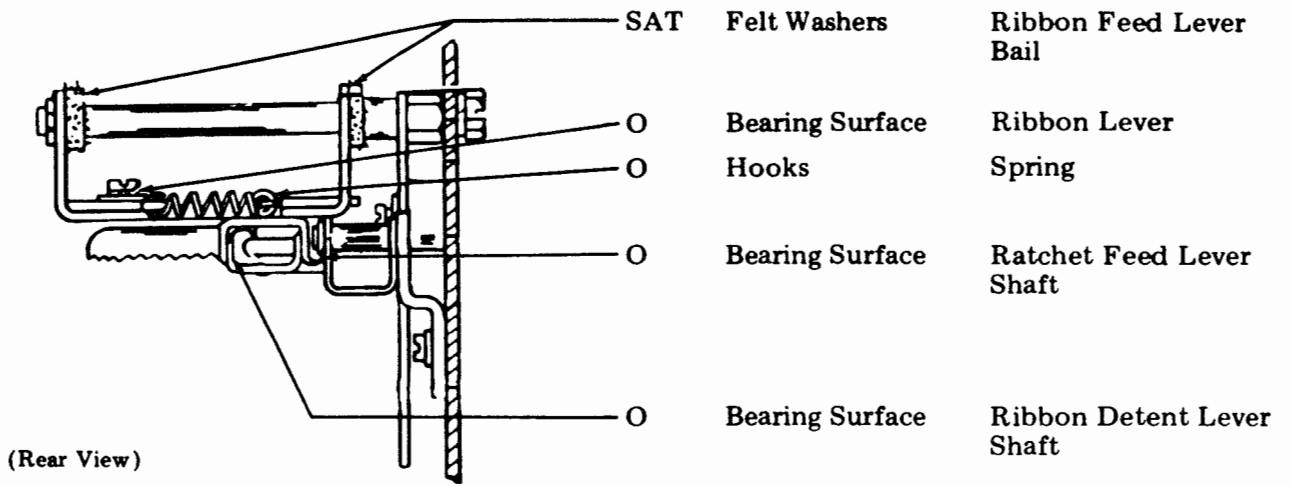
2.10 Ribbon Area



2.11 Ribbon Feed Mechanism



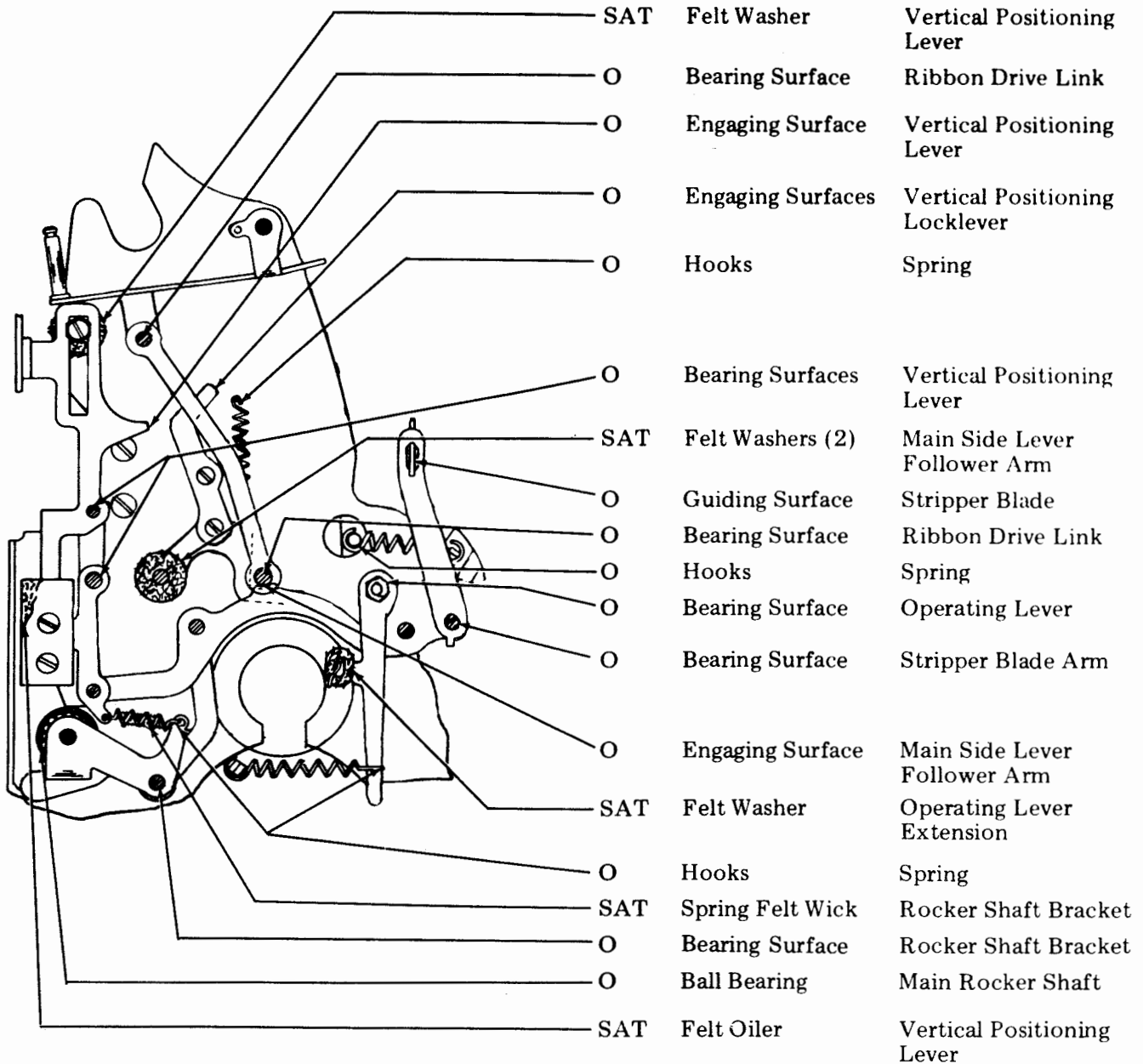
2.12 Ribbon Feed Mechanism (continued)



(Right Side View)

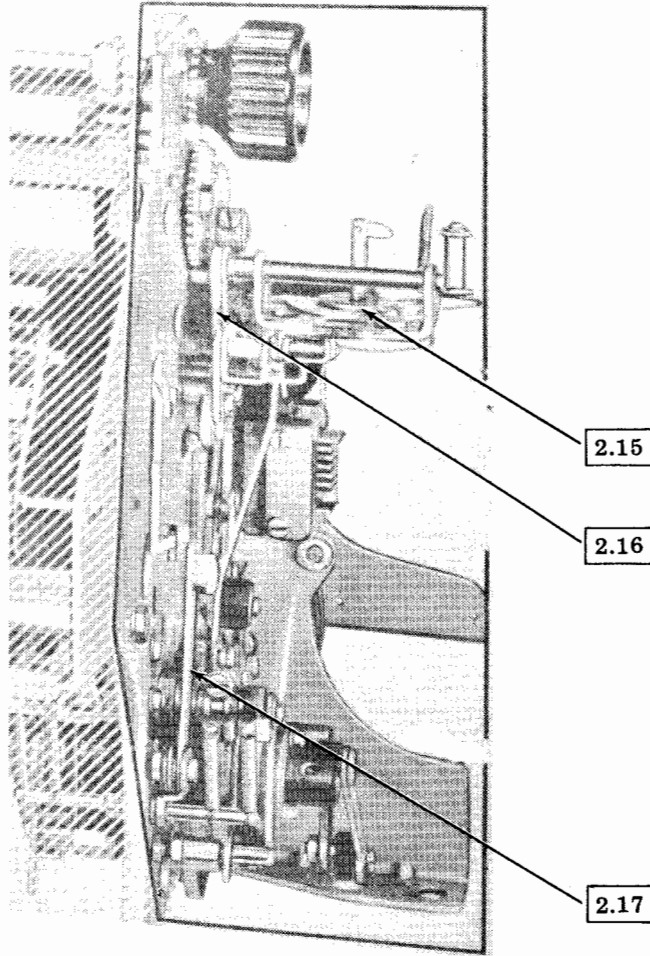
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2.13 Vertical Positioning Mechanism



(Right Side View)

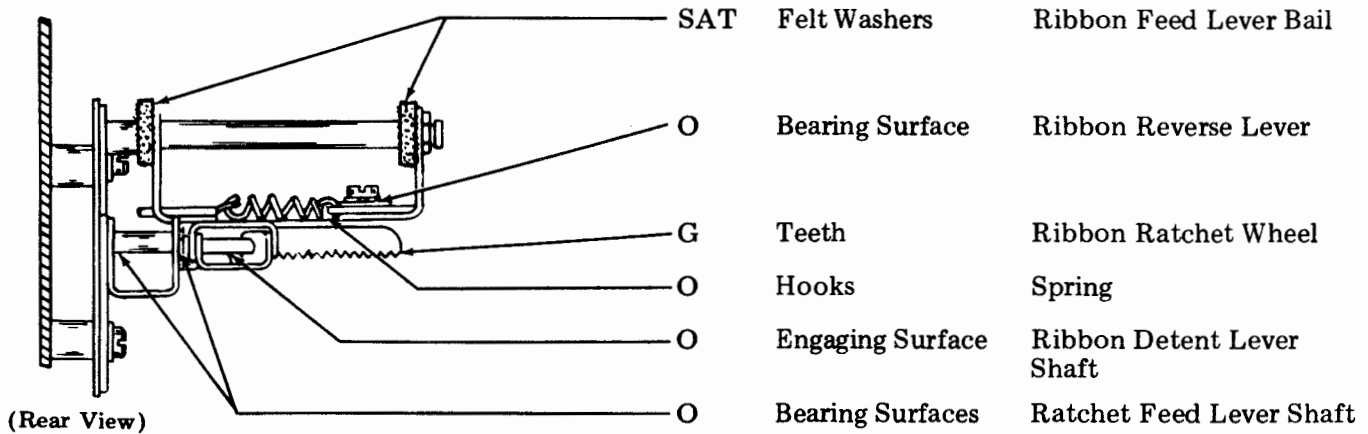
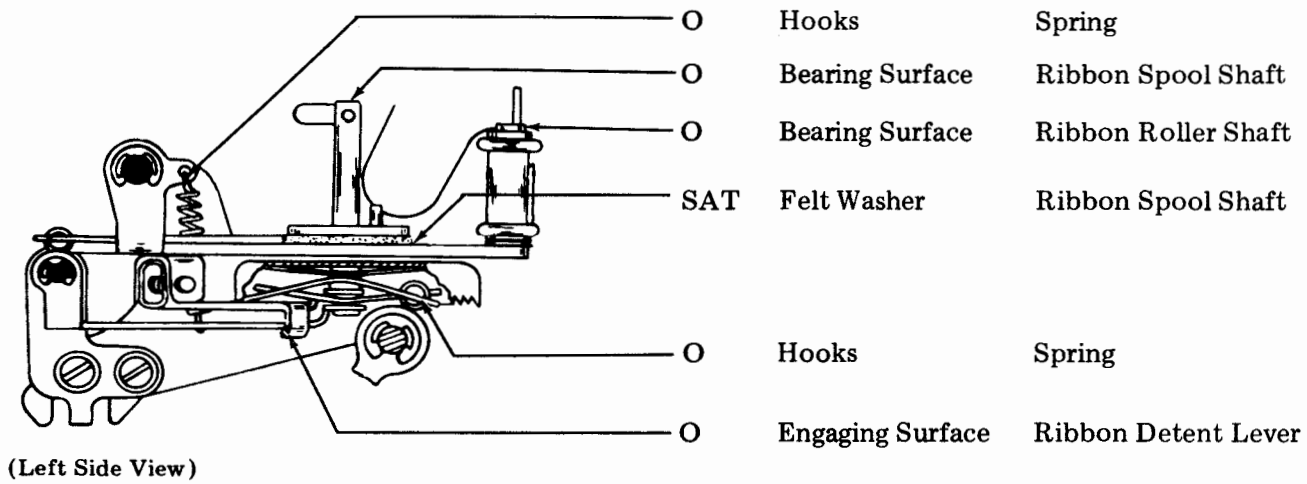
2.14 Ribbon Area (continued)



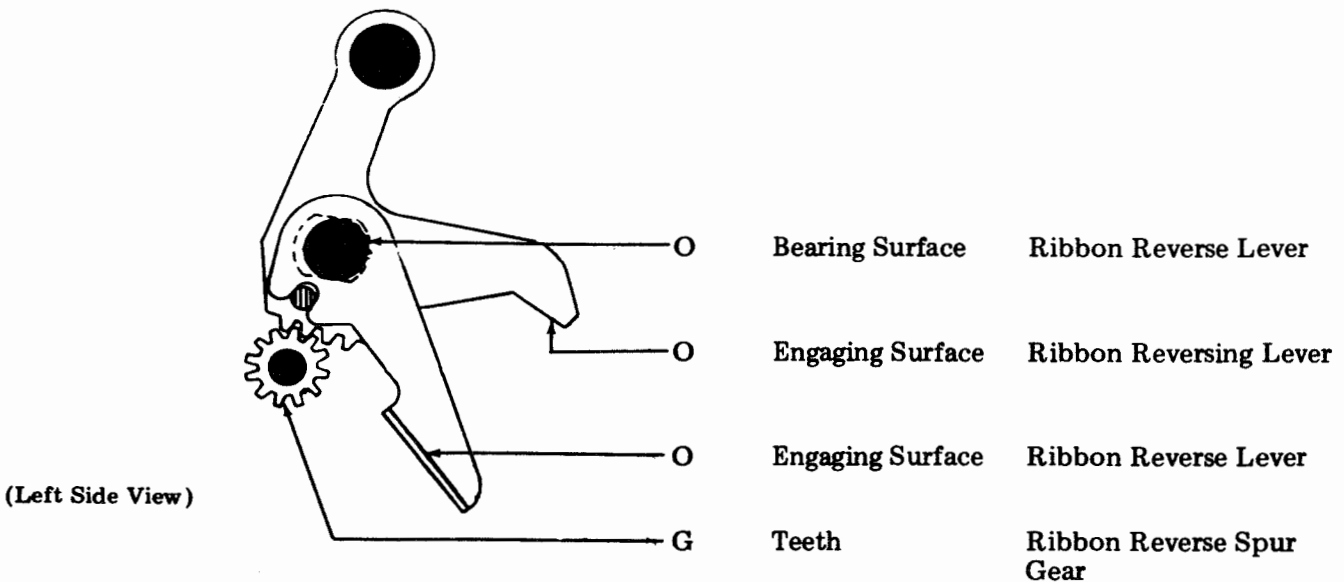
(Left Rear View)

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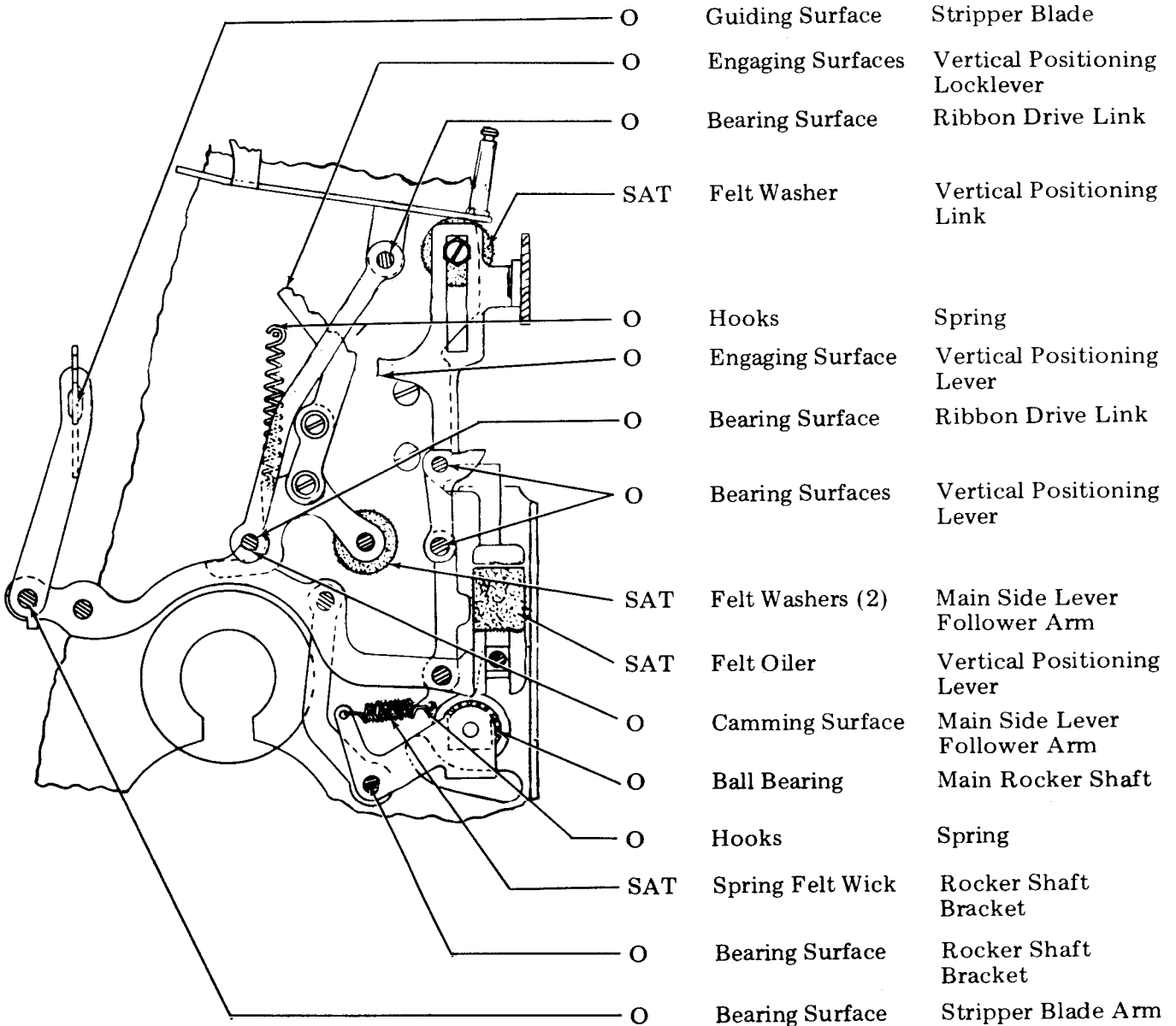
2.15 Ribbon Feed Mechanism (continued)



2.16 Ribbon Feed Mechanism (continued)



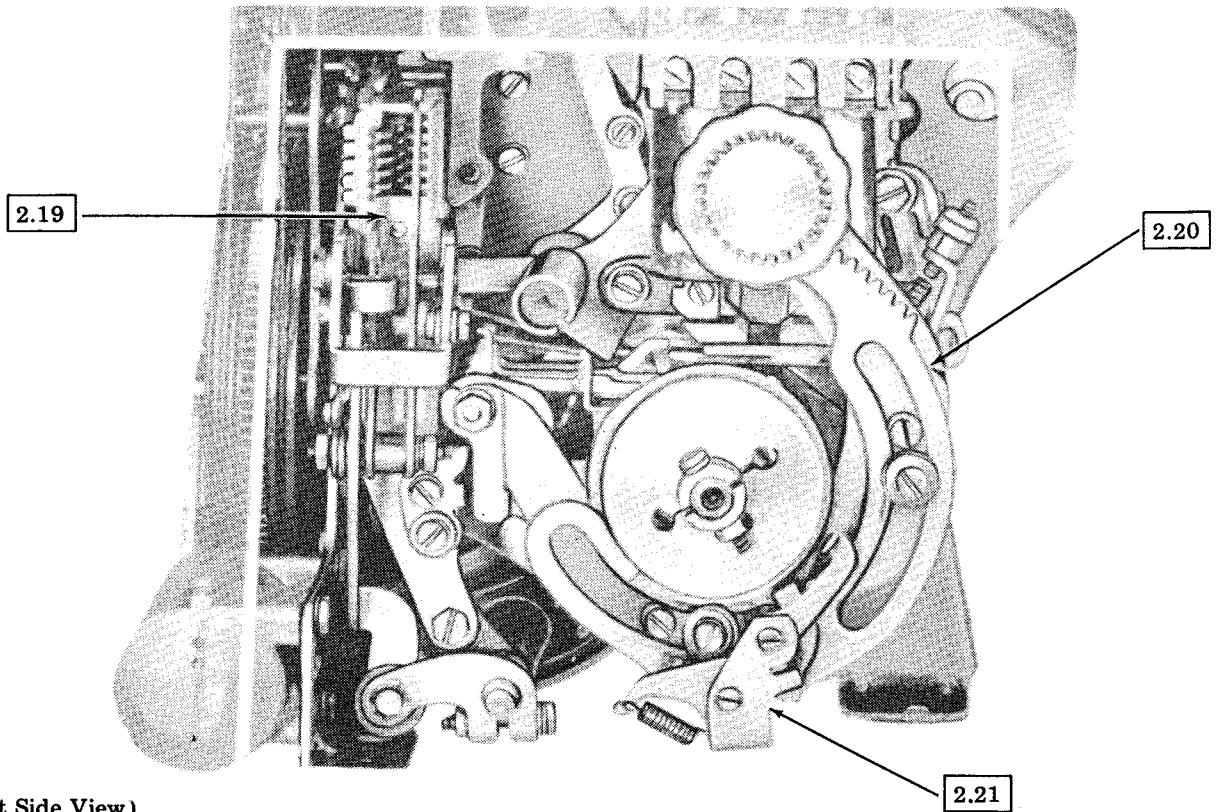
2.17 Vertical Positioning Mechanism (continued)



(Left Side View)

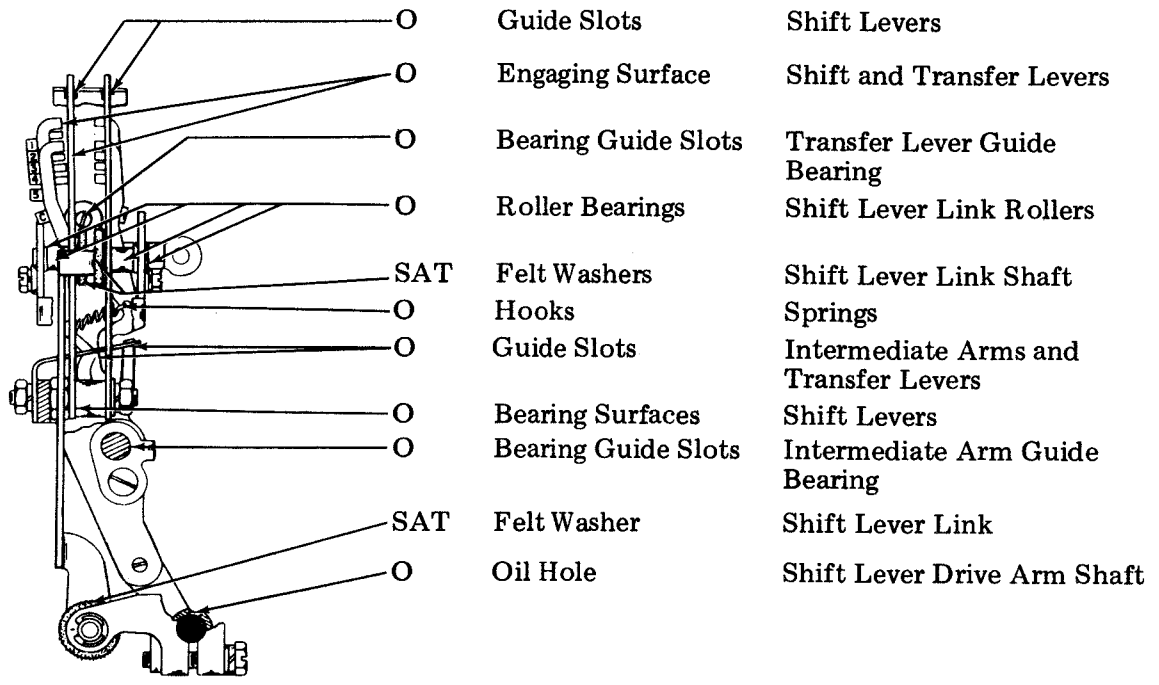
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2.18 Selector Area



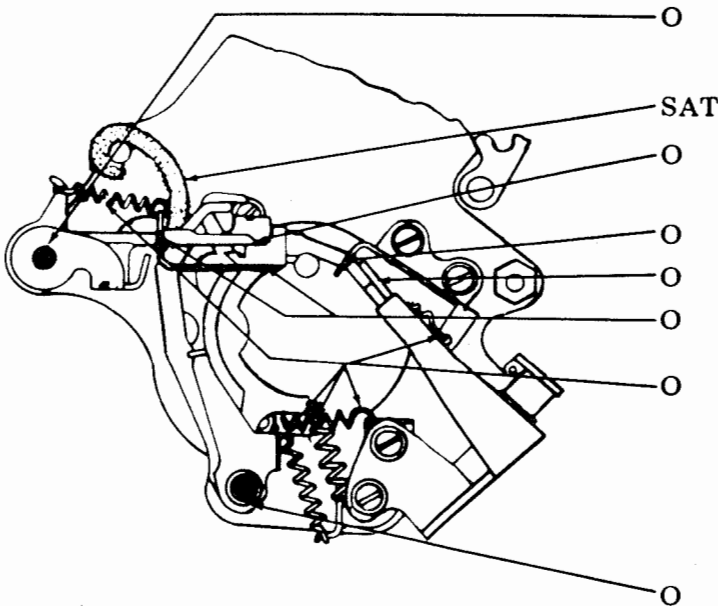
(Right Side View)

2.19 Codebar Mechanism (continued)



(Right Side View)

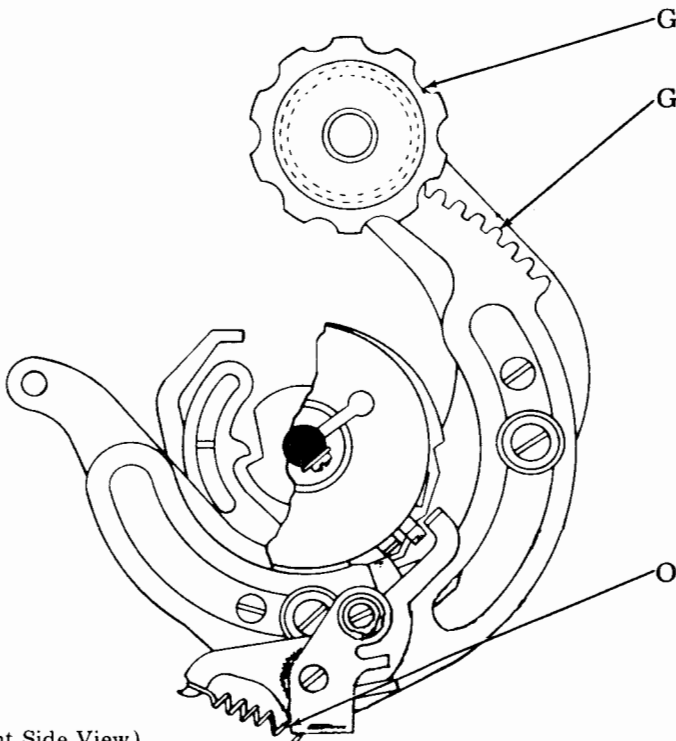
2.20 Selector Mechanism



(Right Side View)

- | | | |
|-----|---------------------|------------------------------|
| O | Bearing Guide Slots | Push Lever Guide Bearing |
| SAT | Felt Wick | Selector Wick |
| O | Engaging Surfaces | Push Levers |
| O | Guide Slot | Marking Locklever |
| O | Wick | Lubricator Wick |
| O | Guide Slots | Selector and Push Levers |
| O | Hooks | Springs |
| O | Bearing Guide Slots | Selector Lever Guide Bearing |

2.21 Selector Mechanism (continued)

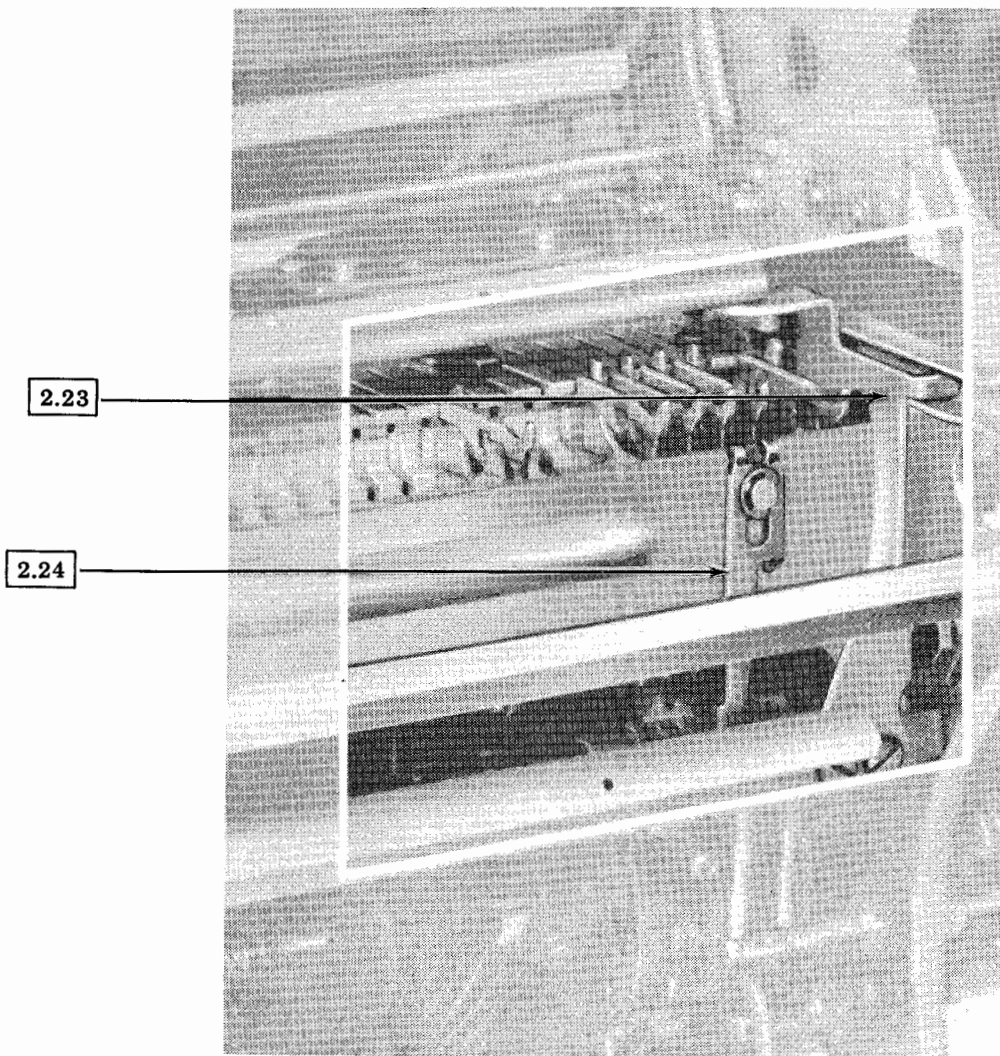


(Right Side View)

- | | | |
|---|-------|--------|
| G | Teeth | Knob |
| G | Teeth | Gear |
| O | Hooks | Spring |

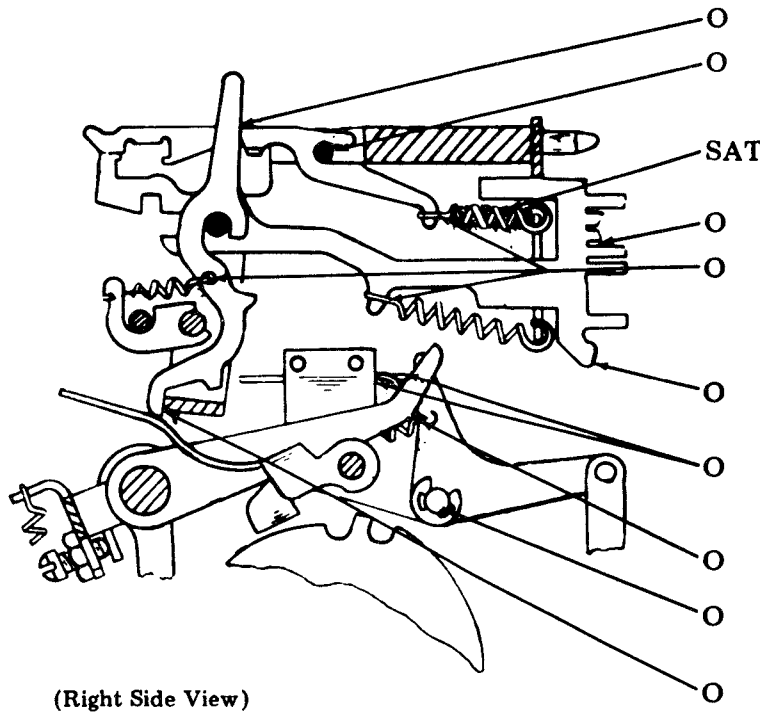
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2.22 Function Area



(Rear View)

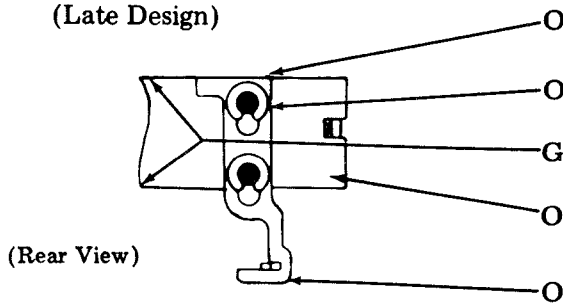
2.23 Stunt Box Mechanism



- O Guide Slots Function Levers
- O Guide Slots Function Pawls
- SAT Each Felt Wick Function Pawl Springs
- O Guide Slots Function Bars
- O Hooks Springs
- O Engaging Surfaces Function Bars (Front and Rear)
- O Guide Surfaces Line Feed Slide Arm
- O Hooks Spring
- O Bearing Surface Keyboard Locklever
- O Engaging Surfaces Function Levers

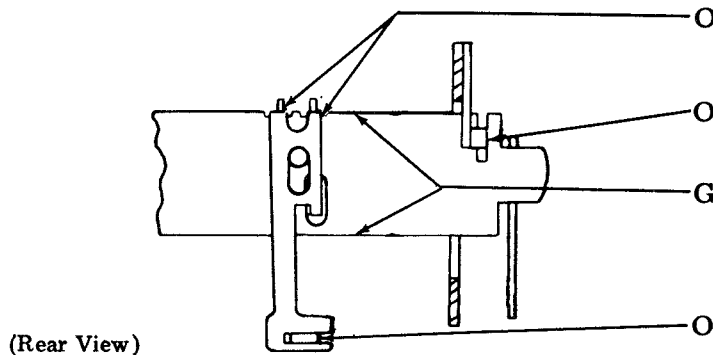
2.24 Stripper Blade Mechanism

(Late Design)



- O Engaging Surface Line Feed Stripper Slide
- O Guide Surfaces Stripper Slide
- G Engaging Surfaces Stripper Blade
- O Guide Surfaces Stripper Blade
- O Engaging Surface Stripper Blade

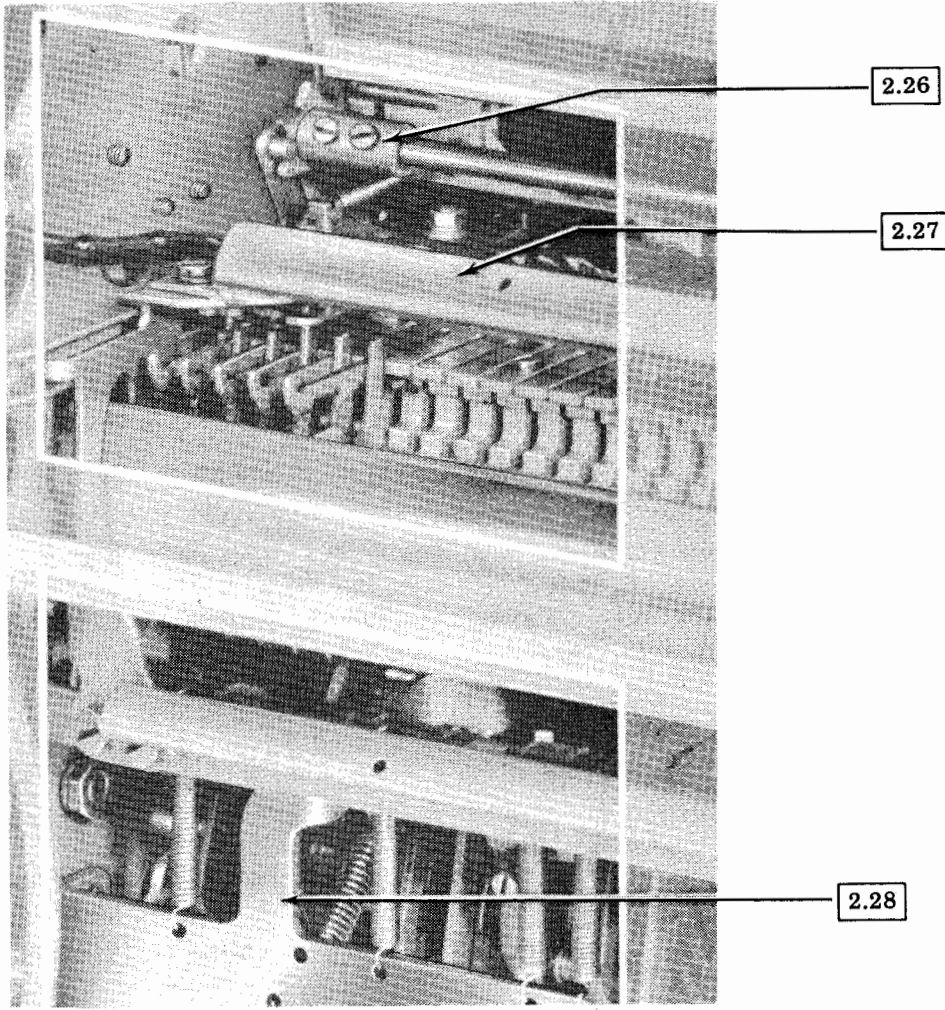
(Early Design)



- O Engaging Surfaces Line Feed Function Pawl Stripper
- O Guiding Surface Stripper Blade
- G Upper and Lower Surface Stripper Blade
- O Guiding Surface Stripper Bail

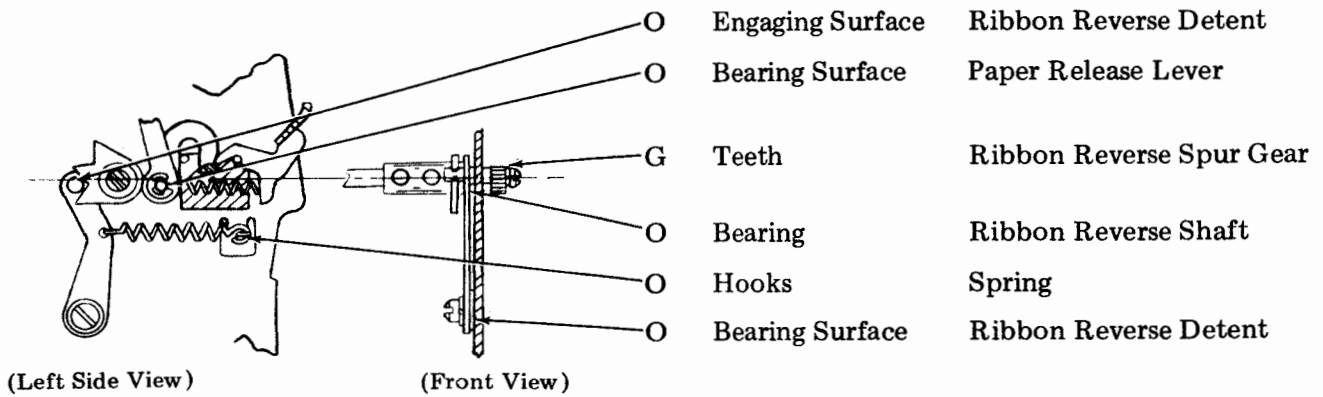
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2.25 Function Area (continued)

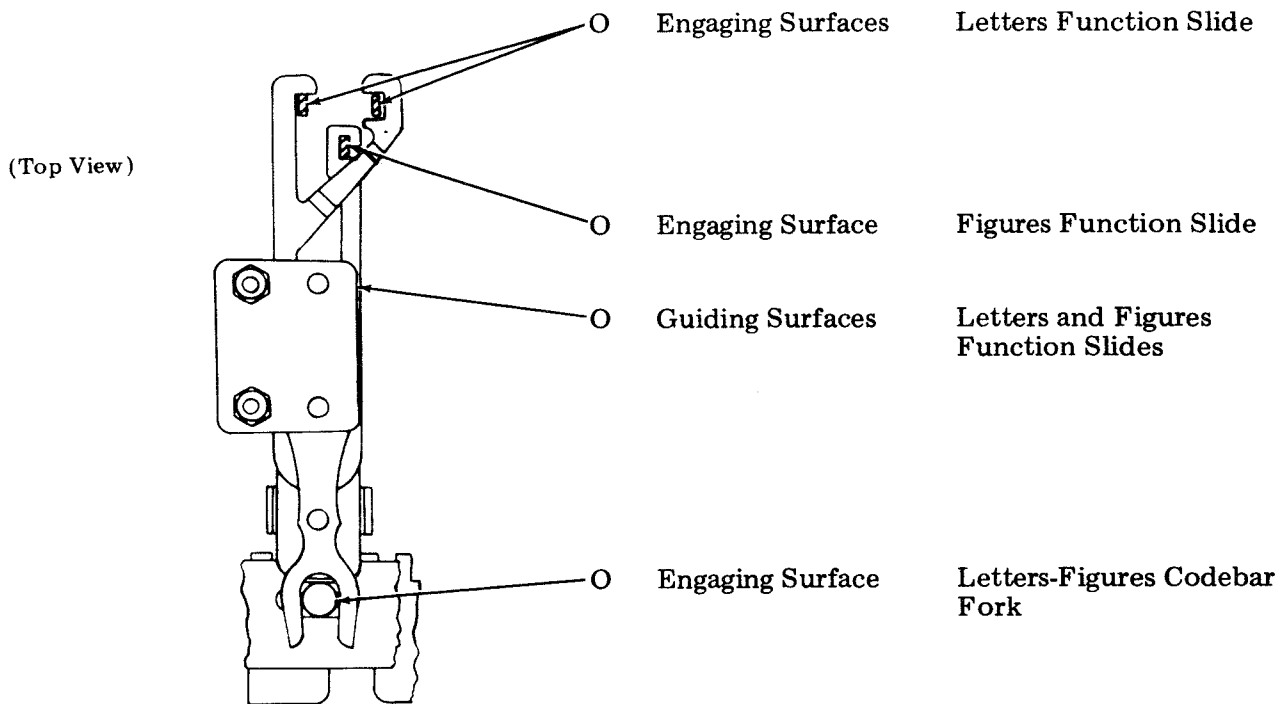


(Rear View)

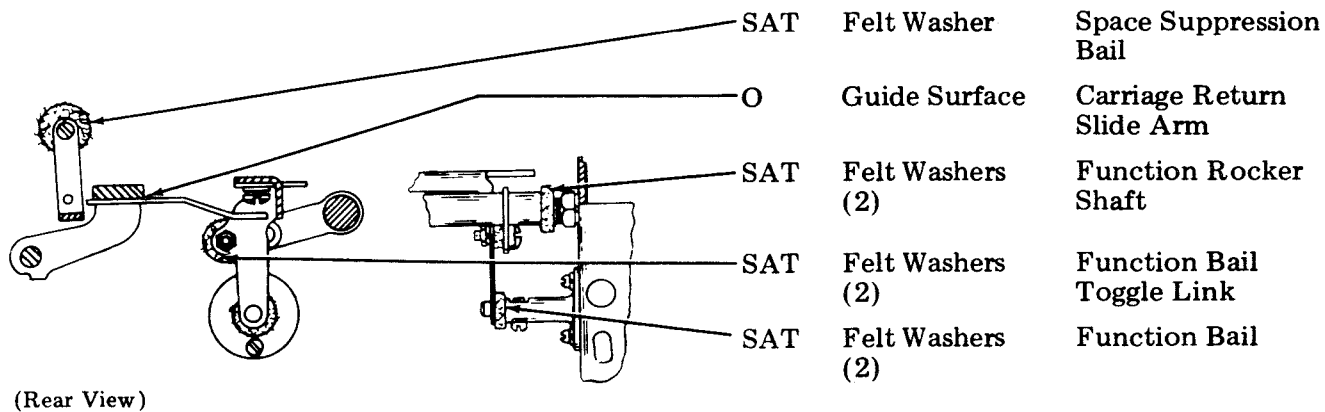
2.26 Ribbon Reverse Mechanism



2.27 Shift Mechanism

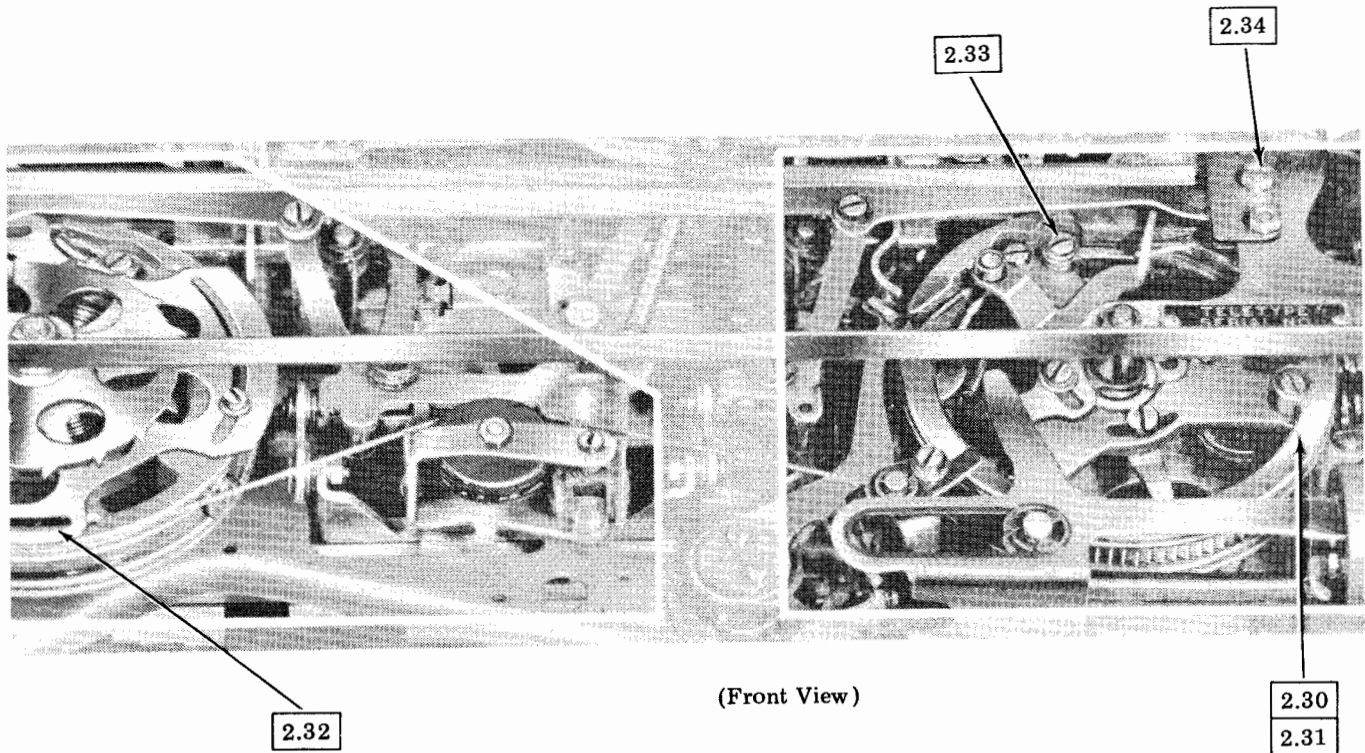


2.28 Function Rocker Shaft Mechanism



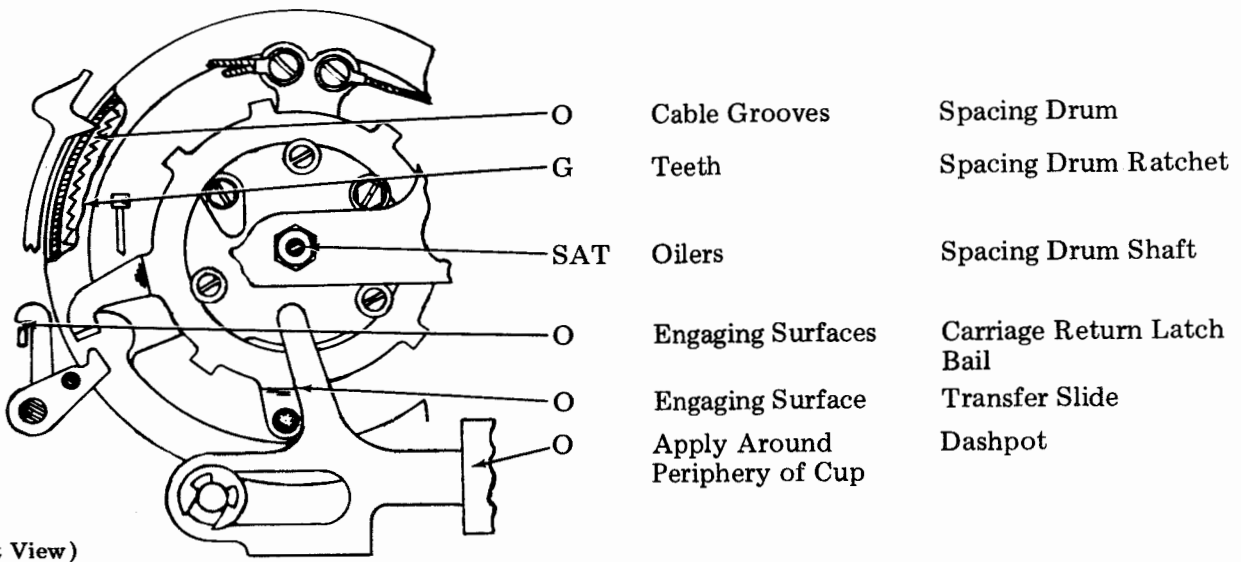
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2.29 Spacing Area



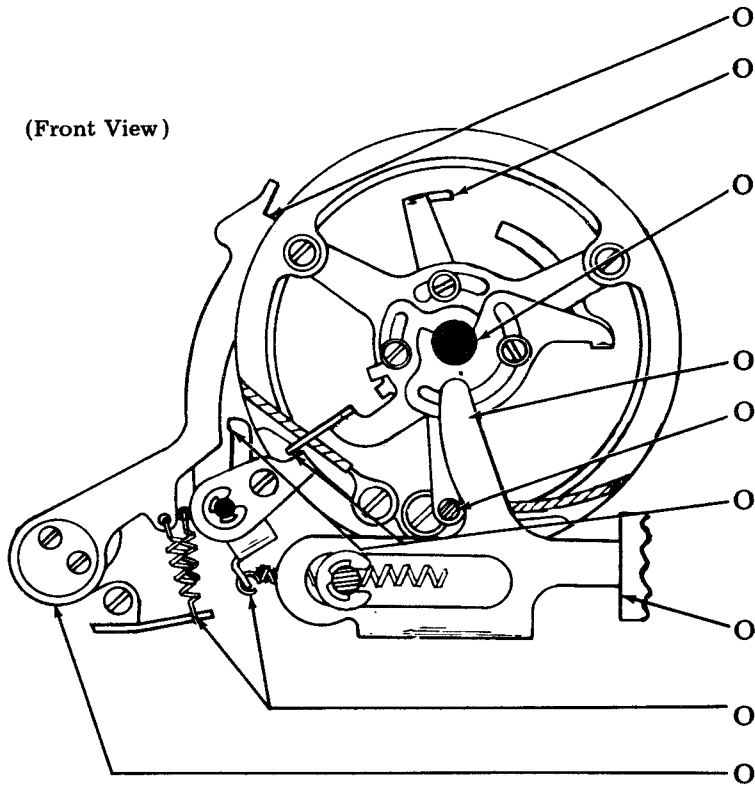
(Front View)

2.30 Spacing Drum Drive Mechanism (Late Design)



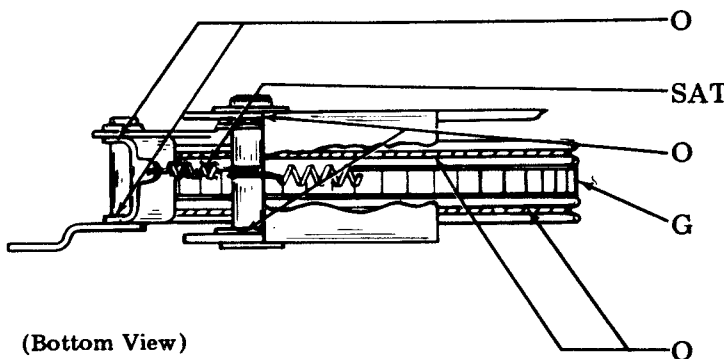
(Front View)

2.31 Spacing Drum Drive Mechanism (Early Design)



(Front View)

- O Engaging Surface Space Pawls (2)
- O Engaging Surface Spacing Cutout Lever
- O Bearing (Outer and Inner End) Spacing Drum Shaft
- O Engaging Surface Transfer Slide
- O Roller Bearing Stop Arm Roller
- O Engaging Surfaces Carriage Return Latch Bail
- O Apply Around Periphery of Cup Dashpot
- O Hooks Springs
- O Bearing Surfaces Spacing Pawls Eccentrics

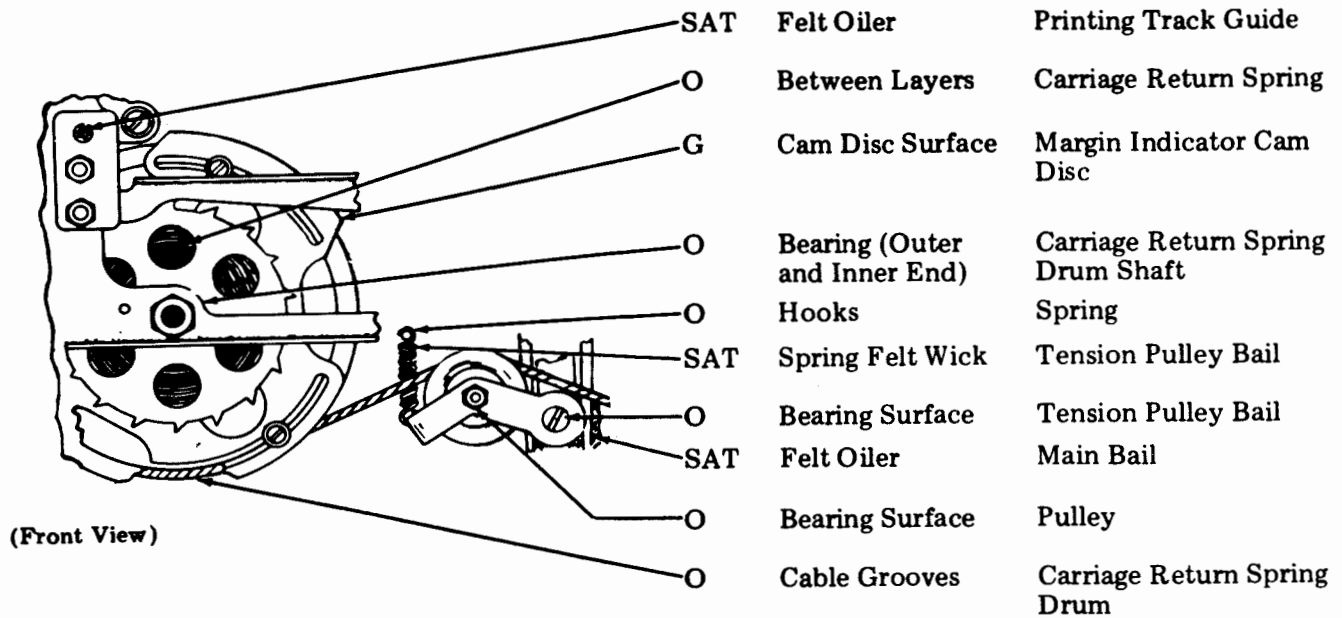


(Bottom View)

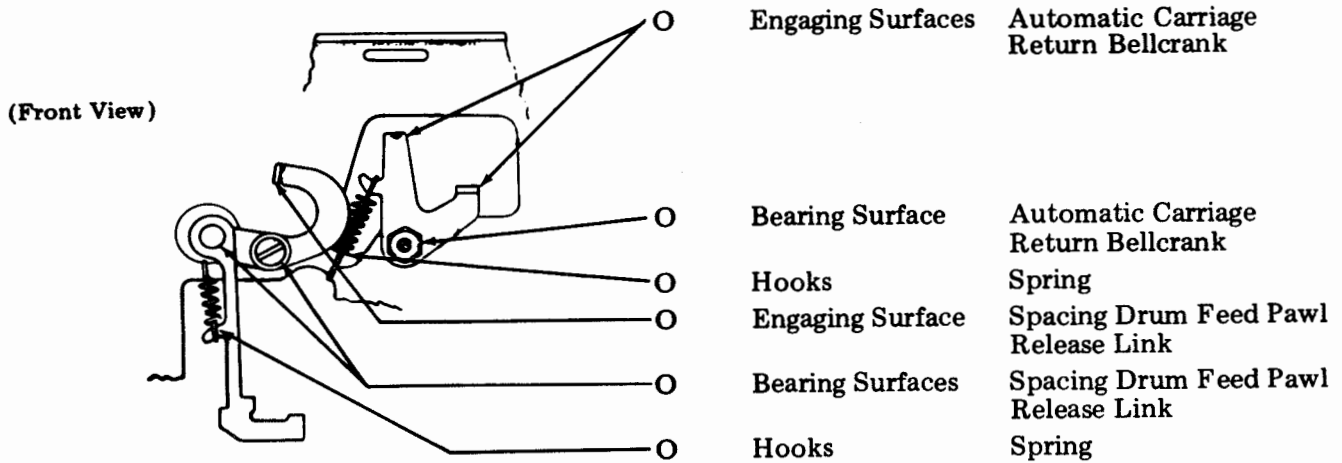
- O Bearing Surfaces Carriage Return Latch Bail
- SAT Felt Wick Spring Wick
- O Roller Bearings Transfer Slide Rollers
- O Teeth Spacing Drum Ratchet Wheel
- O Cable Grooves Spacing Drum

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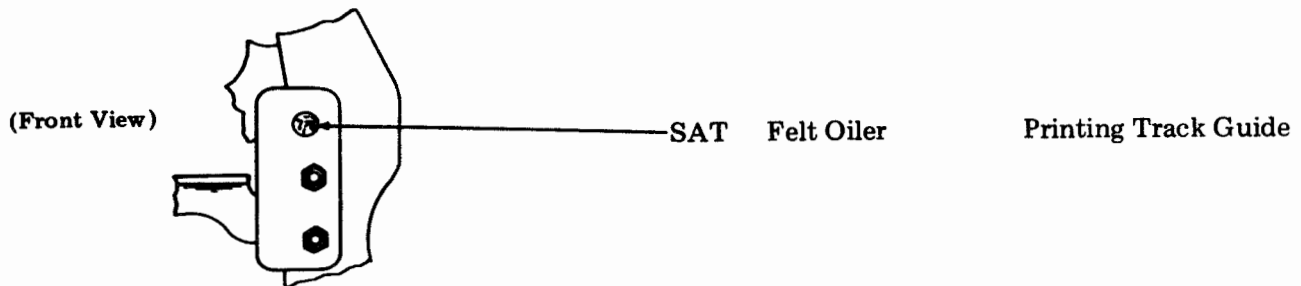
2.32 Carriage Return Mechanism



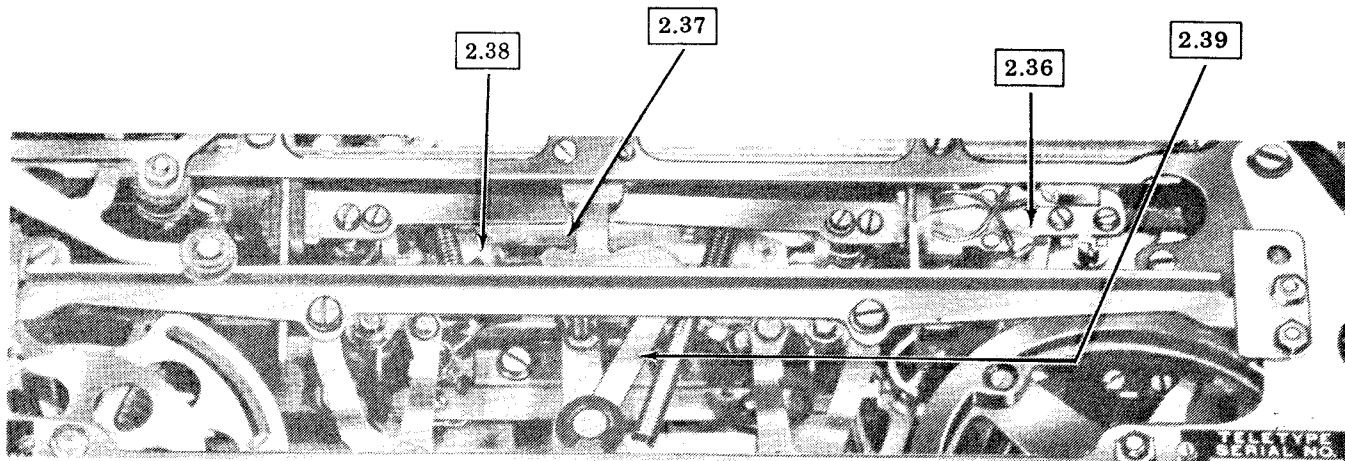
2.33 Spacing Drum Feed Mechanism



2.34 Track Guide Mechanism

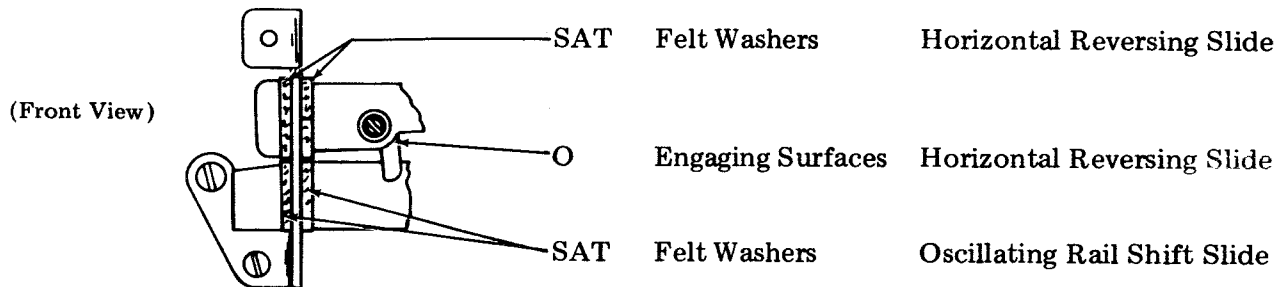
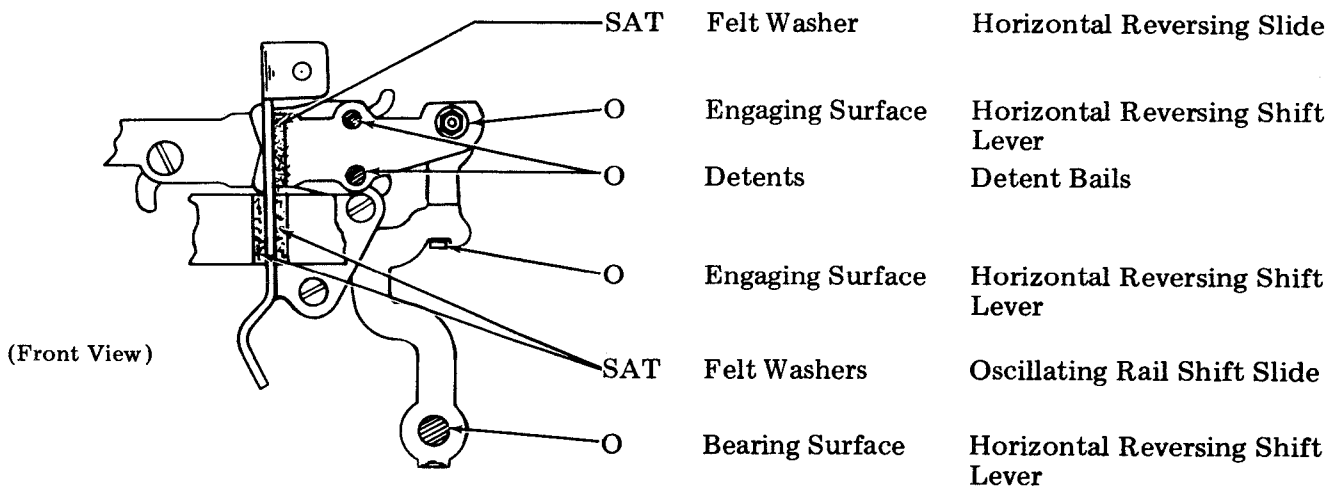


2.35 Horizontal Positioning Area



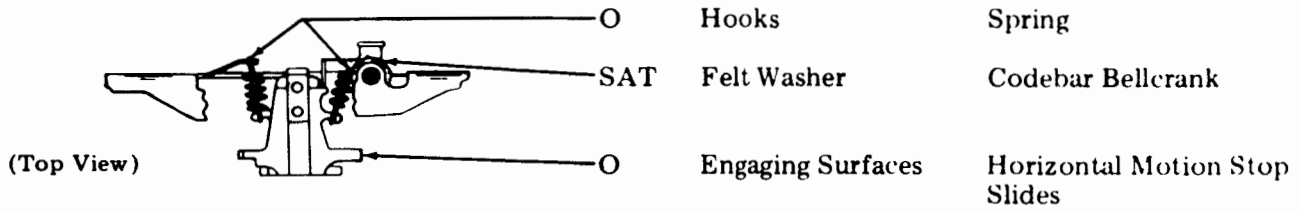
(Front View)

2.36 Horizontal Positioning Mechanism

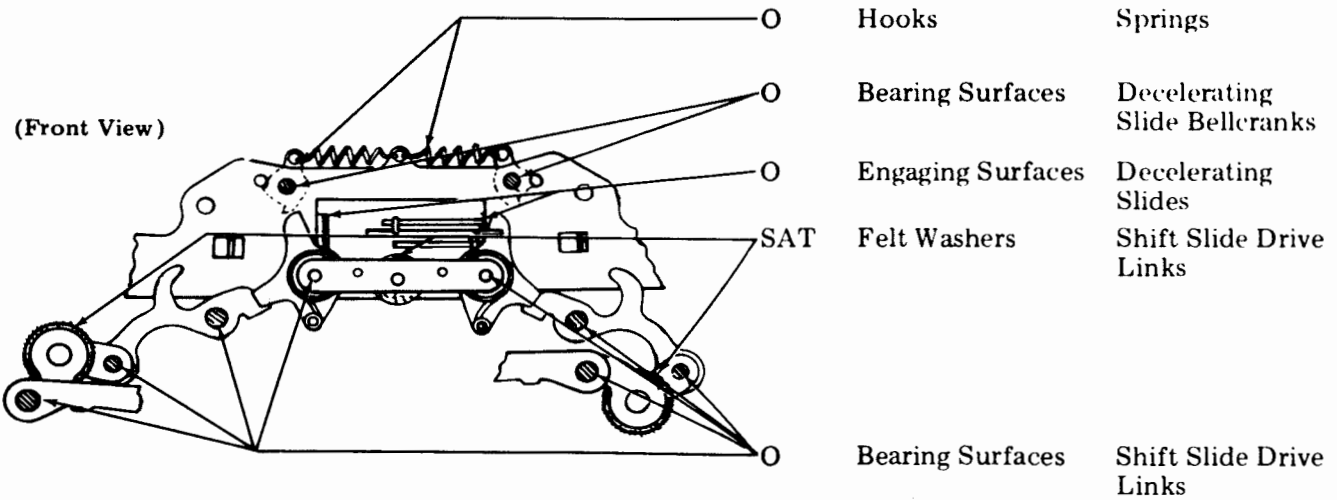


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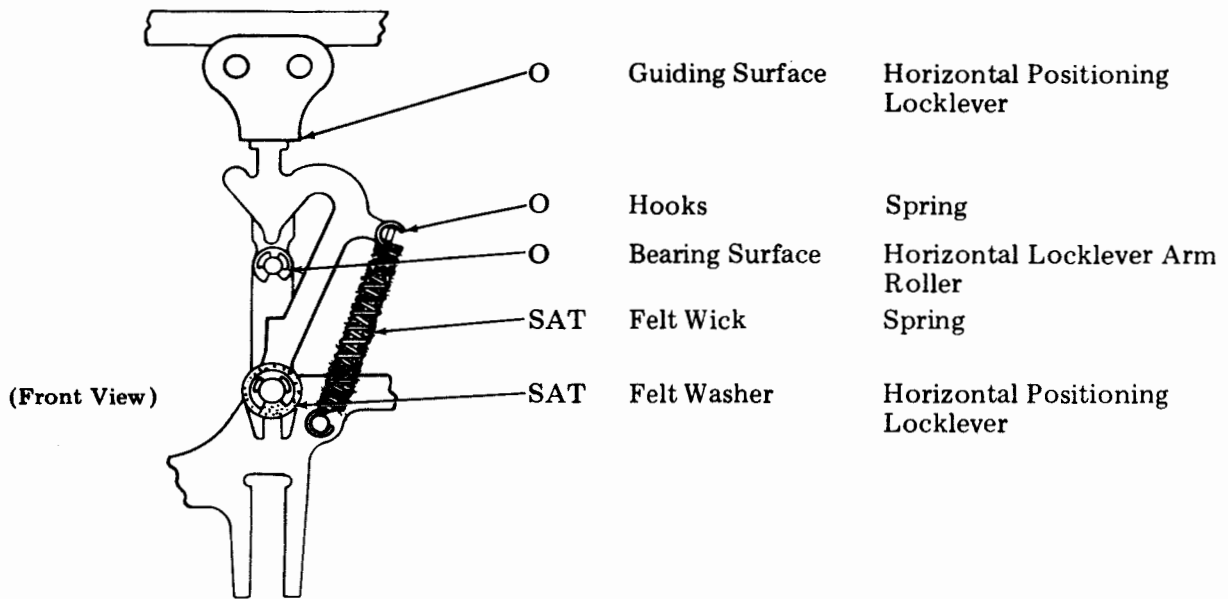
2.37 Horizontal Positioning Mechanism (continued)



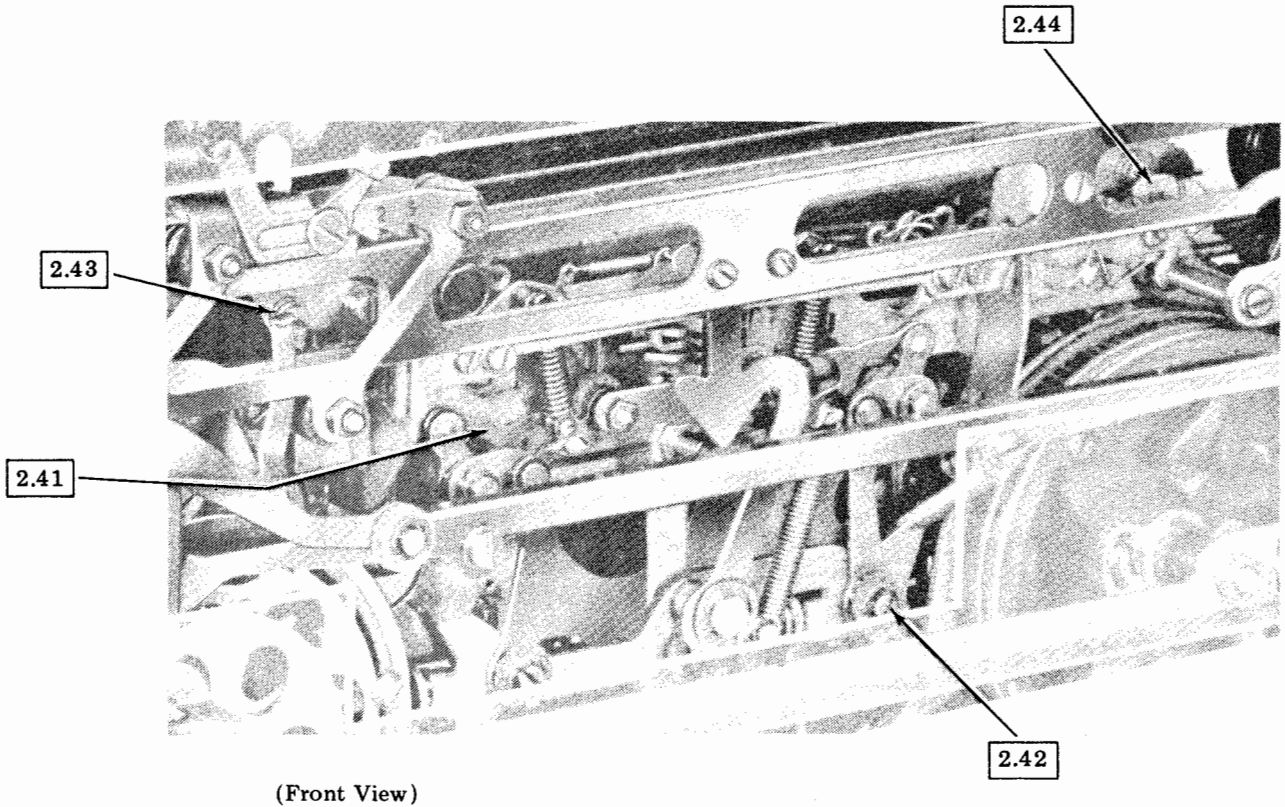
2.38 Horizontal Positioning Mechanism (continued)



2.39 Horizontal Positioning Mechanism (continued)

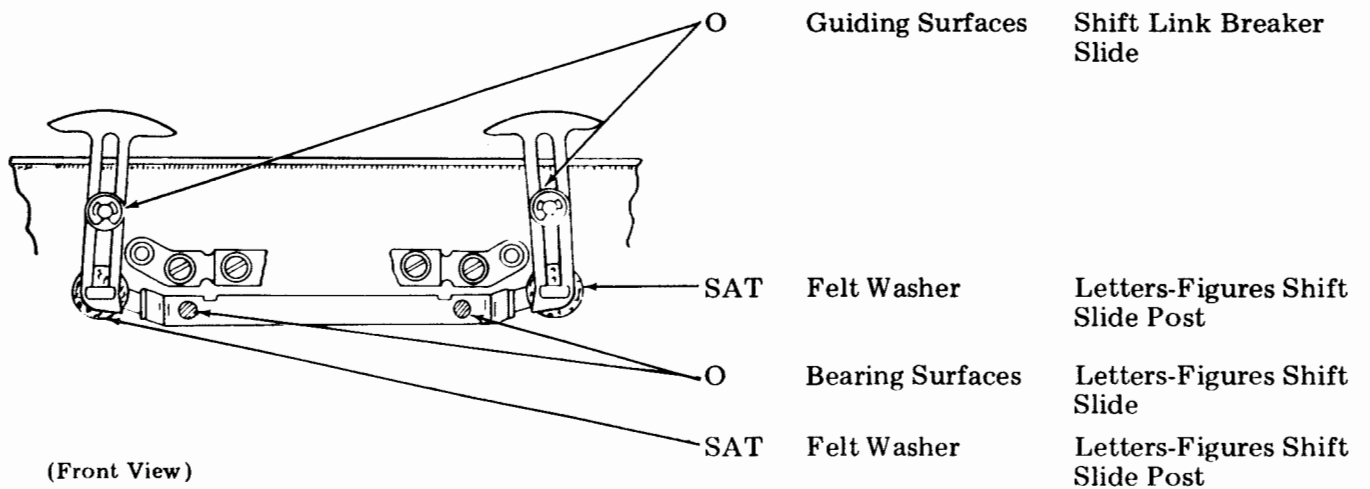


2.40 Letters-Figures Shift Area



(Front View)

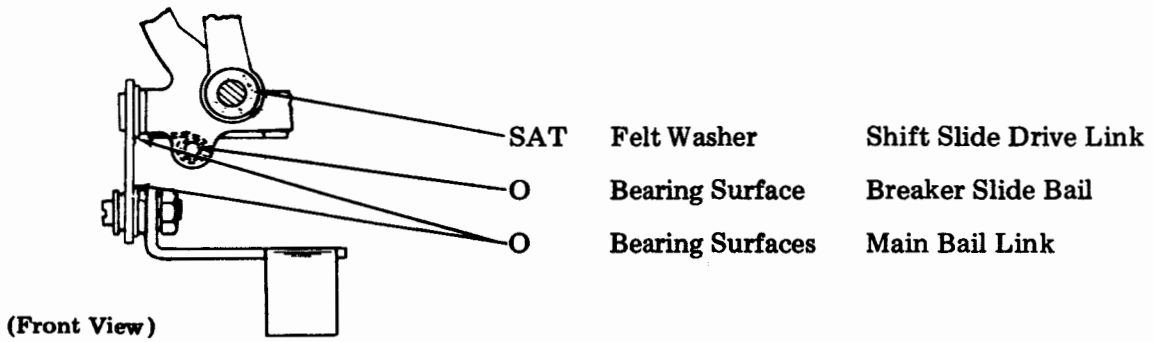
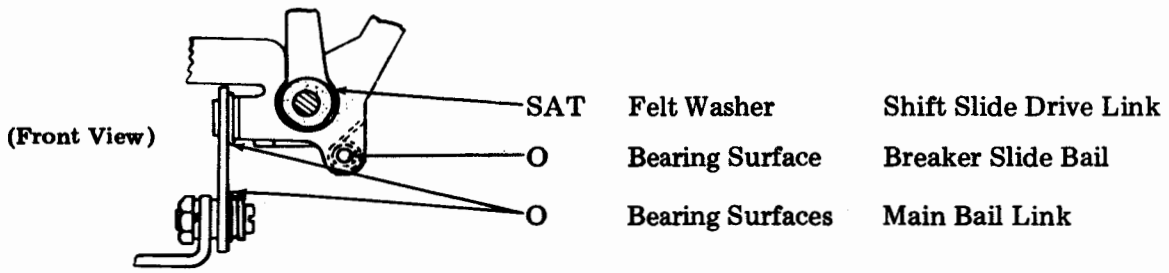
2.41 Letters-Figures Shift Mechanism



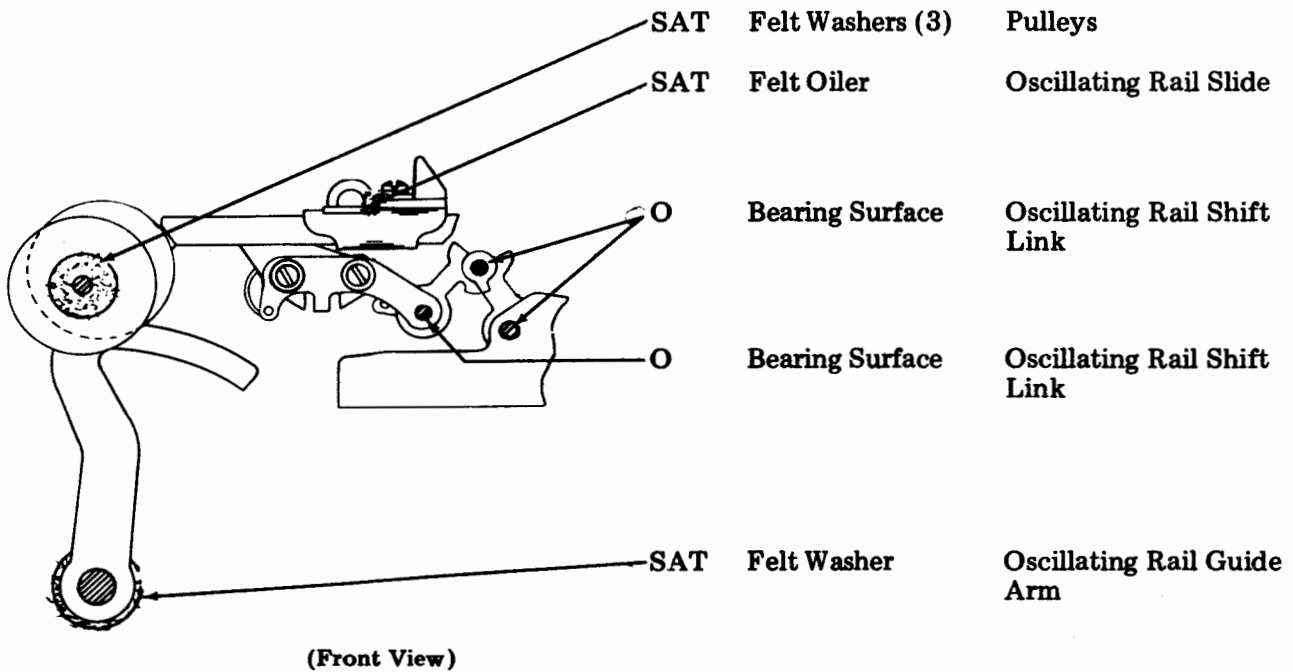
(Front View)

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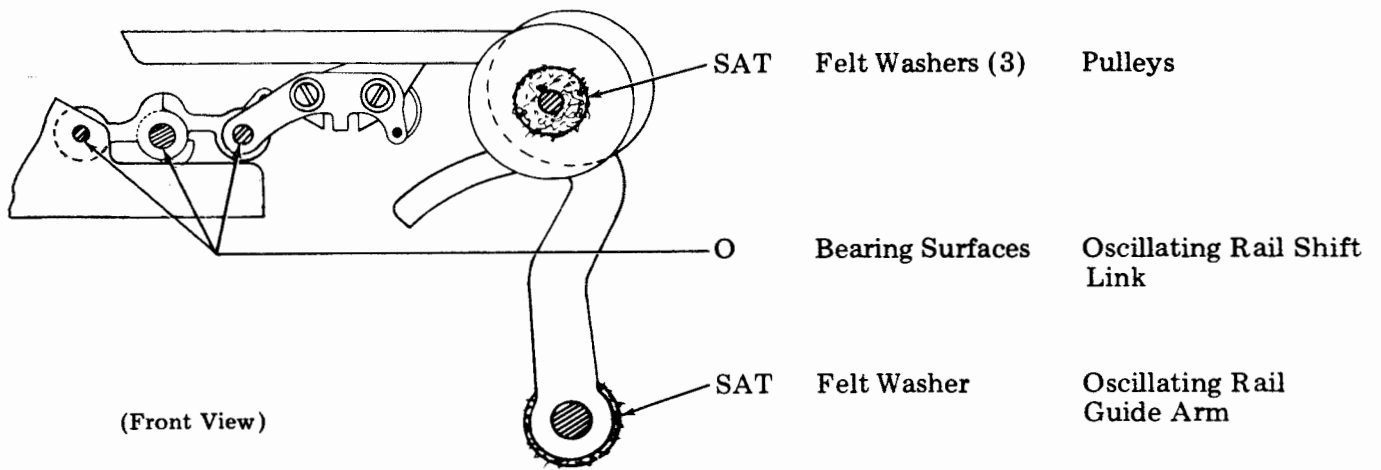
2.42 Letters-Figures Shift Mechanism (continued)



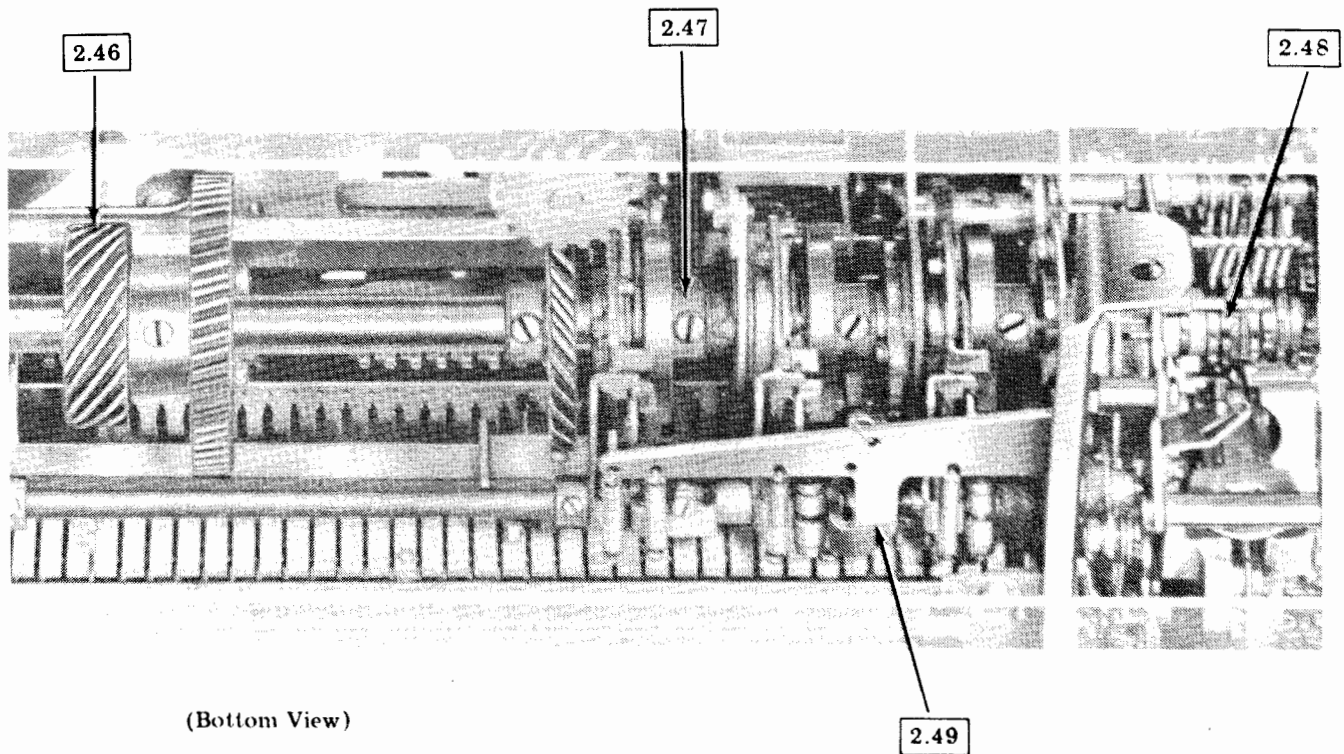
2.43 Oscillating Mechanism



2.44 Oscillating Mechanism (continued)

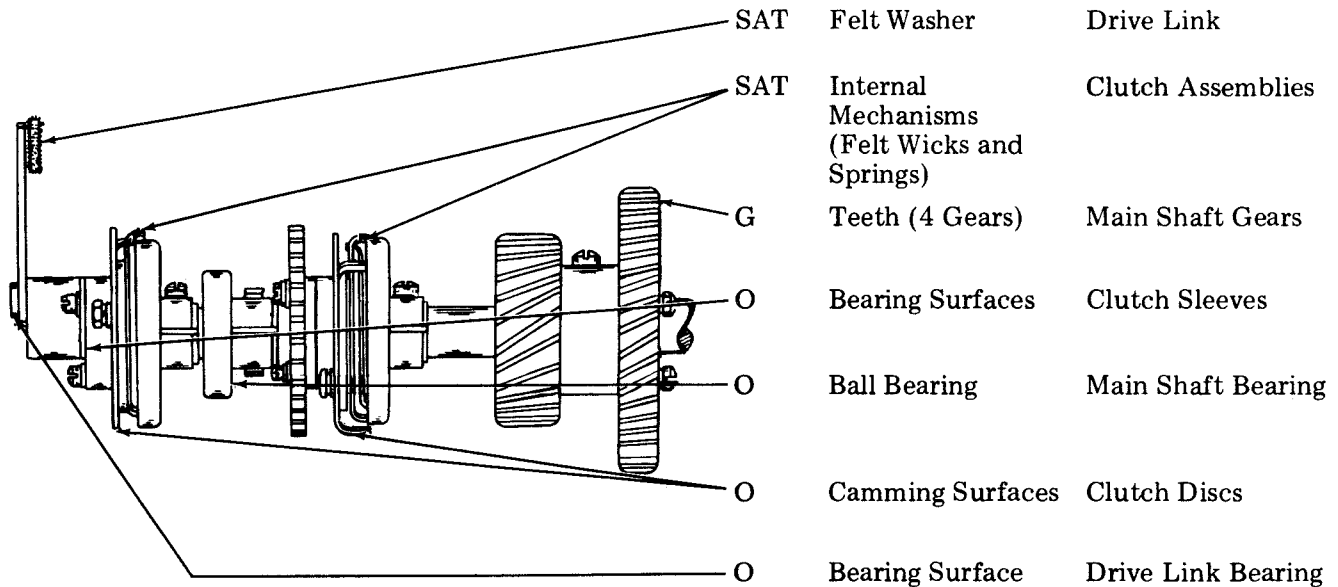


2.45 Main Shaft Area



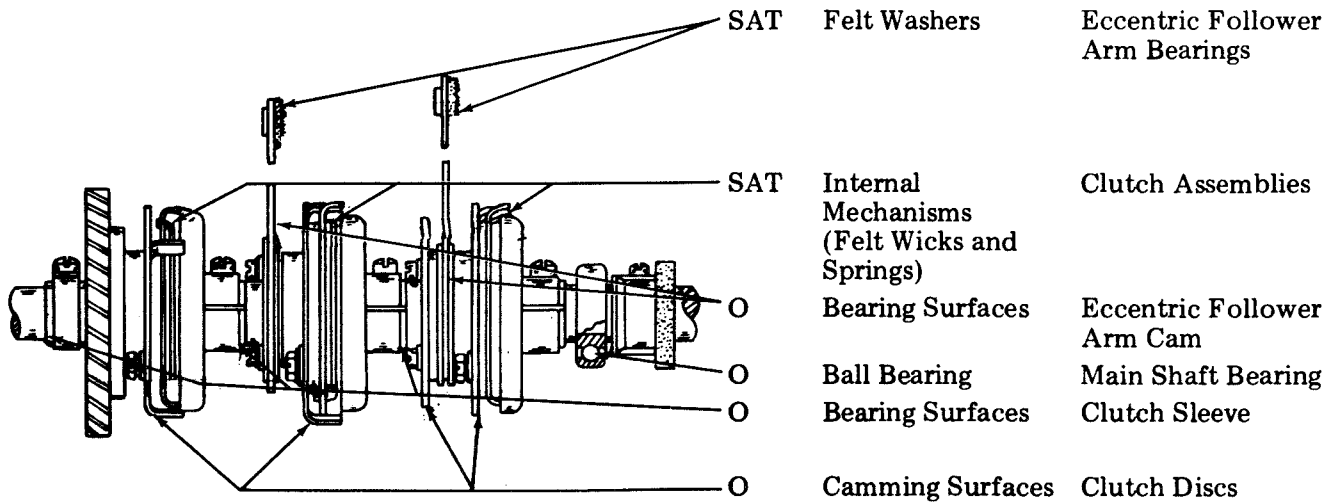
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2.46 Main Shaft — Clutches, Gears, etc



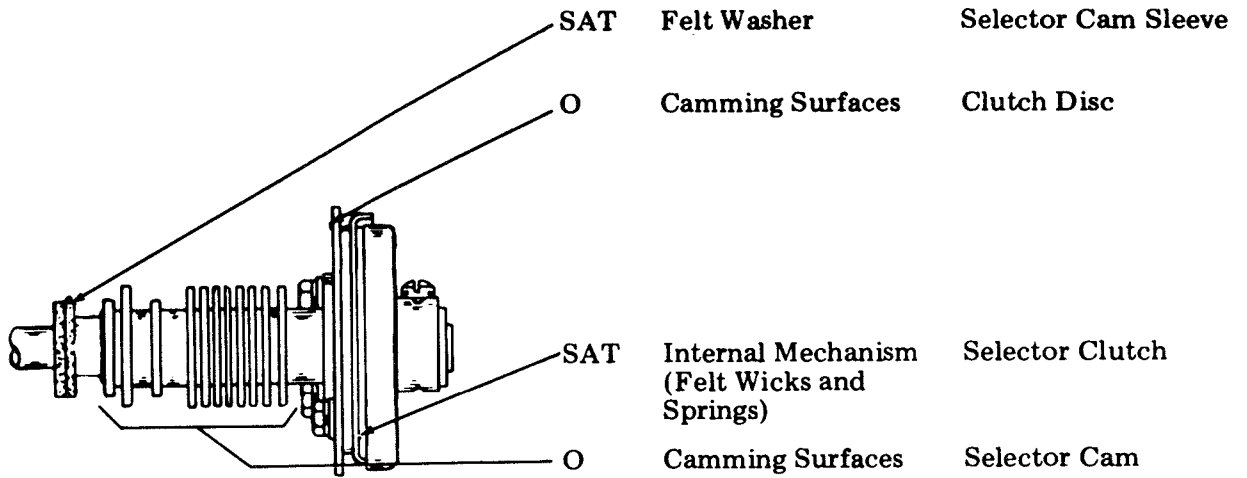
(Bottom View)

2.47 Main Shaft Mechanism



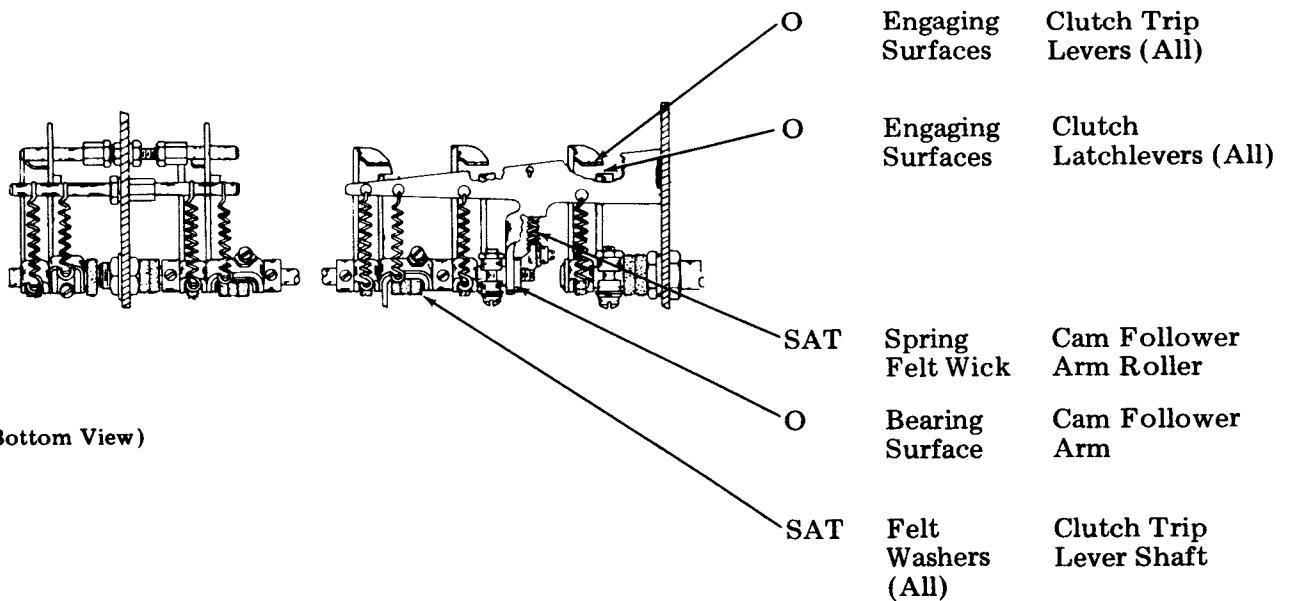
(Bottom View)

2.48 Selector Cam Clutch Assembly



(Front View)

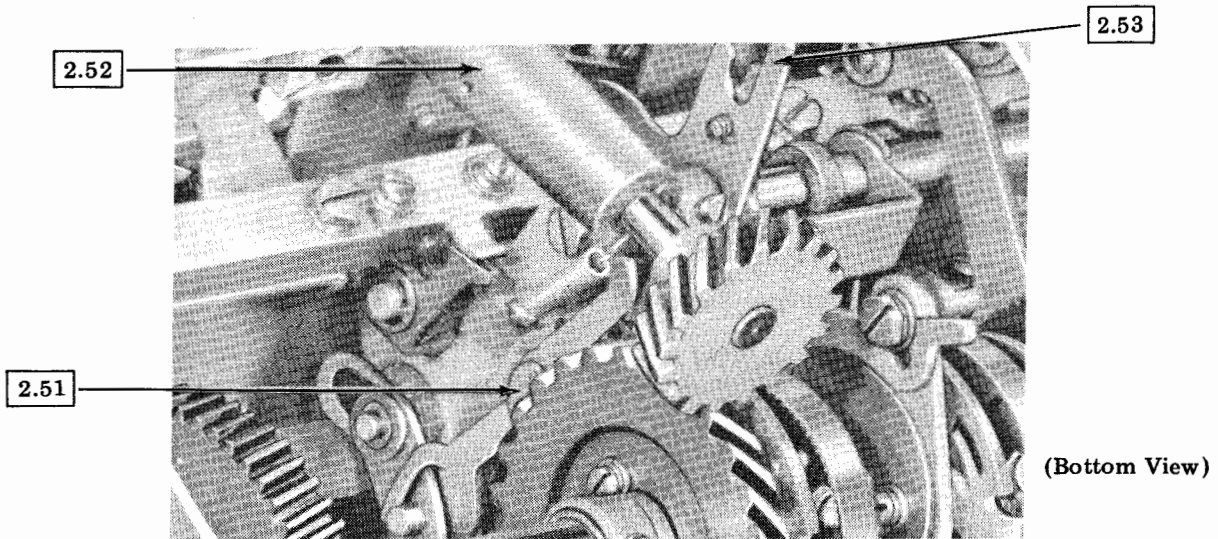
2.49 Main Shaft — Clutches, Gears, etc (continued)



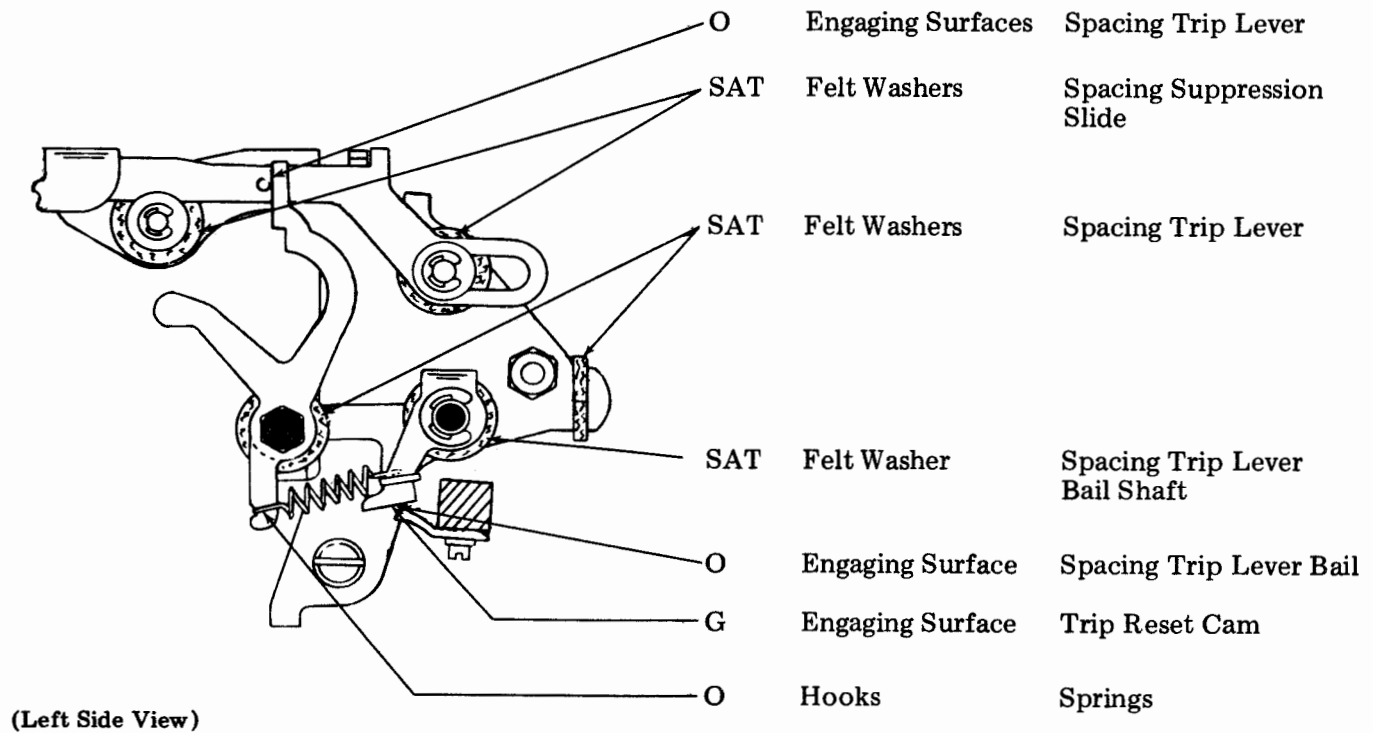
(Bottom View)

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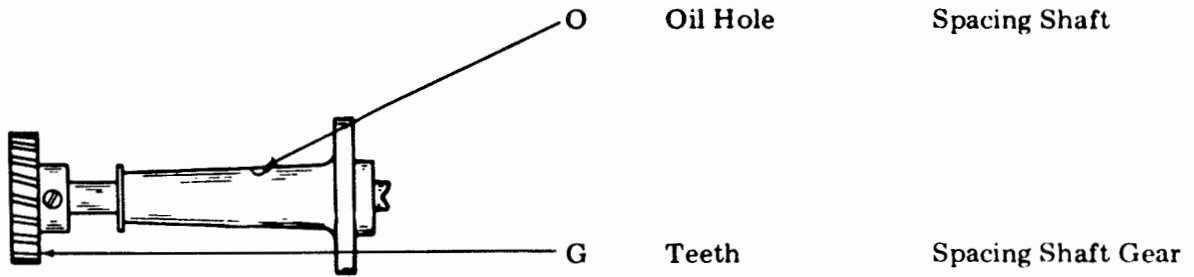
2.50 Spacing Area (continued)



2.51 Spacing Mechanism

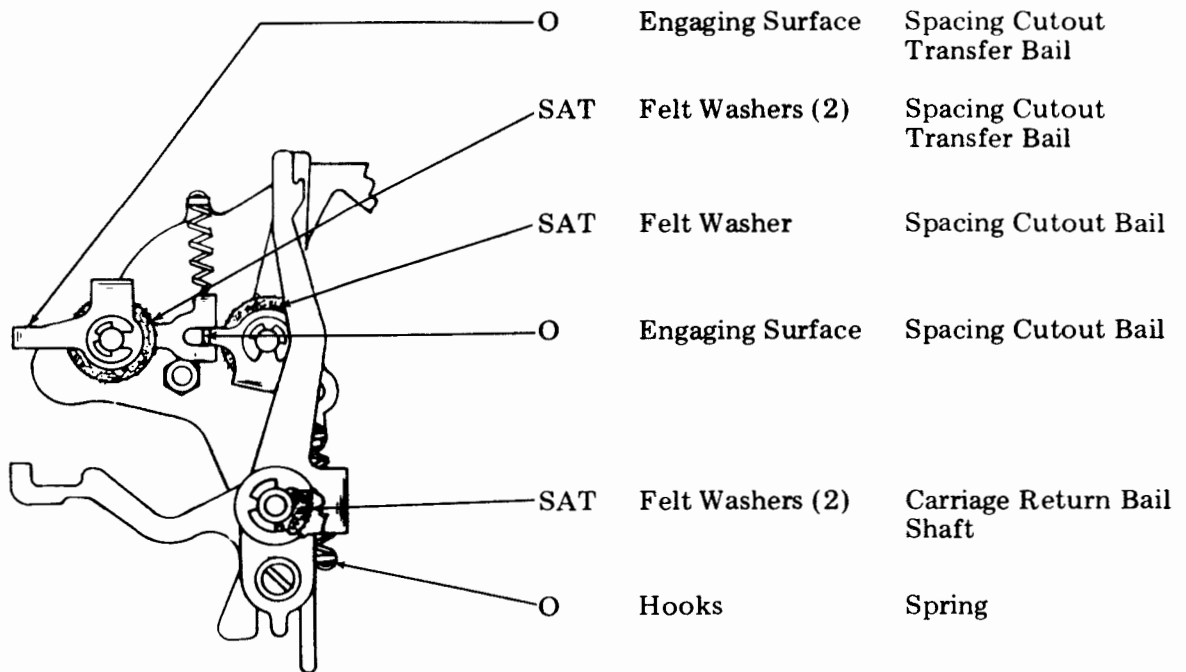


2.52 Spacing Mechanism (continued)



(Left Side View)

2.53 Spacing Mechanism (continued)

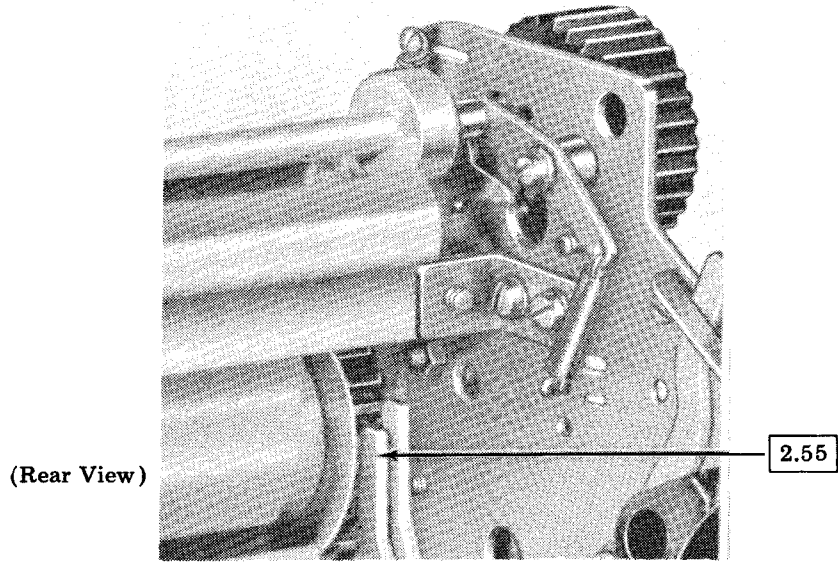


(Right Side View)

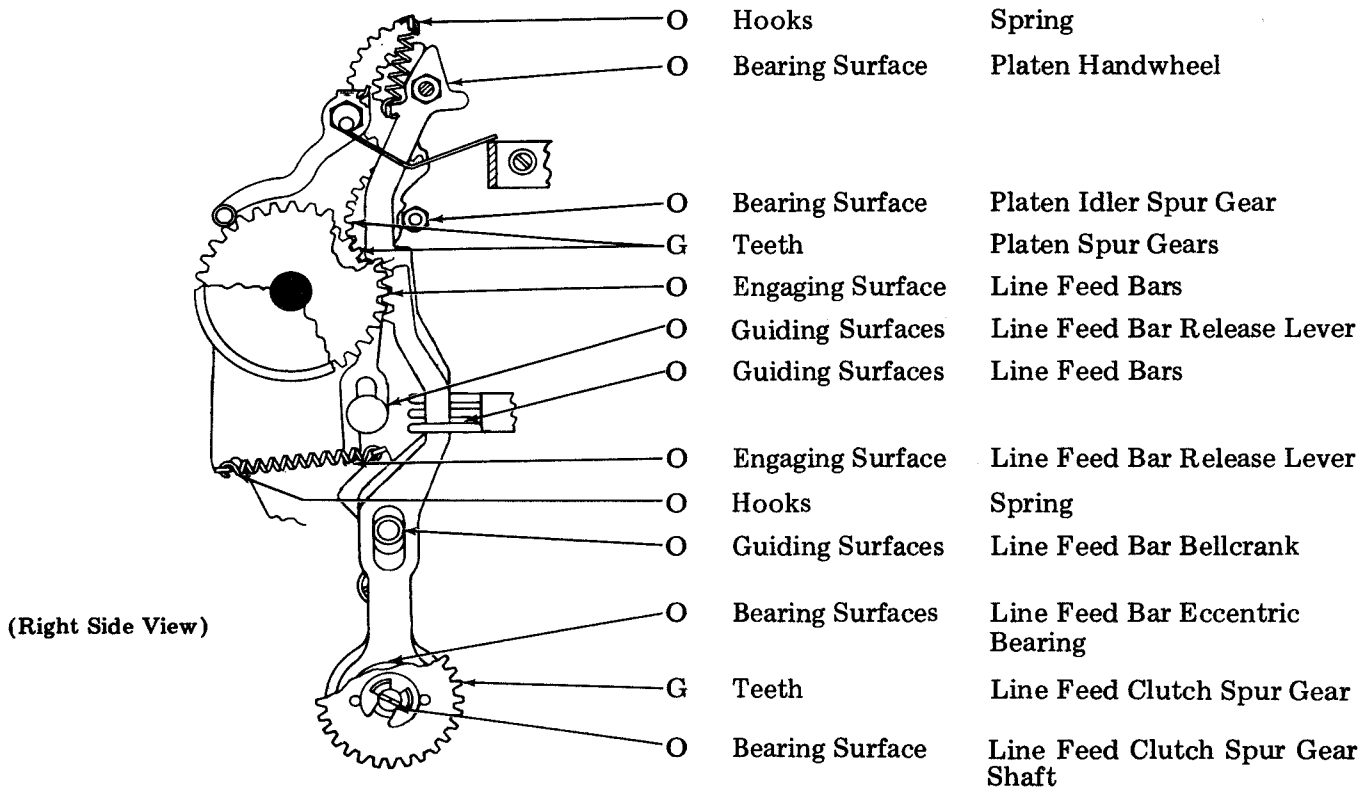
SECTION 573-115-701TC

FRICITION FEED AREAS

2.54 Line Feed Area

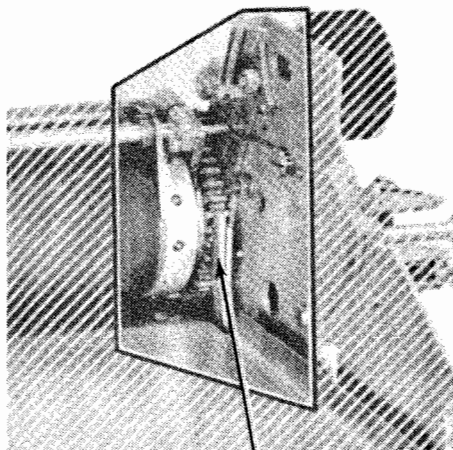


2.55 Line Feed Mechanism



SPROCKET FEED AREAS

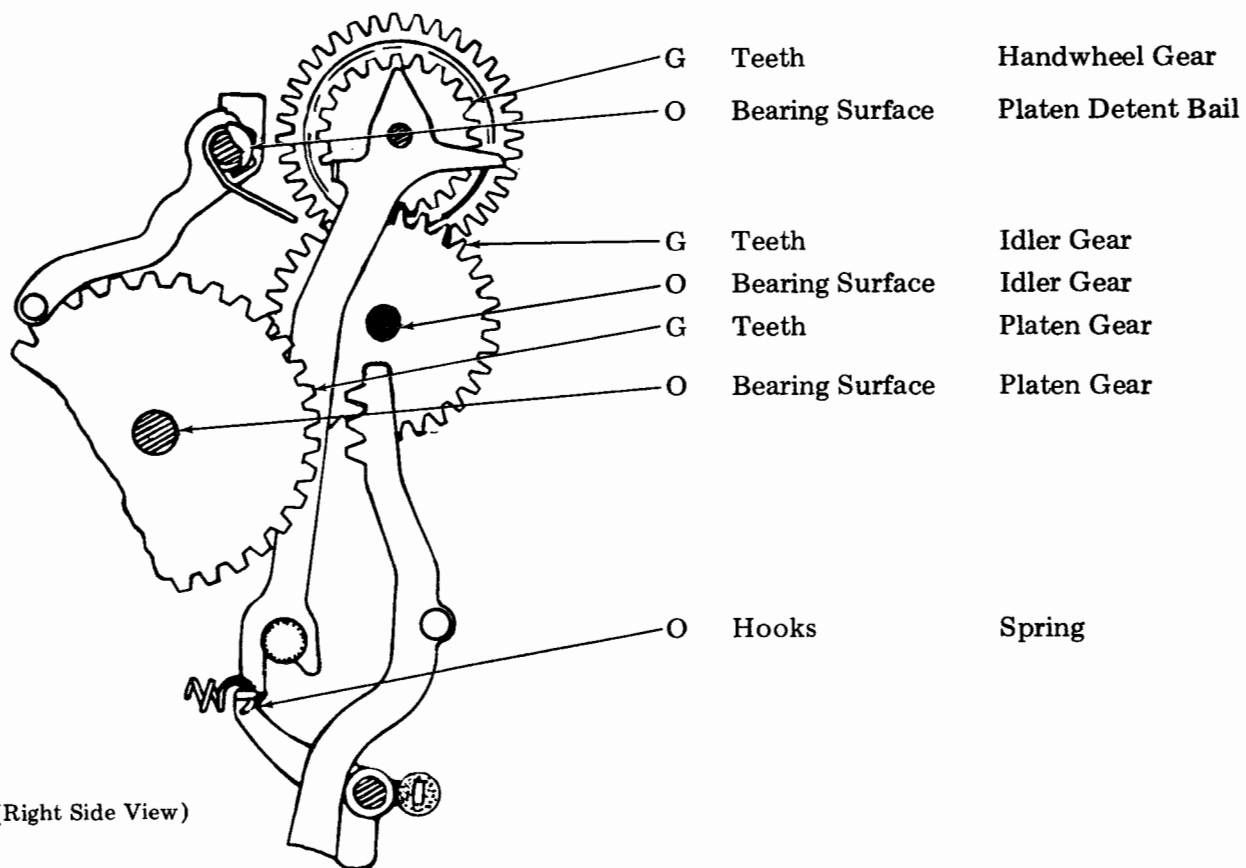
2.56 Line Feed Area



(Rear View)

2.57

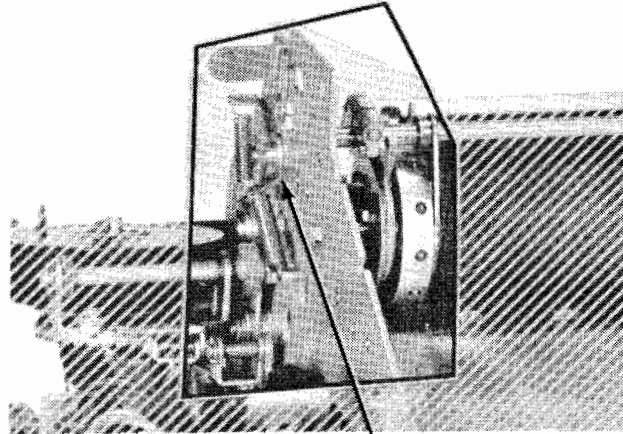
2.57 Line Feed Mechanism



(Right Side View)

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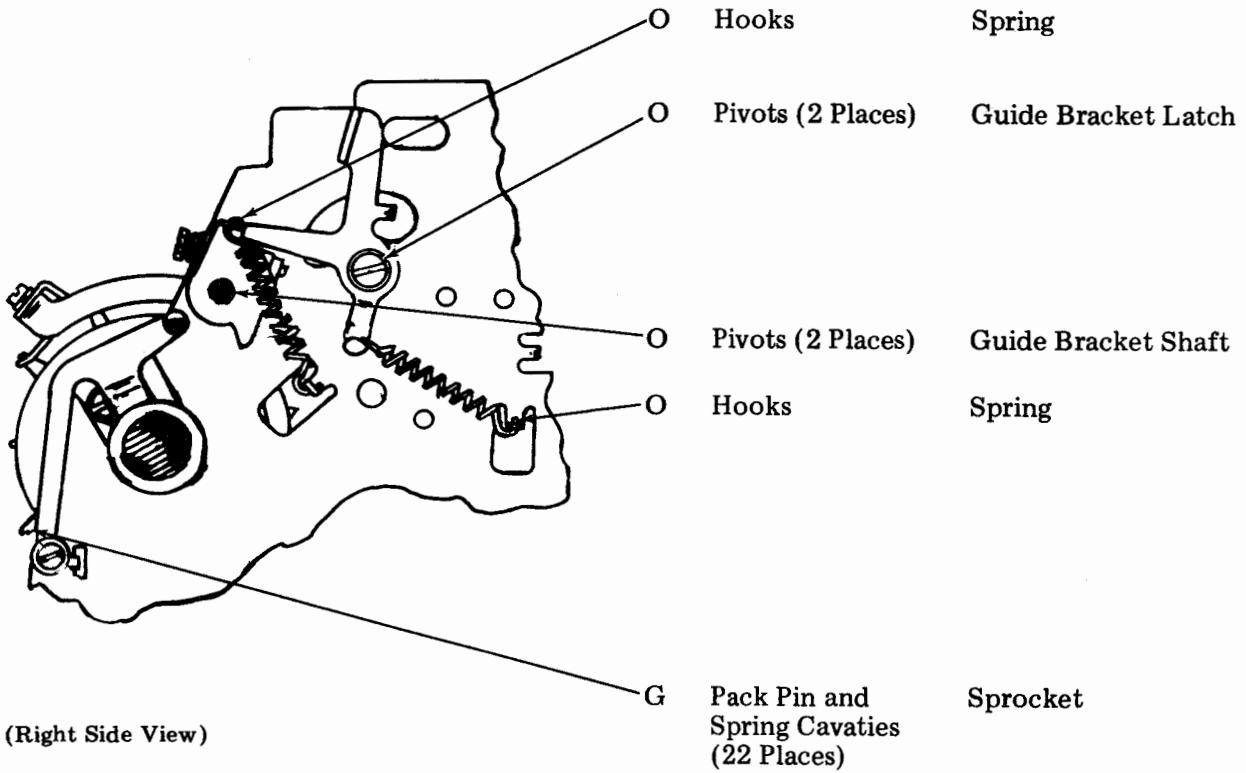
2.58 Paper Guide Area



(Rear View)

2.59

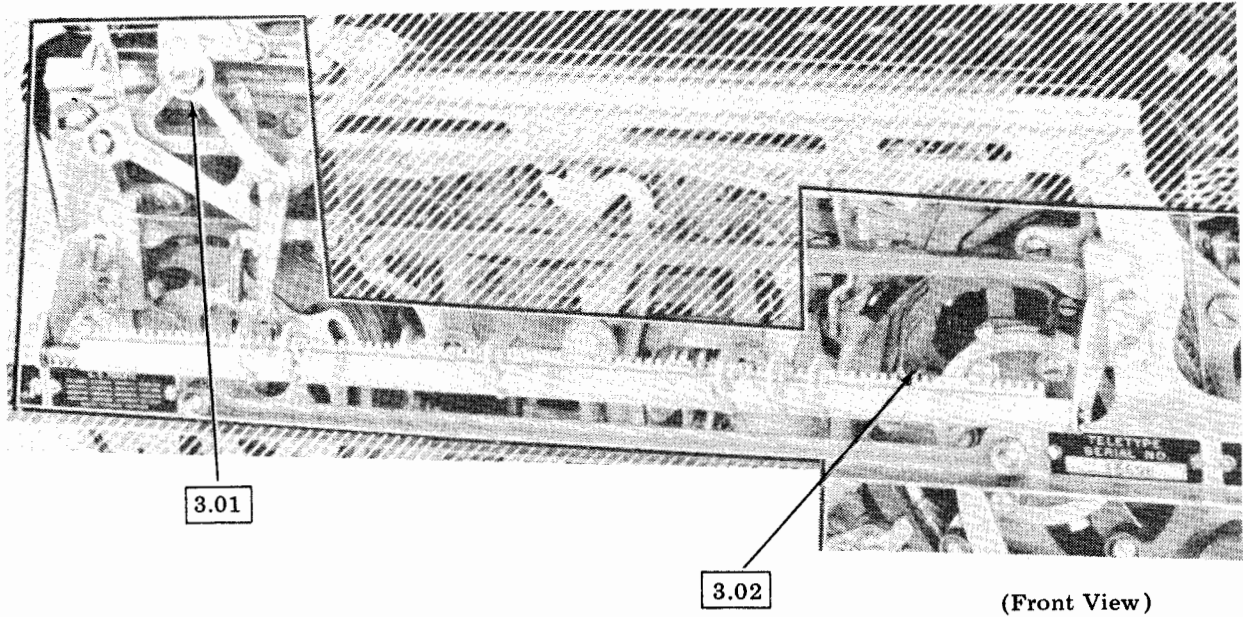
2.59 Paper Guide Mechanism



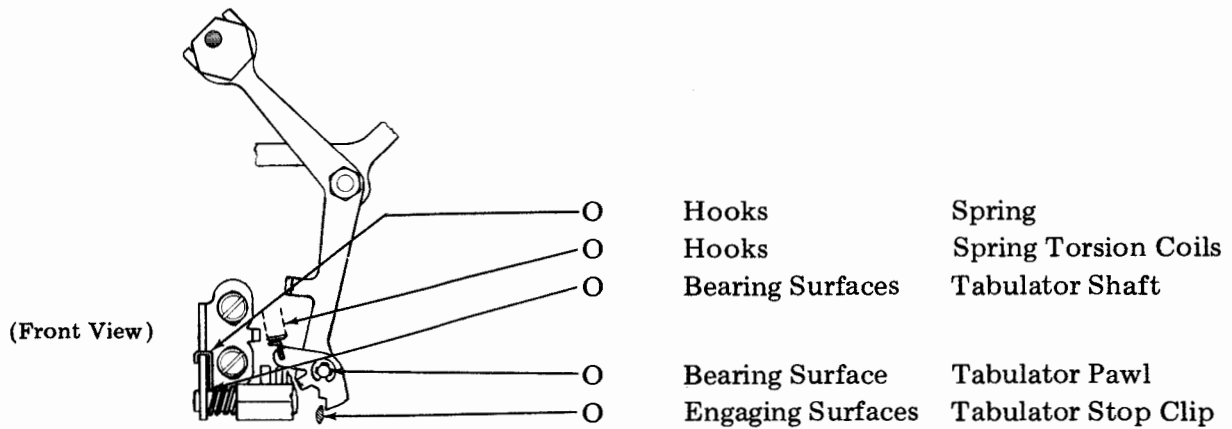
(Right Side View)

3. VARIATIONS TO BASIC UNIT

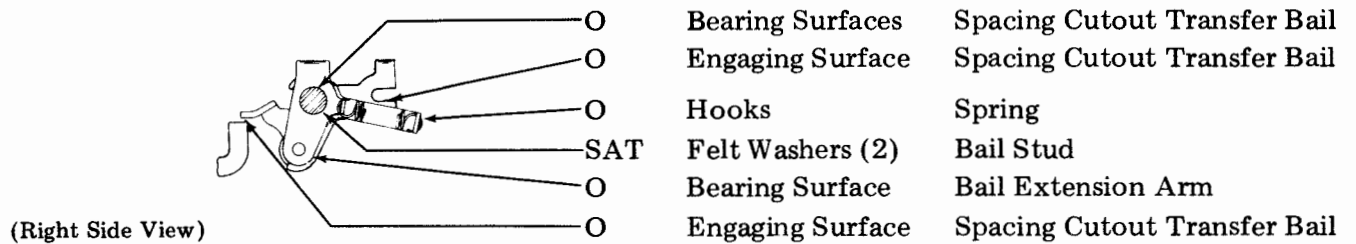
HORIZONTAL TABULATOR MECHANISM (EARLY DESIGN)



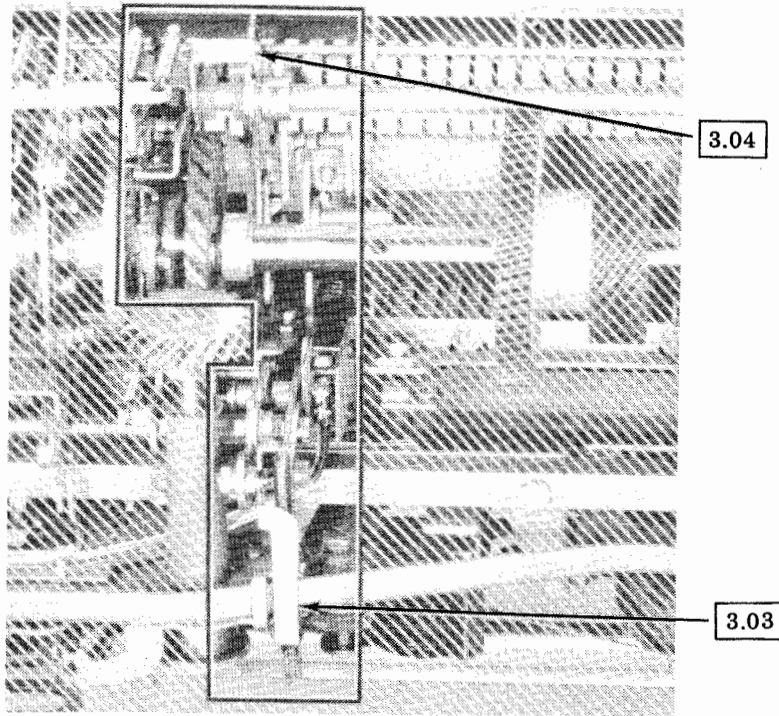
3.01 Tabulator Shaft Mechanism



3.02 Space Suppression Mechanism

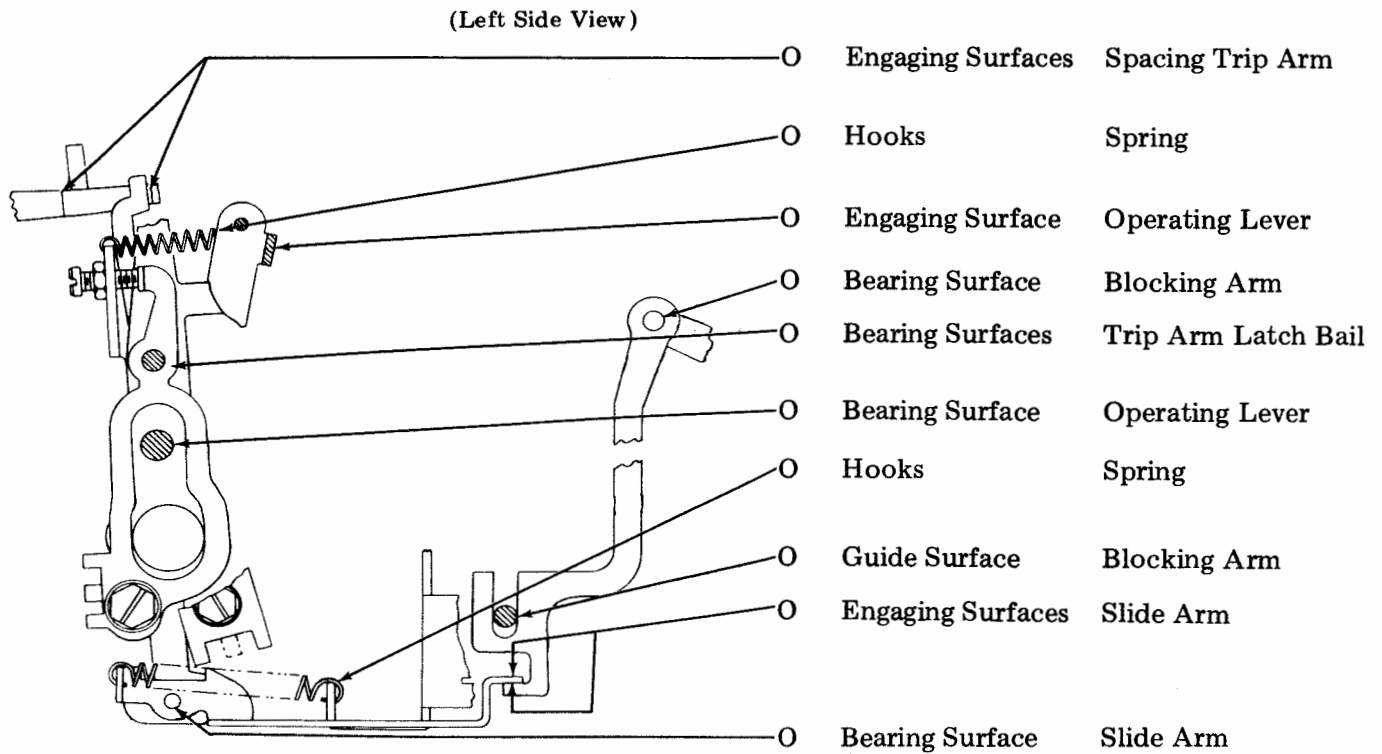


HORIZONTAL TABULATOR MECHANISM (EARLY DESIGN) (continued)

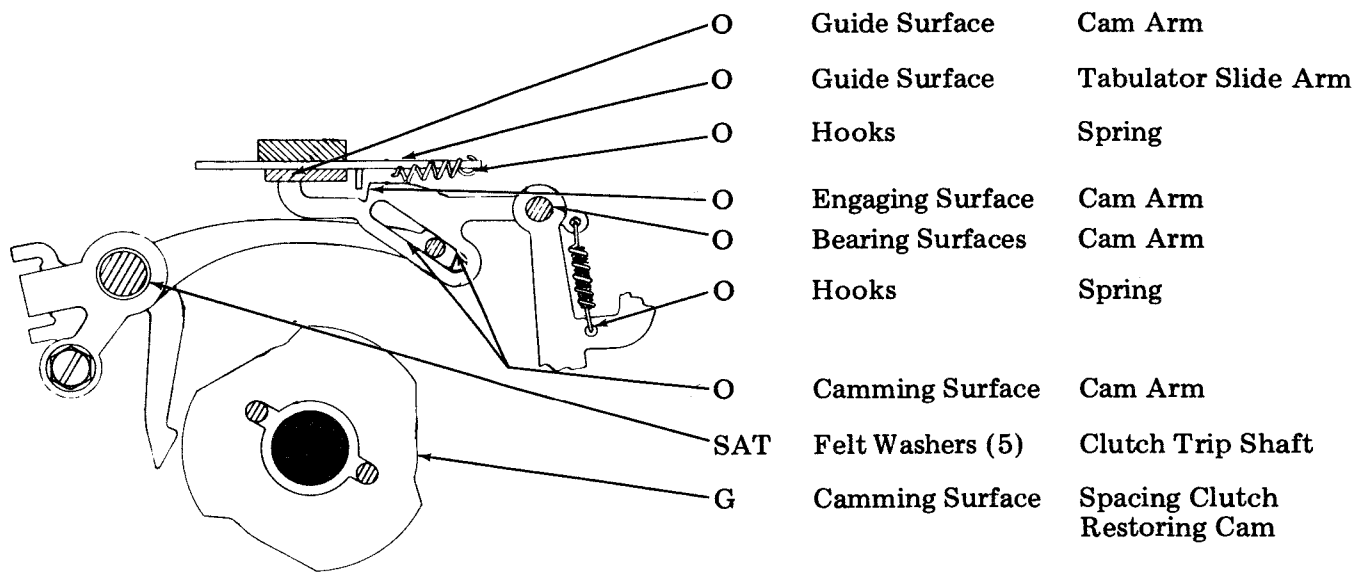


(Bottom View)

3.03 Operating Lever Mechanism

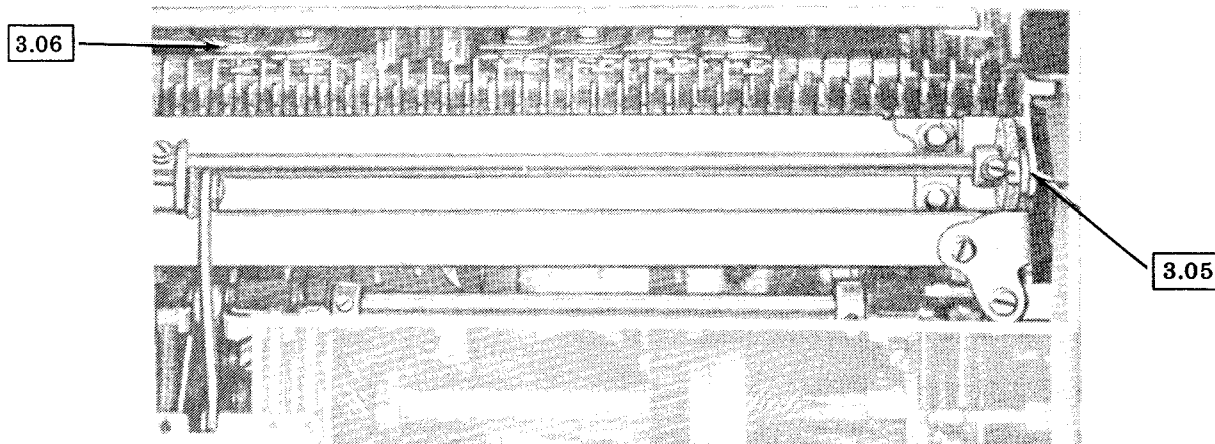


3.04 Spacing Clutch Mechanism



(Right Side View)

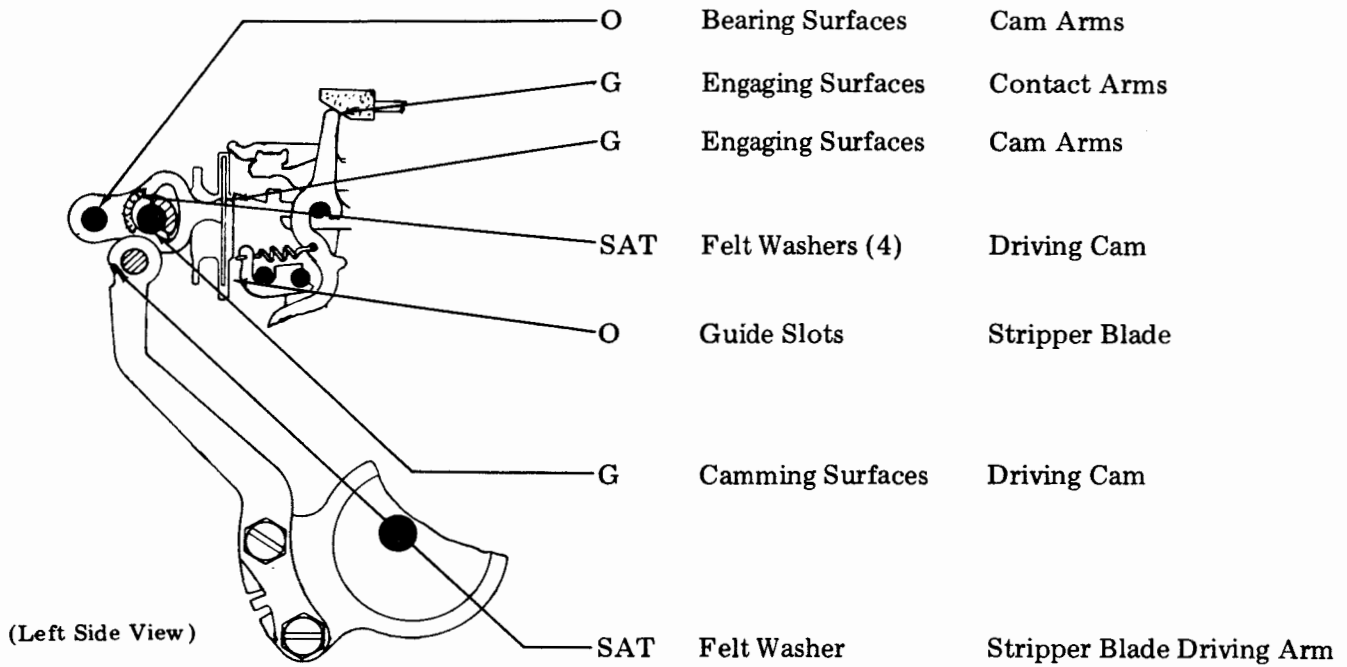
SELECTIVE CALLING MECHANISM



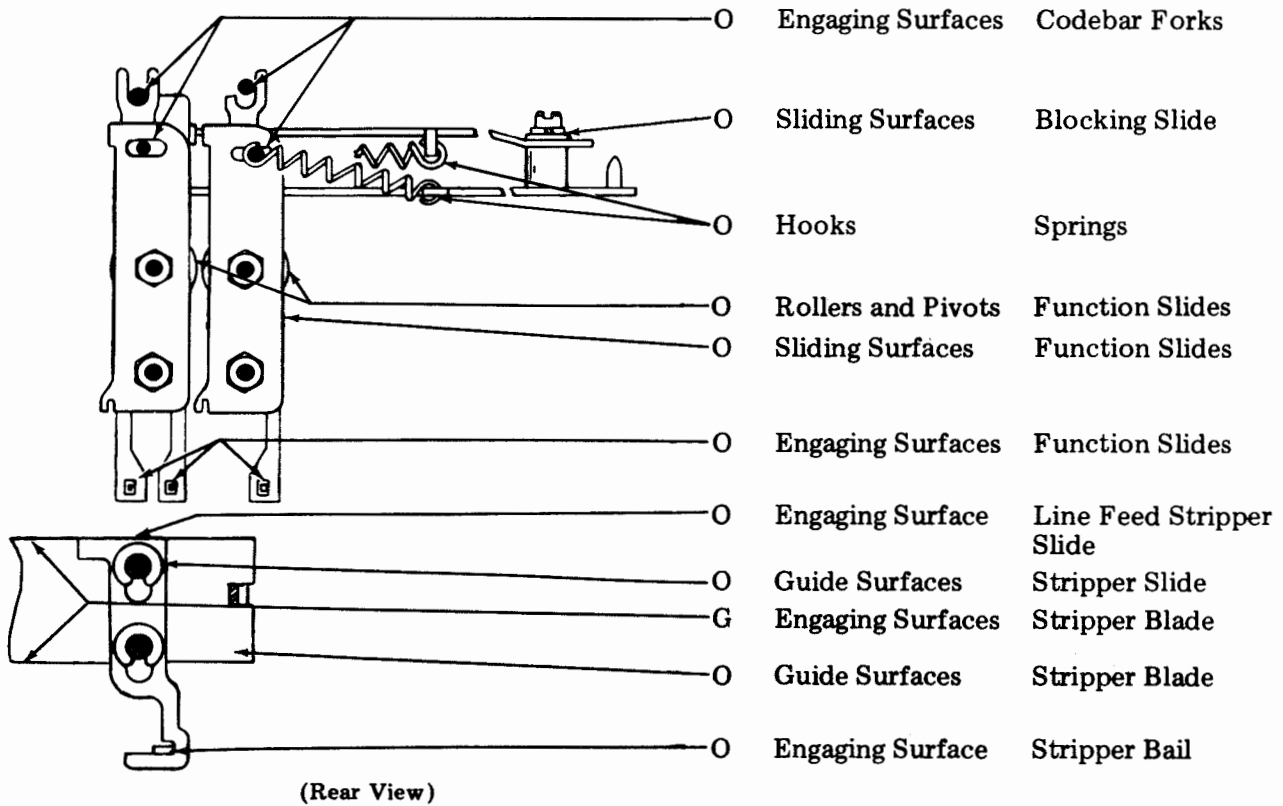
(Rear View)

SECTION 573-115-701TC

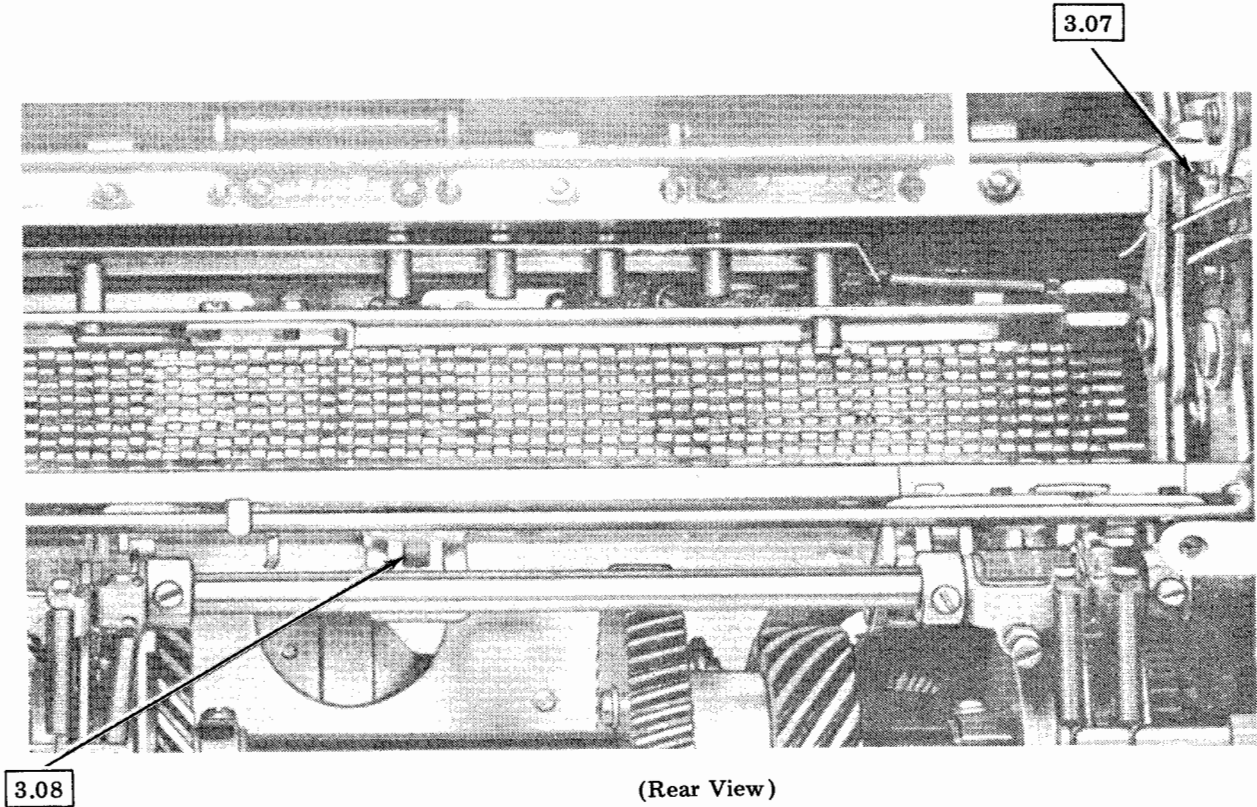
3.05 Stripper Bail Mechanism



3.06 Shift and Stripper Bail Mechanisms

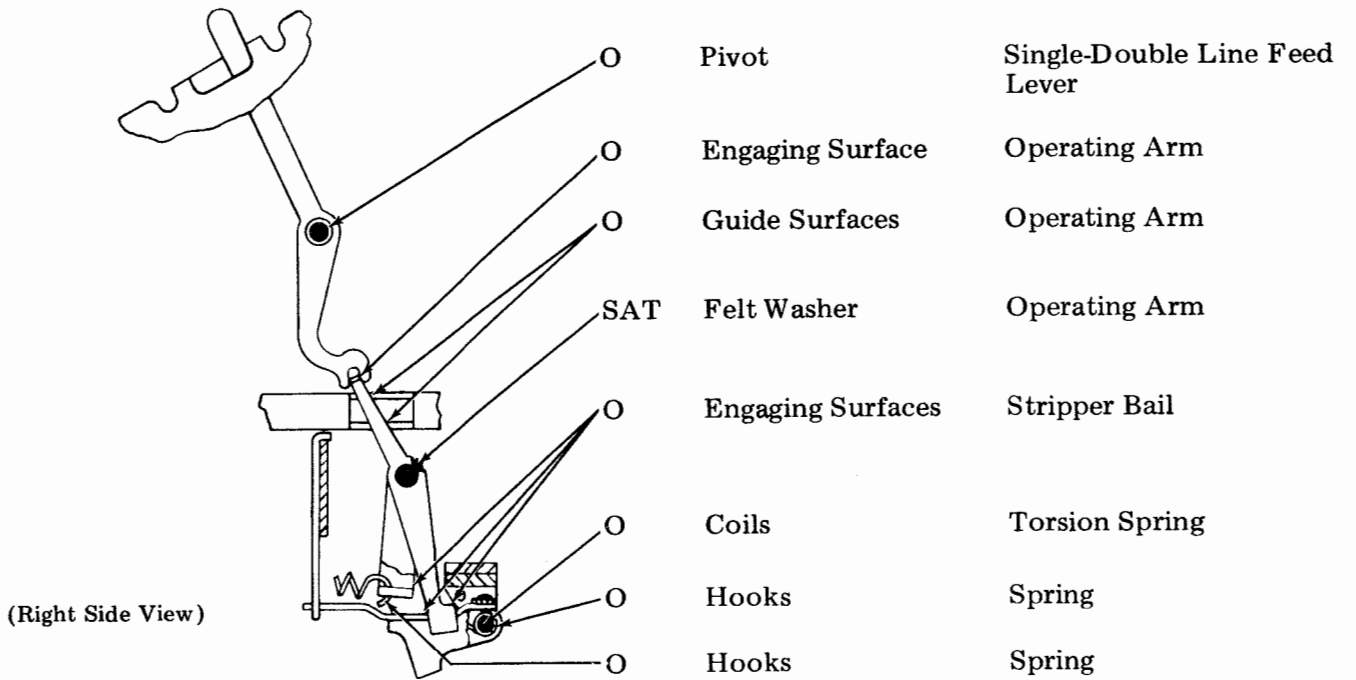


SELECTIVE CALLING MECHANISM (continued)



(Rear View)

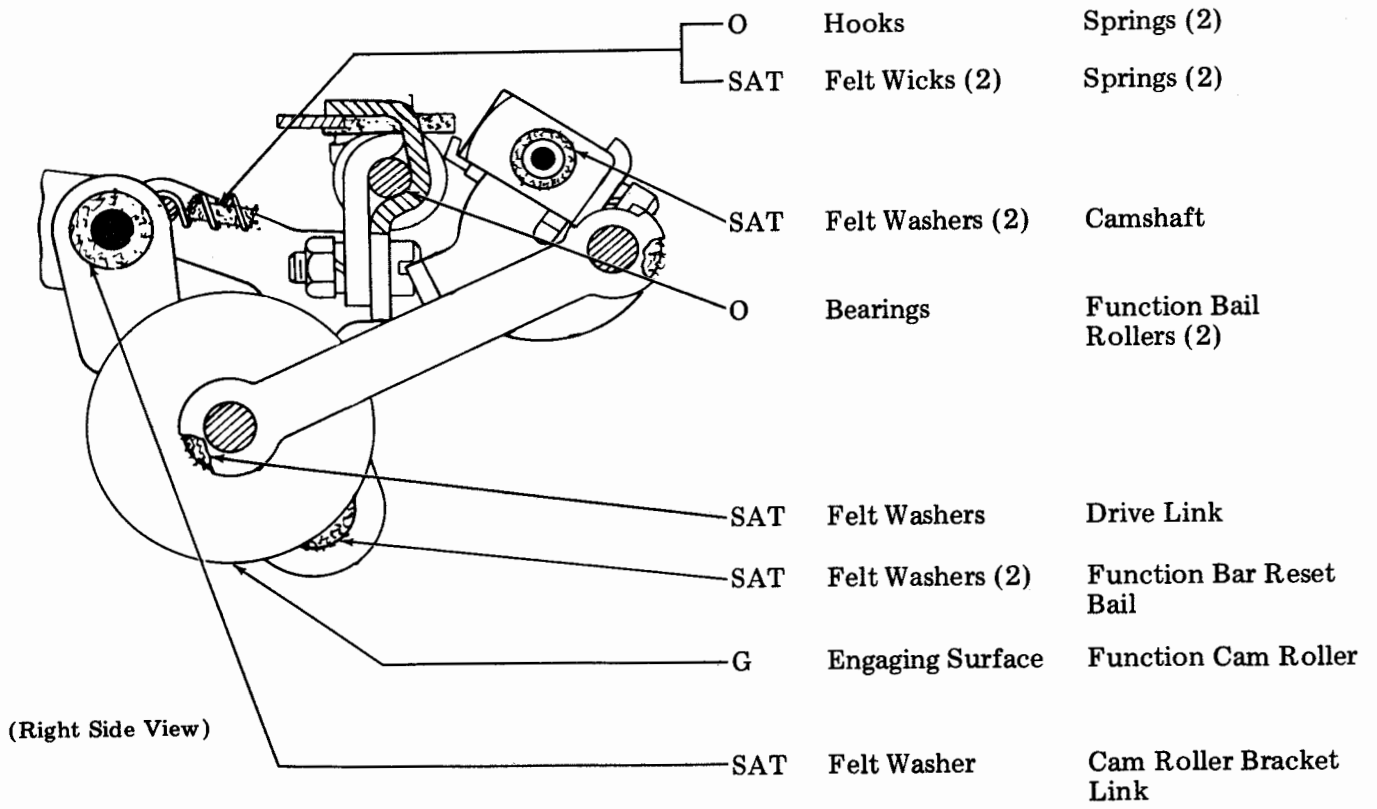
3.07 Single-Double Line Feed Mechanism



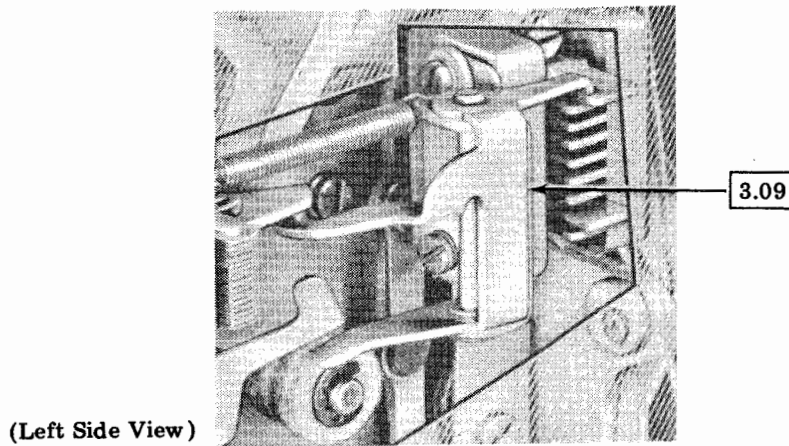
(Right Side View)

SECTION 573-115-701TC

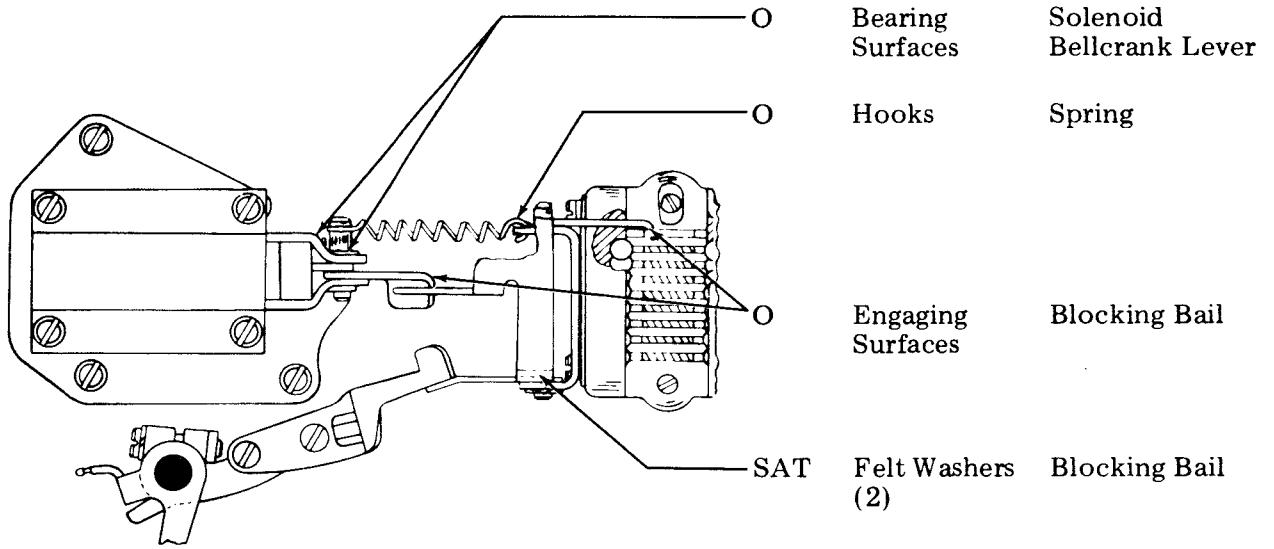
3.08 Function Reset Bail Mechanism



SELECTIVE CALLING MECHANISM (continued)



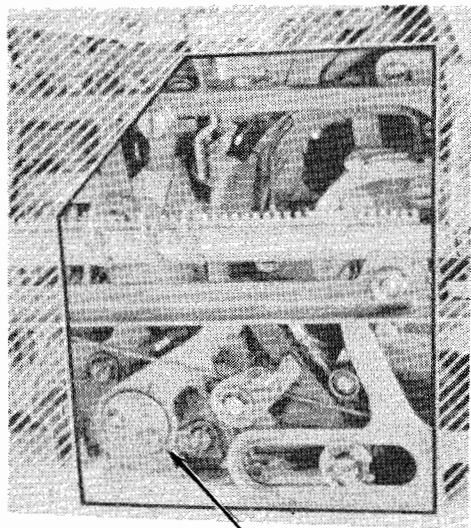
3.09 Clutch Suppression Mechanism



(Left Side View)

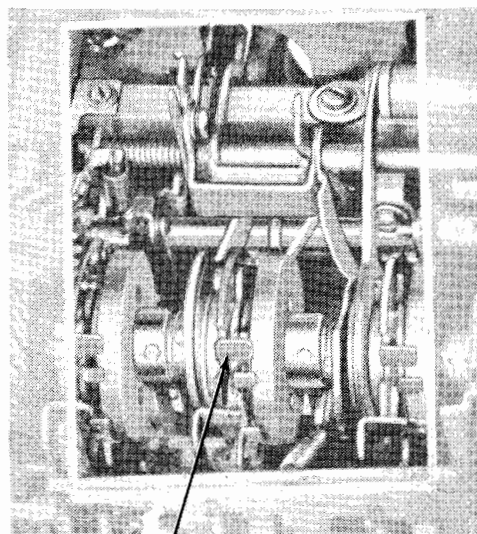
SECTION 573-115-701TC

LOCAL BACKSPACE MECHANISM



(Front View)

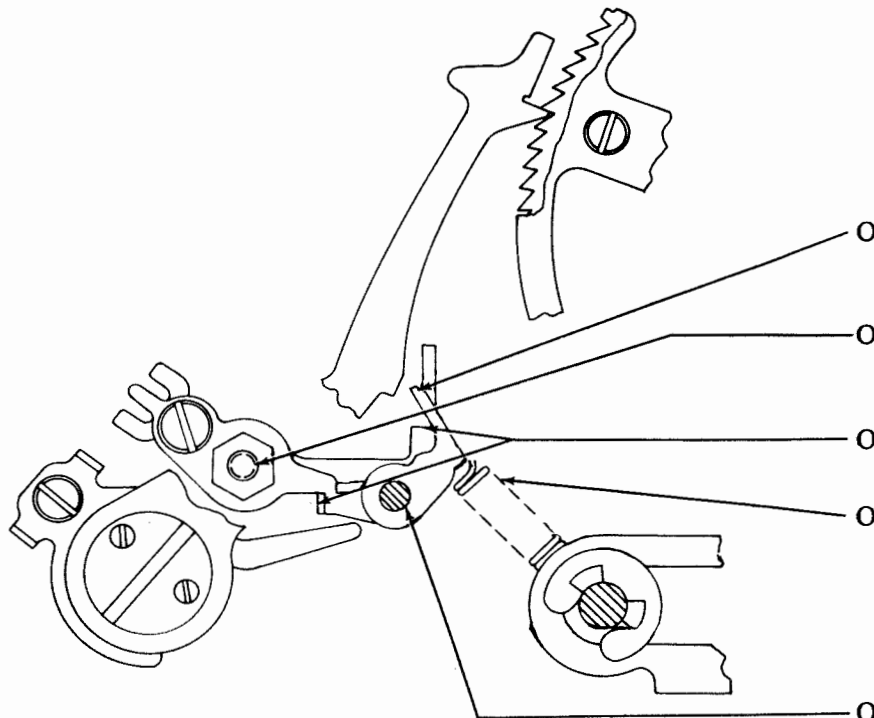
3.10



3.11

(Bottom View)

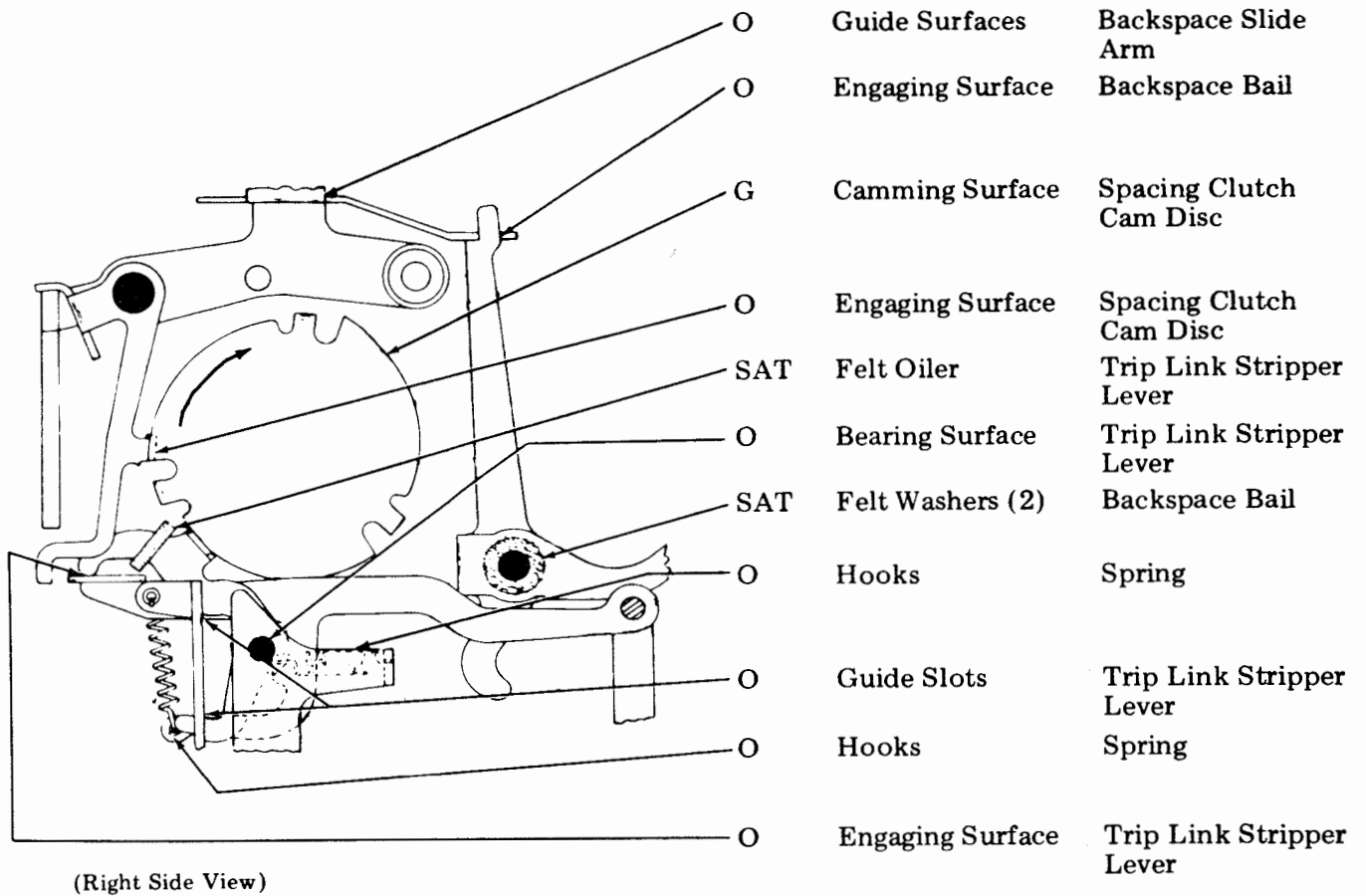
3.10 Pawl Mechanism



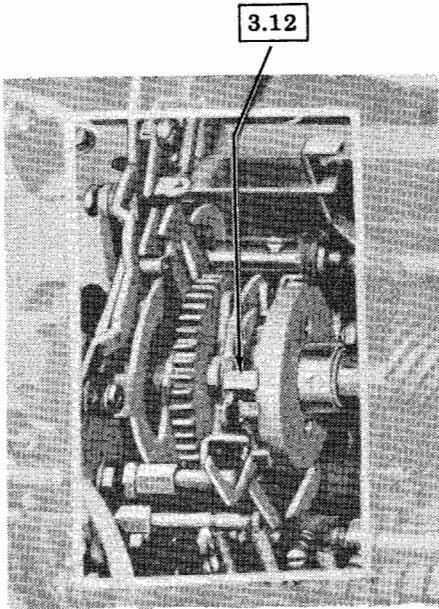
(Front View)

- O Engaging Surface Backspace Camming Bail
- O Bearing Surface Adjusting Plate
- O Engaging Surfaces Intermediate Arm
- O Hooks Spring
- O Bearing Surface Backspace Camming Bail

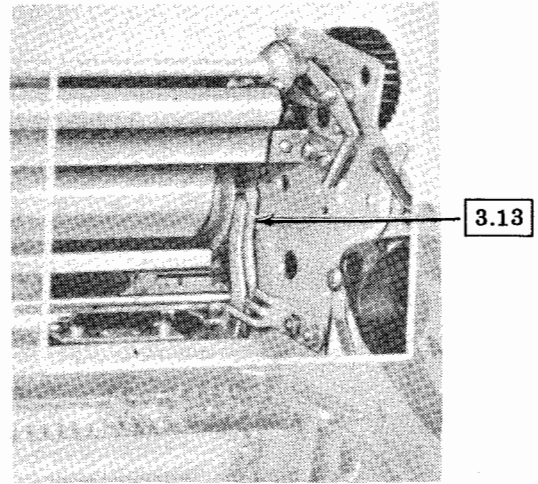
3.11 Trip Mechanism



REVERSE LINE FEED MECHANISM

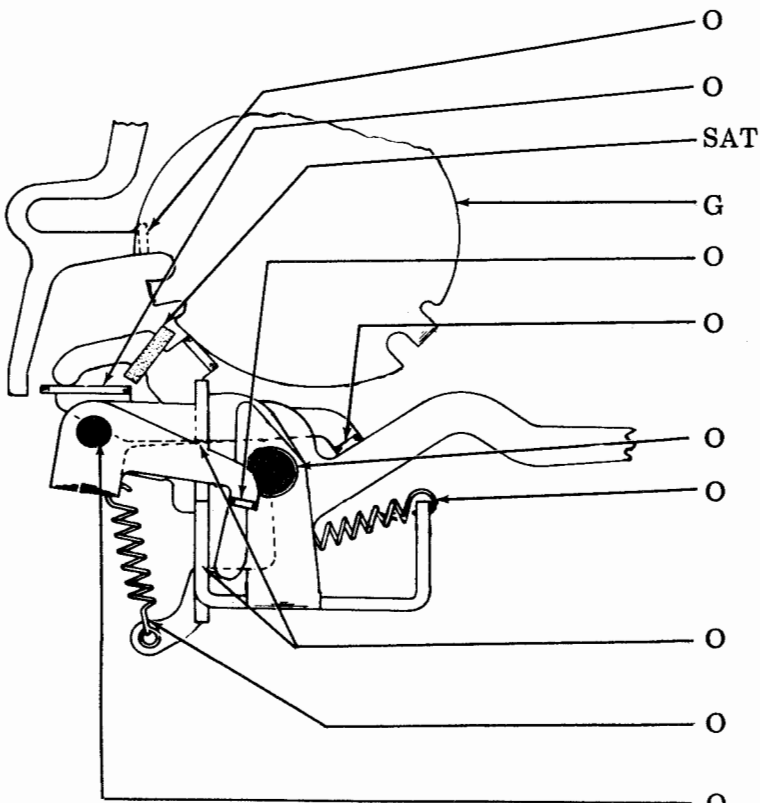


(Bottom View)



(Rear View)

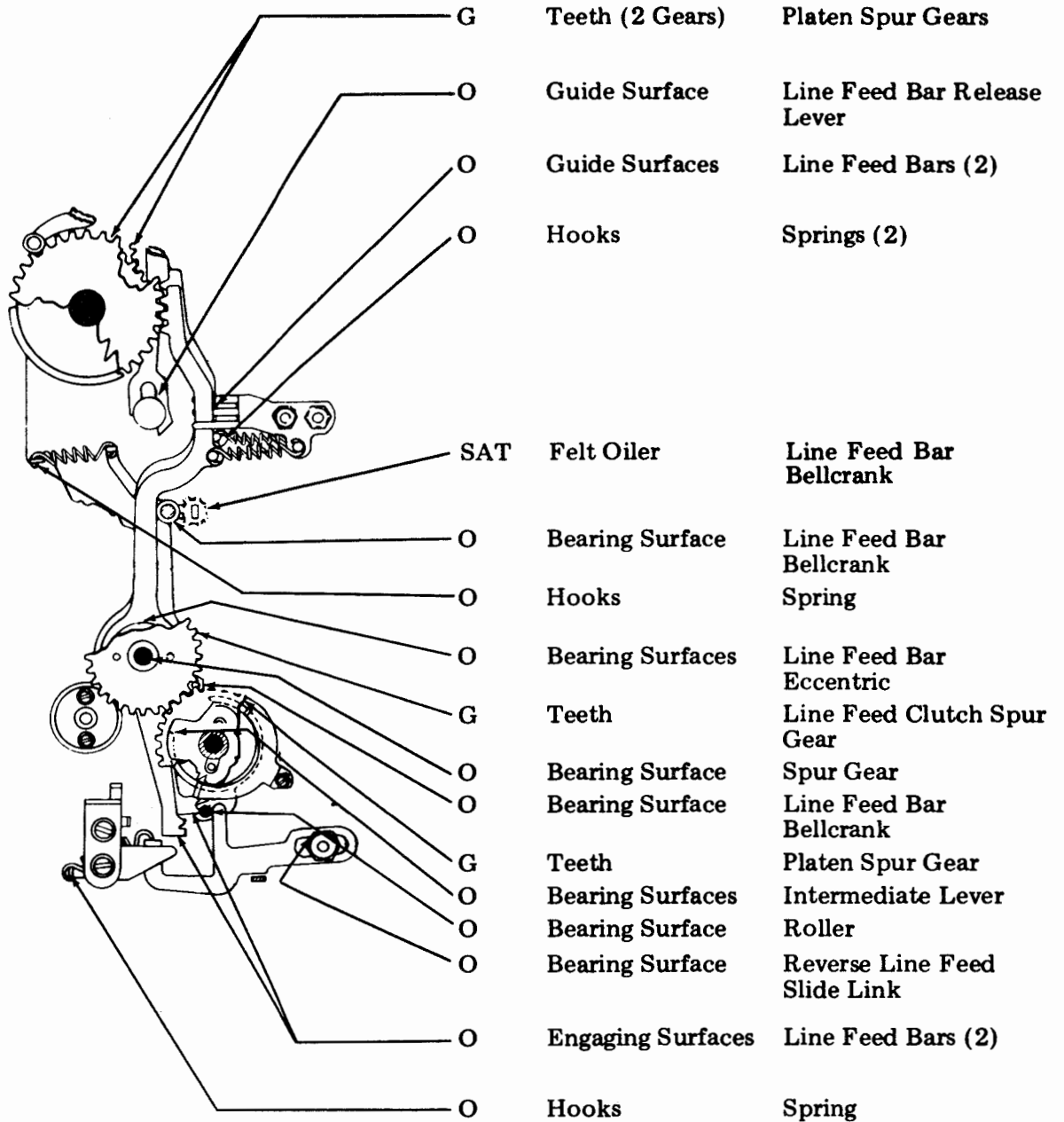
3.12 Trip Mechanism



(Left Side View)

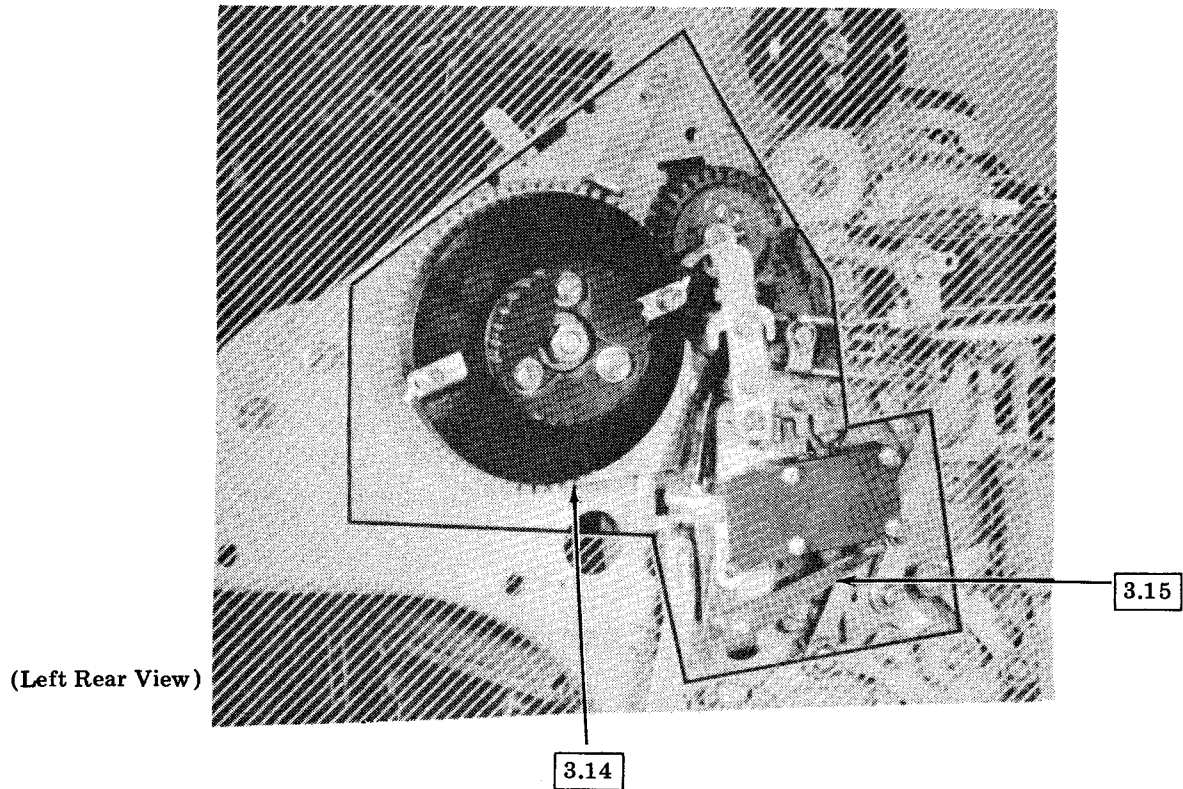
- | | | |
|-----|------------------|-------------------------|
| O | Engaging Surface | Line Feed Clutch |
| O | Engaging Surface | Trip Lever |
| SAT | Felt Oiler | Trip Link |
| G | Camming Surface | Stripper Lever Cam Disc |
| O | Engaging Surface | Transfer Bail |
| O | Bearing Surface | Trip Link |
| O | Bearing Surface | Stripper Lever |
| O | Hooks | Spring |
| O | Guide Slots | Trip Link |
| O | Hooks | Spring |
| O | Bearing Surface | Transfer Bail |

3.13 Line Feed Mechanism

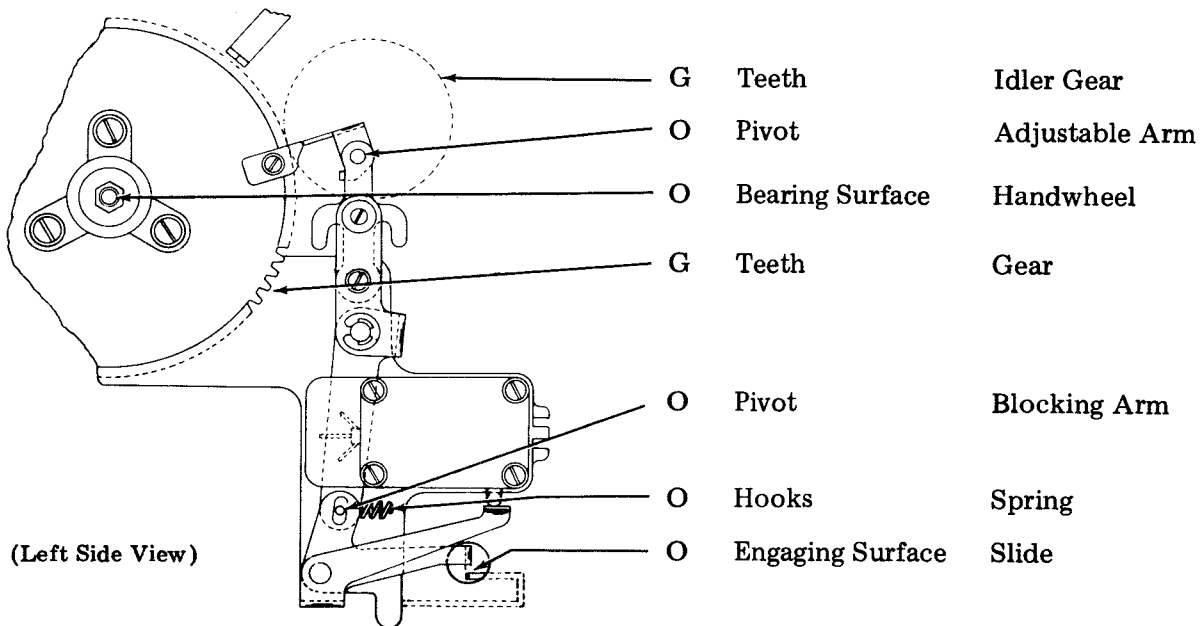


(Right Side View)

PAGE FEED-OUT MECHANISM

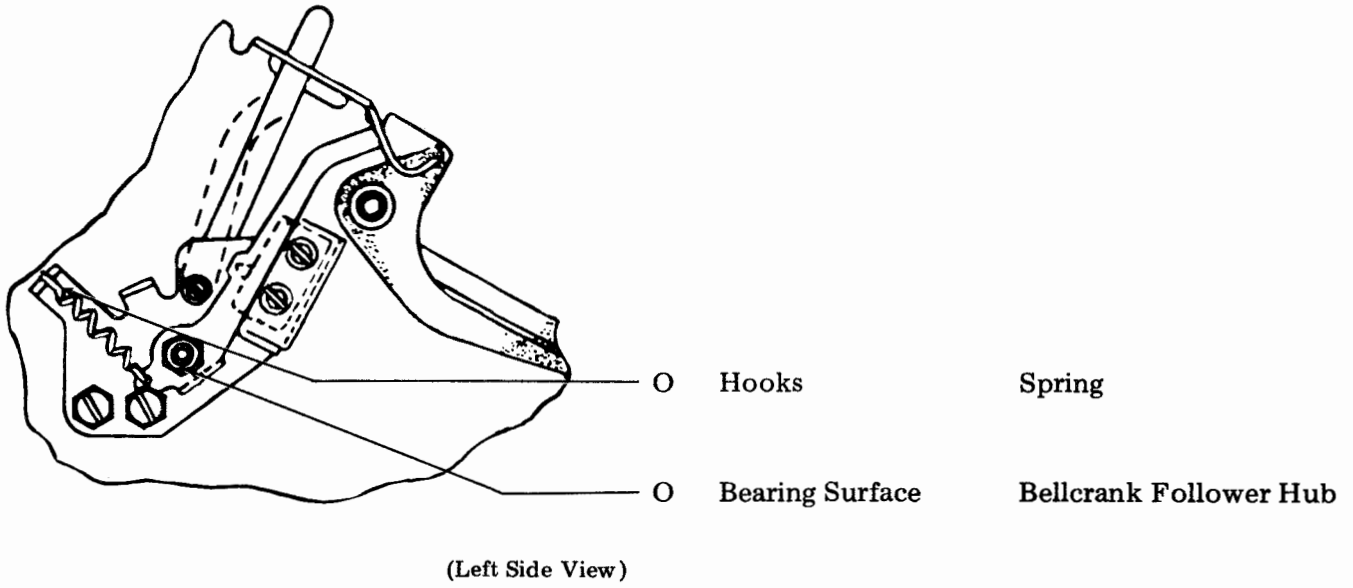


3.14 Drive Mechanism

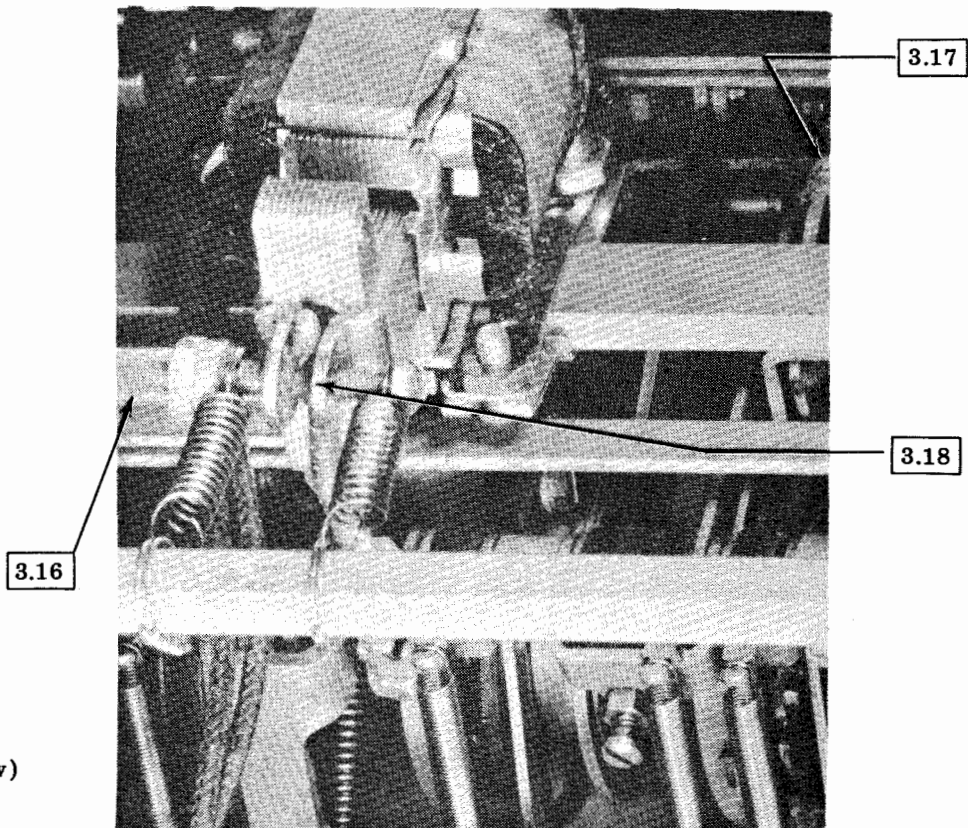


PAPER-OUT ALARM MECHANISM

3.15 Operating Mechanism

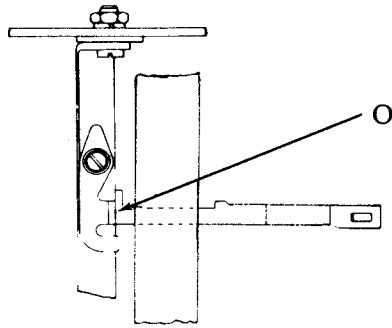


CONTINUOUS SPACING MECHANISM



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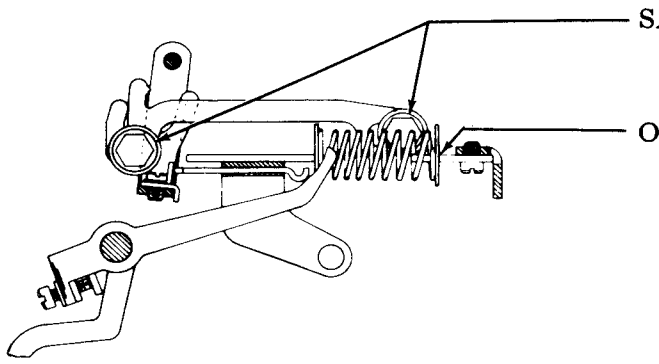
3.16 Slide Arm Bracket



Engaging Surface
(Two Brackets)

CR Slide Arm Bracket
LF Slide Arm Bracket

3.17 Compression Spring



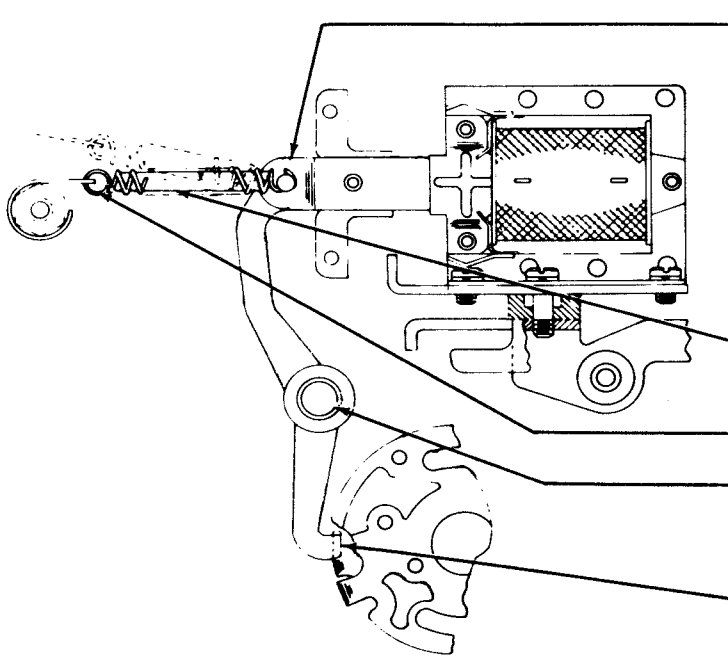
SAT Felt Washers

Connecting Link

Engaging Surface

Compression Spring

3.18 Trip Mechanism



SAT Felt Washer

Function Clutch Trip
Lever

SAT Felt Wick

Spring

Hooks

Spring

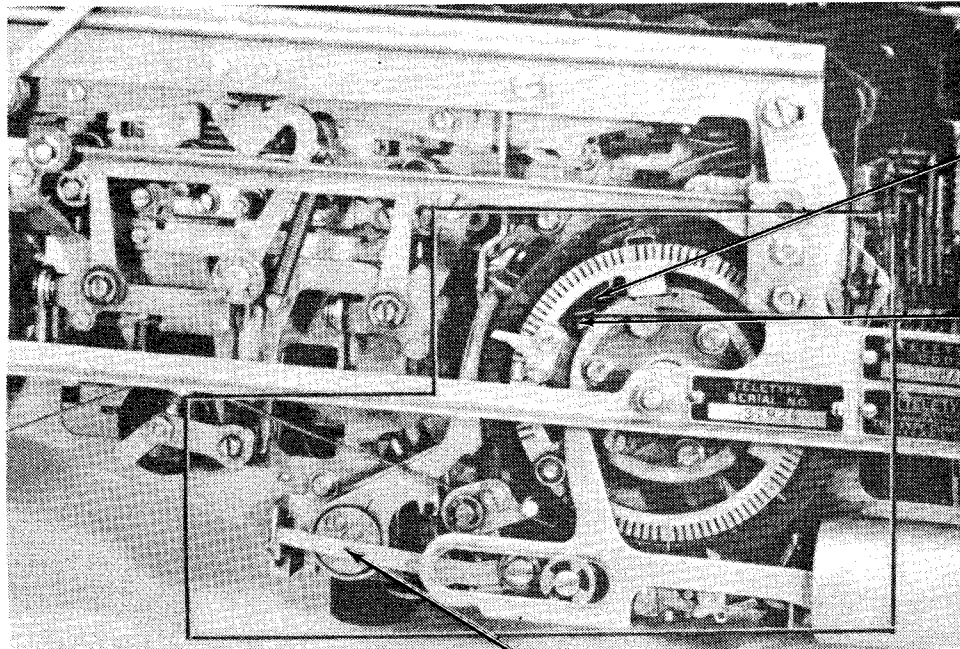
Bearing
Surface

Function Clutch Trip
Lever

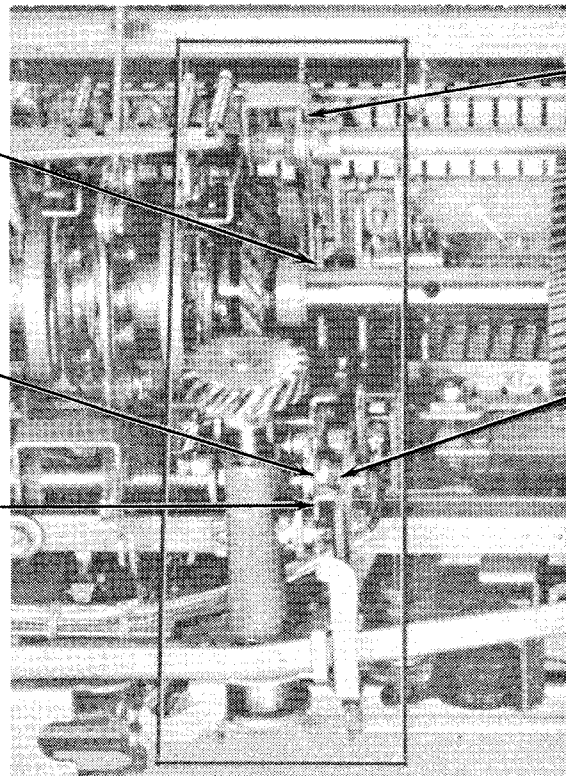
Engaging
Surface

Function Clutch Trip
Lever

HORIZONTAL TABULATOR MECHANISM (LATE DESIGN)



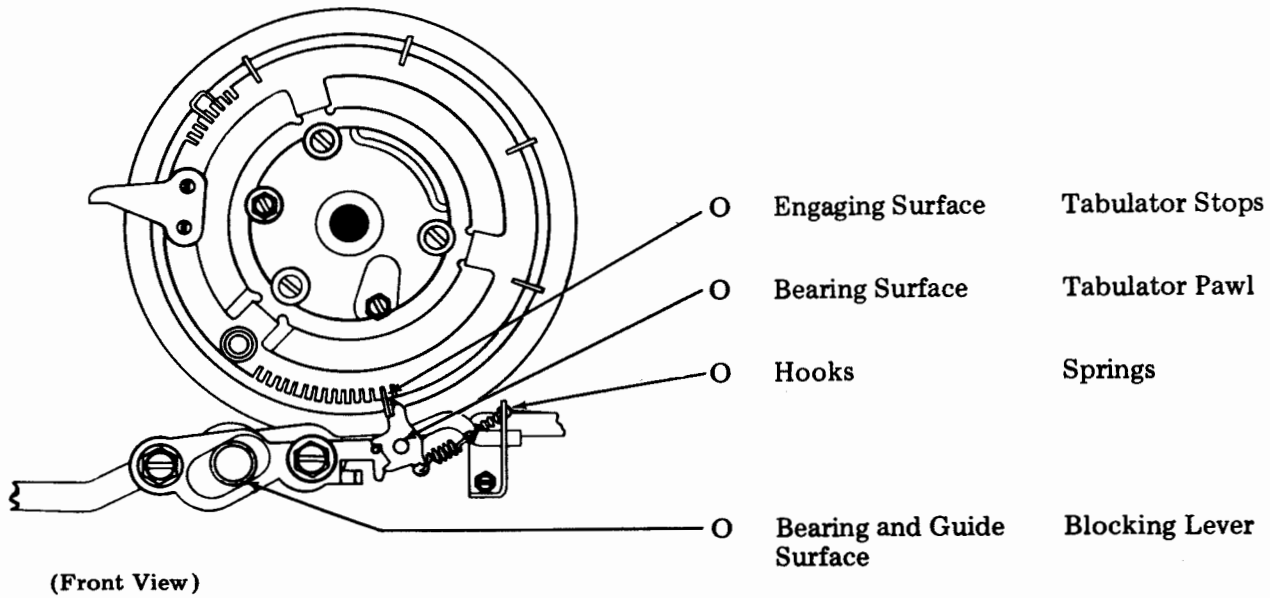
(Front View)



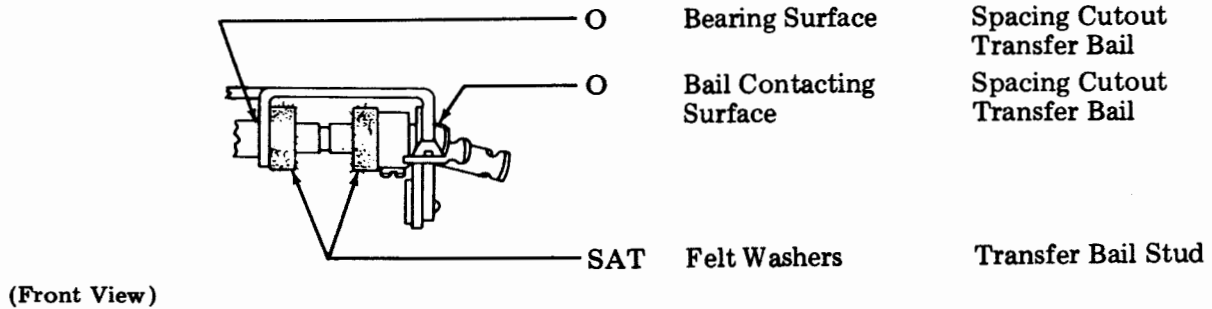
(Bottom View)

SECTION 573-115-701TC

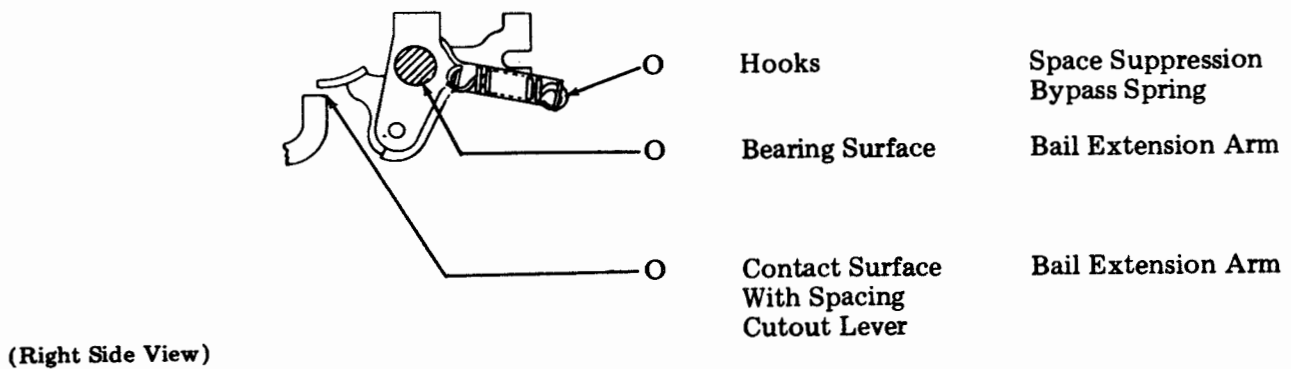
3.19 Blocking Lever



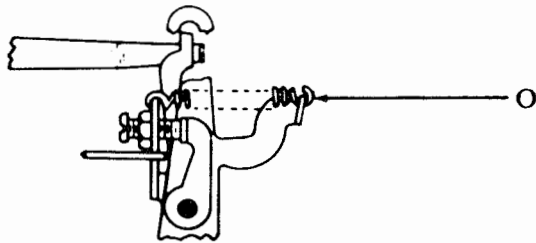
3.20 Spacing Cutout Transfer Bail



3.21 Bail Extension Arm



3.22 Latch Bail

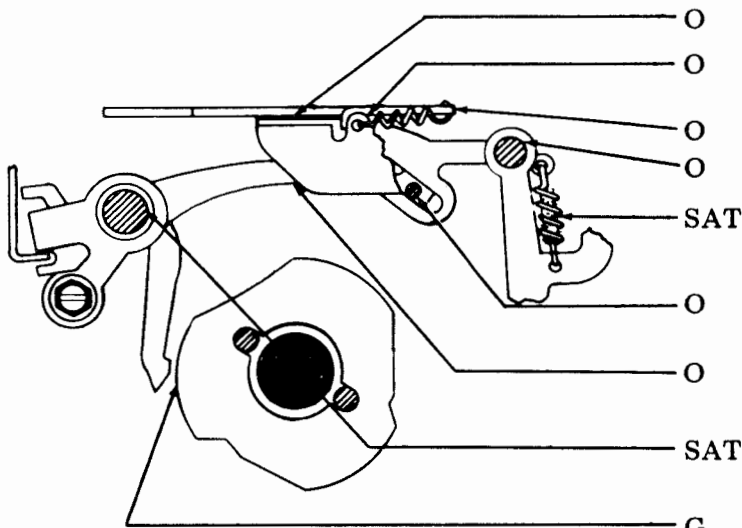


O Hooks

Latch Bail Spring

(Right Side View)

3.23 Operating Lever



O Guide Surfaces

Operating Lever

O Contact With Slide Arm

Operating Lever

O Hooks

Slide Arm Spring

O Bearing Surface

Operating Lever

SAT Felt Wick

Spring

O Slot Camming Surface

Operating Lever

O Bracket Contact Surface

Operating Lever

SAT Felt Washers

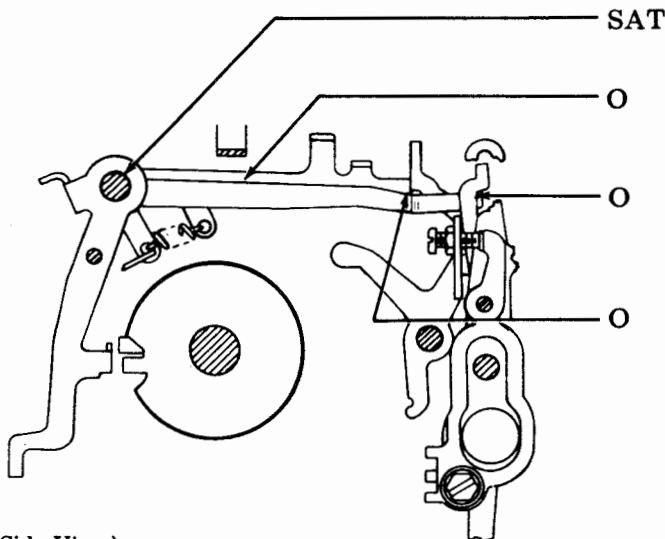
Stripper Bail Shaft

G Camming Surface

Spacing Clutch Restoring Cam

(Right Side View)

3.24 Intermediate Bail



SAT Felt Washer

Trip Lever Arm Shaft

O Contact Surface

Intermediate Bail

Spacing Trip Lever

O Contacting Surface

Spacing Trip Lever Arm

O Contact Surface

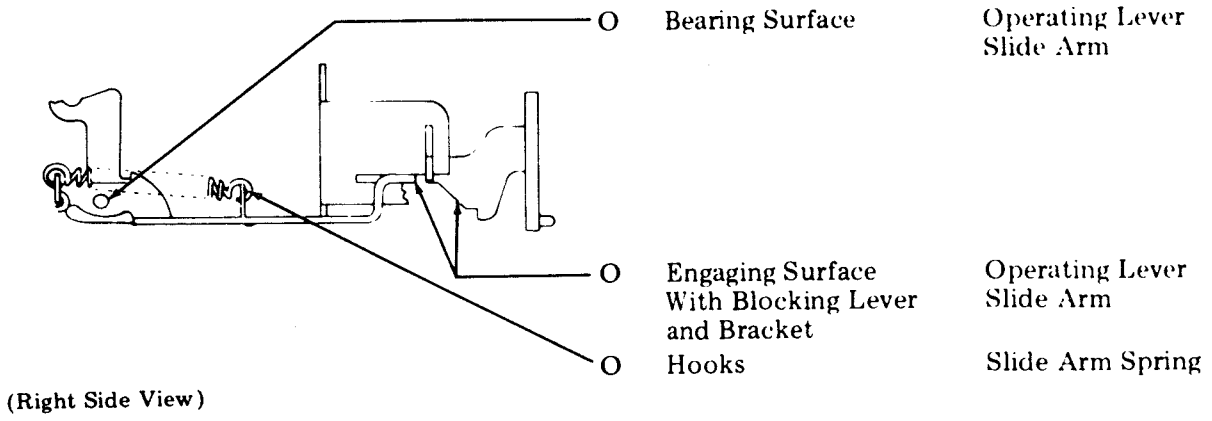
Intermediate Bail

Trip Lever Arm

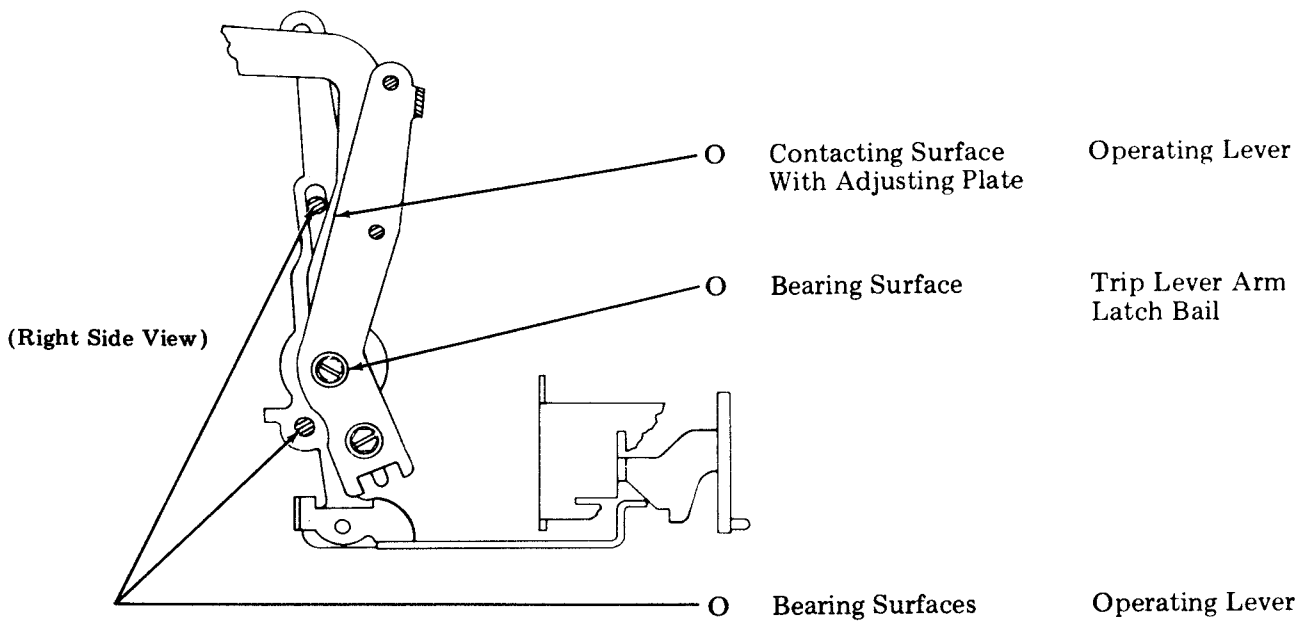
(Right Side View)

SECTION 573-115-701TC

3.25 Slide Arm

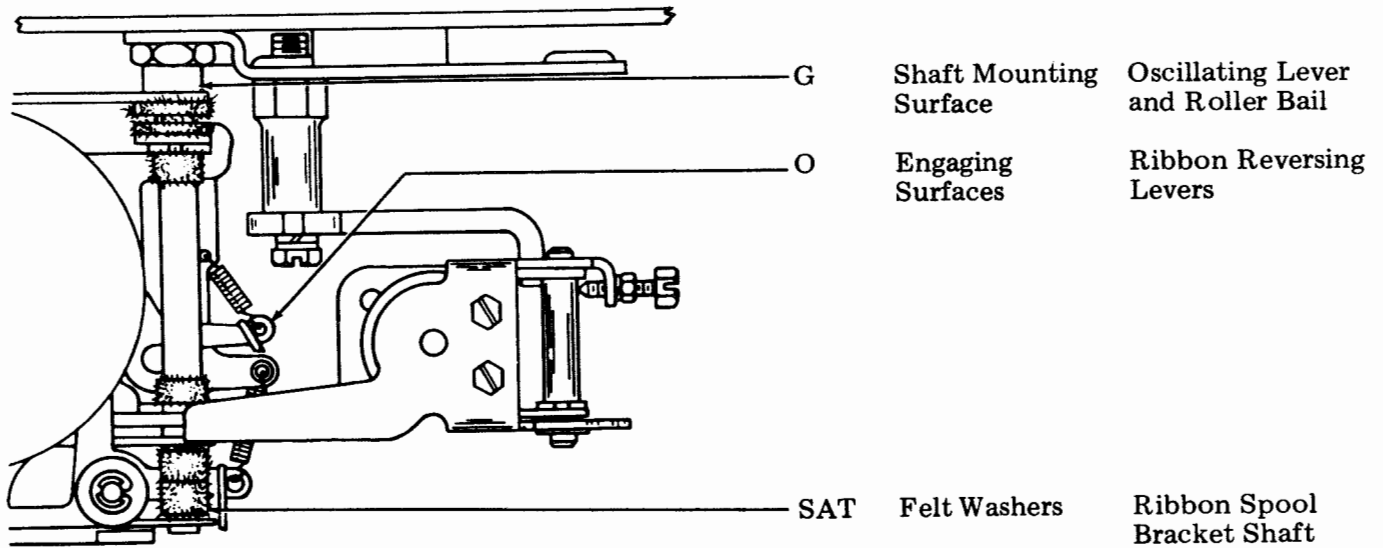


3.26 Operating Lever (continued)



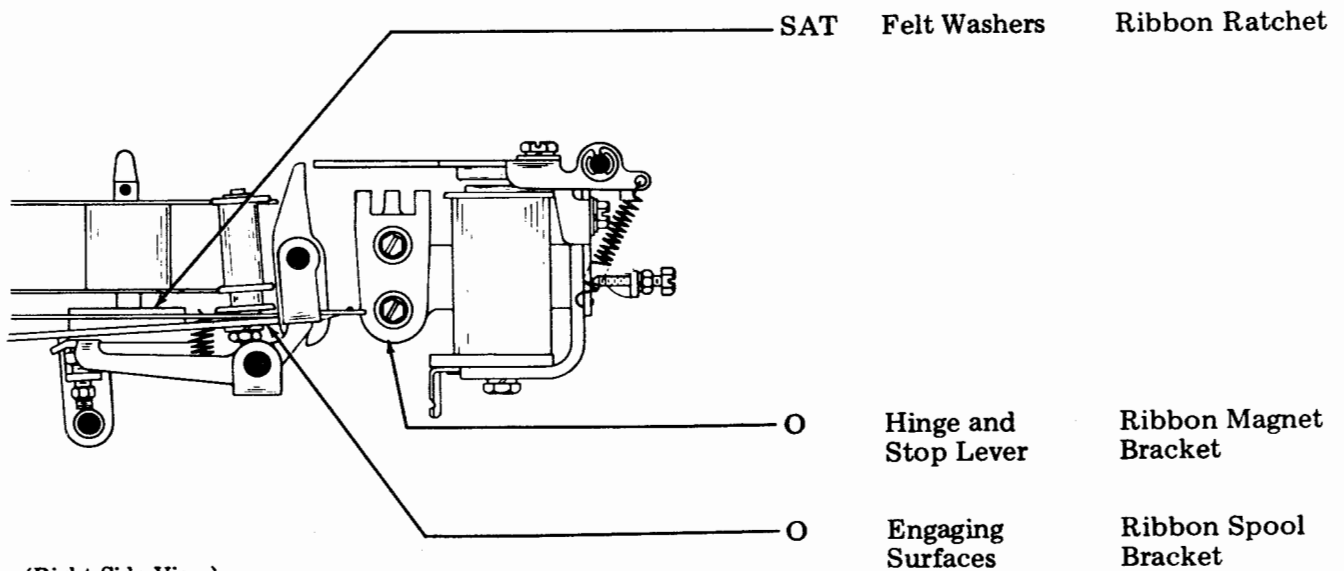
TWO-COLOR RIBBON MECHANISM

3.27 Oscillating Lever



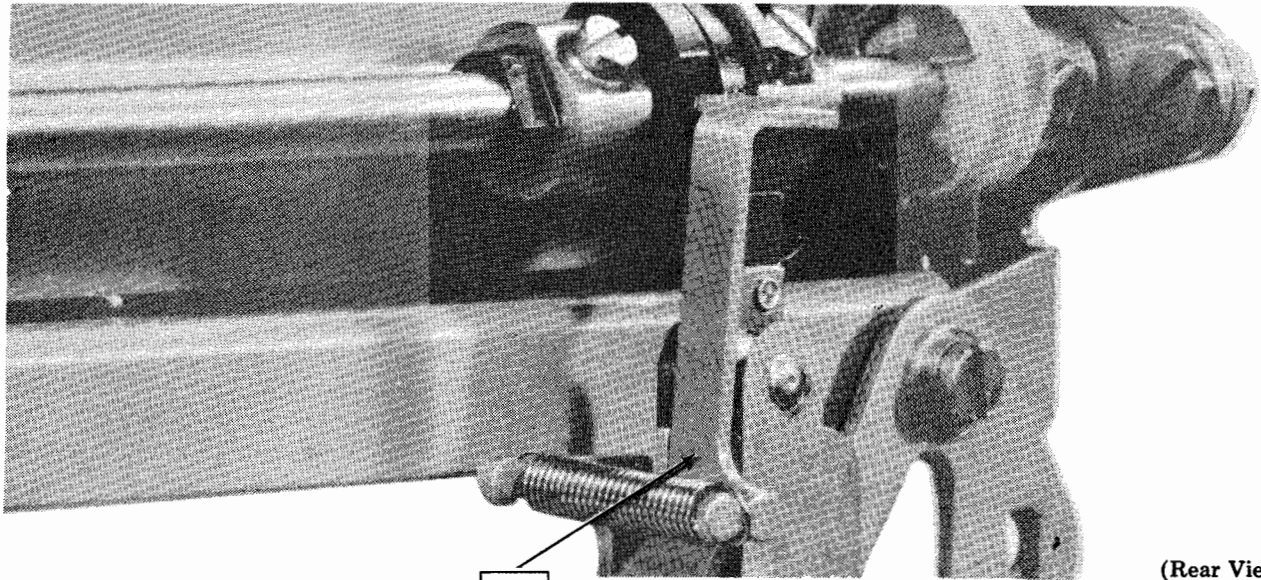
(Top View)

3.28 Ribbon Operating Mechanism



(Right Side View)

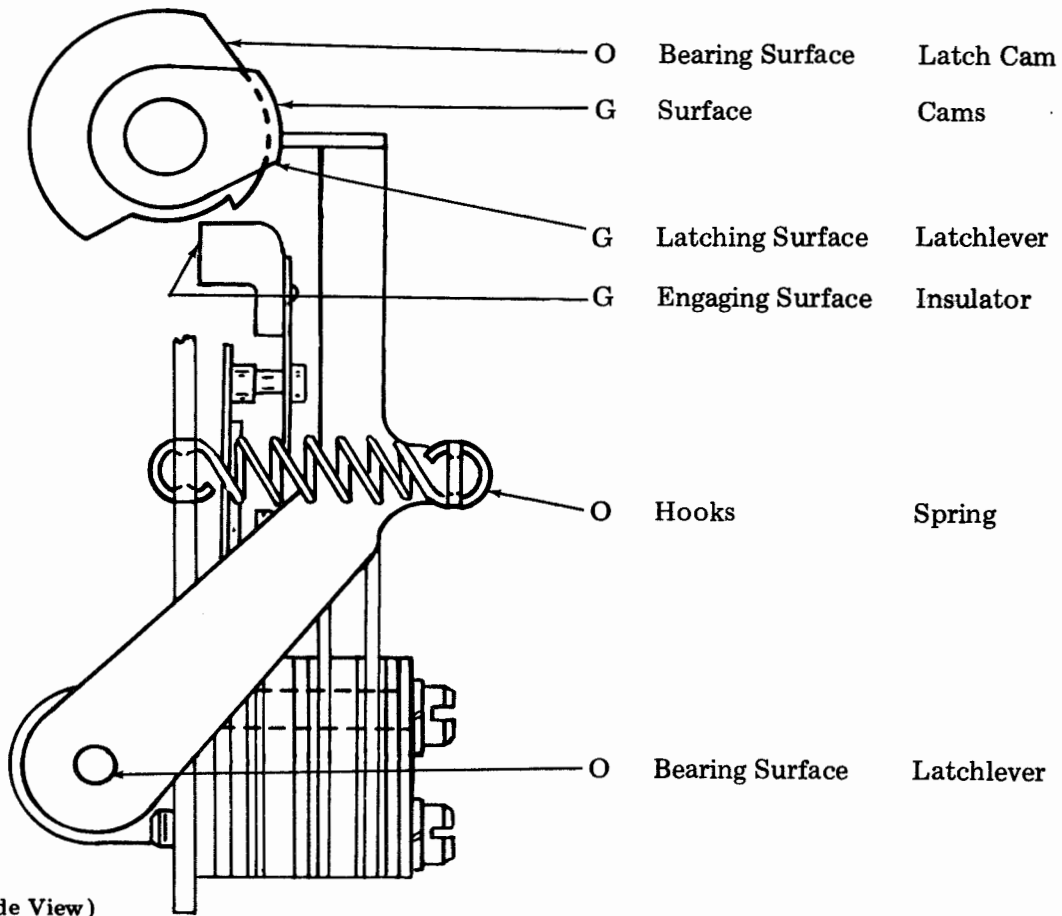
UNIVERSAL CONTACT STUNT BOX MECHANISM



3.29

(Rear View)

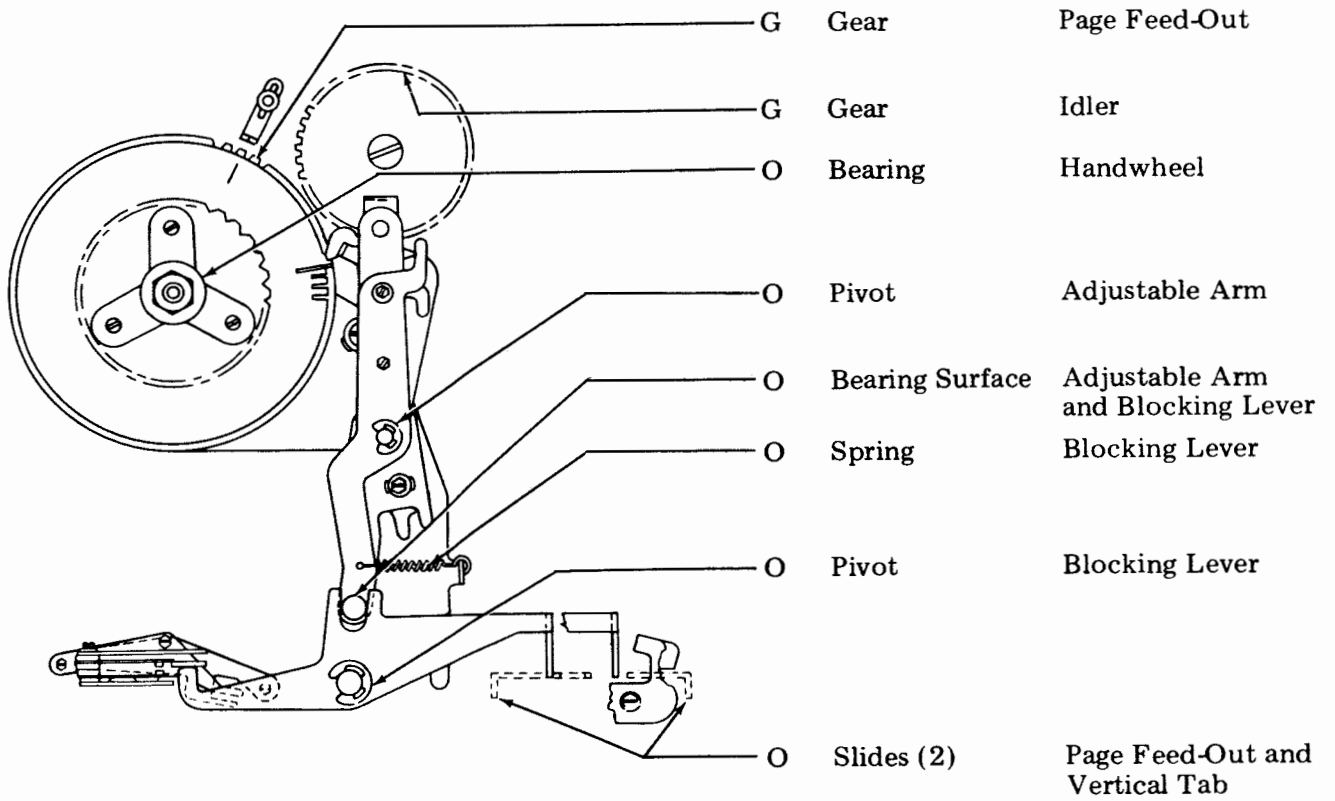
3.29 Operating Mechanism



(Right Side View)

VERTICAL TABULATION AND TRANSMITTER DISTRIBUTOR CONTROL MECHANISM

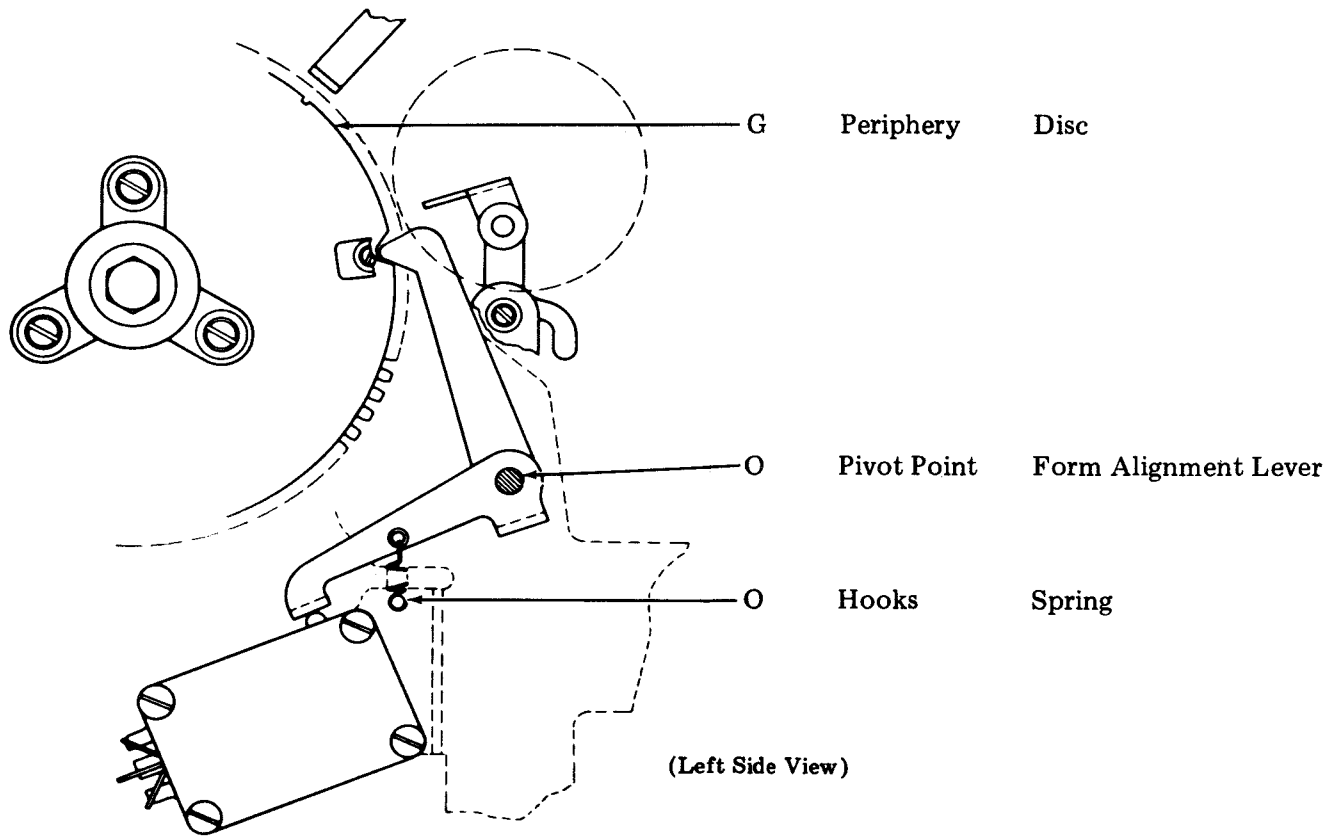
3.30 Control Mechanism



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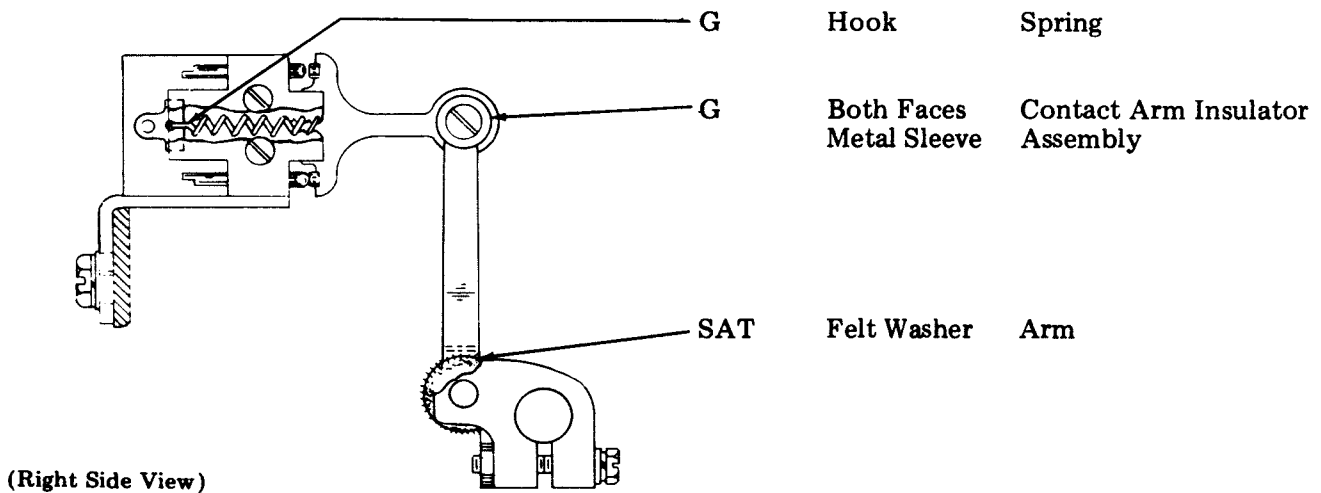
FORM ALIGNMENT SWITCH MECHANISM

3.31 Operating Mechanism



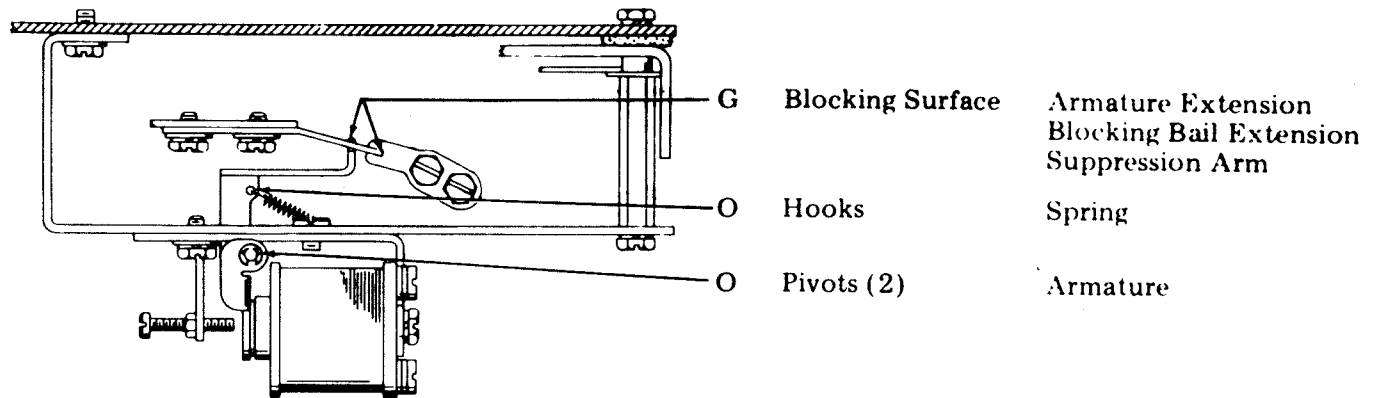
UNIVERSAL CONTACT SELECTOR MECHANISM

3.32 Contact Mechanism



DC MAGNET OPERATED PRINT SUPPRESSION MECHANISM

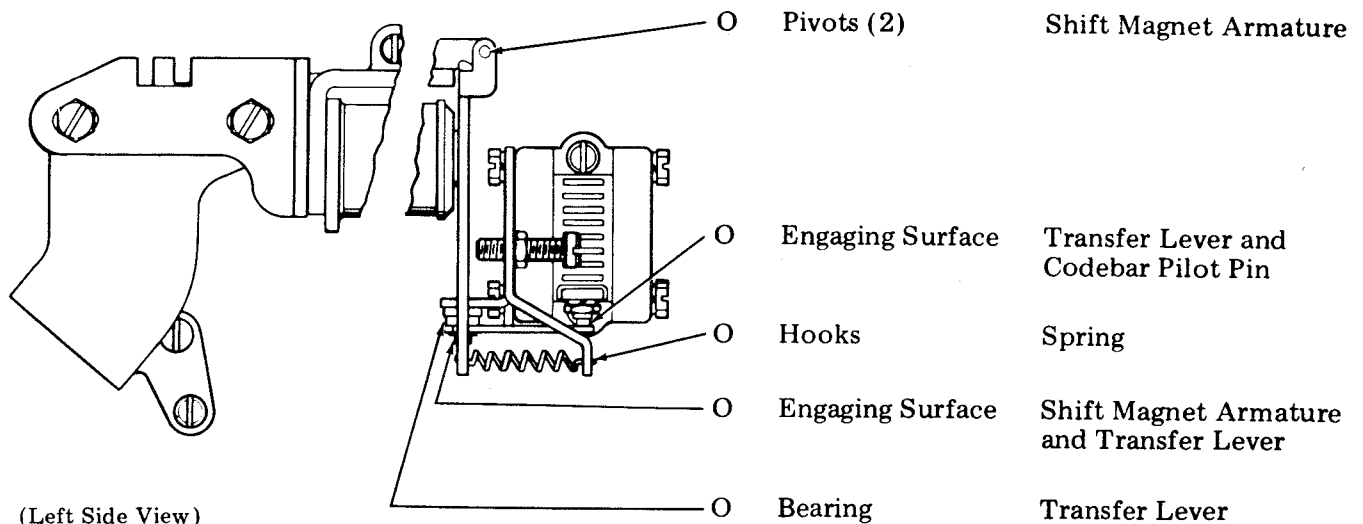
3.33 Suppression Mechanism



(Left Side View)

LETTERS-FIGURES CODEBAR SHIFT MAGNET MECHANISM

3.34 Shift Magnet Mechanism

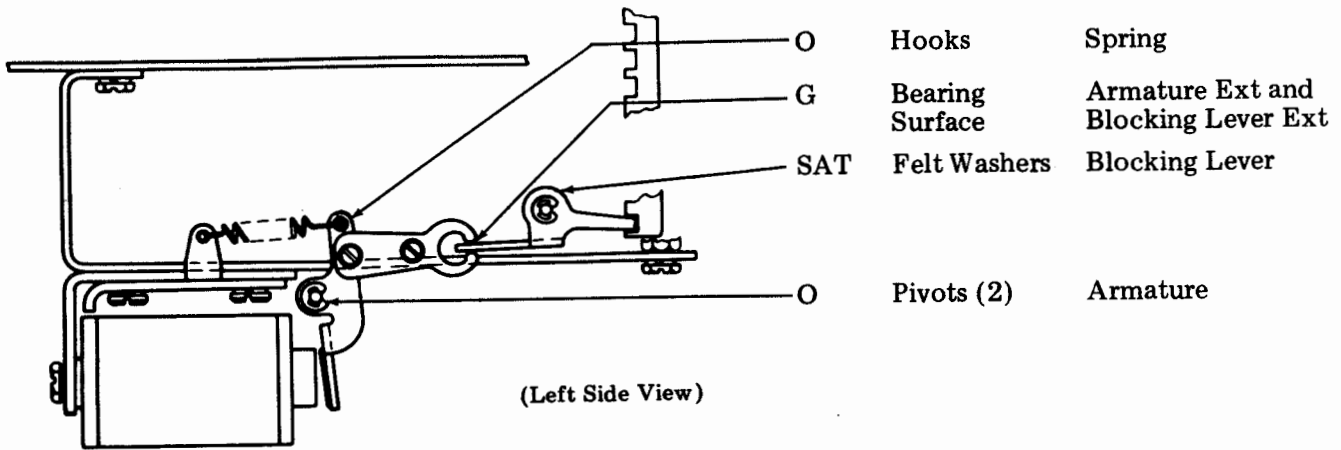


(Left Side View)

SECTION 573-115-701TC

PRINT SUPPRESSION AND OFF-LINE STUNT SHIFT CONTROL MECHANISM

3.35 Shift Mechanism



FORM FEED-OUT MECHANISM

3.36 Feed-Out Bail

