

# PART 4

## CONTENTS

### ADJUSTMENT INSTRUCTIONS

	Page		Page
1. General .....	1	H. Answer-Back Unit	
2. Recommended Sequence of Adjustment and Reassembly .....	1	24. Latch Trip Lever .....	18
<b>SECTION 1</b>		25. Lag Disc Clearance .....	20
A. Electromagnet		26. Release Lever Lift .....	20
1. Armature Stop Bracket .....	3	27. Release Lever Trip Arm Engagement .....	22
2. Centralising Springs .....	3	<b>SECTION 2</b>	
B. Translator Unit		28. Translator Clutch .....	23
3. Clutch Trigger Backstop Clearance .....	4	29. Pin-Box Traverse Multiplying Lever .....	23
4. Clutch Abutment Engagement .....	4	30. Pecker Retention Arm .....	24
5. Function Bar Reset .....	5	31. Selector Detent Clearance .....	25
6. Print Release Lever .....	5	32. Selector Camshaft Retention Lever .....	26
7. Case Shift Lever - Vertical Position .....	6	33. Selector Clutch .....	27
8. Case Shift Lever - Horizontal Position .....	6	34. Selector Rockshaft End-Play .....	28
9. Non-Print Hook .....	7	35. Translator Trip Operating Lever Stop .....	28
10. Letter Feed Latch .....	8	36. Translator Clutch Trip .....	28
11. Carriage Return Latch .....	8	37. Starter Trip from Electromagnet ..	29
C. Selector Unit		38. Starter Trip from Translator Clutch	29
12. Selector Drive Shaft End-Play .....	9	39. Pecker/Code Selection Pin Clearance	30
13. Starter Switch - Operating Link ..	10	40. Pecker Traverse .....	31
14. Starter Switch Spindle .....	11	41. Carriage Return Pawl Lift .....	32
15. Starter Switch Hold-out Lever .....	11	42. Line Feed Lever Stop Plate .....	32
16. Starter Switch Hold-out Bush .....	12	43. Friction Feed Platen .....	33
D. Typehead Carriage Unit		44. Sprocket Feed Platen .....	34
17. Corrector Backstop .....	12	45. Paper Guide Retainers .....	36
E. Motor Unit		46. Line Feed Pawl Overthrow Stops .....	37
18. Governor Contacts Clearance .....	13	47. Platen Retention Pawl .....	37
19. Governor Contact Assembly Location	14	48. Typehead Carriage End-Play .....	37
F. Keyboard		49. Typehead Carriage Stop Screw and Pawl Latch .....	38
20. Keybar/Combination Bar Clearance ..	14	50. Feed and Retention Pawl Height .....	39
21. Trip Lever Pivot .....	15	51. Typehead Carriage Feed Link .....	39
22. Push Rod Lift .....	16	52. Carriage Return Spring .....	40
G. Transmitter Unit		53. Dashpot .....	41
23. Contact Springs .....	16	54. Print Spring .....	41
		55. Typehead/Platen Clearance .....	42
		56. Print Beam Stop Screw .....	43
		57. Typehead Corrector .....	43
		58. Typehead Corrector Track Rail .....	44
		59. Typehead Height-Initial Setting ..	45
		60. No. 5 Aggregate Motion Lever .....	45
		61. No. 4 Aggregate Motion Lever .....	46
		62. No. 1 Aggregate Motion Lever .....	46

## LIST OF ILLUSTRATIONS

### SECTION 1

- Fig. 4.1 Electromagnet
- Fig. 4.2 Translator Clutch Trigger Mechanism
- Fig. 4.3 Translator Clutch Abutment Mechanism
- Fig. 4.4 Function Bar Reset Mechanism
- Fig. 4.5 Print Release Mechanism
- Fig. 4.6 Case Shift Mechanism - Rear View
- Fig. 4.7 Non-Print Hook Mechanism
- Fig. 4.8 Letter Feed and Carriage Return Control Linkages
- Fig. 4.9 Selector Drive Shaft
- Fig. 4.10 Starter Switch - Operating Linkage
- Fig. 4.11 Starter Switch - Starter Pin/Worm Wheel Mechanism
- Fig. 4.12 Typehead Corrector Mechanism
- Fig. 4.13 Governor Contact Assembly
- Fig. 4.14 Keybar/Combination Bar Clearance
- Fig. 4.15 Keyboard Trip Mechanism
- Fig. 4.16 Keyboard - Underside View
- Fig. 4.17 Push Rod Lift
- Fig. 4.18 Transmitter Unit - Front View
- Fig. 4.19 Send-Receive Contacts
- Fig. 4.20 Answer-Back Latch Trip Lever - Vertical Clearance
- Fig. 4.21 Answer-Back Part-Cycle Condition
- Fig. 4.22 Answer-Back Lag Disc Clearance
- Fig. 4.23 Answer-Back Unit - Rear View
- Fig. 4.24 Answer-Back Trip Mechanism

### SECTION 2

- Fig. 4.25 Translator Clutch - Rear View
- Fig. 4.26 Pin-Box Traverse Action
- Fig. 4.27 Pecker Retention Arm Mechanism - Rear View
- Fig. 4.28 Selector Clutch Trigger Mechanism - Side View
- Fig. 4.29 Selector Clutch Trigger Mechanism - Plan View
- Fig. 4.30 Selector Clutch
- Fig. 4.31 Starter Trip from Electromagnet
- Fig. 4.32 Starter Trip Shaft Linkage
- Fig. 4.33 Pecker/Selection Pin Clearance
- Fig. 4.34 Pecker/Selection Pin Engagement
- Fig. 4.35 Feed and Retention Rack Clearances
- Fig. 4.36 Line Feed Operating Lever
- Fig. 4.37 Line Feed Ratchet Wheel Mechanism
- Fig. 4.38 Friction Feed Platen - Left-Hand End
- Fig. 4.39 Sprocket Feed Platen - Left-Hand End
- Fig. 4.40 Paper Guide Retainer

- Fig. 4.41 Ratchet Support Plate
- Fig. 4.42 Typehead Carriage - Left-Hand End
- Fig. 4.43 Typehead Retention Pawl
- Fig. 4.44 Typehead Carriage Feed Link
- Fig. 4.45 Carriage Return Spring Drum
- Fig. 4.46 Dashpot/Print Spring Mechanism
- Fig. 4.47 Print Beam/Print Shackle Linkage
- Fig. 4.48 Typehead/Platen Clearance
- Fig. 4.49 Typehead Corrector Mechanism
- Fig. 4.50 Typehead Corrector Track Rail
- Fig. 4.51 Typehead Carriage / Plan View
- Fig. 4.52 Push Rod/Aggregate Bellcrank Linkage - Rear View
- Fig. 4.53 Shift Rod/Shift Bellcrank Linkage - Rear View
- Fig. 4.54 Ribbon Spool Clearance
- Fig. 4.55 Ribbon Feed and Retention Pawls
- Fig. 4.56 Ribbon Jumper Arm

### SECTION 3

- Fig. 4.57 Combination Bar Reset Mechanism
- Fig. 4.58 Selector Bar/Selection Pin Alignment
- Fig. 4.59 Selector Bar/Selection Pin Clearance
- Fig. 4.60 Lag Weight Mechanism
- Fig. 4.61 Send-Receive Switch Delay Linkage
- Fig. 4.62 Send-Receive Switch Contacts

### SECTION 4

- Fig. 4.63 Telegraph Distortion Measuring Set, Type 6B
- Fig. 4.64 TDMS/Transmitter Connexions for Signals Length Check
- Fig. 4.65 Transmitter Lever/Cam Assembly
- Fig. 4.66 Transmitter Timing Disc, TA1316
- Fig. 4.67 Transmitter Lever/Camshaft Relationship
- Fig. 4.68 Speed-change Lever Positions
- Fig. 4.69 Typehead Lift Rack and Stop Block
- Fig. 4.70 Typehead Carriage - Plan View
- Fig. 4.71 Starter Switch Timing Mechanism
- Fig. 4.72 Bell Contact Operating Mechanism
- Fig. 4.73 Bell and WRU? Function Bars
- Fig. 4.74 Bell Contact Spring Assembly
- Fig. 4.75 Operation Counter

### SECTION 5

- Fig. 4.76 Selector Bar/Punch Mechanism
- Fig. 4.77 Selector Bar/Push Rod Linkage

ADJUSTMENT INSTRUCTIONS

	Page		Page
63. No. 3 Aggregate Motion Lever .....	47		
64. Typehead Height - Preliminary Setting .....	47		
65. Ribbon Spool Damping .....	48		
66. Ribbon Spool Clearance .....	49		
67. Ribbon Unit Pawls .....	49		
68. Ribbon Jumper Arm .....	50		
<b>SECTION 3</b>			
69. Keyboard Combination Bar Reset ...	51		
70. Keyboard Trip Lever Pivot - Dynamic Check .....	52		
71. Selector Bar/Selection Pin Alignment .....	52		
72. Selector Bar/Selection Pin Clearance .....	52		
73. Lag Weight Release Lever Stop .....	53		
74. Lag Weight Trip .....	54		
75. Lag Weight Movement .....	55		
76. Translator Trip from Lag Weight .....	55		
77. Send-Receive Delay Lever Clearance .....	56		
78. Send-Receive Switch Contacts .....	56		
79. Send-Receive Contact Delay .....	57		
80. Send-Receive Contact Delay - Dynamic Check .....	58		
<b>SECTION 4</b>			
81. Motor Speed .....	60		
82. Transmitter Contacts and Signals Length (TDMS) .....	60		
83. Transmitter Contacts and Signals Length (Timing Disc) .....	64		
84. Lag Weight Transit Timing .....	68		
85. Typehead Height - Final Setting ..	69		
86. Carriage Return Button .....	70		
87. Dashpot - Dynamic Check .....	70		
88. Line Length Operating Stop .....	70		
89. Starter Switch Timing .....	71		
90. Bell and WRU? Contacts .....	72		
91. Operation Counter .....	75		
		<b>SECTION 5</b>	
		<b>A. Reperforating Attachment</b>	
		92. Selector Bar/Punch - Vertical Clearance .....	77
		93. Selector Bar/Punch - Horizontal Clearance .....	77
		94. Punch Withdrawal Plate .....	78
		95. Feed Hole Pitch - Initial Setting.	78
		96. Feed Pawl Height .....	80
		97. Feed Pawl Engagement .....	80
		98. Reperforator Control Knob .....	80
		99. Reperforator Control Lever Stop Screw .....	80
		100. Reperforator Suppression from Bell and WRU? .....	80
		101. Throwout Lever Reset Chopper .....	81
		102. Tape Feed Latch .....	82
		103. Feed Hole Pitch - Final Setting ..	83
		104. Tape Exhaust Alarm .....	85
		<b>B. Answer-Back Unit</b>	
		105. Keyboard Suppression .....	85
		106. Trip from Keyboard .....	86
		107. Vertical Trip Link .....	87
		108. Trip from Function Bar .....	87
		109. Transfer Lever Bracket .....	89
		110. Trip Link Stop Screw .....	89
		111. Feed Pawl .....	89
		112. Feed Pawl Stop .....	89
		<b>C. End-of-Line Indicator</b>	
		113. Trip Mechanism .....	90
		<b>D. Automatic Carriage-Return/Line Feed</b>	
		114. Line Length .....	91
		<b>E. Two-Colour Printing</b>	
		115. Operating Check and Setting-Up Procedure .....	92

- Fig.4.78 Feed Lever Mechanism
- Fig.4.79 Tape Feed Mechanism
- Fig.4.80 Reperforator ON/OFF Control Linkage
- Fig.4.81 Throwout Lever Mechanism
- Fig.4.82 Tape Guide and Latch Mechanism
- Fig.4.83 Tape Exhaust Alarm
- Fig.4.84 Push Rod Suppressor/Push Rod Clearances
- Fig.4.85 Answer-Back Trip Mechanism
- Fig.4.86 Answer-Back Unit - Rear View
- Fig.4.87 Vertical Trip Link/Transfer Lever Clearance
- Fig.4.88 Trip Arm/WRU? Function Bar Clearance
- Fig.4.89 Answer-Back Feed Mechanism
- Fig.4.90 End-of-Line Indicator Trip Mechanism
- Fig.4.91 Automatic Carriage-Return/Line-Feed Mechanism
- Fig.4.92 Two-Colour Printing - Latch Mechanism
- Fig.4.93 Two-Colour Printing - Lift Link Mechanism
- Fig.4.94 Adjustment Interlock Chart

## PART 4

### ADJUSTMENT INSTRUCTIONS

#### 1. GENERAL

The adjustments for the Model Seventy-five teleprinter are presented in the sequence recommended for adjusting and reassembling a machine after it has been completely overhauled. If, however, the machine requires only one or two functional adjustments to remedy a fault condition or after a new part has been fitted, it will not always be necessary to follow this sequence. Since many of these adjustments can affect others, the service engineer is advised to consult the Adjustment Interlock Chart, Fig.4.94, when carrying out isolated adjustments.

In the following instructions, unless otherwise stated, the machine is assumed to be in the rest condition, i.e.

- (a) with the translator and selector clutches latched against their detents,
  - (b) with the translator and selector unit camshafts located by their respective retention rollers and
  - (c) with all pins in the pin-box fully withdrawn and the selector code plates down.
- Always remember that when the machine is connected to line and power is switched on, an incoming signal from the distant station will start up the machine. Before attempting any adjustment that requires putting your fingers near moving parts, therefore, DISCONNECT THE SIGNAL CORD FROM THE LINE.
  - Before tilting the machine on its back to carry out an adjustment, remove the signal and power sockets from the rear of the machine main base. It is also advisable to support the motor with a packing piece, such as an ink ribbon container.
  - In the following instructions, occasional adjustments will be found with the symbol † against their numerical headings. This symbol denotes a warning to engineers that, if they wish to carry out this adjustment out of its recommended sequence, it may first be necessary to remove another unit in order to gain access to the components to be adjusted.

#### 2. RECOMMENDED SEQUENCE OF ADJUSTMENT AND REASSEMBLY

- (a) Carry out Section 1 of the Adjustment Instructions. These are adjustments to individual units which must be completed before these units are reassembled to the machine main base.
- (b) Reassemble the following units to the machine main base.
  - Electromagnet
  - Translator Unit
  - Selector Unit
  - Aggregate Motion Unit
  - Typehead Carriage Unit
  - End-of-Line Indicator and Carriage Return Spring Drum
  - Ribbon Unit
  - Motor Unit
  - Platen Unit
- (c) Complete Section 2 of the Adjustment Instructions. These adjustments bring the receiver-only mechanism into a condition in which the motor can safely be switched on.

ADJUSTMENT INSTRUCTIONS

(d) Reassemble the following units to the machine main base.

Keyboard  
Selector Frames Unit  
Answer-Back Unit

(e) Complete Section 3 of the Adjustment Instructions. These adjustments bring the transmitter mechanism into a condition in which the motor can safely be switched on.

(f) Reassemble the following units to the machine.

Transmitter Unit  
Operation Counter

(g) Complete Section 4 of the Adjustment Instructions. These are functional adjustments under power.

(h) Reassemble the Reperforating Attachment to the machine main base.

(j) Complete Section 5 of the Adjustment Instructions. These are adjustments for the optional attachments.

SECTION I

A. ELECTROMAGNET

1. ARMATURE STOP BRACKET

Check

- 1.1 Disconnect the centralising springs, Fig.4.1, from the armature. Apply a tension gauge to the armature block and check that the force necessary to move the armature from side to side is between 6 and 8 ounces (170-227 grammes), and that the forces in the two directions do not differ by more than 1 ounce (28 grammes). If no adjustment is required, connect the centralising springs.

Action

- 1.2 To adjust, slacken the screws securing the armature stop bracket and reposition the bracket until both conditions are satisfied. Tighten the stop bracket securing screws and connect the centralising springs.

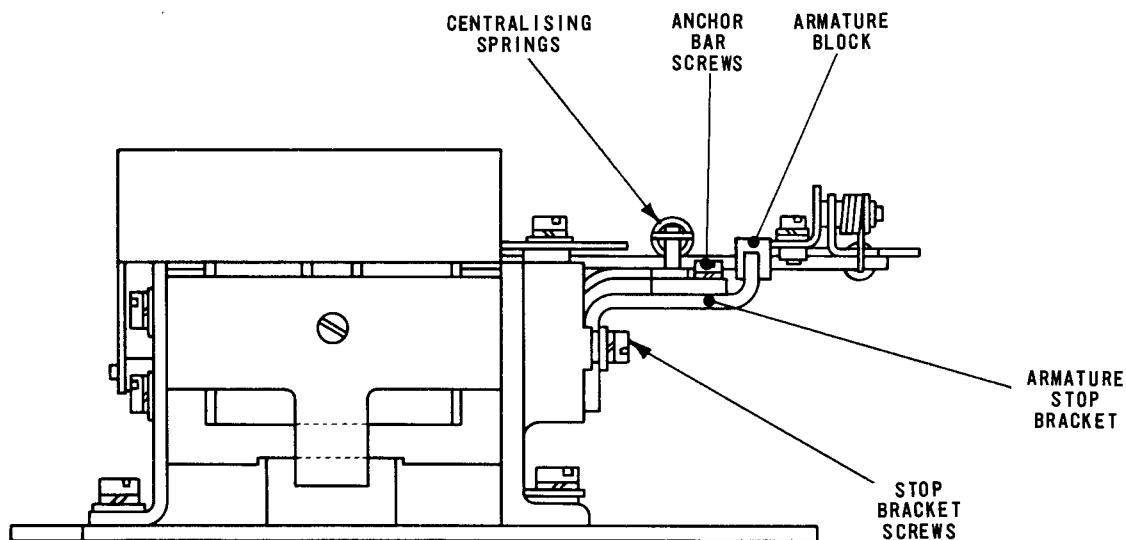


Fig. 4.1 ELECTROMAGNET

2. CENTRALISING SPRINGS

Check

- 2.1 Apply a tension gauge to the end of the armature, Fig.4.1, and check that a force of 1½-3 ounces (43-85 grammes) is now sufficient to move the armature from side to side, and that the forces in the two directions do not differ by more than ½ ounce (14 grammes).

Action

- 2.2 To adjust, slacken the screws securing the anchor bar and reposition the bar by means of its screwdriver slot until both conditions are satisfied. Tighten the anchor bar securing screws.

B. TRANSLATOR UNIT

3. CLUTCH TRIGGER BACKSTOP CLEARANCE

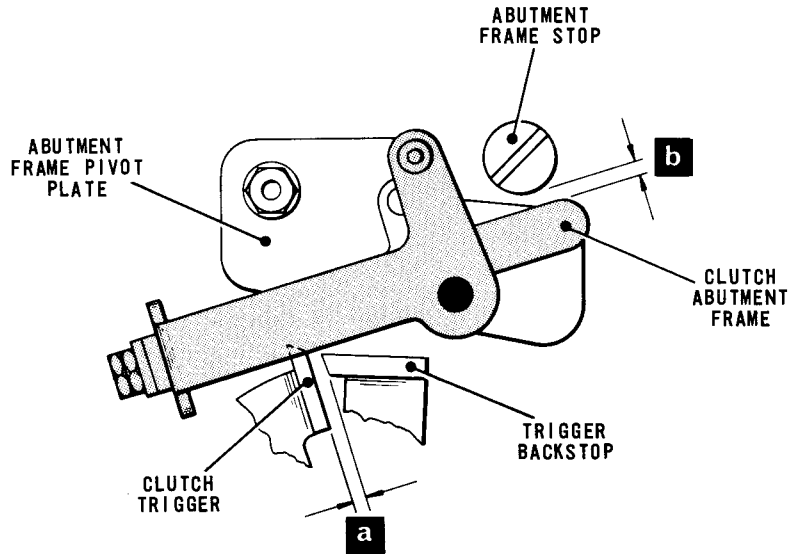


Fig. 4.2 TRANSLATOR CLUTCH TRIGGER MECHANISM

Check

- 3.1 With the translator camshaft in the rest condition and the retention lever roller located in its recess in the retention cam, check that there is a clearance of .010 - .020 in. (dimension 'a') between the clutch trigger, Fig.4.2, and the trigger backstop.

Action

- 3.2 To adjust, slacken the nuts securing the clutch abutment frame pivot plate and reposition the plate until the correct clearance is obtained. Tighten the plate securing nuts.

4. CLUTCH ABUTMENT ENGAGEMENT

Check

- 4.1 With the translator camshaft in the rest condition and the retention lever roller located in its recess in the retention cam, insert a .022 in. feeler gauge between the tail of the clutch abutment frame, Fig.4.2, and its eccentric stop (i.e. set up dimension 'b'). Check that this action does not cause the clutch to trip.
- 4.2 Withdraw the .022 in. feeler gauge and replace with a .028 in. gauge. Check that this action causes the clutch to trip. Remove the gauge.

Action

- 4.3 To adjust, slacken the nut clamping the eccentric stop, Fig.4.3, and turn the stop for maximum depth of engagement between the abutment and the trigger. Insert a .025 in. gauge between the tail of the abutment frame and its eccentric stop,



## ADJUSTMENT INSTRUCTIONS

and turn the eccentric until the clutch just trips. Remove the gauge and clamp the eccentric stop with its nut.

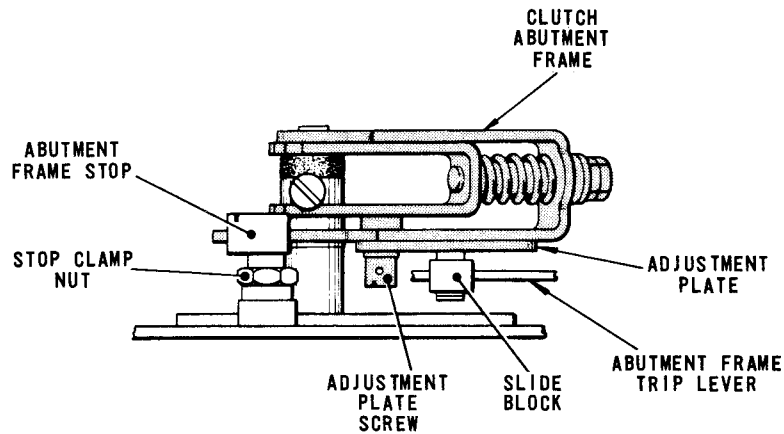


Fig. 4.3 TRANSLATOR CLUTCH ABUTMENT MECHANISM

### 5. FUNCTION BAR RESET

#### Check

- 5.1 Ensure that the translator camshaft is in the rest position and check that there is a clearance of .015 - .030 in. (dimension 'c') between the projections on the function bars, Fig.4.4, and the selector code plates.

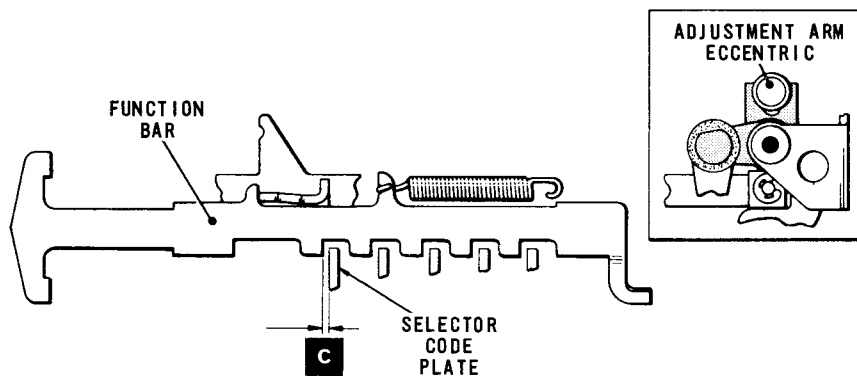


Fig. 4.4 FUNCTION BAR RESET MECHANISM

#### Action

- 5.2 If this is not so, slacken the nut clamping the adjustment arm eccentric (inset) and reposition the eccentric until dimension 'c' is satisfied. Clamp the eccentric in this position with its nut.

### 6. PRINT RELEASE LEVER

#### Check

- 6.1 With the translator camshaft in the rest position, check that the function bars, Fig.4.5, are centrally positioned with respect to their corresponding slots in

the print release lever. This can be done by observing any visible function bar and checking that the right-hand side of the bar is clear of its corresponding slot by .020 - .026 in. (dimension 'd').

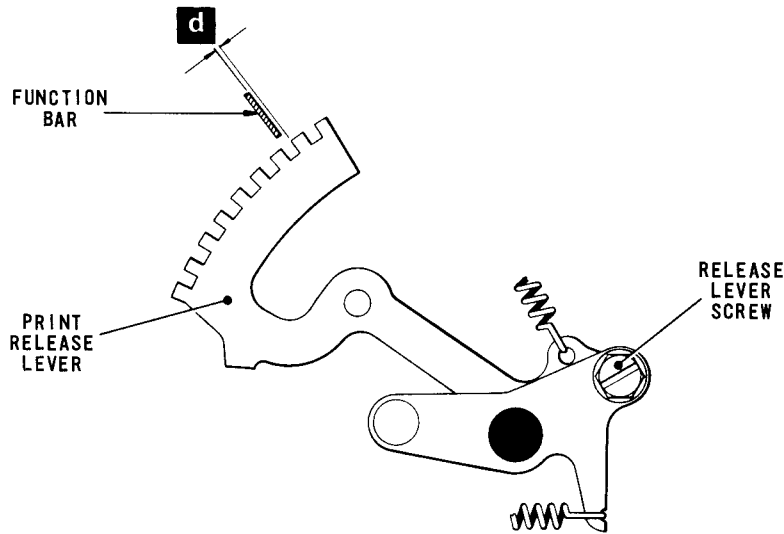


Fig. 4.5 PRINT RELEASE MECHANISM

#### Action

- 6.2 To adjust, slacken the screw securing the print release lever until it is friction tight and reposition the lever until dimension 'd' is obtained. Tighten the lever securing screw.

### 7. CASE SHIFT LEVER - VERTICAL POSITION

#### Check

- 7.1 With the translator camshaft in the rest condition, move the shift lever, Fig.4.6, to the letters position, i.e. to the right, and check that there is now a vertical clearance of .050 - .060 in. (dimension 'e' - inset) between the top edge of the shift latch and the bottom edge of the shift bellcrank.

#### Action

- 7.2 To adjust, slacken the two nuts securing the adjustment plate and reposition the plate until dimension 'e' is set up. Tighten the securing nuts.

### 8. CASE SHIFT LEVER - HORIZONTAL POSITION

#### Check

- 8.1 Ensure that all the pins in the pin-box are fully withdrawn. Lift the translator clutch abutment and turn the camshaft by hand until the function bars move towards the rear. Move the shift lever, Fig.4.6, alternately from Letters to Figures shift and check that in either position there is a minimum clearance of .010 in. between the operating surfaces of the shift lever and the tails of the Letters and Figures function bars. Check also that the two clearances are approximately equal.
- 8.2 Move the shift lever to the Figures position, i.e. to the left, and check that there is a minimum clearance of .010 in. (dimension 'f') between the shift latch and the tip of the shift bellcrank.

ADJUSTMENT INSTRUCTIONS

- 8.3 Move the shift lever to the Letters position and check that there is a minimum shift latch/shift bellcrank engagement of .045 in. (dimension 'g' - inset).

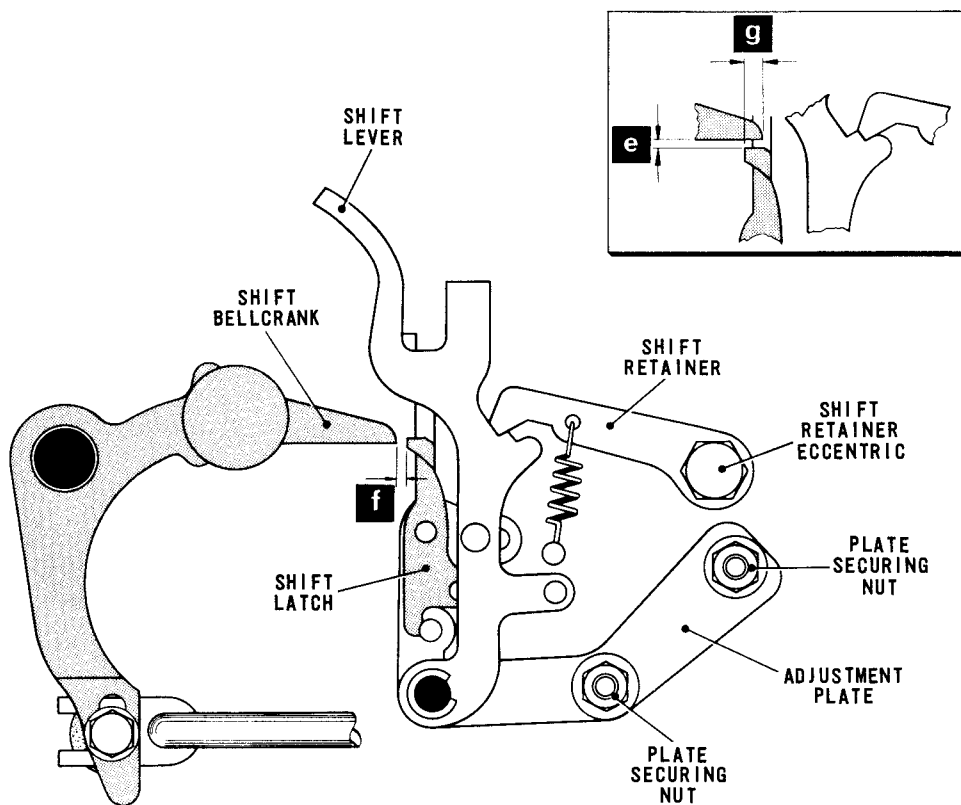


Fig. 4.6 CASE SHIFT MECHANISM—REAR VIEW

- 8.4 Set up the Figures (MMSMM) and Letters (MMMMM) combinations in turn, lift the translator clutch abutment and turn the camshaft by hand. Check that the function bars move the shift lever from one condition to the other.

Action

- 8.5 If any of the above conditions are not present, slacken the nut securing the shift retainer eccentric and reposition the retainer by turning its eccentric until all four conditions are satisfied. Tighten the eccentric securing nut.

9. NON-PRINT HOOK

Check

- 9.1 Set up any **printing** character in the pin-box, lift the translator clutch abutment and turn the camshaft by hand until the print release lever, Fig.4.5, drops. Check that there is a minimum horizontal clearance of .030 in. (dimension 'h') between the end of the print lever, Fig.4.7, and the step of the print hook.
- 9.2 Set up any **non-printing** character in the pin-box, lift the translator clutch abutment and turn the camshaft by hand until the hook engages the print lever. Check that this engagement is at least .045 in. (dimension 'j' - inset).

Action

- 9.3 To adjust, slacken the hook clamp screw and turn the clamp until the correct conditions are set up. Tighten the screw.

ADJUSTMENT INSTRUCTIONS

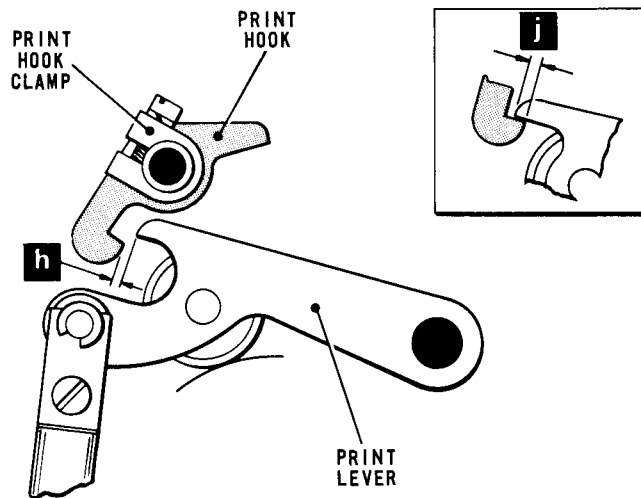


Fig. 4.7 NON-PRINT HOOK MECHANISM

10. LETTER FEED LATCH

Check

- 10.1 Lift the translator clutch abutment and turn the camshaft by hand until the letter feed operating lever, Fig.4.8, is fully raised. Hold the letter feed lever abutment against the lower guide rack and push the letter feed latch inwards. Check that the latch passes beneath the shoe on the operating lever by .015 - .025 in. (dimension 'k').

Action

- 10.2 To adjust, slacken the screw securing the lever abutment and reposition the abutment until the correct clearance is obtained. Tighten the screw.

Check

- 10.3 Set up any **non-feed** combination on the pin-box, hold the lever abutment against the lower guide rack and lift the translator clutch abutment. Turn the camshaft by hand and check that as the operating lever falls, it clears the step on the latch by .015 - .030 in. (dimension 'l' - inset).

Action

- 10.4 To adjust, slacken the letter feed arm clamp screw and reposition the latch until dimension 'l' is set up. Tighten the clamp screw.

11. CARRIAGE RETURN LATCH

Check

- 11.1 With the translator camshaft in the rest position, press the carriage return driving block, Fig.4.8, down on its retaining plate. Push the lower end of the carriage return latch inwards and check that its latching face passes over the shoe of the carriage return operating lever with a clearance of approximately .030 in. (dimension 'm').

Action

- 11.2 If this is not so, slacken the screw securing the driving block and reposition the block until dimension 'm' is satisfied. Tighten the screw.

ADJUSTMENT INSTRUCTIONS

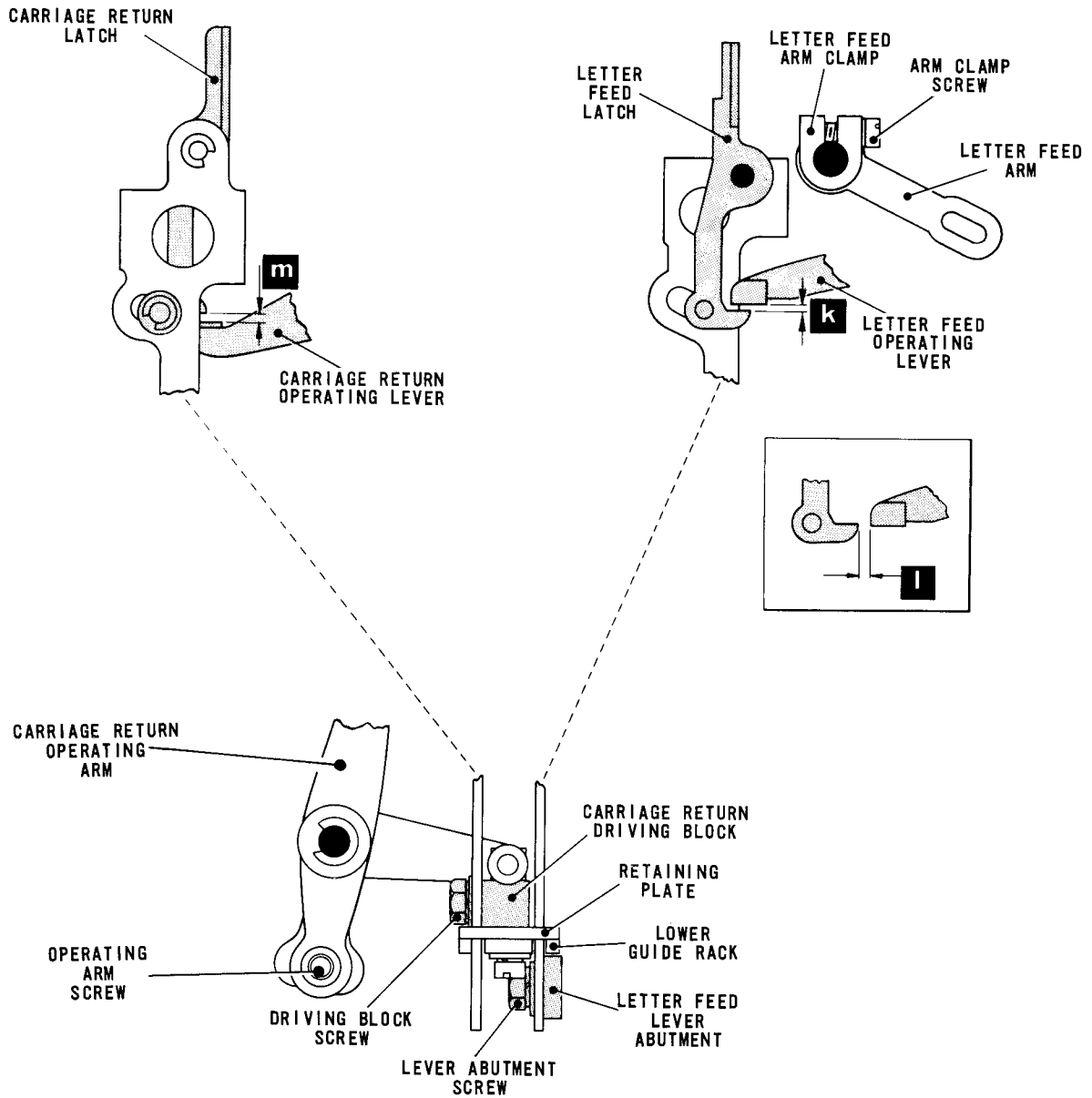


Fig. 4.8 LETTER FEED AND CARRIAGE RETURN CONTROL LINKAGES

C. SELECTOR UNIT

12. SELECTOR DRIVE SHAFT END-PLAY

Check

- 12.1 Check that the selector drive shaft, Fig.4.9, is free to turn and that its end-play does not exceed .003 in.

Action

- 12.2 To adjust, remove the outer nut and its washer, slacken the locknut and turn the special square nut located in the collar until the correct end-play is

present. Clamp the square nut with its locknut and refit the outer nut and its washer.

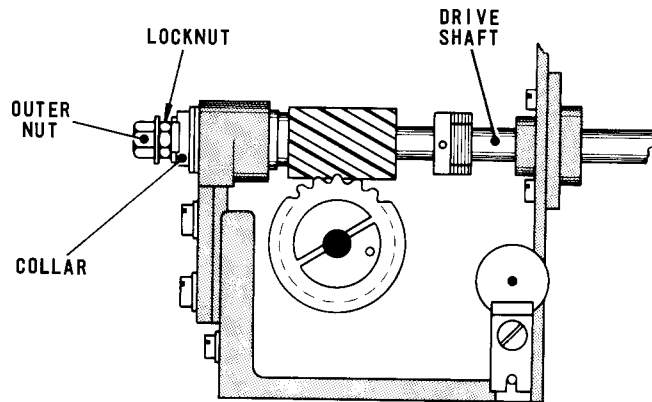


Fig. 4.9 SELECTOR DRIVE SHAFT

13. STARTER SWITCH-OPERATING LINK

Check

- 13.1 Disengage the starter arm pin, Fig.4.11, from the worm wheel. Depress the starter arm as far as it will go so that the starter lever, Fig.4.10, is fully down. Check that there is now an engagement of .015 - .030 in. (dimension 'n') between the bottom end of the starter operating link and the peg on the rockshaft.
- 13.2 Release the starter arm and allow the lever to restore to its uppermost position. Check that there is now a clearance of .015 - .030 in. (dimension 'p' - inset) between the link and the peg.

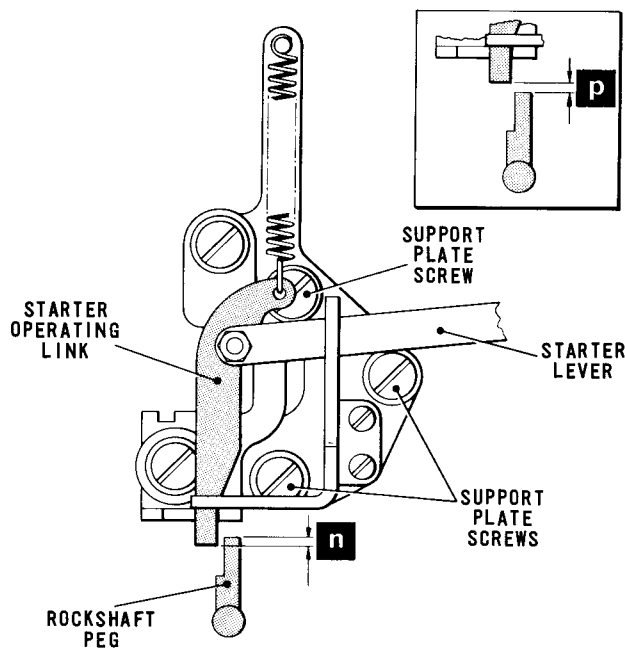


Fig. 4.10 STARTER SWITCH-OPERATING LINKAGE

Action

- 13.3 To adjust, slacken the three screws securing the support plate and reposition the plate by means of its screwdriver slot until both the above conditions are satisfied. Tighten the screws.

14. STARTER SWITCH SPINDLE

Check

- 14.1 With the starter arm pin, Fig.4.11, fully engaged with the worm wheel, check that the left-hand end of the starter spindle protrudes through its bearing bracket by .015 - .030 in. (dimension 'q').

Action

- 14.2 To adjust, slacken the screw clamping the starter arm until friction tight and, holding the pin in engagement with the worm wheel, reposition the starter spindle to achieve dimension 'q'. Tighten the clamp screw.

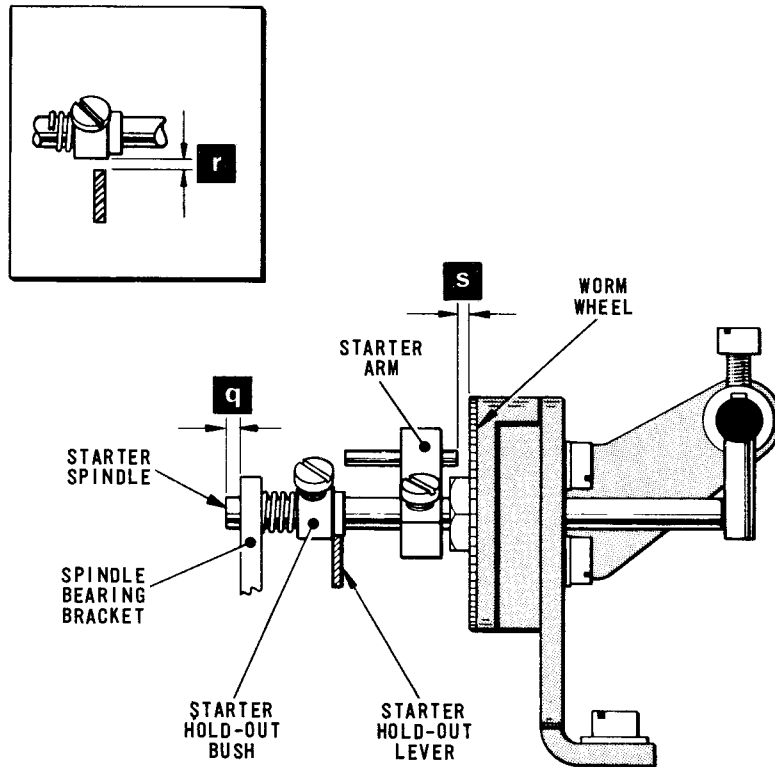


Fig. 4.11 STARTER SWITCH-STARTER PIN/WORM WHEEL MECHANISM

15. STARTER SWITCH HOLD-OUT LEVER

Check

- 15.1 With the starter lever, Fig.4.10, in its uppermost position and with the starter arm pin, Fig.4.11, engaged in the worm wheel, check that the end of the starter hold-out lever is clear of the larger diameter of the shouldered bush by .004 - .008 in. (dimension 'r' - inset).

Action

- 15.2 If this is not so, slacken the nut clamping the eccentric backstop of the hold-out lever and rotate the backstop until dimension 'r' is set up. Tighten the clamp nut.

16. STARTER SWITCH HOLD-OUT BUSH

Check

- 16.1 Disengage the starter arm pin, Fig.4.11, from the worm wheel and depress the starter arm as far as it will go. Check that the hold-out lever is now located against the shoulder of the bush, as shown in the figure, and that there is a clearance of .005 - .010 in. (dimension 's') between the end of the pin and the worm wheel.

Action

- 16.2 To adjust, slacken the screw clamping the bush and slide the bush along the starter spindle until both conditions are satisfied. Tighten the clamp screw.

D. TYPEHEAD CARRIAGE UNIT

17. CORRECTOR BACKSTOP

Check

- 17.1 Press the corrector lever, Fig.4.12, into full engagement with the corrector wheel and check that the type in the printing position is parallel to the rear edge of the typehead unit casting.

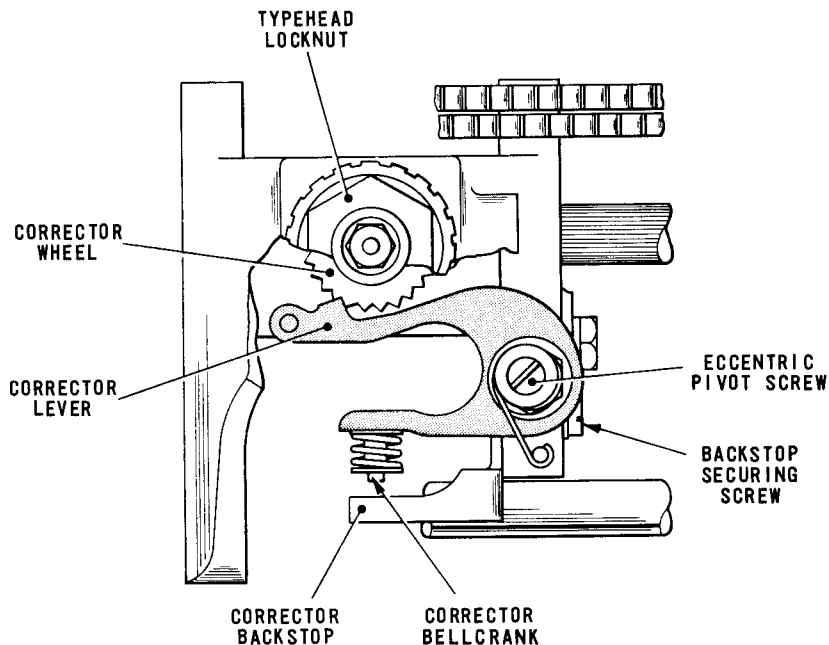


Fig. 4.12 TYPEHEAD CORRECTOR MECHANISM



## ADJUSTMENT INSTRUCTIONS

- 17.2 Insert a .015 in. feeler gauge between the corrector backstop and the corrector bellcrank and check that it is possible to turn the typehead without interference from the corrector lever.
- 17.3 Replace the .015 in. feeler gauge with a .025 in. gauge. Rotate the typehead again and check that the corrector lever now touches the teeth of the wheel. Remove the gauge.

### Action

- 17.4 If these conditions are not satisfied, carry out the following procedure.
- Slacken the screw securing the eccentric pivot of the corrector lever and turn the eccentric to its mid-position, using that half of its throw which is towards the rear of the machine. Tighten the pivot securing screw.
  - Slacken the locknut securing the typehead and turn the typehead slightly to satisfy Check 17.1. Tighten the locknut.
  - Slacken the screw securing the corrector backstop and reposition the backstop until Checks 17.2 and 17.3 are satisfied. Tighten the backstop securing screw.

## E. MOTOR UNIT

### 18. GOVERNOR CONTACTS CLEARANCE

#### Check

- 18.1 Remove the screws securing the contacts cover, Fig.4.13, and take off the cover. Push the contact peg and contact arm inwards towards the motor to remove any contact peg pressure from the contacts. Check that there is now a clearance of .025 in. between the contacts.

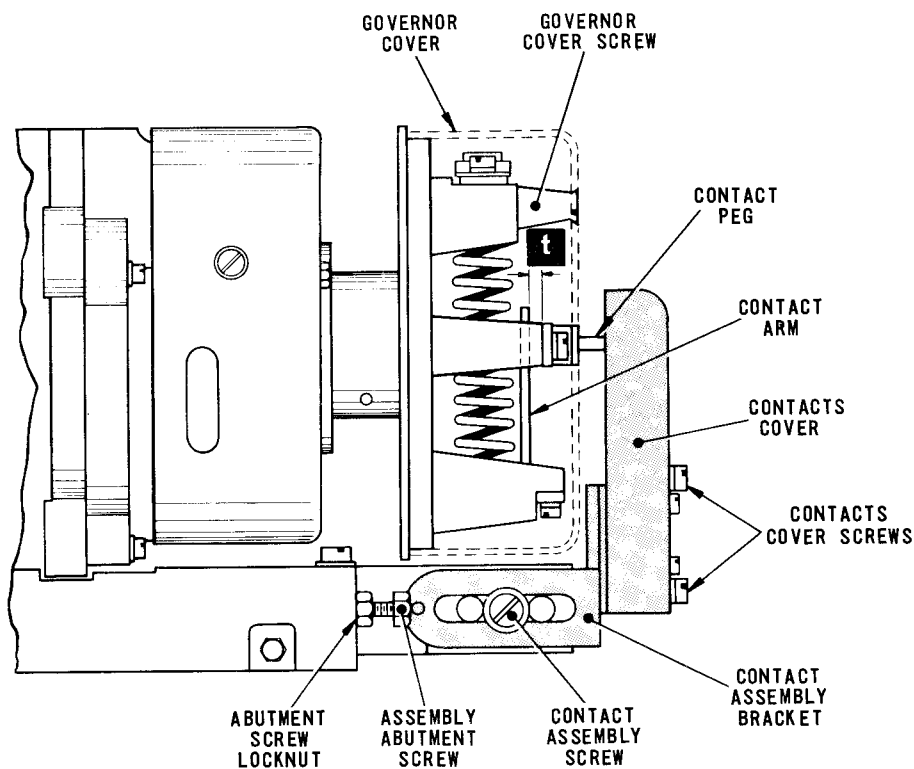


Fig. 4.13 GOVERNOR CONTACT ASSEMBLY

## ADJUSTMENT INSTRUCTIONS

### Action

- 18.2 To adjust, set the contact blade until the correct clearance is obtained. Refit the contacts cover and secure it with its screws.

## 19. GOVERNOR CONTACT ASSEMBLY LOCATION

### Check

- 19.1 Remove the screw securing the governor contact assembly, Fig.4.13, and lift off the assembly, taking care not to lose the contact peg. Remove the screw securing the governor cover and take off the cover.
- 19.2 Refit the contact assembly to the motor base, ensuring that the contact peg is correctly located between its recesses in the governor contact blade and the contact arm. With the contact assembly located against its abutment screw, check that there is a clearance of .042 - .052 in. (dimension 't') between the contact arm and the plate carrying the pin retaining bush.

### Action

- 19.3 If this is not so, slacken the abutment screw locknut and turn the abutment screw as far as it will go towards the casting. Slacken the screw securing the contact assembly and slide the assembly on its pins until the correct clearance is obtained. Tighten the screw securing the assembly and turn the abutment screw until it touches the pin on the contact assembly bracket. Clamp the abutment in this position with its locknut.
- 19.4 Slacken the screw securing the contact assembly and withdraw the assembly. Refit the governor cover and secure it with its screw. Refit the contact assembly and tighten its securing screw.

## F. KEYBOARD

## 20. KEYBAR/COMBINATION BAR CLEARANCE

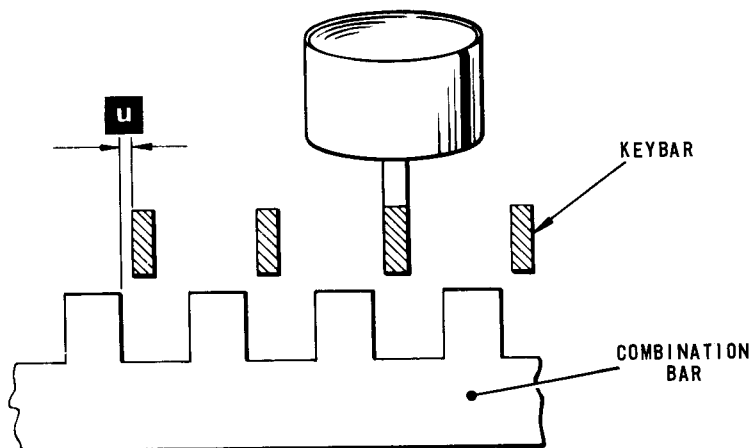


Fig. 4.14 KEYBAR/COMBINATION BAR CLEARANCE

### Check

- 20.1 With the keyboard in the reset condition, i.e. with the combination bars, Fig.4.14, latched back, check that there is a horizontal clearance of

## ADJUSTMENT INSTRUCTIONS

.010 - .020 in. (dimension 'u') between the teeth of the combination bars and the left-hand faces of the keybars. Check also that it is possible to depress the Run-out key without interference from the combination bars.

### Action

- 20.2 If these conditions are not present, ensure that all the keybars are straight and parallel to each other. Slacken the four screws securing the trip mechanism base plate, Fig.4.16, and alter the rest position of the combination bars by repositioning the trip mechanism, Fig.4.15. When both conditions have been met, tighten the four base plate screws.

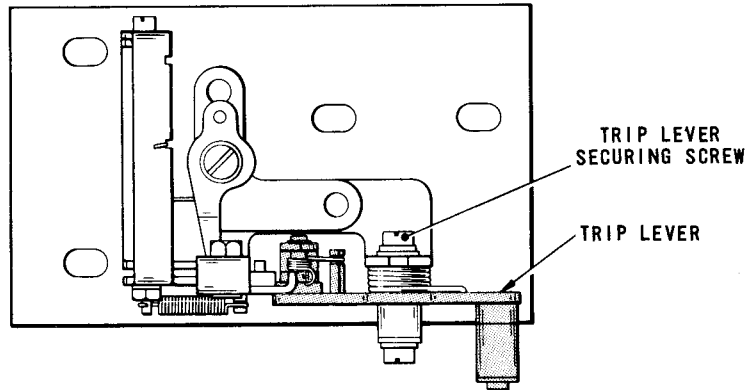


Fig. 4.15 KEYBOARD TRIP MECHANISM

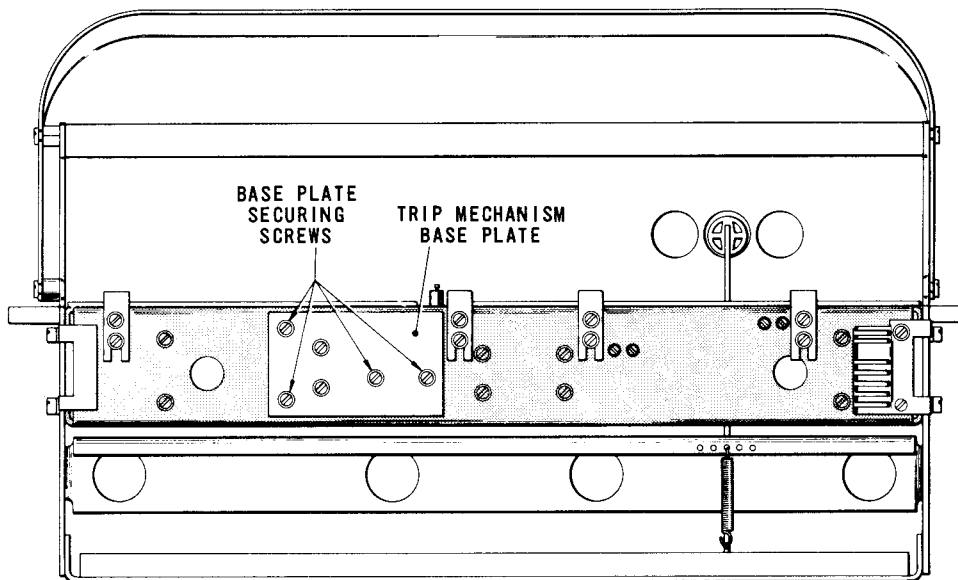


Fig. 4.16 KEYBOARD—UNDERSIDE VIEW

## 21. TRIP LEVER PIVOT

### Check

- 21.1 With the keyboard in the reset condition, depress a central printing key slowly and check that the trip mechanism is released just before the keybar is

## ADJUSTMENT INSTRUCTIONS

arrested. Check also that the keybar is held down by the locking bar when the finger-pressure on the key is released. Repeat this procedure with all the printing keys.

### Action

- 21.2 To adjust, insert a screwdriver through the hole at the rear of the keyboard main frame, slacken the trip lever securing screw, Fig.4.15, and lever the trip lever pivot up or down as required. Tighten the screw.

## 22. PUSH ROD LIFT

### Check

- 22.1 With the keyboard in the reset position, check that the clearance between the operating faces of the transfer bellcranks, Fig.4.17, and each of the studs on the combination bars is not more than .005 in. (dimension 'v').

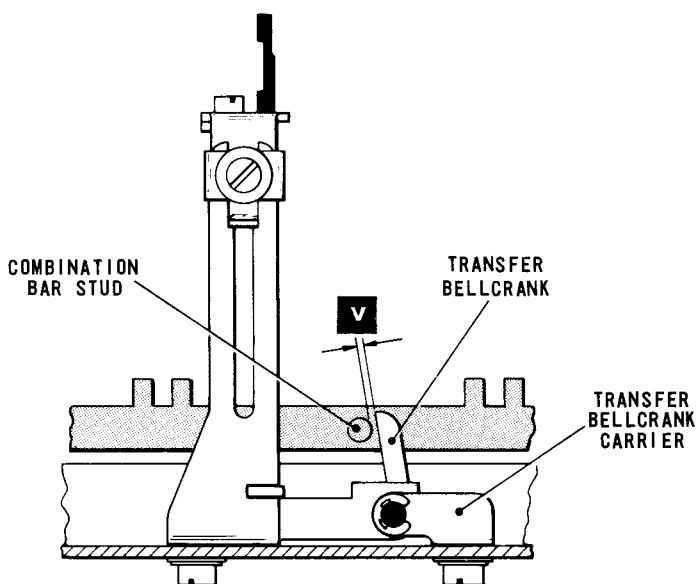


Fig. 4.17 PUSH ROD LIFT

### Action

- 22.2 To adjust, slacken the two screws securing the transfer bellcrank carrier and reposition the carrier until the correct clearance is obtained. Tighten the carrier securing screws.

## G. TRANSMITTER UNIT

## 23. CONTACT SPRINGS

### (a) Code, Start and Stop Contacts

#### Check

- 23.1 Check that the left-hand face of the contact plate, Fig.4.18, is clear of the tips of each contact stud by a maximum of .010 in. (dimension 'w') and that the tips of the studs are in alignment.

ADJUSTMENT INSTRUCTIONS

- 23.2 Check that there is a clearance of .020 - .025 in. (dimension 'x') between each mark contact blade and its associated tongue.

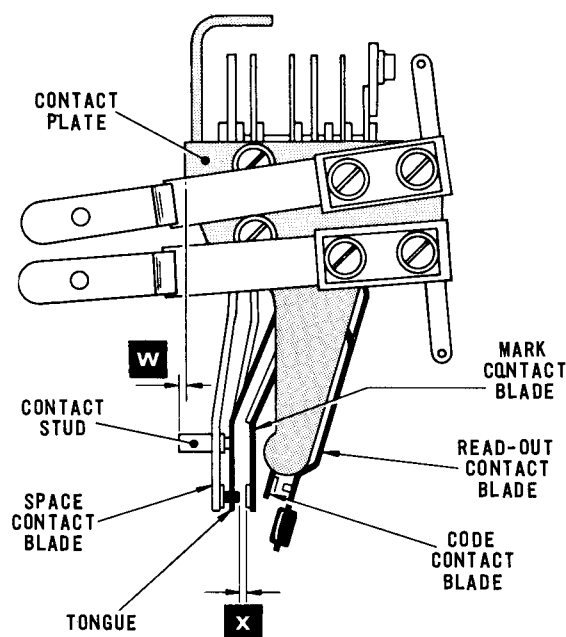


Fig. 4.18 TRANSMITTER UNIT—FRONT VIEW

- 23.3 Check that the following spring pressures are within the limits indicated.

- (i) A force of 2 - 2½ ounces (57 - 72 grammes) applied to the tip of each tongue to move it clear of its associated space contact blade.
- (ii) A force of 1 - 1½ ounces (28 - 43 grammes) applied to the tip of each mark contact blade to move it away from its associated buffer.
- (iii) A force of 2½ - 3 ounces (72 - 85 grammes) applied to the tip of each code contact blade to move it away from its associated buffer.
- (iv) A force of 2½ - 3½ ounces (72 - 99 grammes) applied to the tip of each read-out contact blade to cause its contact to engage the code contact blade.

Action

- 23.4 To adjust, set the appropriate contact blades until all the conditions are satisfied.

(b) Send-Receive Contacts

Check

- 23.5 Check that the following conditions are present.

- (i) A force of 1 - 1½ ounces (28 - 43 grammes) applied to the tip of the receive contact blade, Fig.4.19, causes the blade to move away from its buffer.
- (ii) There is a clearance of .025 - .035 in. (dimension 'y') between the receive contact blade and the tongue.

## ADJUSTMENT INSTRUCTIONS

- (iii) A force of 1 - 1½ ounces (28 - 43 grammes) applied to the tip of the tongue causes the tongue to engage the receive contact blade.

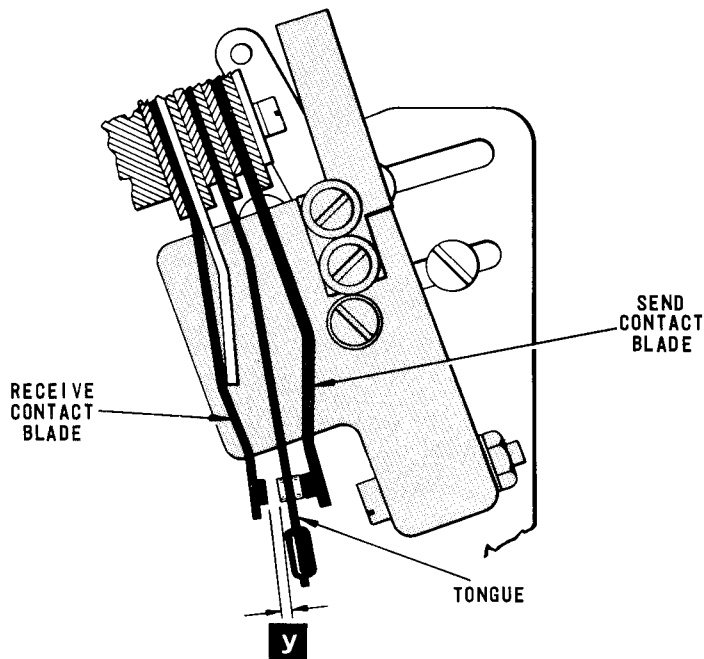


Fig. 4.19 SEND-RECEIVE CONTACTS

### Action

- 23.6 To adjust, set the appropriate contact blades until all the conditions are satisfied.

## H. ANSWER-BACK UNIT

- After the answer-back unit has been completely dismantled for overhaul and then re-assembled, the trip linkages may be so far out of adjustment that it is unlikely that the normal method of releasing the mechanism by operating the 'Here Is' trip bellcrank, Fig.4.21, will be effective. If this is so, the ward drum shaft may be released by depressing the lag disc release pawl, Fig.4.24, by hand. Turning the ward drum ratchet counter-clockwise with the tip of a narrow screwdriver will then bring the drum into the part-cycle position required for most of the adjustments which follow.

A consequence of this direct method of releasing the ward drum and then feeding it round to the rest position after the adjustment has been completed, is that the lag disc spring will be wound up by one turn. To avoid the repetition of this procedure from overwinding the spring, it is recommended that the lag disc is released after each adjustment by fully lowering and then raising the release lever, Fig.4.20.

## 24. LATCH TRIP LEVER

### (a) Vertical Clearance

#### Check

- 24.1 Release the answer-back unit and feed the ward drum round for one or two wards, as shown in Fig.4.21. Ensure that the release lever, Fig.4.20, is engaged on

ADJUSTMENT INSTRUCTIONS

the top step of the release lever latch. With these conditions set up, check that there is a vertical clearance of .003 - .008 in. (dimension 'z') between the latch trip lever and the tail of the release lever latch.

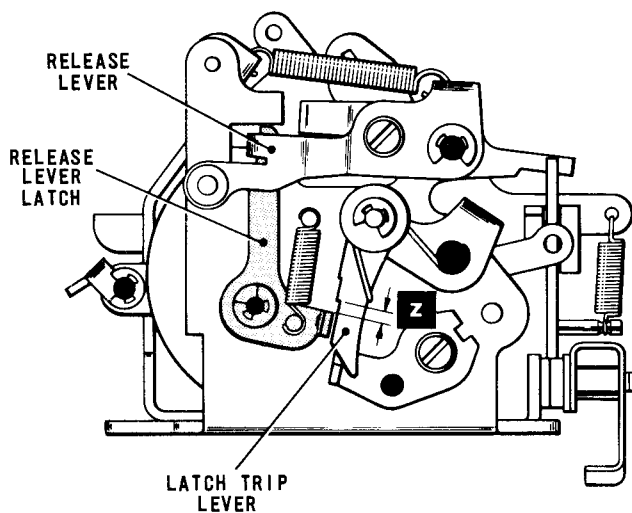


Fig. 4.20 ANSWER-BACK LATCH TRIP LEVER-VERTICAL CLEARANCE

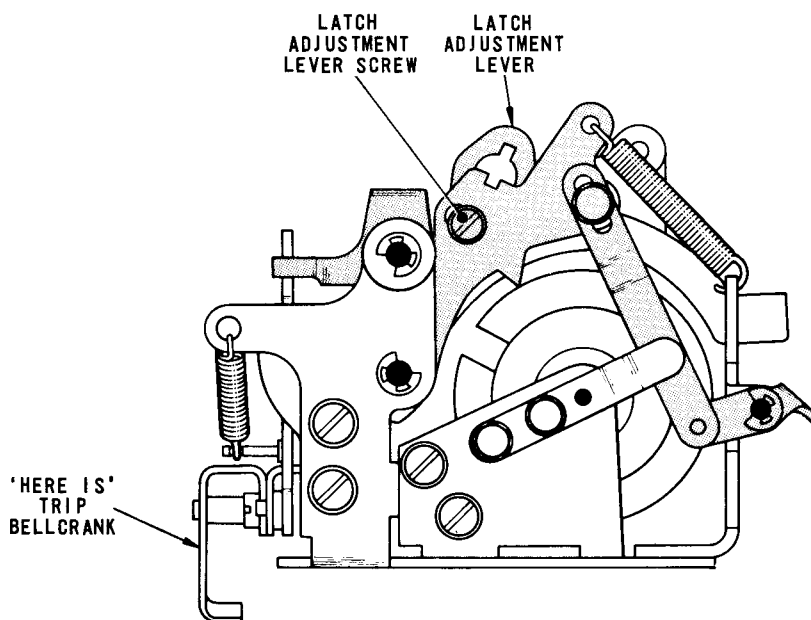


Fig. 4.21 ANSWER-BACK PART-CYCLE CONDITION

Action

- 24.2 To adjust, slacken the screw securing the latch adjustment lever, Fig.4.21, and raise or lower the lever by means of its screwdriver slot until dimension 'z' is obtained. Tighten the screw.

## ADJUSTMENT INSTRUCTIONS

### (b) Horizontal Clearance

#### Check

- 24.3 Return the unit to the rest position. Check that there is now a horizontal clearance of .002 - .006 in. (dimension 'aa') between the latch trip lever, Fig.4.23, and the tail of the release lever latch.

#### Action

- 24.4 To adjust, slacken the screw securing the trip adjustment lever and move the lever until dimension 'aa' is obtained. Tighten the screw.

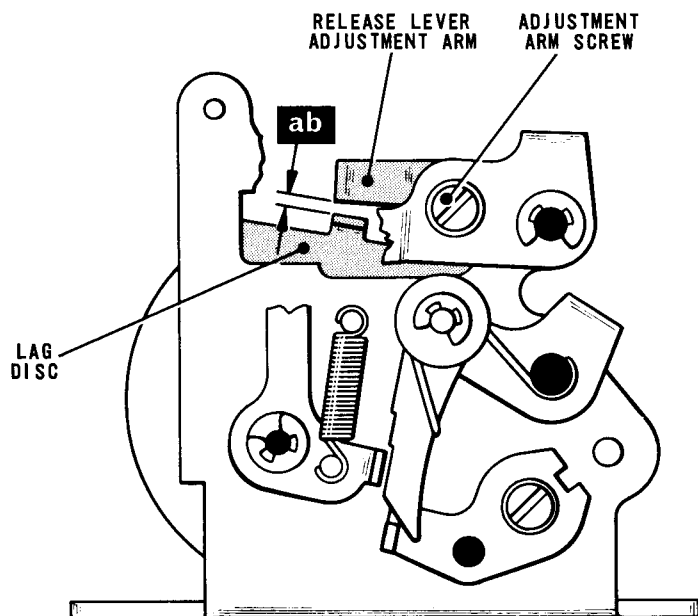


Fig. 4.22 ANSWER-BACK LAG DISC CLEARANCE

### 25. LAG DISC CLEARANCE

#### Check

- 25.1 Release the answer-back unit and feed the ward drum round for one or two wards. Ensure that the release lever, Fig.4.20, is engaged on the top step of the release lever latch. Turn the lag disc, Fig.4.22, clockwise by hand until the lug on the lag disc is directly beneath the end of the release lever adjustment arm, as shown in the figure. Check that there is now a clearance of .005 - .010 in. (dimension 'ab') between the lug on the lag disc and the adjustment arm.

#### Action

- 25.2 To adjust, slacken the screw securing the adjustment arm and move the arm until the above condition is satisfied. Tighten the screw.

### 26. RELEASE LEVER LIFT

#### Check

- 26.1 Release the answer-back unit, ensuring that the release lever, Fig.4.23, is engaged on the top step of the release lever latch. With the ward drum in the



ADJUSTMENT INSTRUCTIONS

rest position, operate the 'Here Is' trip bellcrank, Fig.4.24, and check that the release lever, Fig.4.23, is lifted an estimated .005 in. (dimension 'ac') clear of the top step of the release lever latch.

★ During this check, ensure that the release lever is not forced against the main frame at point 'X'.

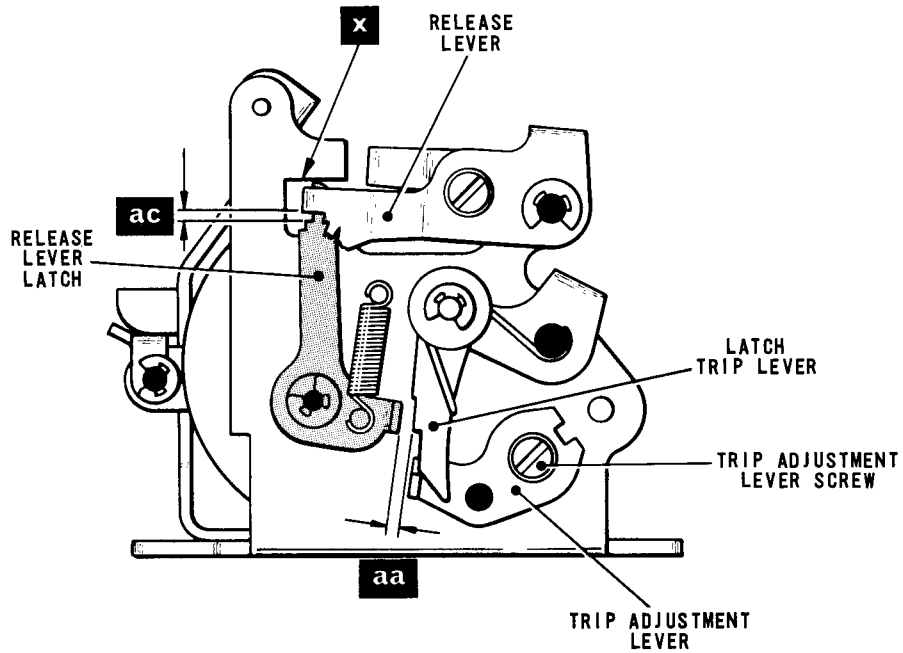


Fig. 4.23 ANSWER-BACK UNIT—REAR VIEW

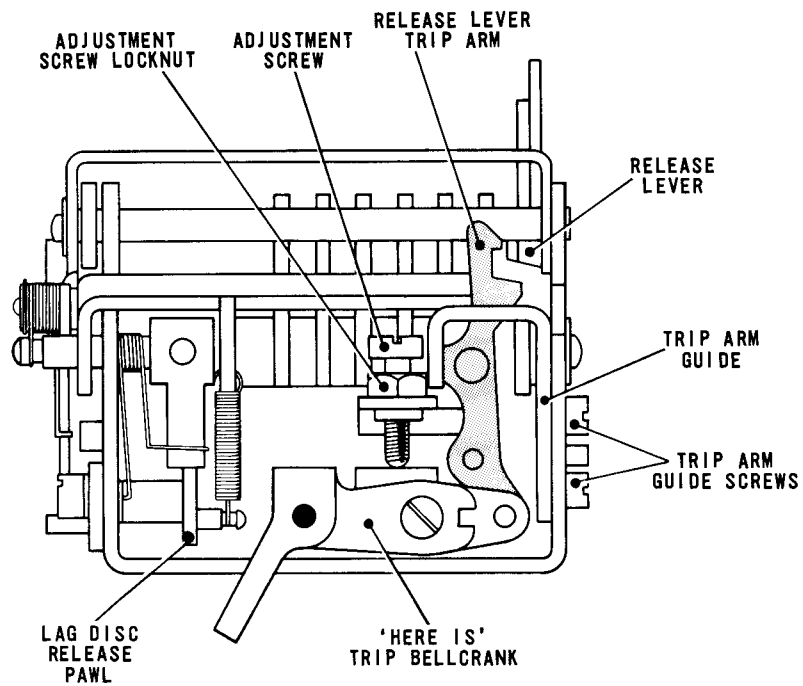


Fig. 4.24 ANSWER-BACK TRIP MECHANISM

Action

- 26.2 To adjust, slacken the two screws securing the trip arm guide, Fig.4.24, and lever the guide up or down until the required condition is obtained. Tighten the guide screws.

27. RELEASE LEVER TRIP ARM ENGAGEMENT

Check

- 27.1 Release the answer-back unit and feed the ward drum round for one or two wards. Ensure that the release lever, Fig.4.23, is engaged on the top step of the release lever latch. Check that the latching face of the release lever trip arm, Fig.4.24, is held clear of the tail of the release lever.
- 27.2 Return the ward drum to the rest position. Check that the trip arm now latches over the tail of the release lever.

Action

- 27.3 To adjust, slacken the adjustment screw locknut and turn the screw until the above conditions are satisfied. Secure the adjustment screw with its locknut.

## SECTION 2

28. TRANSLATOR CLUTCH

## Check

- 28.1 With the translator camshaft in the rest position and the retention lever roller located in its recess in the retention cam, lift the translator clutch abutment so that the clutch trigger, Fig.4.25, is released. Turn the machine by hand until the clearance between the trigger and its backstop can be measured easily and check that this clearance is now .093 - .110 in. (dimension 'ad').

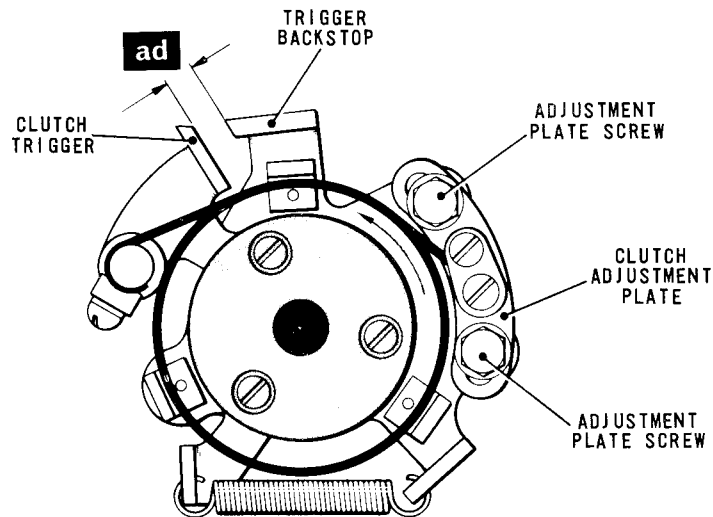


Fig. 4.25 TRANSLATOR CLUTCH—REAR VIEW

## Action

- 28.2 To adjust, turn the machine by hand until the clutch adjustment plate is accessible, slacken the two screws securing the adjustment plate and move the plate until dimension 'ad' is achieved. Tighten the screws.

†29. PIN-BOX TRAVERSE MULTIPLYING LEVER

## Check

- 29.1 Clamp the pivot of the traverse multiplying lever, Fig.4.26, in the mid-position of its movement.
- 29.2 Set the machine up so that it is at rest with the translator unit pin-box in its forward position, i.e. nearest the front of the machine. Lift the translator clutch abutment and turn the machine by hand until the function bars have just moved towards the rear of the machine.
- 29.3 Lightly pull the traverse multiplying lever outwards so that any backlash in the mechanism is taken up. Check that there is now a clearance (dimension 'ae' - inset) between the front end of the slot in the lever and the shouldered pin.

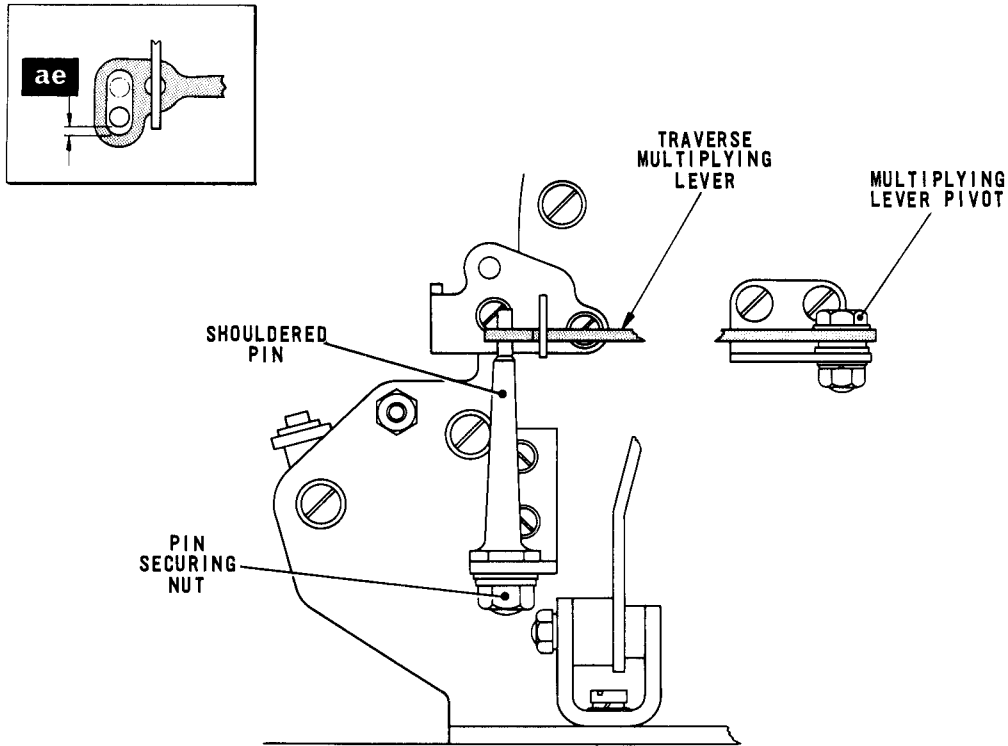


Fig. 4.26 PIN-BOX TRAVERSE ACTION

- 29.4 Return the machine to the rest position. Lift the translator clutch abutment and turn the machine by hand until the function bars have again just moved towards the rear of the machine.
- 29.5 Lightly push the traverse multiplying lever inwards so that any backlash in the mechanism is taken up. Check that a clearance equal to dimension 'ae' now exists between the rear end of the slot in the lever and the shouldered pin.

Action

- 29.6 To adjust, remove the operation counter, slacken the nut securing the shouldered pin and reposition the pin until both the above conditions are satisfied. Tighten the pin securing nut and refit the operation counter.

30. PECKER RETENTION ARM

(a) Horizontal Position

Check

- 30.1 Move the electromagnet armature to the space position so that the selector clutch detent, Fig.4.28, is released. Turn the machine by hand until the striker lever, Fig.4.27, is on one of the high points of the striker cam. Check that there is now a horizontal clearance of .005 - .010 in. (dimension 'af') between the hook on the retention arm and the engagement face of the striker lever.

Action

- 30.2 If this is not so, slacken the two screws securing the retention arm bracket until it is friction tight. Using the screwdriver slot in the top of the bracket, lever the retention arm sideways until the correct clearance is present. Tighten the bracket screws.

## (b) Vertical Position

## Check

- 30.3 Move the electromagnet armature to the mark position and continue to turn the machine by hand until the striker lever locates in one of the recesses in the striker cam. Check that this movement causes the lever to pass over the retention arm with an estimated vertical clearance of .010 - .020 in. (dimension 'ag' - inset).

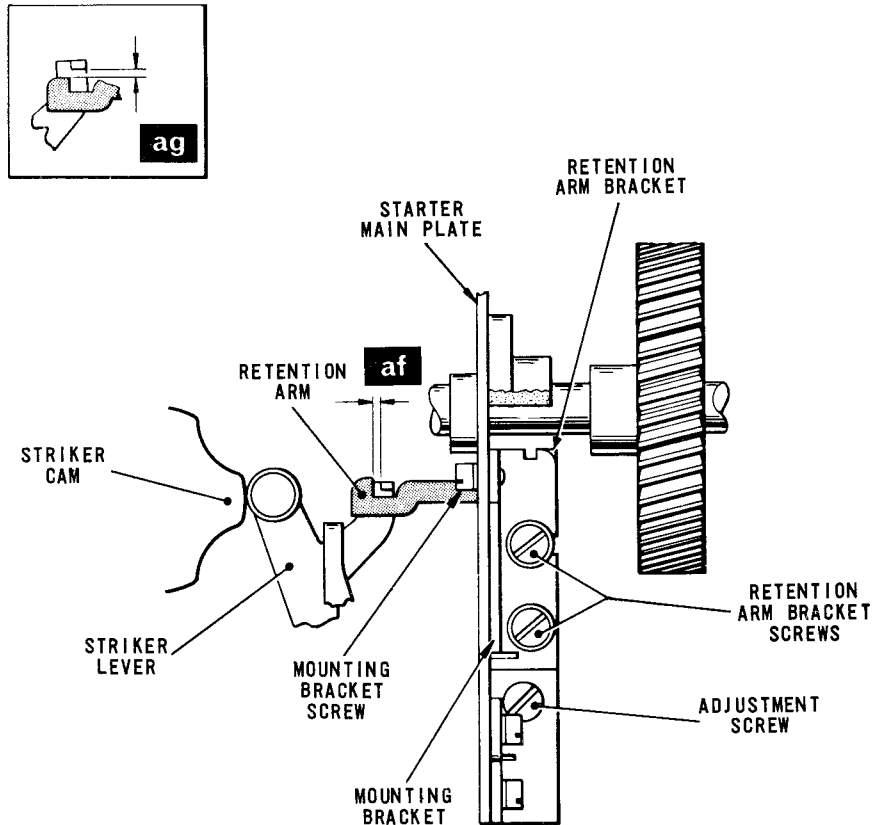


Fig. 4.27 PECKER RETENTION ARM MECHANISM—REAR VIEW

## Action.

- 30.4 To adjust, ensure that the electromagnet armature is still in the mark position, slacken the mounting bracket screw and turn the adjustment screw until the correct vertical clearance is obtained. Tighten the mounting bracket screw.

31. SELECTOR DETENT CLEARANCE

## Check

- 31.1 With the machine in the rest position and the selector clutch trigger, Fig.4.28, held against the clutch detent, move the electromagnet armature to the space position so that the detent is released. Maintaining light pressure on the detent to take up any backlash present, check that there is now a vertical clearance of .005 - .010 in. (dimension 'ah' - inset) between the clutch trigger and the detent.

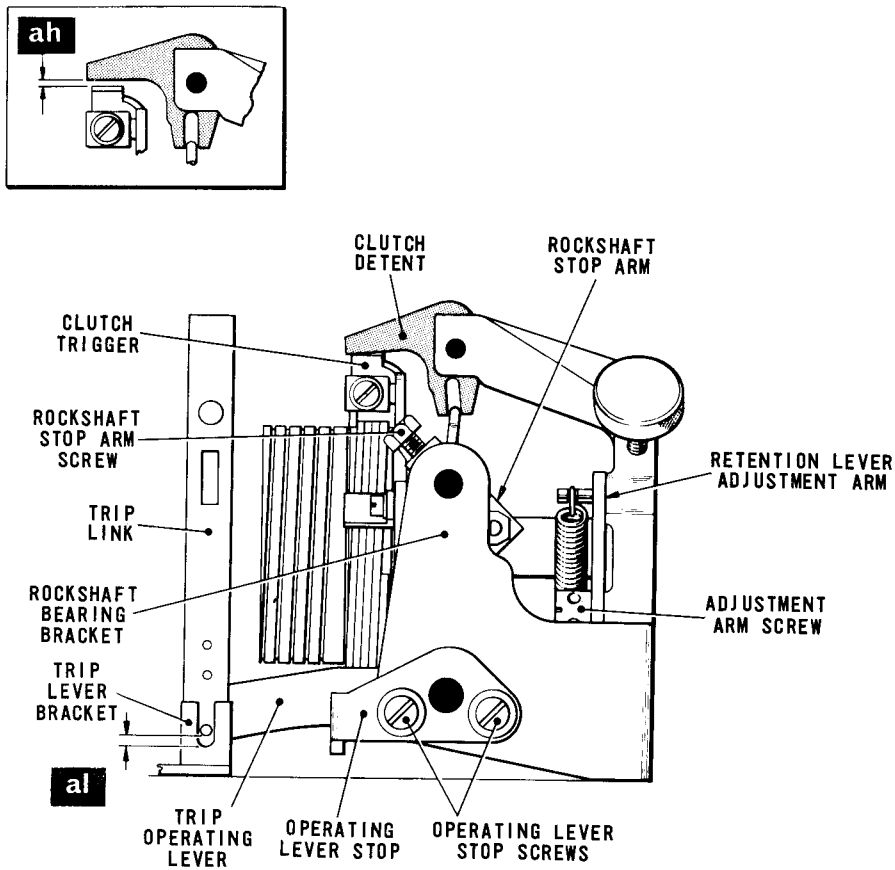


Fig. 4.28 SELECTOR CLUTCH TRIGGER MECHANISM—SIDE VIEW

Action

31.2 To adjust, slacken the rockshaft special screw, Fig.4.29, and, ensuring that the electromagnet armature remains at space, reposition the detent until dimension 'ah' is satisfied. Tighten the rockshaft screw.

32. SELECTOR CAMSHAFT RETENTION LEVER

Check

32.1 With the electromagnet armature in the mark position, the retention lever roller located in its recess in the retention cam and the clutch trigger, Fig.4.29, held against the clutch detent, check that there is a clearance of .010 - .015 in. (dimension 'aj' - inset) between the trigger and its backstop.

Action

32.2 If this is not so, slacken the capstan-headed screw securing the retention lever adjustment arm, Fig.4.28, and push the arm inwards so that the cam assembly moves clockwise and the trigger backstop, Fig.4.29, presses the trigger against the detent. Now gently move the cam assembly counter-clockwise until dimension 'aj' is set up and then tighten the adjustment arm screw, Fig.4.28.

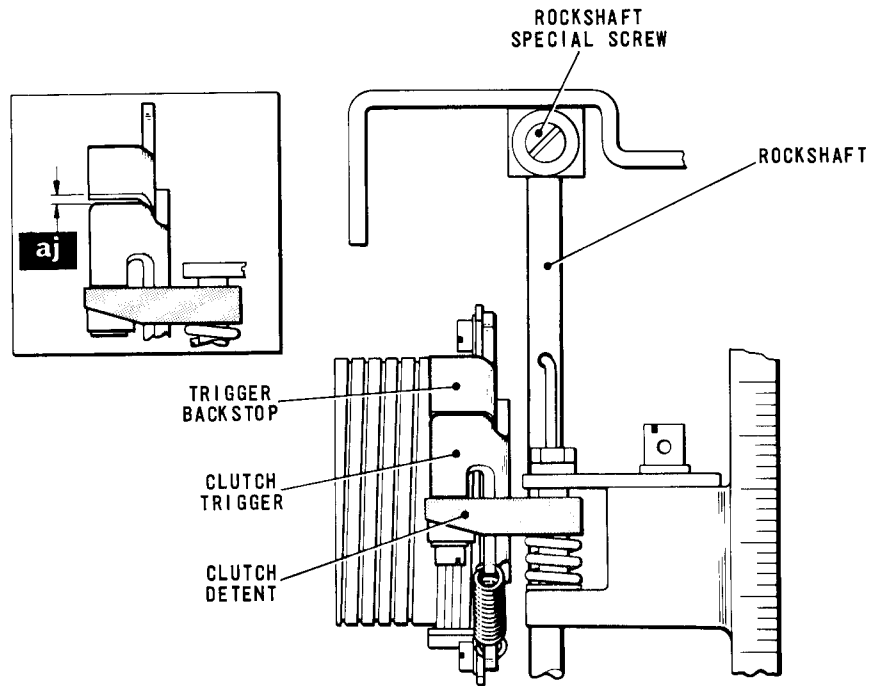


Fig. 4.29 SELECTOR CLUTCH TRIGGER MECHANISM—PLAN VIEW

33. SELECTOR CLUTCH

Check

- 33.1 Move the electromagnet armature to the space position so that the clutch detent is lifted and the clutch trigger, Fig.4.30, is released. Check that there is now a clearance of .093 - .110 in. (dimension 'ak') between the clutch trigger and its backstop.

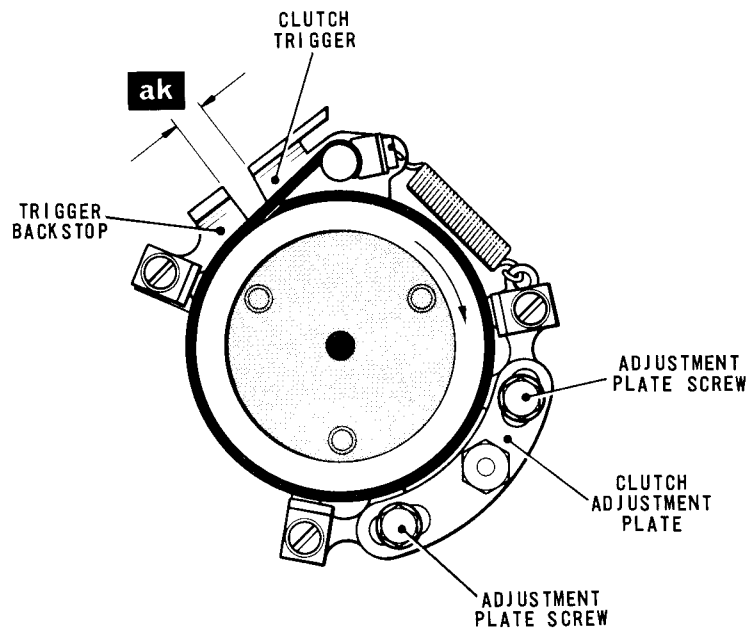


Fig. 4.30 SELECTOR CLUTCH

## Action

- 33.2 To adjust, turn the machine by hand until the clutch adjustment plate is accessible, slacken the two screws securing the adjustment plate and move the plate until dimension 'ak' is achieved. Tighten the adjustment plate screws.

34. SELECTOR ROCKSHAFT END-PLAY

## Check

- 34.1 Check that there is a maximum of .003 in. end-play in the rockshaft, Fig.4.29, and, with the electromagnet armature in the mark position, check that the pin on the rockshaft stop arm, Fig.4.28, is touching the edge of the rockshaft bearing bracket.

## Action

- 34.2 To adjust, slacken the screw securing the rockshaft stop arm until it is friction tight and position the stop arm so that the correct end-play is present. Then, ensuring that the electromagnet armature remains at mark and that the end-play which has just been set is not disturbed, turn the stop arm about the rockshaft until the pin just touches the rockshaft bearing bracket. Tighten the stop arm screw.

35. TRANSLATOR TRIP OPERATING LEVER STOP

## Check

- 35.1 With the machine at rest, check that the trip operating lever, Fig.4.28, is against its stop and that there is a clearance of .003 - .010 in. (dimension 'al') between the pin on the trip link and the bottom of the slot in the trip lever bracket.

## Action

- 35.2 To adjust, slacken the two screws securing the trip operating lever stop until friction tight and lever up the stop as far as it will go. Pull the trip link forward against its guides and press down so that the pin on the link is at the bottom of the slot in the bracket. Maintaining this condition, measure the clearance between the operating lever stop and the surface of the translator unit base plate with a feeler gauge.
- 35.3 Add a further .003 in. to the operating lever stop/base plate clearance determined above and re-insert the gauge between the stop and the base plate. With this increased dimension set up, tighten the stop screws. Repeat Check 35.1 which should now be satisfied.

36. TRANSLATOR CLUTCH TRIP

## Check

- 36.1 Lift the trip operating lever, Fig.4.28, so that the trip link passes over the abutment frame trip lever, Fig.4.3. Holding the operating lever, Fig.4.28, in this position, insert a .015 in. feeler gauge between the operating lever and the hook of the operating lever stop. Release the lever so that it moves down on to the gauge and check that the translator clutch abutment does not trip.
- 36.2 Replace the .015 in. feeler gauge with a .005 in. gauge and repeat Check 36.1. Check that the translator clutch abutment will now trip.



## Action

- 36.3 To adjust, maintain the condition set up in Check 36.2 and slacken the capstan-headed screw securing the adjustment plate, Fig.4.3. Holding the slide block in contact with the abutment frame trip lever, move the adjustment plate until the clutch abutment trips the clutch trigger. Tighten the adjustment plate screw.

37. STARTER TRIP FROM ELECTROMAGNET

## Check

- 37.1 Disengage the starter arm pin, Fig.4.32, from the worm wheel. Depress the starter arm as far as it will go so that the starter lever, Fig.4.31, moves fully down. Holding the arm in this position, and with the electromagnet armature against the marking stop, check that there is a maximum clearance of .006 in. (dimension 'am') between the rockshaft peg and the starter operating link.
- 37.2 Move the electromagnet armature to space and check that this action causes the peg to displace the link.

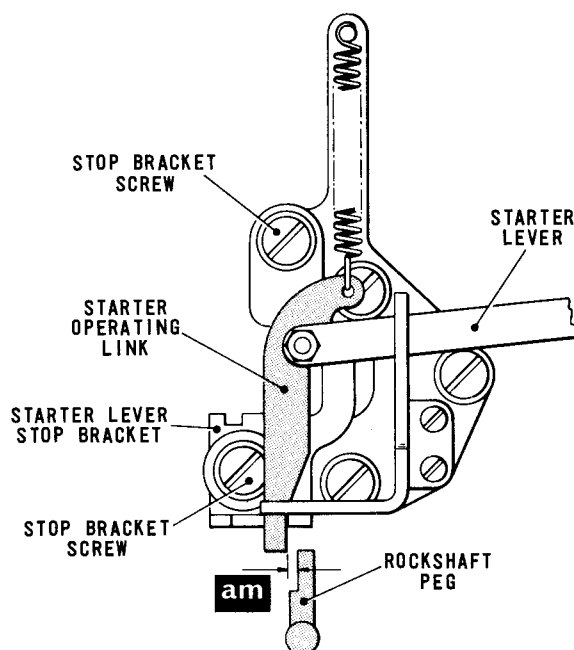


Fig. 4.31 STARTER TRIP FROM ELECTROMAGNET

## Action

- 37.3 To adjust, slacken the two screws securing the starter lever stop bracket and, with the electromagnet armature in the mark position, move the stop bracket by means of its screwdriver slot until both conditions are satisfied. Tighten the bracket screws.

38. STARTER TRIP FROM TRANSLATOR CLUTCH

## Check

- 38.1 Trip the translator clutch by raising and then lowering the trip operating lever, Fig.4.28. Holding the trip operating lever fully down,

## ADJUSTMENT INSTRUCTIONS

check that there is now a clearance of .005 - .010 in. (dimension 'an') between the starter arm pin, Fig.4.32, and the worm wheel.

### Action

- 38.2 To adjust, slacken the screw clamping the forked lever and turn the trip shaft until the correct clearance is obtained. Tighten the clamp screw.

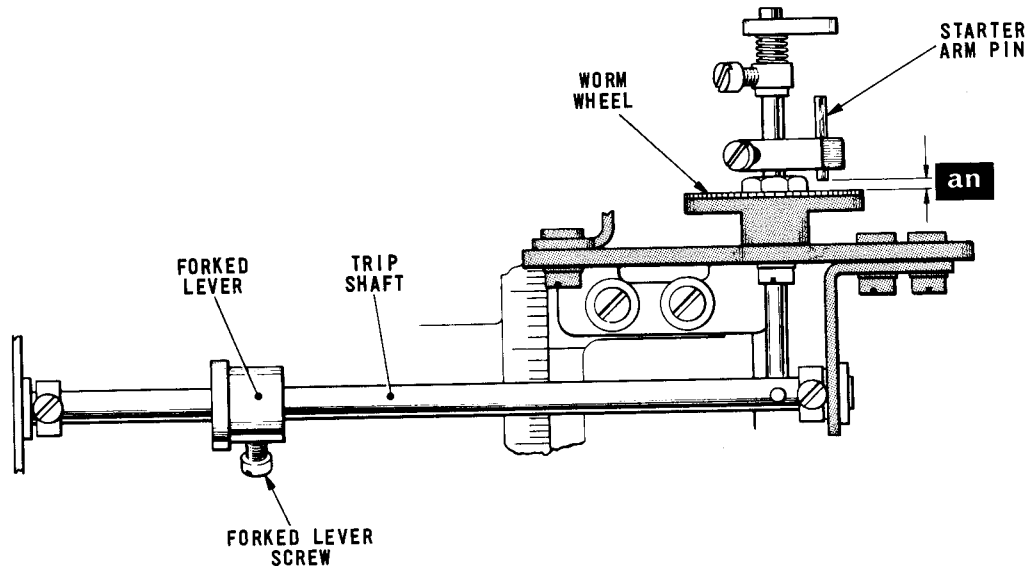


Fig. 4.32 STARTER TRIP SHAFT LINKAGE

## †39. PECKER/CODE SELECTION PIN CLEARANCE

### Check

- 39.1 Move the electromagnet armature to the mark position and check that the selector shaft is held at rest. Lift the translator clutch abutment and turn the machine through two complete cycles. Check that all the selection pins in the pin-box have been withdrawn.
- 39.2 Move the electromagnet armature to space. Turn the machine by hand until the pecker, Fig.4.33, is opposite the first (inner) selection pin and the striker lever, Fig.4.27, is held away from the striker cam by the retention arm hook.
- 39.3 Lightly press the pecker, Fig.4.33, towards the selection pin to take up any play that may be present and check that there is a clearance of .030 - .045 in. (dimension 'ap') between the pecker and the pin.
- 39.4 Repeat this procedure with the pecker opposite the fifth (outer) selection pin.

### Action

- 39.5 If adjustment is necessary, remove the keyboard and stand the machine on its back. Disconnect the pecker frame return spring and slacken the nuts securing the pecker frame until friction tight. Ensure that the striker lever, Fig.4.27, is held by the retention arm hook and reposition the pecker frame, Fig.4.33, on its shaft until the correct clearance is present at both ends of the pecker traverse. Tighten the frame securing nuts, re-connect the pecker frame return spring and refit the keyboard.

ADJUSTMENT INSTRUCTIONS

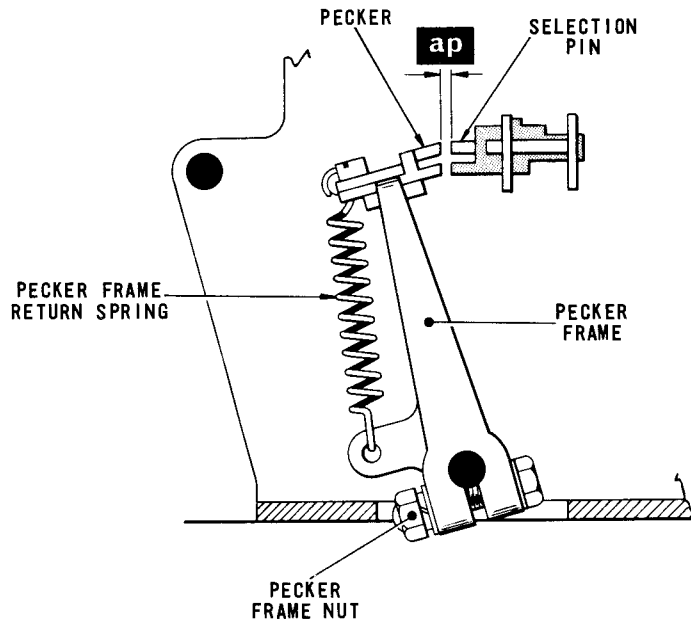


Fig. 4.33 PECKER/SELECTION PIN CLEARANCE

†40. PECKER TRAVERSE

Check

- 40.1 Lift the selector clutch detent and then move the electromagnet armature to the mark position. Turn the machine slowly by hand and check that each selection pin, Fig.4.33, is struck by the pecker and that the area of contact between the pecker and the pins is as great as possible over the complete traverse. Repeat this check with the pin-box in its alternative position.

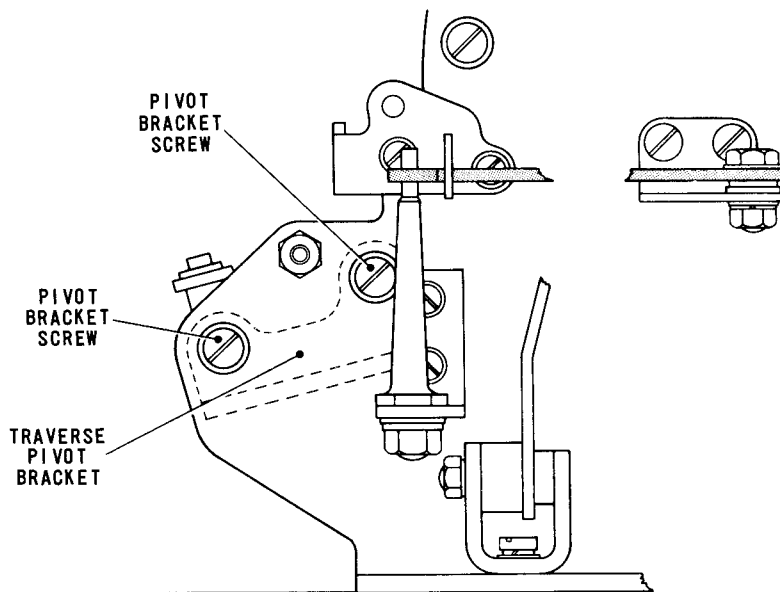


Fig. 4.34 PECKER/SELECTION PIN ENGAGEMENT

## Action

- 40.2 To adjust, remove the operation counter, slacken the screws securing the traverse pivot bracket, Fig.4.34, and reposition the bracket until the above conditions are satisfied for both sets of pins. Tighten the bracket screws and refit the operation counter.

41. CARRIAGE RETURN PAWL LIFT

## Check

- 41.1 Operate the carriage return manual lever to move the typehead carriage to its extreme left-hand position. Set up the carriage return code combination (SSMS) on the pins, lift the translator clutch abutment and turn the machine by hand until the noses of the feed and retention pawls, Fig.4.35, are at their highest point. Check that the pawls are now high enough to enable the pawl latch to pass beneath their noses with a clearance of approximately .030 in. (dimension 'aq'). Check also that there is a clearance of approximately .030 in. (dimension 'ar') between the tails of the pawls and the top of the rack teeth.

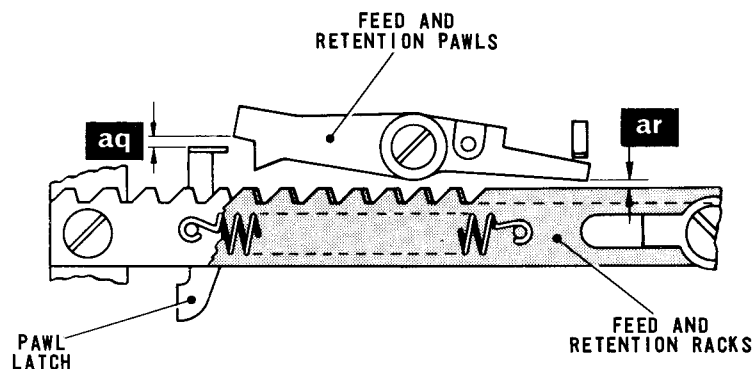


Fig. 4.35 FEED AND RETENTION RACK CLEARANCES

## Action

- 41.2 To adjust, stand the machine on its back, slacken the screw clamping the carriage return operating arm, Fig.4.8, and reposition the arm until both the above clearances are obtained. Tighten the clamp screw.

42. LINE FEED LEVER STOP PLATE

## Check

- 42.1 Move the feed change lever, Fig.4.37, to the double feed position, i.e. towards the front of the machine.
- 42.2 With the machine in the rest condition, turn the platen by hand and check that there is a radial clearance of .005 - .050 in. (dimension 'as') between the line feed pawl and its ratchet wheel.
- 42.3 Move the line feed latch, Fig.4.36, into the path of the line feed operating lever and pull the line feed roller outwards so that the lever is arrested by the latch hook, as shown in the figure. With this condition set up, check that there is a minimum clearance of .008 in. (dimension 'at') between the roller and the line feed cam.

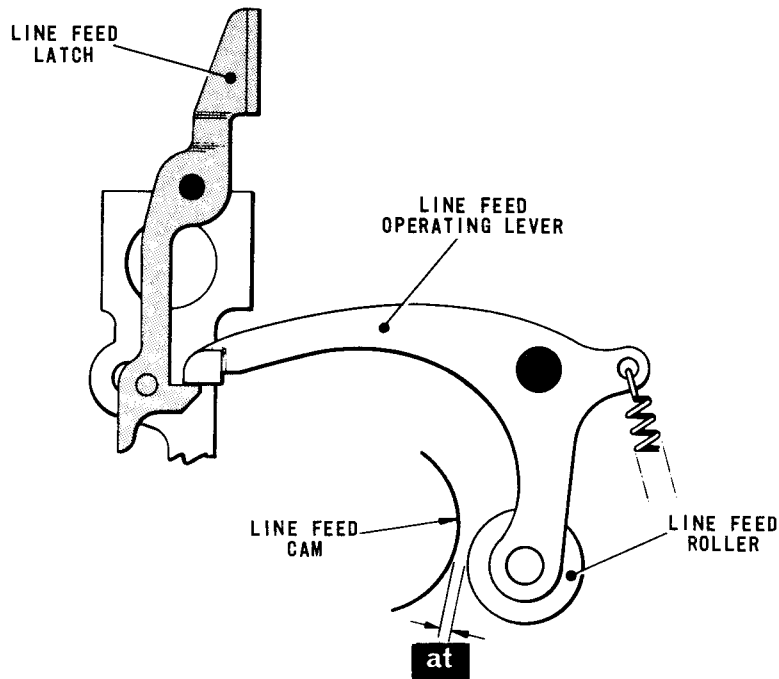


Fig. 4.36 LINE FEED OPERATING LEVER

- 42.4 Move the feed change lever, Fig.4.37, to the single feed position and repeat Checks 42.2 and 42.3.

Action

- 42.5 To adjust, slacken the screws securing the line feed lever stop plate and reposition the plate until all the above conditions are obtained. Tighten the stop plate screws.

43. FRICTION FEED PLATEN

Check

- 43.1 Move the feed change lever, Fig.4.37, to the double feed position. Depress the Line Feed Key or, if the machine has no keyboard, set up the Line Feed code combination (SMSSS) on the pins. Lift the translator clutch abutment and turn the machine by hand until the line feed mechanism is fully fed. Check that the feed pawl is now clear of its eccentric stop. Check also that there is a maximum clearance of .015 in. (dimension 'au' - inset) between the feed pawl and the next tooth of the ratchet wheel.

Action

- 43.2 To adjust, slacken the nut securing the retention lever, Fig.4.38, and turn the eccentric pivot by means of its screwdriver slot until dimension 'au' is satisfied. Tighten the nut.

- ★ If the movement available on the pivot is insufficient to satisfy Check 43.1, slacken the two ratchet wheel clamp screws, move the ratchet wheel slightly with respect to the platen and tighten the clamp screws. Access to the clamp screws is via the hole in the ratchet support plate, Fig.4.41.

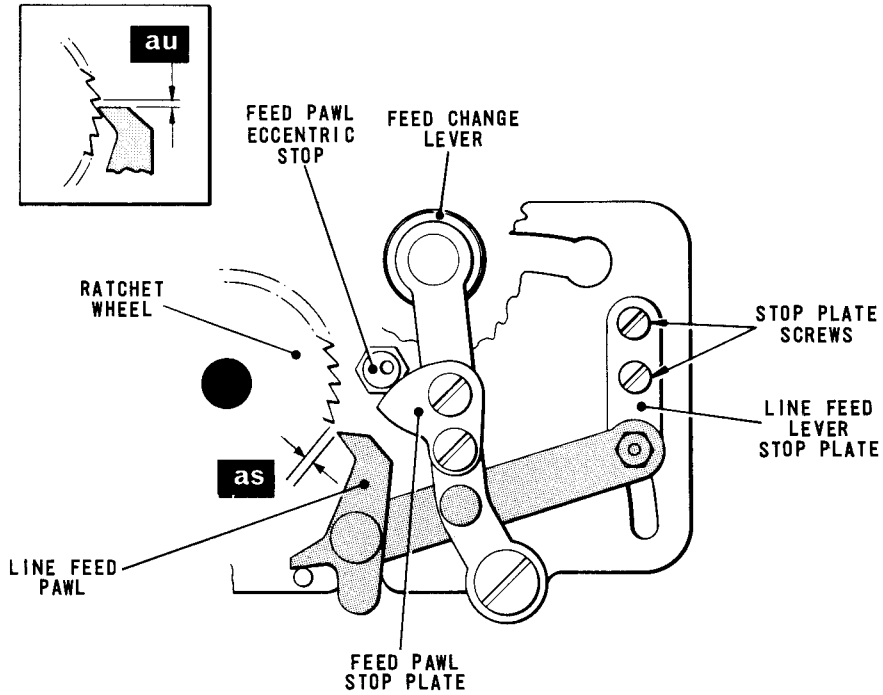


Fig. 4.37 LINE FEED RATCHET WHEEL MECHANISM

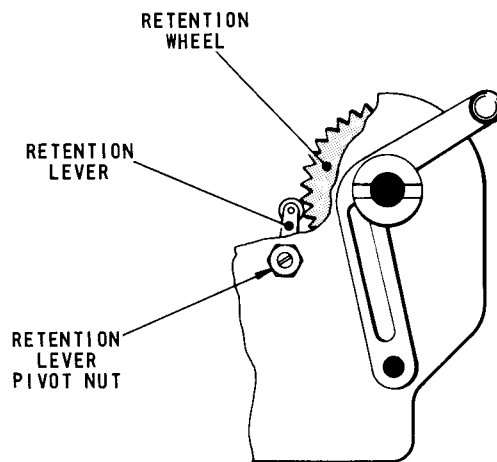


Fig. 4.38 FRICTION FEED PLATEN—LEFT-HAND END

44. SPROCKET FEED PLATEN

Check

- 44.1 Operate the sprocket feed change lever so that the feed pins protrude, and insert a sheet (or sheets) of stationery into the machine. Ensure that the pins are correctly located in the holes in the paper and check that the printing point is correctly positioned with respect to any 'boxes' on the stationery.

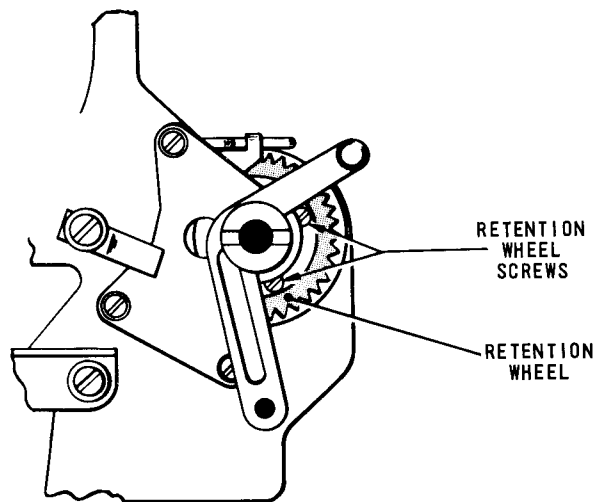


Fig. 4.39 SPROCKET FEED PLATEN—LEFT-HAND END

## Action

- 44.2 If it is not, slacken the three screws securing the retention wheel, Fig.4.39, until they are friction tight and, holding the platen so that the correct paper/type alignment is present, move the retention wheel until its roller is fully engaged. Tighten the three retention wheel screws.

## Check

- 44/3 Depress the Line Feed key or, if the machine has no keyboard, set up the Line Feed code combination (SMSSS) on the pins. Lift the translator clutch abutment and turn the machine by hand until the line feed mechanism is fully fed. Ensure that the retention lever roller is fully engaged in the retention wheel. Check that the feed pawl, Fig.4.37, is now clear of its eccentric stop and that there is a maximum clearance of .015 in. (dimension 'au' - inset) between the feed pawl and the next tooth of the ratchet wheel.

## Action

- 44.4 To adjust, remove the three ratchet wheel clamp screws, turn the wheel so that the next set of holes coincide with those of the clamp screws and tighten the screws. Access to the clamp screws is via the hole in the ratchet support plate.
- 44.5 Repeat Check 44.3 and, if necessary, Adjustment 44.4 until the correct platen/ratchet relationship is achieved.

## Check

- 44.6 With the right-hand paper guide retainer arm, Fig.4.40, located in the groove in its pivot bracket guide, check that the slot in the retainer arm is positioned symmetrically about the right-hand sprocket pins. Repeat this check with the left-hand guide retainer arm.

## Action

- 44.7 To adjust, slacken the screw securing the pivot bracket guide and move the guide along its eccentric pin until the condition is satisfied. Tighten the guide screw.

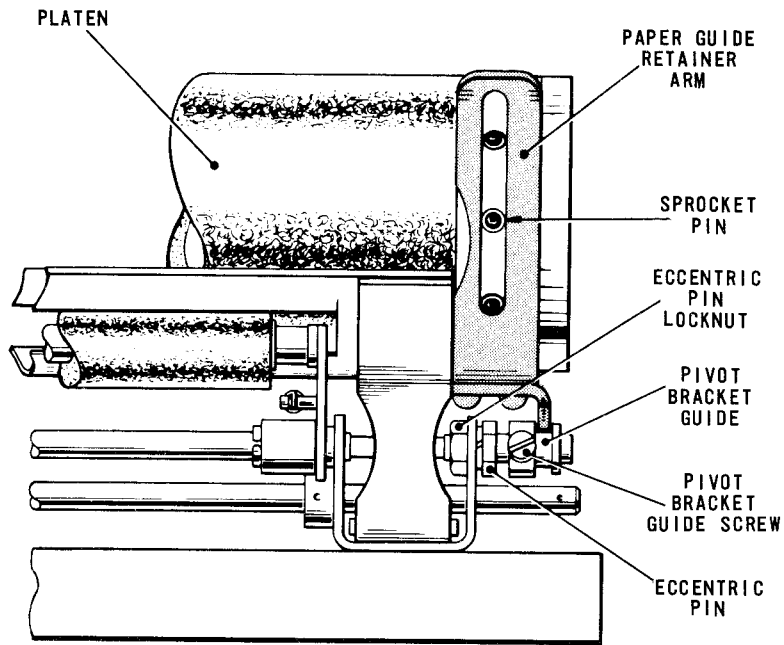


Fig. 4.40 PAPER GUIDE RETAINER

45. PAPER GUIDE RETAINERS

Check

- 45.1 Turn the platen by hand and check that the clearance between the paper guide retainer arms, Fig.4.40, and the platen is sufficient to allow the required thickness of paper to pass smoothly.

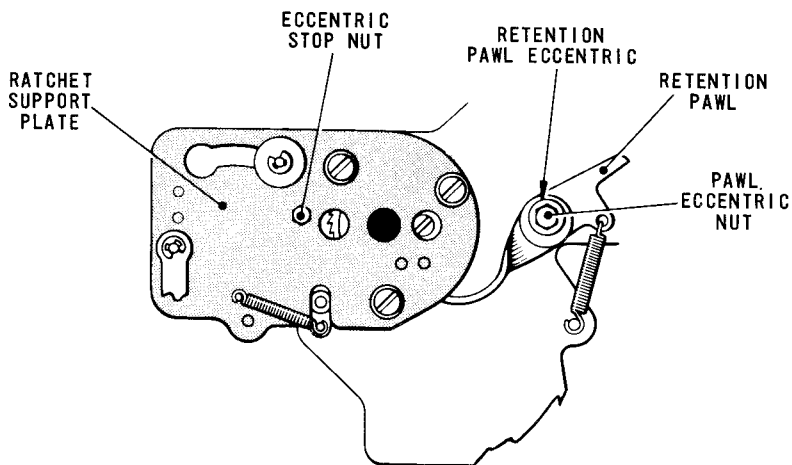


Fig. 4.41 RATCHET SUPPORT PLATE

Action

- 45.2 To adjust, slacken the locknut securing the eccentric pin and rotate the pin until the condition is satisfied. Tighten the locknut.



46. LINE FEED PAWL OVERTHROW STOPS

## Check

- 46.1 Move the feed change lever, Fig.4.37, to the double feed position. Depress the Line Feed key or, if the machine has no keyboard, set up the Line Feed code combination (SMSSS) on the pins. Lift the translator clutch abutment and turn the machine by hand until the line feed mechanism is fully fed.
- 46.2 Without applying excessive force, attempt to turn the platen by hand in the normal direction of rotation. Check that some movement is possible but that it does not exceed .015 in. measured at the edge of the platen.

## Action

- 46.3 If this is not so, slacken the eccentric stop securing nut, Fig.4.41, and turn the eccentric stop, Fig.4.37, until the correct amount of overthrow is present. Tighten the nut.

## Check

- 46.4 Move the feed change lever to the single feed position and check that the same amount of overthrow is present as with the double feed setting.

## Action

- 46.5 To adjust, slacken the screws clamping the feed pawl stop plate and reposition the plate until the overthrow is correct. Tighten the plate screws.

47. PLATEN RETENTION PAWL

## Check

- 47.1 With the machine in the rest position, check that the retention pawl, Fig.4.41, is engaged in the ratchet wheel and that it is possible to turn the platen against the normal direction of rotation by a maximum of .015 in. measured at the edge of the platen.

## Action

- 47.2 To adjust, slacken the nut securing the retention pawl eccentric and turn the eccentric until the correct engagement is achieved. Tighten the nut.

48. TYPEHEAD CARRIAGE END-PLAY

## Check

- 48.1 Check that there is not more than .005 in. end-play on the typehead carriage.

## Action

- 48.2 If the end-play is excessive, remove the two screws securing the typehead carriage left-hand bearing block, Fig.4.42. Hold the carriage so that the gears and racks remain in mesh and lift off the bearing block. Add .005 in. shims (Creed Part No.2003/277) as necessary between the bearing block and the carriage until the end-play is less than .005 in. Refit the bearing block and tighten its securing screws.

★ The bearing block must always be clamped in its extreme left-hand position.

ADJUSTMENT INSTRUCTIONS

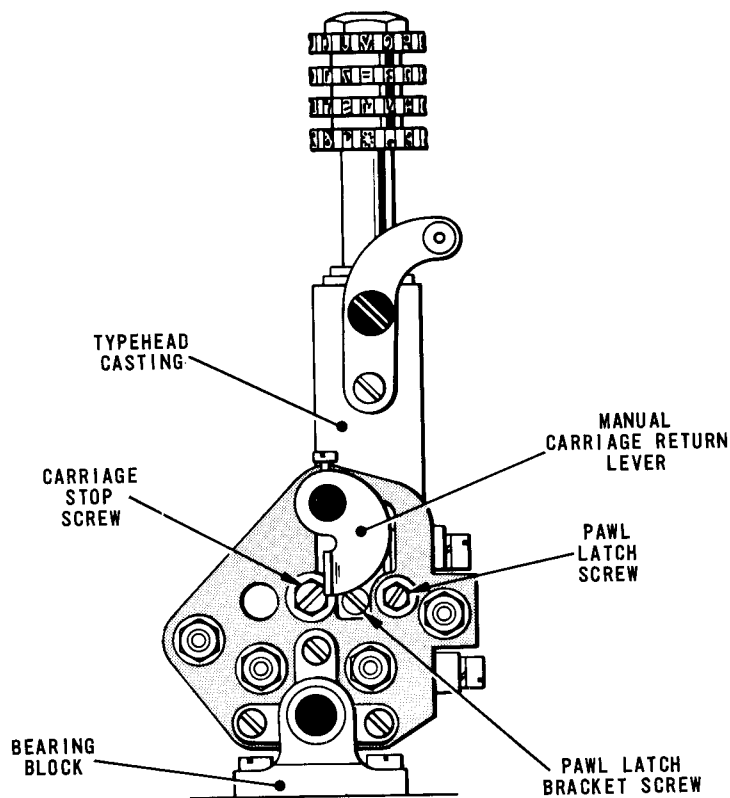


Fig. 4.42 TYPEHEAD CARRIAGE—LEFT-HAND END

49. TYPEHEAD CARRIAGE STOP SCREW AND PAWL LATCH

Check

49.1 Operate the carriage return manual lever, Fig.4.42, so that the typehead moves to its extreme left-hand position. Check that the retention pawl, Fig.4.43, is now resting in the correct tooth of the retention rack for the required left-hand margin, i.e.

Retention Rack Tooth	Nominal Left-hand Margin
6th	0.5 in.
7th	0.6 in.
8th	0.7 in.
9th	0.8 in.

49.2 Check that the retention pawl is clear of the next tooth of the retention rack by approximately .005 in. (dimension 'av') and that the pawl latch clears the feed and retention pawls by approximately .015 in. (dimension 'aw').

Action

49.3 If these conditions are not satisfied, adjust as follows.

(a) Slacken the locknut of the pawl latch screw, Fig.4.42, and turn the screw until its end is well clear of the pawl latch, Fig.4.43.

## ADJUSTMENT INSTRUCTIONS

- (b) Slacken the locknut of the carriage stop screw, Fig.4.42, and turn the screw until the retention pawl, Fig.4.43, engages the correct tooth of the retention rack and until dimension 'av' is set up. Clamp the carriage stop screw, Fig.4.42, in this position with its locknut.
- (c) Turn the pawl latch screw until dimension 'aw' is obtained and clamp the screw in this position with its locknut.

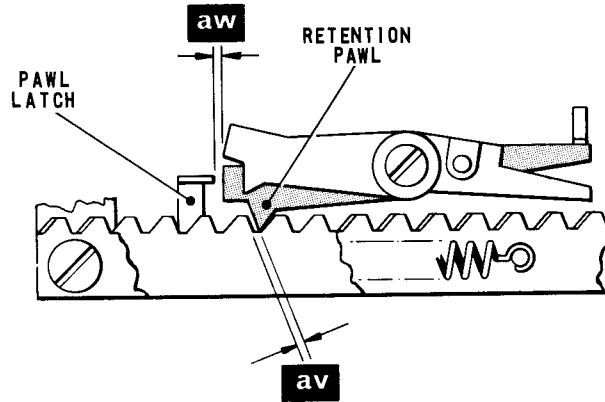


Fig. 4.43 TYPEHEAD RETENTION PAWL

### 50. FEED AND RETENTION PAWL HEIGHT

#### Check

- 50.1 Slide the typehead to the right-hand limit of its travel. Holding the typehead in this position, operate the carriage return manual lever, Fig.4.42, so that the feed and retention pawls, Fig.4.44, are held up by the pawl latch. Allow the typehead to slide slowly to the left and check that the tails of both pawls clear the racks by .030 - .045 in.

#### Action

- 50.2 If this is not so, slacken the two screws (one only shown in Fig.4.42) clamping the pawl latch bracket to the typehead casting, and reposition the bracket until the correct pawl clearance is present. Tighten the bracket clamp screws.

### 51. TYPEHEAD CARRIAGE FEED LINK

#### Check

- 51.1 Operate the carriage return manual lever, Fig.4.42, so that the typehead moves to its extreme left-hand position. Depress any printing key or, if the machine has no keyboard, set up any printing combination on the pins. Lift the translator clutch abutment and turn the machine by hand until the carriage feed link, Fig.4.44, has moved to its extreme right-hand position.
- 51.2 Move the pawl latch away from the pawls. Check that the retention pawl has dropped into engagement with the retention rack and is clear of the next tooth face by an estimated .004 - .008 in. (dimension 'ax').
  - ★ The feed pawl is shown lifted in the figure to clarify the required retention pawl condition.

#### Action

- 51.3 To adjust, carry out the following procedure.
  - (a) Set up the machine as in Check 51.1, i.e. with the letter feed mechanism fully fed.

## ADJUSTMENT INSTRUCTIONS

- (b) Unscrew the carriage feed link nut and its locknut so that the feed rack is allowed to move to its extreme left-hand position under the action of its spring.
- (c) Slowly tighten the carriage feed link nut until the retention pawl just drops into the retention rack, then turn a further quarter of a turn to achieve dimension 'ax'. Clamp the nut in this position with its locknut.

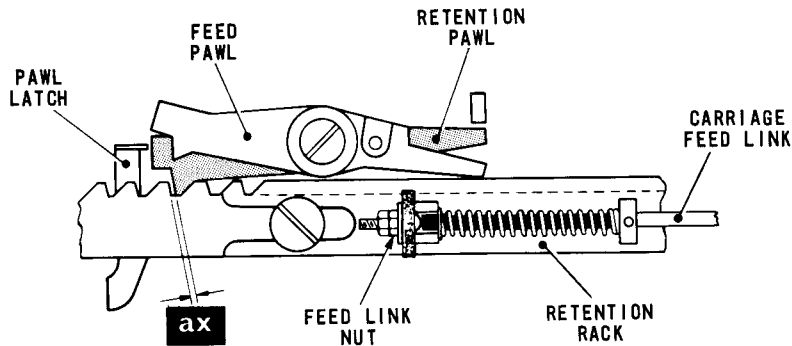


Fig. 4.44 TYPEHEAD CARRIAGE FEED LINK

## 52. CARRIAGE RETURN SPRING

### Check

- 52.1 Slide the typehead to its extreme right-hand position. Apply a tension gauge to the spring drum tape stud, Fig.4.45, and check that there is a force of  $4\frac{1}{2}$  - 5 lb (2.04 - 2.27 kg) acting at the periphery of the drum.

### Action

- 52.2 If this is not so, insert a tommy pin into one of the holes in the capstan-headed pivot boss and slacken the pivot nut. Turn the pivot boss approximately a quarter of a turn at a time, clockwise to decrease or counter-clockwise to increase the tension, and tighten the pivot nut. Repeat this procedure as often as necessary until the correct tension is achieved.

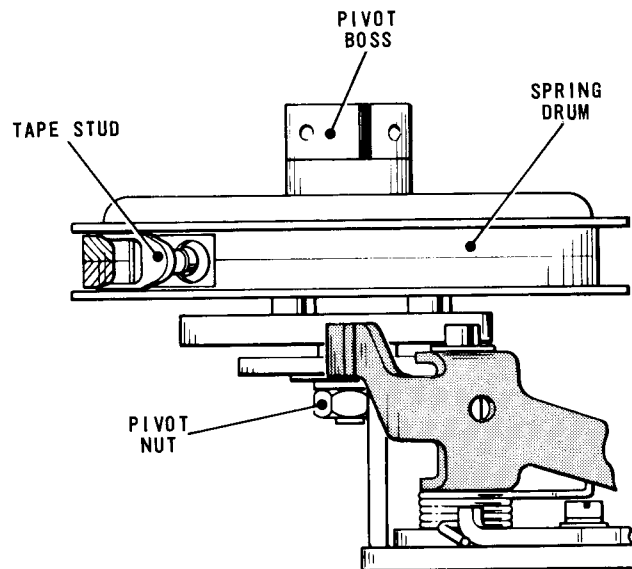


Fig. 4.45 CARRIAGE RETURN SPRING DRUM

53. DASHPOT

## Check

- 53.1 Operate the carriage return manual lever, Fig.4.42, so that the typehead moves to its extreme left-hand position. Stand the machine on its back and check that it is now possible to move the dashpot piston, Fig.4.46, a further .060 in. into its cylinder.

## Action

- 53.2 If this is not so, slacken the three dashpot securing screws. Move the dashpot unit until the above condition is satisfied and tighten the securing screws.

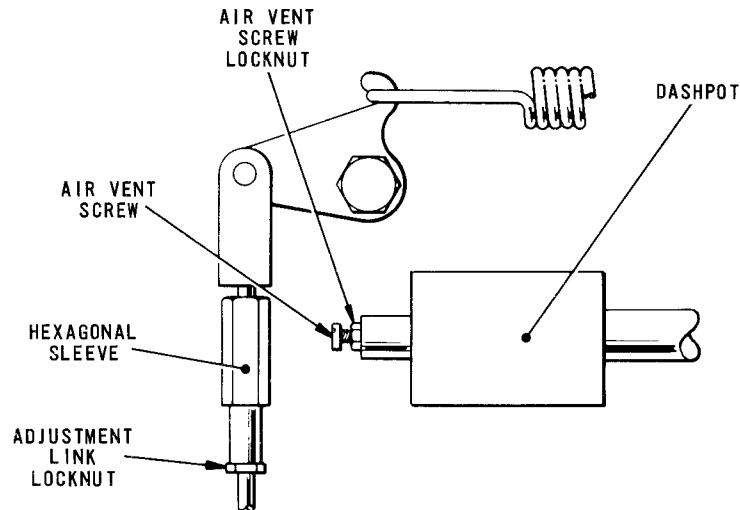


Fig. 4.46 DASHPOT/PRINT SPRING MECHANISM

## Check

- 53.3 Slide the typehead to its extreme right-hand position. Operate the carriage return manual lever and check that the typehead returns to the left-hand position with a minimum of impact.

## Action

- 53.4 To adjust, carry out the following procedure.
- (a) Slacken the locknut of the dashpot air vent screw and turn the screw clockwise until the air vent is fully closed. This will cause pneumatic bounce to occur when the typehead is returned to its left-hand position.
  - (b) Turn the air vent screw counter-clockwise a quarter of a turn at a time and repeat Check 53.3. Repeat this procedure as often as necessary until the typehead bounce just ceases, and lock the air vent screw in this position with the locknut.

54. PRINT SPRING

## Check

- 54.1 Ensure that the top end of the print spring change lever is towards the rear of the machine. Stand the machine on its back and check that a force of approximately 3 lb (1.36 kg), applied to the print beam, Fig.4.47, at and in the direction of the arrow, just moves the beam.

ADJUSTMENT INSTRUCTIONS

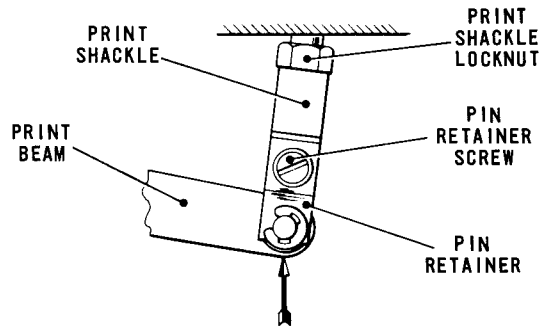


Fig. 4.47 PRINT BEAM/PRINT SHACKLE LINKAGE

Action

- 54.2 To adjust, slacken the locknut of the spring adjustment link, Fig.4.46, and turn the hexagonal sleeve until the correct tension is present. Tighten the locknut.

55. TYPEHEAD/PLATEN CLEARANCE

Check

- 55.1 Depress the letter 'X' key or, if the machine has no keyboard, set up the letter 'X' combination (MSMMM) on the pins. Lift the translator clutch abutment and turn the machine by hand until the print lever, Fig.4.7, is on the highest point of its cam (just prior to fall off). Using slip gauge TA1338, check that there is a clearance of approximately 0.5 in. (dimension 'ay') between the typehead, Fig.4.48, and the platen.

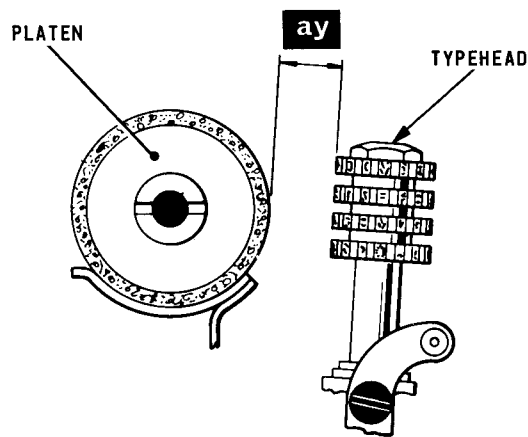


Fig. 4.48 TYPEHEAD/PLATEN CLEARANCE

Action

- 55.2 To adjust, continue to turn the machine by hand until the typehead moves forward to print. Stand the machine on its back, withdraw the screw securing the pin retainer, Fig.4.47, and remove the retainer from the print shackle. Disconnect the print beam from the print shackle and slacken the shackle locknut. Turn the shackle clockwise to increase or counter-clockwise to decrease the dimension. Re-connect the print beam to the shackle, refit the pin retainer and tighten the retainer screw.

55.3 Repeat Check 55.1 and, if necessary, Adjustment 55.2 until the correct dimension is set up. Tighten the shackle locknut.

56. PRINT BEAM STOP SCREW

Check

56.1 Depress the letter 'X' key or, if the machine has no keyboard, set up the letter 'X' combination (MSMMM) on the pins. Lift the translator clutch abutment and turn the machine by hand until the typehead moves forward to print. Using slip gauge TA1338, check that there is a clearance of .160 - .220 in. between the typehead and the platen.

Action

56.2 If this is not so, stand the machine on its back and disconnect the print spring. Add or remove .005 in. shims (Creed Part No. PW5199) as necessary under the print beam stop screw until the correct clearance is obtained. Re-connect the print spring.

57. TYPEHEAD CORRECTOR

Check

57.1 Slide the typehead to the middle of the line. Depress the letter 'X' key or, if the machine has no keyboard, set up the letter 'X' combination (MSMMM) on the pins. Lift the translator clutch abutment and turn the machine by hand until the typehead moves forward to print. Check that the typehead backlash is equal in both directions by carrying out the following procedure.

- (a) Press the typehead casting towards the platen so that the letter is printed. Turn the platen knob until the paper has moved up one line.
- (b) Pull the typehead back so that the corrector lever, Fig. 4.49, is out of engagement and, turning the typehead lightly to the left to take up the backlash, press the typehead casting towards the platen so that the letter is printed again on the lower line.

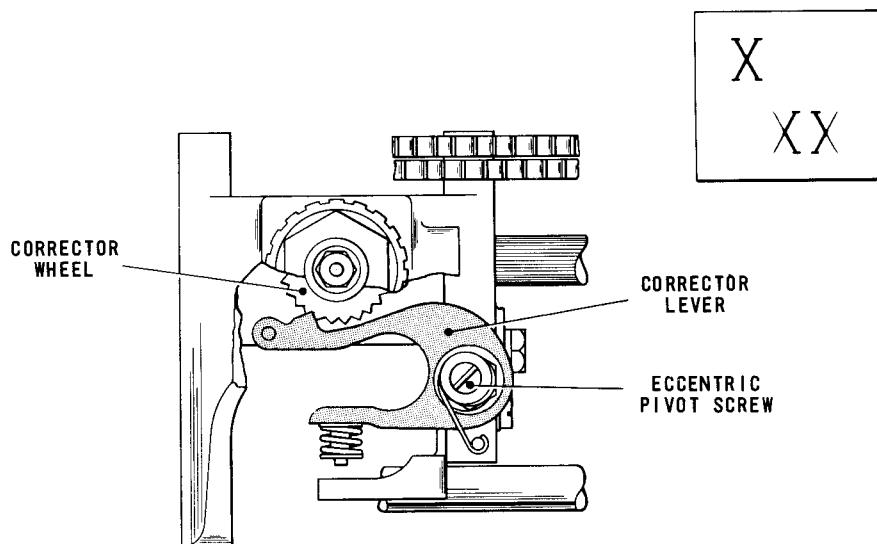


Fig. 4.49 TYPEHEAD CORRECTOR MECHANISM

ADJUSTMENT INSTRUCTIONS

(c) Repeat Check 57.1(b), this time turning the typehead to the right.

(f) Check that the image printed appears as shown in the inset to Fig. 4.49. This inset shows the image obtained when the backlash is equal in both directions.

Action

57.2 To adjust, slacken the nut securing the front splined shaft, Fig. 4.51, and turn the typehead clockwise or counter-clockwise until the backlash is equal in both directions. When this condition is satisfied, insert a tommy pin into the hole in the front splined shaft and, holding the shaft with the pin, tighten its securing nut.

Check

57.3 Press the typehead casting towards the platen again and check that the letter 'X' thus printed is equal in density on both sides of the character.

★ Differences in density between the upper and lower legs should be ignored at this stage.

Action

57.4 If this is not so, slacken the screw securing the eccentric pivot of the corrector lever, Fig. 4.49, and turn the pivot until the letter 'X' is correctly positioned. Holding the pivot in this position with a spanner, tighten its securing screw.

58. TYPEHEAD CORRECTOR TRACK RAIL

Check

58.1 Depress the letter 'X' key or, if the machine has no keyboard, set up the letter 'X' combination (MSMMM) on the pins. Lift the translator clutch abutment and turn the machine by hand until the typehead moves forward to print. Press the typehead casting forward so that the typehead moves towards the platen. Using slip gauge TA1337, check that when the corrector lever, Fig. 4.49, is fully engaged with the corrector wheel, the typehead is within .100 - .125 in. of the platen. Check for this condition with the typehead at both ends of its traverse.

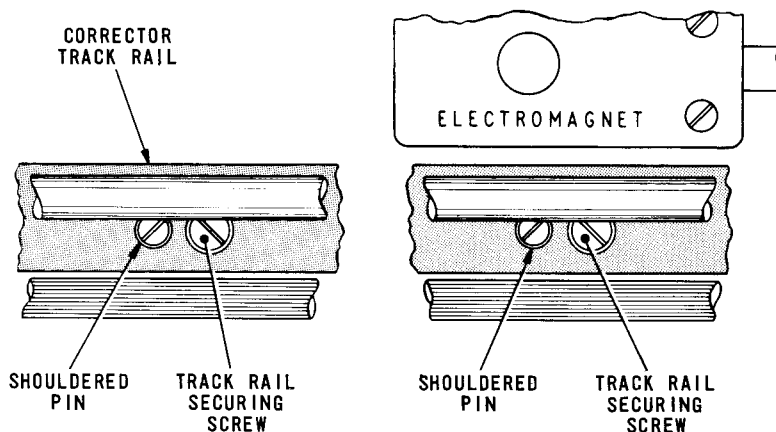


Fig. 4.50 TYPEHEAD CORRECTOR TRACK RAIL



## Action

- 58.2 If this condition is not present, it will be necessary to adjust the height of the corrector track rail, Fig.4.50. To do this, slacken the two screws securing the track rail and adjust the height of the rail by means of the two shouldered pins. When the correct height is achieved, tighten the track rail securing screws.

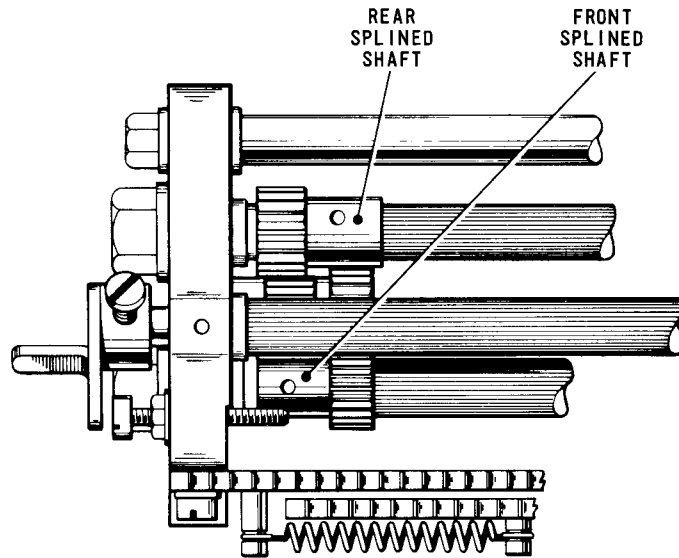


Fig. 4.51 TYPEHEAD CARRIAGE—PLAN VIEW

59. TYPEHEAD HEIGHT—INITIAL SETTING

## Check

- 59.1 Depress the letter 'K' key or, if the machine has no keyboard, set up the letter 'K' combination (MMMMS) on the pins. Lift the translator clutch abutment and turn the machine by hand until the printing action has taken place and the aggregate motion levers have ceased to move. Press the typehead casting towards the platen so that the typehead moves against the paper and check that the density of the 'K' thus printed is equal at the top and bottom of the character.

## Action

- 59.2 If this is not so, slacken the nut securing the rear splined shaft, Fig.4.51, until friction tight, insert a tommy pin into the hole in the shaft and turn the shaft until the condition is satisfied. Hold the shaft with the tommy pin and tighten its securing nut.

†60. No. 5 AGGREGATE MOTION LEVER

## Check

- 60.1 Depress the letter 'K' key or, if the machine has no keyboard, set up the letter 'K' combination (MMMMS) on the pins. Lift the translator clutch abutment and turn the machine by hand until the printing action has taken place and the aggregate motion levers have ceased to move. Check that the typehead backlash is equal in both directions by carrying out the procedure described in paragraphs 57.1(a) to (c) above.

ADJUSTMENT INSTRUCTIONS

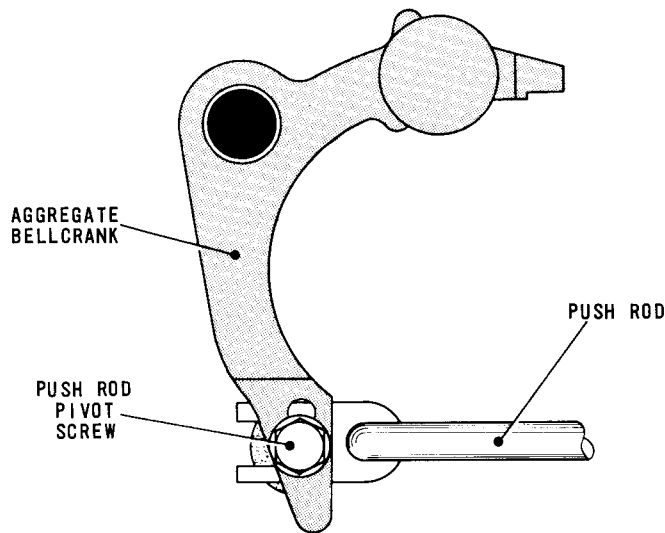


Fig. 4.52 PUSH ROD/AGGREGATE BELLCRANK LINKAGE—REAR VIEW

Action

- 60.2 To adjust, remove the reperforating attachment, slacken the pivot screw securing the push rod, Fig.4.52, to No.5 aggregate bellcrank (nearest the front of the machine) and adjust the pivot in its slot until the typehead backlash is equal in both directions. Tighten the pivot screw. Refit the reperforating attachment unless it is intended to check Adjustment Nos.61 to 64 below.

†61. No. 4 AGGREGATE MOTION LEVER

Check

- 61.1 Depress the letter 'Q' key or, if the machine has no keyboard, set up the letter 'Q' combination (MMMSM) on the pins. Lift the translator clutch abutment and turn the machine by hand until the printing action has taken place and the aggregate motion levers have ceased to move. Check that the typehead backlash is equal in both directions by carrying out the procedure described in paragraphs 57.1(a) to (c) above.

Action

- 61.2 To adjust, remove the reperforating attachment, slacken the pivot screw securing the push rod, Fig.4.52, to No.4 aggregate bellcrank and adjust the pivot in its slot until the typehead backlash is equal in both directions. Tighten the pivot screw. Refit the reperforating attachment unless it is intended to check Adjustment Nos.62 to 64 below.

†62. No. 1 AGGREGATE MOTION LEVER

Check

- 62.1 Depress the letter 'V' key or, if the machine has no keyboard, set up the letter 'V' combination (SMMMM) on the pins. Lift the translator clutch abutment and turn the machine by hand until the printing action has taken place and the aggregate motion levers have ceased to move. Check that the typehead backlash is equal in both directions by carrying out the procedure described in paragraphs 57.1(a) to (c) above.

## Action

- 62.2 To adjust, remove the reperforating attachment, slacken the pivot screw securing to push rod, Fig.4.52, to No.1 aggregate bellcrank and adjust the pivot in its slot until the typehead backlash is equal in both directions. Tighten the pivot screw. Refit the reperforating attachment unless it is intended to check Adjustment Nos.63 and 64 below.

†63. No.3 AGGREGATE MOTION LEVER

## Check

- 63.1 Depress the letter 'B' key or, if the machine has no keyboard, set up the letter 'B' combination (MSSMM) on the pins. Lift the translator clutch abutment and turn the machine by hand until the printing action has taken place and the aggregate motion levers have ceased to move. Check that the typehead backlash is equal in both directions by carrying out the procedure described in paragraphs 57.1(a) to (c) above.

## Action

- 63.2 To adjust, remove the reperforating attachment, slacken the pivot screw securing the push rod, Fig.4.52, to No.3 aggregate bellcrank and adjust the pivot in its slot until the typehead backlash is equal in both directions. Tighten the pivot screw. Refit the reperforating attachment unless it is intended to check Adjustment No.64 below.

†64. TYPEHEAD HEIGHT-PRELIMINARY SETTING

## Check

- 64.1 Depress the letter 'K' key or, if the machine has no keyboard set up the letter 'K' combination (MMMMS) on the pins. Lift the translator clutch abutment and turn the machine by hand until the printing action has taken place and the aggregate motion levers have ceased to move. Press the typehead casting towards the platen so that the letter 'K' is printed.
- 64.2 Repeat this procedure, this time selecting the letter 'X' combination (MSMMM). Check that the printed letter 'X' is equal in density at the top and bottom, and that it is in line with the letter 'K' printed immediately before.

## Action

- 64.3 To adjust, remove the reperforating attachment, slacken the pivot screw securing the push rod, Fig.4.52, to No.2 aggregate bellcrank and adjust the pivot in its slot until both the above conditions are satisfied. Tighten the pivot screw.

## Check

- 64.4 Move the shift lever, Fig.4.53, to the Figures position, i.e. to the right looking from the rear of the machine. Depress the figure '8' key or, if the machine has no keyboard, set up the letter combination (SMMSS) corresponding to the figure '8' on the pins. Lift the translator clutch abutment and turn the machine by hand until the printing action has taken place and the aggregate motion levers have ceased to move. Press the typehead casting towards the platen and check that the printed figure '8' is equal in density at the top and bottom and is in line with the letters 'K' and 'X' previously printed. If no adjustment is required, refit the reperforating attachment.

## Action

- 64.5 To adjust, slacken the pivot screw securing the shift rod to the shift bellcrank and adjust the pivot in its slot until both the above conditions are satisfied. Tighten the pivot screw and refit the reperforating attachment.

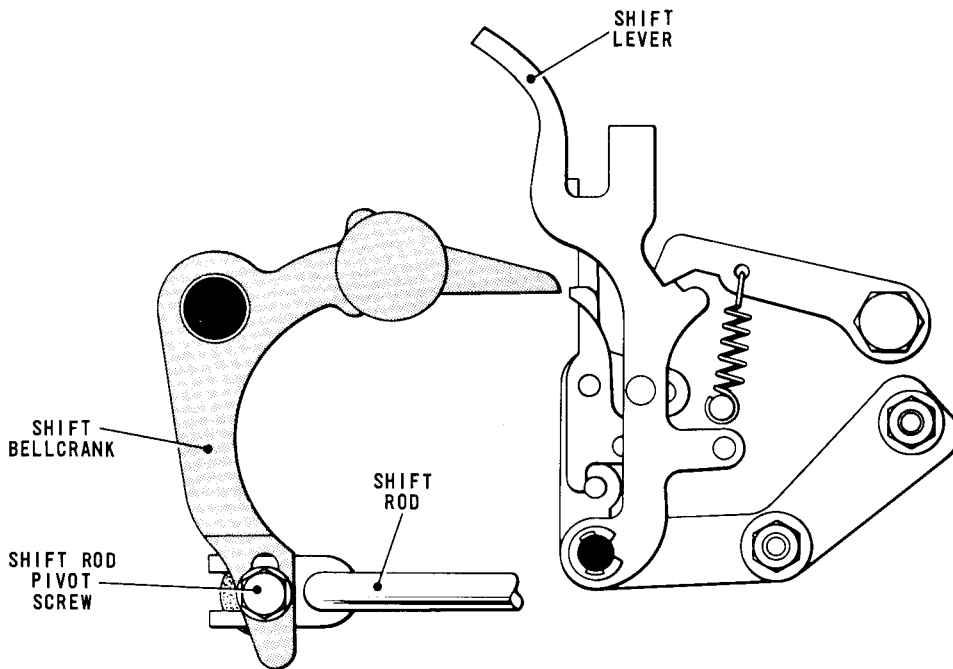


Fig. 4.53 SHIFT ROD/SHIFT BELLCRANK LINKAGE—REAR VIEW

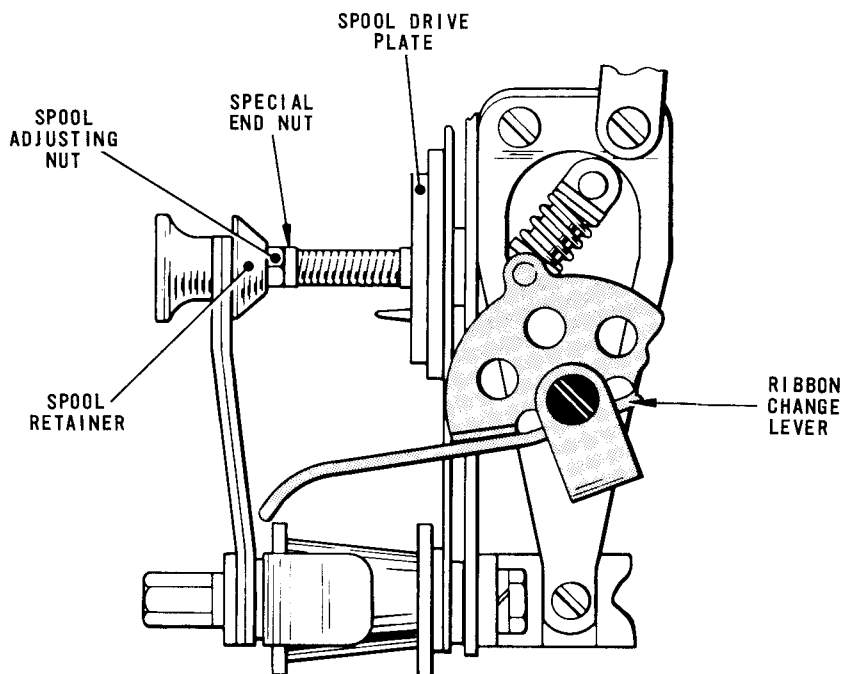


Fig. 4.54 RIBBON SPOOL CLEARANCE

65. RIBBON SPOOL DAMPING

Check

- 65.1 Move the ribbon change lever, Fig.4.54, until the ratchet wheel is disengaged from the ratchet coupling and the left-hand spool is free to turn. Check that

## ADJUSTMENT INSTRUCTIONS

a force of 1 - 2 ounces (28 - 57 grammes), applied to the left-hand spool at a radius of 0.75 in. (19.1 mm), just causes the spool to move. Repeat this check for the right-hand spool.

### Action

- 65.2 To adjust, slacken the special end nut and turn the spool adjusting nut until the correct pressure is obtained. Tighten the special end nut.

## 66. RIBBON SPOOL CLEARANCE

### Check

- 66.1 Remove the ribbon spools and check that there is a clearance of 0.63 - 0.64 in. (16 - 16.25 mm) between the inside face of the left-hand spool retainer, Fig. 4.54, and the left-hand spool drive plate. Repeat this check for the right-hand side of the ribbon unit. If no adjustment is required, refit the ribbon spools.

### Action

- 66.2 If this is not so, remove the special end nut and add or subtract shims between the end nut and the spool adjusting nut until this clearance is satisfied. Refit the special end nut.

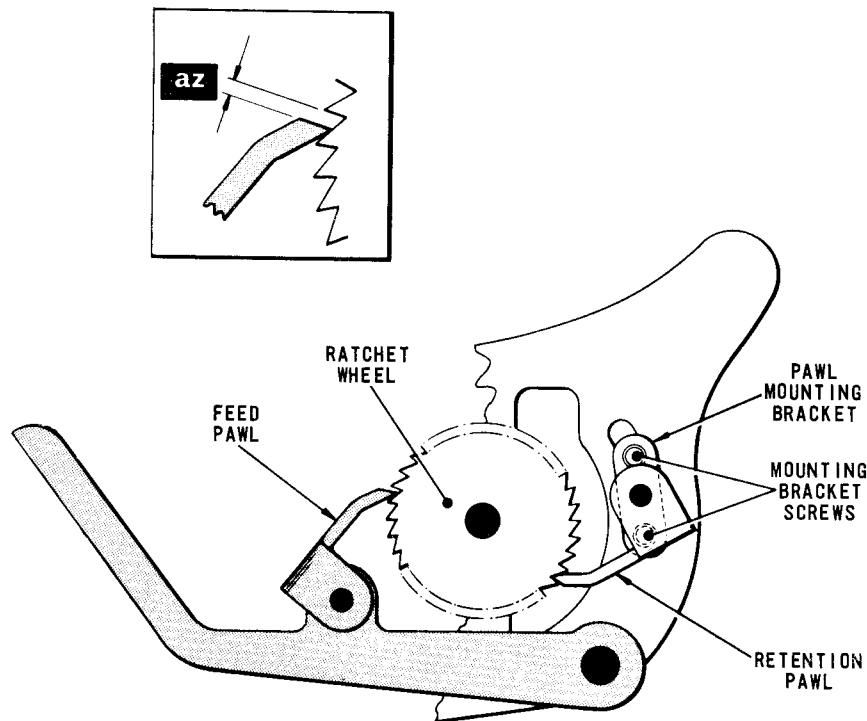


Fig. 4.55 RIBBON FEED AND RETENTION PAWLS

## 67. RIBBON UNIT PAWLS

### Check

- 67.1 Remove the ribbon spools. Depress any printing key or, if the machine has no keyboard, set up any printing combination on the pins. Lift the translator

clutch abutment and turn the machine by hand until the printing action has taken place. Press the typehead casting so that the typehead is held against the platen, and rotate the ratchet wheel, Fig.4.55, against the retention pawl. Check that there is now a clearance of .005-.010 in. (dimension 'az') between the face of the feed pawl and the face of the next tooth in the ratchet wheel. If no adjustment is required, refit the ribbon spools.

Action

- 67.2 To adjust, slacken the two screws securing the pawl mounting bracket and move the bracket until dimension 'az' is satisfied. Tighten the bracket screws and refit the ribbon spools.

68. RIBBON JUMPER ARM

Check

- 68.1 Depress any printing key or, if the machine has no keyboard, set up any printing combination on the pins. Lift the translator clutch abutment and turn the machine by hand until the printing action has taken place. Press the typehead casting so that the typehead is held against the platen and check that the upper edge of the ribbon is approximately .030 in. above the type face which is in contact with the platen.

Action

- 68.2 If this is not so, slacken the two screws securing the jumper arm, Fig.4.56, and adjust the arm until the above condition is satisfied. Tighten the arm screws.

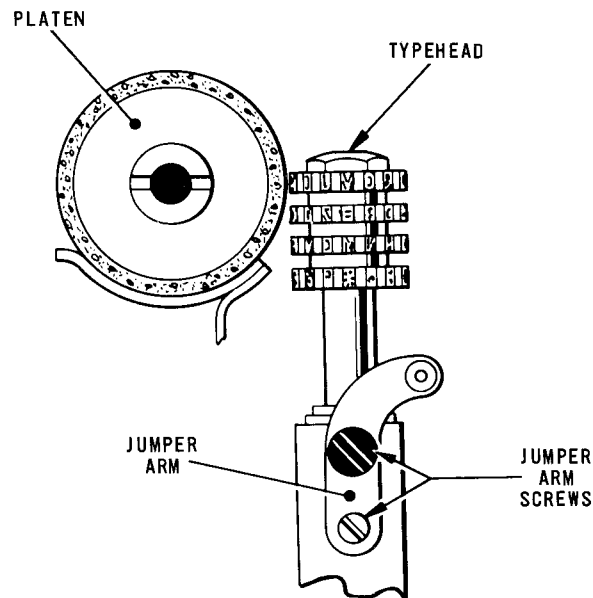


Fig. 4.56 RIBBON JUMPER ARM