APPENDIX H

TAPE READER ATTACHMENT

1. INTRODUCTION

This appendix provides a data summary, outline technical description, lubrication and adjustment instructions for the Tape Reader Attachment to the Creed Manual Seventy-five Teleprinter.

2. GENERAL

The Tape Reader Attachment is generally supplied as a factory-fitted unit for keyboard or receiver-only machines; it can also be fitted to machines already equipped with a Reperforating Attachment. The Tape Reader, which is located on the right-hand side of the teleprinter, can be set to accept 11/16 or 7/8 in. wide, 5-track fully-punched paper tape and it can transmit up to the maximum speed of the teleprinter, i.e. 100 words per minute.

No additional motor or transmitter is required as the Reader is driven by levers associated with the standard translator unit. The teleprinter transmitter is controlled by linkages that connect the peckers in the Reader with the combination bars of the keyboard unit. The code settings are conveyed to the translator unit and transmitter by the selector frames, as in normal keyboard operation. A dummy combination bar unit is used when the Reader is fitted to a receiver-only machine.

Depending on the wiring and adjustment of the teleprinter transmitter, the signal output form may be on a single- or double-current sequential basis for on-line telecommunications use, or in the multi-wire (parallel) form used for off-line data processing work.

The off-line use of the Reader is simplified by the mechanical local-record facility of the Model Seventy-five. This facility enables a perforated tape to be read and translated into page copy (off-line) without any signalling power supplies being necessary.

3. DATA SUMMARY

Facilities

Tape Reader only:

(a) On-line automatic reading of standard, 5-track punched tape with simultaneous printed local copy of all transmitted messages. Signalling battery required.

(b) Off-line automatic conversion of 5-track tape into page copy. No signalling battery required.

(c) FEED ONLY setting of the Reader control switch enables unwanted parts of the tape to be omitted.

Tape Reader and Reperforating Attachment:

(a) On-line automatic reading of standard, 5-track punched tape with simultaneous printed local copy of all transmitted messages. Signalling battery required.

(b) Normal reperforator facilities for preparing punched tape records of all incoming and outgoing messages.

(c) Off-line preparation of punched tape with local check copy. No signalling battery required.

(d) Off-line tape duplication with local check copy while duplication is in progress. No signalling battery required.

(e) Off-line tape editing involving the production of a second tape (by the Reperforating Attachment) that contains selected parts of a previously prepared tape (as it passes through the Reader) plus additional information inserted from the keyboard. A local check copy is produced automatically and records all material inserted in the new tape.

(f) FEED ONLY setting of the Reader control switch enables unwanted parts of the tape to be omitted.

Signalling speed:	Transmits at speed of associated teleprinter.
Output:	Via teleprinter transmitter, which can be arranged to provide 5-unit start-stop sequential single- or double-current signals, or 5-element parallel output with a trip signal.
Local record:	Automatic local record of all transmitted messages.
Manual controls:	ON - Tape feeds and reads; keyboard not available. OFF - Reader inoperative; keyboard available. FEED ONLY - Read action suppressed; tape feeds whenever keyboard is operated.
Automatic controls:	Tight-tape and tape-out facilities fitted.
Tape details:	Adaptable for either 5-track, 11/16 or 7/8 in. wide fully-punched tapes. Maximum thickness .010 in. Adjustable for centre or advanced feed holes.
Feed direction:	Front to rear.
Feed action:	Step-by-step.
Dimensions:	3 in. wide, 5 in. deep and 3 in. high. (7.62 cm x 12.7 cm x 7.62 cm.)
Weight:	3 lb (1.3 kg) approximately.

4. OUTLINE TECHNICAL DESCRIPTION

Operation of the Reader is controlled by a manually-operated switch shown in an inset to Fig.H.1. The switch has three positions, ON, OFF and FEED ONLY, which are identified to the operator by coloured bands on the boss of the knob, as follows:-

ON	- GREEN
OFF	- RED
FEED ONLY	- BLACK

When the switch is selected to ON, the tape feeds and reads. When the switch is selected to FEED ONLY, the sensing tips of the peckers are withdrawn below the tape plate and the feed action is controlled from the keyboard. Operation of any key on the keyboard will now advance the tape in the Reader by one character. Operation of the run out key together with another selected key will cause the tape to advance continuously until the run out key is released. The FEED ONLY facility can be used to omit unwanted portions of the tape as it passes through the Reader.

The Reader may also be switched off independently of the control switch by moving the tight-tape roller upwards so that it overrides the tight-tape latch arm. When switched

off in this manner, the Reader must be restarted by moving the tight-tape roller down past the lobe of the tight-tape latch.

Sequence of Operation

Fig.H.2 shows the mechanism responsible for putting the keyboard into the continuous-cycling condition during which the Reader controls the teleprinter transmitter by acting on the keyboard combination bars. The mechanism is shown in the rest condition, i.e. the position it takes up when the manual control switch, Fig.H.1, is set to OFF.

In the OFF position, the lobe of a cam 4, Fig.H.2, mounted on the control switch camshaft 3, holds down the code bar suppressor 5. A horizontal projection at the left-hand end of the suppressor presses the five code bars 6 (for clarity, two only are shown in the figure) downwards, so holding the pecker withdrawl lever 15 away from its cam 16.

A torsion spring 12, acting through the pin in the trip link bracket 13 and the trip arm 14, presses the trip spindle 9 in a clockwise direction. The trip lever 8, which is keyed to the right-hand end of the spindle, tensions the trip bar 7 downwards so that the step at the top of the bar is held down against the code bar suppressor as shown in the inset. When the trip bar is in the rest position (as illustrated), the trip interposer 10 is held clear of the keyboard run out bar 11, so allowing the keyboard to function normally.

Switching the control knob to the ON position turns the cam on the control switch camshaft so that its flat portion is presented to the code bar suppressor which then rotates clockwise under the action of its spring. The suppressor lifts the trip bar causing the trip spindle to turn counter-clockwise; the trip interposer and trip arm, which are riveted together and keyed to the trip spindle, consequently move downwards.

This downward movement of the trip interposer and trip arm has three effects, as follows:-

(a) The trip interposer blocks the path of the keyboard run out bar, thus neutralising the single-cycle action of the keyboard mechanism.

(b) The trip arm, Fig.H.3, by acting on the pin in the trip link bracket, pulls down the trip bracket 23 causing it to tread on the keyboard trip slat 24, thus putting the keyboard into the run out condition. The translator camshaft, on which the reset cam 28 is mounted, will now revolve continuously in a clockwise direction.

(c) The trip bracket extension 22 moves down with the trip bracket and, in so doing operates a combination bar release delay mechanism consisting of the latch lever 20, disable lever 21 and release delay lever 27. The purpose of this mechanism is given on page H6.

The code bar suppressor, Fig.H.2, in rising to the ON position releases the code bars, so allowing the pecker withdrawal lever to make contact with its cam in preparation for the tape sensing movement of the peckers.

Tape Sensing Action

Fig.H.4 illustrates the tape sensing mechanism in the act of reading the tape and transferring the code to the keyboard combination bars. In the illustration, No.1 pecker 29 is shown transferring a space condition through its code bar 31 to a keyboard combination bar 34, while No.5 pecker 30 is transferring a mark condition to combination bar 33 via its code bar 36.

As the pecker operating cam revolves, the roller on the pecker withdrawal lever follows the dictates of the cam to raise and lower the withdrawal lever. When the lever is raised it lifts the code bars which in turn move the peckers clockwise about their pivot, so that the tips of the peckers are withdrawn below the tape plate to enable the tape feed action to take place.

When the pecker withdrawal lever is lowered, the code bars are released. This allows the peckers to rotate counter-clockwise about their pivot under the action of their springs, and so raise the tips of the peckers above the tape plate to scan the underside of the tape.

If a pecker tip senses a hole (i.e. mark) in the tape, the subsequent passage of the tip through the hole will allow the pecker to rotate still further counter-clockwise and

depress its associated code bar fully downwards. This movement orientates the code frames assembly so that the end of its interposer 32 is out of the path of the keyboard combination bar which is then free to move forward and set up a mark condition in the translator unit when released in the normal manner.

If the pecker tip senses unperforated tape (i.e. space), the pecker is restrained by the tape from making any further counter-clockwise movement and the end of the interposer 35 is left in the path of the keyboard combination bar. This prevents the bar from moving forward when released, thus setting up a space condition in the translator unit.

Tape Feed Action

Fig.H.5 illustrates the tape feed mechanism in the rest position, with tape loaded in the Reader and the tight-tape roller arm 37 fully down. The control switch is at ON.

The tape feed action is controlled by the carriage return cam 44, located on the translator camshaft. As the cam revolves, the roller on the carriage return lever 43 follows the cam profile resulting in an oscillating movement to the extension of the lever at the end farthest from the roller. The extension actuates the feed latch 42 to give an up and down movement to the feed link 41; this movement is transmitted to the feed lever 48 which operates the feed pawl 50. The pawl engages the feed ratchet wheel 52 which is linked to the tape feed spindle, causing the tape to be drawn step-by-step through the Reader.

When the control switch is set to OFF, a flat portion of the control camshaft is presented to the vertical arm of the feed suppression lever 49. This lever turns clockwise under the action of its spring and treads on the horizontal arm of the feed latch, moving the bottom end of the latch away from the carriage return lever and thus suppressing the tape feed action.

Manual Control Switch

The effect of the three positions (ON, OFF and FEED ONLY) of the manual control switch, Fig.H.1, can be summarised as follows:-

OFF position:

(a) The lobe of the cam on the control camshaft holds down the code bar suppressor, holding the pecker withdrawal lever away from its operating arm. (Fig.H.2 refers.)

(b) The trip bar is down, allowing the trip interposer to be held out of the path of the keyboard run out bar so that the keyboard can function normally. (Fig.H.2 refers.)

(c) The lobe of the control camshaft acts on the short vertical arms of the peckers, holding the pecker tips below the tape plate. (Fig.H.4) refers.)

(d) The flat portion of the control camshaft is presented to the feed suppression lever which turns clockwise to press the feed latch away from the carriage return lever, thus suppressing the tape feed action. (Fig.H.5 refers.)

ON position:

(a) The flat portion of the cam on the control camshaft is presented to the code bar suppressor which rotates clockwise, allowing the pecker withdrawal lever to rise and its roller to make contact with the pecker operating cam. (Fig.H.2 refers.)

(b) The trip arm, acting through the trip link bracket, depresses the keyboard trip slat, so putting the keyboard into the run out condition. (Fig.H.3 refers.)

(c) The flat portion of the control camshaft is presented to the short vertical arms of the peckers, allowing them to turn counter-clockwise and sense the tape. (Fig.H.4 refers.)

(d) The lobe of the control camshaft holds the feed suppression lever away from the feed latch, allowing the tape feed action to take place once every cycle of the translator camshaft. (Fig.H.5 refers.)

FEED ONLY position:

(a) The lobe of the cam on the control camshaft holds down the code bar suppressor, holding the pecker withdrawal lever away from its operating cam. (Fig.H.2 refers.)

(b) The trip bar is down, allowing the trip interposer to be held out of the path of the keyboard run out bar so that the keyboard can function normally. (Fig.H.2 refers.)

(c) The lobe of the control camshaft acts on the short vertical arms of the peckers, holding the pecker tips below the tape plate. (Fig.H.4 refers.)

(d) The lobe of the control camshaft holds the feed suppression lever away from the feed latch, allowing the tape feed action to take place once every cycle of the translator camshaft. (Fig.H.5 refers.)

When the control switch is in the FEED ONLY position, the tape reading action will be suppressed but the tape will advance by one character whenever the translator camshaft is released to turn through one cycle. The translator camshaft can be released either by operating any key on the keyboard (except run out) or by a start signal being received from the distant station.

It should be noted at this stage that if the Reader is switched off either by the tape-out action or by lifting the tape gate, the Reader will disable its feed mechanism and then come to rest. To bring the Reader back into operation, the tape must be reloaded, the tape gate closed and the manual control switch turned to OFF and then back to ON again. The reason for this procedure is explained in the next section.

Tape-Out Mechanism

Fig.H.2 illustrates the tape-out mechanism at the beginning of the reading cycle.

Once during each cycle the pecker withdrawal lever lowers the tape-out bar 17 and so allows the tape-out seeker 2 to rotate counter-clockwise under the action of its spring. If there is tape in the Reader, the upward movement of the right-hand end of the seeker will be arrested by the tape before the horizontal arm of the tape-out frame 1 can touch the top of the trip bar. If, however, the end of the tape has moved past the sensing point, the seeker will be able to rotate far enough counter-clockwise for the horizontal arm of the tape-out frame to disengage the step on the trip bar from the code bar suppressor.

The subsequent downward movement of the trip bar, caused by the trip link bracket torsion spring acting through the trip spindle, lifts the trip interposer out of the path of the keyboard run out bar. The normal single-cycle action of the keyboard mechanism can now operate and bring the keyboard and the Reader to rest.

It will now be appreciated why, once a tape-out condition has disengaged the trip bar from the code bar suppressor, the control switch must first be switched to OFF and then to ON again to bring the Reader back into operation.

Setting the switch to OFF depresses the code bar suppressor so that it can re-engage the step at the top end of the trip bar, as shown in the inset. Once this has been done, turning the switch to ON presents the flat portion of the cam on the switch camshaft to the code bar suppressor which turns clockwise, lifting the trip bar as it does so.

The bottom end of the trip bar turns the trip spindle to bring the trip interposer down into the path of the keyboard run out bar. Simultaneously, the trip arm depresses the trip link bracket to operate the keyboard trip slat, Fig.H.3, and so put the keyboard into the run out condition which drives the Reader.

Tight-Tape Mechanism

Fig.H.5 illustrates the components which comprise the tight-tape mechanism (roller arm 37, operating lever 40, tight-tape bar 47 and its trip interposer 45) in the positions they take up when the tape is feeding normally. The control switch is in the ON position.

The tape path lies over the fixed guide roller 38 and beneath the tight-tape roller arm. This arm is held down by the spring connected to the tight-tape operating lever which is clamped round the pivot of the roller arm. A light spring on the tight-tape trip interposer holds the top end of the tight-tape bar in contact with a stop pin on the operating lever.

When the tape is feeding normally, the spring on the operating lever holds the tight-tape bar down, thus pivoting its trip interposer counter-clockwise so that the right-hand of the interposer is held clear of the keyboard trip bar 46. The keyboard can now function normally.

If the tape should tighten, the tight-tape roller arm lifts, allowing the tight-tape bar to rise. The right-hand end of the interposer can now move down into the path of the keyboard trip bar. The resulting inhibition of the keyboard trip action brings the translator camshaft and thus the Reader temporarily to the rest position.

When the tape is released and the tight-tape condition no longer exists, the roller arm moves down, depressing the tight-tape bar and thereby moving the interposer away from the keyboard trip bar. The trip bar can then move to the left so releasing the translator camshaft in the normal manner and restarting the tape reading action.

Combination Bar Release Delay Mechanism

The combination bar release delay mechanism is located near the front end of the translator camshaft in the area indicated on Fig.H.1. The components which comprise the delay mechanism (latch lever 20, disable lever 21, trip bracket extension 22 and release delay lever 27) are illustrated in Fig.H.3. The function of the mechanism is to delay by some 20 milliseconds the time at which the combination bar reset lever 19 allows the combination bars to move to the right. This delay ensures that the tape reading action has been completed before the combination bars read off the code combination on the ends of the interposers.

When the control switch is at OFF, the trip bar is down and the trip interposer together with the trip arm consequently raised, as shown in Fig.H.2. The trip link bracket torsion spring, Fig.H.3, holds the trip bracket away from the keyboard trip slat and causes the left-hand end of its extension to turn the disable lever counter-clockwise. The left-hand end of the disable lever bears on the delay lever extension 25 (part of the release delay lever) and turns the delay lever clockwise against its spring. Latch arm 26 (also part of the release delay lever) is thus held away from the end of the latch lever, so allowing the combination bar reset lever to function normally.

When the control switch is turned to ON, a projection on the trip bracket treads on the keyboard trip slat releasing the keyboard trip bar and the five combination bars which then slide to the right. The keyboard trip bar releases the lag weight which in turn releases the translator camshaft causing the keyboard reset cam 28 to rotate. The five combination bars then sense the code combination on the ends of the interposers. The movement of the combination bars also turns the combination bar reset lever counter-clockwise to make contact with the keyboard reset cam which is turning to meet it.

After the Reader code setting has been transferred to the translator unit by the selector frames, the keyboard reset cam acts on the combination bar reset lever whose lower end presses the keyboard trip and combination bars back to the left. As the combination bar reset lever turns, the latch lever rises to allow the latch arm to slip beneath it.

Once the high point of the keyboard reset cam has passed the roller at the top end of the combination bar reset lever, the combination bars would be released again were it not for the latch lever being engaged with the latch arm. Because of this latching action, the combination bars are not released to read off the next code setting from the Reader until the high point of the keyboard reset cam has moved round to depress the release delay lever and release the latch. The time taken by the reset cam to travel from the roller on the combination bar reset lever to the roller on the release delay lever is approximately 20 milliseconds, and is the time delay referred to at the beginning of this section.

KEY

A	CODE BAR No.6
B	CODE BAR No.5
C	CODE BAR No.4
D	CODE BAR No.3
E	CODE BAR No.2
F	CODE BAR No.1
G	TIGHT-TAPE BAR
H	TRIP BAR
T/O	TAPE-OUT SEEKER

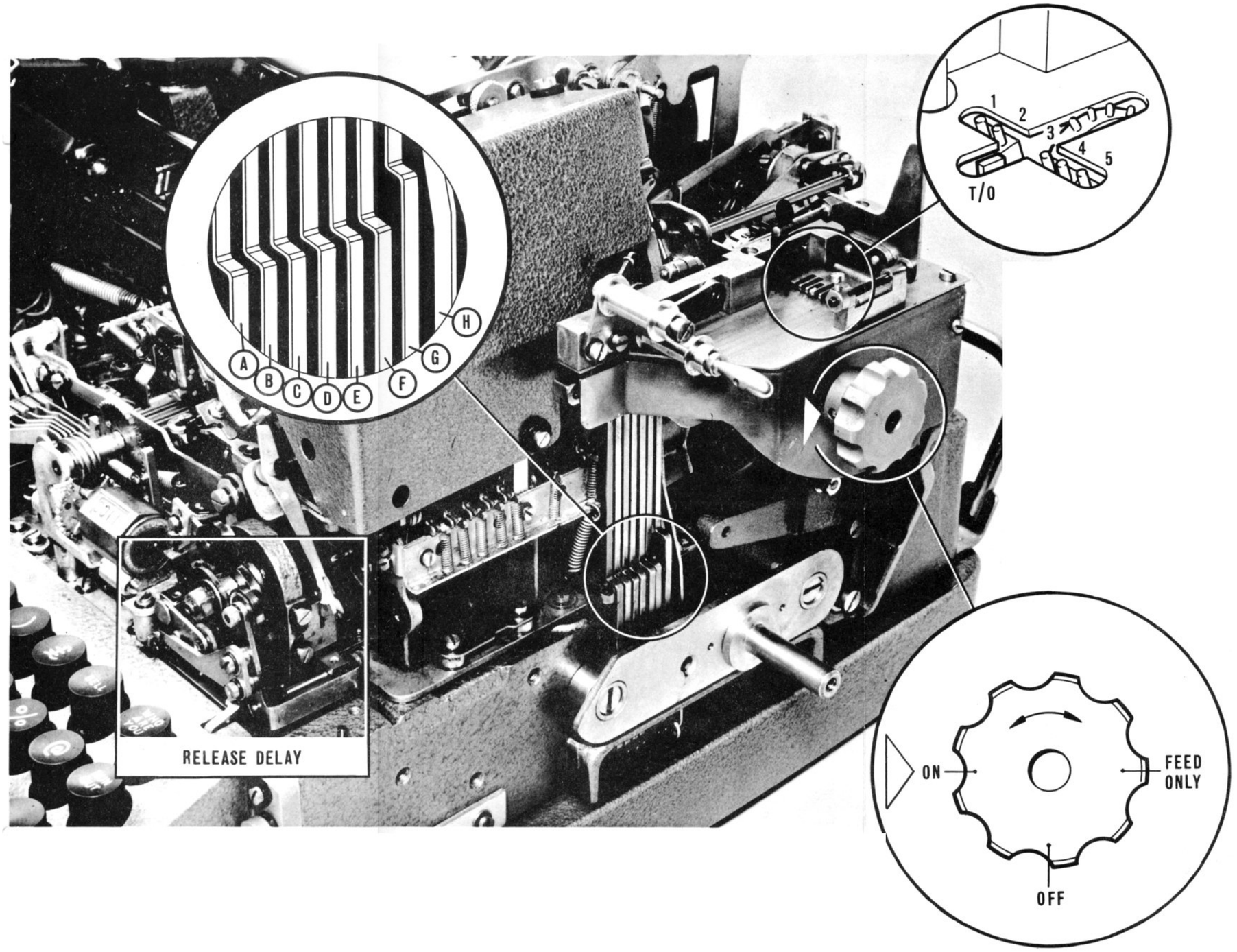

Fig. H.1 TAPE READER—MAIN FEATURES

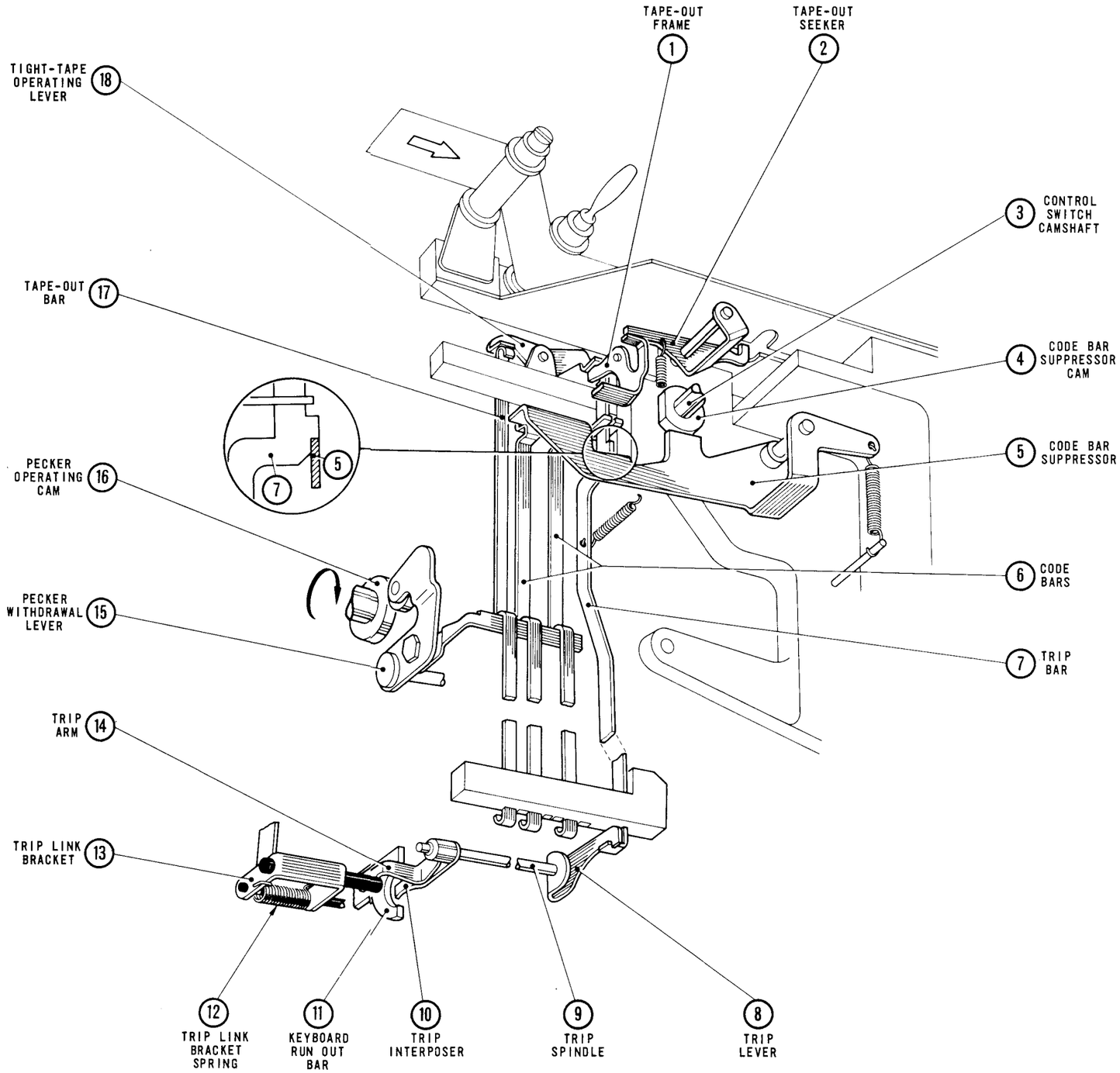

Fig. H.2 START AND TAPE-OUT MECHANISMS

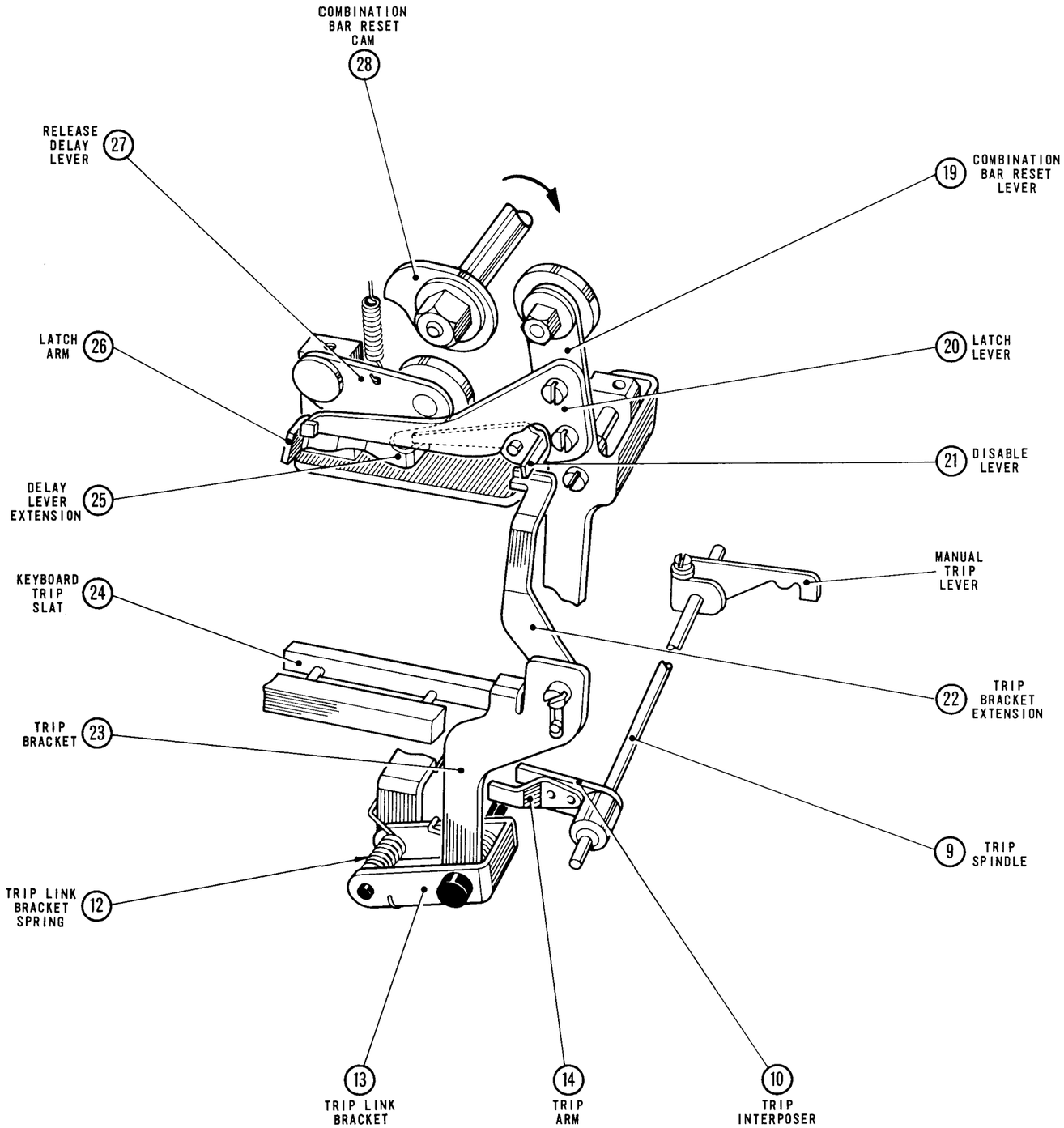

Fig. H.3 KEYBOARD TRIP AND RELEASE DELAY MECHANISMS

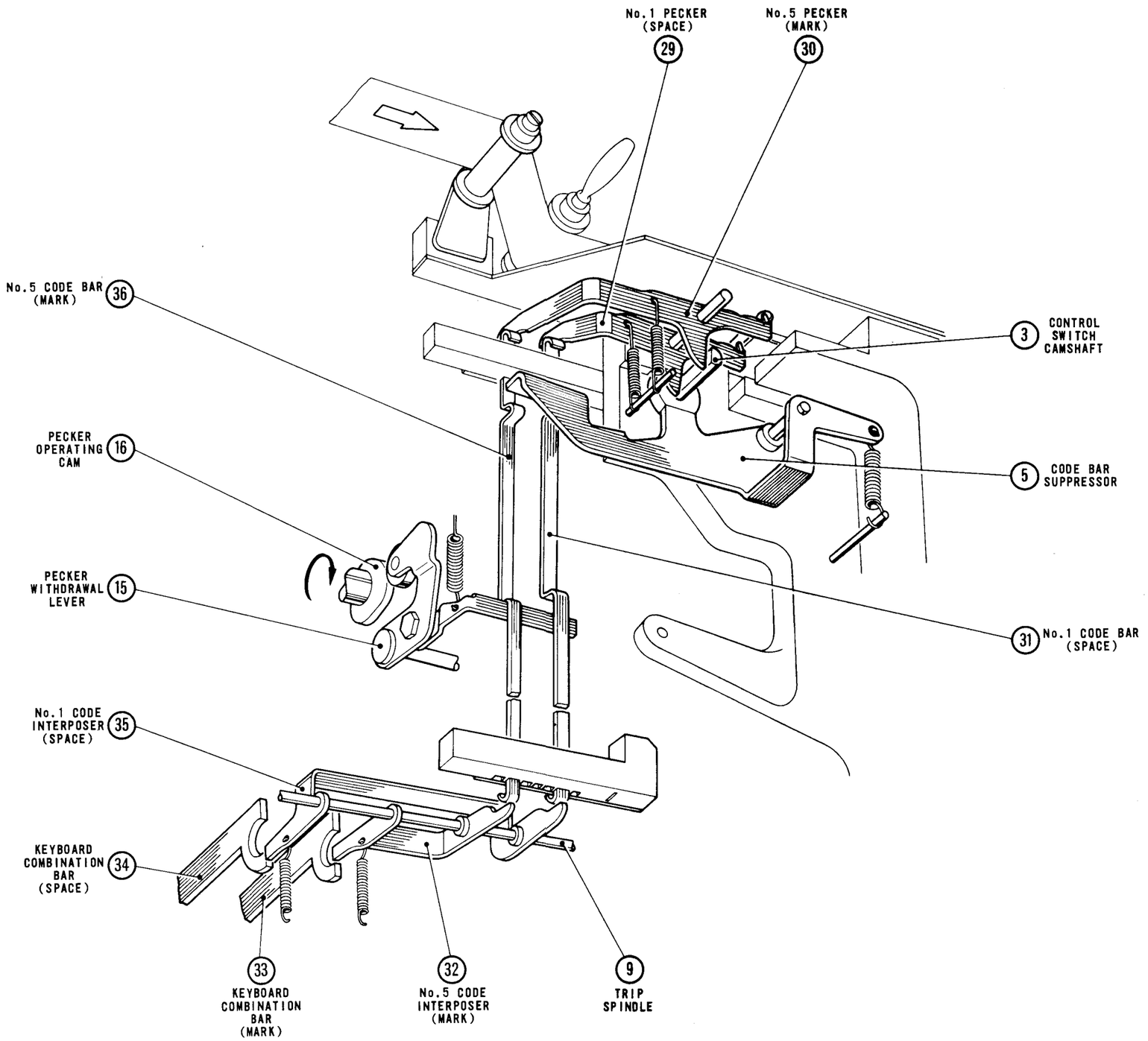

Fig. H.4 TAPE SENSING MECHANISM

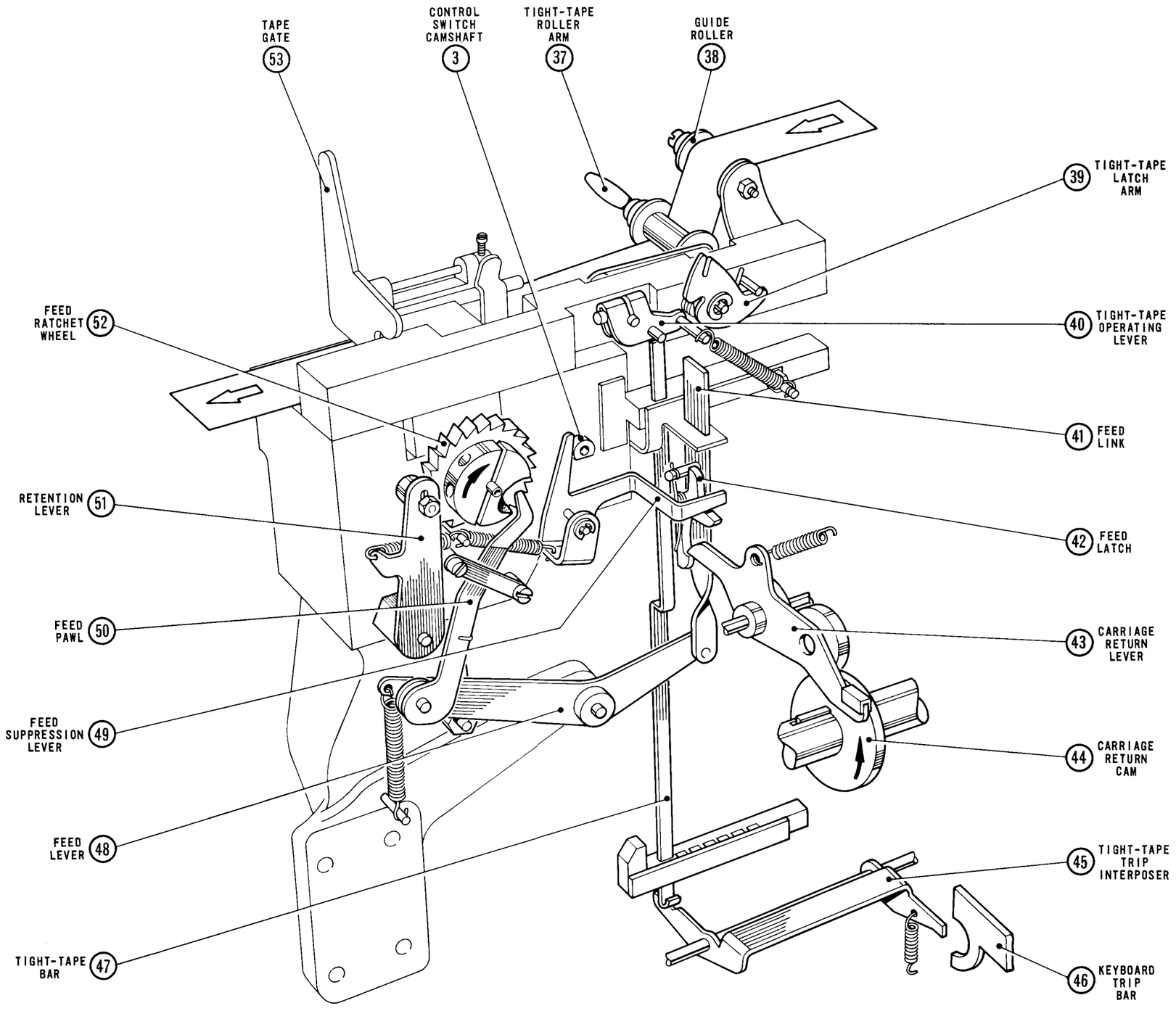

Fig. H.5 FEED AND TIGHT-TAPE MECHANISMS

5. LUBRICATION INSTRUCTIONS

Lubricate all pivots and bearings with Creed Lubricant No.2 at the intervals recommended in the Maintenance Instructions (Part 3, pages 1-10).

6. ADJUSTMENT INSTRUCTIONS

1. Keyboard Combination Bar Reset

Check

1.1 Set the manual control switch to OFF. Depress any key on the keyboard, lift the translator clutch abutment and turn the machine by hand until the roller on the combination bar reset lever, Fig.H.6, is approximately 1/8 in. (dimension 'ha' - inset 1) off the peak lift of the combination bar reset cam. Check that in this position the combination bar lever latch has now reset.

Action

1.2 If this is not so, clacken the nut securing the reset lever eccentric and adjust the eccentric until dimension 'ha' is obtained. Tighten the nut.

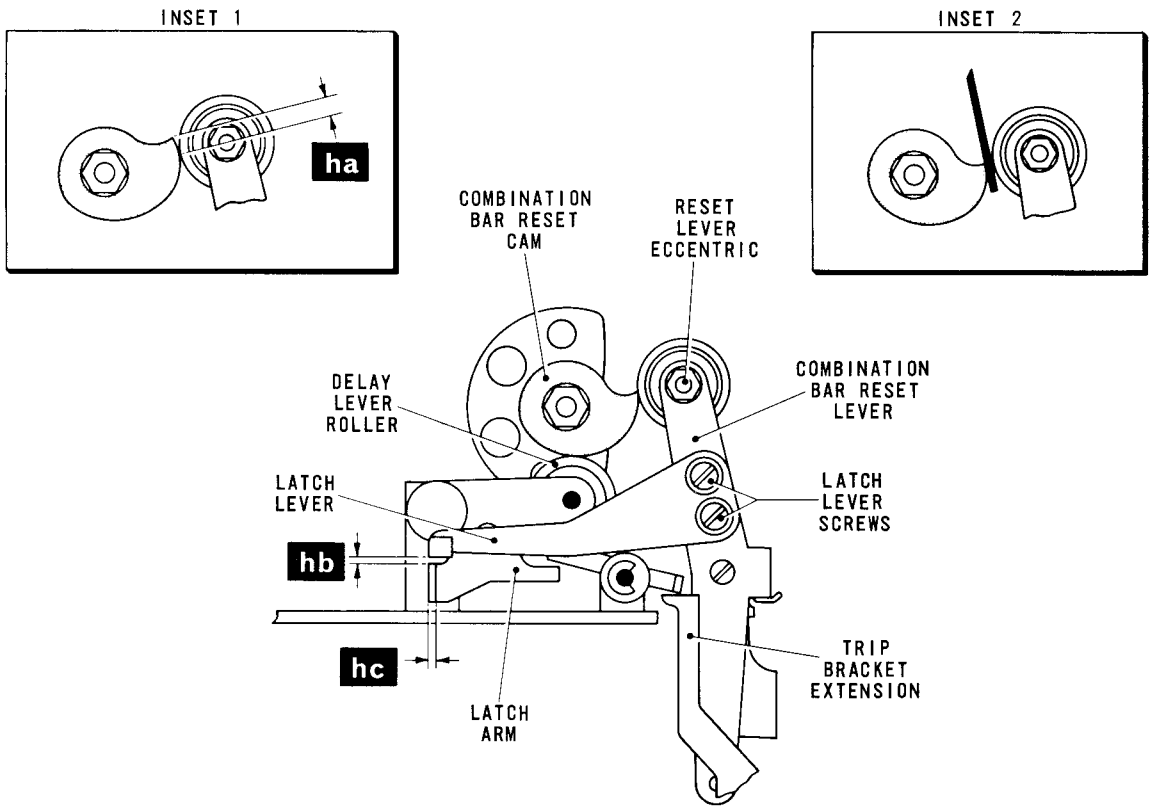

Fig. H.6 COMBINATION BAR RESET AND DELAY MECHANISMS

Check

1.3 Set the manual control switch to ON. Continue to turn the machine by hand until the roller on the reset lever is on the peak lift of the reset cam. Insert a .005 in. feeler gauge between the roller and the cam, as shown in inset 2. Depress each key on the keyboard separately in turn and check that all the keys have unrestricted movement.

Action

1.4 If necessary, refine Adjustment 1.2 above until the correct condition is obtained.

2. Delay Mechanism

Check

2.1 Lift the translator clutch abutment and turn the machine by hand until the roller on the combination bar reset lever, Fig.H.6, is on the peak lift of the combination bar reset cam. Depress the trip bracket extension so that the roller on the delay lever engages the reset cam. Check that there is now a clearance of .010 - .020 in. (dimension 'hb') between the shoe on the left-hand end of the latch lever and the top of the latch arm. Check also that the amount of engagement between the latch arm and the latch lever is approximately .045 in. (dimension 'hc'), i.e. the thickness of the end of the arm.

Action

2.2 To adjust, slacken the screws securing the latch lever and position the lever to satisfy the required conditions. Tighten the screws.

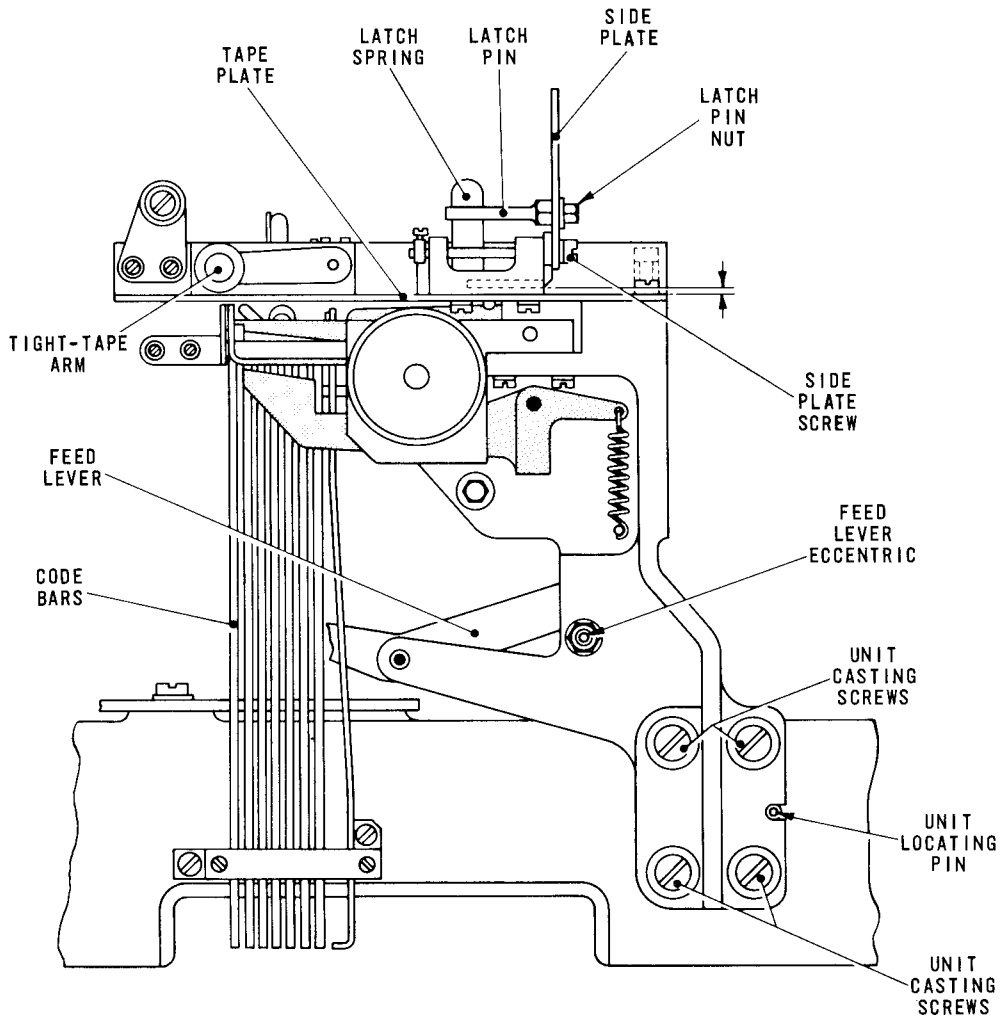

Fig. H.7 TAPE READER—RIGHT-HAND SIDE VIEW

3. Pecker Height

Check

3.1 Lift the translator clutch abutment and turn the machine by hand until the code bars, Fig.H.7, are fully raised. Check that the tips of the peckers are now .005 - .010 in. below the top surface of the tape plate.

Action

3.2 If adjustment is required, slacken the two screws securing the abutment plate, Fig.H.8. Slacken the four screws securing the unit casting, Fig.H.7, and swing the casting until the correct setting is obtained. Ensure that the unit locating pin is held against the casting during this operation. Tighten the four casting screws. Position the abutment plate, Fig.H.8, to abut against the translator rear frame and secure the plate with its two screws.

4. Tape-Out Seeker Height

Check

4.1 Set the manual control switch to ON. Lift the translator clutch abutment and turn the machine by hand until the peckers are fully withdrawn. Check that the tape-out seeker, Fig.H.9, is between .004 in. above and .008 in. below the top surface of the tape plate, Fig.H.7.

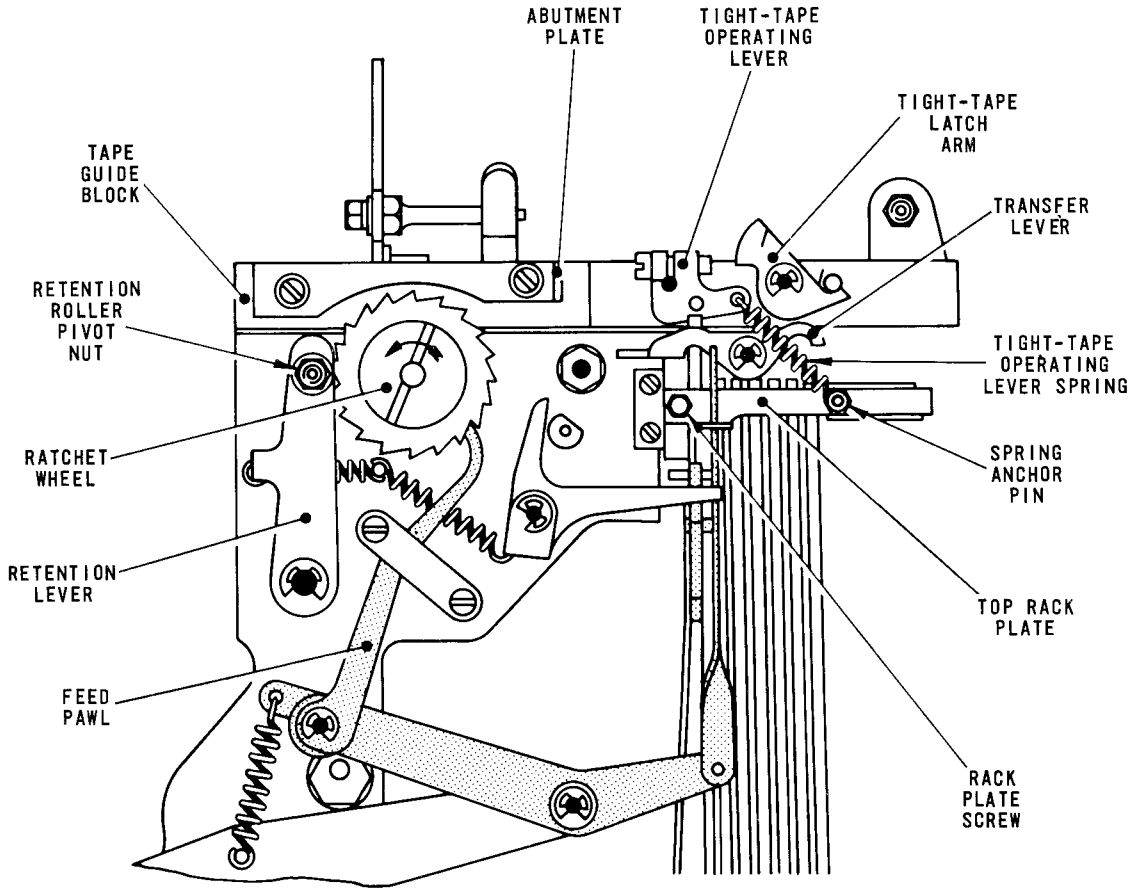

Fig. H.8 TAPE FEED RATCHET MECHANISM

Action

4.2 To adjust, remove the tight-tape operative lever spring, Fig.H.8, slacken the screw and spring anchor pin securing the top rack plate and move the **inner** plate carrying the transfer lever until the correct setting is obtained. Secure the top rack plate with its screw and spring anchor pin. Refit the tight-tape operating lever spring.

5. Feed Latch

Check

5.1 Set the manual control switch to ON. Check that the latching surface of the feed latch, Fig.H.10, lies in the path of the carriage return lever but clears it by .005 - .010 in. (dimension 'hd').

5.2 Depress the arm of the feed latch and check that the latch is free to move clear of the carriage return lever, and that it will snap back into the position shown in the figure as soon as it is released.

Action

5.3 To adjust, slacken the nut clamping the feed lever eccentric, Fig.H.7, and turn the eccentric until dimension 'hd' is obtained. Secure the eccentric with its clamp nut.

6. Retention Lever

Check

6.1 Turn the ratchet wheel, Fig.H.8, slowly from front to rear until the feed pawl **just** drops into a tooth in the wheel. Check that the periphery of the wheel can now be turned a further .010 - .020 in. before the retention lever roller fully engages the teeth.

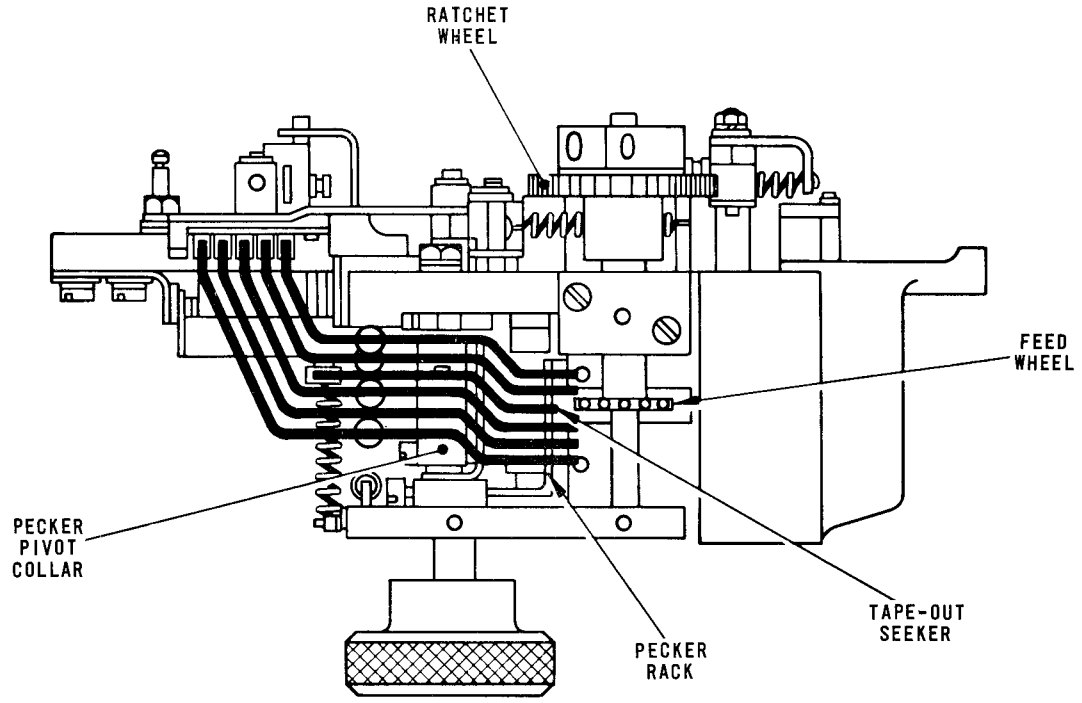

Fig. H.9 PLAN VIEW (TAPE PLATE REMOVED)

Action

6.2 To adjust, slacken the nut clamping the retention roller pivot pin and position the pin in its slot in the retention lever until the condition is satisfied. Secure the pin with its clamp nut.

7. Pecker Alignment

Check

7.1 Set the manual control switch to ON. Light the translator clutch abutment and turn the machine by hand until the peckers and tape-out seeker, Fig.H.9, are flush with the top surface of the tape plate.

7.2 Place a length of fully-punched tape over the feed wheel and pull the tape towards the front of the machine until the top pin of the feed wheel is against the leading edge of the feed hole. Check that the peckers are now in longitudinal alignment with the code holes in the tape. (Ignore lateral alignment at this stage.)

Action

7.3 To adjust, slacken the two screws securing the ratchet wheel and carefully turn the feed wheel in relation to the ratchet wheel until the correct condition is obtained. Tighten the screws.

Check

7.4 With the machine set up as in Check 7.1, ensure that the edge of the tape is registering against the side of the tape guide block, Fig.H.8. Check that the peckers are now in lateral alignment with the code holes in the tape.

Action

7.5 To adjust, slacken the screw securing the pecker pivot collar, Fig.H.9, and the two screws securing the pecker rack, and move the peckers on their pivot until the correct condition is obtained. Tighten the two pecker rack screws, re-position the pecker pivot collar lightly against the end pecker and secure it with its screw. Latch down the tape gate and turn the manual control knob from ON to OFF to ensure that the peckers pass freely through the code holes.

8. Tape Gate Latch

Check

8.1 Close the tape gate. Check that the gate is held down by the latch spring, Fig.H.7, firmly and without any vertical play, yet can be easily unlatched.

Action

8.2 To adjust, ensure that the latch spring is vertical, slacken the nut securing the latch pin and engage the pin with the camming face of the spring until the condition is satisfied. Tighten the nut.

9. Tape Gate

Check

9.1 Check that the tape gate is positioned centrally over the peckers and that there is a parallel clearance of .011 - .013 in. (dimension 'he') between the upper surface of the tape plate, Fig.H.7, and the underside of the gate.

Action

9.2 To adjust, slacken the two screws securing the side plate and insert a .012 in. feeler gauge under the gate near the gate hinge and clear of the peckers. Position the gate so that its slots are centrally over the peckers, and press it down on to the gauge. Tighten the side plate screws and remove the gauge.

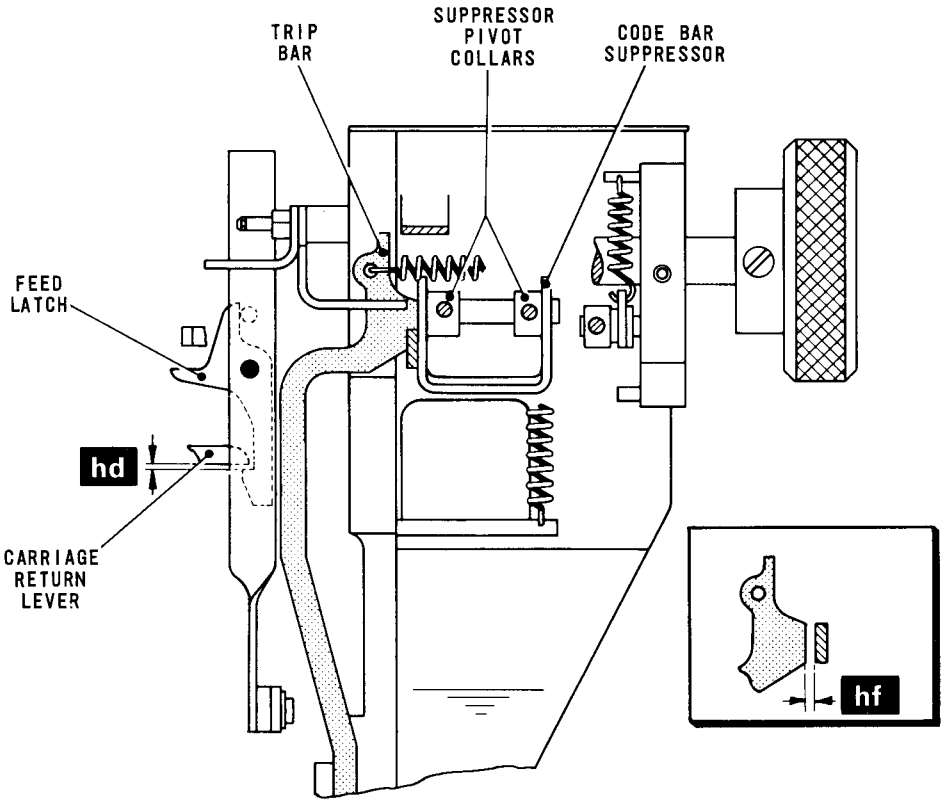

Fig. H.10 TRIP BAR/CODE BAR SUPPRESSOR MECHANISM

10. Trip Bar

Check

10.1 With no tape in the gate, check that there is a clearance of .004 - .010 in. (dimension 'hf' - inset) between the trip bar, Fig.H.10, and the code bar suppressor.

Action

10.2 To adjust, slacken the screws securing the suppressor pivot collars and adjust the code bar suppressor laterally until dimension 'hf' is obtained. Holding the suppressor in this position, set the collars against each flange as shown in the figure. Tighten the collar screws.

11. Keyboard Code Interposers

Check

11.1 With the manual control switch set to ON and the peckers fully raised, remove the signal and power sockets from the rear of the machine main base and

carefully turn the machine on its back. Depress the Letters key and check by eye (through the slot in the right-hand drawer runner) that there is an estimated vertical clearance of .030 - .045 in. (dimension 'hg' - inset 1) between No.1 code interposer, Fig.H.11, and No.1 combination bar. Check also that the code interposers are in alignment with the combination bars and vertical code bars, Fig.H.7.

★ Dimension 'hg' will show a progressive increase for each code interposer.

Action

11.2 To adjust for vertical clearance, remove the four rubber feet and support pillars together with the two round-headed screws which secure the tape drawer assembly. Take care not to damage the tape-out switch operating lever which protrudes through the SRBF cover plate. Remove the five screws securing the SRBF cover plate and take off the plate. Slacken the two screws securing the left-hand bearing bracket, Fig.H.11, and raise or lower the bracket until the required clearance is obtained. Tighten the screws.

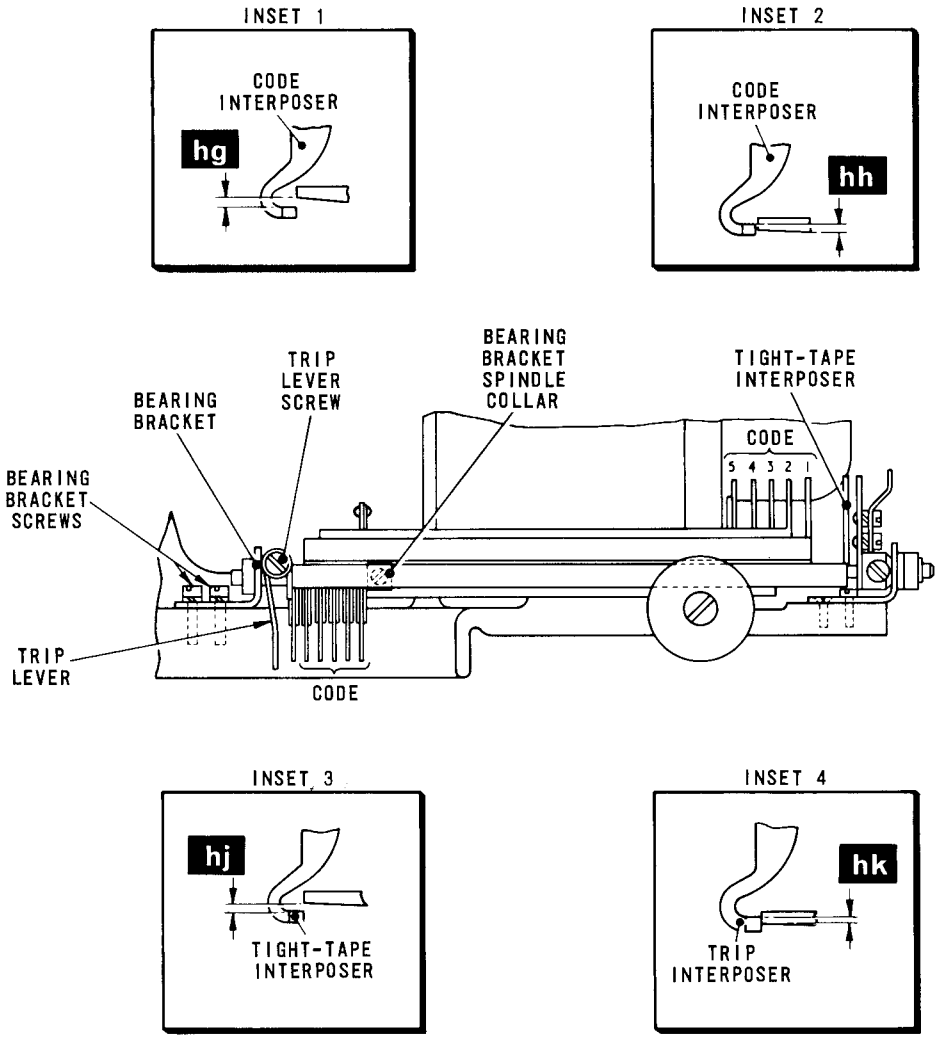

Fig. H.11 CODE FRAMES MECHANISM

11.3 To adjust for alignment with the combination bars and vertical code bars, Fig.H.7, slacken the screw securing the trip lever, Fig.H.11, and the screw securing the bearing bracket spindle collar, and position the bearing bracket, trip lever and collar until the correct condition is obtained. During this adjustment, ensure that the end-play in the code frames is kept to a minimum. Tighten the bearing bracket screws, trip lever screw and the screw clamping the bearing bracket collar.

Check

11.4 Reset the keyboard and set the manual control switch to OFF. Insert a short length of blank tape and turn the manual control switch to ON. Check that the code interposers now engage the faces of their corresponding combination bars by .030 - .045 in. (dimension 'hh' - inset 2).

Action

11.5 To adjust, refine Adjustment 11.2 until dimension 'hh' is obtained. Refit the SRBF cover plate and secure it with its five screws. Refit the tape drawer, ensuring that the tape-out switch operating lever is in the correct position.

12. Tight-Tape Arm

Check

12.1 With the tight-tape arm, Fig.H.7, fully lowered as shown in the figure, check that there is a vertical clearance of .030 - .045 in. (dimension 'hj' - inset 3) between the tight-tape interposer, Fig.H.11, and the keyboard trip bar.

Action

12.2 To adjust, slacken the screw clamping the tight-tape operating lever, Fig.H.8, and position the lever until dimension 'hj' is obtained. Tighten the clamp screw.

13. Manual Trip

Check

13.1 Insert a short length of blank tape and set the manual control switch to ON. Check that the trip interposer, Fig.H.11, now engages the face of the keyboard run out bar by .030 - .045 in. (dimension 'hk' - inset 4).

Action

13.2 If this is not so, slacken the screw securing the trip bracket extension, Fig.H.3. Slacken the two screws securing the trip arm, lift the arm to its highest position and tighten its screws. With the length of blank tape still inserted, turn the manual control switch to OFF. Slacken the screw securing the manual trip lever until it is friction tight, and pull down the trip arm until the keyboard is tripped. Depress the manual trip lever until the trip bar, Fig.H.10, engages the code bar suppressor. Turn the manual control switch to ON so that the manual trip lever, Fig.H.3, is lifted and secure the lever in this position. Turn the manual control switch to OFF and ensure that the trip interposer, Fig.H.11, is now clear of the keyboard run out bar. Tighten the screw securing the trip bracket extension, Fig.H.3.

★ When this adjustment has been completed, ensure that there is a small amount of free movement on the keyboard trip slat when the keyboard has been tripped. If this is not so, refine the adjustment of the manual trip lever.

14. Delay Mechanism

Check

14.1 With the machine in the rest position, set the manual control switch to OFF and check that the trip bracket extension, Fig.H.3, pivots the disable lever so that the left-hand end of the lever moves the latch arm out of engagement with the shoe on the end of the latch lever with a minimum clearance of 0.10 in.

14.2 Turn the manual control switch to ON and check that the trip bracket extension now moves down so that the disable lever does not restrict the movement of the release delay lever.

Action

14.3 To adjust, slacken the screw securing the trip bracket extension and adjust the extension until both conditions are satisfied. Tighten the screw.