Bulletin No. 143
November, 1930

TELETYPE

PRINTING TELEGRAPH SYSTEMS

DESCRIPTION & ADJUSTMENTS

OF THE

REPERFORATOR

(MODEL 12)

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CORPORATION
SUBSIDIARY OF
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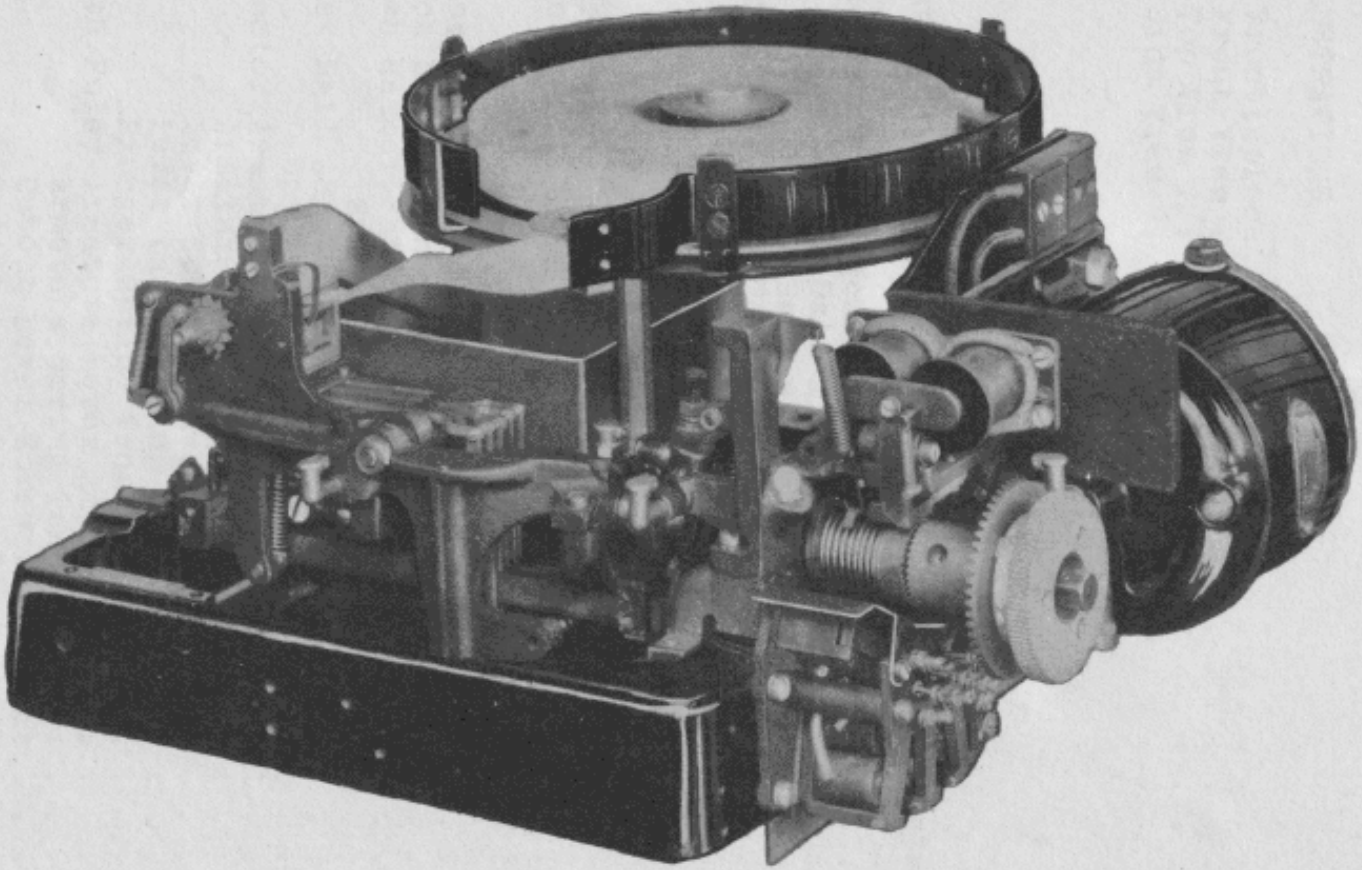

ILLUSTRATION 1

CONTENTS

ILLUSTRATIONS

ADJUSTMENTS INDEX

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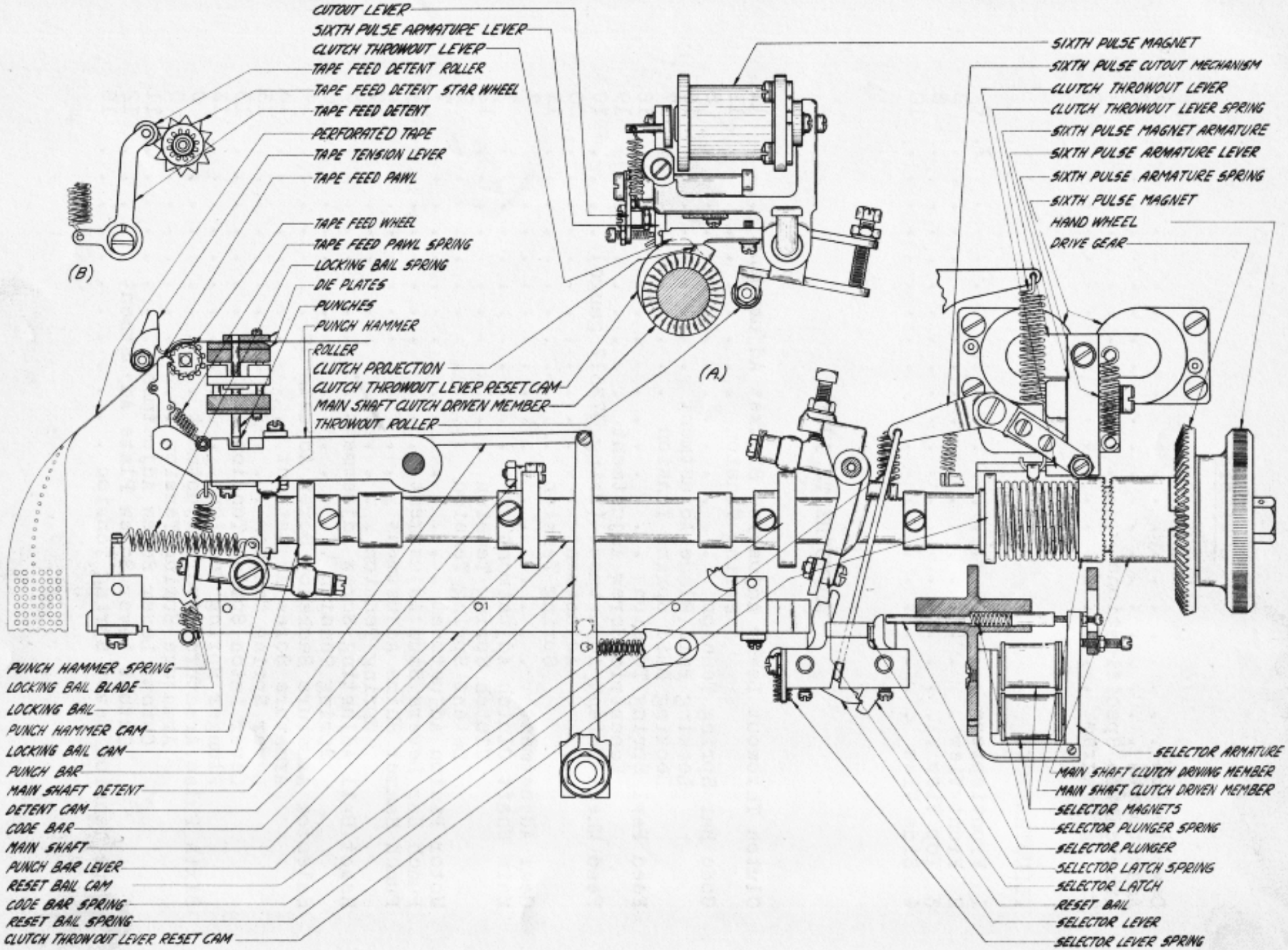

FIGURE 1.

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DESCRIPTION OF THE TELETYPE REPERFORATOR (MODEL 12)

GENERAL

The Model 12 Teletype reperforator is a motor driven tape reperforating machine which receives electrically transmitted signals and records them on a paper tape by perforating thereon combinations of holes. The five unit code signals thus recorded may be transmitted on other similar printing telegraph circuits thus eliminating manual preparation of tape with a perforator at the relaying station.

The reperforator is constructed so that it may be used in place of or in conjunction with a Teletype 12 type printer when a printed copy is also desired. The selecting mechanism and the main operating shaft are similar to those used in the 12 type printer. The printing mechanism is replaced by a perforating mechanism which is similar to that used on the Teletype five unit perforator. The combination to be perforated by the reperforator is determined by the setting of five code bars which are actuated by five selector magnets controlled by the line signals. The code bars control the positions of the punch bars which are located in the punch hammer (Fig. 1). Following the positioning of the punch bars the punch hammer moves upward causing the selected punch bars to push the corresponding punch pins through the tape. From the foregoing it may be seen that combinations perforated in the tape correspond to the received signals.

SELECTING UNIT

The five selector magnets are mounted in the rear left corner of the reperforator. The coils of these magnets are connected to the receiving or distributing unit and are operated by the line signals as they are received. When a magnet is energized the armature pulls up and moves the selector plunger to the left. (Fig. 1) The selector plunger strikes the upper arm of the selector latch thereby disengaging the selector lever. The upper end of the lever moves to the left and pushes the corresponding code bar in the same direction. Each selector magnet is either energized or unenergized determined by the combination of the code for the character received.

During the time the selectors are being operated the code bar lock lever (shown at left of Figure 1) is being held away from the code bars and the selector lever reset bail (shown at the right of Figure 1) is held away from the selector levers. After the code combination has been received by the printer, a local sixth pulse is transmitted from the receiving distributor to the sixth pulse magnets. The sixth pulse magnet armature is pulled up (Fig. 1) thus permitting the clutch throwout lever to move out of engagement with the projection on the driven clutch sleeve. The driven clutch sleeve will then engage with the driving clutch sleeve and cause the main shaft to revolve thus starting the operating cycle of the reperforator.

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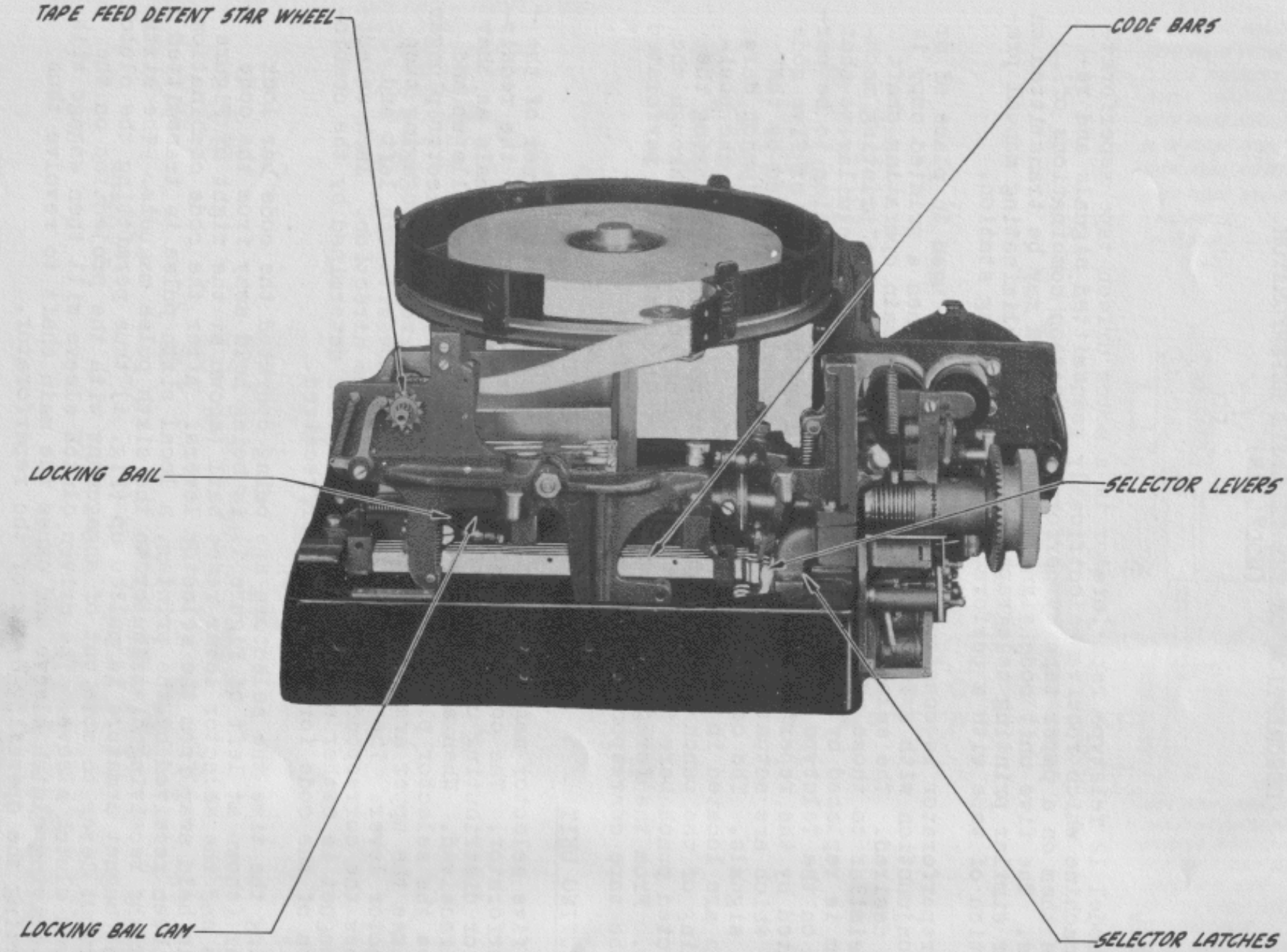

FRONT VIEW
ILLUSTRATION 2

CODE BAR LOCK LEVER

As soon as the main shaft starts revolving the code bar lock cam will permit the lock lever to move down and engage with the notches in the upper side of the code bars. This will hold the code bars in their selected positions while the selector levers are being reset and the new combination is being set up in the selector levers.

SELECTOR LEVER RESET

After the code bar lock lever has engaged with the code bars the selector levers may be reset. This is accomplished by the operation of the reset cam which permits the lower end of the reset bail to move against the upper projection of the selector levers. The lower ends of the selector levers will move downward and engage with the notches of the selector latches. The latches and levers are then ready for the reception of the next letter. It should be noted that the reperforator overlap is secured by resetting the levers at this particular time so that the impulses for the next perforation may be received while the reperforator is performing its operations determined by the previous setting of the selector levers.

CLUTCH MECHANISM

Figure 2 shows the clutch mechanism and Figure 1 shows the shaft together with its cams, which perform the various functions of the reperforator. Over the right hand end of the main shaft is fitted the driving clutch sleeve with teeth on its left edge and a gear fastened to the right end. The gear meshes with a pinion on the motor shaft and is continually rotating. To the left of the driving sleeve is a driven sleeve on the right edge of which are teeth that may mesh with the driving sleeve causing the main shaft to revolve. The left hand side of the driven sleeve has four tongues which slide into four grooves on a collar secured to the main shaft. The driven sleeve therefore may be moved in and out of mesh with the driving sleeve thereby making a driving connection with the main shaft. At the end of each revolution of the main shaft a projection on the driven sleeve is engaged in a "V" shaped slot in the clutch throwout lever which causes the driven clutch to move to the left and out of engagement with the driving clutch bringing the main shaft to rest. When the sixth pulse magnet operates, the throwout lever is permitted to disengage from the projection on the driven sleeve, which in turn is moved to the right by a spring into engagement with the driving sleeve causing the main shaft to revolve.

CLUTCH THROWOUT RESET CAM

The clutch throwout reset cam is located just outside of the main shaft bearing and is the last cam to the right shown in Figure 1. Referring to Figure 4, it is to be noted that as the main shaft revolves the clutch throwout lever cam will move against the throwout roller, bringing the left edge of the throwout lever down into engagement with the notch of the armature lever. As described in the foregoing the operation of the sixth pulse initiates the rotation of the main shaft. Towards the end of the revolution the resetting cam resets the clutch throwout lever so that the clutch will be disengaged. At the end of

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the revolution the clutch sleeves are disengaged by the camming of the projection on the driven sleeve in the slot of the throwout lever.

MAIN SHAFT DETENT

To prevent rebounding of the main shaft when the projection on the driven clutch sleeve engaged in the clutch throwout lever and to guard against any possible tendency of the shaft to creep back when the clutches are disengaged, a detent is provided as shown in Figures 1 and 3.

PERFORATING MECHANISM

After the code bar lock lever has been permitted to engage the notches in the code bars in order to hold the selected combination securely, the punching of the tape will take place. The punch hammer cam located at the extreme left of the main shaft is so designed that its high portion revolving against the punch hammer will cause the selected punch bars to move the corresponding punch pins upwards thru the tape, perforating it. (Figure 1). Simultaneously with every perforated combination, a small feed hole is punched into the tape.

FEED MECHANISM

Spaced at equal intervals around the periphery of the feed roll are twelve projecting feed pins which mesh with the feed holes punched in the tape (Figure 1). On the same roll at the forward end a ratchet with twelve teeth is located.

A feed pawl is pivoted at the end of the punch hammer and held against the feed ratchet by a spring. When the punch hammer is moved upward by the cam action the pawl moves with it and engages a tooth of the feed ratchet. During its downward travel assisted by the punch hammer spring the feed pawl causes the feed roll to revolve, thus moving the tape forward one feed hole. To keep the feed holes of the tape securely in mesh with the pins on the feed roll a tape tension lever is provided as shown in Figure 1. The travel of the tape for each operation of the punch hammer is accurately limited by a twelve tooth star wheel attached to the forward end of the feed roll shaft against which a detent roller is held by a strong spring (Figure 1-B).

SIXTH PULSE CUTOUT

It is to be noted that when the reperforator is to be used in conjunction with a receiving distributor which is continually rotating, a sixth pulse will be received for every revolution and will therefore cause the reperforator to space the tape for each sixth pulse whether code signals are being transmitted or not. A means is therefore provided to prevent the reperforator from functioning unless some code combination is being received. This is accomplished by the sixth pulse cutout assembly (Figures 1 and 1-A). The cutout lever bail is made of steel wire formed in such a way as to rest across the top of the selector levers and to pivot on the cutout lever. Normally the lower end of the cutout lever is held upward by a spring in the path of the sixth pulse armature lever. If a sixth pulse is received when

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the cutout lever is in this position the sixth pulse armature will not be permitted to operate so as to release the throwout lever. It is therefore evident that the main shaft will not revolve. Should any of the selector levers be operated, the cutout lever bail will be moved upward, the lower end of the lever downward and out of the path of the sixth pulse armature. A sixth pulse then received will not be prevented from becoming effective.

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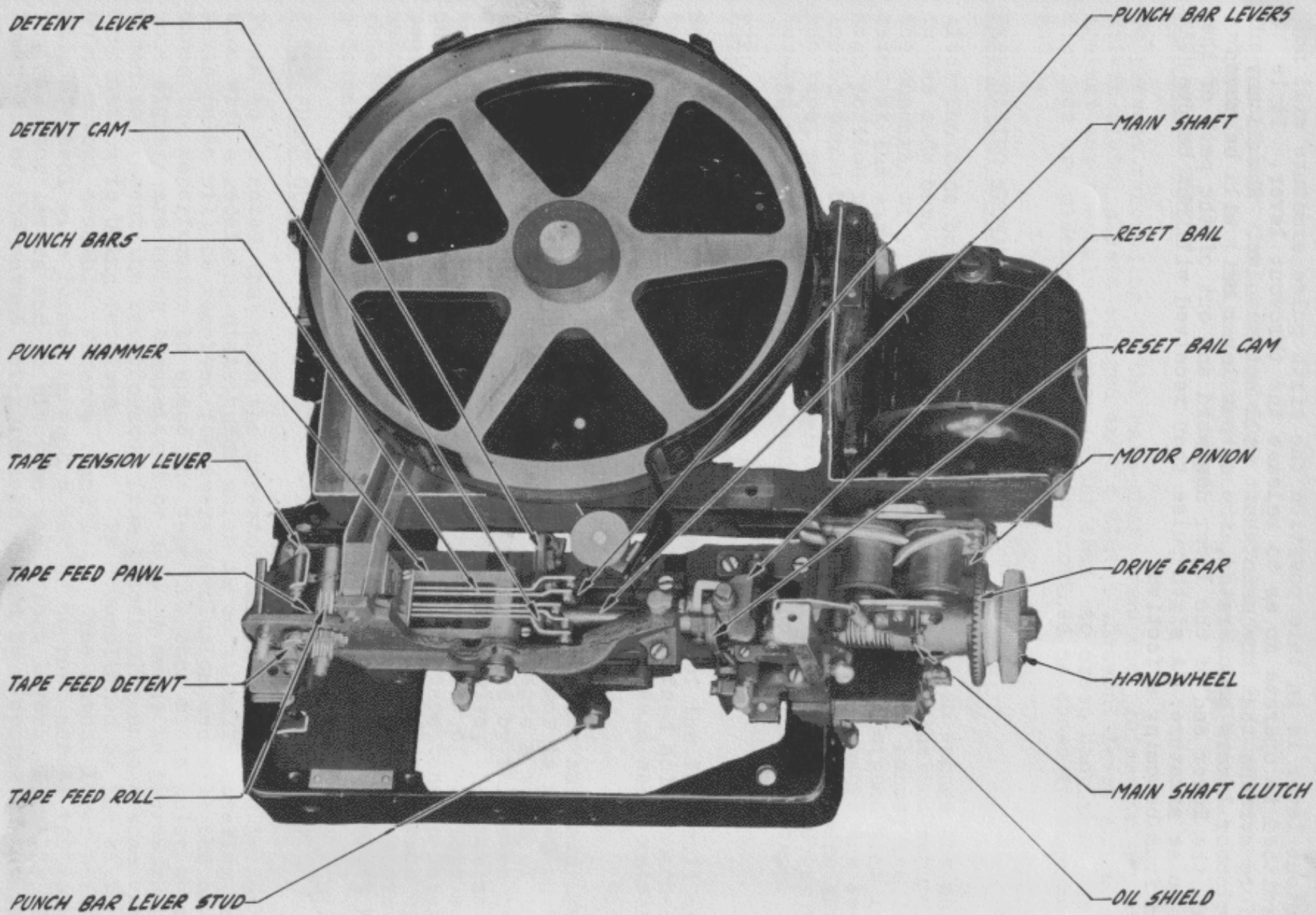


TOP VIEW
ILLUSTRATION 3

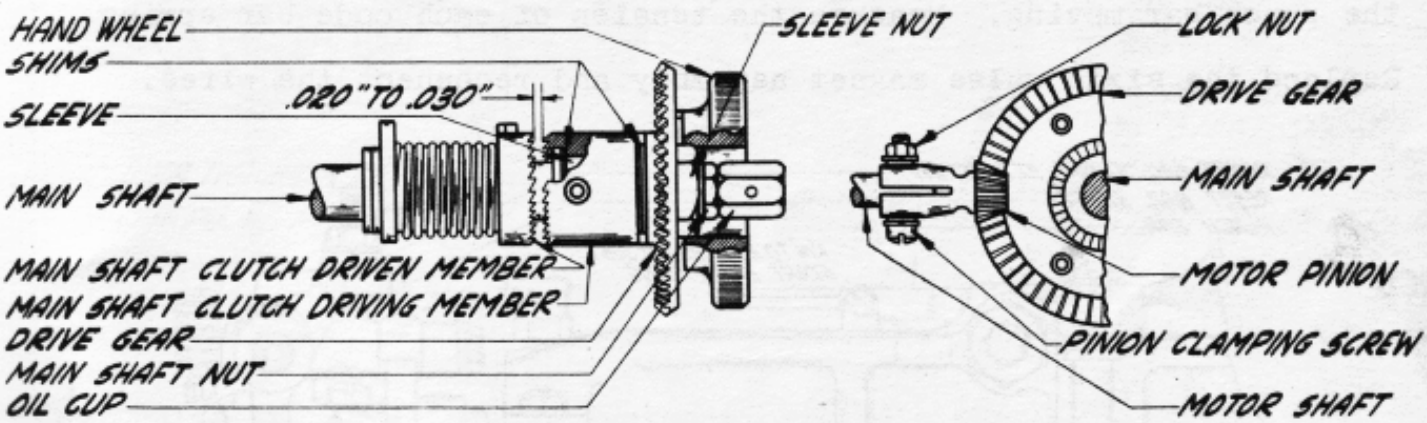
ADJUSTMENTS OF THE REPERFORATOR

The following adjustments are arranged in a sequence that would be followed if a complete re-adjustment of the reperforator were undertaken. This fact should be kept in mind when a single adjustment is to be made.

Any of the operations of the reperforator may be performed slowly by tripping any combination of the selector levers (Fig. 1) by hand, then holding away the sixth pulse cutout mechanism, trip the sixth pulse armature and turn the main shaft by means of the hand wheel. This feature is of value in studying the operations or in checking the adjustments.

Motor Pinion Adjustment, Fig. 2.

The motor pinion should be positioned on the motor shaft so that it engages the drive gear by the full length of the motor pinion teeth. The motor pinion may be positioned after loosening the pinion clamping screw. Lock the clamping screw by means of the locknut.



(SEE ILLUSTRATION 3.)
FIGURE 2.

Gear Adjustment, Fig. 2.

To secure the proper play between the main shaft gear and the motor pinion, add or remove shims between the gear and the driving clutch sleeve. The play should be held to a minimum, not exceeding .010" and there should be no bind throughout a complete revolution of the gear. To gain access to the shims, remove the hand wheel, main shaft oil retaining nut, shaft nut and washer, sleeve nut and lockwasher. When replacing the gear, insert tool #75766 through the clutch and into a sleeve hole to prevent the sleeve turning when tightening the nut.

Main Shaft Clutch Adjustment, Fig. 2.

When the clutch is fully disengaged there should be a clearance of from .020" to .030" between the driven and driving clutch teeth. Before measuring this clearance make sure that the clutches are fully

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disengaged by pressing the main shaft detent roller into the indent of the detent cam. This will complete the travel of the main shaft.

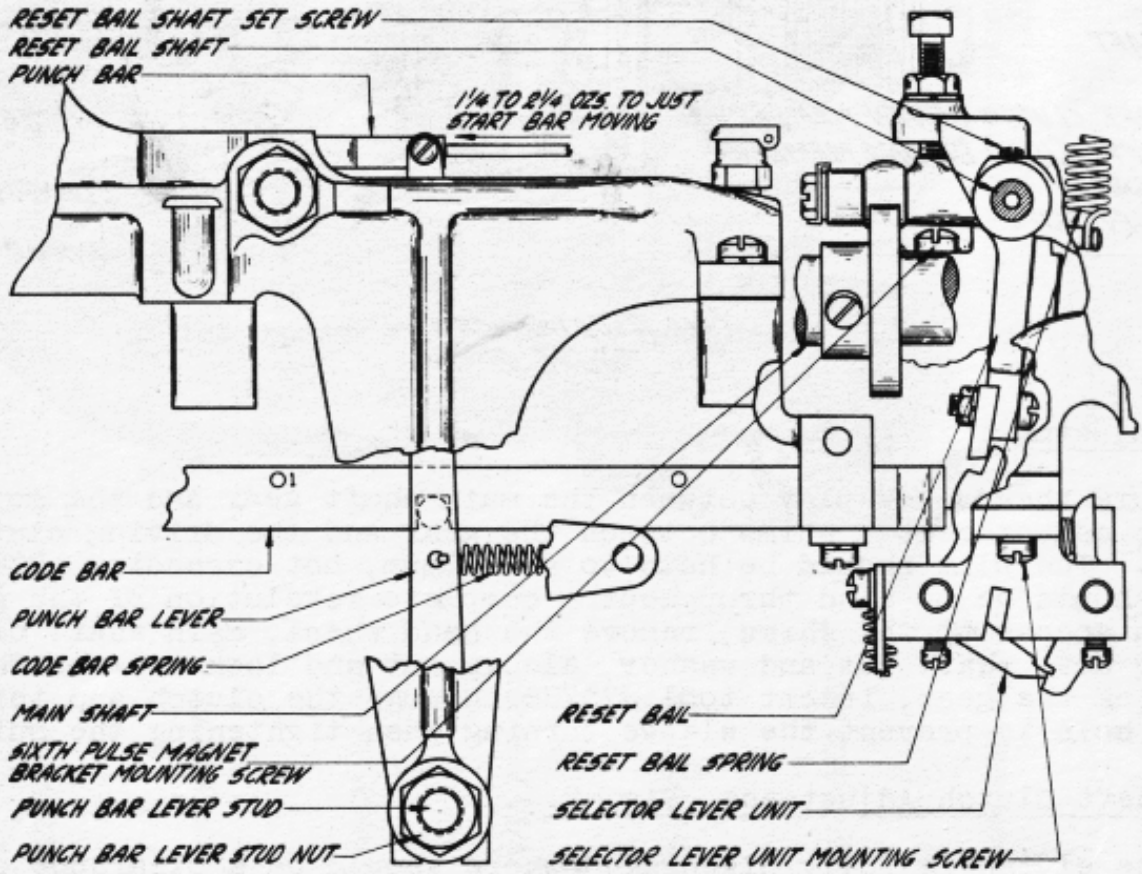
To increase the clearance add shims to the left end of the clutch sleeve. These shims should be removed from between the clutch and gear. To decrease the clearance remove shims from the left end of the clutch sleeve and add them to the space between the clutch and gear. If such an exchange of shims will not provide the proper clearance and it is necessary to add or remove shims from the assembly, the preceding gear adjustment should be rechecked.

Code Bar Spring Tension, Fig. 3.

In order to ascertain this tension, it will be necessary to remove the sixth pulse magnet assembly. Disconnect the wires from the right magnet lower terminal screw and the left magnet upper terminal screw, and push them back carefully out of the way. Loosen the reset bail shaft set screw and remove the reset bail shaft. Take out the three sixth pulse magnet bracket mounting screws and unhook the reset bail spring. Lift out the sixth pulse magnet assembly.

Apply an 8 oz. push scale to the right hand end of the punch bar and push horizontally. It should require from $1\frac{1}{4}$ to $2\frac{1}{4}$ ozs. to just start the punch bar moving. Measure the tension of each code bar spring.

Replace the sixth pulse magnet assembly and reconnect the wires.



(SEE ILLUSTRATION 2.)
FIGURE-3

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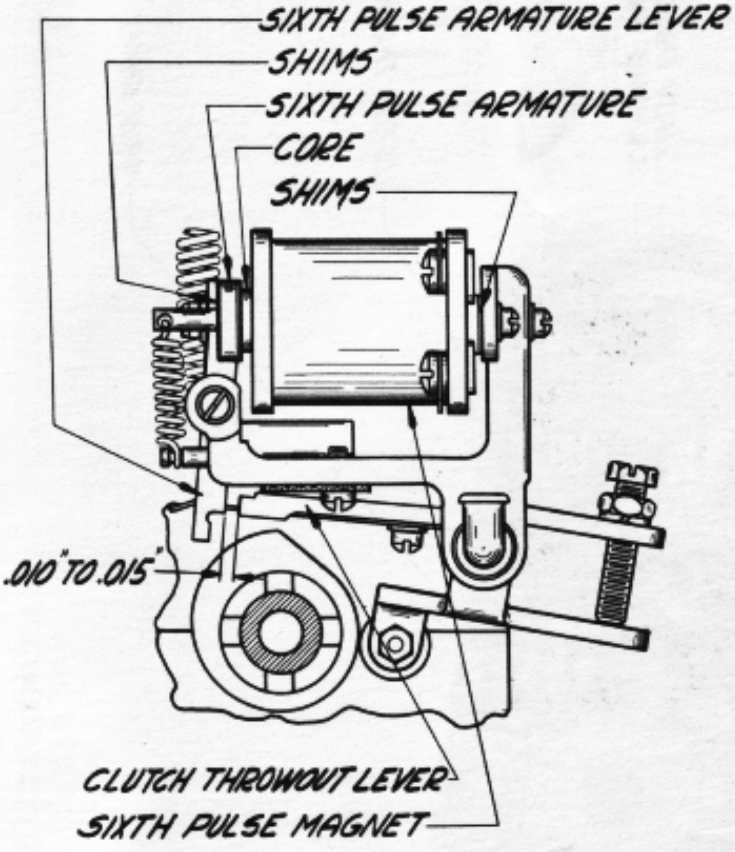
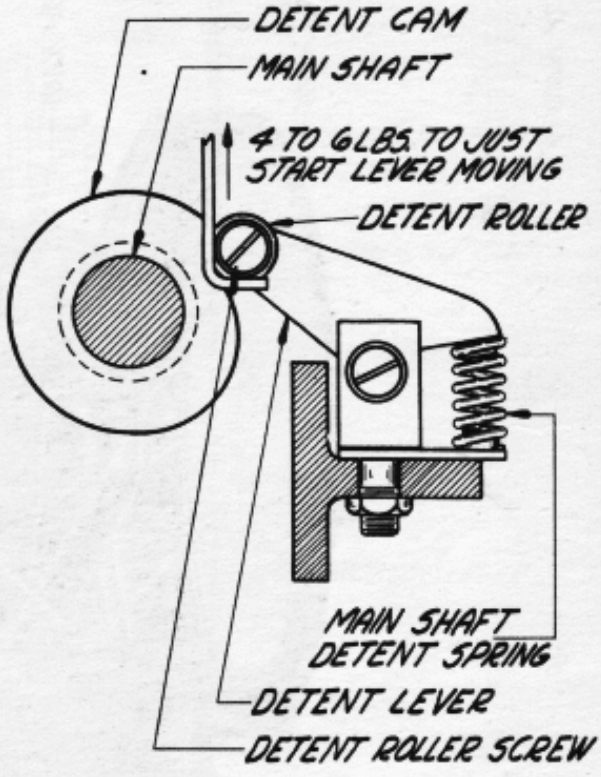
Main Shaft Detent Spring Tension, Fig. 5.

With the main shaft detent roller in the low part of the cam, a 12 lb. scale hooked over the head of the detent roller screw, a tension of from 4 to 6 lbs. should be required to just start the detent lever moving when the spring balance is pulled vertically upwards.



(SEE ILLUSTRATION 4)

FIGURE-4



(SEE ILLUSTRATION 3.)

FIGURE-5

Sixth Pulse Armature Lever Adjustment, Fig. 4.

Note: It should not be necessary to make this adjustment unless shims are disturbed.

When the sixth pulse armature is held firmly against the cores, there should be from .010" to .015" clearance between the end of the clutch throwout lever and the sixth pulse armature lever. This clearance is obtained by adding or removing shims between the sixth pulse armature and the sixth pulse armature lever.

Note: There are shims also between the ends of the magnet cores and the bracket to which the magnets are attached which, if necessary, can be varied in number to assist obtaining the above clearance. However, they are primarily intended to be used as a means of lining up the ends of the cores in respect to the sixth pulse armature.

Sixth Pulse Armature Spring Tension, Fig. 6.

Rotate the main shaft until the main shaft is disengaged. Unhook the

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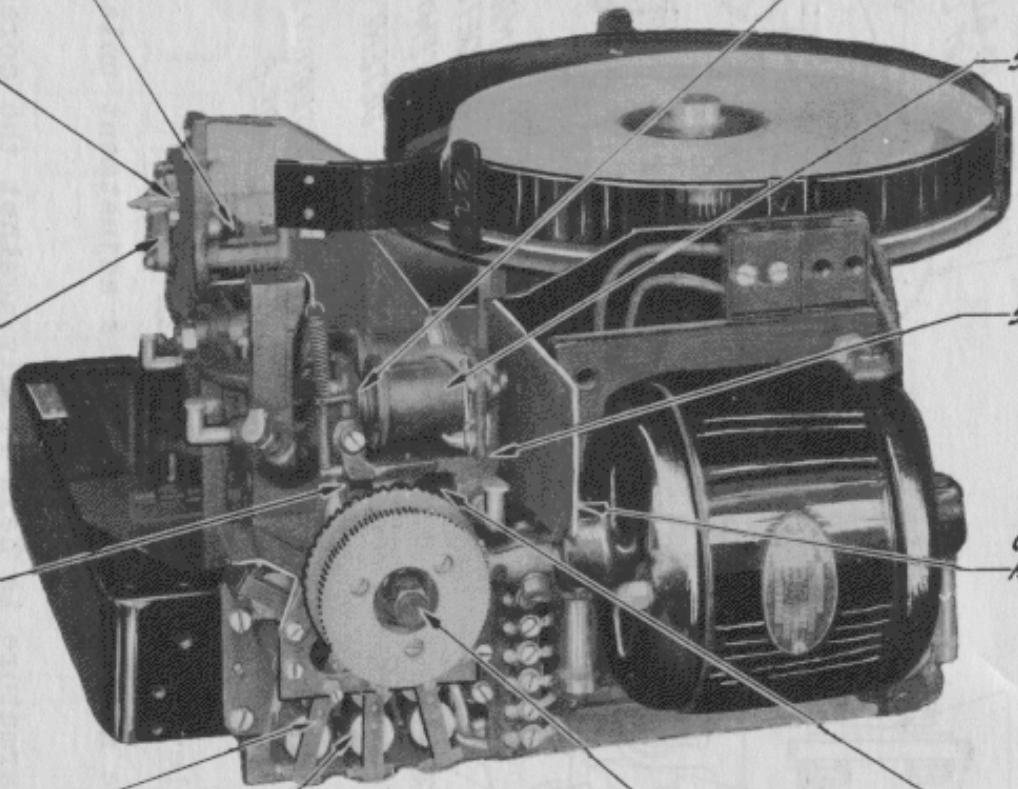
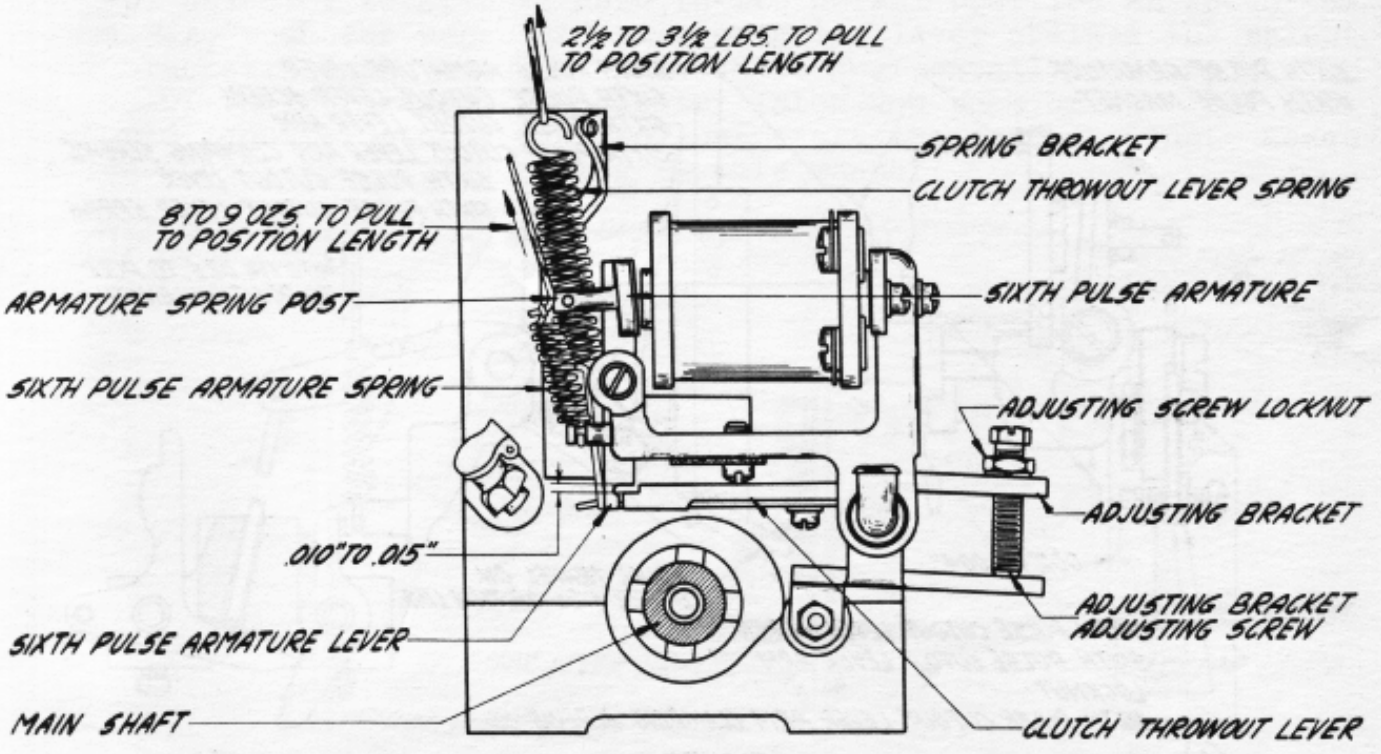


SIDE VIEW
ILLUSTRATION 4

sixth pulse armature spring from the armature spring post and hook on a 32 oz. scale. Pull the spring up vertically. It should require from 8 to 9 ozs. to just pull the spring to its position length. Replace spring.



(SEE ILLUSTRATION 4.)
FIGURE 6.

Clutch Throwout Lever Adjusting Bracket Adjustment, Fig. 6.

Operate the sixth pulse armature and rotate the main shaft until the clutch throwout lever is in its extreme downward position. Loosen the adjusting screw locknut and turn the adjusting bracket adjusting screw so that the clutch throwout lever overtravels the shoulder on the sixth pulse armature lever by .010" to .015". Lock the adjusting screw by means of its locknut.

Clutch Throwout Lever Spring Tension, Fig. 6.

The clutch throwout lever should be engaged with the shoulder on the sixth pulse armature lever. Unhook the clutch throwout lever spring from the spring bracket and hook a 12 lb. scale in the spring eye. It should require from 2½ to 3½ lbs. to pull the spring to its position length. Replace spring.

Sixth Pulse Cutout Lever Screw, Fig. 7-A.

With the sixth pulse armature and clutch throwout levers engaged, adjust the cutout lever screw so that there is from .002" to .004" space between the end of the screw and the armature when all the play of the cutout lever has been taken up in a direction to make this clearance a minimum.

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Sixth Pulse Cutout Lever Screw Plate Adjustment, Fig. 7-B.

Adjust the cutout lever screw plate so that the sixth pulse armature is locked by as much as it is free when cutout lever is in the unoperated and operated positions respectively.

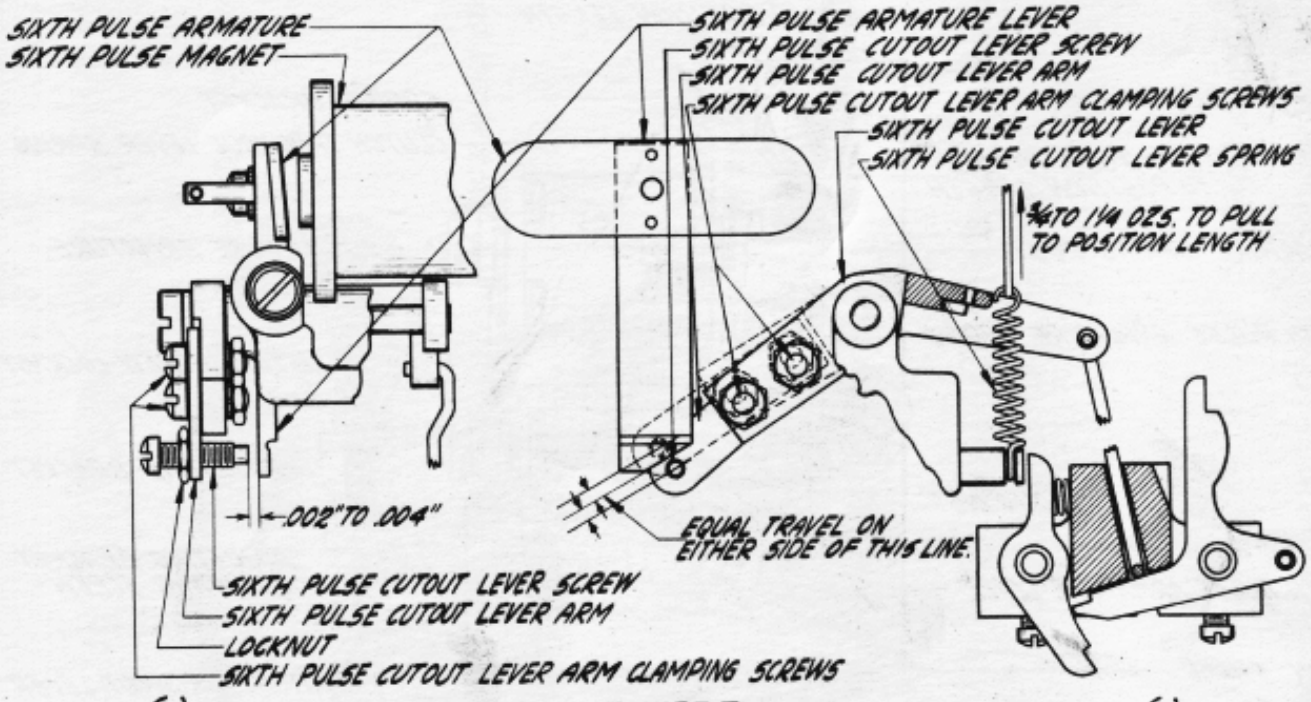
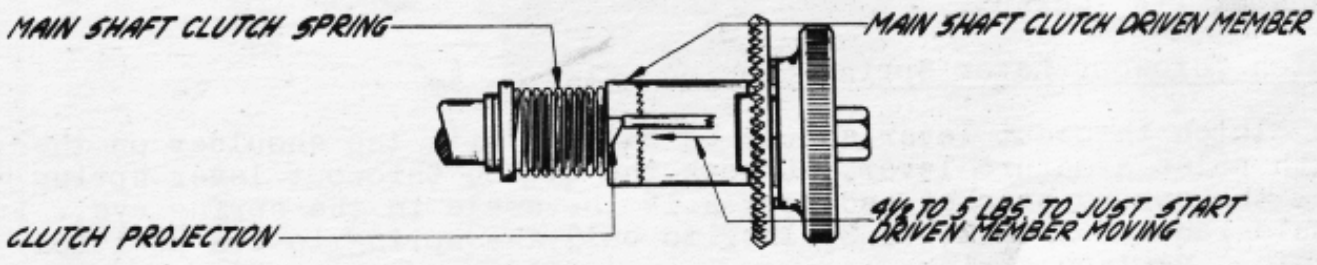


FIGURE-7

Main Shaft Clutch Spring Tension, Fig. 8.

Operate the sixth pulse armature and rotate the main shaft until the clutch projection is accessible. Apply a 12 lb. push scale against the clutch projection. It should require from 4½ to 5 lbs. to just start the driven clutch member moving away from the driving member.



(SEE ILLUSTRATION 3.)
FIGURE-8

Note: In order to take the lock pawl, the selector lever, and the selector plunger spring tensions, it will be necessary to remove the selector lever unit. To do this, detach the sixth pulse cutout bail from the cutout lever and remove the three selector lever unit mounting screws (Fig. 3).

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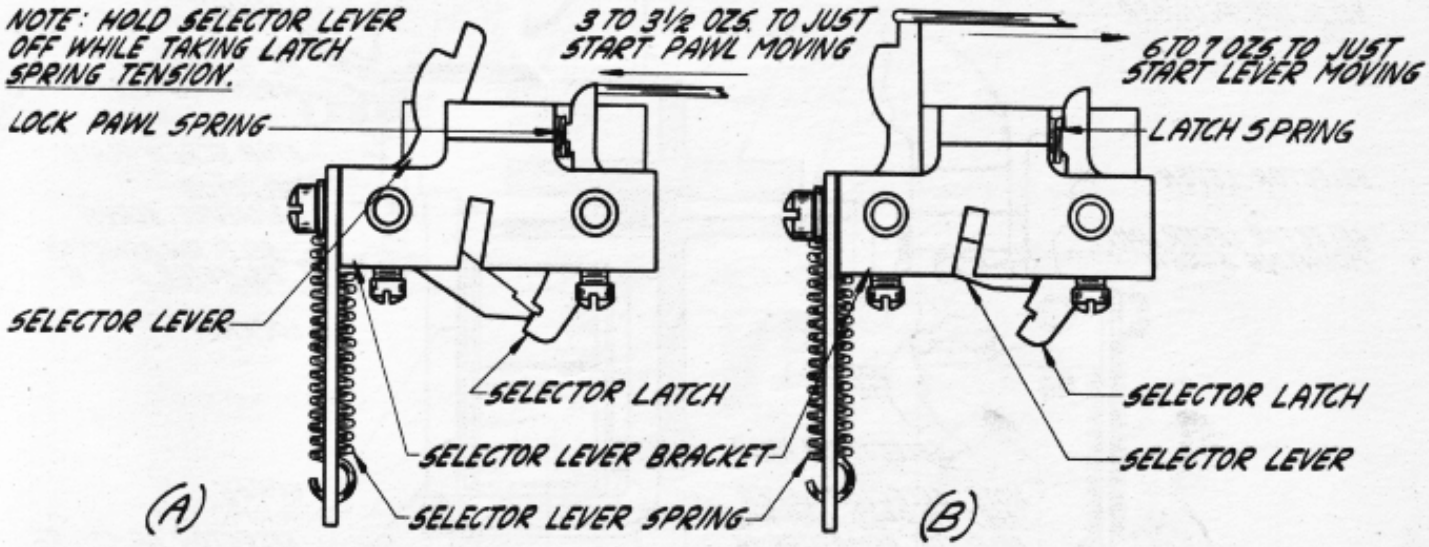
Selector Lever Latch Spring Tension, Fig. 9-A.

With the selector lever unit held in its normal position as shown in Figure 9-A, push the upper end of a selector lever against the selector lever bracket. Apply an 8 oz. push scale horizontally against the upper end of the corresponding selector latch and push against the spring. It should require 3 to 3½ ozs. to just start the latch moving. Measure the tension of each latch spring in this manner.



(SEE ILLUSTRATION 2.)
FIGURE-9

Selector Lever Spring Tension, Fig. 9-B.

The selector levers should be in their released position. This is obtained by pushing against the upper ends of the selector latches. Hook an 8 oz. spring scale over the upper end of a selector lever and pull horizontally against the spring. It should require from 6 to 7 ozs. to just start the selector lever moving. Measure tension of each selector lever spring in this manner.

Selector Plunger Spring Tension.

Loosen the selector magnet unit oil shield (Fig. 10) which is fastened by two screws to the stop screw plate. Remove the stop screw plate and the oil shield.

Apply an 8 oz. push scale to the end of a selector plunger and push horizontally against the spring. It should require from ½ to ¾ ozs. to hold the plunger flush with the selector magnet frame. Measure the tension of each selector plunger spring in this manner.

Note: Replace the selector lever unit, being careful not to bend the plungers. Replace the selector magnet oil shield and stop screw plate.

Selector Armature Screw Adjustment, Fig. 10-A.

Back off the selector armature screws so that when each armature is brought against the selector magnet pole pieces, the selector latch

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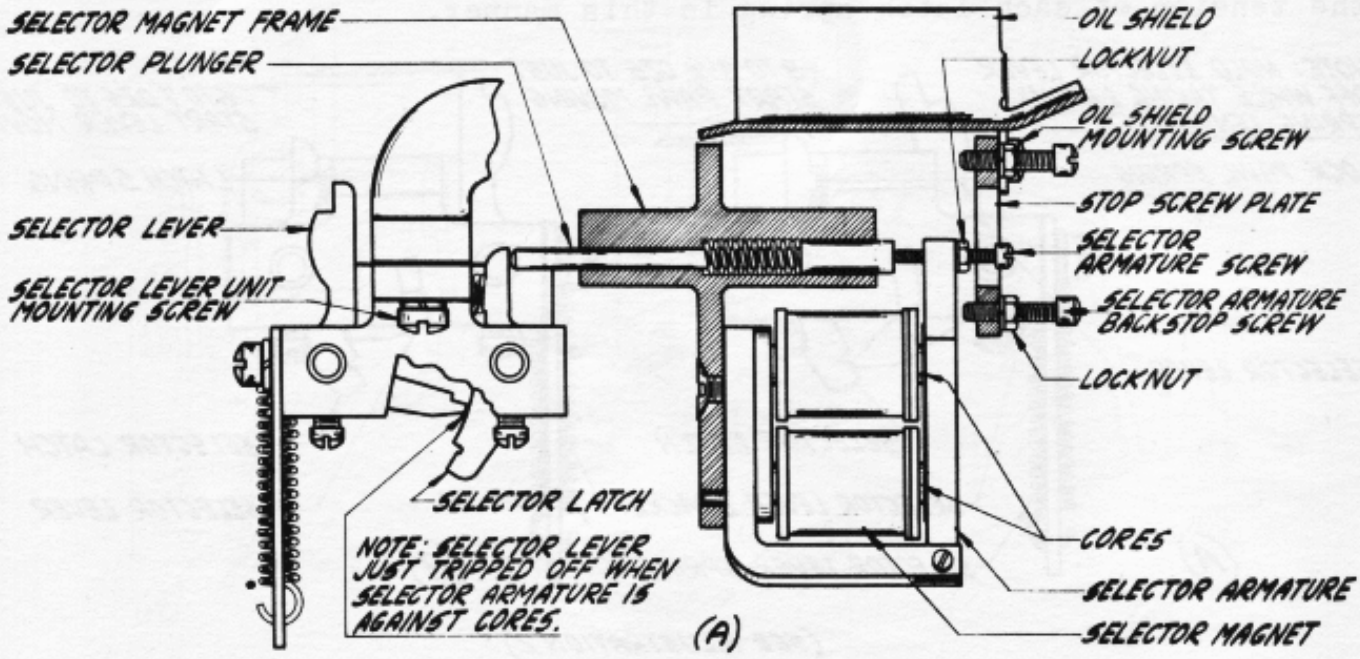
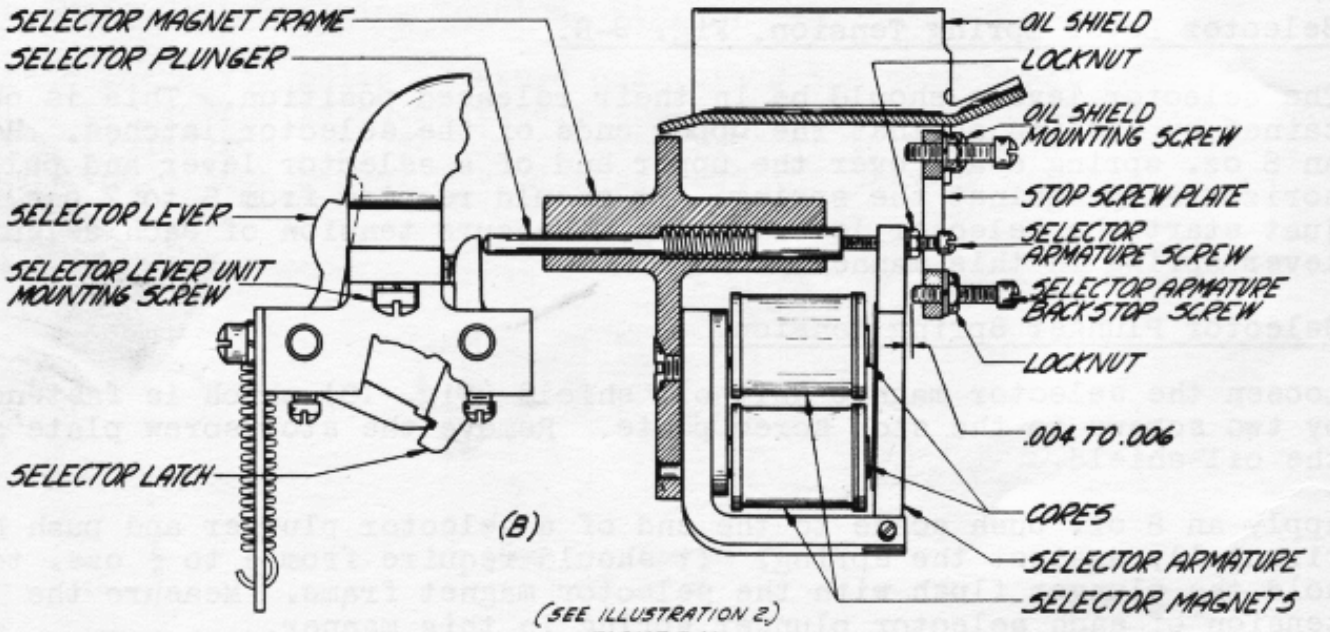
fails to trip the lever. Holding the selector armature firmly against the magnet pole pieces, advance the armature screw until the corresponding selector lever is tripped off, then advance the screw an additional 1/6th turn and lock the nut. Reset the lever and operate the armature to see whether the adjustment has not been disturbed while tightening the locknut. Adjust the remaining armature screws in the same manner.





(SEE ILLUSTRATION 2.)

FIGURE 10.

Selector Armature Backstop Screw Adjustment, Fig. 10-B.

Engage the #1 selector lever in its latch. Then, without moving the latch take up all the clearance between the end of the selector plunger and the latch by pressing lightly against the armature. With the armature held in this position adjust the backstop screw so that there is a

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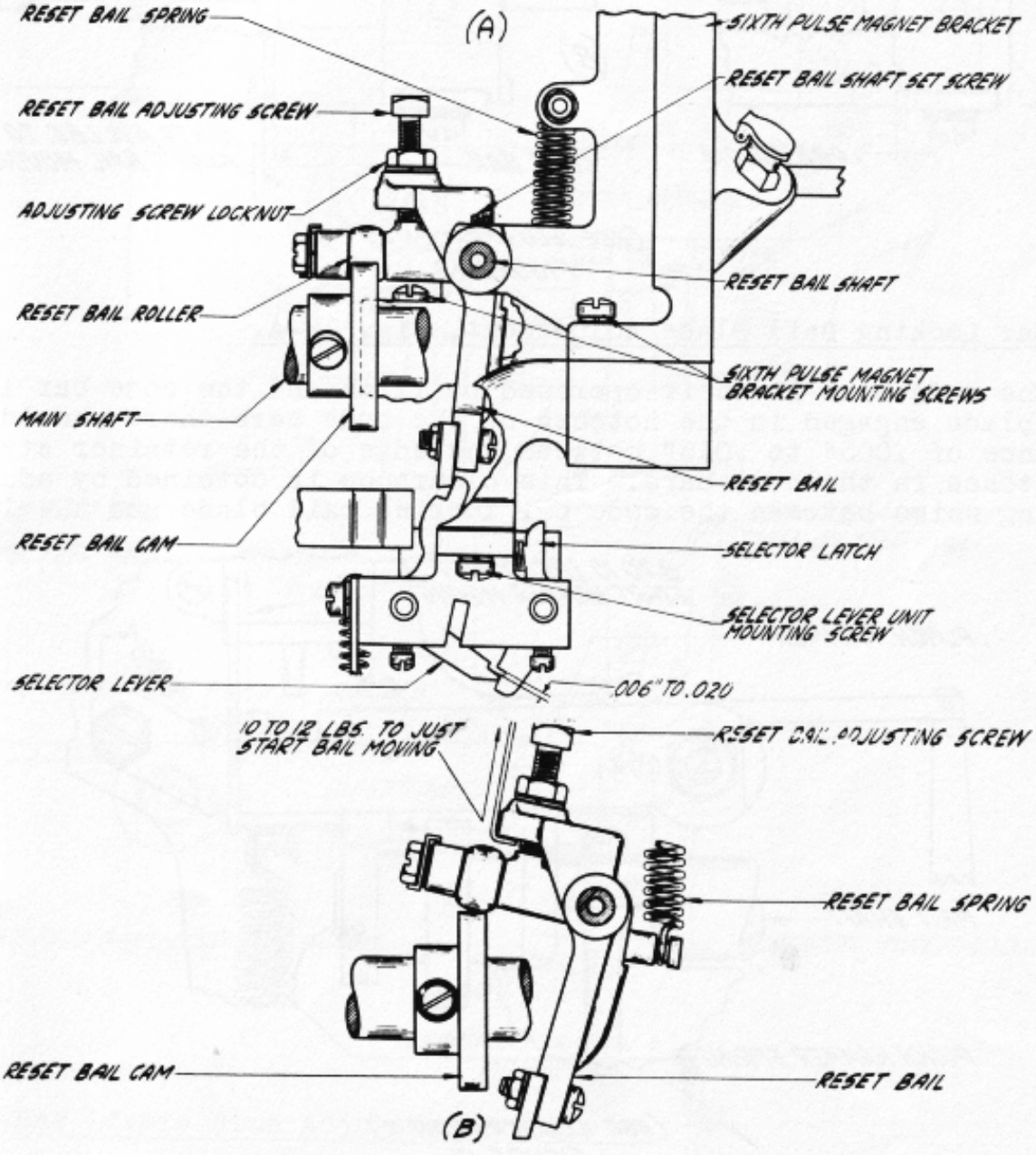
clearance of .004" to .006" between the end of the screw and the armature. Adjust the remaining backstop screws in the same manner. See that these adjustments have not changed after the locknuts have been tightened.

Reset Bail Adjusting Screw Adjustment, Fig. 11-A.

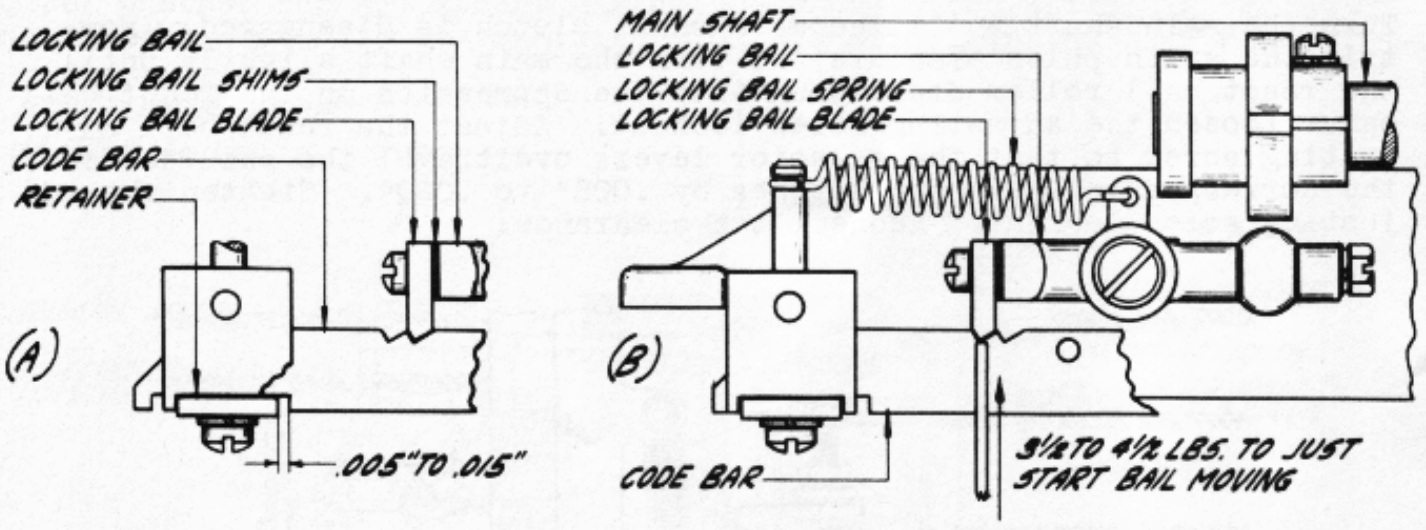
Turn the main shaft until the main shaft clutch is disengaged. Now trip the sixth pulse armature and turn the main shaft slightly until the reset bail roller drops down into the depression on the reset bail cam. Loosen the adjusting screw locknut. Adjust the reset bail adjusting screw so that the selector levers overtravel the shoulder on the corresponding selector latches by .006" to .020". Tighten the adjusting screw locknut. Recheck the clearance.



(SEE ILLUSTRATION 2)
FIGURE-11

Reset Bail Spring Tension, Fig. 11-B.

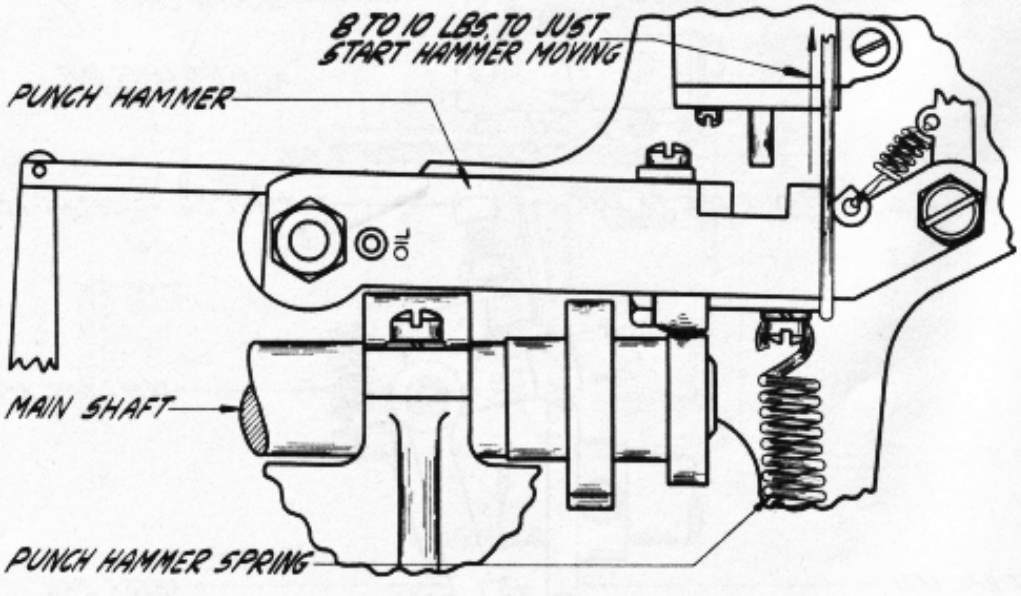
Rotate the main shaft until the main shaft clutch is disengaged. Hook a 12 lb. scale under the reset bail just in front of the reset bail adjusting screw. It should require 10 to 12 lbs. to just start the bail moving.



(SEE ILLUSTRATION 2)
FIGURE 12

Code Bar Locking Bail Blade Adjustment, Fig. 12-A.

With the code bars in their operated position and the code bar lock lever blade engaged in the notches of the code bars there should be a clearance of .005" to .015" between the edge of the retainer strip and the notches in the code bars. This clearance is obtained by adding or removing shims between the code bar locking bail blade and the lever.



(SEE ILLUSTRATION 3.)
FIGURE-13

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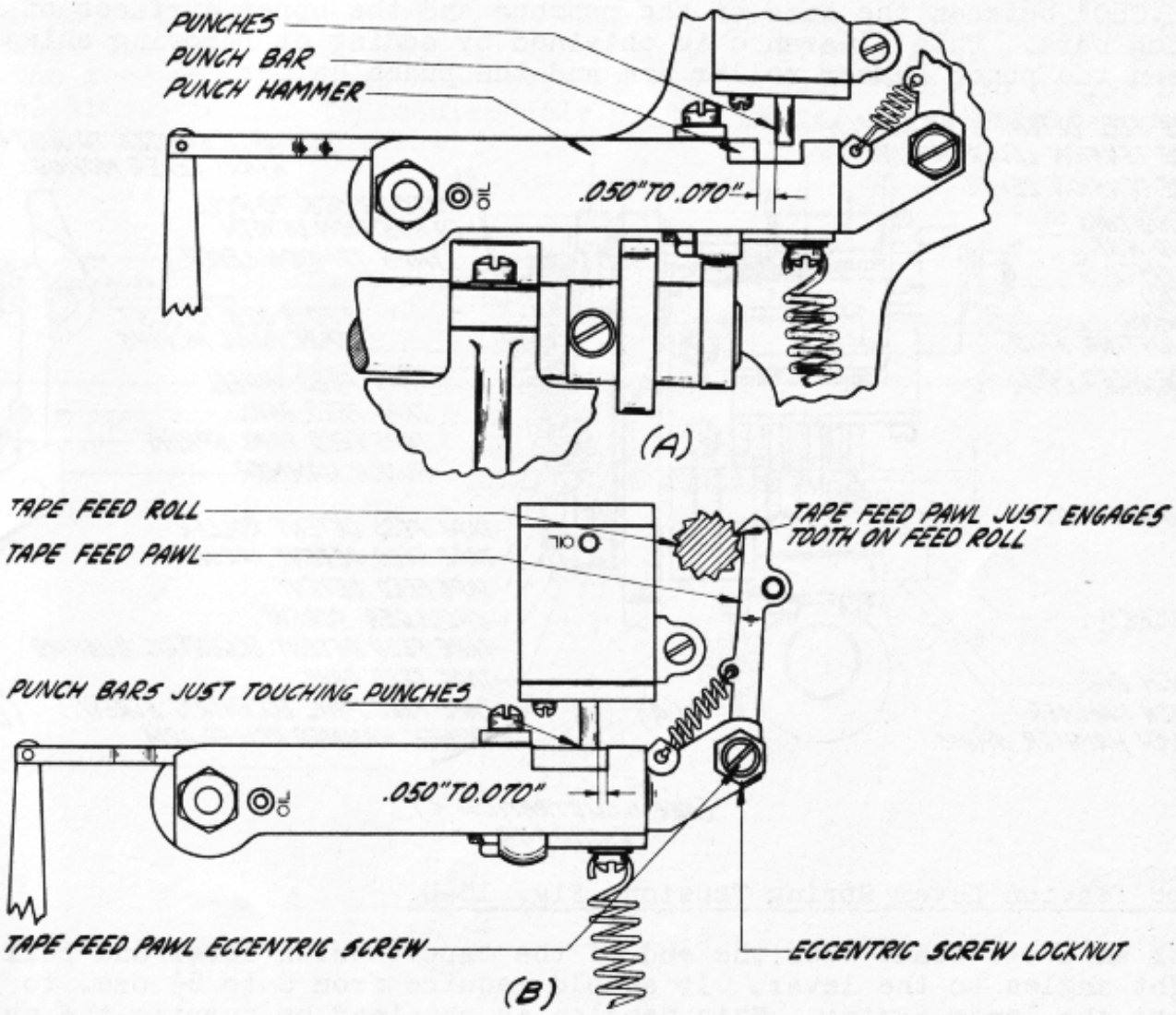
Code Bar Locking Bail Spring Tension, Fig. 12-B.

Trip the sixth pulse armature and rotate the main shaft until the locking bail blade is in the notches cut in the code bars. Apply a 12 lb. push scale, from underneath, against the locking bail blade and push at right angles to the spring. It should require $3\frac{1}{2}$ to $4\frac{1}{4}$ lbs. to just start the locking bail lever moving.

Punch Hammer Spring Tension, Fig. 13.

Rotate the main shaft until the main shaft clutch is disengaged. Hook a 12 lb. scale over the end of the punch hammer and pull vertically upward. It should require 8 to 10 lbs. to just start the punch hammer moving.



(SEE ILLUSTRATION 3.)
FIGURE-14

Punch Bar Levers Stud Adjustment, Fig. 14.

Loosen the punch bar lever stud nut (Fig. 5). Adjust the punch bar lever stud, by moving to the right or left, so that there is from .050" to .070" clearance between the ends of the punch bars and the sides of

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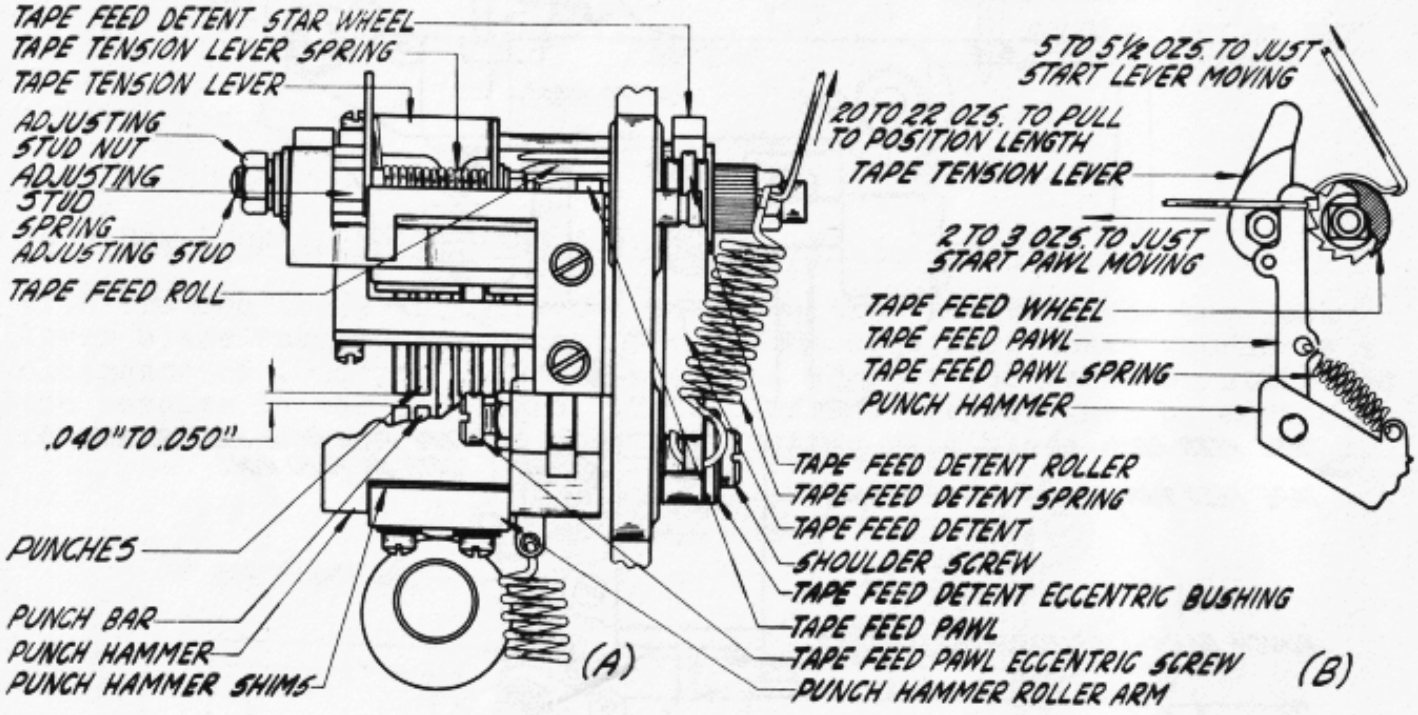
the punches when the punch bars are in their unoperated position (Fig. A) and also when the punch bars are in their operated position, the ends of the punch bars should extend beyond the sides of the punches by .050" to .070" as shown in Fig. B.

Adjust the up and down position of the punch bar lever stud so that the punch bars slide freely in the guide slots on the punch hammer. Tighten the punch bar lever stud nut. Recheck the adjustments described in the preceding paragraph.

Punch Hammer Shims Adjustment, Fig. 15-A.

Rotate the main shaft until the main shaft clutch is disengaged. Trip off all the selector levers. There should be a clearance of from .040" to .050" between the ends of the punches and the upper surfaces of the punch bars. This clearance is obtained by adding or removing shims between the punch hammer roller arm and the punch hammer.



(SEE ILLUSTRATION 4.)
FIGURE-15

Tape Tension Lever Spring Tension, Fig. 15-B.

Hook an 8 oz. scale over the end of the tape tension lever and pull at right angles to the lever. It should require from 5 to 5½ ozs. to just start the lever moving. This tension is obtained by turning the spring adjusting stud (Fig. 15-A). Loosen the adjusting stud nut and turn the stud until the proper tension is obtained. Tighten the adjusting stud nut.

Feed Pawl Spring Tension, Fig. 15-B.

Operate the sixth pulse armature and rotate the main shaft until the tape feed pawl is in its uppermost position. Hook an 8 oz. scale over

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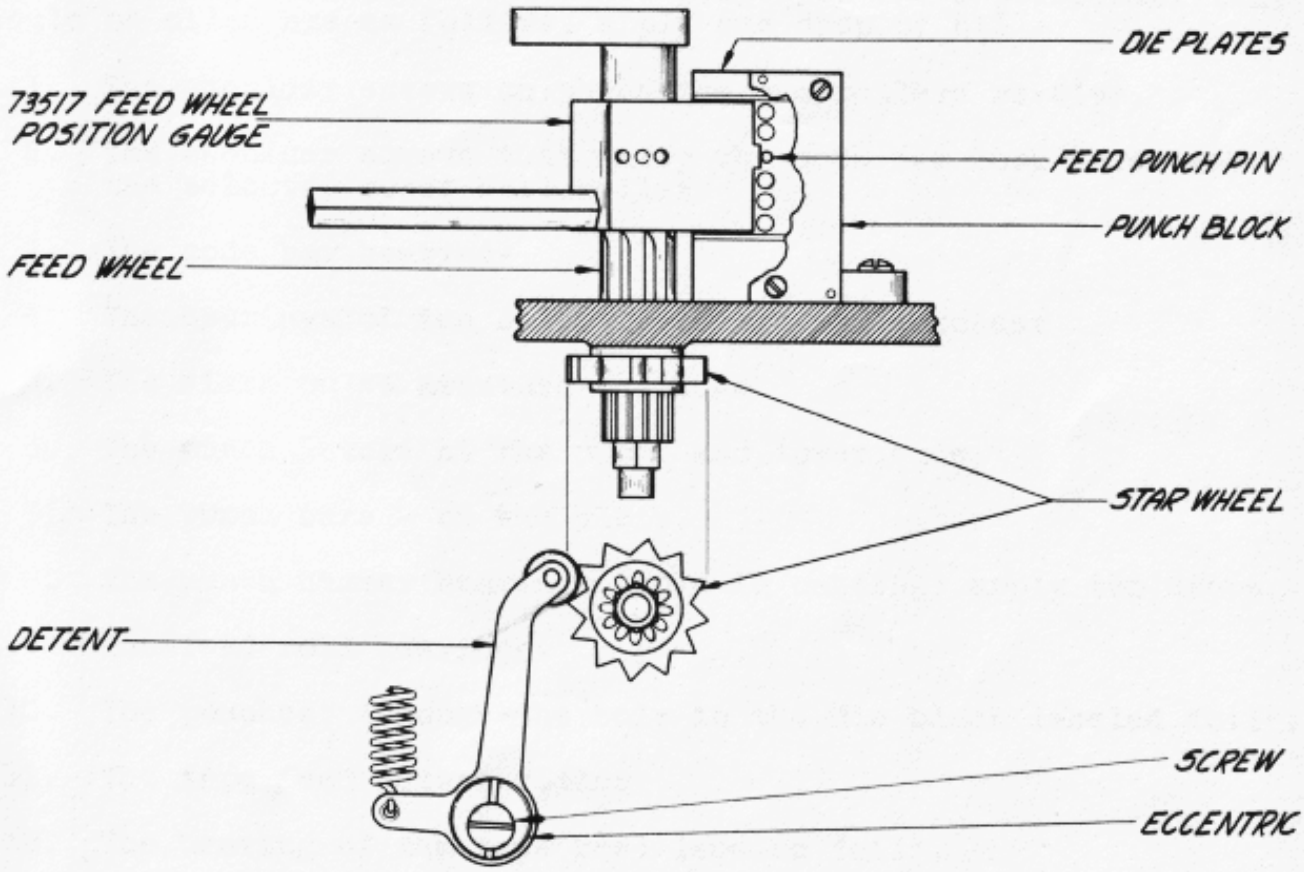
the end of the tape feed pawl and pull horizontally against the spring. It should require from 2 to 3 ozs. to just start the tape feed pawl moving.

Feed Wheel Detent Spring Tension, Fig. 15-A.

Unhook the tape feed detent spring at its upper end and attach a 32 oz. scale. It should require from 20 to 22 ozs. to pull the spring to its position length.

Feed Wheel Detent Adjustment (Using #73517 Gauge), Fig. 16.

Operate the sixth pulse armature and turn the main shaft until the punch hammer is in its highest position. Insert the Feed Wheel Position gauge in the punch block so that the projection of the gauge stops against the feed punch pin, as shown in Figure 17. Adjust the position of the feed wheel detent eccentric so that a tape feed pin of the feed wheel lines up with the center hole of the gauge. Tighten the eccentric bushing clamping screw.



(SEE ILLUSTRATION 2)
FIGURE-16

Feed Pawl Eccentric Screw Adjustment, Fig. 14-B.

Rotate the main shaft until the main shaft clutch is disengaged. Operate all the selector armatures. Operate the sixth pulse armature and rotate the main shaft until the punch bars just touch the punches. Loosen the eccentric screw locknut and adjust the tape feed pawl eccentric screw so that the tape feed pawl just engages a tooth on the tape feed roll. Lock the eccentric screw by means of its locknut.

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Feed Wheel Detent Adjustment, Fig. 16.

Operate the reperforator in the set perforating the "letters" combination. Lay a strip of this tape (about six inches in length) on the perforator tape gauge #2315 to see whether the holes in the tape line up with the holes in the gauge. If they do not, refine the adjustment of the detent eccentric bushing so that every tenth hole in the tape lines up with a hole in the gauge. Recheck the Tape Feed Pawl Eccentric Screw Adjustment.

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LUBRICATION

Proper attention to lubrication is of the utmost importance. If properly lubricated wear will be minimized and the reperforator will operate for long periods without the necessity of re-adjustment. How often the reperforator should be lubricated will depend on the class of service in which it is used and the speed of operation.

The oil should be a good grade of medium oil. Do not use light oils such as typewriter oil or "3-in-1" which lack sufficient body. Oildag P-2 is especially recommended, but any good grade of automobile oil such as Mobile Arctic or Veedol Light may be used.

Five of the more important bearings are equipped with oil cups which should be filled at regular intervals. Remove the oil retaining nut on the end of the main shaft, fill it with oil and replace it. The oil from this retainer feeds through a lengthwise hole in the shaft from which it is conveyed by two wicks to the driving and driven clutch bearing surfaces. The other places on the reperforator that should be oiled are as follows, apply one drop of oil -

1. The shoulder screws on which the cam rollers revolve.
2. The shoulder screws that carry the code bar lock lever and the selector reset bail roller.
3. The code bar bearings.
4. The bearings of the selector levers and latches.
5. The sixth pulse armature bearings.
6. The punch levers at the upper and lower ends.
7. The punch bars - on the slots.
8. The punch hammer bearings (hole in casting) apply two drops.
9. The feed roll bearings.
10. The punches; through the hole in the die block labeled "oil".
11. The tape feed detent roller.
12. The bearing of the tape reel labeled "oil".

A little grease should be applied to the gear teeth occasionally and the motor grease cups should be filled with light grease regularly.

The selector plungers should not be oiled as the oil is apt to gum and prevent them from moving freely in their guides. If they are removed for any reason wipe them clean with a slightly oily rag. The pivot screws which carry the selecting magnet armatures should be oiled occasionally but sparingly.

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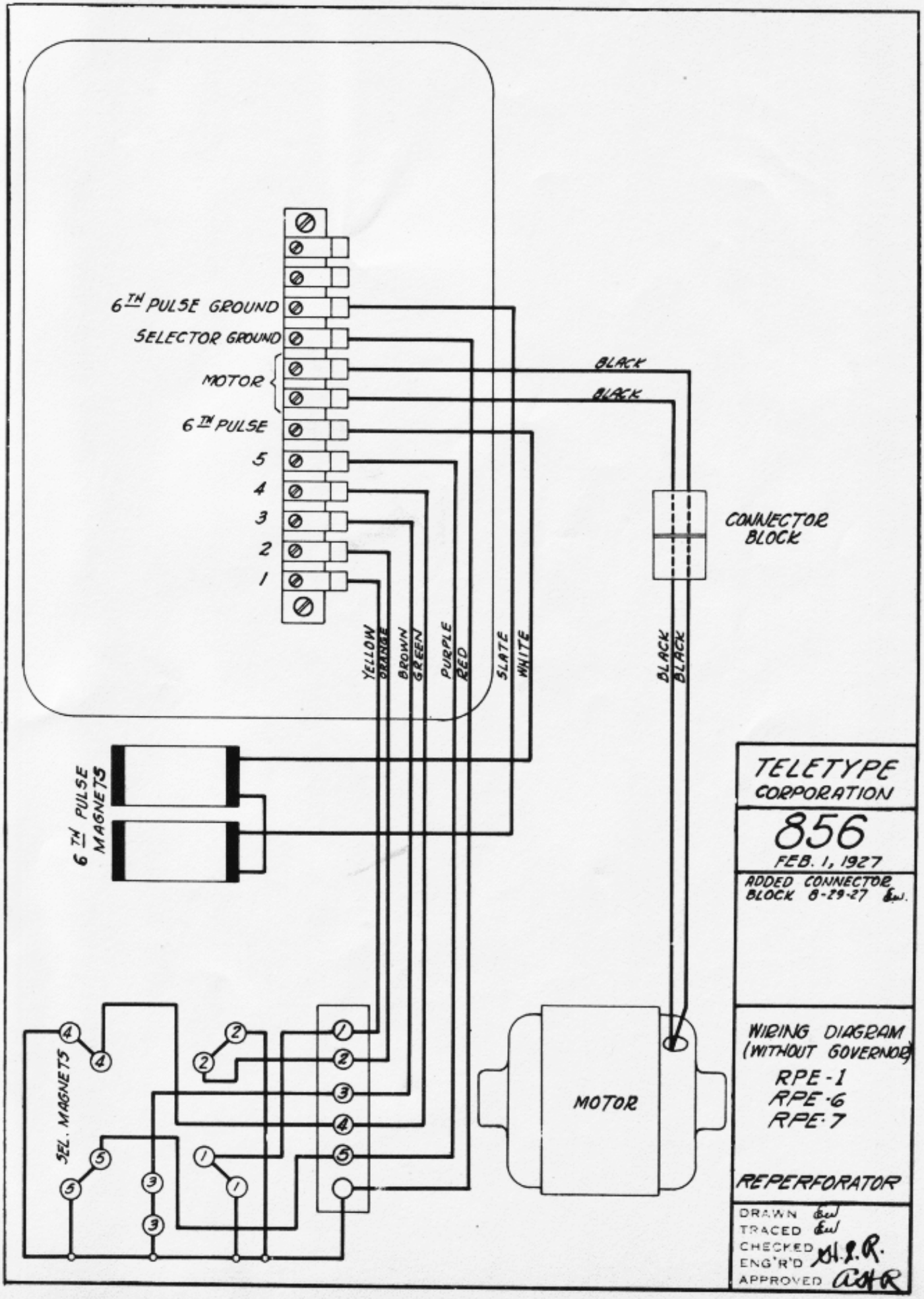

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Teletype Corporation
Chicago, Ill., U.S.A.

EE-382
Issue 1, Page 1
May, 1938

CHANGES IN BULLETIN 143 (NOV. 1930) DESCRIPTION AND ADJUSTMENTS OF THE REPERFORATOR (MODEL 12)

Page 9

Main Shaft Detent Spring Tension (Figure 5)

Change this requirement to read as follows:

Rotate the main shaft until the clutch teeth are separated. Place a screw driver on the head of the screw in the code bar locking blade cam and push downward forcing the clutch to fully disengage. Hook a 12 lb. scale under the head of the main shaft detent roller screw and pull vertically upward. It should require 4 to 6 lbs. to start the detent moving.

Sixth Pulse Armature Spring Tension (Figure 6)

Change the requirement to read "8 to 12 ozs." instead of "8 to 9 ozs."

Page 12

Main Shaft Clutch Spring Tension (Figure 8)

Change the requirement to read "3-1/2 to 5-1/2 ozs." instead of "4-1/2 to 5 ozs."

Page 17

Code Bar Locking Bail Spring Tension (Figure 12-B)

Change the last sentence of this requirement to read as follows: It should require 3-1/2 to 4-1/2 lbs. to just start the locking bail moving.

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Punch Bar Levers Stud Adjustment (Figure 14)

Change this adjustment to read as follows:

(a) When the punch bars are in their unoperated positions, there should be a clearance of .070" to .100" between the ends of the punch bars and the sides of the punches.

(b) When the punch bars are in their operated positions and the code bars have been locked in position by the locking bail, the ends of the punch bars should extend .020" to .050" beyond the sides of the punches.

(c) There should be at least .005" clearance between the ends of the punch bars and the side of the slot in the punch hammer casting just after the punch bars are moved to their operated position and just before the code bars are locked in their operated positions by the locking bail.

To adjust, loosen the punch bar levers stud nut (See figure 3) and position the punch bar levers by moving the stud to the right or left. Tighten the nut.

Page 21

Lubrication

Omit the second paragraph and the last sentence of the third paragraph and add the following:

The oil and grease specified in the supplement furnished with this bulletin should be used to lubricate the reperforator.

Unless otherwise specified, one or two drops of oil at each of the places indicated will be sufficient. Use oil for lubrication at all of the places listed below, except where the use of grease is specified.

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Oil both loops of all helical springs that exert a nominal tension of less than 2-1/2 pounds.

Apply grease to both loops of all helical springs that exert a nominal tension of 2-1/2 pounds or more.

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FOR GENERAL DISTRIBUTION TO BELL SYSTEM

1/23/46

TELETYPE CORPORATION
CHICAGO, ILLINOIS, U.S.A.

EE-525
ISSUE 1
JANUARY, 1946

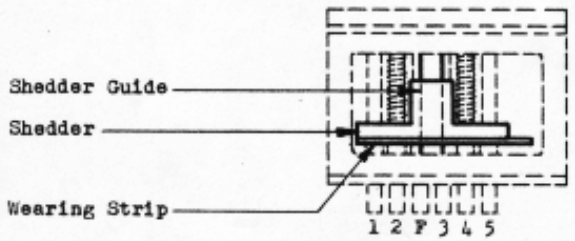
CHANGES AND ADDITIONS TO PARTS BULLETINS

1001	Issue 1	1067	Issue 2	1090	Issue 2
1012	Issue 2	1080	Issue 1	1093	Issue 1
1038	Issue 2	1082	Issue 2	1100	Issue 2
1052	Issue 1	1088	Issue 2	1117	Issue 2
1064	Issue 2	1089	Issue 1		

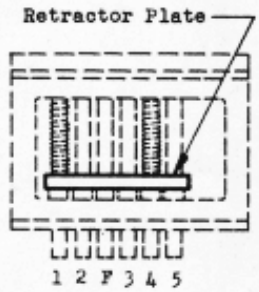
The punch block assemblies shown in the above bulletins have been redesigned and assigned new assembly numbers. Old style punch block assemblies are no longer furnished. On orders for old style blocks, new style assemblies which are fully interchangeable with the old style will be furnished.

The sketches below illustrate the difference between the old and new style assemblies, and it should be noted that the shedder and wearing strip are replaced by a retractor plate, and the shedder guides are not used. The shedder and wearing strip are no longer being furnished. When it is desired to replace a shedder or wearing strip, a retractor plate should be ordered instead.

The chart below may be used to determine the new style punch block assembly number which replaces an old style, and which retractor plate must be ordered to replace the old style shedder, and/or wearing strip.



OLD STYLE PUNCH BLOCK
(Spring on punches 2 & 4)



NEW STYLE PUNCH BLOCK
(Spring on punches 1 & 4)

Old Style Assembly Number	Apparatus Used On	Type of Punch Block			Shedder	Wearing Strip	New Style Assembly Number	Retractor Plate
		Number of Code Punch Holes	Type of Feed Hole	Grinding on Punches				
122-384	Perf. & nontyp. Reperf. (5 mag.)	5	Advanced	Cup Ground	122-367	122-368	112640	110902
122-575	Perf. & nontyp. Reperf. (5 mag.)	5	Straight	Cup Ground	122-367	122-574	111019	110901
77987	Perforator	6	Straight	Cup Ground	75121	77986	112642	110903
81510	Perforator	6	Advanced	Cup Ground	75121	75120	112643	110904
81792	Perf. Trans.	5	Straight	Cup Ground	75121	77986	111020	110901
85356	Nontyp. Reperf.	6	Advanced	V Notch	75121	75120	112645	110904
86113	Nontyp. Reperf.	5	Straight	V Notch	75121	77986	111021	110901
89504	Perf. Trans.	5	Straight	Cup Ground	75121	77986	111022	110901
91114	Perf. Trans.	5	Advanced	Cup Ground	75121	75120	112646	110902
94904	Perforator	7	Advanced	Cup Ground	94948	94950	112647	110905
95451	Typ. Reperf.	5	Straight	Cup Ground	122-367	122-574	111023	110901
97472	Nontyp. Reperf.	5	Advanced	V Notch	75121	75120	112648	110902
102790	Typ. Reperf.	5	Straight	Cup Ground	122-367	122-574	111024	110901
104573	Typ. Reperf.	5	Advanced	Cup Ground	122-367	122-368	112649	110902

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