BELL SYSTEM PRACTICES
Station Installation and Maintenance

SECTION C42.127
Issue 1, 7-27-36
AT&T Co. Standard

COIN COLLECTORS

50, 150, 161, 162 AND 163 TYPES
TESTS AND ADJUSTMENTS

1. GENERAL

1.01 This section covers methods of testing and adjusting 50, 150, 161, 162 and 163 type coin collectors but does not cover the maintenance of any special chutes or devices which may be installed on the collector. Maintenance of the dial, transmitter, receiver and cords is covered in Division C30. This section replaces Section C52.175.

1.02 For information regarding the conditions under which the various tests and adjustments should be performed see Section C64.222—50, 150, 161, 162 and 163 Type Coin Collectors—Service Order and Repair Work.

1.03 Before making any adjustments disconnect the ground lead from the coin collector terminal block.

1.04 When the collector is dirty or dusty, clean by brushing off with a No. 7 sash tool or other approved cleaning brush. The detailed cleaning of the Coin Chute, Coin Hopper Coin Relay, Housing Contact Springs and Switchhook is specified under their respective headings.

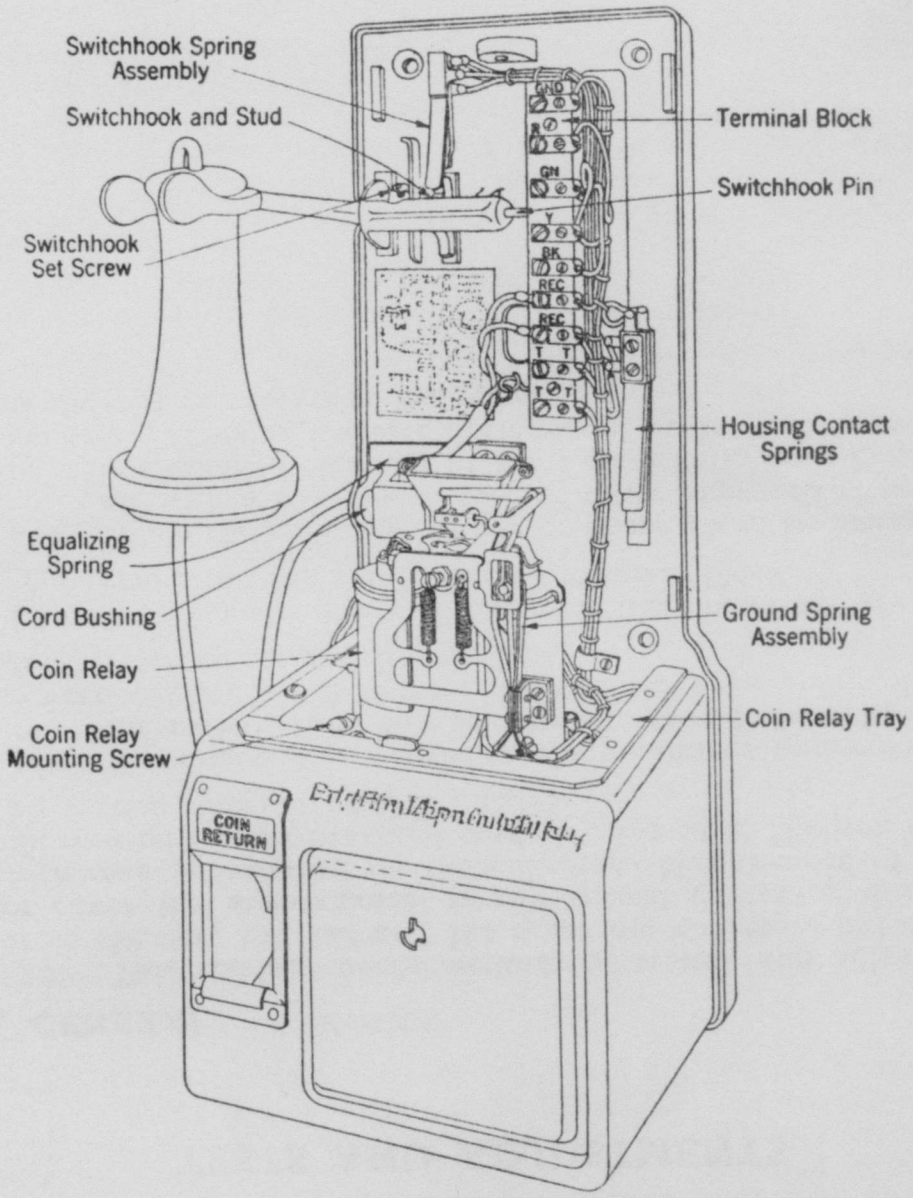

Switchhook Spring Assembly
Switchhook and Stud
Switchhook Set Screw
Equalizing Spring
Cord Bushing
Coin Relay
Coin Relay Mounting Screw
Terminal Block
Switchhook Pin
Housing Contact Springs
Ground Spring Assembly
Coin Relay Tray
GND
R
GN
Y
BK
RED
RED
T
T
T
T
COIN RETURN

Fig. 1.

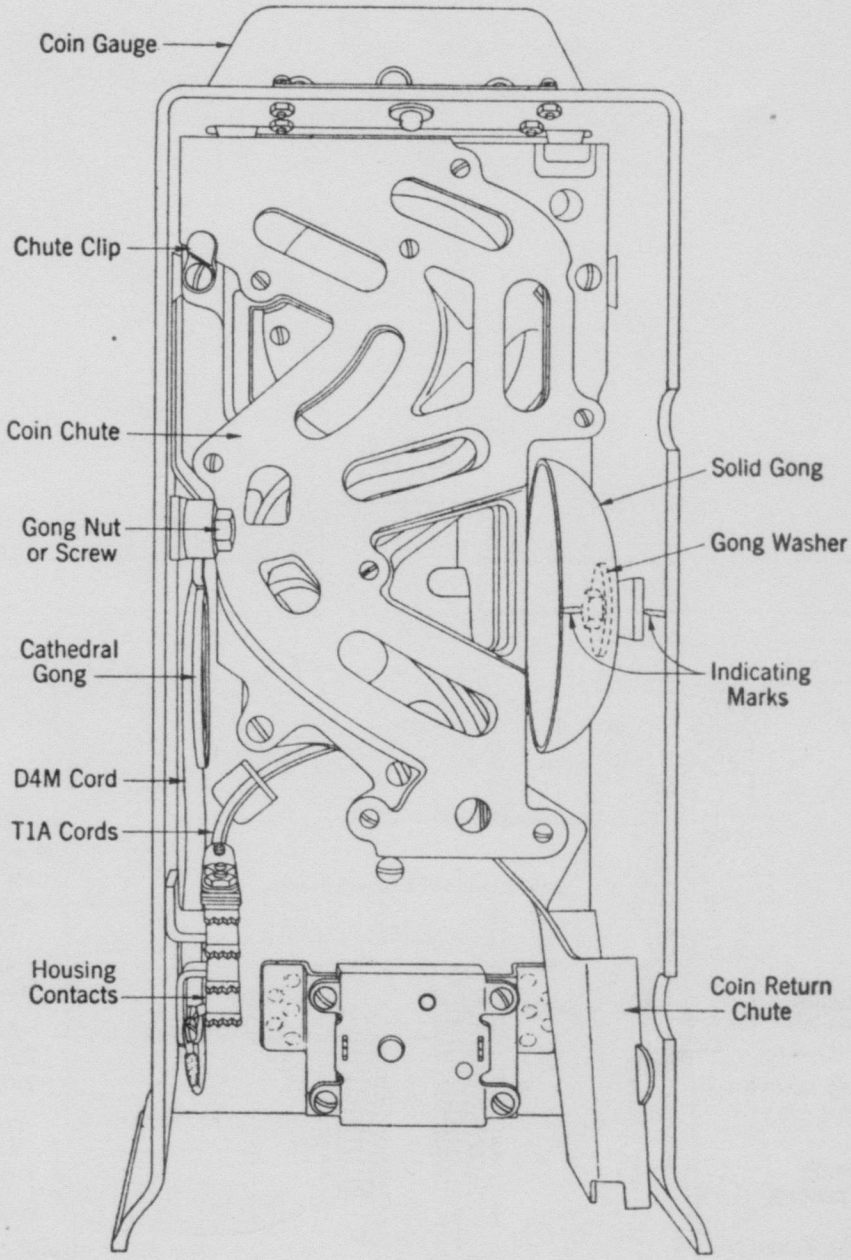

Coin Gauge
Chute Clip
Coin Chute
Gong Nut or Screw
Cathedral Gong
D4M Cord
T1A Cords
Housing Contacts
Solid Gong
Gong Washer
Indicating Marks
Coin Return Chute

Fig. 2.

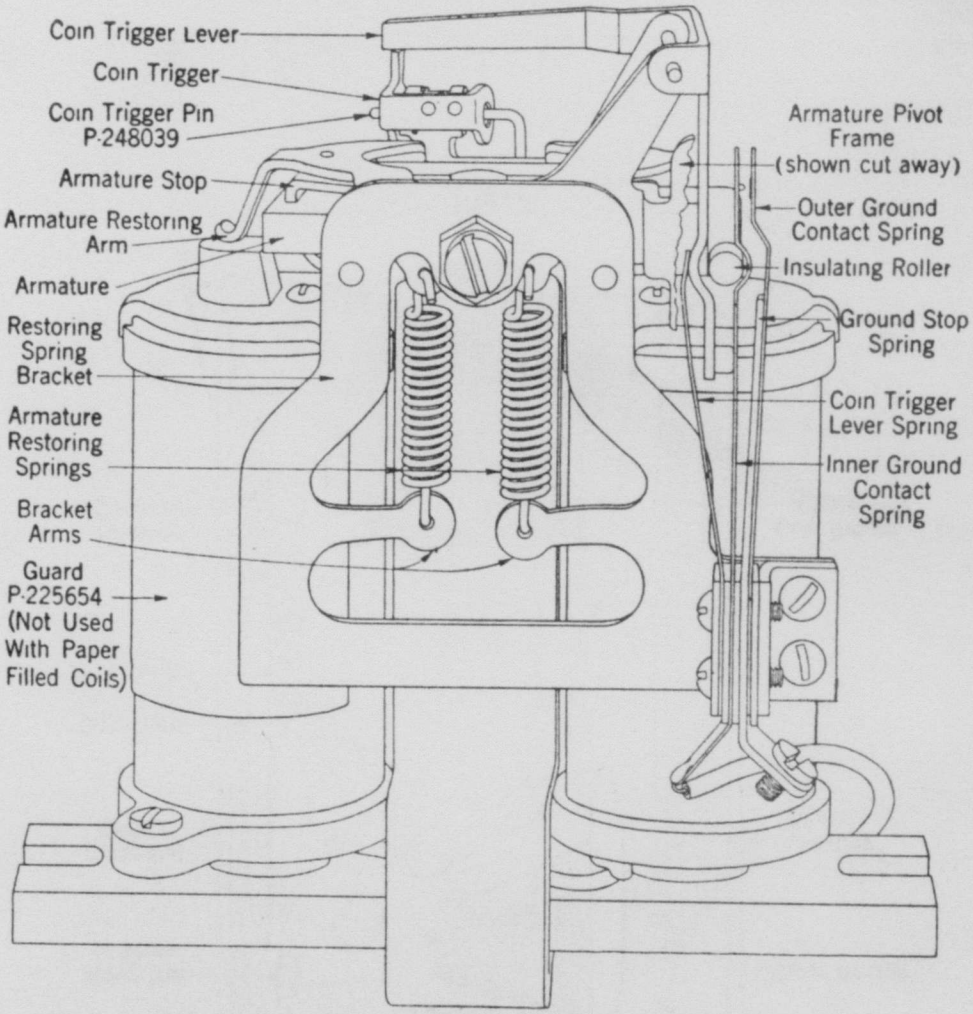

Coin Trigger Lever
Coin Trigger
Coin Trigger Pin P-248039
Armature Stop
Armature Restoring Arm
Armature
Restoring Spring Bracket
Armature Restoring Springs
Bracket Arms
Guard P-225654 (Not Used With Paper Filled Coils)
Armature Pivot Frame (shown cut away)
Outer Ground Contact Spring
Insulating Roller
Ground Stop Spring
Coin Trigger Lever Spring
Inner Ground Contact Spring

Fig. 3.

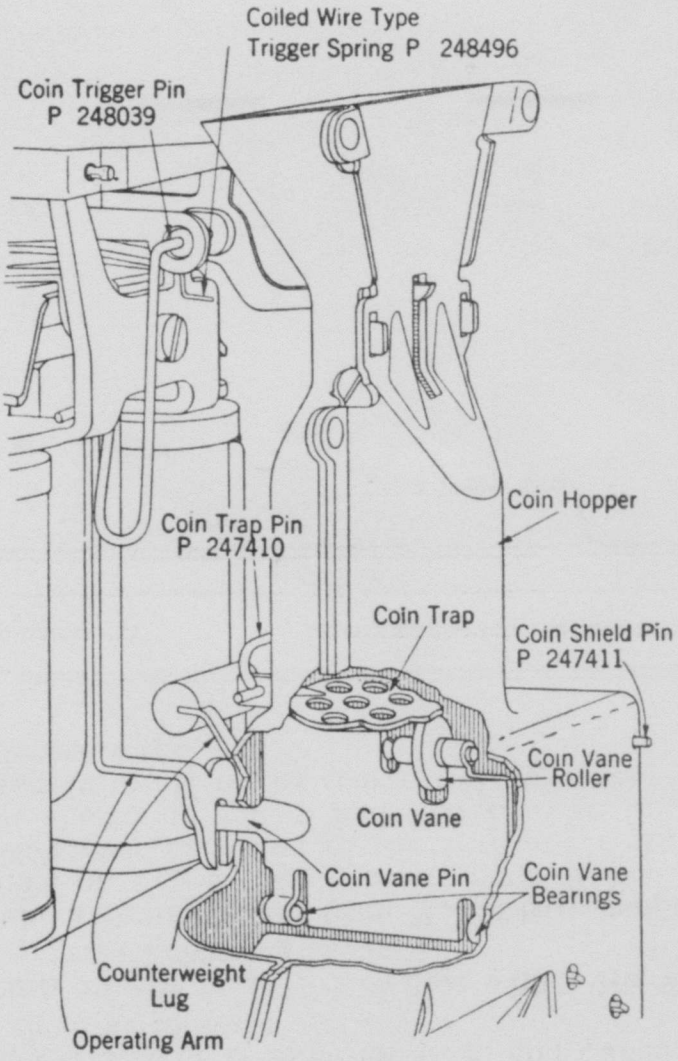


Fig. 4.

2. UPPER HOUSING

Gauging of Coin Chute

Caution: Before doing any work on the coin chute, inspect the chute to see if there is a designation stamped on the coin chute cover (back plate) and consult the information given under the heading "Ground Spring Requirements" (5.16).

2.01 Check coin chute runways as follows:

(a) Remove upper housing from coin collector.

(b) Invert upper housing and insert the nickel and quarter discs of the No. 122A gauge in the proper discharge openings. Then insert the dime disc, tilt the housing to the left and guide the disc with the finger or thumb to prevent it from dropping into the nickel runway. Check to see that discs have traveled to coin gauge.

(c) Restore housing to an upright position. Discs should travel back to discharge openings without sticking.

(d) If discs stick in chute runways proceed as in 2.02.

Inspection and Cleaning of Coin Chute

2.02 Remove chute from upper housing. If chute is badly worn, distorted, or if it cannot be cleaned by the following method, replace it. (Use P-242923 or D-96591 chute for U. S. coins, P-243570 or D-96720 for U. S. and Canadian coins.) Otherwise clean as follows:

(a) Brush off any loose dirt or dust with a No. 7 sash tool or approved cleaning brush.

(b) Make a chute cleaner from No. 14 bare copper wire as shown on Fig. 5. Slip a clean piece of No. 2 sleeving (P-103007) over each end of the wire and clean the runways as shown on Fig. 6 and Fig. 7. Use C. P. carbon tetrachloride to aid in the removal of any sticky substance from the runways.

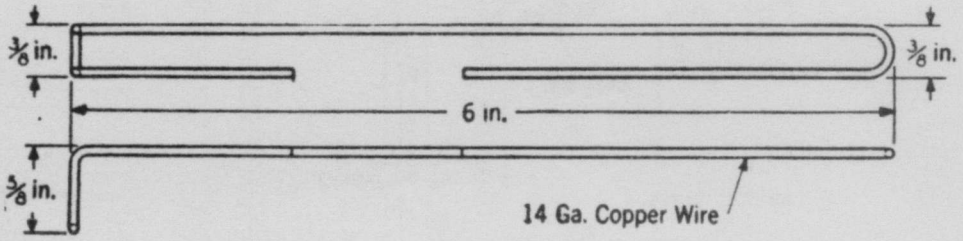


Fig. 5.

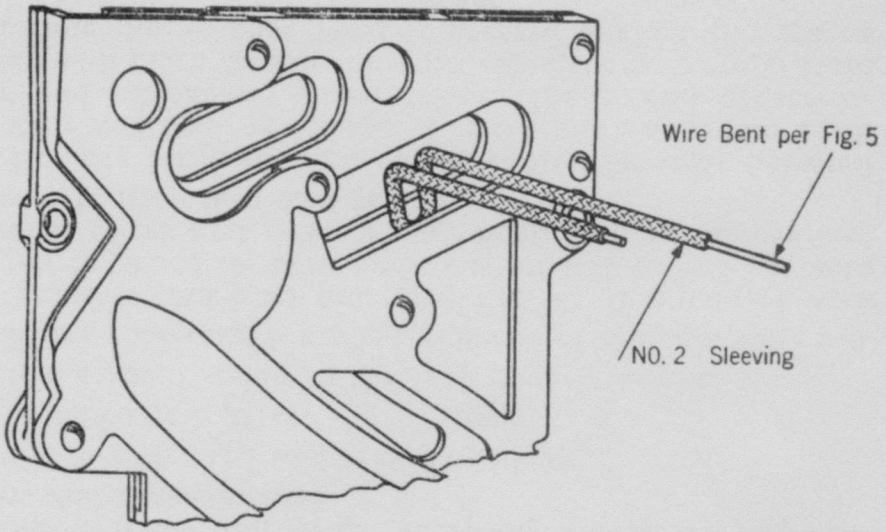


Fig. 6.

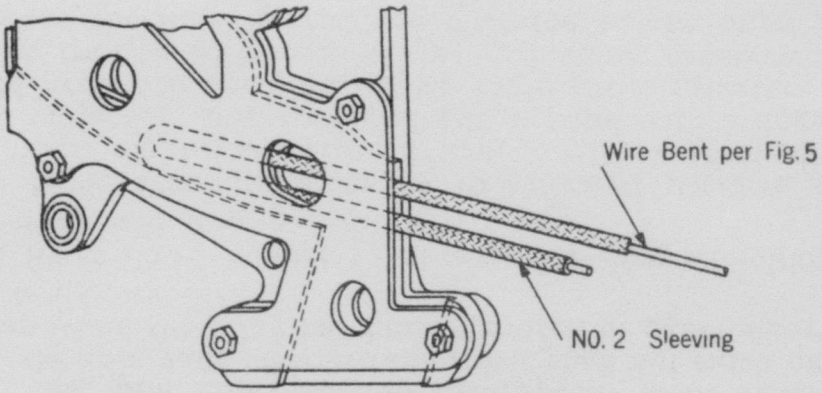


Fig. 7.

Note: No attempt shall be made to take chute apart or to straighten distorted chutes.

(c) Install cleaned or new chute in upper housing, tighten all mounting screws securely and check chute with No. 122A gauge as described in 2.01.

Note: When installing P-242923 and P-243570 chutes use 1/2" long screws P-126320 for mounting.

(d) If, after cleaning, discs stick in chute install new chute.

Chute Clip

2.03 See that chute clip is installed on all chutes except on P-242923 and P-243570 chutes. (See Fig. 2.)

Check Coin Signal Gongs

2.04 Check for loose gongs. The indicating mark on solid gong should line up with mark on edge of housing. If marks do not line up loosen gong nut and reset gong. Use No. 63 tool.

Cords

2.05 Cords shall be secured so that they do not come into contact with gongs nor obstruct the passage of coins through the coin chute.

3. COIN HOPPER (EXCEPT POST-PAYMENT COIN COLLECTORS)

Coin Vane and Coin Trap Inspection and Operation

3.01 Coin vane and coin trap shall appear to be clean and the coin vane or coin vane roller shall not catch on the coin trap when the relay has been operated in either direction. Check as follows:

(a) Sight down hopper to observe for dirty condition of vane and trap.

(b) Move armature manually to operated position, push vane pin toward rear of hopper with a screw-driver, and move coin trap counterweight upward with a finger to hold armature operated. Take finger from armature and allow trap to restore slowly while holding counterweight. Repeat check with armature operated to the other side.

(c) If found dirty or if vane and trap catch proceed as in 3.02.

Cleaning of Vane and Trap (Including Necessary Replacements and Adjustments)

3.02 Clean coin vane and trap as follows:

(a) Remove coin relay.

(b) Tie a small string to the trap counterweight.

(c) Move coin vane to right by means of the coin vane pin.

(d) Remove coin trap pin. See Fig. 8. If equipped with pin flattened on both ends, cut off left end of pin with diagonal pliers and remove pin. Push trap in hopper and allow it to drop into coin return.

(e) Remove burrs on coin vanes, caused by wear between vane and trap, as follows. Place a piece of crocus cloth over end of cabinet screw-driver. Insert end of screw-driver with cloth into opening provided for coin trap. Hold coin vane pin so that vane is pressed against the crocus cloth. Rub until burrs are removed.

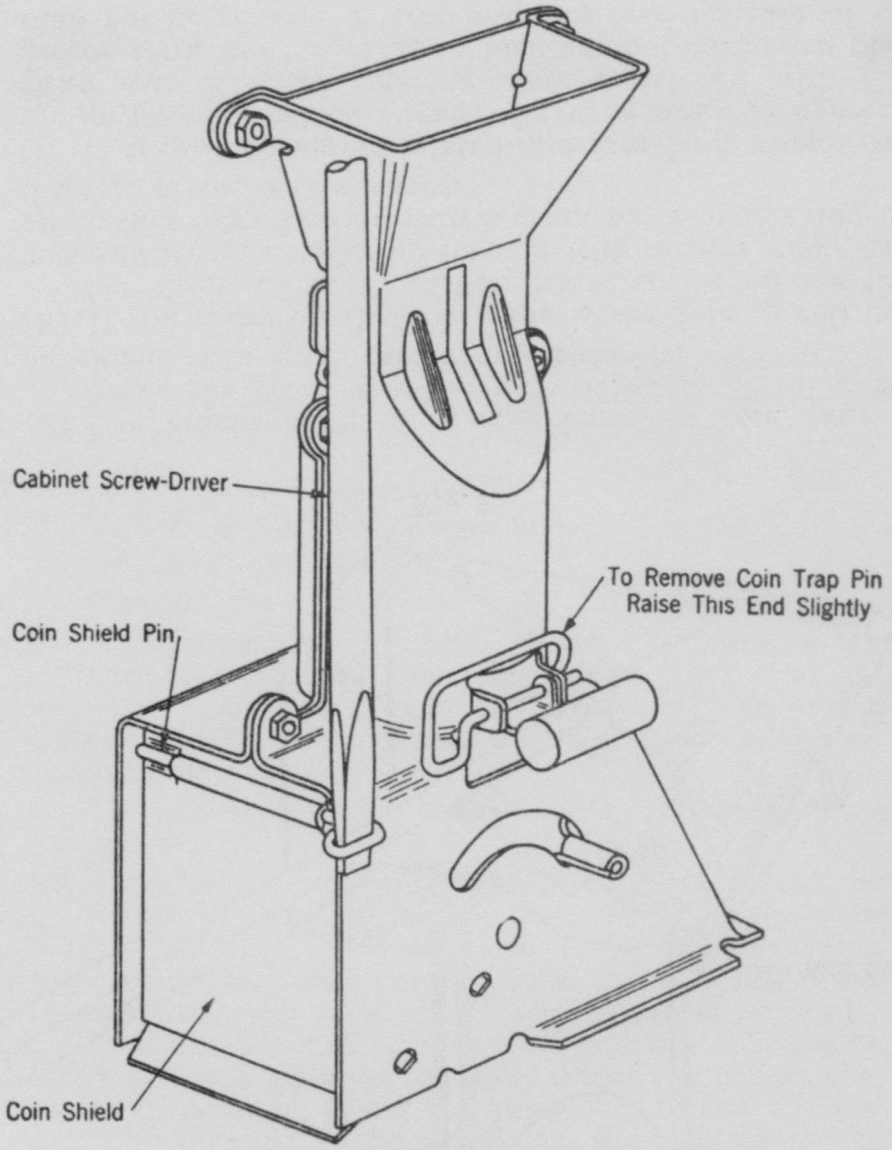


Fig. 8.

(f) Clean the coin vane as follows. Slip a piece of 1/4" plain cotton sleeving over end of cabinet screw-driver. Moisten sleeving with C. P. carbon tetrachloride, insert end of screw-driver covered with sleeving into opening provided for coin trap. Hold coin vane pin so that the vane is pressed against the sleeving. Rub to remove dirt. Then slide the sleeving so that a clean part of the sleeving is at the end of the screw-driver and again rub same side of vane. This procedure should then be repeated on the other side of the vane.

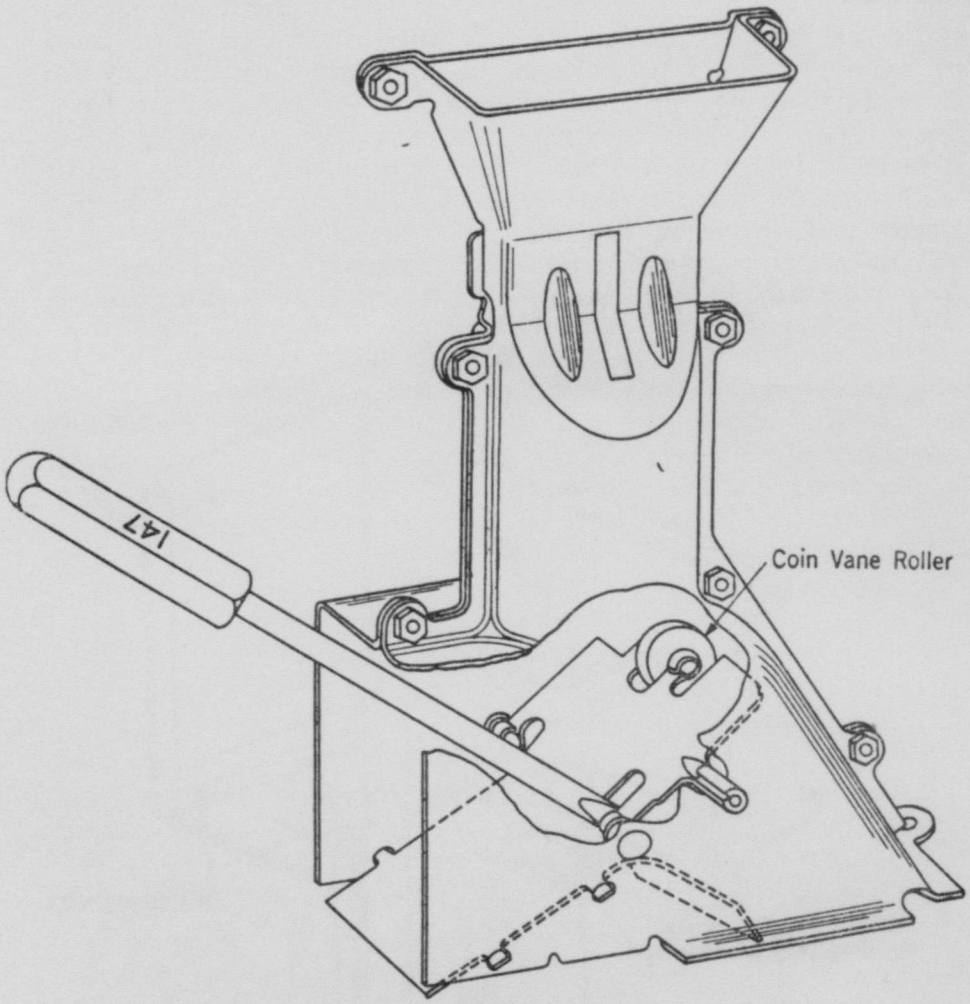


Fig. 9.

(g) Use crocus cloth to remove burrs on coin vane pin. Clean the coin vane pin with KS-2423 cleaning cloth moistened with C. P. carbon tetrachloride.

(h) If the roller on the coin vane is not free to roll put a few drops of C. P. carbon tetrachloride on the bearings and free the roller by turning with orange stick. Clean off carbon tetrachloride with a clean piece of sleeving over the end of the screw-driver.

(i) If trap is chromium plated and free from rough edges on portions which engage the vane when in operation, clean with KS-2423 cleaning cloth moistened with C. P. carbon tetrachloride. Traps which are not chromium plated shall not be reused. If trap was removed because of vane

catching on the trap, or has rough edges as mentioned above, replace trap with a new one.

(j) Attach cleaned or new trap to string and draw into position. Insert coin trap pin P-247410 as shown in Fig. 8.

(k) Check 3.03.

(l) Check 3.04.

(m) Clean the slot at the lower end of the relay operating arm as outlined in 5.06.

(n) After remounting the relay check 3.01, and if trap and vane still catch and this catching cannot be cleared by the use of other traps replace coin collector.

Vane and Hopper Clearance

3.03 The vane shall not scrape against the side of the hopper. Check as follows:

(a) Remove the coin relay.

(b) Grasp coin vane pin and pull vane forward to take up end play at front bearing. Move vane over its full travel and see that it does not scrape on side of hopper. Repeat check while pushing on coin vane pin to take up play at rear bearing.

(c) If vane scrapes on either side of hopper proceed as follows:

(d) Remove the coin shield by inserting a cabinet screw-driver in the loop of the coin shield pin as shown in Fig. 8. Turn the screw-driver in a clockwise direction just sufficiently to release the pin from the hole in the hopper. If equipped with coin shield pin flattened on both ends pull the pin forward and clip off the pin as close to the front of the hopper as possible. Push the pin to the rear as far as possible, swing the shield out to the left and clip off the pin between the shield and the rear of the hopper which will permit the shield to be removed. Clip off the pin as short as possible, bend the remaining short length and work it out of the hole so that it falls down the outside of the hopper.

(e) If the vane scrapes on the front side of the hopper place the No. 147 tool or equivalent, such as No. 35 tool or KS-6854 screw-driver, as shown in Fig. 9 and adjust the front bearing outward by turning the tool slightly. If the vane scrapes against the back of the hopper adjust the rear bearing outward as described above. In adjusting the vane be careful not to introduce any binding at the bearings. Check this by holding the vane in a vertical position and

see that it drops to either the refund or collect position by its own weight. If the scraping cannot be eliminated replace the coin collector.

(f) Recheck 3.01.

(g) Assemble the pin P-247411 on the coin shield so that with the straight end of the pin in the hole at the rear of the hopper the bent-over section of the shield is toward the inside of the hopper, as shown in Fig. 8. Snap the hooked end of the pin in place by pressing on the shield directly over the middle of the pin.

(h) Remount relay.

Coin Trap Adjustment

3.04 With the coin trap in the normal position (approximately horizontal) and with the lug in contact with the hopper, the trap shall just clear the coin vane roller when vane is moved from side to side. To adjust proceed as follows:

(a) Bend the counterweight lug on trap to meet the requirement. Use long-nose pliers.

4. COIN HOPPER (150U, 150W, 163A AND 163B COIN COLLECTORS ONLY. SEE FIG. 10)

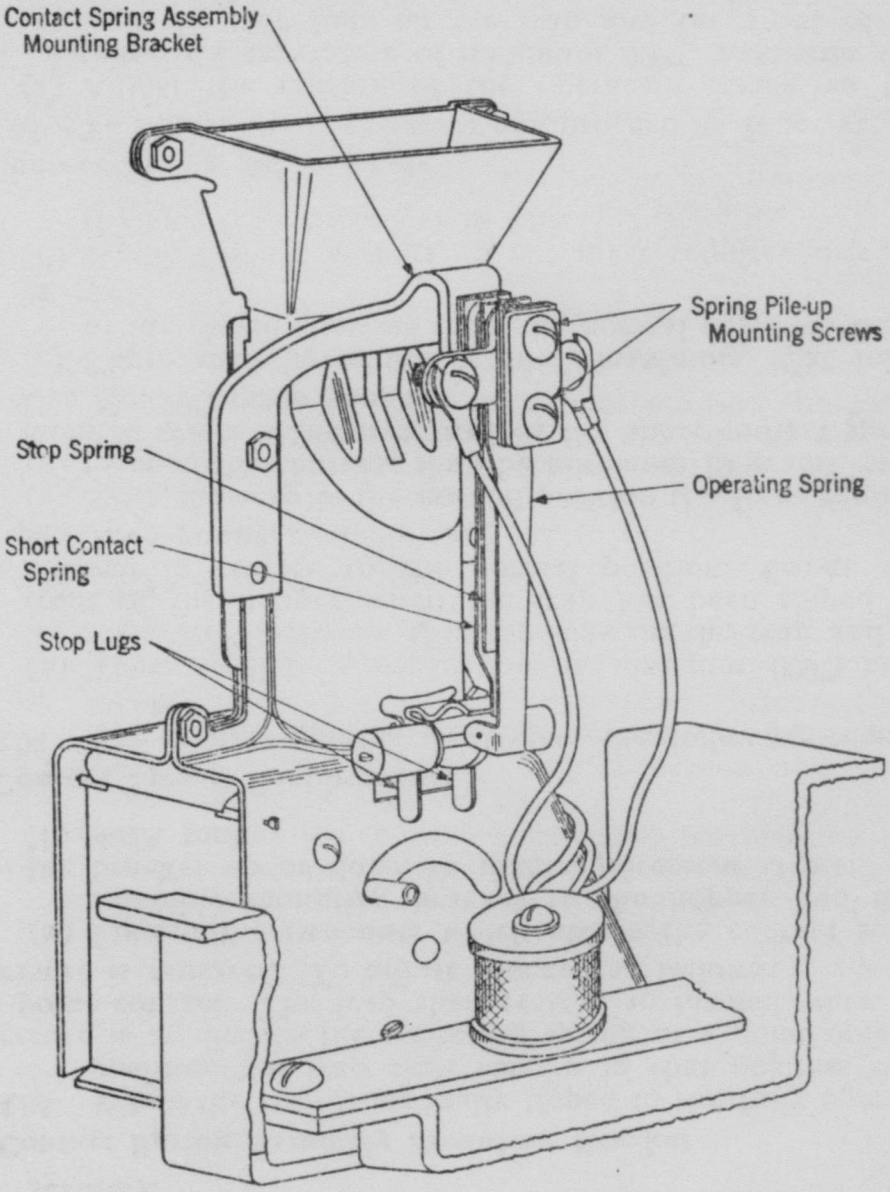


Fig. 10.

Cleaning and Alignment of Contact Springs

4.01 Contacts shall be clean.

(a) To clean burnish with No. 265B tool.

4.02 Contacts shall line up so that the contact point falls within the circumference of the opposing contact disc. To adjust proceed as follows:

(a) Loosen the spring pile-up mounting screws with a cabinet type screw-driver and shift the springs until the contact point lies wholly within the contact disc preferably as near the center as possible. Then tighten the screws securely.

Contact Spring Assembly Mounting Bracket

4.03 When the trap is manually tipped to the fully operated position, the trap shall remain in that position when pressure is applied to the operating spring at a point opposite its point contact. The trap shall restore to normal when this pressure is removed. To adjust proceed as follows:

(a) Loosen the two nuts which attach the contact spring assembly mounting bracket to the hopper and move the bracket up or down so that requirement is met. Use No. 403A tool.

Contact Spring Requirements

4.04 The contact springs shall meet the following requirements:

(a) There shall be a separation of minimum .009", maximum .015" between the stop lugs on the trap and the front of the hopper when the trap has been tipped and allowed to restore to the normal position. Gauge with No. 126A gauge.

(b) With the trap in the normal position the force required to open the contacts shall be minimum 10 grams, maximum 20 grams when measured at the short contact spring. Use No. 70G gram gauge.

(c) There shall be minimum .015", maximum .025" follow of the closed contacts from the normal position. Gauge by eye.

(d) If the contact springs do not meet requirements (a), (b) and (c) proceed as in 4.05.

Contact Spring Adjustments

4.05 To adjust the contact springs proceed as follows:

(a) Adjust the tension of the operating spring so that there is a separation of minimum .009", maximum .015" between the stop lugs on the trap and the front of the hopper. Use No. 466A tool.

(b) Adjust short contact spring so that required contact pressure is obtained. Use No. 466A tool.

(c) Adjust stop spring so that required follow is obtained. Use No. 466A tool.

(d) Recheck 4.04 (a) and (b).

5. COIN RELAY

Caution: The tension of the armature restoring springs, the position of the bracket arms, the adjustment of the armature restoring arms, the separation between the armature and pole pieces and the adjustment of the pivot screws should not be changed. If the relay cannot be made to operate properly without adjusting these parts, the relay should be replaced.

Normal Position of Armature Restoring Arms

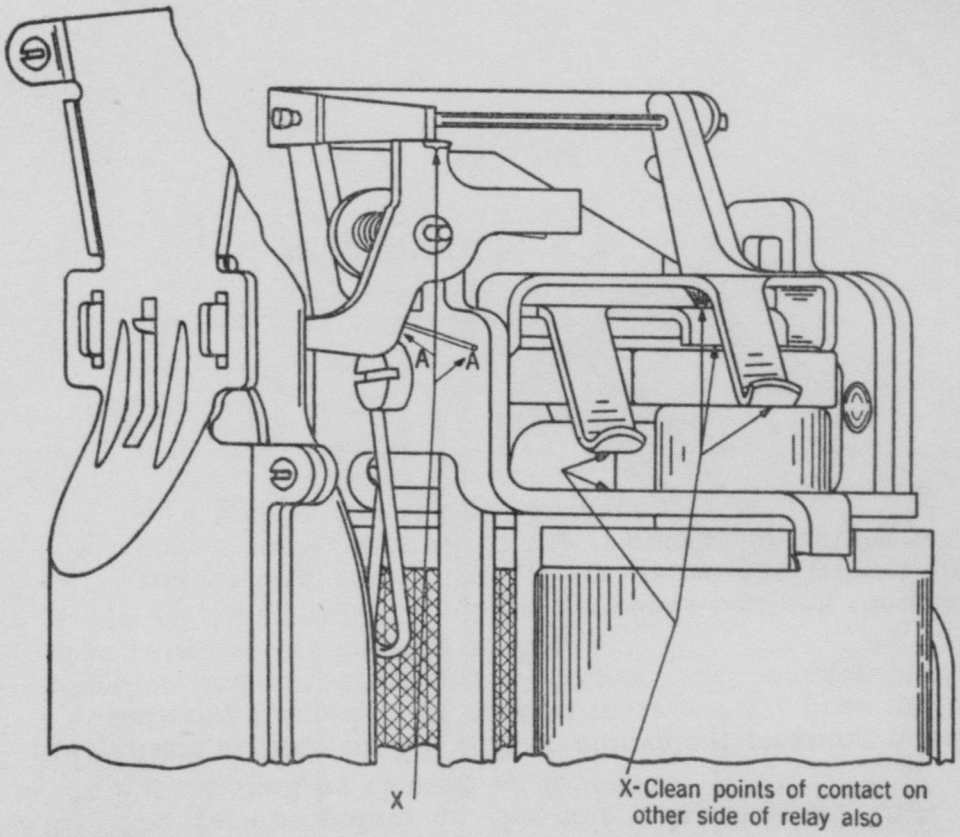
5.01 When operating arm is in normal position the armature restoring arms shall rest on the tops of the pole pieces with no play between the operating arm and the armature restoring arms at their points of contact. If the relay does not meet this requirement, replace the relay.

Points Cleaned With Paper

5.02 The various points on the coin relay marked "X" in Fig. 11 shall be cleaned as follows:

(a) Insert a piece of KS-7188 or equivalent cleaning paper between the points of contact marked "X", press parts together and withdraw paper. Repeat with a new paper until paper shows no sign of dirt.

Note: In addition to pulling the paper between the coin trigger and coin trigger lever, move the trigger up and down so that all of the trigger's contacting surface will be cleaned by the paper.



Note: Points A need be cleaned only when flat type trigger spring is used

Fig. 11.

Cleaning of Insulating Roller

5.03 Clean the outside of the insulating roller as follows:

(a) Square off end of orange stick KS-6320 by trimming about 1/8" from end.

(b) Scrape the dirt from the roller by pushing the end of the orange stick back and forth over the roller. Rotate the roller a little at a time until the entire surface is cleaned.

Note: Do not apply carbon tetrachloride to the roller.

Cleaning of Inner Ground Contact Spring

5.04 Clean that part of the inner ground contact spring which comes into contact with the insulating roller, as follows:

(a) Hold the inner ground contact spring slightly away from the roller.

(b) Moisten the end of an orange stick KS-6320 with C. P. carbon tetrachloride, and use the side of the flattened portion of the stick to scrape the dirt from the spring.

Magnetic Particles

5.05 Remove magnetic particles from armature and pole pieces as follows:

(a) Place a piece of rubber tape (stretched to reduce thickness as much as possible) over the top of one of the pole pieces and under the armature. Operate armature manually so that tape is pressed between armature and pole piece. Operate armature to other side and remove tape. Use a new piece of tape for each pole piece.

Burrs on Operating Arm

5.06 Remove burrs on the slot at the lower end of the operating arm with a piece of crocus cloth wrapped around the end of a cabinet screw-driver. Clean off with KS-2423 cleaning cloth moistened with C. P. carbon tetrachloride.

Coin Trigger Adjustment

5.07 The coin trigger shall turn freely on its pivot pin and shall rest in a horizontal position when pressure of coin trigger lever is removed. The coin engaging end of the trigger shall be located approximately in the vertical center line of the coin hopper slots and shall not touch either the sides or the top of the front or rear slots when the play is taken up in either direction. Coin trigger shall be of the chromium plated type, P-231256 or P-231255 (these triggers may be identified by a prick punch mark stamped on the side face). In case of newer style trigger P-231255 having coiled wire type spring (P-248496), the free end of the leg of the spring designated "A" on Fig. 12 shall stand out slightly from the surface of the pivot frame and shall be interposed between the trigger and the pivot frame so as to act as a resilient stop for the trigger in the tripped position. To adjust, proceed as follows:

(a) If trigger is not horizontal, adjust by bending the spring riveted to the trigger with No. 147 tool or equivalent in case of trigger having flat spring, and by bending end of spring designated "B" in case of newer style trigger having coiled wire type spring. If, in case of coiled wire type spring, end designated "A" does not stand out from pivot frame as covered in 5.07, adjust by bending the end of spring designated "A".

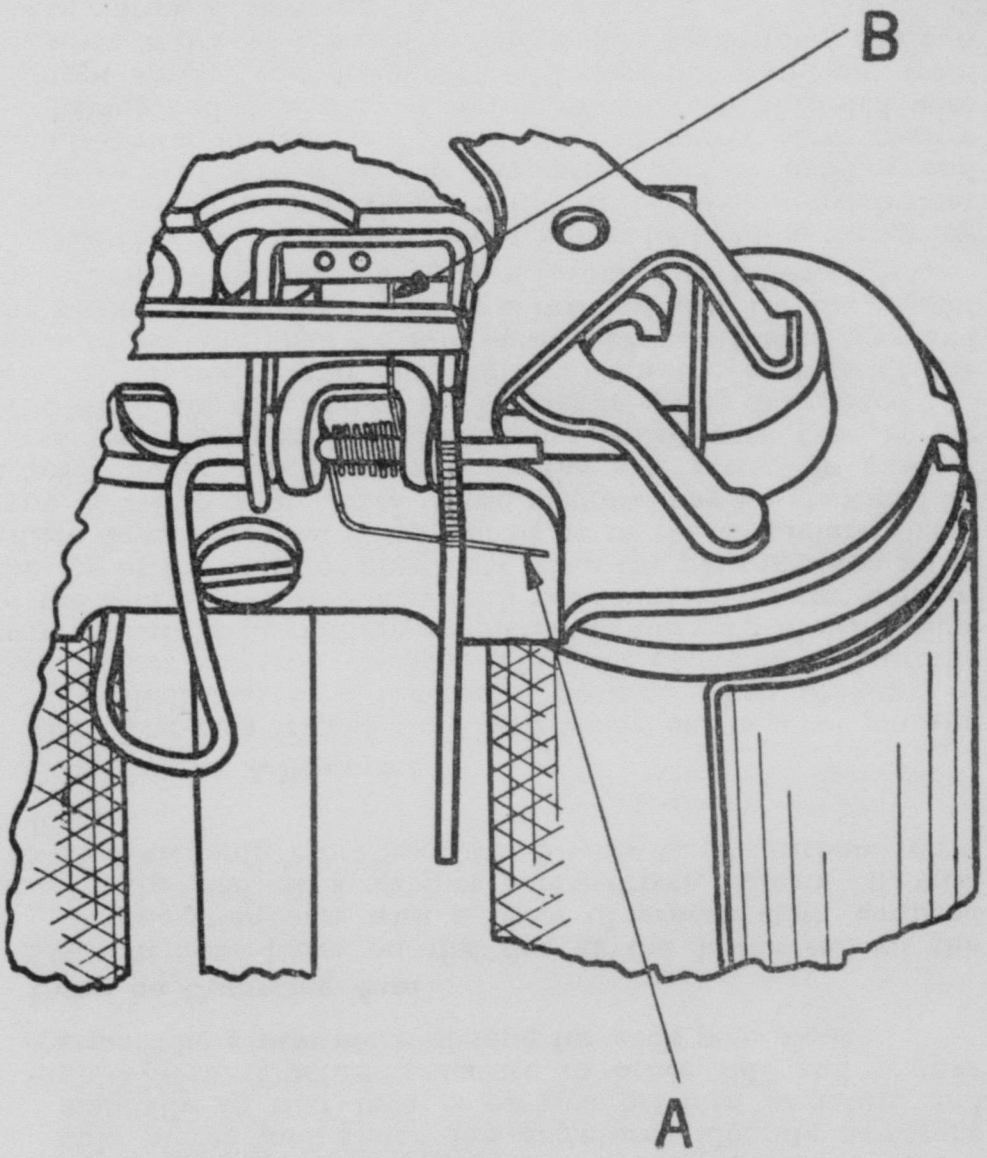


Fig. 12.

Note: See that trigger spring (on older type triggers) does not touch the restoring arm when relay is operated to the collect position, and the trigger operated over its entire travel.

(b) If trigger touches sides of slots, loosen coin relay mounting screws and adjust relay to meet the requirement in 5.09 and at the same time try for a better adjustment of the coin trigger in the slots of the coin hopper.

(c) If trigger continues to touch sides of slots after requirement 5.09 is met center the trigger in the slots by bending the trigger with No. 466A tool.

(d) If trigger touches the sides of slots due to excessive play between the trigger and its bracket replace the trigger.

Replacement of Coin Trigger

5.08 To remove trigger remove relay from coin collector and proceed as in (a) or (b). To install new trigger proceed as in (c).

(a) If relay is equipped with coin trigger pin flattened on both ends, cut pin in center and at both ends with diagonal pliers and remove pin.

(b) If relay is equipped with new style pin P-248039 lift pin until it clears the head of the pivot screw. Then slide the pin over the head of the pivot screw until the hooked end of the pin disengages from the frame.

(c) Place new chromium plated trigger P-231255 in position. Place end of spring P-248496 designated "A" on Fig. 12 against the surface of the pivot frame and end designated "B" over the coin trigger supporting bracket and under the back of the trigger, as shown on the figure. Then insert the straight end of the pin P-248039 through the trigger, supporting bracket and spring from the side adjacent to the pivot screw. Hook the other end of the pin under the frame and snap straight portion over head of pivot screw, as shown in Fig. 13. Triggers with flat springs (P-231256) may be converted to the newer style (P-231255) by clipping off the spring as near as possible to the surface of the trigger. Remount the coin relay.

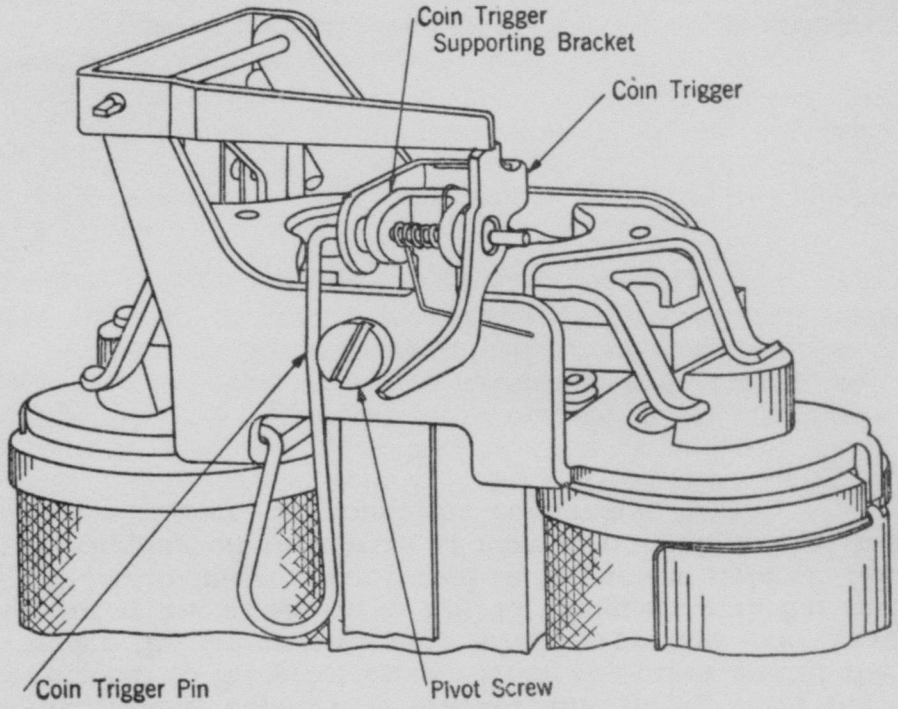


Fig. 13.

Centering of Relay

5.09 The operating arm when in the normal position shall bring the coin vane in a vertical line so that the thickness of the vane may be seen through the center hole of the coin trap. See Fig. 14. To adjust, proceed as follows:

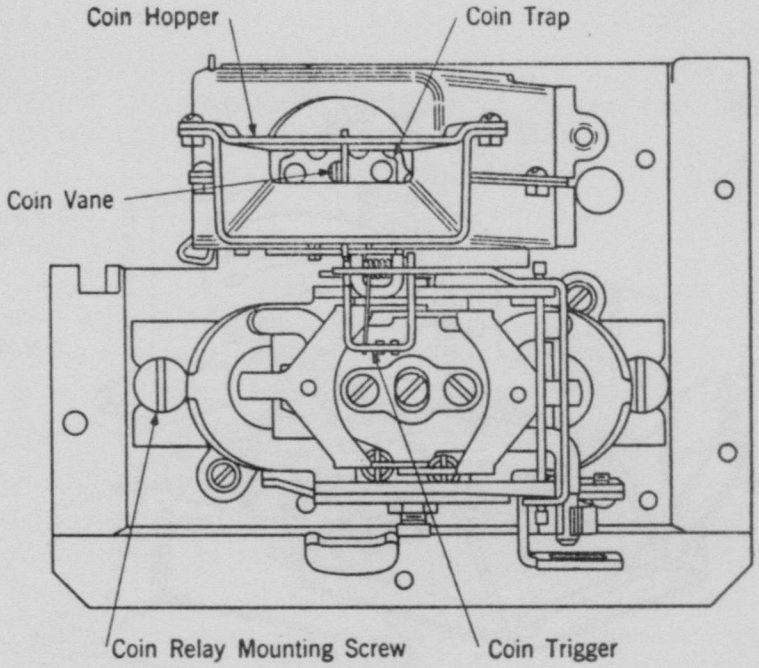


Fig. 14.

(a) Loosen coin relay mounting screws and move relay to right or left until coin vane is centralized.

(b) Without disturbing the adjustment of the coin vane move the relay as close to the coin hopper as possible and tighten mounting screws. Check 5.07.

Armature Side Play

5.10 Armature shall move freely with perceptible but not excessive pivot play. Do not adjust pivot screws. If armature does not meet this requirement, replace the coin relay.

Operating Arm Stop Lugs

5.11 With armature in the normal position the space between the pivot frame and the operating arm stop lugs which limit the armature travel shall be within the limits of minimum .123" and maximum .129". The relay being checked meets this requirement when the .123" part of the No. 126E gauge enters freely between the lug and the frame (as shown in Fig. 15), and the .129" part of the gauge will only enter with some friction. When the No. 126E gauge is not available the No. 44 gauge may be used in which case the .125" blade may enter with a slight looseness if adjustment approaches the maximum of .129" or may enter with some friction if adjustment approaches the minimum of .123". To adjust proceed as follows:

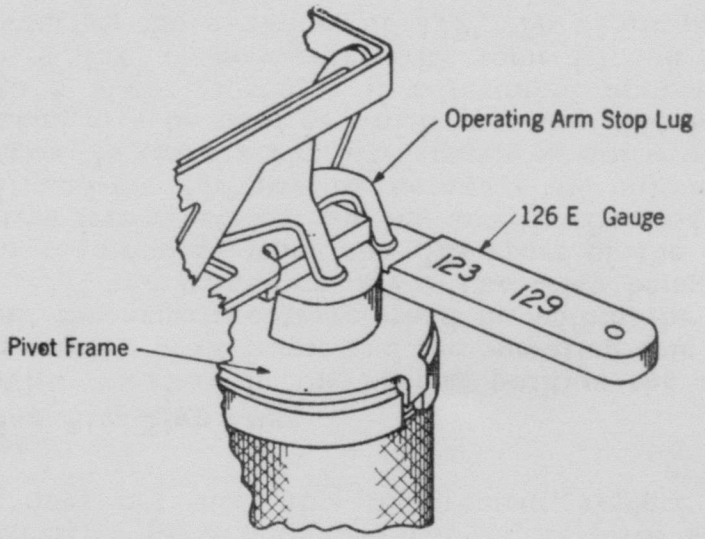


Fig. 15.

(a) Place the No. 466A tool on the operating arm stop lug as shown on Fig. 16 and adjust lug so that requirement is met.

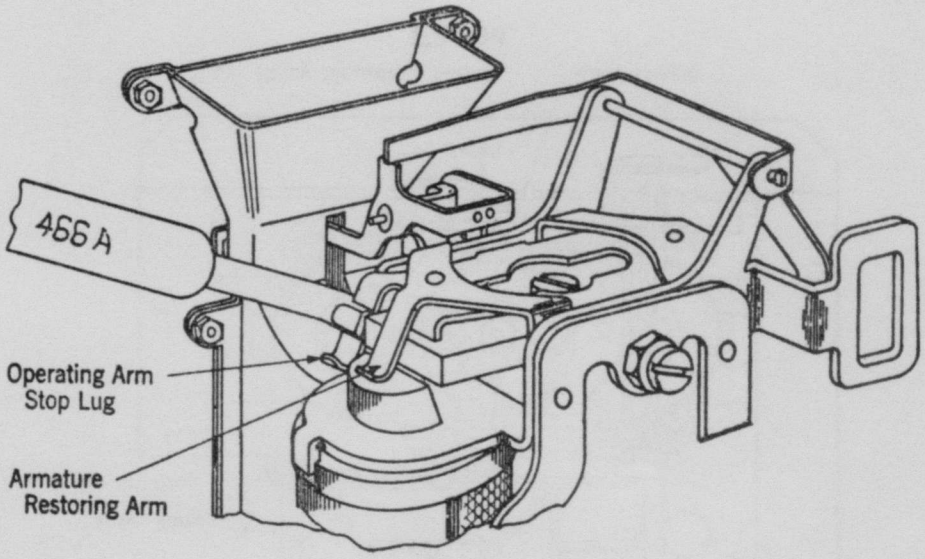


Fig. 16.

Coin Trigger Lever

5.12 The coin trigger lever shall rest on the coin trigger approximately on the vertical line of the pivot for the trigger. To adjust proceed as follows:

(a) Place the No. 466A tool on the arm of the coin trigger lever as shown on Fig. 17 and adjust lever so that requirement is met.

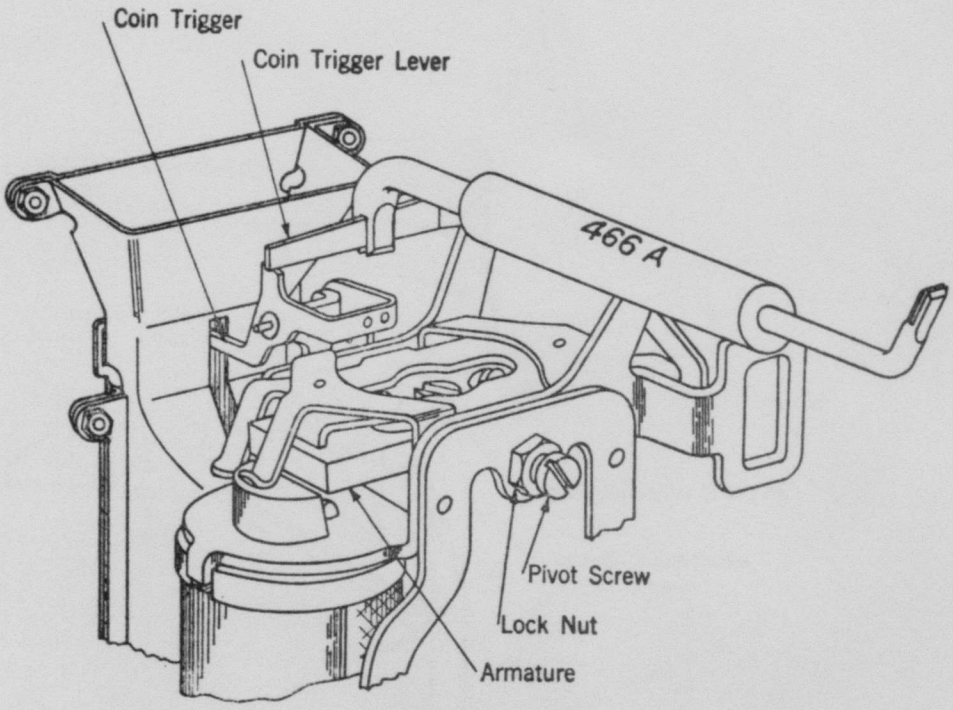


Fig. 17.

5.13 The coin trigger when in the operated position shall restore to its normal position and there shall be a perceptible clearance (approxmately 1/64") between the top of the coin trigger and the coin trigger lever when either of the operating arm stop lugs is given its full travel, but shall not restore when either of the operating arm stop lugs is moved down slowly by hand to within .030" of its full down travel when pressure is applied inside the rounding at the end of the operating arm stop lugs as shown in Fig. 18. To gauge the .030", place the .030" portion of the No. 126C gauge or the .030" blade of the No. 44 gauge between the stop lug and the pivot frame, as shown on Fig. 18, and (with the coin trigger tripped) press down slowly as described above. To adjust proceed as follows:

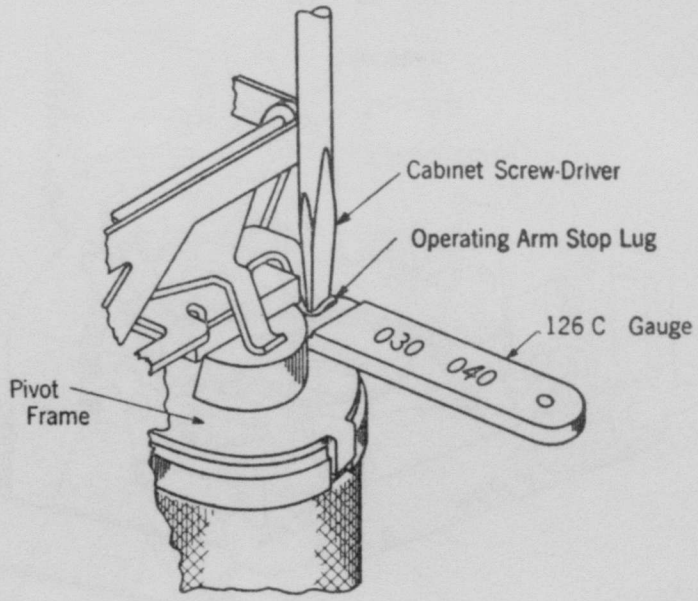


Fig. 18.

(a) Operate armature in either direction by pressing down on the operating arm stop lugs. See that insulating roller on operating arm causes an approximately equal rise of the coin trigger lever. If necessary adjust roller arm as shown in Fig. 19 (being careful to keep the roller in a horizontal position) until an approximately equal rise is obtained. Use No. 466A tool.

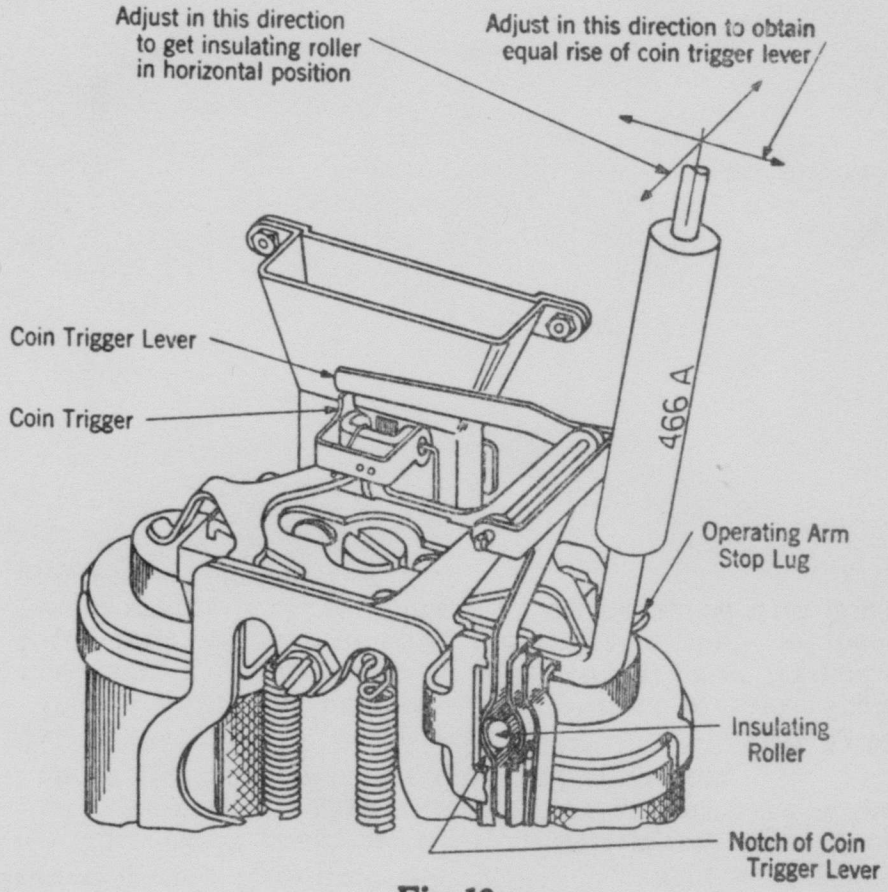

Adjust in this direction to get insulating roller in horizontal position
Adjust in this direction to obtain equal rise of coin trigger lever
Coin Trigger Lever
Coin Trigger
466 A
Operating Arm Stop Lug
Insulating Roller
Notch of Coin Trigger Lever

Fig. 19.

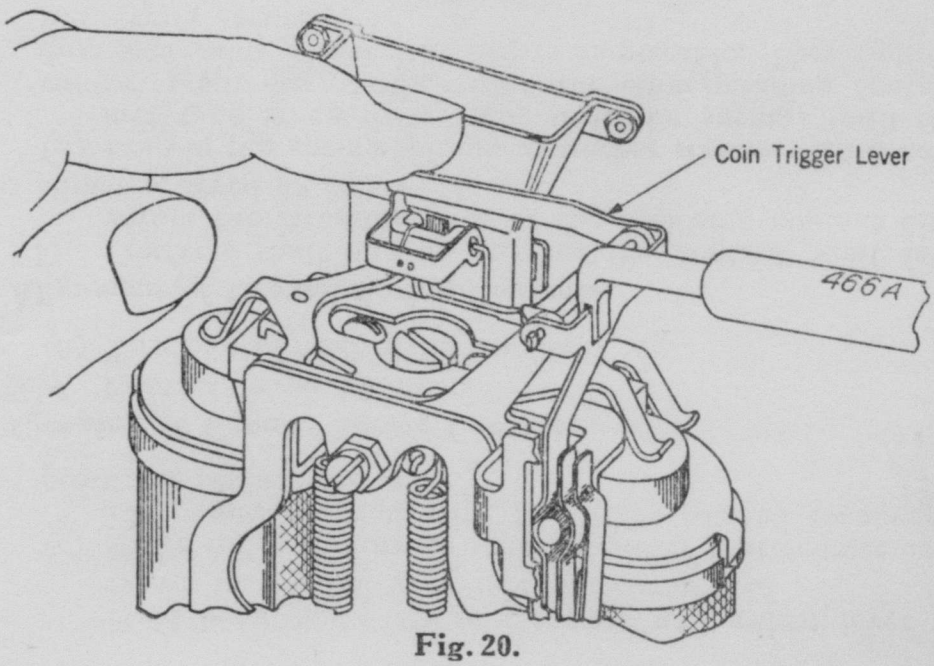

Coin Trigger Lever
466A

Fig. 20.

(b) Hold lever down on coin trigger and adjust lever as shown on Fig. 20 to meet requirement 5.13.

(c) If the roller is worn to such an extent that requirement 5.13 cannot be met with the roller rotated to several positions, replace the relay.

Cleaning of Ground Spring Contacts

5.14 Contacts shall be clean.

(a) To clean burnish with No. 265B tool.

Alignment of Ground Spring Contacts

5.15 Contacts shall line up so that the contact point falls within the circumference of the opposing contact disc. To adjust proceed as follows:

(a) Loosen the spring pile-up mounting screws with a cabinet type screw-driver and shift the springs until the contact point lies wholly within the corresponding contact disc, preferably as near the center as possible. Then tighten the screws securely.

Ground Spring Requirements

5.16 The relay shall meet the requirements given below. Whenever the ground spring contact pressure is measured check the coin chute for type and condition.

(a) If the chute is designated P-242923, P-243570, D-96591 or D-96720 the ground spring contact pressure shall be minimum 5 grams, that is, with the trigger tripped the force required just to open the contacts shall not be less than 5 grams. This pressure shall be measured with No. 70F gauge as shown in Fig. 21.

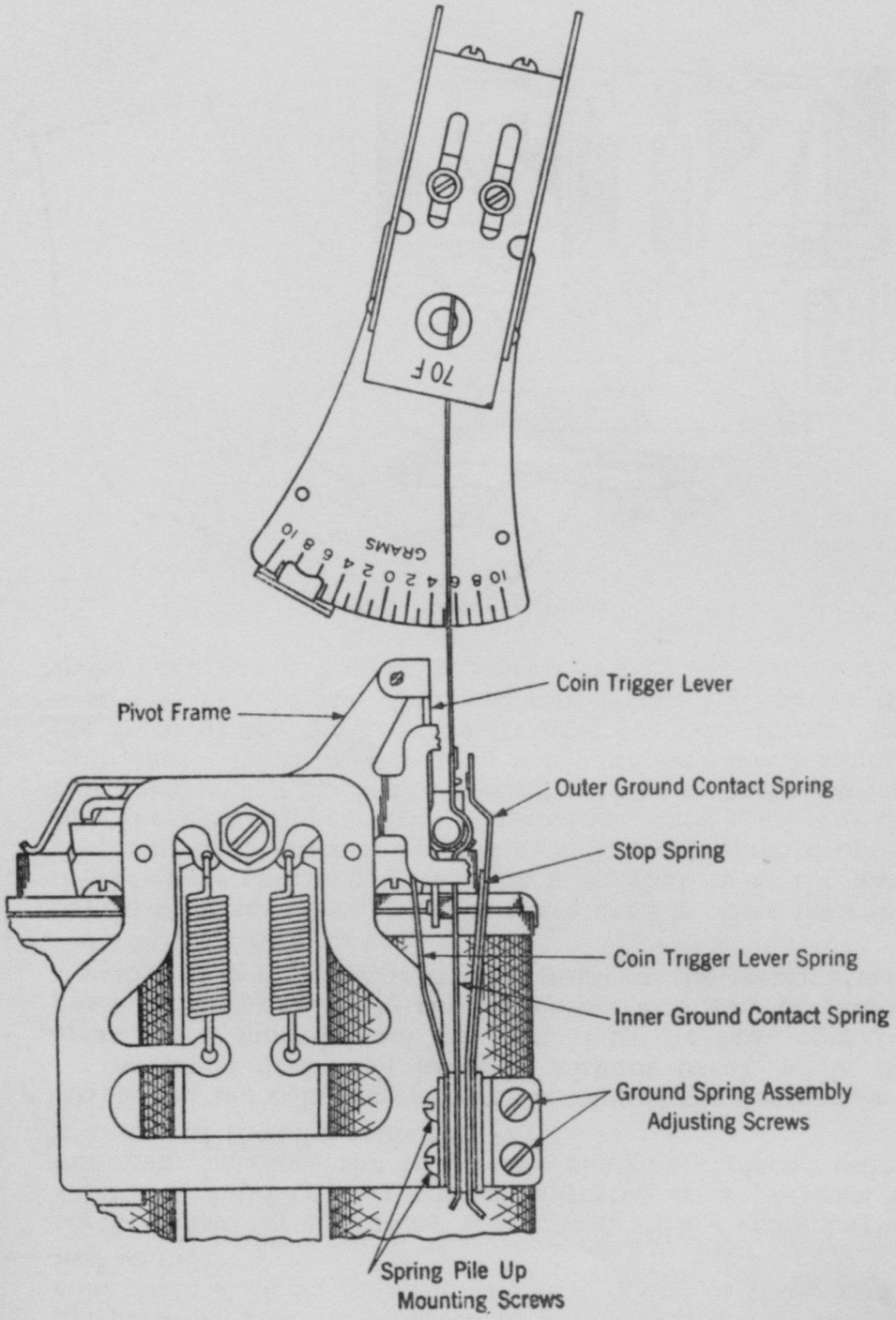


Fig. 21.

(b) If the chute is other than one of those specified in (a) and meets the gauging and inspection requirements or can be made to meet these requirements by cleaning, do

not readjust the ground contact springs if the pressure is 3 grams or more but less than 5 grams and they meet all the other ground spring requirements. If, however, the ground springs require adjustment for any other reason the pressure shall be adjusted to minimum 5 grams and the coin chute shall be replaced unless it is one of those specified in (a).

(c) Whenever a coin relay is replaced with a relay having the ground contact springs adjusted to a pressure of minimum 5 grams, the coin chute shall be replaced unless it is one of those specified in (a).

(d) When the coin trigger lever is tripped the contact shall be made and shall be held without break while the armature is moved from the normal to the fully operated position. This applies in each direction and may be judged visually. It is immaterial at what point on the return stroke the contacts open.

(e) In all cases when the coin chute used is other than one of those specified in (a), the relay shall meet the dime dropping test, which is applied as follows: A dime dropped into the coin hopper three consecutive times shall trip the coin trigger and cause the ground springs to make contact each time. To drop the dime it should be placed against the front of the hopper directly over the coin trigger and with the edge of the dime not more than 1/8" above the front edge of the hopper as shown in Fig. 22.

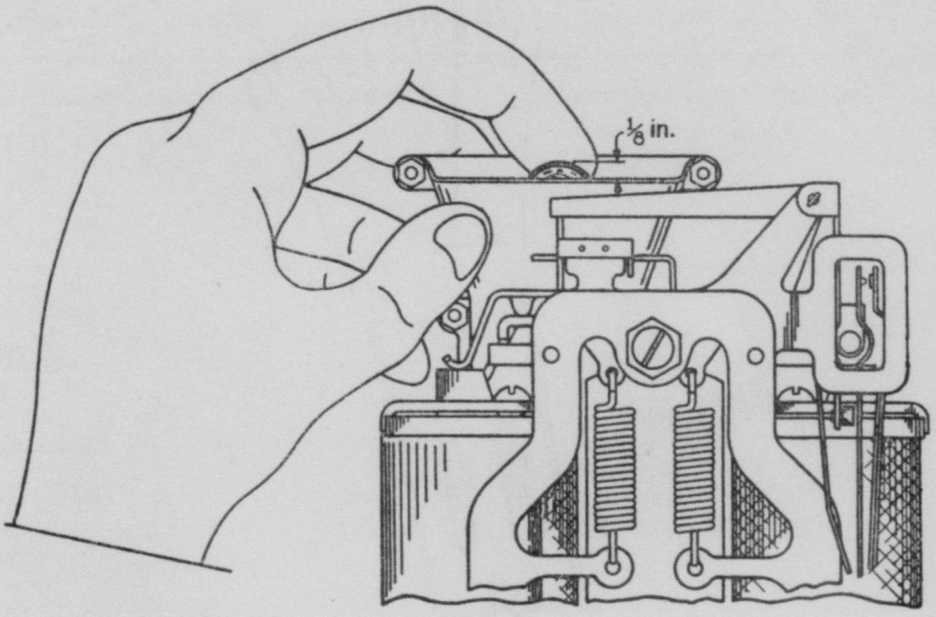


Fig. 22.

(f) With coin trigger and armature in normal position the separation between contacts shall not be less than .015". Use No. 127B gauge.

(g) If the relay does not meet requirements (a) to (f) inclusive proceed as in 5.17.

Ground Spring Adjustments

5.17 To adjust the ground springs proceed as follows:

(a) With armature in the normal position see that the insulating roller is approximately in the center of the notch of the inner ground contact spring. If necessary, loosen the screws holding the ground spring contact assembly and move assembly up or down as required.

(b) With the relay in the normal position adjust the inner ground contact spring until it almost touches the hard rubber stud on the coin trigger lever. Use No. 466A tool.

(c) See that the outer ground contact spring is tensioned against upper end of its stop spring and that stop spring is adjusted so that there is not less than .015" air gap between contacts. To adjust stop spring use wide end of No. 466A tool. To tension outer ground contact spring place the slot of the narrow end of the No. 466A tool over the outer ground contact spring and while holding the tool in a direction tending to increase the tension of the spring against the stop spring, move the tool up and down, bowing the spring slightly.

(d) Adjust coin trigger lever spring so that the contact pressure is at least five grams.

Caution: Do not bow coin trigger lever spring so that it will come into contact with lock bracket on upper housing or end of coin trigger lever.

(e) Trip the coin trigger and observe that the contacts make and do not break while the armature is operated slowly in either direction.

(f) Recheck 5.13.

(g) Replace relay if requirements cannot be met.

6. HOUSING CONTACT SPRINGS AND EQUALIZING SPRING

6.01 Springs shall follow about 1/4" when the housing is removed.

(a) To check for this requirement swing the bottom of the upper housing outward from its locked position about one inch, then slowly return it until the contacts on the upper housing are felt to come into contact with the con-

tact springs on the coin collector base. At about the same time the equalizing spring should come into contact with the upper housing. The travel of the lower end of the upper housing from this point to its locked position shall be approximately 1/4".

(b) If springs do not have the desired follow adjust with No. 466A tool as shown in Fig. 23.

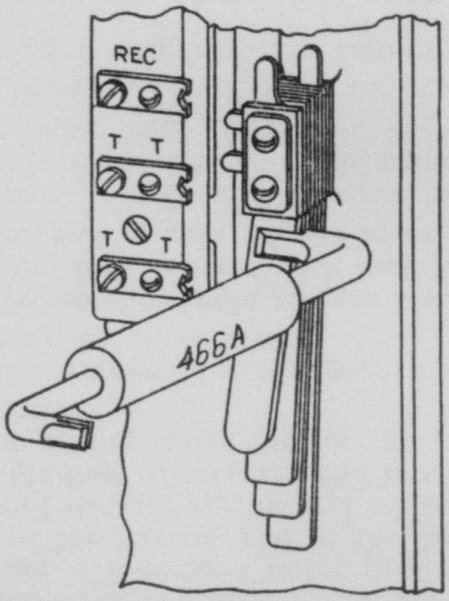


Fig. 23.

6.02 Housing contact springs shall be clean.

(a) To clean place a piece of crocus cloth over end of cabinet screw-driver and rub bright the contact surface of the springs. Wipe off springs with KS-2423 cleaning cloth moistened with C. P. carbon tetrachloride.

7. SWITCHHOOK

Binding and Squeaking

7.01 Switchhook shall move freely without binding or squeaking throughout the entire travel. To eliminate binding or squeaking proceed as follows:

(a) Remove switchhook. Clean off hard rubber stud with dry cloth. Remount switchhook using a new pin if old one is bent or rusted.

Contact Cleaning

7.02 The contacts shall be clean.

(a) To clean burnish with No. 265B tool.

Contact Spring Requirements and Adjustments

7.03 Contacts shall line up so that the contact points fall within the circumference of the opposing contact discs. To adjust proceed as follows:

(a) Loosen the spring pile-up mounting screws with a cabinet type screw-driver and shift the springs until the contact point lies wholly within the corresponding contact disc preferably as near the center as possible. Then tighten the screws securely.

7.04 When the receiver is slowly lifted from the switchhook, the switchhook shall move upward and come to a positive stop against the coin collector base. When the receiver is slowly lowered into place on the switchhook it shall cause the switchhook to move downward and come to a positive stop against the coin collector base. To adjust proceed as follows:

(a) Adjust the contact spring normally in contact with hard rubber stud on switchhook to increase or decrease tension against switchhook. Use No. 466A tool.

7.05 All contact springs shall have a perceptible follow (approximately 1/64″). The break between all contacts when open shall not be less than .025″. Gauge by eye. The rear pair of contacts shall break first and make last. To adjust proceed as follows:

(a) Adjust the contact springs with No. 466A tool.

8. COIN RETURN

8.01 Inspect the coin return for any obstruction which would retard the return of refunded coins. Clean the bottom of the coin return where the refunded coins come to rest. Use KS-2423 cleaning cloth moistened with C. P. carbon tetrachloride.

9. FINAL TESTS

9.01 After replacing ground lead on terminal block, replace upper housing, call operator, and advise her that you are about to test signals and that she should return coins deposited. Then deposit a nickel, dime and quarter and see if the operator distinguishes signals properly.

9.02 Test to see that the coin collector housings are not crossed with the wiring. Check as follows: Pass a short length of insulated wire through the cord hole and attach the

conductor to the ground lug on the terminal strip in order to obtain a ground connection. Lock the upper housing in place and remove the receiver from the switchhook. Connect one clip of the hand test set to the wire attached to the ground lug and with the other clip touch various parts of the coin collector such as transmitter rim screws, coin gauge, coin return and dial finger stop. If a battery click is heard in the receiver the coin collector is crossed with the wiring. Clear the trouble before leaving the station. Be sure to remove the wire used for making the above test.

9.03 When the foregoing checks and adjustments have been completed call the test deskman and cooperate in making a complete test of the station as outlined in the section of Division C60 covering Station Testing. While testing with the test deskman move the upper housing up and down and from side to side observing for noise or cutouts on the talking circuit. If present recheck housing contact and equalizing spring adjustments. See 6.01. Clean as covered in 6.02 if necessary.

10. OUT OF SERVICE NOTICES

10.01 When trouble is of such a nature that repairman cannot clear it (as in case a new coin collector is required) he should immediately advise the Test Desk and place a No. 126A number plate over the coin gauge or see that a "Temporarily Out of Service" sign is placed on collector.

10.02 When collector is restored to service the No. 126A number plate should be removed. If a "Temporarily Out of Service" sign was on the collector the sign should be returned to the public telephone subscriber or agent.

11. LEVELING OF COINS

11.01 In cases where the coin relay will not operate properly due to the coin receptacle being full, the trouble can be cleared temporarily by inserting the No. 139 tool through the hole in the right side of the coin relay tray and leveling the coins in the receptacle. Report that a collection should be made.