

COIN COLLECTORS/COIN TELEPHONES
(PREPAY-MULTISLOT)
MAINTENANCE

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SECTION 506-110-301

1. GENERAL

1.01 This section is reissued to:

- Change title
- Include the 146B Bias Margin Gauge
- Include information formerly contained in Sections 506-110-302 and 506-110-305, which are hereby canceled.

Since this reissue covers a general revision, arrows ordinarily used to indicate changes have been omitted.

1.02 Component parts (dials, ringers, handsets, etc.) should be maintained in accordance with section covering the particular item.

1.03 When trouble cannot be cleared:

- (a) Notify testdesk.
- (b) Place KS-7991 out-of-service sign on coin collector or E-4914 out-of-service tag over coin gauge.

1.04 When service is restored:

- (a) Remove sign or tag.
- (b) Return sign to agent.

2. TOOLS, GAUGES, CORDS, AND MATERIALS

2.01 The following tools, gauges, cords, and materials are required in addition to those normally carried to perform work operations outlined in this section.

ITEM	USE
139B Tool	Leveling coins
265C Tool	Burnishing contacts
376A Tool	Viewing contacts
466A Tool	Adjusting housing contacts
528A Tool	Removing foreign material from locks
641A Tool (2 req'd)	Mounting 5-type dials

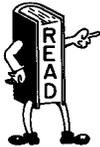
ITEM	USE
710A Tool	Removing switch hooks in corner mounted coin stations
719A Tool	Opening door on 235- and 1235-type coin telephones
KS-14995 Tool	Trap and vane release test
KS-16750, L2 Releaser	Removing dial finger wheels
TP-75503 Spring hook	Assembling springs on pull bucket
Center punch	Removing and replacing pull bucket shaft
1/2-inch cold chisel	Removing plastic pull bucket
146B Gauge	Coin relay bias margin test
178A Gauge	Gate operating arm adjustment (shaft type)
178B Gauge	Gate operating arm adjustment (yoke type)
P10B Cord	Electrically connecting upper to lower housing (236-, 1234-type)
P11C Cord	Electrically connecting door to housing assembly (235-, 1235-type)
KS-6320 Orange stick	Removing stuck coins
No. 6 Sash brush	General cleaning
KS-13786 Nylon brush	Cleaning coin return
KS-14164 Brush	Cleaning washer reject mechanism
KS-2423 Cotton twill cloth	Cleaning
KS-7860 Petroleum spirits	Cleaning
KS-16601, L1 Paper	Cleaning
No. 320 Aluminum oxide cloth	Cleaning housing contacts
KS-14774, L1 Grease	Lubricating
KS-19094, Anti-seize Compound	KS-19277 Security lock
Pipe cleaners	Cleaning coin gauge

ITEM	USE
Lead Pencil (2B or softer)	Lubricating switch hook and coin release mechanism
Paper clip	Dial shorting
Tinnerman clips (C-29313-012-445 or C-3412-020-38)	Upper to lower housing group clip
P-12A745 Spacer	Reduce upper housing ver- tical play
P-29872 Spacing washer	2-piece switch hook
Form E-4914 or KS-7991	Out-of-service tag or sign



KS-7860 petroleum spirits is flammable. Use safety precautions when handling.

3. CLEANING



Remove handset from switch hook before removing or replacing upper housing to avoid damage to the gate operating arm. Do not reassemble upper housing without replacing coin relay dust cover.

3.01 General Cleaning



Check operation of coin station following cleaning operations which may affect the mechanism.

- (a) To remove loose dirt or dust:
 - Use cleaning paper, KS-2423 cleaning cloth or a No. 6 sash brush
- (b) To remove sticky deposits:
 - Use cloth or brush moistened with water.
 - Wipe dry.
- (c) To remove gummy deposits:
 - Use cloth or brush moistened with KS-7860 petroleum spirits.
 - Wipe dry.

3.02 Coin Gauge

- (a) To clean dirty or sticky coin gauge openings:
 - See 3.01
 - Use moistened pipe cleaner to clean coin slots.

3.03 Coin Chute

(a) DO NOT CLEAN COIN CHUTE

- Replace if dirty or corroded
- Check for dirt at bottom of coin chute just back of the vertical step.
- Upper mounting screws or bayonet guides and springs may be cleaned with a KS-2423 cloth and KS-7860 petroleum spirits.



Do not lubricate nylon bushings, lower mounting screw, and rubber grommets.

- Replace if electromagnet armature, latch spring, or gate spring show definite signs of rust.
- Coin chute should be changed rather than replacing upper housing unless other conditions warrant change-out of the housing.

3.04 Coin Return

- (a) If coin return is badly corroded
 - Replace instrument
- (b) To clean coin return
 - See 3.01

3.05 Housing Contacts

- (a) Clean contacts with No. 320 or *finer* aluminum oxide cloth.
- (b) Wipe off with KS-16601, List 1 paper or KS-2423 cleaning cloth.

3.06 Locks

- (a) Use a 528A tool to remove foreign material from upper housing and security locks.

3.07 Washer Reject and Coin Release Mechanism

- (a) Remove upper housing and coin chute (see 4.04).
- (b) If mechanism is damaged, replace upper housing.
- (c) To clean:
 - Remove dust from reject mechanism with dry KS-14164 brush.
 - Clean star wheels and pushbutton with KS-7860 petroleum spirits applied with a KS-14164 brush.
 - Wipe dry.
- (d) If star wheels still do not move freely, replace upper housing.
 - Do not lubricate.



Do not attempt to reposition or bend star wheels or castings.

- (e) Lubricate shaft, of coin release pushbutton with No. 2B or softer lead pencil.
- (f) Reassemble mechanism, see 4.04.

3.08 Coin Relay

- (a) Remove foreign magnetic particles which have accumulated on selector card magnet and pole piece extensions as follows:

- (1) Fold a piece of rubber tape over the end of an orange stick.
- (2) Depress selector card then hold armature operated.
- (3) Press rubber tape against pole piece extension arms and magnets in selector card so that foreign particles adhere to tape.

4. UPPER HOUSING

4.01 Dial Replacement

- (a) Replace 4- or 5-type dial with 5-type dial.
 - To mount 5-type dial on upper housing, locate two 641A tools in dial mounting holes as guide pins.
- (b) Replace 6-type dial with 6-type dial.
 - Assemble mounting studs to dial before mounting dial.

Note: Replacement of a 4- or 5-type dial with a 6-type dial involves added replacement of dial adapter, number plate, dial cord, and possible modification of upper housing; therefore, upper housing should be replaced rather than replacing a 4- or 5-type dial with a 6-type dial.

4.02 Coin Deflectors

- (a) The 63A dial adapter used with the 6-type dial incorporates a coin deflector to prevent dropped coins from lodging behind the dial.
- (b) A P-14A544 coin deflector is used with the 5-type dial and the 56A dial adapter.
 - P-14A544 coin deflector replaces earlier P-16A805 coin deflector.
 - See Fig. 1 and 2 for installation.

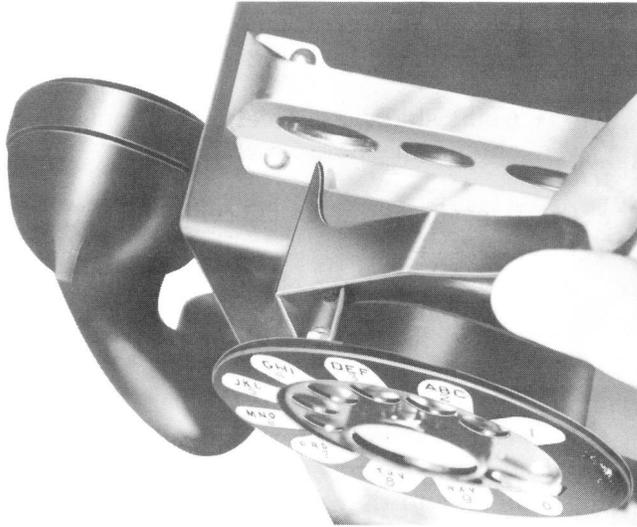


Fig. 1 — Method of Installing P-14A544 Coin Deflector

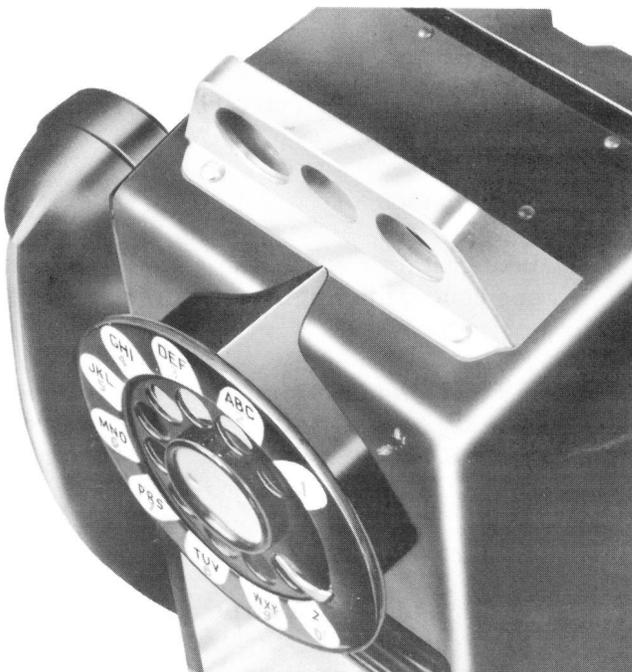


Fig. 2 — P-14A544 Coin Deflector in Place

4.03 *Stuck Coins*

- (a) To remove coins or slugs stuck in coin gauge:
 - Use fingers or an orange stick, do not use a screwdriver or other metal object.

- If necessary loosen or remove coin chute. See 4.04.
- (b) Replace upper housing if coin gauge is mutilated or distorted.
 - (c) To remove coins or slugs stuck in coin chute:
 - Use orange stick or other nonmetallic tool.
 - Remove coin chute, if necessary. See 4.04.
 - (d) Replace coin chute if coin channels are bent or damaged.
 - (e) Remove slugs, foreign coins or washers stuck in coin reject opening.
 - Check reject opening with a standard coin before chute is reassembled in upper housing.

4.04 *Coin Chute Replacement*

- (a) To remove coin chute from upper housing:
 - (1) Disconnect attached leads.
 - (2) Loosen filter, if present.
 - Leave filter hanging loose.
 - (3) If gong signal assembly is mounted on swing bracket:
 - Remove mounting screws and swing out of way.
 - (4) Remove mounting screw.
 - (5) Remove bayonet guides by pushing them toward coin chute and rotating one-fourth turn in either direction.
 - (6) Lift coin chute from upper housing.
- (b) If existing coin chute is equipped with gong signal assembly, capacitor, or resistor and the replacement chute is not so equipped, remove them and place on new chute.
 - End of gate operating arm guide on capacitor mounting bracket should clear gate lever (Fig. 3).

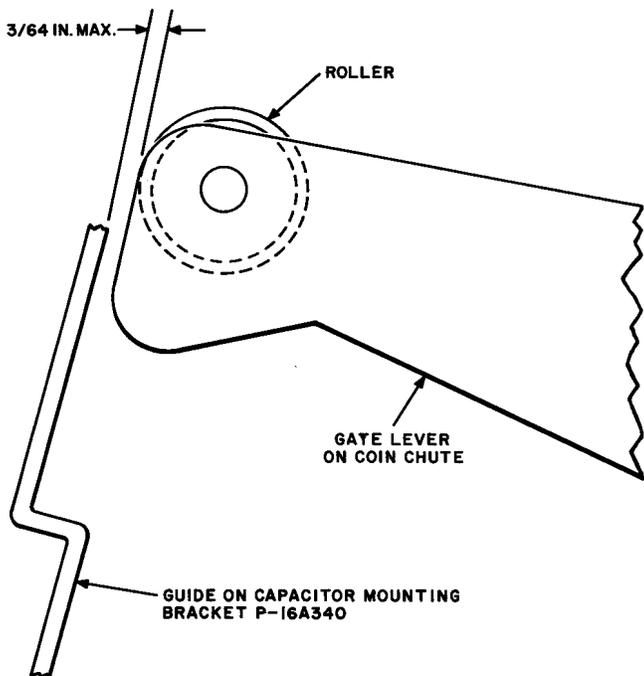


Fig. 3 — Clearance Between Guide and Gate Operating Arm

- (c) To reassemble coin chute in upper housing, reverse removal procedure.

Caution: Bayonet guides not securely fastened may fly out when coin release push-button is depressed.

4.05 Coin Chute Alignment

- (a) Check chute alignment with upper housing removed from lower housing and in a vertical position.
 - (1) Deposit nickel in 5-cent slot of coin gauge.
 - Coin shall pass freely from gauge into chute.
 - Coin should stop at first latch.
 - Deposit second nickel.
 - Locking latch should release, allowing coins to continue through channel.

- (2) Deposit dime and quarter in 10- and 25-cent slots of coin gauge, respectively.
 - Coins shall pass freely from gauge into chute and exit from chute.

- (3) Deposit nickel in 25-cent slot of coin gauge:
 - Coin shall pass freely from gauge into chute and pass through coin return channel.

- (b) If coins do not enter chute freely, check that chute is properly positioned on mounting flanges, and that mounting screw and bayonet guides are secure.
 - Do not use washers to align chute.
 - Do not attempt to straighten distorted chutes.

- (c) If above checks fail, try another chute. If coin still fails to enter chute freely, replace upper housing.

4.06 Coin Signals

- (a) Make certain coins strike signal gongs at time coin chute alignment tests are made.



Final judgment of coin signal tones shall be determined by the operator. See 6.04.

- (b) Coin signals shall be as follows:
 - (1) When a nickel or quarter passes through the coin chute, the associated gong should emit one clear signal.
 - (2) When a dime passes through the chute, the gong should emit two clear signals.
 - (3) If signal is poor:
 - Check for interference caused by improperly dressed wires.
 - Check that gongs are the proper type and fastened securely.

- Check for broken coin signal transmitter wires.

(c) Signal gongs

- Oval gongs should be mounted so that punch mark is within 1/8-inch of the center plane of the gong and at right angles to face of gong mounting bracket.
- Round gongs may be rotated to any position.
- Make sure quarter does not override quarter gong.

- (d) Replace coin chute, if satisfactory signals cannot be obtained.

4.07 Coin Release Mechanism

- (a) Coin chute shall rest against both flanges of frame assembly, not against pushbutton mechanism.

- (b) When pushbutton is fully depressed top of the coin chute should move approximately 1/4-inch.

- Gradual release of pushbutton should allow coin chute to return freely to its normal position.



If cardholder mounting screw interferes with electromagnet cover, clip off end of screw.

- (c) Pushbutton should not bind at any point in its fully in or fully out position over its length of travel.

- (d) Replace upper housing if pushbutton does not meet above requirements.

4.08 Cord Interference

- (a) Cords or wiring should not interfere with passage of coins through coin chute or with any moving parts.

4.09 Security Lock

- (a) Upper housing may be equipped with KS-19277 lock assembly for additional security.

- When upper housing is removed, apply KS-19094 antiseize compound to threaded area of bolt or stud fastener which engages the security lock.

5. LOWER HOUSING AND BACKPLATE ASSEMBLY

5.01 Transmitter and Receiver Cap Locks

- Refer to Section 501-210-101.
- Replace damaged handset per Section 506-110-103.

5.02 Antifrost Transmitter Cover

- Refer to Section 506-110-200

5.03 Antifraud Transmitter Unit

- Refer to Section 501-230-100.

5.04 Handsets With Armored Cords

- Refer to Section 506-110-103.

5.05 Defective Capacitor

- (a) Replace 195C capacitor if filling compound is leaking or container is collapsed.

5.06 37A Varistor

- If varistor is used, ensure that it is properly connected.
- Replace varistor if insulating finish on lead-out terminal is cracked or chipped.

5.07 Full Coin Receptacle

- (a) To temporarily clear coin paths blocked by full coin receptacle:

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- Insert 139B tool through leveling hole in base of mechanism to level coins.
- (b) To determine coin level:
- (1) With tool touching coins, move sliding indicator as far downward as possible.
 - (2) Remove tool; note indicator position on calibrated scale.
- (c) Report findings to test desk to prevent a repeated full coin box condition before collection.
- (d) If service cannot be cleared, place out-of-service sign or tag.

5.08 Switch Hook Operation

- (a) Switch hook shall not be cracked, broken, or bent.
- (b) Switch hook shall move freely. Test as follows:
- (1) *Slowly* lift handset from switch hook:
 - Switch hook shall move upward and come to a positive stop against backplate.
 - (2) *Slowly* lower handset onto switch hook:
 - Switch hook shall move downward and come to a positive stop against backplate.
 - If failure occurs, check operation of gate on coin chute.
 - See 5.11 for gate operating arm adjustments.
 - (c) Replace switch hook if failure is due to over travel caused by worn switch hook stops.

- (d) Check for binding between switch hook and upper housing:
- Make certain that vertical and lateral movement of upper housing does not interfere with switch hook operation.
 - Replace upper housing if switch hook binds.
- (e) On earlier type coin collectors (those with terminals on a wooden block), if switch hook binds, proceed as follows:
- (1) Loosen set screw and remove pivot pin.
 - (2) Take care not to burr bearing surface of pin.
 - (3) Replace pin if bent or corroded.
 - (4) Clean pin, bearing surfaces of switch hook, lugs on backplate, hard rubber stud on switch hook, and adjacent spring. See 3.01.
 - (5) Lubricate with 2B or softer lead pencil.
 - (6) Reassemble switch hook. Pivot pin shall be within 1/64- to 1/32-inch from end of hole in switch hook. Tighten switch hook.
 - (7) Replace coin collector, if above operations do not clear trouble.

5.09 Switch Hook Replacement

- (a) To remove shaft-type switch hooks from corner mounted coin stations without dismounting coin collector:
- (1) Remove hex head machine screw, lock-washer, and gate operating arm assembly and any spacing washers from right end of bearing shaft.
 - (2) Place large notch of 710A bending tool on switch hook hub. (Fig. 4A).
 - (3) Push tool to right, bending switch hook shaft.
 - (4) Place small notch of 710A bending tool over switch hook shaft. (Fig. 4B).

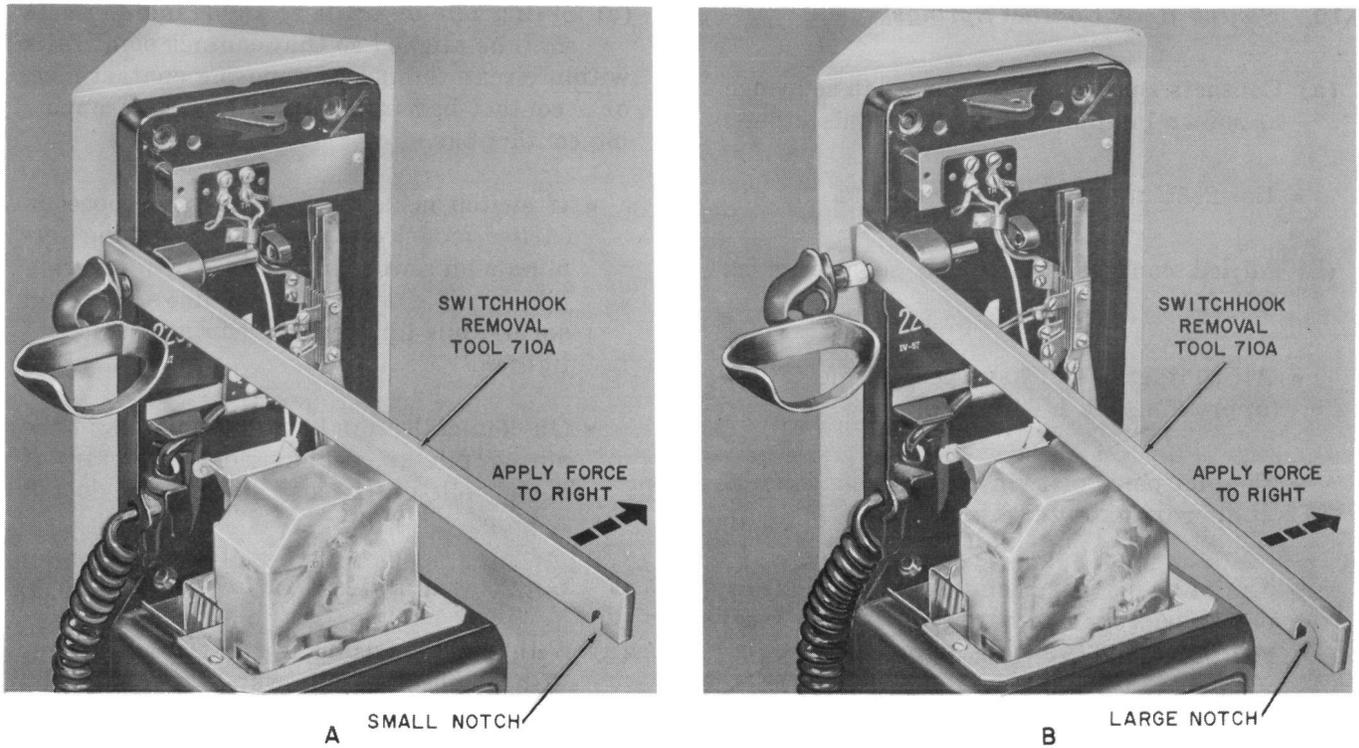


Fig. 4— Removal of Damaged Switch Hook on Corner Mounted Coin Collectors

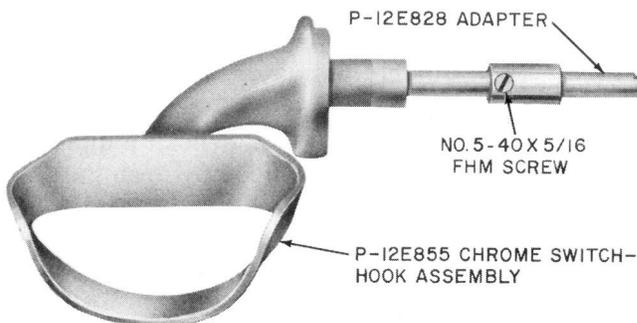


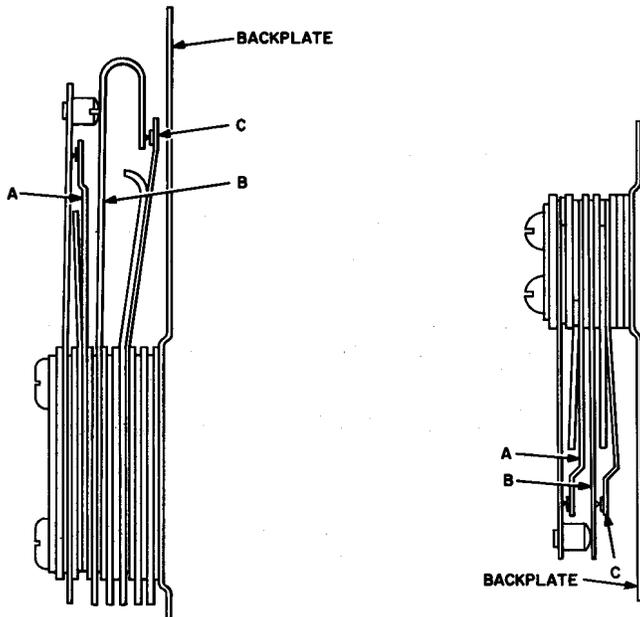
Fig. 5 — 2-Piece Switch Hook Assembly

- (5) Continue moving tool to right, applying bends as needed to remove switch hook from lower housing.
- (b) To install 2-piece switch hook:
- (1) Disassemble switch hook (Fig. 5).
 - (2) Place adapter shaft in right bearing of backplate.

- (3) Place switch hook shaft in left bearing of backplate.
- (4) Slide shaft into socket of adapter shaft.
- (5) Fasten parts together with flat head screw provided.
- (6) Replace gate operating arm lock washer and hex head machine screw.
 - End play of switch hook shaft should not exceed 1/32-inch.
 - Install P-297872 spacing washers to take up excessive end play.
- (c) Refer to Section 506-110-103 for installation of D-180009 switch hook conversion kit which may be used to reduce switch hook blocking.
- (d) Test operation of switch hook. See 5.08.

5.10 Switch Hook Contact Springs

- (a) Contacts shall make and break in sequence as shown in applicable connection sections.
- Use 265C tool to burnish contacts.
- (b) Adjust contact follow and separation as follows:
- All contacts shall have perceptible follow (approximately 1/64-inch).
 - Contact pairs of twin contacts shall make at approximately the same time.
 - Minimum separation between mating point-disc type and bar type contacts shall be 0.025 and 0.016 inch, respectively.
 - Clearance between noncontacting springs and between spring and backplate is shown in Fig. 6.



NOTE:
MIN. 1/32 IN. CLEARANCE BETWEEN
SPRINGS A AND B, AND BETWEEN
SPRING C AND BACKPLATE. JUDGE
VISUALLY.

Fig. 6 — Spring Clearance

(c) Spring pile-up shall be tight and contacts shall be aligned so that contact point falls within circumference of opposing contact disc, or a contact bar falls within length of opposing contact bar.

- If switch hook spring pile-up is loose on earlier model coin collectors (having terminals on a wooden block), tighten spring pile-up; if contacts do not line up, loosen spring pile-up, realign contacts and re-tighten.
- On coin collectors having terminals in the spring pile-up, replace coin collectors if spring pile-up is loose or contacts do not line up.

5.11 Gate Operating Arm Adjustment

(a) With upper housing in place and handset off-hook check as follows:

- (1) Deposit a single nickel which should be stopped by holding latch.
- (2) Lower switch hook slowly to release nickel.
 - There should be perceptible switch hook travel before and after nickel is released by holding latch.
- (3) With handset on-hook, deposit a quarter, which should be stopped by open gate.
- (4) Raise switch hook; quarter should be released, strike gong, and enter return chute.

(b) If above requirements are not met, check operating arm using 178A or 178B gauge (Fig. 7).

- With switch hook in down position, bottom surface of curved end of arm shall be between the two arcs and lines A and B.
- With switch hook in up position, bottom surface of curved end of arm shall be between the two arcs and lines C and D.

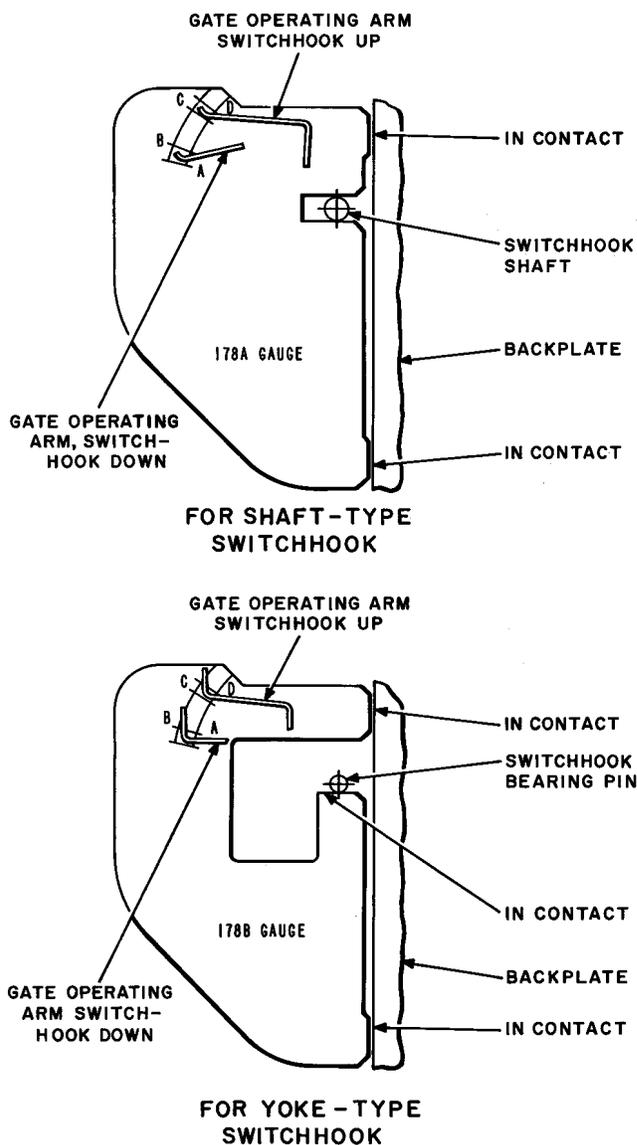


Fig. 7 — Use of 178-Type Gauge

- (c) To adjust position of gate operating arm:
- Bend lugs on each side of support bracket with 466A tool.
 - On early type, adjust spring arm only.
- (d) Replace switch hook if requirements cannot be met by adjustment.

5.12 Coin Relay and Hopper Tests

Note: No modification or adjustment of coin relay or hopper other than those specified herein shall be made.

Ground Contact Springs

- (a) Remove P-10E783 dust cover from coin relay.
- (b) Connect hand test set across line terminals and trip coin trigger. Dial tone should be heard. If not:
- (1) Verify presence of central office battery and station ground.
 - (2) If contacts make firmly, but test open, burnish with 265C tool.
 - (3) If dial tone is still not heard, replace relay.
- (c) Lubricate surface between trigger and contact spring with 2B or softer lead pencil (Fig. 9).
- (d) An open resistor will result in no coin pilot light at switchboard. Verify as follows:
- (1) Connect hand test set across line terminals with coin trigger not tripped.
 - (2) Close relay armature to its full extent of travel. Dial tone should be heard.
 - (3) If dial tone is not heard, replace relay.

Caution: Tilt selector card by pressing downward on one of the ears before manually operating the coin relay. This avoids jamming selector card and cam engaging surfaces.

Dial Shorting Springs

- (e) With coin trigger unoperated, contacts shall be made and have perceptible follow.
- (f) With coin trigger tripped, contacts should be open.

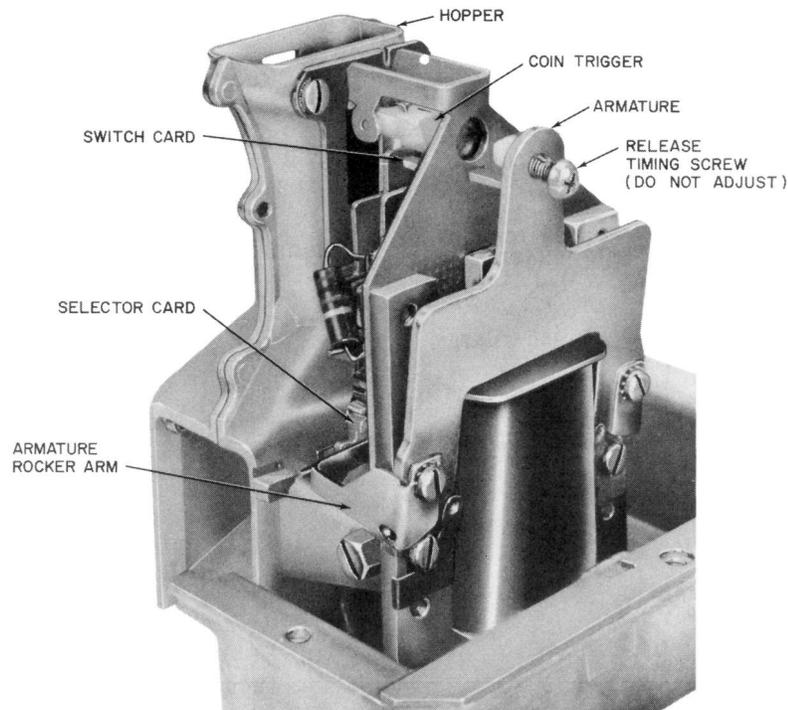


Fig. 8 — P-10E683 Mechanism Unit With P-13E961 Coin Relay

(g) Contacts shall shunt dial pulsing contacts when coin trigger is unoperated. Check as follows:

- (1) Provide ground on line by inserting paper clip or equivalent between ground terminal and spring pile-up of No. 4 spring (Fig. 10).

Note: Make sure paper clip does not make with the spring contact portion of No. 4 spring. Avoid making contact with No. 3 terminal.

- (2) Place upper housing on coin collector and listen for dial tone.
- (3) When dial tone is heard, dial any digit except 1. Dial tone should not be broken.
- (4) Remove upper housing.
- (5) Remove paper clip.

(6) If dial tone is broken, burnish contacts with 265C tool, check housing transfer spring contacts, and wiring for continuity, and repeat test.

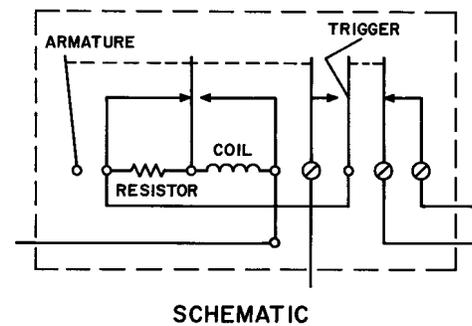
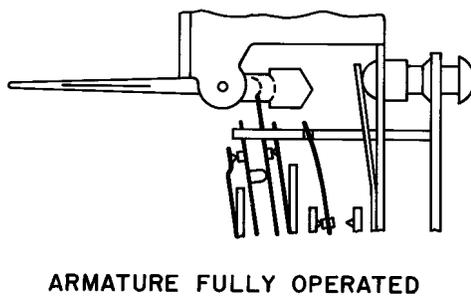
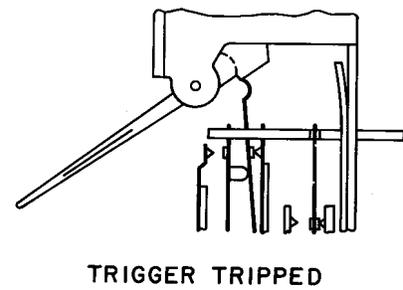
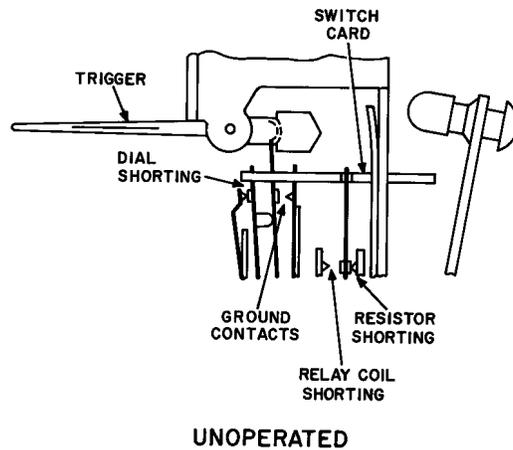
- (h) Replace dust cover.

5.13 Trap and Vane Release Test

Note: Disconnect ground from coin relay while making this test at manual stations.

- (a) Test as follows:

- (1) Manually close coin relay armature to its full extent of travel.
- (2) Insert KS-14995 tool into hopper to operate trap to the limit of its travel (Fig. 11).
- (3) Slowly withdraw tool.
- (4) Armature, trap, and vane should return to nonoperated position and trap should be locked.



NOTE:

ON RELEASE AND RETURN TO UNOPERATED POSITION,
GROUND CONTACTS OPEN BEFORE RELAY COIL
SHORTING CONTACTS OPEN.

Fig. 9 — Contact Spring Assembly

- (5) Make test three times in both collect and refund positions, pressing left side of selector card ear for collect and right side for refund.
- (6) If mechanism fails to restore properly, check mounting for binding.
- (b) If mechanism still fails, remove coin relay from hopper as covered in 5.15 (a) and proceed as follows:
- (1) Check vane for binding:
 - Hold vane tilted slightly to the right.
 - Vane shall drop to right when released.
 - (2) Check operating, restoring, and locking of coin trap.
 - Hold vane tilted slightly to the left.
 - Vane shall drop to left when released.
 - If vane binds, replace coin collector.
 - Depress trap-lever tab slowly with finger.
 - Coin trap shall fall freely and come to a positive stop.
 - Release trap lever slowly.
 - Coin trap shall restore and lock.

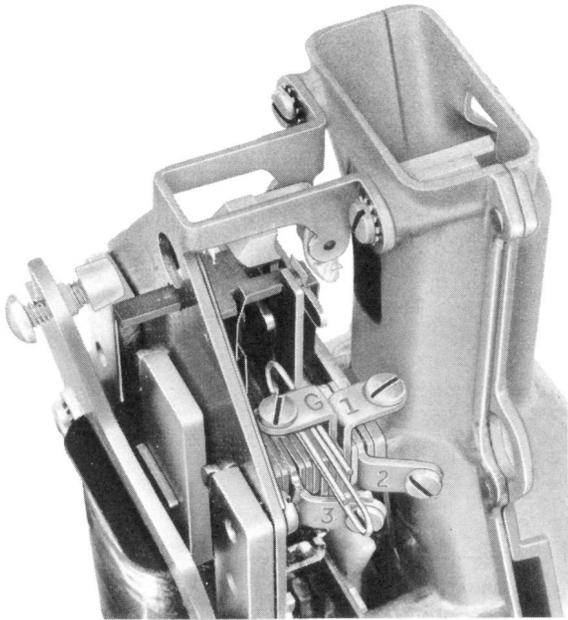


Fig. 10 — Method of Strapping Ground Around Ground Contacts on Coin Relay

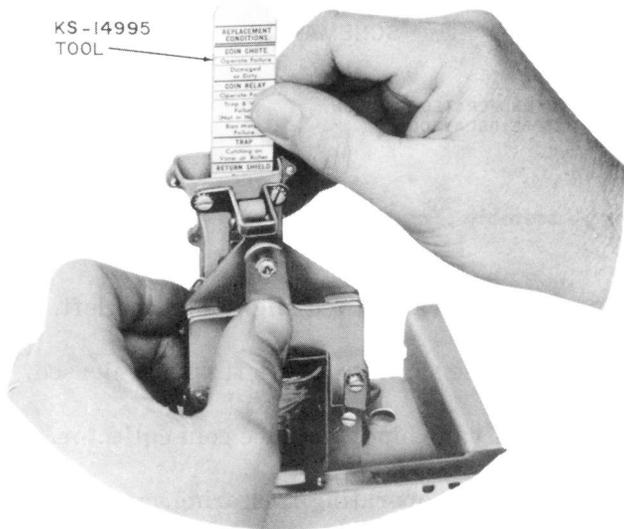


Fig. 11 — Trap and Vane Release Test

- If trap-lever spring is missing or lacks sufficient tension, replace or retension spring. See 5.16 (c).
- Replace defective coin trap, trap lever, or pin as required. See 5.16 (d).

- (c) Remount relay and repeat test.
 - If mechanism fails, replace relay.
 - If mechanism still fails, replace coin collector.

5.14 Bias Margin Test

Note: Make this test when coin relay is suspected of failing to operate or of operating in the wrong direction.

- (a) Coin relay shall operate in the selected direction (collect or refund) when appropriate central office battery is applied.

(b) Test as follows:

- (1) Call test desk and request a bias margin test of the coin relay (use central office test circuit where available).
- (2) Slip 146B bias margin gauge (Fig. 12) over left pole piece extension arm from left side of coin relay (Fig. 13).
- (3) Request test desk to perform operation (collect or refund) appearing in lower left corner of gauge.
- (4) After checking for the correct relay operation, reverse gauge by turning it around on the same pole piece extension arm and request operation appearing in the lower left corner of gauge.
- (5) Check for correct relay operation. Replace relay if either test fails.

Note: Make certain coin relay dust cover is in place before replacing upper housing.

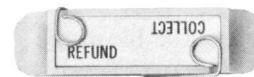


Fig. 12 — 146B Bias Margin Gauge

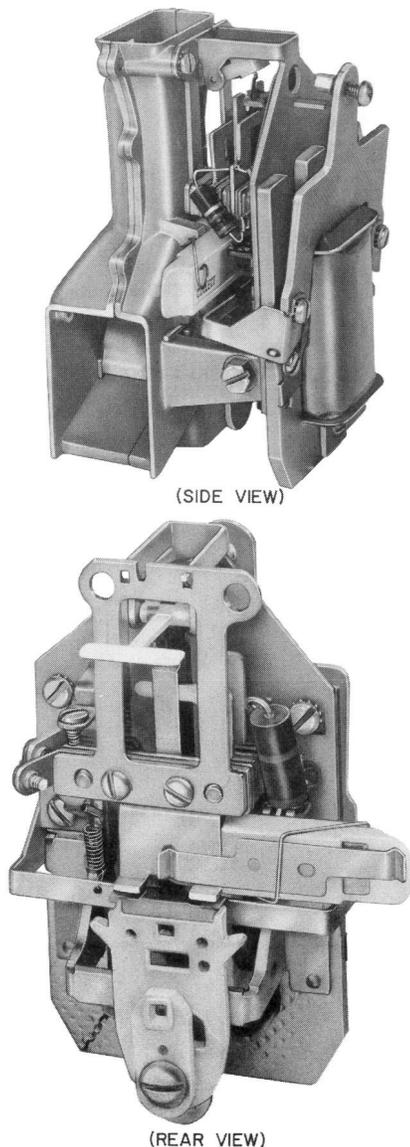


Fig. 13 — 146B Bias Margin Gauge in Position for Collect Test

5.15 Replacing Coin Relay

(a) To remove coin relay from hopper:

- (1) Remove wiring and four mounting screws.
- (2) Slide relay forward to clear trap and vane and lift upward.

(b) To replace relay on hopper:

- (1) Move vane to left.

- (2) With trigger tripped, place relay on hopper.
- (3) Slide relay back until trigger enters opening in hopper and trap-lever tab enters slot in selector card (Fig. 14).
- (4) Close armature manually by pressing downward on ear on left side of selector card.
- (5) Slide relay back, vane stem should enter hole in cam and mounting screw holes should line up.
- (6) Replace mounting screws.
- (7) Trigger should have some end play and armature, trap, and vane should operate and release without binding.
- (8) If trigger binds, loosen upper mounting screws.
- (9) If trigger is free with upper mounting screws loose, retighten screws evenly.
- (10) Replace relay if trigger still binds.

5.16 Replacing Coin Trap and Associated Parts

(a) Make certain new P-10E702 trap-lever spring is used.

(b) To remove trap-lever and coin trap:

- (1) Remove coin relay from hopper. See 5.15 (a).
- (2) Move vane to right.
- (3) Remove trap pin by sliding vertical portion over boss on front of hopper.
- (4) Turn coin trap sideways and remove through opening.

(c) To replace trap-lever spring.

- (1) Place trap-lever and spring on a flat surface (Fig. 16).

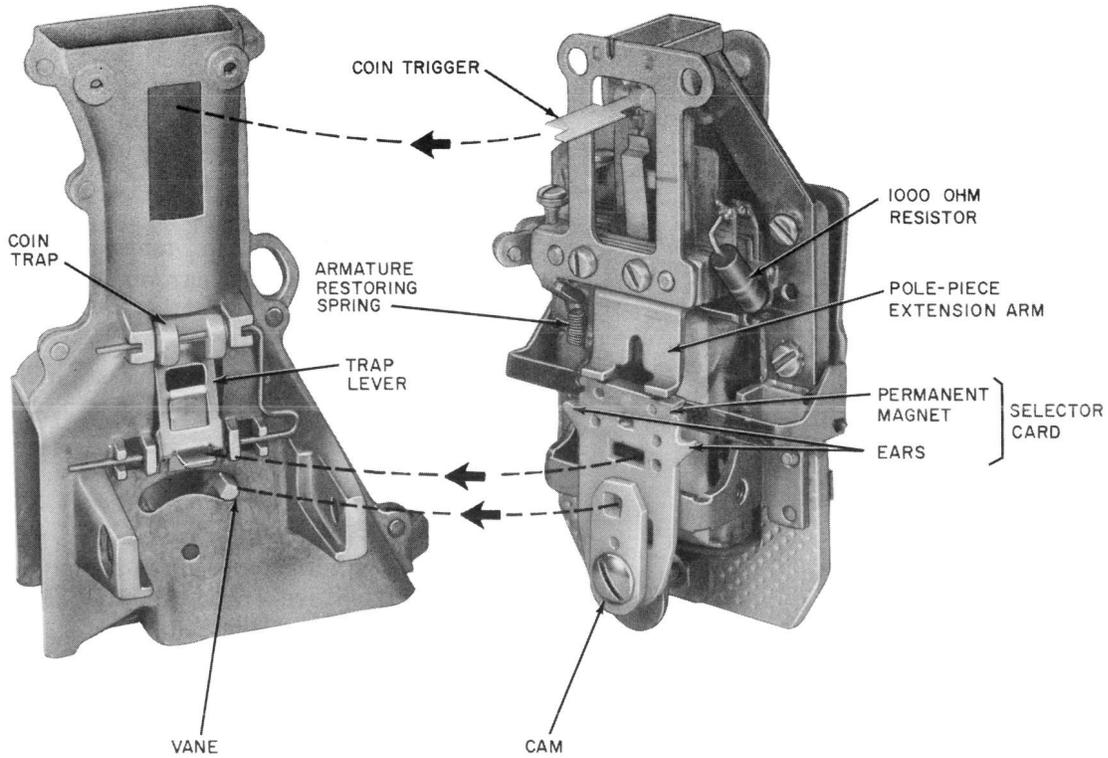


Fig. 14 — Coin Hopper and Rear View of Coin Relay

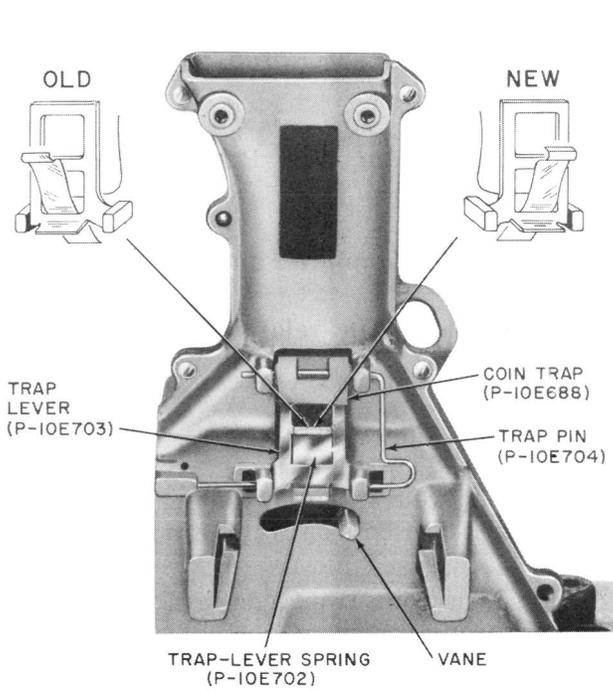


Fig. 15 — Trap-Lever Spring and Trap-Lever Assembled

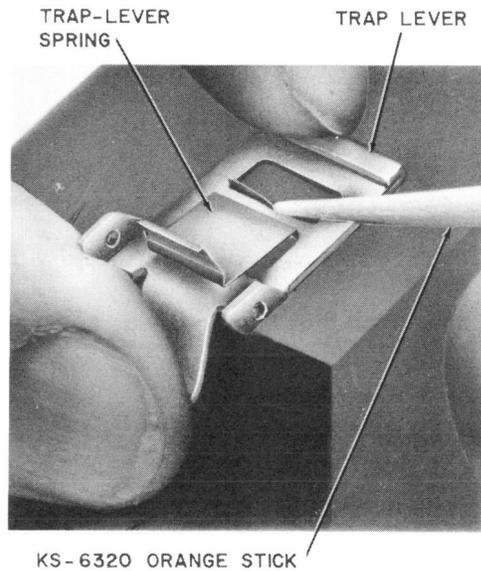


Fig. 16 — Bending Trap-Lever Spring

(2) Use a KS-6320 orange stick to bend trap-lever spring around center bar of trap-lever (Fig. 16 and 17).

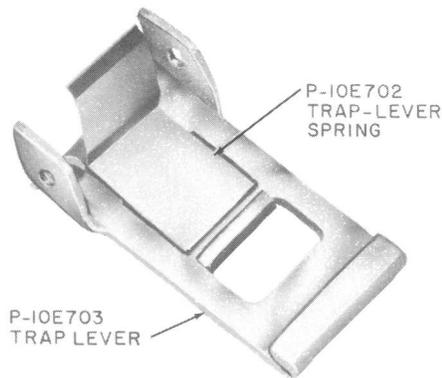


Fig. 17 — Trap-Lever Spring Assembled on Trap-Lever

Caution: Avoid distorting trap-lever spring during bending and insertion operations.

(d) To replace coin trap and trap-lever:

- (1) Partially insert trap pin into hole in hopper.
- (2) Place trap-lever on trap pin (Fig. 18).
- (3) Insert coin trap in hopper and engage pin in trap (Fig. 19).

Caution: Be sure that trap-lever spring is between trap pin and hopper (Fig. 20).

- (4) Push trap pin into position.
 - (5) Check operation. See 5.13 (a).
- (e) Replace relay on hopper. See 5.15 (b).

5.17 Grounding Coin Collector Housing

- (a) Check that grounding clip, (Tinnerman C-29313-012-445 or C-3412-020-38) is in place on upper housing.
- (b) Backplate assembly should be grounded as covered in Section 506-110-200.



Existing installations located in indoor booths which are not equipped with the No. 14 insulated ground wire assembly shall be grounded in the same manner as open-type installations.

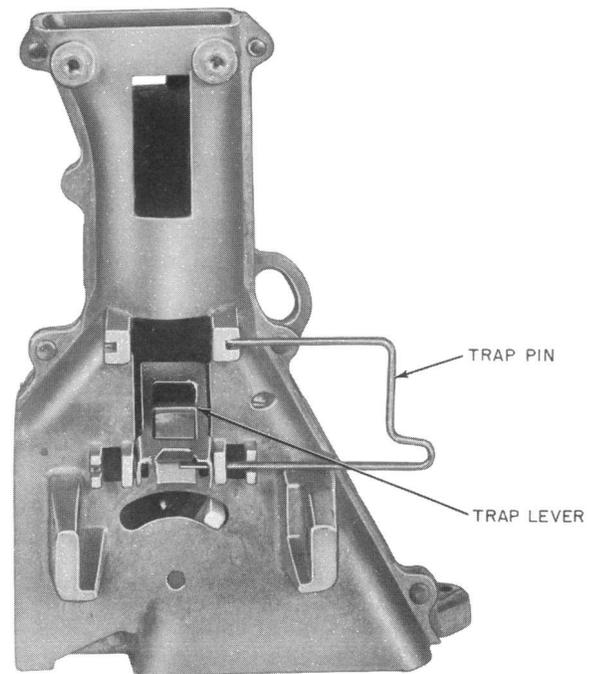


Fig. 18 — Placing Trap-Lever Pin on Hopper

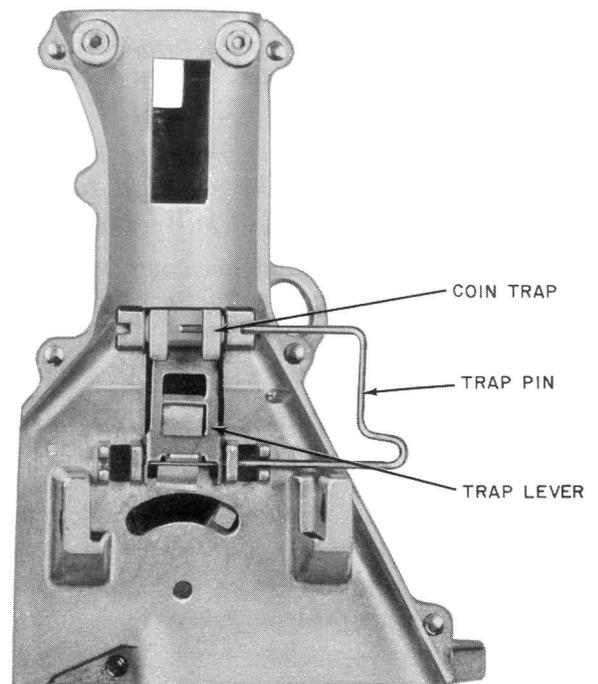


Fig. 19 — Placing Coin Trap on Hopper

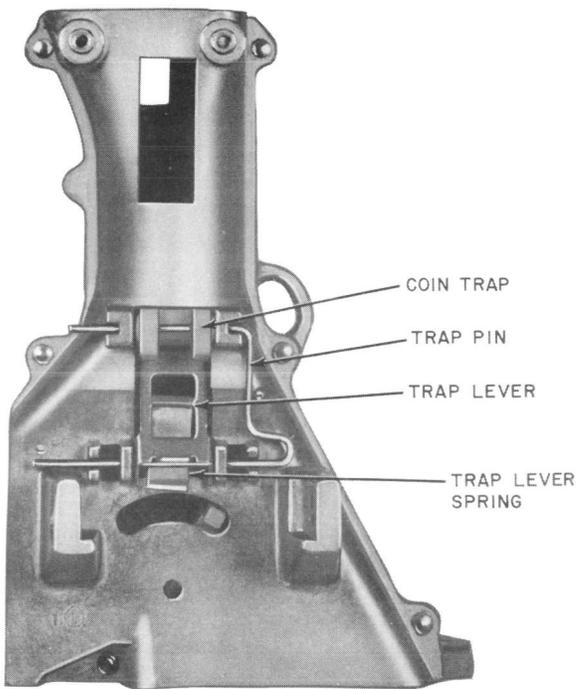


Fig. 20 — Trap-Lever Spring Under Trap Pin

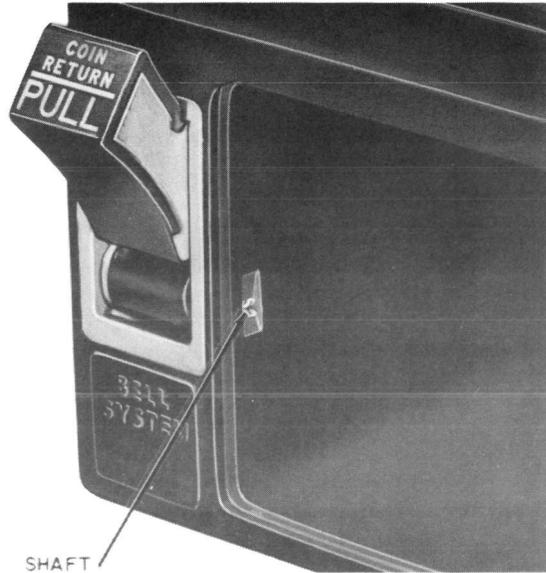


Fig. 21 — Pull Bucket Retaining Shaft

5.18 Pull Buckets



Damaged pull buckets, broken or weak springs and defective shafts may be replaced in the field.

Cash compartment must be unlocked and coin receptacle removed to allow access to split end of pull bucket shaft.

Cash compartment need not be opened when replacing a plastic pull bucket. See (e).

Removal and Installation of Metal Pull Bucket

(a) To remove:

- (1) Use diagonal pliers to pry up tabs on split end of pull bucket retaining shaft (Fig. 21).
- (2) Compress tabs with pliers to line up with shaft.

- (3) Drive shaft from housing using hammer and drive punch.
- (4) Swing pull bucket to open position and pull forward until ends of springs are exposed.
- (5) Use TP-75503 spring hook to disconnect springs from coin chute crossbar.
- (6) Disconnect springs from pull bucket crossbar.

(b) To install:

- (1) Use TP-75503 spring hook to assemble two new springs on pull bucket crossbar (Fig. 22).
- (2) Hold pull bucket with coin recess upward, supporting springs with fingers so springs extend slightly into chute opening (Fig. 23).
- (3) Use TP-75503 spring hook to engage springs on crossbar in coin chute (Fig. 24).
- (4) Insert and hold pull bucket in normal position.



Fig. 22 — Attaching Springs to Pull Bucket

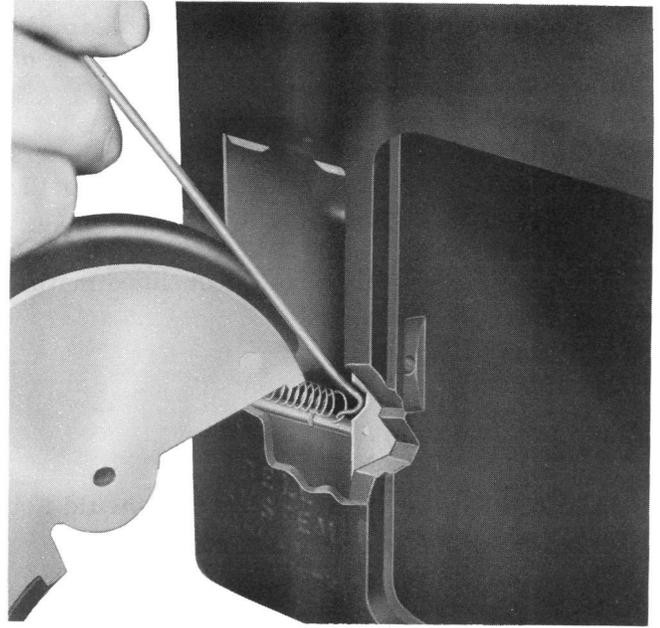


Fig. 24 — Attaching Springs in Return Chute



Fig. 23 — Inserting Pull Bucket in Return Chute

- (5) Use orange stick or equivalent to line up holes in pull bucket and housing.
- (6) Insert P-27E462 stainless steel shaft in housing and force fit using hammer and drive punch (Fig. 25).
- (c) If pull bucket fails to operate properly, replace coin collector.

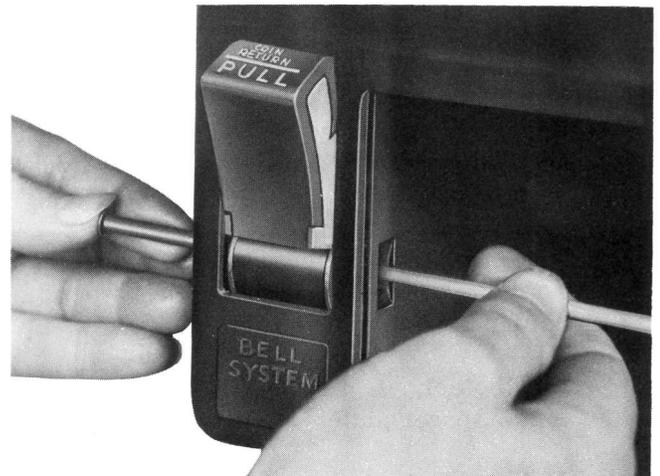


Fig. 25 — Inserting Shaft in Housing

Removal of Plastic Pull Bucket

- (d) Replace damaged or inoperative plastic pull buckets with metal pull buckets.
- (e) To facilitate replacement of pull bucket without removing coin receptacle, proceed as follows:
 - (1) Use hammer and cold chisel to break away lower part of plastic pull bucket which encloses the shaft.

Caution: Exercise care when breaking the plastic to prevent damaging any portion of the lower housing.

(2) Grip shaft with a pair of diagonal pliers and apply pressure horizontally to the left to remove shaft from the housing.

(f) Install new pull bucket as outlined in (b).

6. FINAL TESTS

6.01 Vertical Play

(a) Vertical play of upper housing should not exceed 1/32-inch.

(b) If vertical play is in excess of 1/32-inch, one or two P-12A745 spacer plates may be added as required.

- Spacer plate is 0.032 inch thick, with a turned edge, which gives it an effective thickness of 0.055 inch if positioned upward.

- Spacer plates may be used with turned edge up or down depending on the thickness required.

(c) Spacer plates are mounted on top of upper housing and secured by the two rear cardholder mounting screws.

- Cardholder, if present, is positioned on top of spacer plates.

6.02 Noise or Cutout

(a) With upper housing locked in place and talking battery on line, there shall be no noise or cutouts in the talking circuit resulting from moving the upper housing up and down, from side to side, and forward and backward.

(b) If talking circuit is noisy or cutouts occur, proceed as follows:

- Clean housing contact springs.
- Use a 466A tool to adjust housing contact and equalizing springs to have approximately 1/4-inch follow (Fig. 26).

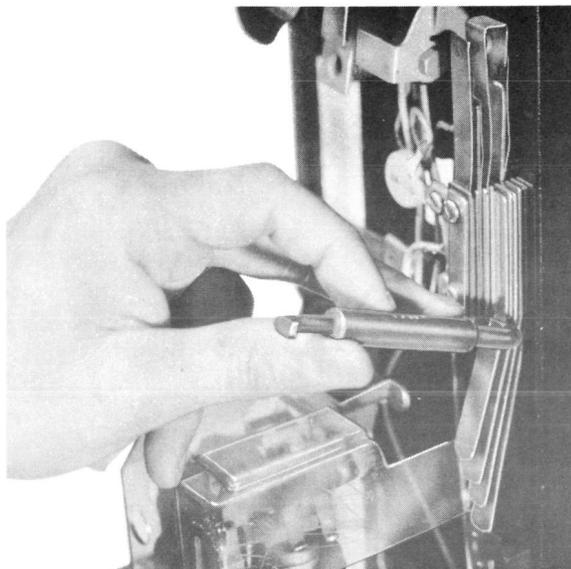


Fig. 26 — Adjustment of Housing Contact Springs

(c) If noise or cutout is caused by shaking cord or handset, replace handset.

6.03 Coin Chute Operation and Refund Test

(a) Ensure that coin chute and coin return paths are clear and station relay (if applicable) and coin relay are operating satisfactorily.

(b) Make final test as follows:

(1) With upper housing locked in place and handset **off-hook**

- Deposit nickel.
- Nickel shall be held at holding latch.
- Lower switch hook **slowly**; coin shall drop into coin return.
- Repeat test five times.

(2) To test washer-reject and coin release mechanism with handset **off-hook**

- Deposit nickel.
- Nickel shall be held at holding latch.

- Operate pushbutton *slowly*; coin shall be released by gate and drop into coin return.
 - Repeat test five times.
- (3) With handset *off-hook*:
- Deposit nickel.
 - Nickel shall be held at holding latch.
 - Deposit second nickel.
 - Second nickel shall release first nickel, permitting both coins to pass through coin chute, strike gong, and trip trigger as they drop into hopper.
 - Dial tone should be heard.
 - Deposit a third nickel which should pass through coin chute and reach trap in hopper.
- (4) At dial stations when dial tone is heard:
- Dial any digit except 1 to break dial tone, then hang up handset.
 - Coins should drop into coin return.
- (5) With handset *on-hook*:
- Deposit dime.
 - Dime shall pass through coin chute, strike gong twice and trip trigger.
 - Dial tone should be heard on removing handset from switch hook.
- (6) With handset *off-hook*:
- Deposit dime.
 - Dime shall pass through coin chute, strike gong twice, and trip trigger.
 - Dial tone should be heard.
- (7) With handset *on-hook*:
- Deposit quarter.
 - Quarter shall be stopped by the open gate.
 - Remove handset from switch hook.
 - Gate will close, releasing quarter to strike gong and trip trigger.
 - Dial tone should be heard.
- (8) With handset *off-hook*:
- Deposit quarter.
 - Quarter shall pass through coin chute, strike gong and trip trigger.
 - Dial tone should be heard.

6.04 Coin Signal Test

- (a) Notify operator that tests for coin signals are to be made and coins should be returned after deposit.
- (b) Deposit nickel, dime, and quarter.
- If operator does not identify signals correctly, inspect station for trouble.
 - Correct as specified under coin chute alignment in 4.05.