

COIN TELEPHONES—1A-TYPE INSTALLATION AND MAINTENANCE

1. GENERAL

1.01 The 1A1 coin telephone can be converted to a 1A2 coin telephone by replacing the P-90C800 cover unit assembly with a P-91C600 cover unit assembly. No wiring changes are necessary.

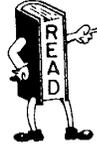
1.02 This section is reissued to add information on 1A2 coin telephone.

2. LOCATION

2.01 Consider the following:

- Accessibility to customers
- Sufficient light
- Privacy
- Absence of noise and vibration
- Absence of grease, smoke, or dust
- Clearance from oily or dirty surfaces
- Clearance from stoves or heaters
- Clearance from moving machinery, piled merchandise, or narrow aisles
- Mounting surfaces—Consult a supervisor before locating coin telephone on finishes that would be expensive to repair if the set is removed.
- Inductive effects—Locate telephone and associated wiring at least six inches from neon fixtures, transformers, or other interference-causing equipment.

3. BACKBOARDS



When mounting the 1A-type coin telephone, a vertical surface must be provided. A tilt greater than 1-1/2 degrees in any direction will cause malfunction of the telephone. A vertical surface may be determined by the following steps:

- (1) Place a spirit level vertically against the mounting surface with the top end of the level at the required height of the coin telephone (3.04).
- (2) Move the top or bottom end of the level away from the mounting surface as required to obtain a vertical reading.
- (3) When a vertical reading is obtained, the end of the level opposite the point of contact shall be no farther from the mounting surface than described in Table A.
- (4) Ensure that a vertical surface is obtained in both directions.

TABLE A

**METHOD FOR DETERMINING
A VERTICAL SURFACE**

SPIRIT LEVEL LENGTH	MAXIMUM DISTANCE ALLOWED FROM SPIRIT LEVEL TO MOUNTING SURFACE ON OPPOSITE END FROM POINT OF CONTACT
18 inches	15/32 inch
24 inches	5/8 inch
30 inches	25/32 inch
36 inches	15/16 inch

SECTION 506-326-200

- 3.01 Refer to Section 506-110-105 for identification and installation of backboards.
- 3.02 Refer to Section 506-110-103 for use of security studs.

Note: Security studs and mounting screws are not furnished and must be ordered separately.

WALL APPLICATIONS

178A-3 Backboard

- 3.03 The 178A-3 backboard is designed for mounting the 1A-type coin telephone on a wall.
- 3.04 When mounting backboard on wall, observe following:
- If seat is used, install backboard with top edge approximately 52 inches from floor.
 - If seat is not used, install backboard with top edge approximately 63 inches from floor.
- 3.05 Refer to Fig. 1 for mounting screw and security stud locations in the coin telephone.



Security studs used with 1A-type coin telephone must have a thread length of not more than 1/4-inch to avoid interference with coin chute-totalizer assembly.

- 3.06 Secure coin telephone to 178A-3 backboard using four P-40Y060 security studs and 1/4-20 by 5/8 RHM screws as required.

BOOTH APPLICATIONS

10- and 11-Type Booths

- 3.07 Use one of the following kits:

(1) D-179939 Kit of Parts which includes:

- One KS-19340, List 53 backboard (Fig. 2)
- Two P-48F349 rails (Fig. 3)
- Six 1/4-20 by 3/4 hex head cap screws
- Six 1/4-20 by 1-1/8 hex head cap screws

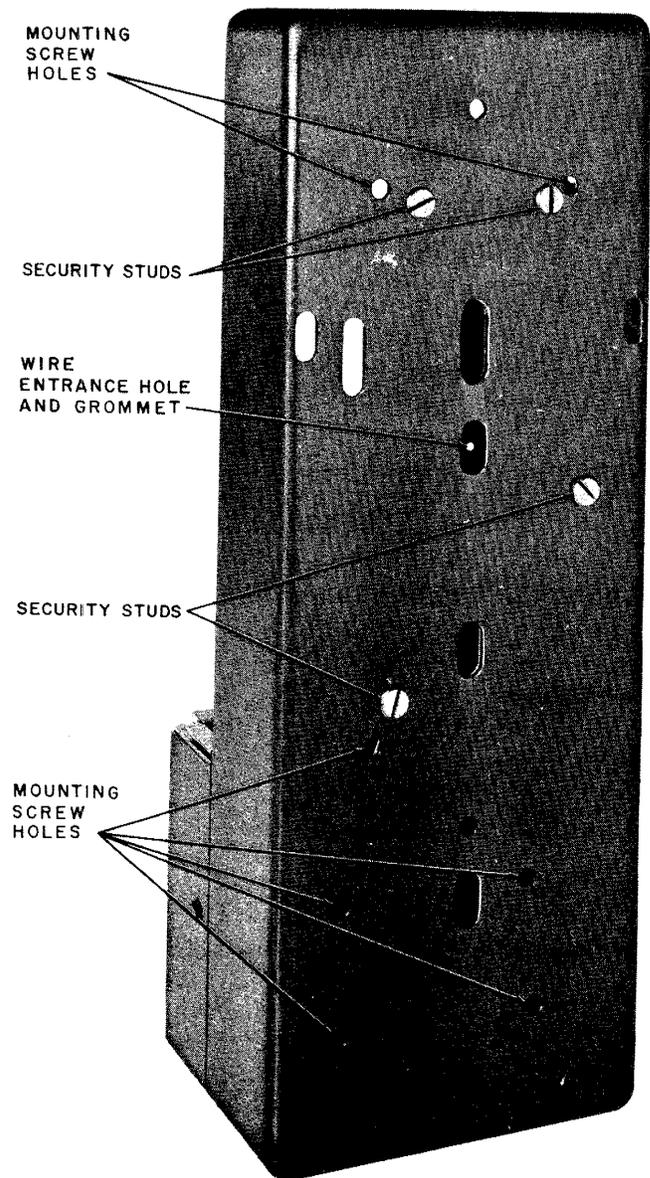


Fig. 1—Location of Mounting Screw Holes and Security Studs

(2) D-179940 Kit of Parts which includes:

- Two P-48F349 rails (Fig. 3)
- One P-48F348 filler block assembly (Fig. 4)
- Six 1/4-20 by 3/4 hex hd cap screws
- Six 1/4-20 by 1-1/8 hex hd cap screws

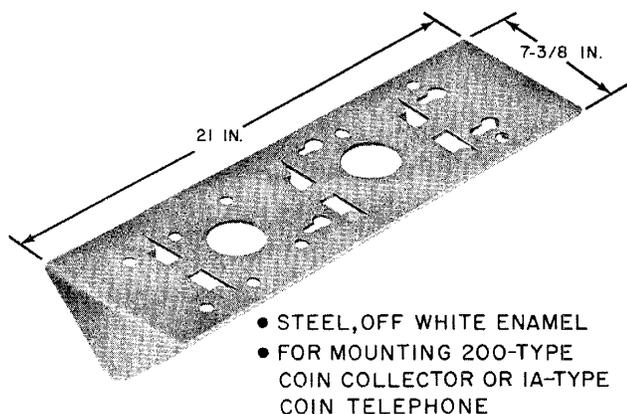


Fig. 2—KS-19340, List 53 Backboard



Mounting holes in the booth sides may be relocated instead of using rails and screws provided in the kit of parts.

- (3) Use four P-40Y060 security studs and 1/4-20 by 5/8 RHM screws as required.

KS-16797 Universal Booth

3.08 Inspect backboard

- Early models (Fig. 5) are too short for the 1A-type coin telephone and must be replaced.
- Later models (Fig. 6) will accept 1A-type coin telephone or 200-type coin collectors.

3.09 If short backboard exists

- (1) Remove and discard.

- (2) Obtain and install B-190387 backboard and two B-650326 filler blocks (Fig. 6).

- Blocks are for securing backboard to cross rails.

- 3.10** Use four P-40Y061 security studs and 1/4-20 by 5/8 RHM screws as required.

KS-19206 Curved Door Booth

- 3.11** Use KS-19206, List 6 coin telephone installation kit

- Refer to Section 506-115-200

- 3.12** Use four P-40Y060 security studs and 1/4-20 by 5/8 RHM screws as required.

KS-19340 Wood Booth

- 3.13** Use KS-19340, List 53 backboard (Fig. 2) four P-40Y060 security studs; and 1/4-20 by 5/8 RHM screws as required.

KS-14611 Outdoor Booth

- 3.14** Use backboard furnished with booth, four P-40Y060 security studs, and 1/4-20 by 5/8 RHM screws as required.

KS-19425 Indoor—Outdoor Booth

- 3.15** Use backboard furnished with booth, four P-40Y061 security studs, and 1/4-20 by 5/8 RHM screws as required.

KS-19580 Outdoor Booth

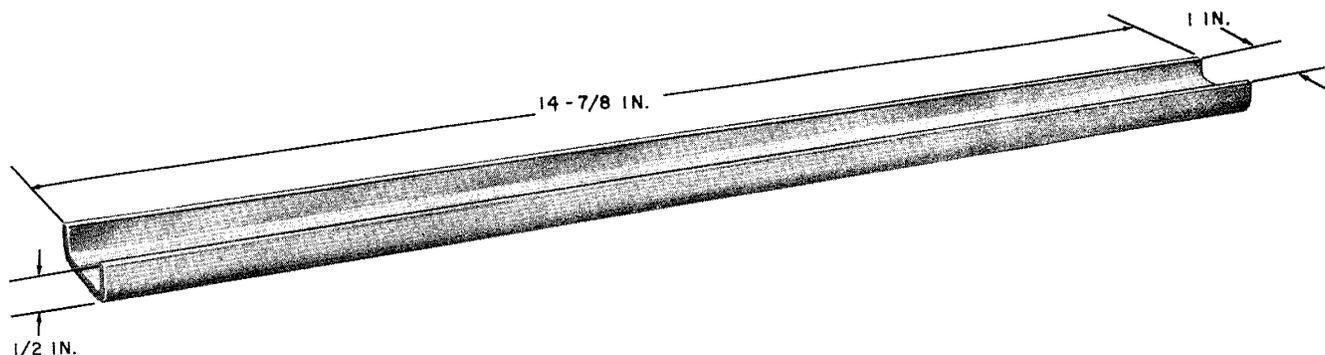


Fig. 3—P-48F349 Rail

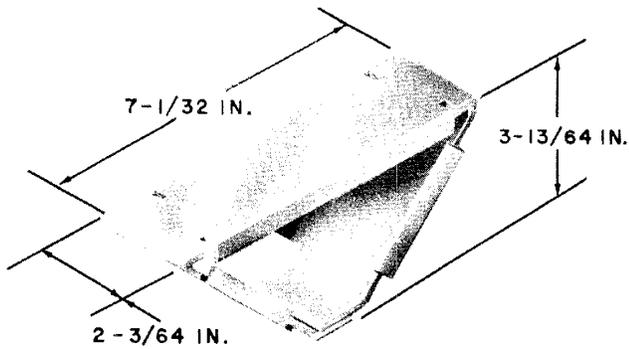


Fig. 4—P-48F348 Filler Block Assembly

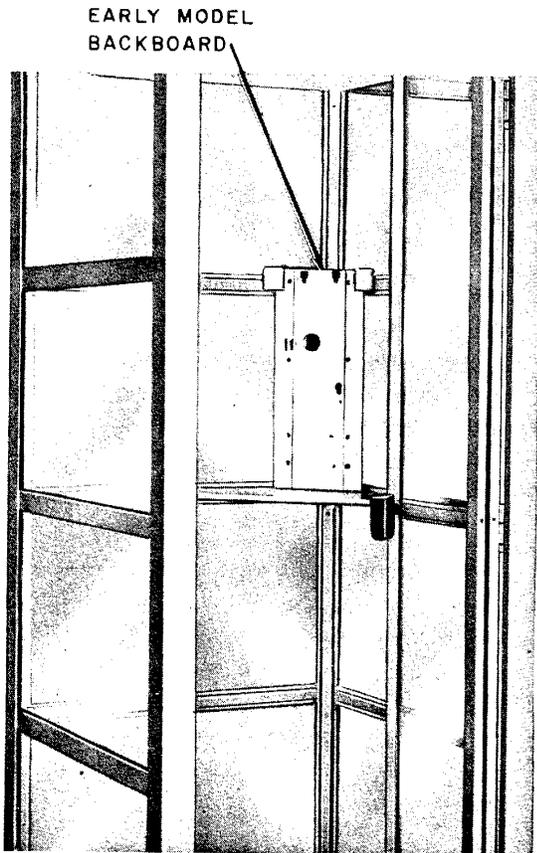


Fig. 5—KS-16797 Universal Booth with Early Version Backboard

3.16 Use backboard furnished with booth, four P-40Y060 security studs; and 1/4-20 by 5/8 RHM screws as required.

◆KS-20255 Telephone Kiosk◆

3.17 Use backboard furnished with booth

- Refer to Section 508-355-100

3.18 Use four P-40Y061 security studs and 1/4-20 by 5/8 RHM screws as required.

SHELF AND MOUNTING APPLICATIONS

KS-19267 Coin Telephone Shelf

3.19 Use backboard furnished with shelf, four P-40Y060 security studs, and 1/4-20 by 5/8 RHM screws as required.

KS-19426 Walk-Up, Drive-Up Mounting

3.20 Use KS-19426, List 7 installation kit

- Refer to Section 508-470-100,

3.21 Use four P-40Y061 security studs and 1/4-20 by 5/8 RHM screws as required.

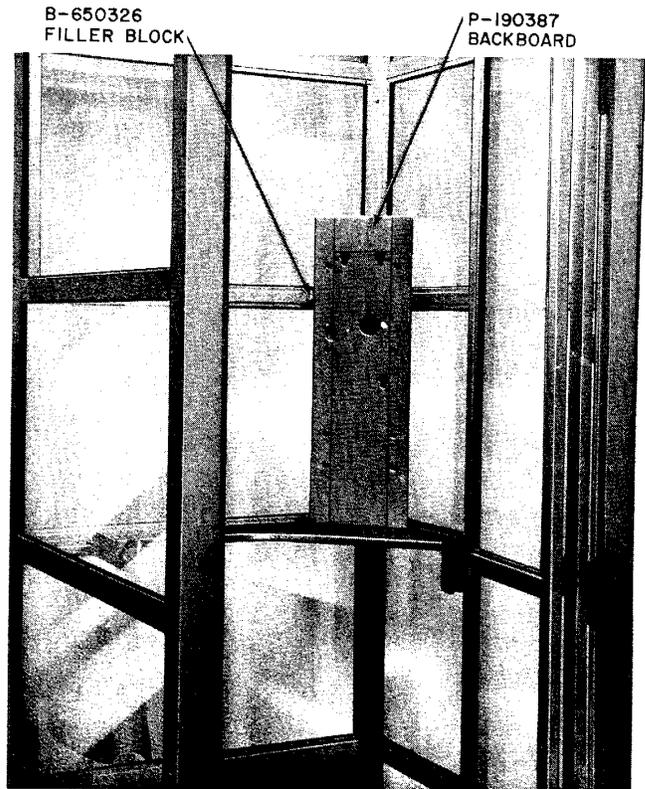


Fig. 6—KS-16797 Universal Booth with B-190387 Backboard

4. INSTALLATION

4.01 To gain access to the coin telephone mounting holes: remove cover unit assembly, coin chute-totalizer assembly, and chassis assembly as follows:

COVER UNIT ASSEMBLY

4.02 To remove cover unit assembly:

- (1) Unlock 29A lock.
- (2) Release locking mechanism with 719A tool by turning tool 1/8-turn counterclockwise. See Section 506-326-100 for illustration of 719A tool.
- (3) Slide cover forward about 3 inches to obtain access to plug P1.
- (4) Disconnect plug P1 (Fig. 7) by pulling straight out as cover is carefully lifted off.

COIN CHUTE-TOTALIZER ASSEMBLY

4.03 To remove coin chute-totalizer assembly:

- (1) Disconnect plug P2 (Fig. 7).
- (2) Release chute locking lever and spring.
- (3) Lift spring out of groove in coin chute.
- (4) Tilt top of coin chute forward and lift out.

4.04 To replace coin chute-totalizer assembly:

- (1) Place assembly on pins located on rear of hopper assembly and back of housing (Fig. 8).

Note: Be sure reject chute assembly, return chute assembly, and coin return assembly line up.

- (2) Place spring in groove on coin chute.
- (3) Lock spring in place by pushing chute locking lever down.
- (4) Reconnect totalizer plug P2 to J2.

Totalizer

4.05 The totalizer, mounted on the side of the coin chute, steps one increment for each 5 cents deposited. A nickel equals one, a dime two, and a quarter equals five increments.

4.06 To remove totalizer from coin chute:



Do not separate coin chute-totalizer assembly unless necessary. Take care not to damage totalizer arms when removing or replacing totalizer on coin chute.

- (1) Disconnect 654B transmitter by separating connector (Fig. 9).
- (2) Remove three totalizer mounting screws from chute. (These are captive screws and will not fall out of totalizer.)
- (3) Carefully remove totalizer from chute.

Setting Totalizer Rate

4.07 Totalizers are preset at manufacture at an initial rate of 10 cents. If initial rates other than 10 cents are required, they may be reset.



Use extreme care when resetting totalizer. Avoid damaging pawl and spring pile-ups. Do not attempt to turn totalizer cam shaft in direction opposite that shown in Fig. 10.

4.08 Two KS-16750, List 2 releasers or two paper clips are used to set the totalizer.

4.09 To set totalizer:

- (1) Remove totalizer cover by loosening captive cover screw (Fig. 9).
- (2) Rotate totalizer shaft in proper direction (from bottom to top) until springs T2 (Fig. 10) rest in depression in shaft as indicated by movement of springs.
- (3) Depress reset latch (Fig. 10) toward bottom of totalizer.
- (4) Rotate shaft in proper direction until contacts T1 operate as indicated by an upward movement of the reset latch.

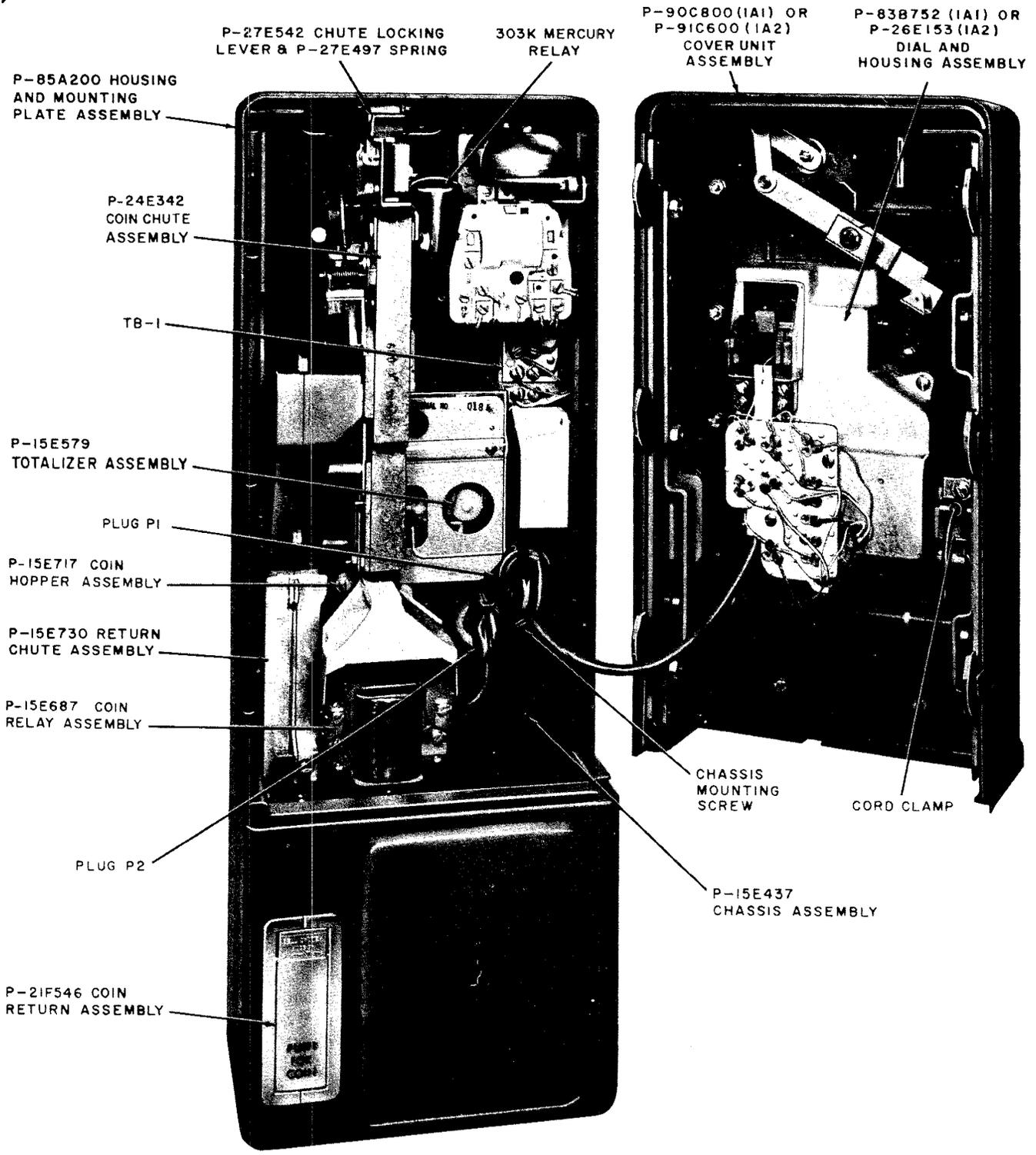


Fig. 7—Assembly of Parts (Typical)

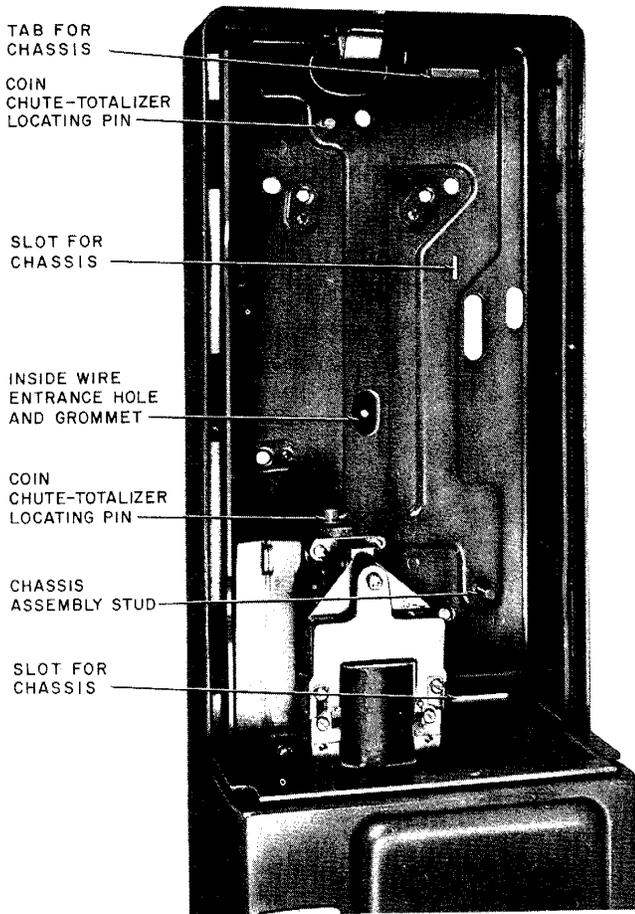


Fig. 8—P-85A200 Housing and Mounting Plate Assembly

- (5) Do not allow shaft to move. Insert one KS-16750, List 2 releaser or paper clip into hole 1 (Fig. 10) located near right-hand end of shaft. Take care not to disturb contact springs.
- (6) Hold the paper clip firmly so that right-hand end of shaft cannot move.
- (7) Insert the second releaser or paper clip into one of four holes indicated as hole 2 in center of shaft (Fig. 10). Do not allow end of releaser or clip to extend too far beyond shaft; this may damage insulation of coil located directly beneath shaft.
- (8) Rotate second releaser or clip in proper direction until springs T2 come to rest in depression in shaft. This is zero rate position. Do not remove releasers or clips from holes in shaft.

- (9) Set desired charge rate by further rotating shaft in proper direction according to Table B.
- (10) Remove releasers or paper clips.

4.10 To check for correct totalizer setting:

- (1) Rotate shaft in proper direction until springs T2 rest in depression in shaft.
- (2) Release reset latch.
- (3) Rotate shaft in proper direction, one step for each 5 cents of the lowest chargeable rate.
- (4) Springs T1 should operate (indicated by reset latch moving forward) when lowest chargeable rate has been reached.

4.11 Example: For a 10-cent rate, shaft should be rotated two steps. On the second step, springs T1 should operate.

TABLE B

SETTING CHARGE RATE OF TOTALIZER

LOWEST CHARGEABLE RATE	ROTATE SHAFT IN PROPER DIRECTION (FROM BOTTOM TO TOP)
5 cents	One step
10 cents	Two steps
15 cents	Three steps
20 cents	Four steps
25 cents	Five steps
30 cents	Six steps

4.12 To replace totalizer:

- (1) Replace totalizer cover.
- (2) Line up the long guide pins on the totalizer with holes in the coin chute.
- (3) Place totalizer on coin chute making sure that totalizer arms enter slots in coin chute. Also be sure short guide pins on coin chute are in holes in totalizer bracket.

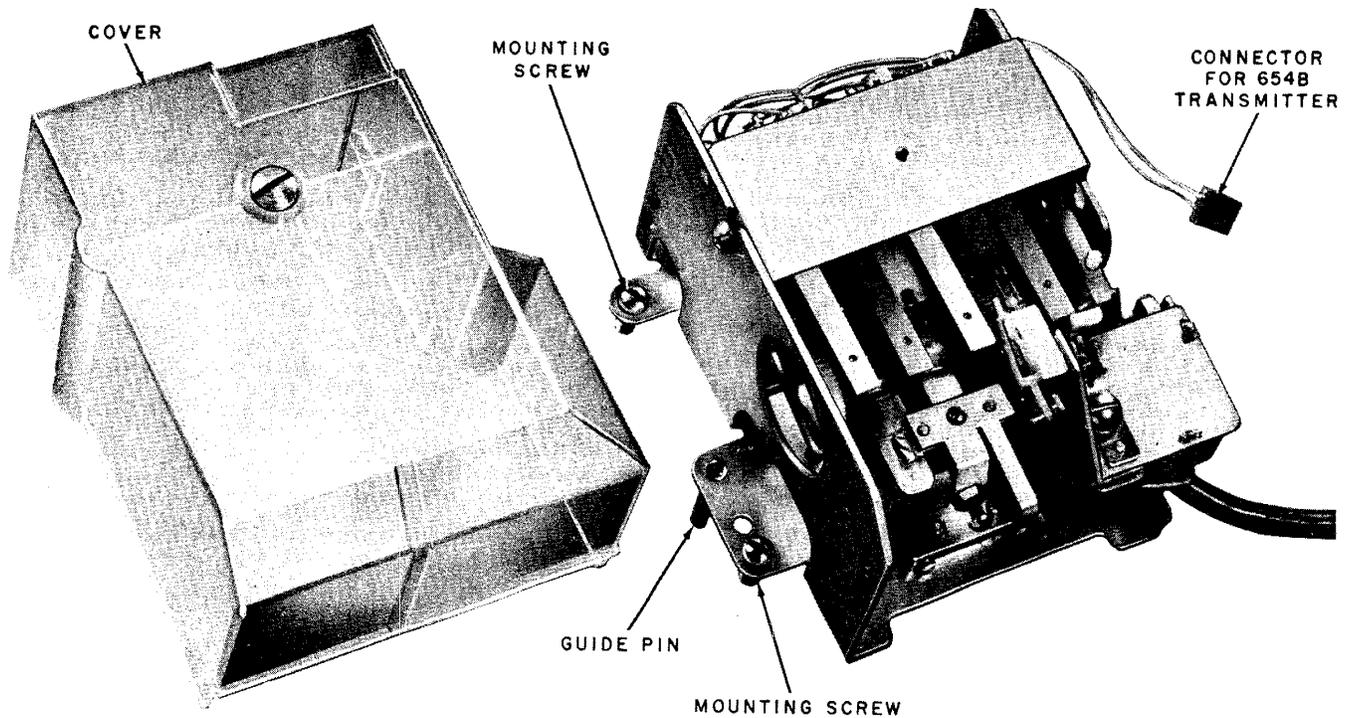


Fig. 9—Totalizer

- (4) Tighten three captive totalizer mounting screws.
- (5) Reconnect 654B transmitter.

Note: Two different types of connectors exist for connecting the 654B transmitter to the totalizer assembly. *Early assemblies* have **black wires** with the male connector on the totalizer assembly and the female connector on the transmitter. *Later assemblies* have **white wires** with the male connector on the transmitter and the female connector on the totalizer assembly. If either, the transmitter or totalizer assembly requires replacing, the other must be replaced to ensure matching connectors.

CHASSIS ASSEMBLY

4.13 To remove chassis assembly:

- (1) Remove coin chute-totalizer assembly (4.03).
- (2) Disconnect black and yellow leads from coin relay and carefully pull leads through guide hole on coin hopper.

- (3) Loosen chassis mounting captive screw (Fig. 7).
- (4) Pull chassis assembly out at bottom and slide down to remove.

4.14 To replace chassis assembly:

Note: When installing chassis assembly, dress inside wire behind chassis as shown in Fig. 11. Allow for the wire to be connected to TB-1 from right side.

- (1) Slide chassis under tab (Fig. 8).
- (2) Seat chassis tabs in slots.
- (3) Tighten chassis mounting captive screw (Fig. 7).
- (4) Replace black and yellow leads on coin relay after threading through hole in hopper. Connect yellow lead to terminal G and black lead to terminal 3 of coin relay.

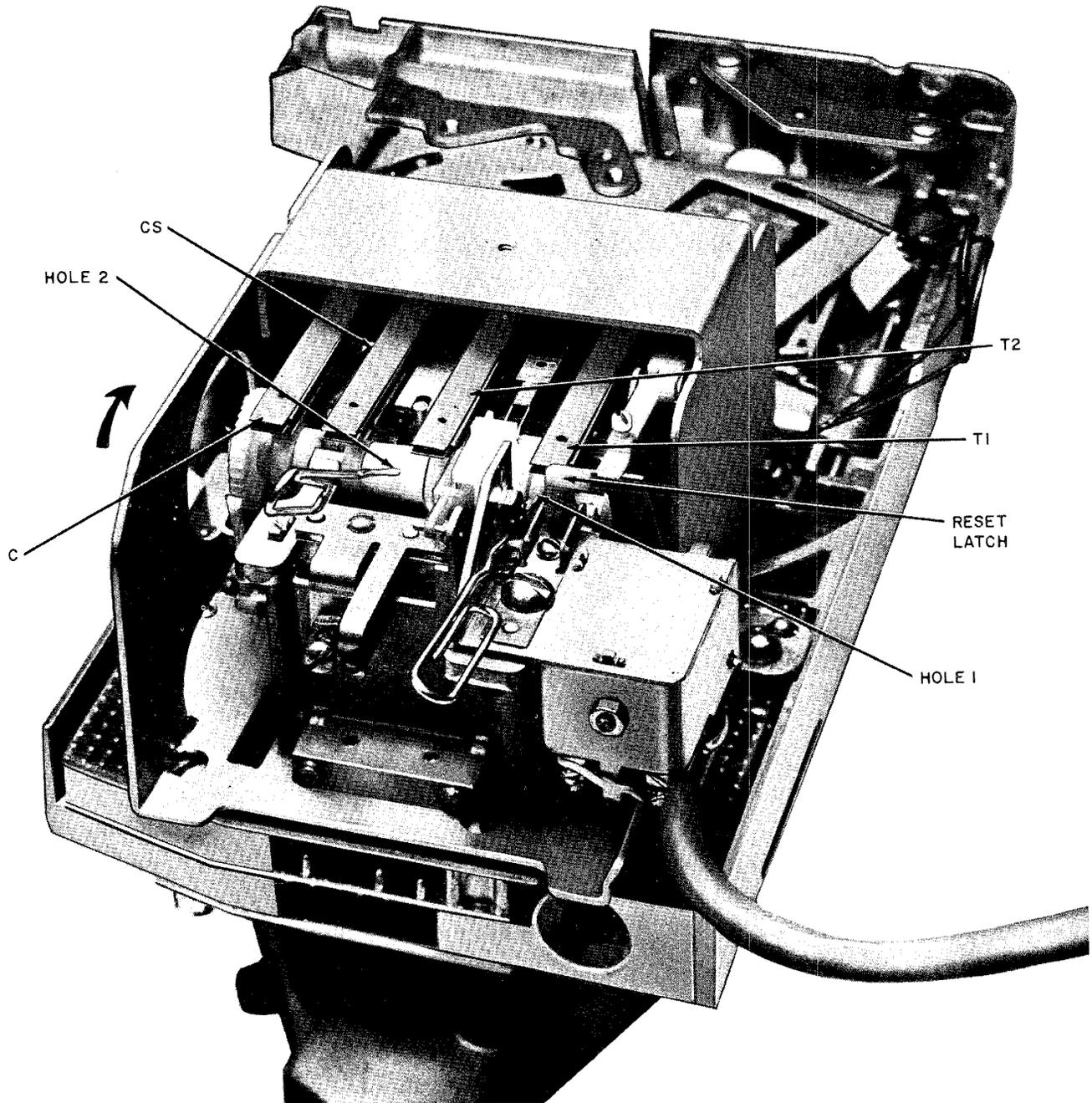


Fig. 10—Setting Totalizer Rate

WIRING

4.15 Select and place wire in accordance with sections covering inside wiring. Wire all coin telephones with triple conductor station wire to provide individual ground for each station. The

ground connection for this conductor must be the same one used for signaling ground.

4.16 Feed inside wire through wire entrance hole grommet (Fig. 1 and 11) as the set is mounted on backboard. Do not displace grommet.

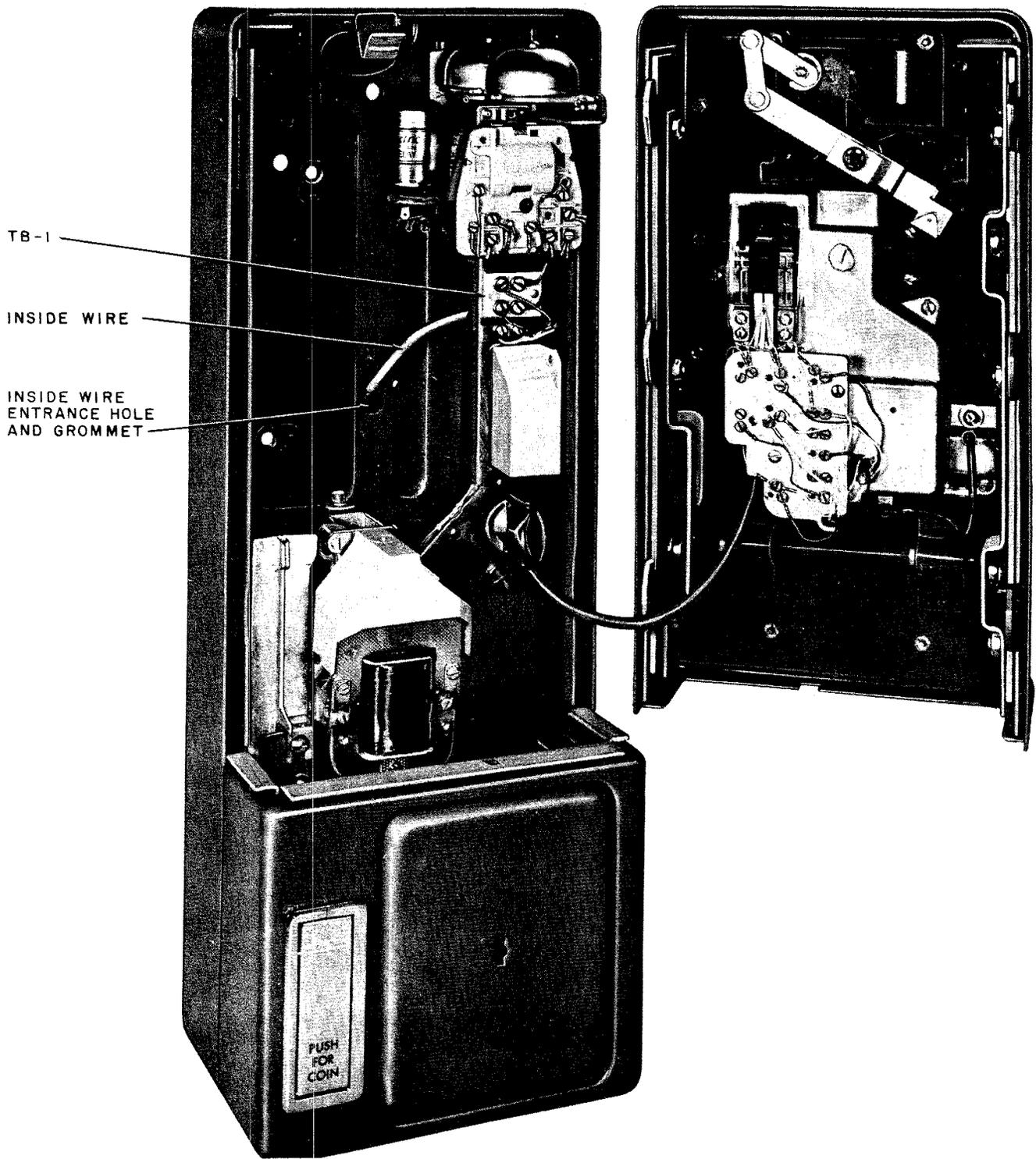


Fig. 11—1A-Type Coin Telephone Showing Wire Entrance and Routing (Typical)

4.17 See Fig. 11 for correct routing of inside wire. Dress wire behind chassis and run to right side of TB-1.

4.18 Conceal wiring near telephone. If this is not possible, use approved moulding or tubing. If moulding or tubing is not used, GS-type wire must be taped with friction tape. JKT wire need not be taped.

4.19 Locate any terminating apparatus, such as protectors, connecting blocks, etc, where they will be inaccessible to person using coin telephone.

COIN RECEPTACLE (CASH BOX)

4.20 The 1A-type coin telephone is equipped with a 1B coin receptacle. If a greater capacity is desired, a 1C coin receptacle can be installed as follows:

- (1) Remove 2A (cash compartment) door.
- (2) Remove 1B coin receptacle.
- (3) Remove false floor from bottom of cash compartment.
 - Brake spot weld at left front tab.
 - Pry with large screwdriver or equivalent.
- (4) Install 1C coin receptacle.
- (5) Install 2A (cash compartment) door.

INSTRUCTION CARDS

4.21 Instruction cards are not furnished and must be procured locally

4.22 To install card:

- Push up with fingers (Fig. 12)
- Snap card in place
- Ensure that card is seated properly in slot

4.23 To remove card:

- Push up with fingers



Fig. 12—Installing Instruction Card (Typical)

- Pry bottom out with small screwdriver or equivalent

4.24 A gummed OUT-OF-SERVICE sticker (Form E-4914) is available.

- Place over coin slot
- Available in books of five.

NUMBER CARD (1A2 ONLY)

4.25 The number card shall be furnished locally.

4.26 The P-21F947 card holder bracket, P-21F948 window and two hex nuts (Fig. 13) are packaged separately and shipped in the cash compartment.

SECTION 506-326-200

4.27 Install number card as follows:

- (a) Remove dial housing (see 5.11).
- (b) Insert P-21F948 window in faceplate from rear (Fig. 14).
- (c) Insert number card in window (Fig. 15).
- (d) Secure window and number card using the P-21F947 card holder bracket and two hex nuts (Fig. 16).
- (e) Install dial housing.



After installation has been completed, refer to Section 506-326-500 and verify if the coin telephone is operating correctly.

5. MAINTENANCE

5.01 Maintenance of the 1A-type coin telephone is limited to cleaning switch hook, clearing of foreign objects from coin chute, and replacement of the following components:

- G3P-52 handset
- 8E dial (1A1)
- 35G3A dial (1A2)
- 1B Coin receptacle rail
- P-83B752 (1A1) or P-26E153 (1A2) dial and housing assembly
- P-90C800 (1A1) or P-91C600 (1A2) cover unit assembly
- P-15E730 return chute assembly
- P-15E718 coin relay and hopper assembly
- P-15E687 coin relay assembly
- P-15E428 coin chute-totalizer assembly
- P-24E342 coin chute assembly
- P-15E579 totalizer assembly
- P-21F546 coin return assembly

- P-15E437 chassis unit assembly
- C4A ringer
- Instruction cards
- 303K Mercury relay
- 654B Transmitter

5.02 Refer to Part 4 of this section for the removal and replacement of cover unit assembly, coin chute-totalizer assembly, and chassis assembly.

COIN RELAY

5.03 To remove coin relay:

- (1) Disconnect black and yellow leads.
- (2) Remove two screws on top front of coin relay (Fig. 17).
- (3) Remove two hex head screws on sides of coin relay.
- (4) Check that hopper trigger (Fig. 18) is in horizontal (up) position and pull off coin relay. Take care not to damage hopper trigger.

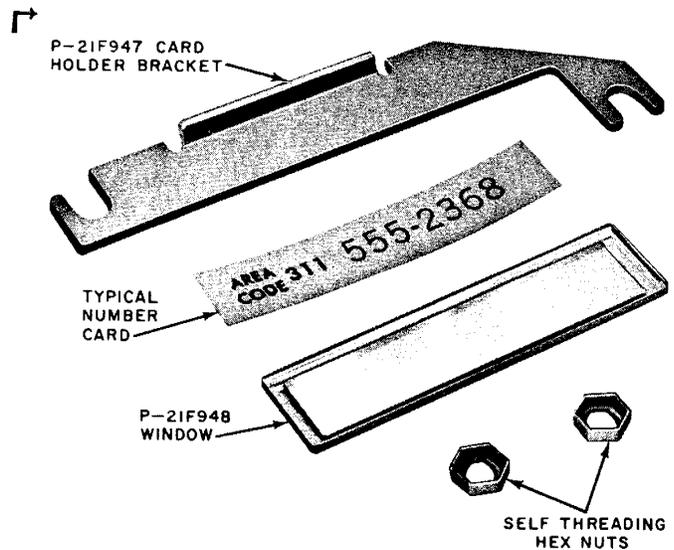


Fig. 13—Number Card and Associated Parts (1A2)

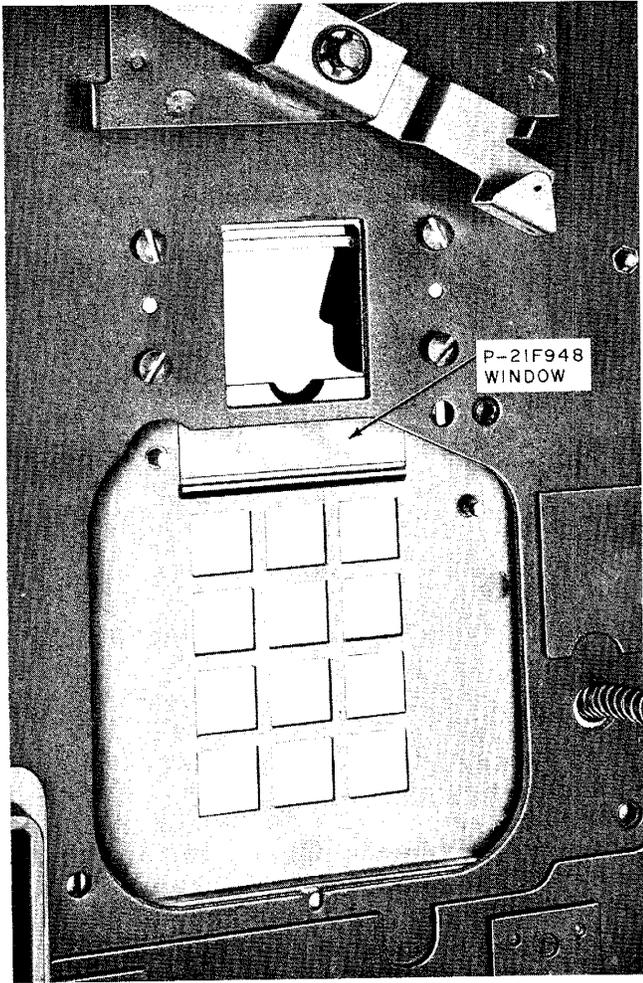


Fig. 14—Window Installed in Faceplate (1A2)

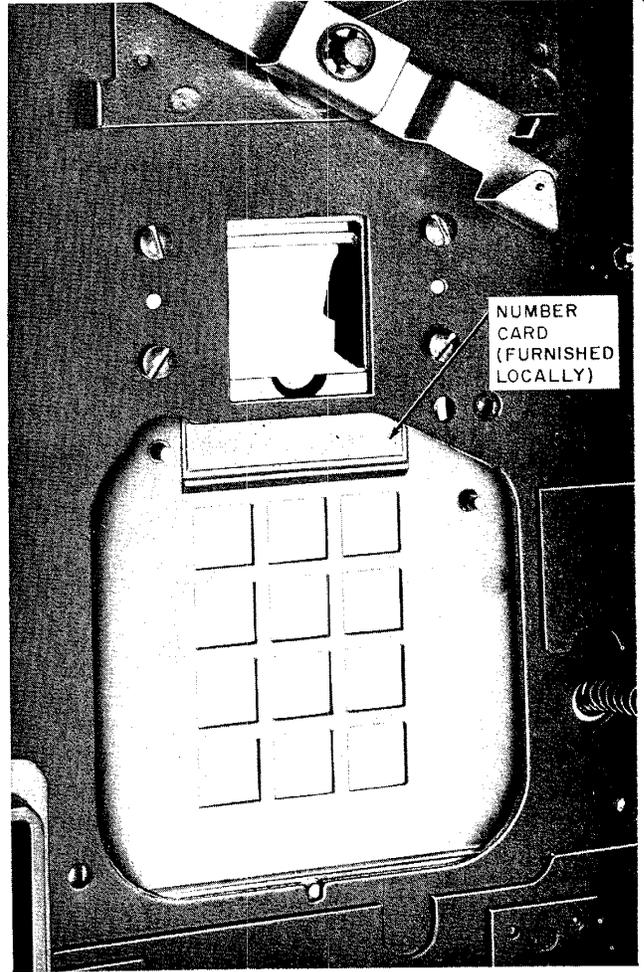


Fig. 15—Number Card Installed in Window (1A2)

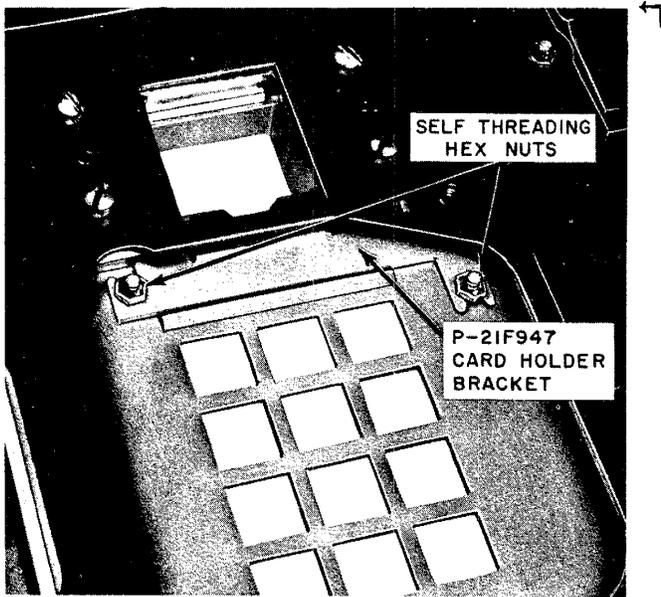


Fig. 16—Card Holder Bracket Installed (1A2)

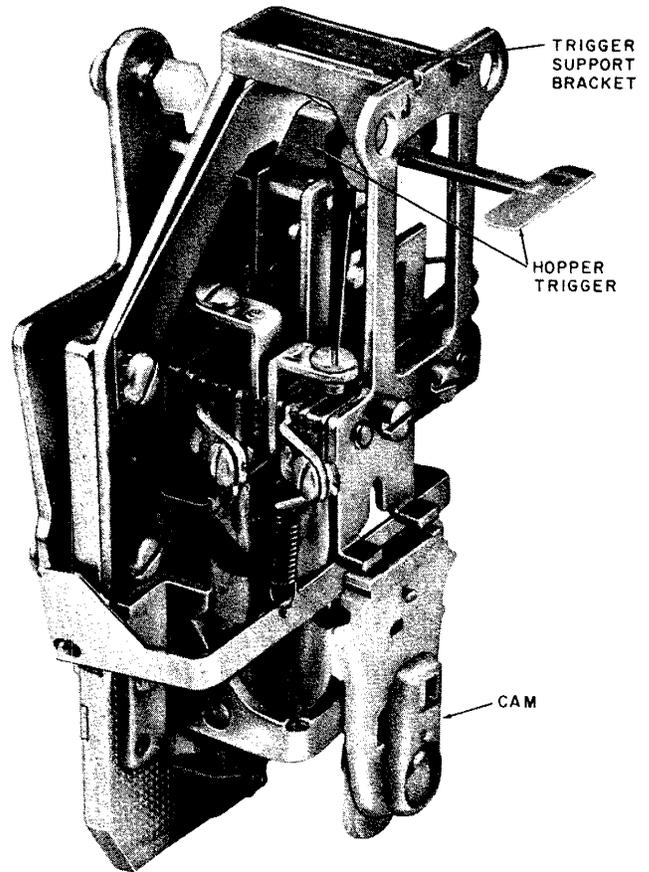


Fig. 18—Coin Relay

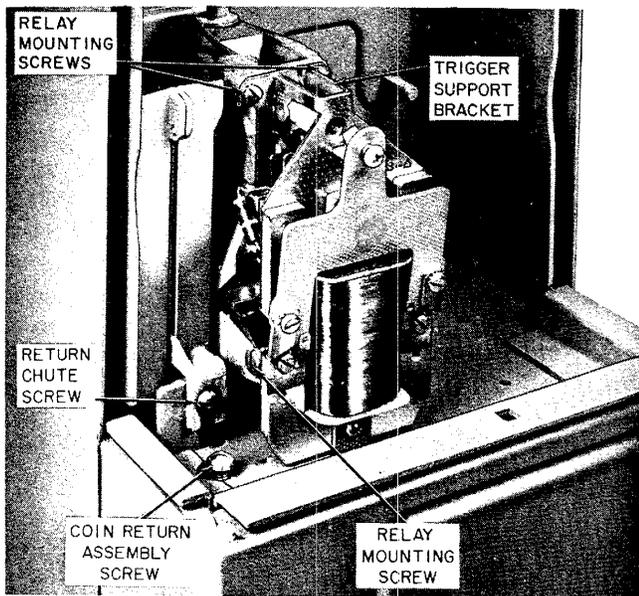


Fig. 17—Coin Relay and Return Chute

5.04 To replace coin relay :

- (1) Move vane on hopper to left or collect position.
- (2) With hopper trigger in nonoperated position (up), move relay into position until trigger enters T-shaped slot in hopper and trap lever tab just enters opening in selector card.
- (3) Press down slightly on ear on left side of selector card and manually move armature forward to its operated position. Hold armature in this position.
- (4) Move coin relay forward until square stem on vane enters hole in cam and mounting screw holes line up.

Note: Do not attempt to install relay if trigger support bracket (Fig. 17) is so distorted that mounting holes do not engage bosses on hopper.

- (5) Place and tighten evenly two mounting screws in top of coin relay and two hex head mounting screws in each side of relay.
- (6) Make sure that trigger, armature, trap, and vane operate without binding.
- (7) Reconnect yellow lead to terminal G and black lead to terminal 3.

RETURN CHUTE ASSEMBLY

5.05 To remove return chute assembly:

- (1) Remove coin chute-totalizer assembly (4.03).
- (2) Loosen screw on return chute assembly (Fig. 17).
- (3) Lift assembly up and off.

5.06 To replace return chute assembly, reverse procedure.

COIN RETURN ASSEMBLY

5.07 To remove coin return assembly:

- (1) Remove coin chute-totalizer assembly (4.03).
- (2) Remove return chute assembly (5.05).
- (3) Remove coin return assembly locking screw (Fig. 17).
- (4) Insert finger in coin return and tilt top forward.
- (5) Lift coin return. Pull coin return assembly out and up.

5.08 To replace coin return assembly:

- (1) Tilt top of coin return assembly toward set.
- (2) Push coin return assembly into set.
- (3) Push in and down on bottom of coin return assembly until flush with front of housing.

(4) Install coin return assembly locking screw. Tighten screw only enough to hold return assembly in place. Further tightening will bend screw.

(5) Replace return chute assembly (5.06).

(6) Replace coin chute-totalizer assembly (4.04).

RINGER

5.09 To remove C4 ringer:

- (1) Remove coin chute-totalizer assembly (4.03).
- (2) Remove chassis assembly (4.13).
- (3) Disconnect four ringer leads—two from TB1 and two from network.
- (4) Remove two ringer mounting screws and lift ringer off.

5.10 Replace C4 ringer by reversing procedure, making sure that locating pin on bottom of ringer is in grommet on chassis assembly. Make connections as follows:

WIRE COLOR	CONNECT TO
BK	TB1-T
R	TB1-R
S-R	Term. A (Network)
S	Term. K (Network)

DIAL HOUSING AND DIAL

5.11 To remove dial housing:

- (1) Remove four mounting screws in dial housing (Fig. 19).
- (2) Lift dial housing off.

Note: Handset cord will pull through cover to enable access to dial without disconnecting cord.

5.12 To replace dial housing, reverse procedure.

5.13 To remove dial:

- (1) Remove dial housing (5.11).

SECTION 506-326-200

- (2) Disconnect dial leads from TB2.
- (3) Loosen two mounting screws on sides of dial through access holes in dial housing.
- (4) Lift dial off.

Note: When installing a new 8E dial in the 1A1, remove and discard the dust cover before installing it in the dial housing.

5.14 To replace dial, reverse procedure, making sure that dial is properly seated on four locating pins. Make connections as follows:

1A1		1A2	
WIRE COLOR	CONNECT TO	WIRE COLOR	CONNECT TO
BL	TB2-9	G	TB2-4
G	TB2-10	W	TB2-2
W	TB2-3	R	TB2-5
W	TB2-2	R-G	TB2-6
		BK	TB2-1
		O-BK	TB2-11
		O-R	TB2-12
		BL	TB2-3
		BL-W	TB2-7

HANDSET

- 5.15** To remove handset:
- (1) Disconnect handset leads from TB2.
 - (2) Loosen cord stay screw (Fig. 19).
 - (3) Remove screw and cord clamp from armored cord.
 - (4) Pull cord out front of cover.
- 5.16** To replace handset, reverse procedure. Make connections as follows;

WIRE COLOR	CONNECT TO
R	TB2-3
BK	TB2-5
W	TB2-7
W	TB2-8

COIN HOPPER

5.17 The coin hopper cannot be removed without removing 2A door and coin receptacle.

DEFECTIVE COINS

5.18 When tests indicate foreign objects or defective coins in coin chute-totalizer assembly:

- (1) Operate coin release lever in attempt to clear coins into return chute.
- (2) If trouble does not clear
 - Remove upper cover assembly
 - Remove coin chute-totalizer assembly (4.03).
 - Swing upper plate assembly open (Fig. 20).



Exercise extreme care when closing the upper plate assembly. If the quarter divider (Fig. 20) gets positioned differently from the way shown, it may become damaged when the upper plate assembly is closed.

- Remove any foreign objects or stuck coins.



Remove totalizer from coin chute only when necessary to clear objects that cannot be dislodged from lower portion of coin chute.



Exercise care when removing or replacing totalizer from coin chute to prevent damage to totalizer coin arms. Do not attempt to make any adjustments to the totalizer other than setting the initial charge rate (see note in 4.12).

- Check for foreign material on coin chute magnets.
- (3) If no foreign objects are found and coins will not pass through chute, replace coin chute assembly.

Note: In early models, the quarter keeper, located in the coin chute, may become loose and not permit the quarter to pass. **Do not** attempt to repair this in the field.

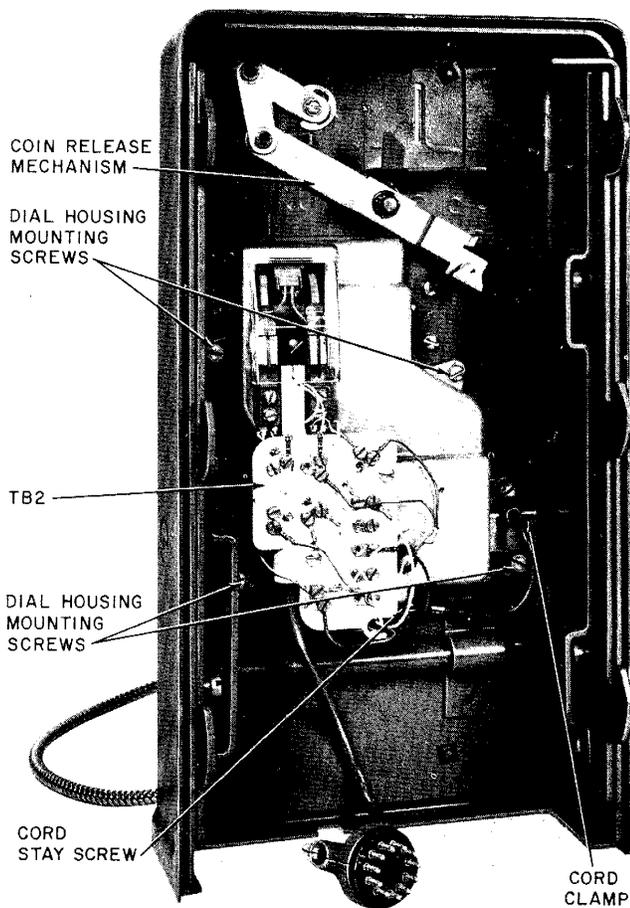


Fig. 19—Cover Unit Assembly (Typical)

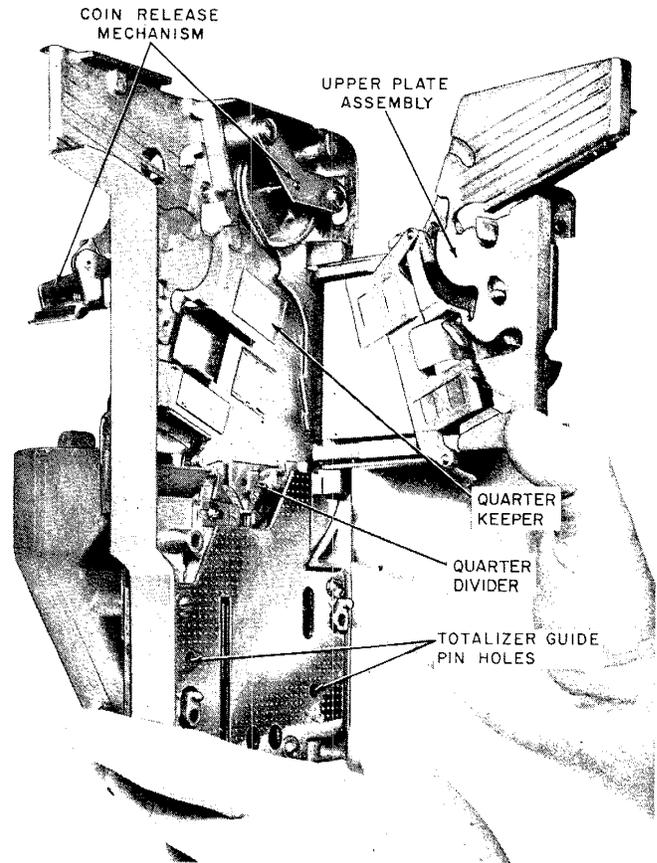


Fig. 20—Coin Chute Assembly

- (4) Install coin chute-totalizer assembly in housing (4.04).
- (5) Coin chute should be tested by depositing coins with cover unit assembly both off and on housing.

ELECTRICAL TROUBLES

5.19 If electrical troubles are indicated refer to Section 506-326-400 (Connections) or Section 506-326-500 (Tests).

CLEANING

5.20 When necessary, the surface of the coin telephone may be cleaned with KS-7860 petroleum spirits or a suitable liquid wax such as Johnson's No. 7700 cleaning and polishing wax emulsion.

Warning: *KS-7860 petroleum spirits is highly flammable. Use safety precautions while it is being used.*