

## COIN TELEPHONE — 1A1

### INSTALLATION AND TESTING

#### 1. GENERAL

1.01 This section describes the installation and testing of the 1A1 coin telephone.

1.02 This section is reissued to:

- Reflect changes in design.
- Revise illustrations

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

1.03 The 1A1 coin telephone should be installed in accordance with standard installation practices.

#### 2. LOCATION

2.01 When selecting a location for the coin telephone, consideration should be given to the following:

- Accessibility to customers
- Sufficient light
- Privacy
- Absence of noise and vibration
- Clearance from oily or dirty surfaces
- Clearance from stoves or heaters
- Clearance from moving machinery, piled merchandise, or narrow aisles

2.02 Consult a supervisor before locating coin telephone on finishes that would be expensive to repair if the coin telephone is removed.

Customer should arrange to drill holes in glazed tile, marble, and similar surfaces.

2.03 To avoid inductive effects, locate the coin telephone and associated wiring at least 6 inches away from neon or fluorescent fixtures, transformers, or other interference-causing equipment.

#### 3. BACKBOARDS



*Mount all coin telephone sets on approved backboards.*

3.01 The 178A backboard is designed to be used with the 1A1 coin telephone. Secure the set to backboard with seven screws (Table A). Screws are not furnished with the coin telephone and must be ordered separately.

3.02 Refer to section on installation of backboards for size and type of fasteners required for mounting backboard on various surfaces.

3.03 The 1A1 coin telephone set should be mounted 52 inches from the floor when seat is furnished or 63 inches from floor when seat is not furnished. Measure distance from floor to top of coin telephone. These heights may vary with local conditions or customer's requirements.

3.04 Where additional security is required, place four security studs in the 1A1 coin telephone (Table A and Fig. 1). Security studs are not provided with the telephone set and must be ordered separately.

*Caution: Security studs shown in Table A have short thread length to avoid interference with the coin chute-totalizer assembly.*

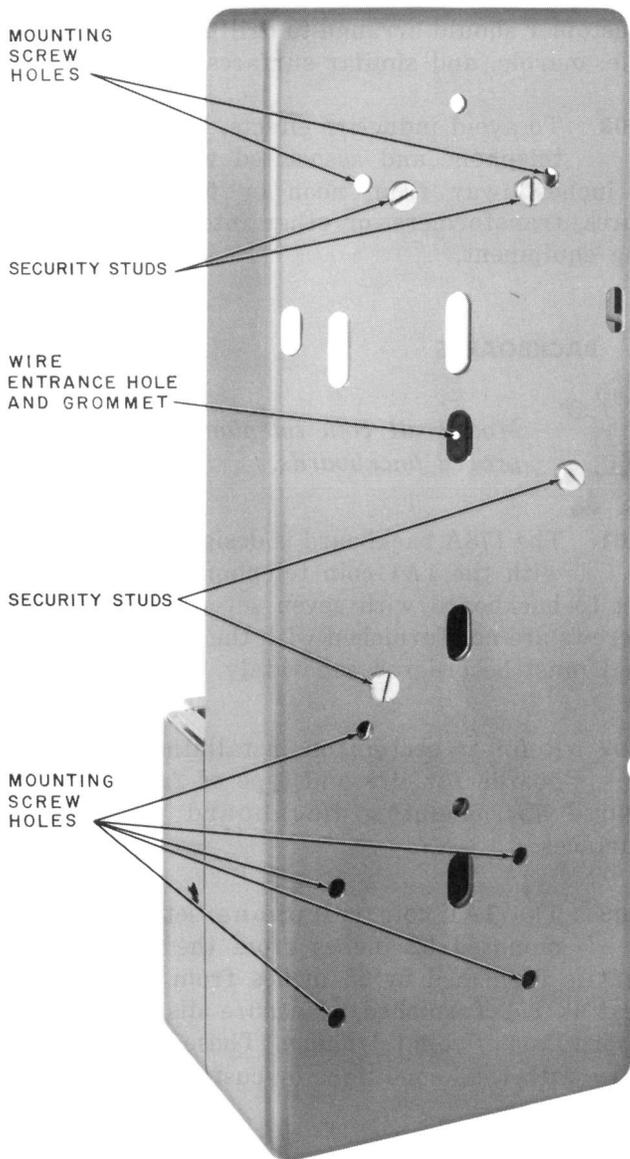


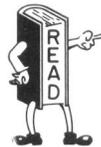
Fig. 1 — Location of Mounting Screw Holes and Security Studs

TABLE A

1A1 COIN TELEPHONE FASTENERS

MOUNTING SURFACE	SCREWS	SECURITY STUDS
178A-65 Backboard	P-210237 1/4-20 x 5/8-inch RH Machine Screws	P-40Y060
Telephone Booths	P-210237 1/4-20 x 5/8-inch RH Machine Screws	P-40Y060* or P-40Y061

\* Some booths are equipped with backboards which are 3/16-inch thick. Other backboards are 5/16-inch thick. The P-40Y060 security stud shall be used with a 3/16-inch thick backboard. The P-40Y061 security stud shall be used with a 5/16-inch thick backboard.



*When mounting the 1A1 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 plumb line may be used to determine if the coin telephone is plumb.*

4. INSTALLATION

4.01 *To gain access to the 1A1 coin telephone mounting holes:* remove cover, coin chute-totalizer assembly, and chassis assembly as follows:

COVER

4.02 *To remove cover*

- (1) Unlock 29A lock.
- (2) Release locking mechanism with 719A tool (Fig. 2) by turning tool 1/8-turn counter-clockwise.

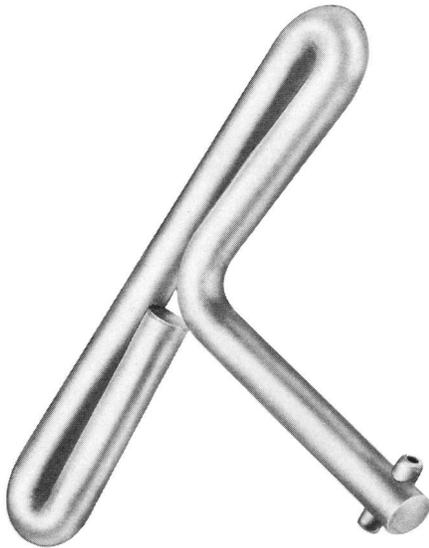


Fig. 2 — 719A Tool

- (3) Slide cover forward about 3 inches to obtain access to plug P1.
- (4) Disconnect plug P1 (Fig. 3) 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. 3).
- (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

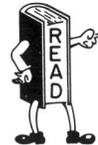
- (1) Place assembly on pins located on rear of hopper assembly and back of housing (Fig. 4).

**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 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. 5).
- (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.

**4.06** Totalizers are preset at manufacture at an initial rate of 10 cents. If an initial rate other than 10 cents is required, remove the coin chute-totalizer assembly (4.03) from coin telephone.

**4.07** 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.



**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. 6.**

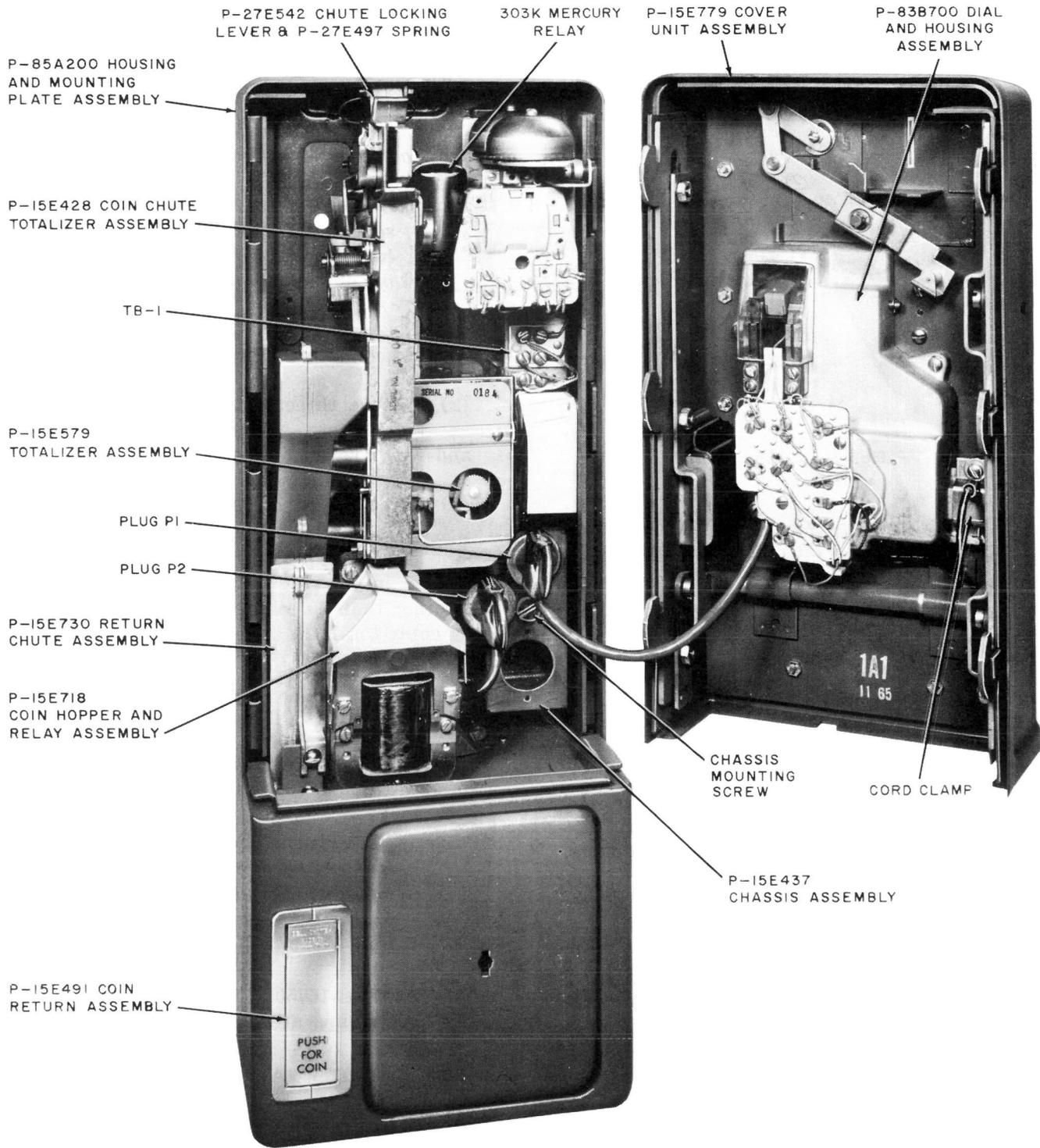
**4.08** Two KS-16750, List 2 releasers or two paper clips are used to set the totalizer.

#### SETTING TOTALIZER RATE

##### 4.09 To set totalizer

- (1) Remove totalizer cover by loosening captive cover screw (Fig. 5).

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**Fig. 3 — Assembly of Parts**

- (2) Rotate totalizer shaft in proper direction (from bottom to top) until springs T2 (Fig. 6) rest in depression in shaft as indicated by movement of springs.
- (3) Depress reset latch (Fig. 6) toward bottom of totalizer.
- (4) Rotate shaft in proper direction until contacts T1 operate as indicated by an upward movement of the reset latch.
- (5) **Do not allow shaft to move.** Insert one of KS-16750, List 2 releaser or paper clip into hole 1 (Fig. 6) located near right-hand end of shaft. Take care not to disturb contact springs.

- (6) Hold the paper clip so that right-hand end of shaft can not move.
- (7) Insert the second releaser or paper clip into one of four holes indicated as hole 2 in center of shaft (Fig. 6). 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.

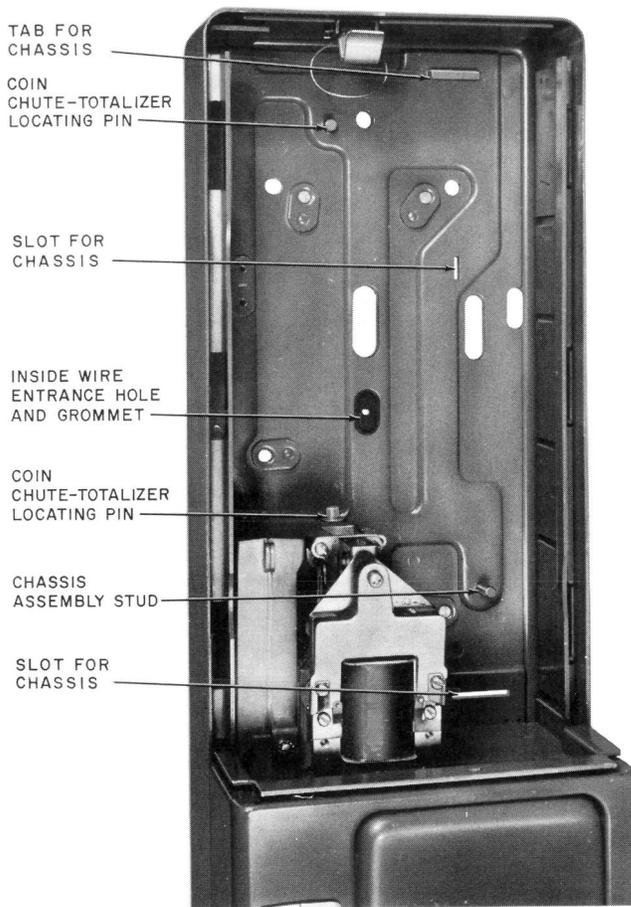


Fig. 4 — Upper Housing

TABLE B

SETTING CHARGE RATE OF TOTALIZER

LOWEST CHARGEABLE RATE	ROTATE SHAFT IN PROPER DIRECTION (FRONT 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

4.10 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.

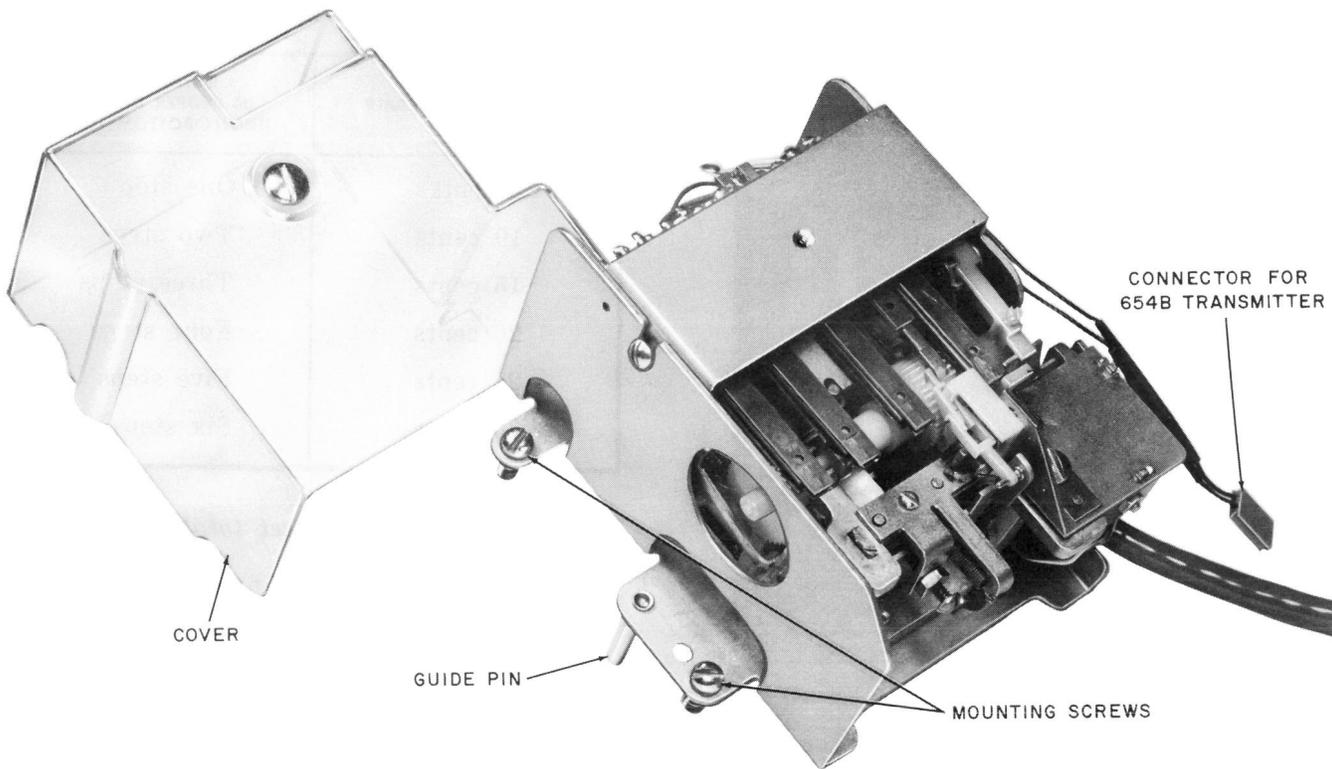
**4.12 To replace totalizer**

- (1) Line up the long guide pins on the totalizer with holes in the coin chute.
- (2) 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.
- (3) Tighten three captive totalizer mounting screws.
- (4) Reconnect 654B transmitter.

**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. 3).
- (4) Pull chassis assembly out at bottom and slide down to remove.



**Fig. 5 — Totalizer**

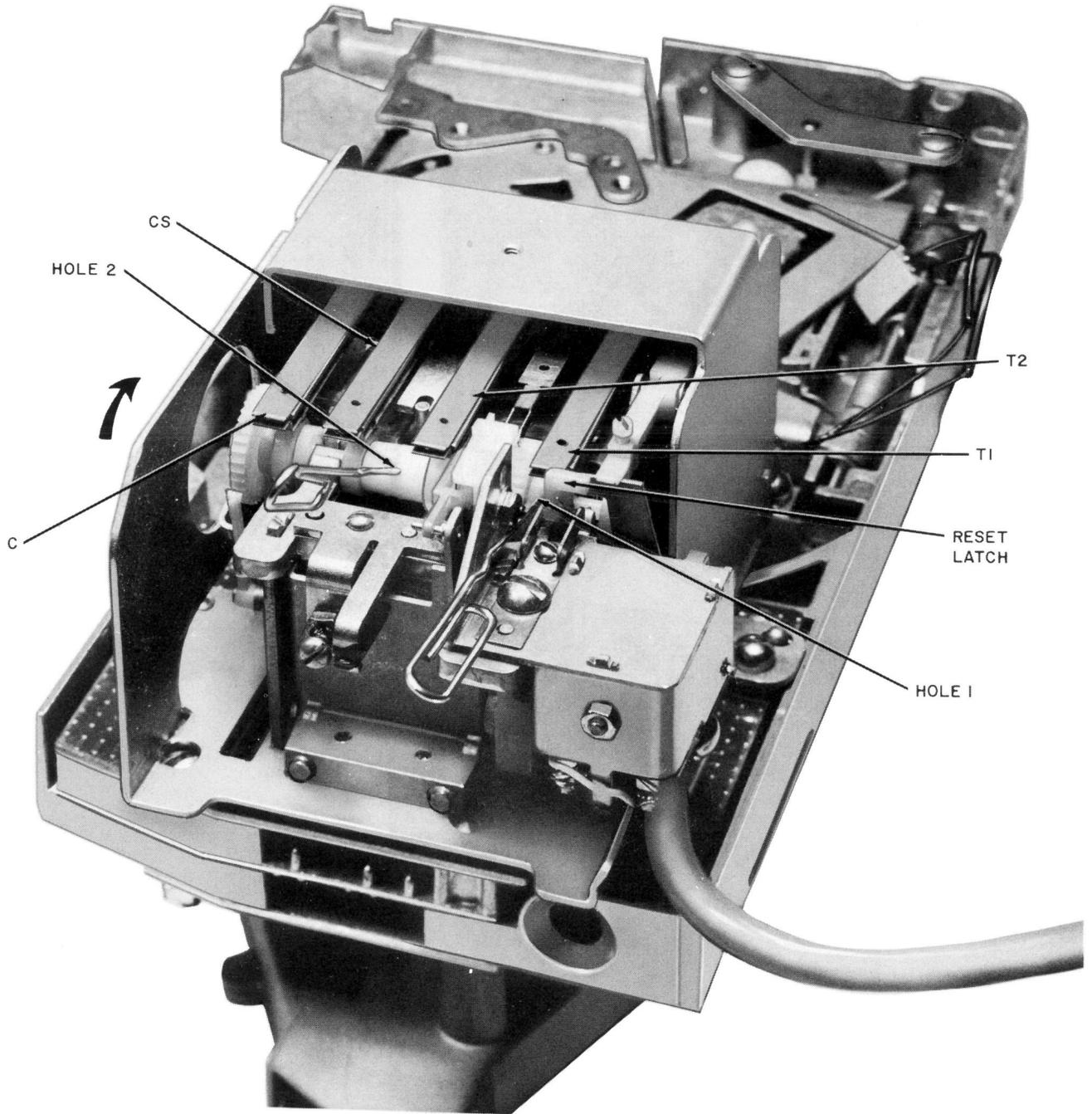


Fig. 6 — Setting Totalizer Rate

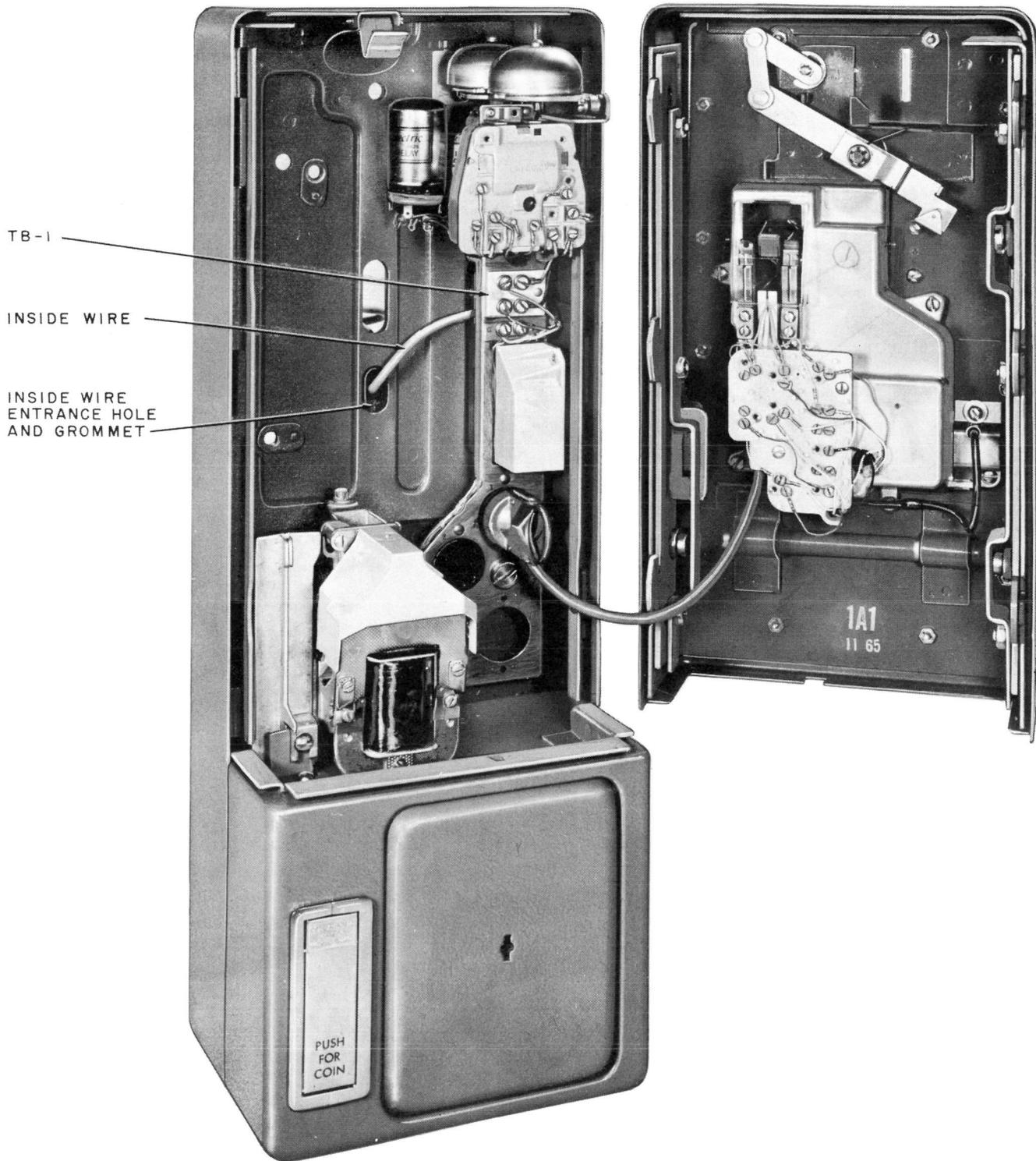


Fig. 7 — 1A1 Coin Telephone — Partial View Showing Wire Entrance and Routing

**4.14 To replace chassis assembly**

**Note:** When installing chassis assembly, dress inside wire behind chassis as shown in Fig. 7. Allow for the wire to be connected to TB-1 from right side.

- (1) Slide chassis under tab (Fig. 4).
- (2) Seat chassis tabs in slots.
- (3) Tighten chassis mounting captive screw.
- (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.

**5. WIRING**

**5.01** 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 for signaling ground.

**5.02** Feed inside wire through wire entrance hole grommet as the set is mounted on backboard. Do not displace grommet.

**5.03** See Fig. 7 for correct routing of inside wire. Dress wire behind chassis and run to right side of TB-1.

**5.04** 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.

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

**6. TESTING**

**Note:** The 1A1 coin telephone set should be tested at the time of installation as outlined in the following paragraphs.

**6.01** Remove coin telephone set cover and connect P11C cord (Fig. 8) between cover assembly and chassis.

**Note:** Cover must be kept in a vertical position while testing to prevent false operation of mercury switch associated with switch hook.

- (1) Remove handset from switch hook.
- (2) Deposit quarter. Totalizer should operate and step to home position.
- (3) Restore handset to reset totalizer. Coin relay should refund quarter.
- (4) Remove handset, remove coin relay dust cover, and operate hopper trigger (Fig. 9) by hand.
- (5) Dial tone should be heard. Dial any digit. Dial tone should not break.
- (6) Restore handset to switch hook.

**6.02 Testing with handset on switch hook**

- (1) Deposit nickel. Coin shall pass through coin chute and be refunded by operation of coin relay.
- (2) Repeat with dime and quarter.

**6.03 Testing with handset off switch hook**

- (1) Deposit penny to check coin release mechanism. Coin will stop in chute.
- (2) Operate coin release lever. Penny should drop into coin return.
- (3) Deposit nickels, dimes, and quarters as shown in Table C.

**TABLE C**  
**TESTS WITH COINS**

TESTS	LOWEST CHARGEABLE RATE SET IN TOTALIZER		
	5 CENTS	10 CENTS	OVER 10 CENTS
Deposit nickel	Dial tone	No dial tone	No dial tone
Deposit second nickel	Does not apply	Dial tone	No dial tone
Deposit dime	Dial tone	Dial tone	No dial tone
Deposit quarter	Dial tone	Dial tone	Dial tone if totalizer is set for 25 cents or less
Deposit amount of money for which totalizer is set	Does not apply	Does not apply	Dial tone

**Note:** After making each test, dial digit to break dial tone, hang up, and coins will be refunded.



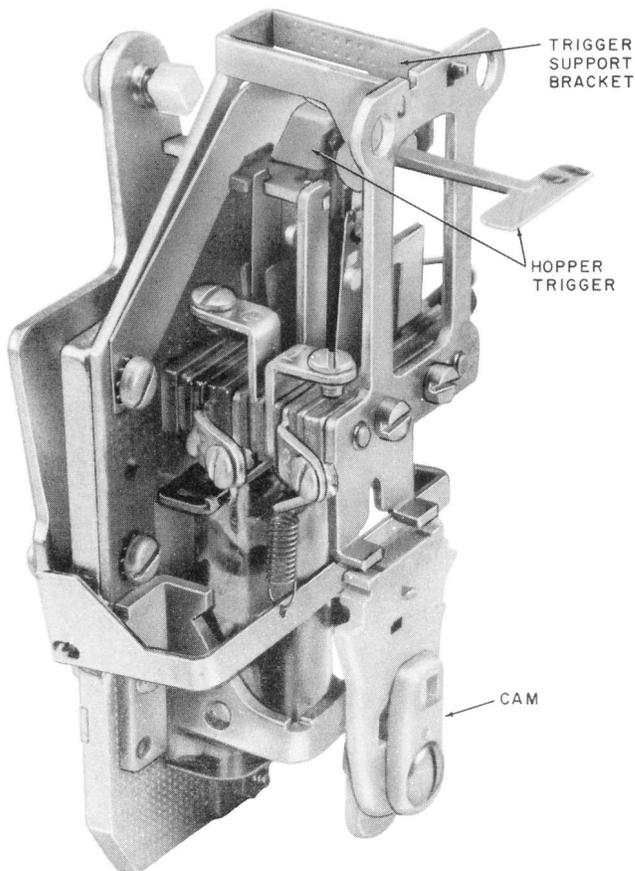
**Fig. 8 — P11C Test Cord**

**6.04 Coin tone signaling**

- (1) Contact local test board or operator for coin check.
- (2) One beep should be heard for nickels, two beeps for dimes, and a series of five rapid beeps for quarters. These beeps should not be heard in the coin telephone handset but may be monitored on the tip and ring of the line using a 1011B test set with the TALK-MONITOR switch in the MONITOR position.
- (3) Testboard or operator should be able to collect or return coins at this time.

**Note:** Before installing coin telephone set cover, check ringer for maximum volume position of gong.

- 6.05** Replace coin relay dust cover, disconnect P11C cord, plug P1 to J1, and replace coin telephone set cover.



**Fig. 9 — Coin Relay**

- 6.06** Call local operator, have station called, and verify that telephone set is working correctly.



*If coin telephone fails to operate properly, refer to Section 506-101-301 (Maintenance) or Section 506-101-401 (Connections). If electrical troubles are indicated, refer to Table D.*

**7. INSTRUCTION CARDS**

- 7.01** Instruction cards are not supplied with the 1A1 coin telephone and will be furnished locally. To install a card, push up with fingers (Fig. 10) and snap bottom into place. Be sure card is seated in slot at bottom.



**Fig. 10 — Installing Instruction Cards**

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**7.02** To remove card, push up and gently pry bottom out with small screwdriver or thin-edge tool.

**7.03** A gummed OUT-OF-SERVICE sticker (Form E-4914) is available to place over coin slot when coin telephone is out of service. These are available in books of five.

**8. COIN RECEPTACLE (CASH BOX)**

**8.01** The 1A1 coin telephone is equipped with a 1B coin receptacle. If a greater capacity is desired, a 1C coin receptacle can be installed. Install as follows:

- (1) Remove vault door.
- (2) Remove 1B coin receptacle.
- (3) Remove false floor from vault by prying with large screwdriver or equivalent.
- (4) Install 1C coin receptacle.
- (5) Install vault door.

**TABLE D**  
**ELECTRICAL TROUBLE ANALYSIS — 1A1 COIN TELEPHONE SET**

FAILURE (NOTES 1 AND 5)			POSSIBLE CAUSE (NOTE 1)	REMEDIAL ACTION
READ OUT	DIAL TONE	REFUND		
<b>HANDSET ON-HOOK — DEPOSIT 5 CENTS</b>				
<i>No</i>		<i>No</i> (Note 2)	Ring and Tip Reversed	Reconnect as required
			Plugs 1 and 2 interchange	Interchange plugs
			C* or T2† Contacts not Making	Clean Contacts — Replace Totalizer
			SH3, SH1, or HT Contacts Not Making	Clean Contacts — Replace Front Cover or Coin Relay
			Defective A Relay	Replace 303K Relay or Chassis
			Defective Front Cover	Replace
			Defective Totalizer	Replace
			Defective Coin Relay	Replace
Yes		<i>No</i>	SH2 Not Breaking	Replace SWHK, Plunger or Cover
			Defective C.O. Coin Trunk	
<b>HANDSET OFF-HOOK — DEPOSIT 5 CENTS</b>				
Yes	Yes	Yes	T1 Contacts Remain Latched After Refund	Replace Totalizer
			Initial Rate Set For 5 Cents	Reset Totalizer
			SH3* Not Breaking	Replace Cover
			Defective Cover	Replace
<b>HANDSET OFF-HOOK — INITIAL RATE DEPOSITED (5 CENTS TO 45 CENTS)</b>				
<i>No</i> (Note 3)	<i>No</i>	Yes	SH3, SH2, or T1† Not Making	Clean Contacts — Replace Totalizer or Cover
			Totalizer Set For more Than Deposit	Reset Totalizer
Yes	<i>No</i>	Yes	T2†, SH1†, or Dial O.N. Contacts Not Breaking	Replace Cover or Totalizer
			Defective cover	Replace
Yes	<i>No</i> (Note 4)	<i>No</i> (Note 2)	T2* Not Making — Totalizer Steps Through Zero Rate Position	Replace Totalizer
Yes	Yes But No Sidetone	Yes	Transmitter Open Defective Cover	Replace Handset or Cover Replace
<i>Coins Return After Readout</i>			SH2 Open Dial Open Defective Cover	Replace Cover Replace Dial or Cover Replace Cover
<i>Cannot Break Dial Tone</i>			T1 Not Latching Defective Dial	Replace Totalizer Replace Dial or Cover Replace
<i>Can Break Dial Tone With T1 Not Transferred</i>			T1* Not Making Defective Totalizer Defective Cover	Clean Contacts — Replace Totalizer Replace Replace
<b>COIN SIGNALING</b>				
No Coin Tones			S1* Not Making Defective Oscillator	Replace Totalizer Replace Chassis
5 Cents Deposited <i>No Read Out, Cannot Hear</i>			Defective A Relay	Replace Relay or Chassis
<i>Dime Tones Too Fast</i>			CS* Contacts, Open CS Cam Not Resetting	Clean Contacts or Replace Totalizer
<i>Quarter Tones Too Slow</i>			CS* Not Breaking	Replace Totalizer
<i>Too Many Coin Tones</i>			Totalizer Not Stepping Properly — T2* Open	Clean Contact or Replace Totalizer
<i>Hear Coin Tones In Handset</i>			Defective Chassis	Replace

\*Normally Open Contact  
†Normally Closed Contact

NOTE 1: Failures are shown *in italics*. Readout refers to operation of totalizer.

Possible cause assumes that preceding tests have been met.

NOTE 2: May refund if central office has automatic timeout.

NOTE 3: Will read out when handset is hung up.

NOTE 4: May give short bursts of dial tone.

NOTE 5: Chassis wiring troubles can cause any of the following troubles.