

BELL SYSTEM PRACTICES
Station Installation and Maintenance

SECTION C42.111
Issue 4, April, 1956
AT&T Co Standard

COIN COLLECTORS

MULTISLOT TYPES

INSTALLATION

1. GENERAL

1.01 This section covers the installation of multislot coin collectors and is reissued to include the use of the 144D backboard and the transmitter and receiver locks and to stress the importance of location and fasteners. Due to extensive changes, marginal arrows have been omitted.

2. SUPPLIES

2.01 The principal supplies needed in connection with the installation of multislot-type coin collectors are listed below. The list does not include minor items such as ground clamps, connecting blocks, wire fasteners, tape, and others which are needed in connection with practically all station installation work. The principal apparatus items required are listed in Section C42.104, Coin Collectors, Multislot Types, Supplies.

INDEX

Anchors

ORDERING INFORMATION AND USE

ANCHOR, DRIVE, HAMMER, 5/16 x 2-1/4 INCH.

For mounting backboards to unfinished masonry walls.

ANCHOR, DRIVE, HAMMER, 5/16 x 2-3/4 INCH.

For mounting backboards to finished masonry walls.

ANCHOR, SCREW, MACHINE, 1/4 INCH—20.

For attaching the 139A backboard to masonry or marble surfaces.

ORDERING INFORMATION
AND USE

INDEX

Bolts

**BOLT, CARRIAGE, 1/4 x 8 INCH—
THREADED, 4 INCH.**

Or approved equivalent. For mounting backboards on plaster block walls.

**BOLT, STEP, 1/4 INCH—
20 x 1-3/4 INCH.**

For mounting backboards on walls of contractor shanties, etc, 1/4 inch—20 hexagon nuts for use with these bolts must be ordered separately.

BOLT, TOGGLE, RH, 1/4 x 4 INCH.

For mounting 144-type backboard on hollow tile walls.

Brace

BRACE, CORNER, IRON.

For securing counter, shelves, etc, as covered in 4.04.

Nut

**NUT, HEXAGON, STEEL,
1/4 INCH—20.**

Used with the 1/4 inch—20 step bolts.

Screws

**SCREW, MACHINE, IRON, FH,
1/4 INCH—20 x 1-1/2 INCH.**

For attaching the 139A backboard to masonry or marble surfaces. Used with 1/4-inch machine screw anchors.

**SCREW, WOOD, BRIGHT, FH,
NO. 14, 1 INCH.**

**SCREW, WOOD, BRIGHT, FH,
NO. 14, 1-1/4 INCH.**

**SCREW, WOOD, BRIGHT, FH,
NO. 14, 1-3/4 INCH.**

**SCREW, WOOD, BRIGHT, FH,
NO. 14, 2-1/2 INCH.**

**SCREW, WOOD, BRIGHT, FH,
NO. 14, 3 INCH.**

**SCREW, WOOD, BRIGHT, FH,
NO. 14, 3-1/2 INCH.**

For fastening backboards to various surfaces as covered in Part 4 of this section.

P-210235, SCREW.

For mounting coin collectors in 144D and 167-type backboards.

P-210249, SCREW.

For mounting coin collector on 139A backboard.

P-210250, SCREW.

For mounting coin collectors in open-type metal booths.

3. LOCATION

3.01 **General:** Due to the public nature of coin collector installations and the necessity for safeguarding the funds contained within the collector, the selection of a satisfactory location for a coin collector is an important matter. Whenever possible, consistent with other considerations listed below, the coin collector should be located so that it is in the viewing range of the agent or other persons normally located in the vicinity.

3.02 The location for a coin collector should be specified on the service order. Consult the supervisor and obtain instructions before proceeding if a location is not specified or does not meet the following requirements as nearly as possible.

3.03 Full consideration should be given to the following:

(a) **Convenience of customers:**

- (1) Easy to find—**visible** from store or building entrance—well marked by signs.
- (2) Always sufficient **light** (daylight or artificial light) for dialing, for inserting coins properly, and for reading the instruction cards.
- (3) Where **noise** and **vibration** are least likely to interfere with telephone conversations.
- (4) Affording as much privacy as possible.

Avoid stairways and doors or other locations where the customer might be inconvenienced during ordinary usage.

(b) **Avoiding locations where the coin collector may be damaged or obstructed, such as:**

- (1) Moving or movable objects or machinery.
- (2) Narrow halls through which articles are trucked.
- (3) Piled merchandise.
- (4) Oily or dirty objects.

(c) **Security:**

(1) Select mounting arrangement with care to assure that the coin collector will not be dislodged through hard usage and cannot be removed by unauthorized persons.

Avoid:

- Locations where fasteners cannot be placed in solid backing (see Figs. 4 through 13).
- Round columns and other locations where the coin collector could easily be pried loose.
- Horizontal surfaces such as shelves, counters, etc, when vertical surfaces are available.
- Portable stands or tables.
- Locations over or adjacent to glass counters, showcases, and other similar property.

Cautions:

1. **Always mount a coin collector on a backboard except in metal or wooden booths which have been designed to permit mounting without a backboard and in cases where the coin collector can be mounted on a smooth vertical wooden surface with the edges of the coin collector in contact with the mounting surface all the way around.**
2. **Never mount a coin collector on a window or door facing.**

(2) If coin collectors must be located on finely finished surfaces such as marble counters or walls, consent in writing must be obtained from the public telephone agent, customer, or owner of the building to drill such surfaces. If the surface to be drilled would be expensive to repair in case the coin collector is later removed by authorized or unauthorized parties, consult the supervisor and obtain instructions before proceeding with the installation.

(3) Wherever possible, coin collectors should be located where the user cannot reach and come in contact with grounded objects. When it appears that the coin collector must be placed near a grounded object, consult the supervisor before proceeding with the installation.

(4) To avoid inductive effects, obtain as great a separation as possible between the coin collector and neon signs. See Section C24.042, Separation for Inside Wire and Cable, for necessary separations between telephone wiring and wiring to neon signs and similar high-voltage devices. When telephone wires must be run near transformers, connecting wires, and neon signs, consult the supervisor since special protective measures may have to be taken to avoid inductive effects.

4. MOUNTING

4.01 **General:** Coin collectors must be securely mounted to prevent unauthorized removal. It is, therefore, extremely important to use the methods given in the following paragraphs and to use the **full number** and the **type** of fasteners specified.

4.02 **Height and clearance** are required as shown in Fig. 1.

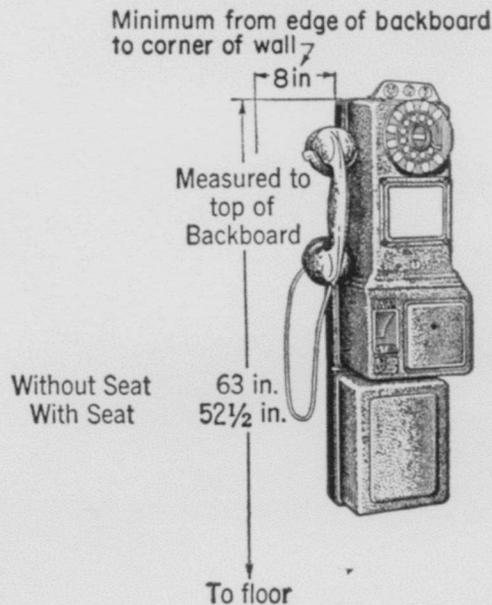


Fig. 1

4.03 In wooden booths designed to permit mounting a coin collector without a backboard, use 1-1/4-inch, No. 14, FH wood screws. In open-type metal booths use the P-210250 screws (1/4-inch—20 x 3/4-inch, FH machine screw) furnished with the booth. Place four screws in the upper mounting holes of the backplate and four in the coin compartment. If the coin compartment is closed, these four screws will be placed later by the collector.

4.04 The 139A backboard shall be used for mounting coin collectors on counters and similar horizontal surfaces. These backboards are also used in some of the earlier 7-type booths in which collectors of other than the handset type are installed. (In general, handset-type coin collectors are installed in 7-type booths and mounted on 167-type backboards.) If the support upon which the backboard is to be mounted can be readily tilted or moved, securely fasten the support with iron corner braces, screws, or other suitable means after obtaining permission from the owner or other responsible person.

4.05 Fasten the 139A backboard to its support with four screws inserted through the four corner holes in the base of the backboard. On hard wood use 1-1/4-inch, No. 14, FH wood screws; on soft wood use 1-3/4-inch, No. 14, FH wood screws; and on marble or other masonry use 1/4- x 1-1/2-inch—20, FH machine screws in 1/4-inch machine screw anchors or locally authorized approved equivalents. Where conditions indicate that a more secure attachment is desirable and the underside of the support is accessible, 1/4-inch carriage or step bolts may be used to attach the backboard to the support with the heads of bolts placed at the underside of the support and the excess length of the bolt cut off above the nut in the base of the backboard. Before fastening the backboard to the mounting surface, select the desired entrance hole (either in the base or in the backplate). Perform the work necessary to bring the wiring to the chosen entrance and feed the wiring through that entrance as the backboard is placed into position. The backboard shall be fastened to the mounting surface so that the wiring is not crushed or pinched.

4.06 The 144C or the 144D backboard shall be used for mounting the coin collectors on vertical surfaces except as noted previously. If the lower part of the backboard must be removed for any reason, saw it off along the saw cut. If a backboard is needed for mounting the subset in a location other than immediately below the coin collector, use this sawed-off portion of the 144-type backboard, unless the sawed-off edge would be too conspicuous.

4.07 Before fastening the backboard to the mounting surface, place the local wiring and line wires in the channel provided on the rear of the 144-type backboard. If the line wires were fished through the wall, locate the hole in the wall so that, when the backboard is placed at the proper height, the top entrance hole in the backboard will fall in the same location as the hole drilled in the wall. As the backboard is placed into position, dress the local wiring and line wires through the proper holes, leaving sufficient slack for connecting. If conditions warrant, the hole for the wiring located in the wall may be made

anywhere within the area of the groove in the back of the backboard.

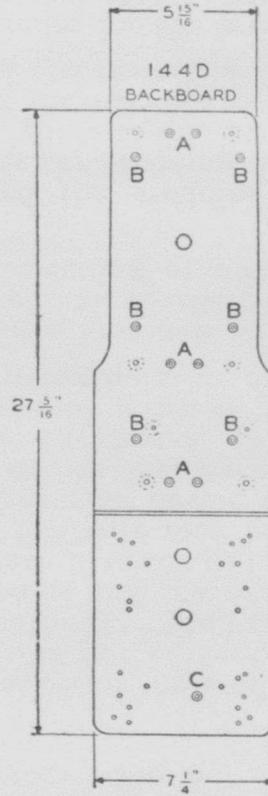


Fig. 2

4.08 The holes designated A, B, and C in Fig. 2 are used to mount the backboard to its support. The other holes are for attaching the coin collector and subset to the backboard. When the lower portion of the backboard is used, use the same type of fastener in hole C as is used in holes A or B. The two large holes provide entrances for the local and line wires of the coin collector and subset.

4.09 The backboard must be fastened to a solid support. On walls containing studding or furring $7/8$ inch or thicker, the 144-type backboard shall be fastened to the studding or furring with screws inserted through holes A. Point the screws inward toward the studding.

4.10 Find the approximate location of the studding or furring by sounding. Then definitely locate its edges by drilling small test holes as shown in Fig. 3. Similar test holes may be drilled near the bottom of the backboard if required.

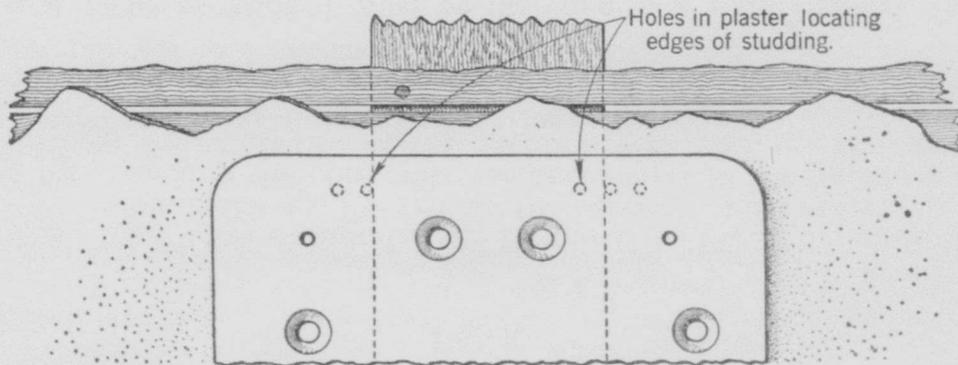


Fig. 3

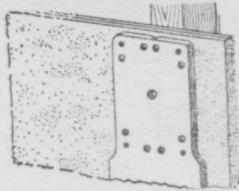
4.11 When the location of the studding or furring on metal sheathed walls is not evident from sounding or from nails fastening the sheathing or the baseboard, it may be necessary to loosen a section of molding and bore test holes through the sheathing underneath in order to locate the studding or furring. In these cases a fish wire may be inserted through a test hole and used as a measuring device to locate the studding or furring. A minimum of six fasteners should be used on the upper portion of the backboard. When greater security is desired due to the type of location, additional fasteners may be placed either in existing holes or by drilling new holes.

4.12 Replace moldings loosened for making the above tests and make sure that no sharp edges or loose nails are left to injure anyone cleaning or coming in contact with the repaired surface.

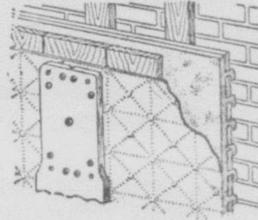
4.13 Having located the studding or furring, center the backboard over the studding or furring, making sure to obtain the proper height and horizontal clearance as shown in Fig. 1. Then, using the backboard as a template, mark the location of holes A on the mounting surface.

4.14 Drill starting holes for the screws and mount the backboard, making sure that a screw is placed in each hole and that each screw or other fastener is secure. The proper type and size of fasteners to be used are listed in connection with Figs. 4 through 6.

WOOD OR METAL LATH
ON STUDDING



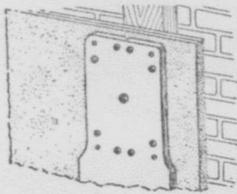
METAL SHEATH ON
 $\frac{3}{8}$ IN. SOLID WOOD OVER
LATH AND PLASTER
ON $\frac{7}{8}$ IN. FURRING



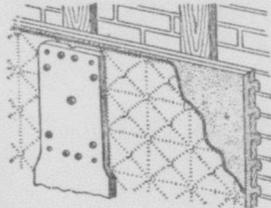
Note: Fasten backboard to studing or furring with 3-inch, No. 14, FH wood screws through holes A and C.

Fig. 4

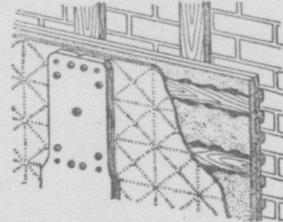
WOOD OR METAL LATH
ON FURRING



METAL SHEATH OVER
LATH AND PLASTER
ON $\frac{7}{8}$ IN. FURRING



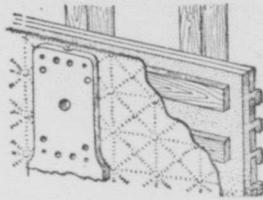
METAL SHEATH ON
 $\frac{7}{8}$ IN. FURRING OVER LATH
WITH PLASTER BETWEEN



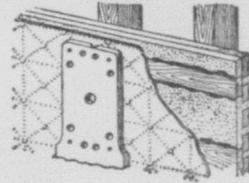
Note: Fasten backboard to furring with 2-1/2-inch, No. 14, FH wood screws through holes A and C.

Fig. 5

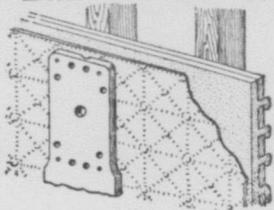
METAL SHEATH ON
 $\frac{3}{8}$ IN. FURRING OVER
 LATH AND PLASTER



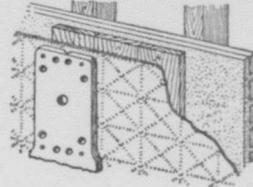
METAL SHEATH ON
 $\frac{7}{8}$ IN. FURRING OVER LATH
 WITH PLASTER BETWEEN



METAL SHEATH ON
 LATH AND PLASTER



METAL SHEATH ON
 $\frac{3}{8}$ IN. SOLID WOOD OVER
 LATH AND PLASTER



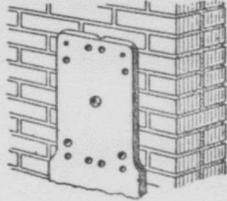
Note: Fasten backboard to studding with 3-1/2-inch, No. 14, wood screws through holes A and C.

Fig. 6

4.15 The **holes B** in the 144-type backboard shall be used when the backboard is to be mounted on masonry, metal lath, hollow tile, plaster blocks, wood surfaces $\frac{7}{8}$ inch or more in thickness, and in all other cases where the use of the holes B will result in a more secure mounting than would the use of holes A.

4.16 Figs. 7 through 13 and associated instructions show the principal types of wall construction on which 144-type backboard is mounted with fasteners through holes B. Follow the instructions given with the figures, making sure that a fastener is placed in each of the holes B and that each is secure. Where the seam between hollow tile sections or brick is encountered in drilling holes for fasteners, or where any of the fasteners are not secure for other reasons, shift backboard slightly or slant hole as required to permit secure attachment. If holes cannot be slanted or shifting of backboard would require redrilling of several holes, relocate mounting holes in the backboard using $\frac{11}{32}$ -inch twist drill and countersink or counter-bore holes so that head of fastener will be flush with backboard.

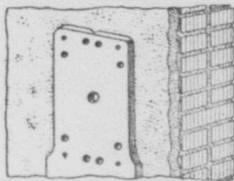
MASONRY NOT PLASTERED



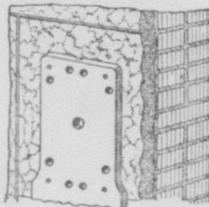
Note: Use 5/16- x 2-1/4-inch hammer drive anchors through holes B and C. Drill bricks with 5/16-inch masonry drill.

Fig. 7

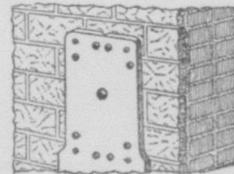
MASONRY PLASTERED



MARBLE



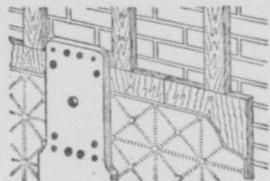
GLAZED TILE ON BRICK



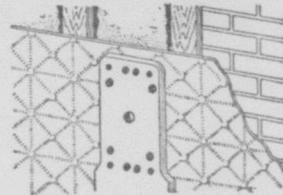
Note: Use 5/16- x 2-3/4-inch hammer drive anchors through holes B and C. Use 3/8-inch twist drill through plaster, then drill bricks with 5/16-inch masonry drill. Review 3.03(c)(2) before proceeding with the installation.

Fig. 8

METAL SHEATH ON 3/8 IN SOLID WOOD OVER BRICK



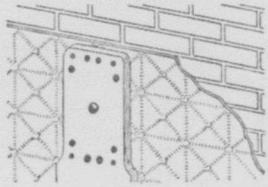
METAL SHEATH ON 3/8 IN FURRING OVER BRICK WITH PLASTER BETWEEN



Note: Use 5/16- x 2-3/4-inch hammer drive anchors through holes B and C. Use 3/8-inch twist drill through sheath and wood, then drill masonry with 5/16-inch masonry drill.

Fig. 9

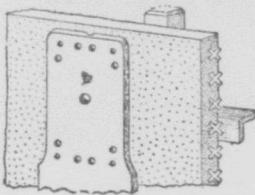
METAL SHEATH ON BRICK



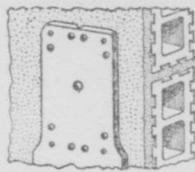
Note: Use 5/16- x 2-1/4-inch hammer drive anchors through holes B and C.

Fig. 10

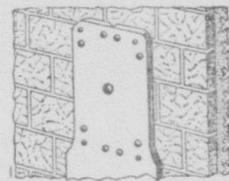
METAL LATH ON METAL FRAMEWORK



HOLLOW TILE



GLAZED TILE ON METAL LATH



Note: Use 1/4- x 4-inch, RH toggle bolts through holes B and C. Use 3/4-inch twist drill through plaster. Drill hollow tile with 1/2-inch masonry drill and then ream hole in tile to 3/4 inch. Use 3/8-inch twist drill through glazed tile, then ream hole with 3/4-inch twist drill. Review 3.03(c)(2) before proceeding with the installation.

Fig. 11

METAL SHEATH ON 7/8 IN SOLID WOOD

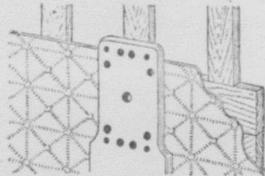


Fig. 12

Note: Use 1-3/4-inch, No. 14, FH wood screws through holes B and C. Be sure that screws do not enter space between boards. In some walls, backing is only shoulder high. In such cases, place the backboard so that the upper holes A are centered over furring as shown and, at the top, place screws through holes A instead of holes B.

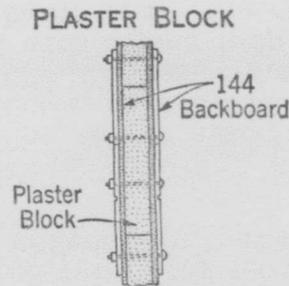


Fig. 13

Note: Place a backboard on each side of the wall and fasten with 1/4- x 8-inch carriage bolts through holes B and C. 1/4- x 8-inch step bolts may be used if available. Place nuts on side where coin collector is mounted. Cut off excess length of bolt. Use 1/4-inch twist drill for making holes through wall. Use this same mounting arrangement for cinder block, inferior concrete block, and other types of wall construction where weakness of the wall is evident.

4.17 When it is necessary to make attachment to wall construction where weakness of wall is evident, such as may be encountered in contractor's shanties, oil filling stations, on corrugated walls, etc, use 1/4- x 1-3/4-inch step bolts to attach backboard to wood 7/8 inch thick or less. For plaster block and similar walls, use two backboards and make attachment as shown in Fig. 13.

167-type Backboards

4.18 The 167A backboard is used to mount 181-, 182-, 183-, 191-, 193-, and 195-type handset coin collectors in the corner of 5-, 6-, 10-, or 11-type booths as covered in Section C44.111, Telephone Booths, 5, 6, 10, and 11 Types, Installation. The 167B backboard is used to mount 181-, 182-, 183-, 191-, 193-, and 195-type handset coin collectors in the corner of the 9-type booth. The 167-type backboard is constructed of sheet steel with mounting screws furnished.

Mounting Coin Collector on Backboard

4.19 When the coin collector is to be mounted, check the fit of the upper housing with the lower housing for jamming or ease of operation prior to mounting. Accommodate the existing surfaces to each other (backplate, backboard, and mounting surface) using shims, if necessary, to reduce warpage. Alternate when tightening the screws in the backplate, tightening each screw partially until the backplate is secure, testing the fit of the upper and lower housing to avoid any unnecessary

bowing of the backplate. When using shims, the maximum gap between coin collector and mounting surface is 1/16 inch.

Caution: Always remove the handset from the switch-hook before removing the upper housing from the lower housing or before placing the upper housing on the lower housing.

4.20 If the coin compartment of the coin collector is open at the time of installation, place four screws in the mounting holes in the coin compartment and four in the upper mounting holes of the coin collector backplate. If the coin compartment is closed, the four screws required in the coin compartment will be added later by the collector.

4.21 **On 139A backboards,** mount the coin collector with the **P-210249 screws** (1/4-inch—20 x 5/8-inch, FH machine screws) furnished with the backboard. Where there is a hole in the bottom of the coin collector, place an additional screw through this hole into the base of the backboard.

4.22 **On 144C backboards,** fasten the coin collector to the backboard with 1-inch, No. 14, FH wood screws. **On 144D backboards,** fasten the coin collector with P-210235 screws (1/4-inch—20 x 1-inch, FH machine screw) which will not be furnished with the backboard.

4.23 **On 167-type backboards,** fasten the coin collector to the backboard with P-210235 screws (1/4-inch—20 x 1-inch, FH machine screws) furnished with the backboard.

4.24 In order to assure proper flow of coins through the chute and leveling in the coin box, make sure that the coin collector is mounted plumb. A suggested method to plumb the coin collector is to place a small spirit level such as a No. 31 Stanley level, or a locally approved equivalent, on the lip of the coin relay tray on the lower housing parallel to the backplate, and level the collector; then place the level on the lip of the coin relay tray perpendicular to the backplate and level the coin collector in that plane.

Subset

4.25 The subset associated with a multislot-type coin collector shall be mounted in the standard manner (see Section C31.102, Subscriber Sets, Installation). When subsets equipped with a long loop relay must be mounted horizontally under a booth shelf, the relay must be readjusted as indicated in the C64 series of sections covering coin collector connections.

5. WIRING

5.01 **Select wire** and place it in accordance with the sections in Division C20 and in addition follow the instructions given in the paragraphs which follow.

5.02 **Conceal the wiring** near the coin collector. Where this is not practicable, consider using an approved molding, tubing, or woven conduit to cover the wiring. If molding is not considered necessary, tape GS wiring with friction tape. JK wire need not be taped.

5.03 **A separate signaling ground wire** must be provided between each coin collector operated on a prepayment basis and the connecting block, protector, or cable terminal. See Section C33.004, Protector and Signaling Grounds, for signaling ground information.

5.04 **Tag the signaling ground wire** in the coin collector with a linen tag or an approved local substitute, giving the location of the ground connection.

5.05 The housing of the coin collector can be grounded by strapping from the coin relay ground terminal screw to the mounting screw which holds the left side of the coin relay tray to the lower housing with an M1W 5-1/2-inch cord or approved equivalent (see Fig. 14). The lockwasher under the mounting screw should be removed. To assure a metallic connection between upper and lower housing, scrape the paint from the upper housing where the equalizing spring pushes against it.

5.06 **Locate connecting blocks, protectors, or other terminating apparatus** where they will not be accessible to a person using the coin collector. In the case of contractor shanty installations, oil filling station installations, and in other similar cases, it may be necessary to locate the protector outside. See Section C33.007, Station Protection, Stations Served by Metal-sheathed Cable, for station protector installation.

5.07 Make connections as indicated in the C64 series of sections covering coin collector connections and Section C63.223, Subscriber Set, Connections, Common Battery.

5.08 When coin collectors equipped for 10-cent initial charge are used in areas requiring a 5-cent initial charge, a P-339098 cutover clip must be placed. Coin collectors will not normally be supplied with this clip.

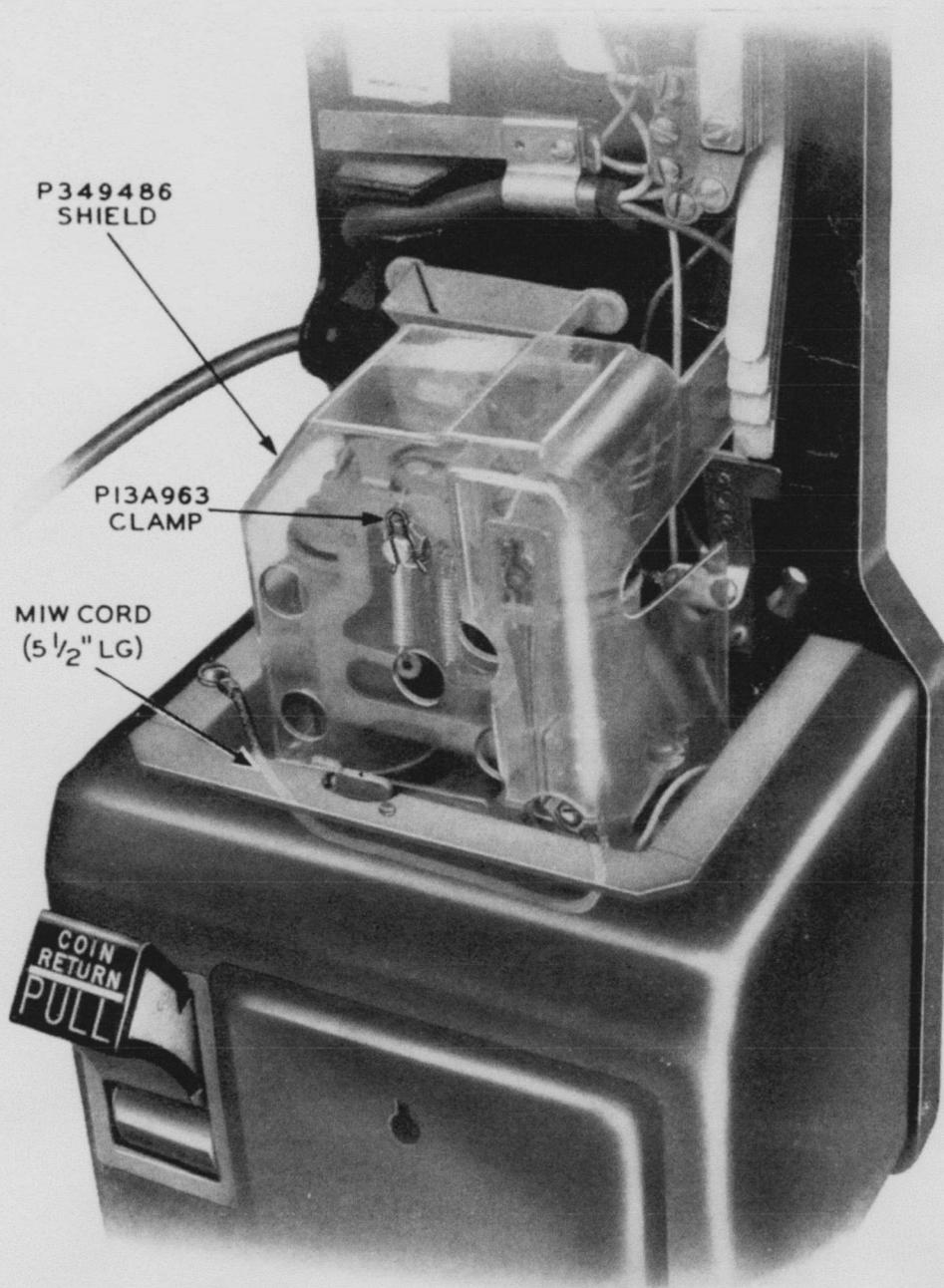


Fig. 14—Method of Grounding Upper Housing

6. POSTPAYMENT INSTALLATIONS

6.01 When a coin collector is operated on a postpayment basis, no coin collector signaling ground is necessary. When local instructions or the service order indicate that the coin collector will later be converted for prepayment service, run the wiring on the same basis as for prepayment coin collectors. Terminate the ground wire or leave a sufficient length of wire coiled up in the coin collector to terminate, as instructed locally.

6.02 When a prepayment coin collector (equipped with a relay) is used temporarily for postpayment service, arrange the coin-collecting mechanism as follows (see Fig. 15):

- (a) Facing the coin collector, reach behind the relay coils and pull the operating arm forward, disengaging it from the coin vane pin.
- (b) Place the coin vane pin to the left of the operation arm of the relay so all coins deposited will fall into the coin receptacle, and allow the operating arm to return to its normal position.
- (c) Disconnect the black wire from the right coil terminal of the coin relay and connect it under the screw on the ground contact spring assembly.
- (d) Terminate the signaling ground wire in the same way as for a prepayment installation.

Coin Gauge Guard

6.03 The KS-8487, List 1 and List 2 coin gauge guard mounts under the same fasteners that hold the cardholder.

7. 1B, 8A, AND 8B CARDHOLDERS

7.01 To install the 1B, 8A, or 8B cardholder on coin collectors operating on a dial basis, proceed as follows:

- (a) Remove the slotless screws from the upper housing to the rear of the coin gauge and save them.
- (b) Attach the cardholder to the upper housing with the machine screws and nuts previously removed or new P-201135 RH slotless machine screws, P-92383 hexagon nuts, and P-165490 lockwashers. Place the washers under the nuts inside of the upper housing.
- (c) If machine screws used are long enough to interfere with the end of insulator pile-up of switchhook spring assembly, cut off excess screw length.

7.02 The 1B, 8A, and 8B cardholders are not usually used on manual coin collectors, as they are equipped with 50C apparatus blanks to hold the necessary instruction card. When desired locally, the cardholders may be used in conjunction with the 50C apparatus blank.

7.03 Two plugged mounting holes are provided in the upper housing for placing the 50C apparatus blank when required.

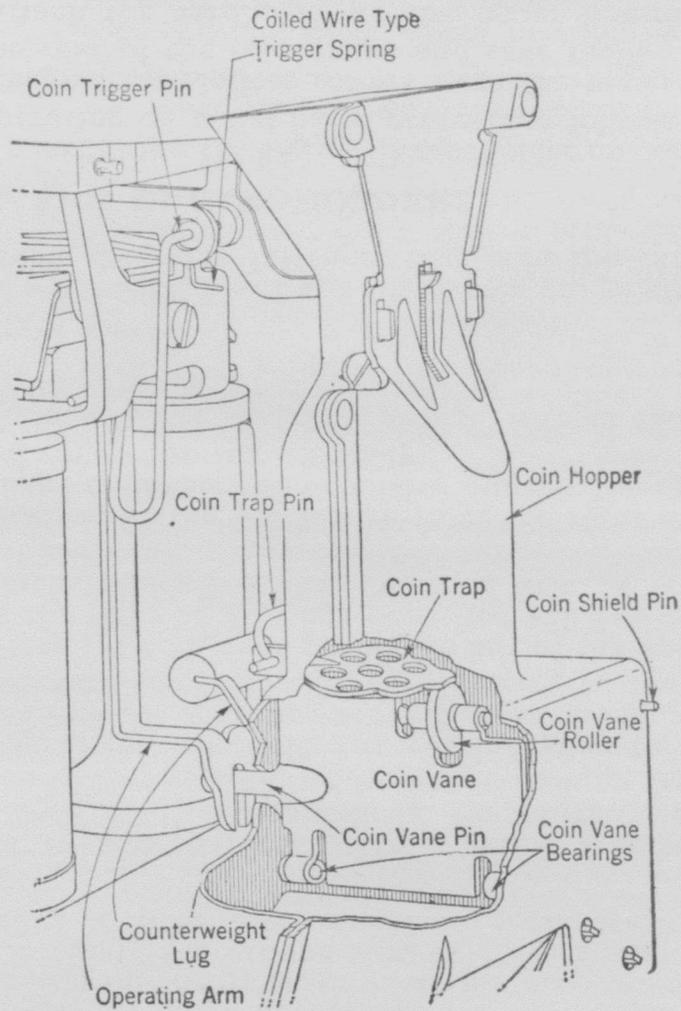


Fig. 15

8. SHIELD

8.01 The coin relay is protected by a relay shield which may be either a fiber shield coded KS-7994 or a **P-349486 molded plastic shield**. On coin collectors equipped with a D-95365 contact device, a **P-16A336 plastic shield** should be used. The plastic shields are held in place by exerting slight pressure on the shield near the coin relay pivot screw, and inserting a **P-13A963 clamp** between the shield and the head of the pivot screw. The clamp is supplied with the plastic shield and this clamp should not be used with the KS-7994 fiber shield since it may cause the shield to catch on the upper housing. (See Fig. 14.)

9. TRANSMITTER AND RECEIVER LOCKS

9.01 In apartment house hallways; air, bus, and train terminals; oil filling stations; and other busy locations where there is reason to expect that transmitter and receiver caps may be subjected to unauthorized removal from handsets, the handsets should be equipped with locks as shown in Section C32.275, Handsets, Maintenance.

10. TESTS

10.01 Make the operation tests in accordance with Section C64.256, Coin Collectors, Multislot Types, Installation Tests.

11. OUT-OF-SERVICE NOTICES

11.01 If the coin collector is not ready for service when the installation work is completed, place a TEMPORARILY OUT OF SERVICE sign KS-7991 so that the customers will not deposit coins in the collector. If the coin collector is placed in service, leave one of these signs with the customer or public telephone agent and give instructions for its use when the coin collector is out of service.

Note: Use only three screws when placing the 8A or 8B cardholder on the 10-cent coin collectors. Do not replace the screw positioned over the electromagnet. Use the screw over the electromagnet to hold the spacer plate on the swing-type gong bracket. The hole in the 8A or 8B cardholder that fits over this location is counter-sunk to accommodate the head of the existing screw.