

BELL SYSTEM PRACTICES
Station Installation and Maintenance

SECTION C42.136
Issue 2, 10-16-50
AT&T Co Provisional

COIN COLLECTORS

191 and 193-TYPE

DESCRIPTION AND OPERATION

1. GENERAL

1.01 This section describes the 191 and 193-type coin collectors. It is being reissued to include information on the post pay 193-type collector.

2. DESCRIPTION—191-TYPE

2.01 The 191-type coin collector has been developed for prepayment coin service and will be used primarily in those locations where the rate for local calls has or will be increased from five cents to ten cents. This collector normally requires a minimum deposit of ten cents to establish a connection to the central office. This deposit may be in the form of two nickels, one dime or a quarter. No central office connection is established with a single nickel and if the call is abandoned after a deposit of only one nickel, it is mechanically refunded when the hand set is replaced on the switchhook. After connection to the central office has been established, the coin collector is capable of accepting single nickels for overtime or other charges until such time as the central office connection is released.

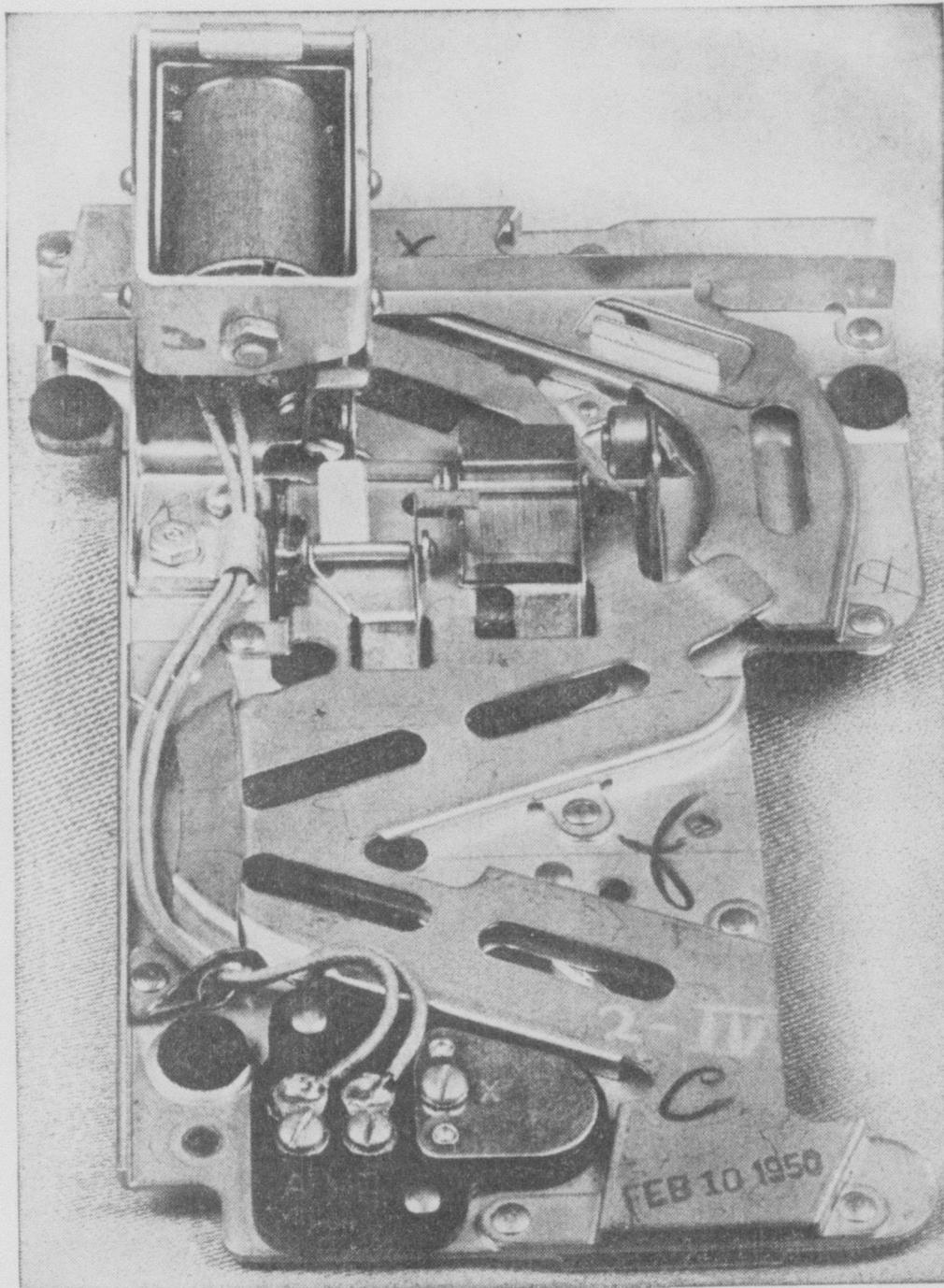


Fig 1.—Photograph of Coin Chute



2.02 Externally, this collector is the same as the 181-type prepayment coin collector. Internally, several changes have been made, all but one of which are confined to the upper housing. An entirely new coin chute (Fig. 1) has been designed to replace the neoprene coated lead chute. This chute is fabricated from stainless steel and has a small electromagnet mounted on it. When the hand set is off the switchhook, a latch mechanism, included in the chute assembly, holds the first nickel deposited in the upper part of the nickel channel of the coin chute. A second nickel when deposited is deflected by the held nickel in the (first or) holding latch and enters the (second or) locking latch located just beyond the first latch. This second nickel actuates the locking latch, thereby releasing the locking mechanism and permitting both coins to traverse the remainder of the channel and reach the coin trigger and trap, thus signaling the central office with a coin relay ground applied to the line. When the hand set is off the switchhook the dime and quarter operation is unchanged from the earlier types, either coin passing directly to the trap. With the hand set on the switchhook, a dime will pass directly to the trap but a quarter will be held in the upper part of the coin chute until the hand set is removed from the switchhook.

2.03 When the coin trigger is operated and the ground contacts are closed, the talking battery, which is then connected to the coin line, energizes and operates the electromagnet. When this electromagnet is in the operated position, an arm (see Fig. 2) attached to the electromagnet armature projects into the nickel channel ahead of the holding latch thus causing nickels to by-pass this latch and traverse the remainder of the channel and proceed directly to the coin trap. When a call is completed and the talking battery is removed, the electromagnet is deenergized, and the arm is removed from the five-cent channel thus resetting the collector for its next call. Collections can be made at any time during a call without affecting the mechanism. Obviously, this system will function only in a coin first, ground start system. Loop start operation, whether dial tone first or coin first, requires central office modifications to convert to ground start.

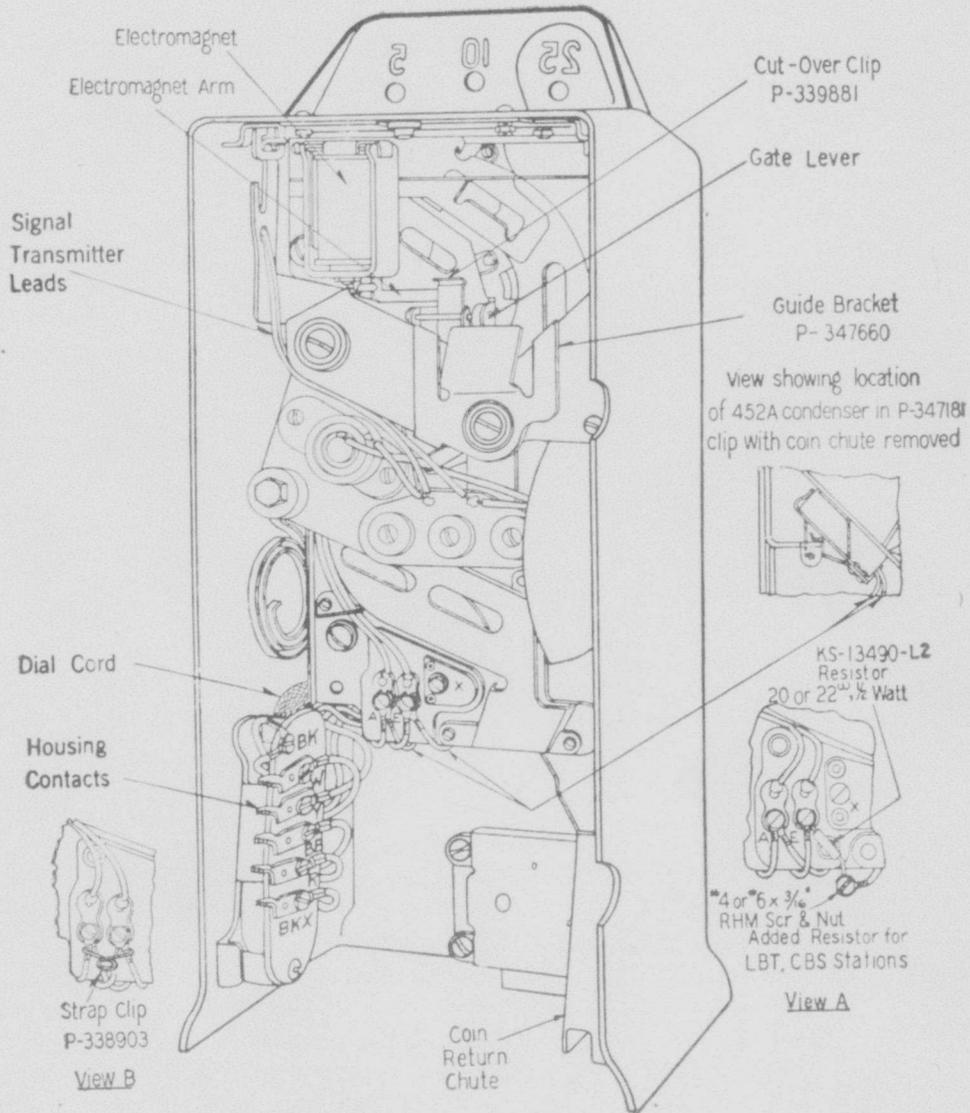


Fig. 2—191 Type—Upper Housing

2.04 Where one nickel is deposited and the call abandoned, its mechanical refund on hang-up is accomplished by a gate operating arm which is part of a new design switchhook arm assembly attached to the switchhook (see Fig. 3). This arm opens a gate in the coin chute at the back of the nickel channel, thus ejecting nickels onto the coin return chute. A change in customer operating procedure results from the use of this system in that a nickel deposited before removing the hand set will be immediately returned.

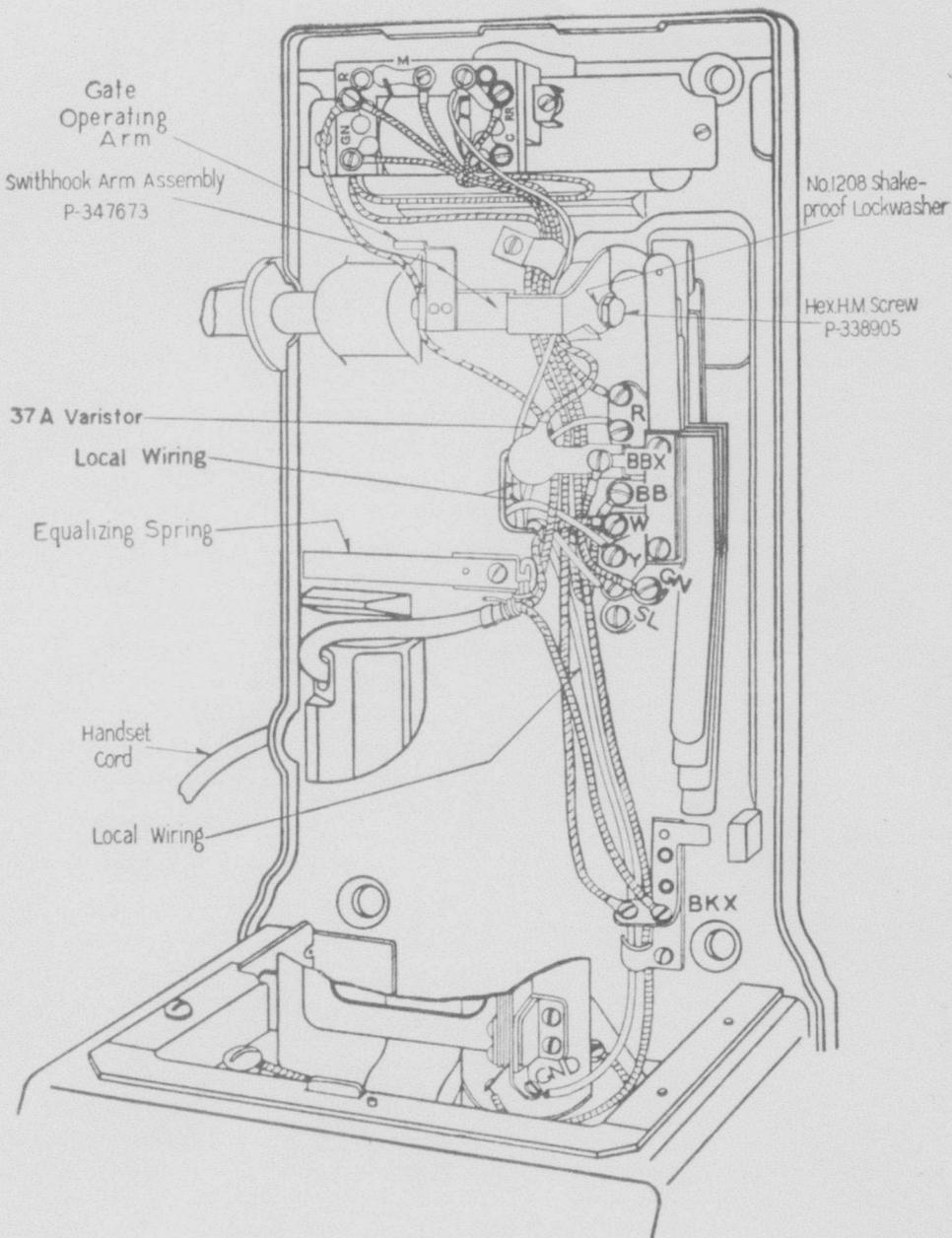


Fig. 3—191 Type—Back Plate

2.05 In this connection, in order to minimize sticking of nickels in the return chute path, the gong guard has been bent to have a surface which will facilitate the return of ejected coins.

2.06 Three neoprene grommets are used in the chute mounting holes to reduce chute noise. Because of the flexible mounting afforded by these grommets, shouldered mounting screws are used to obtain a secure assembly without undue compression of the grommets.

2.07 Since the electromagnet is inserted in series with the transmission circuit in the ringside of the line, a 4 mf by-pass condenser is provided in order to minimize voice-frequency transmission loss and unbalance to ground. This condenser, coded 452A, is mounted under the coin return chute in the upper housing and is held in place by a spring clip. The condenser leads are connected to the terminals of the electromagnet which are brought out on a terminal plate on the lower part of the chute. This terminal plate also carries an additional contact which makes with a transfer spring mounted over the equalizer spring on the back plate, where station circuit requirements may make another transfer contact necessary.

2.08 The internal wiring of the collector is changed in order to include the electromagnet and condenser in series with the signal transmitters and the station circuit. Since the electromagnet has a maximum resistance of 100 ohms, the station resistance will be increased by that amount and the allowable conductor loop resistance may be reduced accordingly. In some cases, the central office equipment may be modified to overcome the additional resistance thereby making it possible to retain the present conductor loop resistance. However, when the central office changes have not been made and the 191 coin collector is being used on long loops on a five-cent basis, the electromagnet can be temporarily short-circuited by using clip P-338903 across the shanks of the cord tips on terminals A and E.

2.09 All 191-type coin collectors will be equipped with a small phosphor bronze cutover clip which disables the ten-cent mechanism and permits the collector to operate as a five-cent device. This clip holds the armature arm securely in the operated position but is so arranged that it can be readily removed for cutover to ten-cent operation.

2.10 Provision is also made for using a 61-type filter when desired. A hole for the filter mounting screw is provided in the chute adjacent to the terminal plate. A new filter, coded 61R, has been designed to fit in this location. A mounting screw is furnished with each filter.

3. DESCRIPTION—193-TYPE

3.01 The 193-type coin collector has been developed for dial⁷ postpayment coin service in areas where the local rate is or will be ten cents. Externally this collector is the same as

the 183-type. Internally, however, the stainless steel coin chute and associated appurtenances of the 191-type have been added, the only difference being in the type of electromagnet mounted on the chute.

3.02 By virtue of the circuit operation in community dial systems, a polarized electromagnet is required to effect ten-cent operation and this type of structure is used in the 193-type in place of the non-polarized structure in the 191-type collector.

3.03 With the hand set on the switchhook of the 193-type coin collector, the electromagnet may be in either position, i.e., with its armature arm in or out of the five-cent runway, since it remains in the position in which it was last operated. When the hand set is lifted from the switchhook, the current flow is in a direction to move the electromagnet armature arm into the five-cent runway if it were not there already.

3.04 On a local call, when the called party answers, the central office battery reversal moves the arm out of the five-cent runway making it necessary to deposit two nickels to operate the coin mechanism of the coin collector. A dime or quarter will also operate the coin passing contact. Since there are no overtime charges for local calls in community dial areas, it is not necessary to revert to five-cent operation after the initial deposit.

3.05 For a toll call, there is no battery reversal and the arm remains in the five-cent runway so that the deposit of any coins, including single nickels, can be made at the operator's request.

3.06 The other mechanical and electrical features described in Part 2 of this section for the 191-type coin collector also apply to the 193-type except that a 61R filter is always included in the 193-type. The cutover clip (2.09) is also provided with new 193-type collectors.

4. USE

4.01 The following table lists the code numbers of the 191 and 193-type coin collectors which are being made available.

191C-3	Manual
191E-3	Dial—147A No. Plate
191G-3	Dial—147B No. Plate
193E-3	Dial—147A No. Plate
193G-3	Dial—147B No. Plate