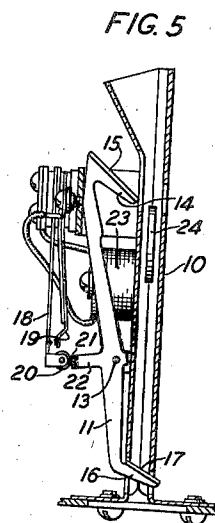
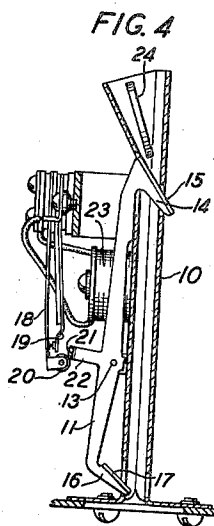
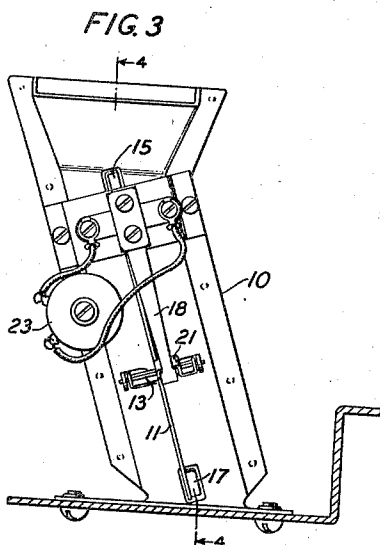
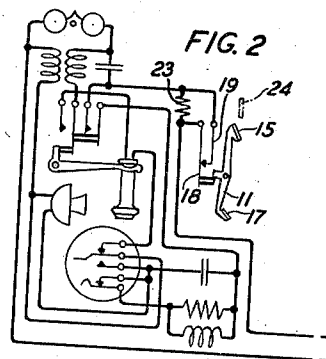
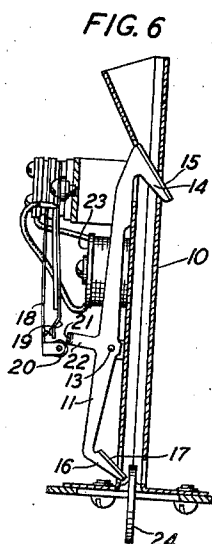
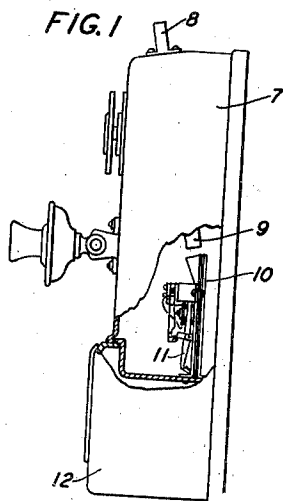


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TELEPHONE COIN COLLECTOR

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TELEPHONE COIN COLLECTOR

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2 Claims. (Cl. 194—9)

This invention relates to telephone coin collectors of the post-pay type in which the deposit of a coin is not required until after the called party has answered, whereupon a coin is needed to establish a talking connection between the calling and called lines.

The primary object of the invention is to provide at a coin collector substation an improved mechanism responsive to coin deposit for producing the desired control of the central office equipment.

In certain collector substations of the post-pay type it is customary to permit the calling party to dial the desired connection without coin deposit. When the called party answers, a characteristic tone on the line notifies the calling party to deposit a coin in order that a talking connection between the two parties will be established. For example, the deposited coin in passing down the collect chute may momentarily open a shunt around a high resistance in the substation circuit to release a suitable relay at the central office to complete the desired connection. The present invention is concerned with the coin operated mechanism for controlling the substation contacts, which must be operated before conversation may take place.

In accordance with the preferred form of this invention the collector comprises a pair of normally closed contacts which act as a shunt to the above-described resistance. These contacts are under the control of a pivoted lever having an angular projection at each end, one extending into the upper portion of the collect chute and the other extending into a lower portion of the chute. This lever near its pivoting axis carries a cam which acts to open the contacts when the upper end is deflected by a deposited coin and serves to reclose the contacts when the lower arm of the lever is subsequently actuated by the same coin. The time taken by the coin in falling from the upper lever extension to the lower lever extension determines the time the contacts are held open and hence this opening time can be made of a uniform duration well within the time limits permissible from a circuit standpoint.

Referring to the drawing,

Fig. 1 is a side view of a coin collector embodying this invention;

Fig. 2 is a wiring diagram of a collector substation of the post-pay type;

Fig. 3 is a front view of the coin hopper of this invention;

Fig. 4 is a sectional view of the apparatus of Fig. 3 shown in normal condition; and

Figs. 5 and 6 are similar to Fig. 4 except that they illustrate different stages in the operation of the device by a deposited coin.

Fig. 1 is a general view of a coin collector of the post-pay type comprising an upper housing 7 on which is mounted a coin gauge 8 for receiving coins of various denominations. The initial coin deposited in payment for a given call upon insertion in gauge 8 traverses an individual channel of a multicoin chute 9 where it actuates a suitable signaling device such as a gong or bell before dropping into the coin hopper 10. Any coin entering hopper 10 after actuating a pivoted lever 11 passes directly and without delay into a cash box located within the lower housing 12.

As shown in Figs. 3 to 6, the hopper 10 provides a substantially vertically arranged coin passage down which the coin freely passes except for its actuation of a lever 11. Lever 11 is suitably supported from a side wall of the hopper and is pivotally mounted on a pin 13. The upper end of the lever has an angular projection 14 which normally extends through slots in both side walls of the hopper and which has a downwardly inclined coin engaging surface 15 to enable a descending coin to rotate the lever about its pivot 13 to an extent sufficient to allow the coin to proceed down the coin hopper. The lower end of the lever has a similar angular projection 16 which is also adapted to extend through slots in both side walls of the hopper to occupy a coin obstructing position with a downwardly inclined coin receiving surface 17.

Also mounted on a side wall of hopper 10 are two spring contacts 18, 19 which are normally biased to closed position. The lower end of spring contact 18 has a roller 20 lying within the path taken by the lateral extension 21 of lever arm 22 whenever the lever is rotated counter-clockwise as viewed in Fig. 4. Contacts 18 and 19 when opened serve to remove a short circuit around the associated high resistance element 23 for a purpose to be explained later.

The operation of the device will be explained in connection with Figs. 4 to 6, inclusive. A deposited coin 24 falling into hopper 10 strikes lever projection 14 a glancing blow to force a counter-clockwise rotation of the lever from its position of Fig. 4 to its position of Fig. 5, thereby removing upper projection 14 from the coin channel while inserting the lower projection 16 into the channel. The coin released from projection 14 thereupon continues down the chan-

nel to strike projection 15 a glancing blow to force a clockwise rotation of the lever from its position of Fig. 5 to its position of Fig. 6, thereby removing projection 16 from the channel to permit the coin to enter the cash box located below the hopper 10 while restoring lever 11 to its original position.

The counter-clockwise rotation of lever 11 produced by a coin striking the upper projection 14 causes lever extension 21 to engage roller 20 and cause the movement of spring contact 18 to the left a distance sufficient to open the contacts as seen in Fig. 5; while the clockwise rotation of lever 11 resulting from the coin actuation of the lower lever projection 16 substantially disengages cam 21 from roller 20 thereby permitting the contacts 18, 19 to close again as viewed in Fig. 6.

It, therefore, follows that the time taken by the coin in falling from the upper lever extension 14 to the lower lever extension 16 accurately determines the time interval through which the contacts 18, 19 are held open. In certain commercially used circuits for collectors of the post-pay type, it is desirable that the shunt around the high resistance be open for only a short time interval which lies between the limits of 0.1 and 0.3 second. Such a requirement can be readily met by the apparatus just described.

The circuit diagram of the substation as shown in Fig. 2 requires only a brief description since it is of the customary type employed for collector substations for use in areas served by small unattended dial offices except that it employs the pivoted lever of this invention for opening and closing the contacts. It will be noted that the momentary opening of contacts 18, 19 serves to place resistance 23 in series with the line thereby producing a momentary reduction in the value of the current in the line sufficient to cause the release of a relay at the central office to establish a talking circuit between the calling and called parties. The central office equipment to be controlled by such a substation may be of the

type disclosed, for example, in the Jacobsen U. S. Patent No. 1,376,814, issued May 3, 1921.

What is claimed is:

1. In a coin collector, a coin hopper having a substantially vertical coin channel traversed by deposited coins, an elongated lever mounted external to said hopper and pivoted at a point intermediate its ends for oscillatory movement in a substantially vertical plane, a pair of normally closed electrical contacts, means on said lever for opening said contacts when said lever is in an advanced position and for closing said contacts when said lever is in normal position, an arm on the upper end of said lever normally projecting into an upper portion of said coin channel for actuation by a deposited coin to move said lever to said advanced position, and an arm on the lower end of said lever projecting into a lower portion of said channel when said lever is in said advanced position for actuation by said deposited coin for restoring said lever to its normal position.

2. In a coin collector, a coin hopper having a downwardly inclined coin channel traversed by deposited coins, an elongated lever mounted external to said hopper and pivoted at a point intermediate its ends for oscillatory movement from a normal position to an advanced position in a plane intersecting said channel, a pair of electrical contacts, a spring member biased to close said contacts, means on said lever engaging said member to maintain said member in position to open said contacts when said lever is in said advanced position and to permit said member to close said contacts when said lever is in said normal position, an arm on the upper end of said lever normally projecting into an upper part of said channel for actuation by a deposited coin to move said lever to said advanced position and an arm on the lower end of said lever projecting into a lower part of said channel when said lever is in said advanced position for actuation by said deposited coin for restoring said lever to its normal position.

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