

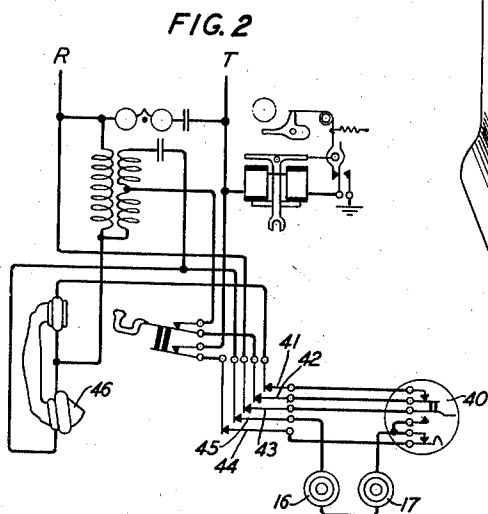
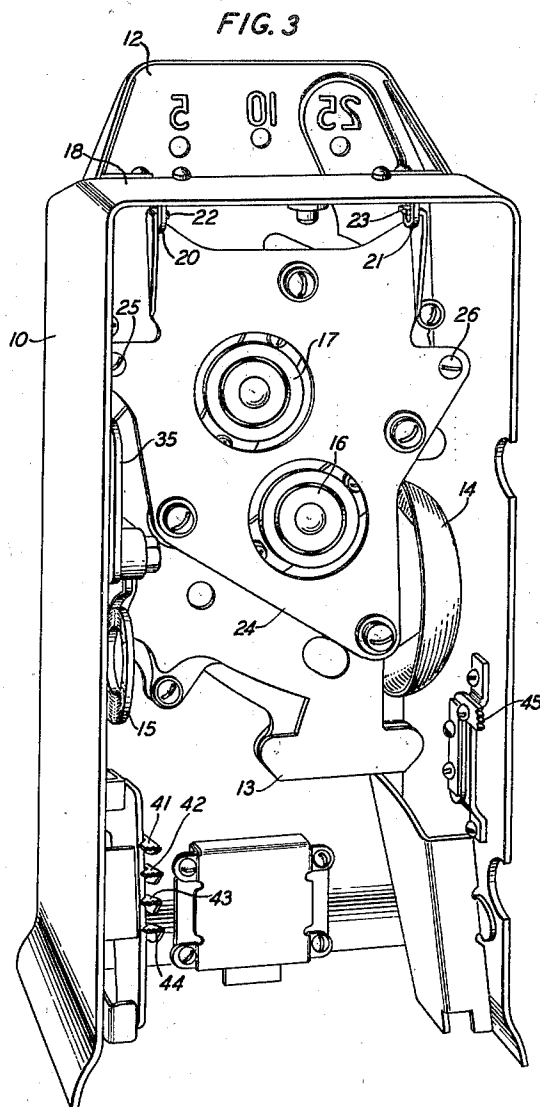
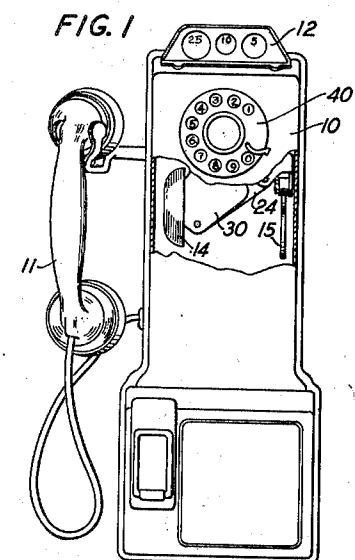
March 18, 1941.

O. A. SHANN ET AL
TELEPHONE COIN COLLECTOR

2,235,648

Filed May 4, 1939

2 Sheets-Sheet 1



INVENTORS: O. A. SHANN
A. K. SMITH
BY
B. H. Jackson
ATTORNEY

March 18, 1941.

O. A. SHANN ET AL

2,235,648

TELEPHONE COIN COLLECTOR

Filed May 4, 1939

2 Sheets-Sheet 2

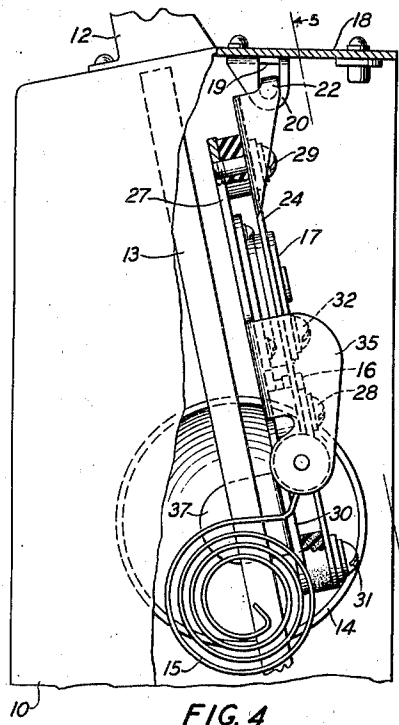


FIG. 4

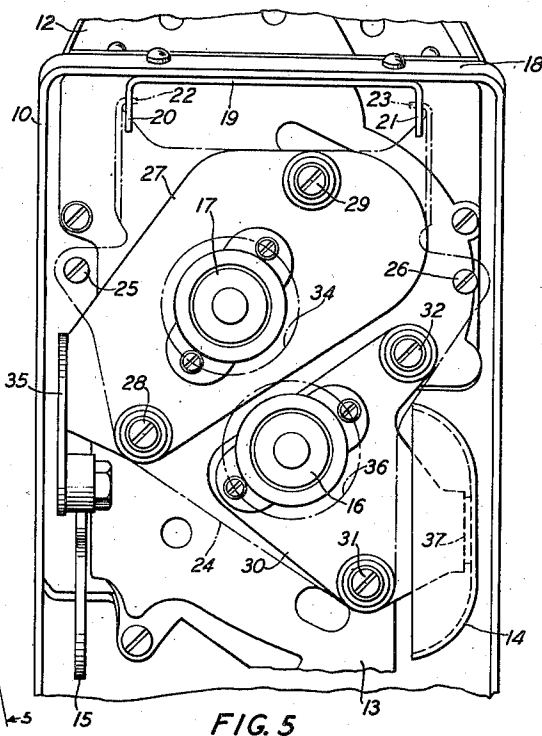


FIG. 5

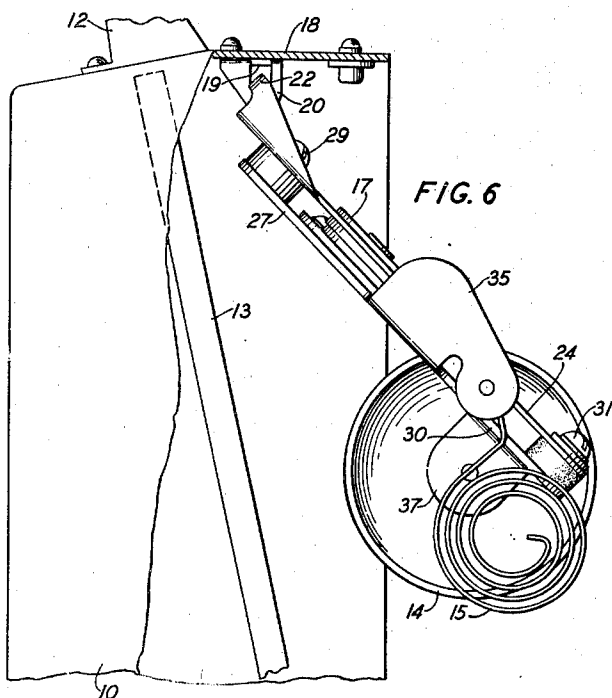


FIG. 6

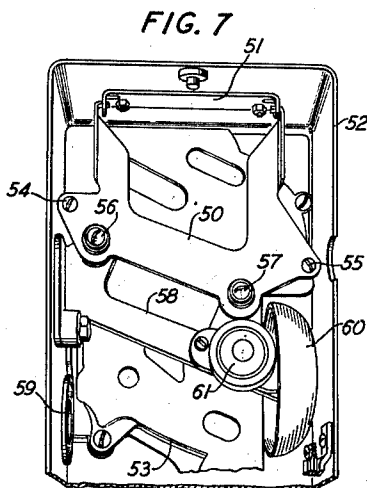


FIG. 7

INVENTORS: O. A. SHANN
A. K. SMITH

BY

T. H. Jackson

ATTORNEY

UNITED STATES PATENT OFFICE

2,235,648

TELEPHONE COIN COLLECTOR

Oscar A. Shann, Bayside, N. Y., and Albert K. Smith, West Orange, N. J., assignors to Bell Telephone Laboratories, Incorporated, New York, N. Y., a corporation of New York

Application May 4, 1939, Serial No. 271,630

4 Claims. (Cl. 194—96)

This invention relates to telephone coin collectors and has for an object the provision of a multicoin collector suitable for use with handsets or other apparatus containing the voice transmitter.

In the usual type of coin collector the housing contains a multiple coin chute by means of which deposited coins are caused to strike distinctive sound signals which are in resonant connection with the talking transmitter mounted external to the housing. For example, a deposited nickel may strike a bell once, a deposited dime may strike the same bell twice, and a quarter may strike a spiral gong. However, when a handset is used there is no resonant connection between the voice transmitter and the sound signals and it, therefore, becomes necessary to provide an additional transmitter within the housing responsive to the coin actuation of the signaling elements in order that the central office operator may be informed of the amount of money deposited.

In accordance with the preferred form of this invention the sound signal elements and the pick-up transmitter therefor are mounted on a bracket which is hinged to the top wall of the upper housing of the collector, the bracket normally being held in such a position that the signal elements supported thereby are adapted to be struck in the proper manner by coins traversing the associated coin chute. In the preferred embodiment the hinged bracket supports two spaced metal plates and on each plate is mounted one of the sound signals and a pick-up transmitter of the inertia type. If desired, these plates may be in non-resonant connection with the hinged bracket, for example, by having these plates supported from the bracket through soft rubber washers or the like. The hinged character of this assembly for the two signal elements and the two transmitters is of considerable advantage in that the assembly can be readily swung out of the upper housing whenever access is desired to the associated coin chute.

Referring to the drawings,

Fig. 1 is a general view of a telephone coin collector of the handset type;

Fig. 2 is a circuit diagram of a telephone coin collector substation;

Fig. 3 is a rear view of the collector upper housing showing the signal mounting arrangement of this invention;

Fig. 4 is a side view of the housing of Fig. 3;

Fig. 5 is an enlarged rear view of part of the upper housing of Fig. 3;

Fig. 6 is similar to the side view of Fig. 4 except that the hinged bracket is shown removed from its normal position; and

Fig. 7 illustrates a modified form of this invention.

The type of telephone coin collector disclosed in Fig. 1 is, in general, similar to that disclosed in the O. F. Forsberg U. S. Patent 1,043,219, except that the voice transmitter is not mounted on the upper housing 10 but constitutes a part of the handset 11. Coins deposited in coin gauge 12 traverse a multicoin chute 13 to strike a distinctive sound signal before being collected or refunded, the sound signals being necessary to notify the central office operator of the character and amount of the money deposited.

As shown in Figs. 3 to 6, the upper housing 10 includes a multicoin chute 13, a bell 14, a spiral gong 15 and two pick-up transmitters 16 and 17 preferably of the inertia type. Since the invention is not concerned with the coin chute it may be assumed that chute 13 is similar to that disclosed in the Forsberg patent, being suitably mounted within the upper housing to receive coins from the coin gauge 12.

Fastened to the inner surface of the top 18 of the upper housing is a metal strip 19 having two spaced depending arms 20, 21 which are slotted to receive the formed projections 22, 23 of a flat elongated bracket 24 which extends downwardly and substantially parallel to the adjacent coin chute. Bracket 24 in its normal position is held in the proper space relation with respect to coin chute 13 by means of two screws 25, 26 which hold bracket 24 against lugs (not shown) which project from the inner side walls of housing 10.

Referring more particularly to Fig. 5 it will be seen that plate 27 is supported from bracket 24 by means of screws 28, 29 and below plate 27 is another plate 30 also supported from bracket 24 by means of screws 31, 32. In Fig. 5 the bracket 24 is shown by a dot-dash line in order that the plates 27 and 30 may be more clearly indicated. Mounted on the central portion of plate 27 is a pick-up transmitter 17 which projects through an aperture 34 in bracket 24. The left lower end of plate 27 is formed to provide a vertical arm 35 on which is suitably mounted the quarter gong 15. Mounted on the plate 30 is a second pick-up transmitter 16 which projects through aperture 36 in bracket 24 and the right end of plate 30 has a tab portion 37 on which the nickel bell is suitably mounted. The above-described assembly is such that gong 15 and bell 14 are normally located with respect to the coin chute 13 in the same relative positions as the gong and bell of the Forsberg patent whereby a deposited nickel in traversing chute 13 will strike the lower edge of bell 14, a deposited dime will strike both the upper and the lower edges of bell 14, and a deposited quarter will strike gong 15 in the same manner as described in the above-mentioned Forsberg patent.

Both of the pick-up transmitters 16 and 17

are preferably of the inertia type as disclosed in the A. F. Bennett U. S. Patent 1,863,322, issued June 14, 1932. Each plate 27 or 30 is of the proper mass and resilience to provide an efficient mechanical coupling between its sound signal and its pick-up transmitter as each transmitter is practically insensitive to air-borne signals.

If desired, all four mounting screws 28, 29, 31 and 32 may be provided with soft rubber washers or the like to prevent either transmitter 16 or 17 from picking up any chute noise or any other extraneous noise such as that produced by blows on the upper housing. In the preferred arrangement it is desirable to permit the picking up of some chute noise and for this purpose plate 30 may be sound insulated from bracket 24 by soft rubber washers with plate 27 substantially rigidly coupled to bracket 24 by washers of hard fibre, for example. With such an arrangement a certain amount of chute noise will be transferred from the coin chute through the upper housing and bracket 24 to cause the vibration of plate 27 which will be picked up by transmitter 17 but not transmitter 16. As long as one of the plates 27 or 30 is mounted on soft rubber washers or the equivalent, it will be obvious that neither transmitter 16 nor 17 will pick up any vibratory energy due to the coin actuation of the sound signal mounted on the other plate.

Whenever it is desired to have access to the coin chute or other apparatus behind the bracket 24 the mounting screws 25, 26 may be removed and the entire assembly swung out of the housing as shown in Fig. 6, the assembly being movable about an axis defined by the slots in the depending arms 20, 21.

In order to provide the proper electrical connections between the substation apparatus mounted on the coin collector base and dial 40, transmitters 16 and 17 mounted in the upper housing, five transfer contacts will be needed which are provided by the four contact terminals 41 to 44 on one side wall of upper housing 10 and contact terminal 45 on the opposite side wall. As shown in the substation circuit of Fig. 2 the two sound signal pick-up transmitters 16 and 17 are connected in series with each other and in series with the voice transmitter 46. Otherwise the substation circuit shown in Fig. 2 is of the conventional type.

A modified form of this invention is disclosed in Fig. 7 wherein a common mounting plate is provided for one pick-up transmitter, the bell and the gong, whereby the same transmitter is responsive to the vibration of the nickel bell as well as the quarter gong. Bracket 50 is similar to bracket 24 in that it is hinged to two depending arms of a metal strip 51 fastened to the top wall of upper housing 52 and bracket 50 is held in the desired position with respect to coin chute 53 by means of two screws 54, 55 which hold the bracket against lugs projecting from the opposite side walls of the upper housing.

Fastened to bracket 50 by means of screws 56, 57 is a plate 58 on one end of which is mounted the quarter gong 59 and on the other end of which is mounted the nickel bell 60. A pick-up transmitter 61 is also mounted on plate 58 preferably at a point considerably nearer the bell 60 than gong 59. The vibrations of gong 59 or bell 60 due to coin actuation are transferred by

plate 58 to the transmitter 61 in order that the remote central office operator may be correctly informed of the amount of money deposited by the user of the instrument. Preferably there is no resonant connection between bracket 50 and plate 58, which condition may be realized by the use of soft rubber washers for the mounting screws 56, 57.

What is claimed is:

1. A coin collector upper housing having a front, side walls and a top, a multicoin chute in said housing for receiving coins of different denominations, means for supporting said chute in fixed position with respect to said front, a downwardly extending bracket hingedly supported from said top for angular movement towards and away from said chute, removable means for normally holding said bracket in spaced relation with said chute, and a sound signal supported by said bracket and adapted to be selectively actuated by a coin of a certain denomination traversing said chute.

2. A coin collector upper housing having a front, side walls and a top, a multicoin chute in said housing for receiving coins of different denominations, means for supporting said chute in fixed position with respect to said front, a downwardly extending bracket hingedly supported from said top for angular movement towards and away from said chute, removable means for normally holding said bracket in spaced relation with said chute, and a vibratory member supported by said bracket and adapted to be selectively actuated by a coin traversing said chute.

3. A coin collector upper housing having a front, side walls and a top, a multicoin chute in said housing for receiving coins of different denominations, means for supporting said chute in fixed position with respect to said front, a downwardly extending bracket hingedly supported from said top for angular movement towards and away from said chute, removable means for normally holding said bracket in spaced relation with said chute, a plate secured to said bracket, a sound signal mounted on said plate and adapted to be selectively actuated by a coin of one denomination traversing said chute, a second plate supported by said bracket, a second sound signal mounted on said second plate and adapted to be selectively actuated by a coin of a second denomination traversing said chute, and means for substantially preventing mechanical vibrations of said first plate from causing mechanical vibrations of said second plate.

4. A coin collector upper housing having a front, side walls and a top, a multicoin chute in said housing for receiving coins of different denominations, means for supporting said chute in fixed position with respect to said front, a downwardly extending bracket pivotally supported from said top for angular movement towards and away from said chute, removable means for normally holding said bracket in spaced relation with said chute, a plate secured to said bracket, and a plurality of sound signals mounted in spaced relation on said plate and adapted to be selectively actuated by coins traversing said chute.

OSCAR A. SHANN.

ALBERT K. SMITH.