

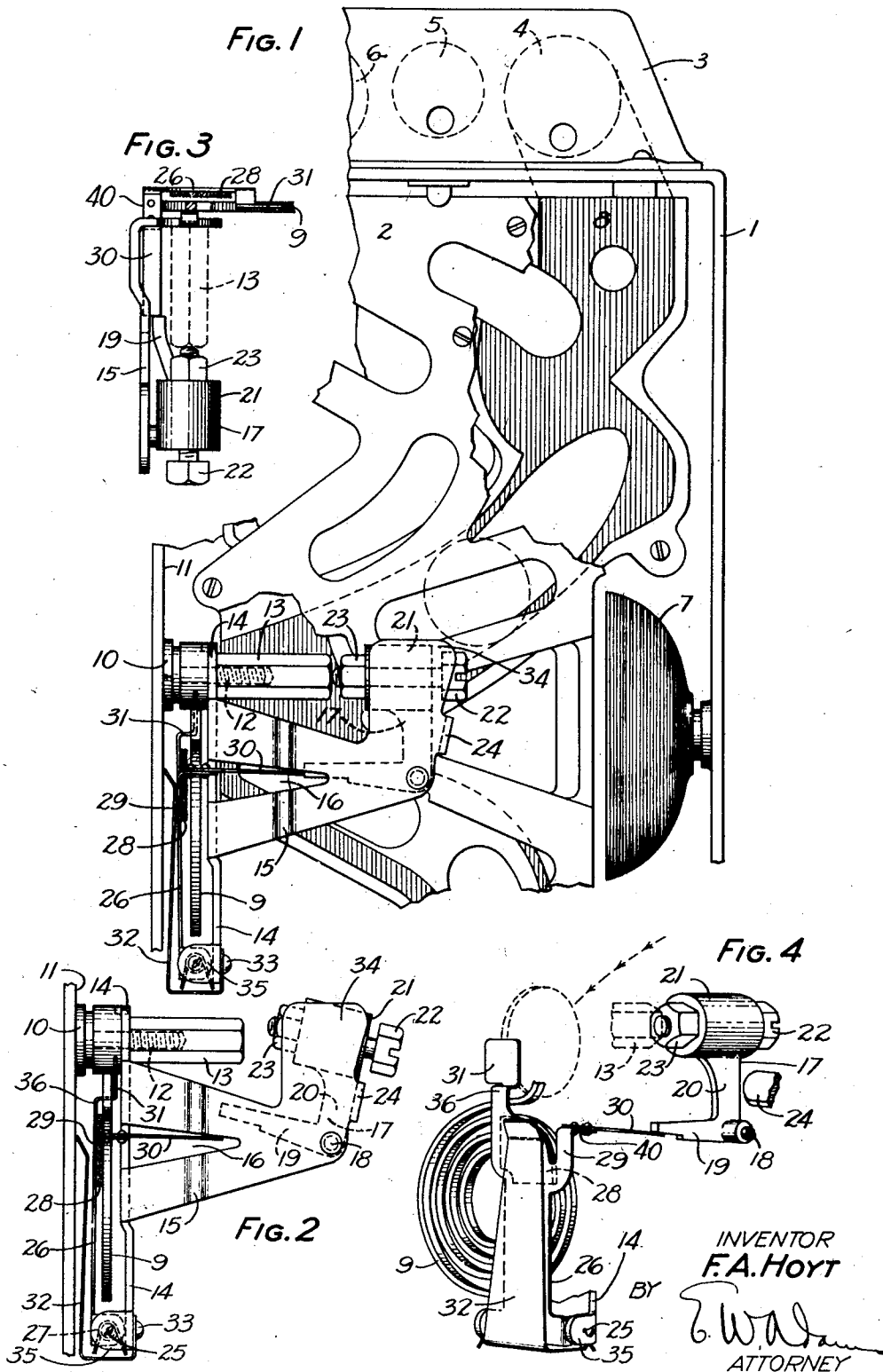
Jan. 12, 1932.

F. A. HOYT

1,841,125

COIN COLLECTION APPARATUS

Filed March 24, 1930



UNITED STATES PATENT OFFICE

FREDERICK A. HOYT, OF EAST ORANGE, NEW JERSEY, ASSIGNOR TO BELL TELEPHONE LABORATORIES, INCORPORATED, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK

COIN COLLECTION APPARATUS

Application filed March 24, 1930. Serial No. 438,395.

This invention relates to coin collection apparatus in which a coin or token is deposited for the use of an instrument. More particularly the invention relates to telephone toll apparatus such for example, as that described in Patent 1,043,219 to O. F. Forsberg, patented November 5, 1912, wherein one or more coins are deposited for the use of a telephone instrument, the coins indicating to the telephone operator through the instrumentality of a signal the fact that they have been deposited.

A common form of signaling apparatus employed in conjunction with telephone pay stations or the like comprises a coin chute in which one or more channels are formed along which the deposited coins travel and are guided to a signaling means that is sounded by the impact of the coins. The signaling means generally consist of a gong rigidly mounted on the inner wall of the housing which contains the telephone apparatus. A microphone transmitter through which the signal produced by a deposited coin is transmitted to the operator handling the call is mounted on the exterior of the housing. A coin deposited in the chutes strikes the signal and causes it to vibrate, the vibrations of which are then carried through the housing and the surrounding air to the transmitter. It has been found that by properly directing a blow on the housing the signal gong may be caused to vibrate and unscrupulous persons have resorted to this method to deceive the operator into believing that the required coins have been deposited and thereby obtain use of the telephone instrument fraudulently.

An object of this invention, therefore, is to prevent the fraudulent production of a signal and the subsequent transmission thereof to the operator.

In accordance with this invention means are provided for preventing vibration of the signal gong by blows struck on the housing. A pivoted movable weight is mounted on the wall of the housing and operates a latch to release, when blows are struck upon the housing, a damping member which is forced against the gong by means of a spring. The

damping member effectively prevents the vibration of the gong and hence prevents the fraudulent transmission of a signal to the operator; it is, moreover, provided with a lever which when struck by a deposited coin removes the member from the gong and allows the transmission of a genuine signal produced by the impact of a coin upon the gong.

Referring to the drawings, Fig. 1 is a partial rear elevation of the upper housing of a coin collection device embodying this invention with the back-board of the housing removed, partially in section; Fig. 2 is the same view of the damping device shown in Fig. 1 immediately after the housing has been struck a blow; Fig. 3 is a partial top view of the damping device in its set position as shown in Fig. 1; Fig. 4 is a partial perspective view of the signal gong and the apparatus for damping the gong and shows the apparatus in damped position about to be operated by a coin.

Similar numerals refer to similar parts throughout the several views.

Mounted within a metallic housing 1 is a coin chute 2. On the upper portion of the housing 1 is a coin gauge 3 in which coin slots 4, 5 and 6 (shown in dotted outline) are provided for the reception of coins of various sizes or denominations. For example, the coin slot 4 is adapted to gauge and receive a twenty-five cent coin, the slot 5 is adapted to receive a ten-cent coin, and the slot 6 is adapted to receive a five-cent coin. The coin chute 2 is connected to the coin gauge 3 by openings (not shown) in the upper portion of the housing. The coin chute 2 has channels therein to guide the coins deposited in the coin gauge 3 to operate their proper signals. The five and ten-cent coins deposited in slots 6 and 5 respectively, drop through openings, (not shown) in the upper portion of the housing 1 and pass through their respective channels (not shown) in the coin chute 2 to strike the signal gong 7. A twenty-five cent coin deposited in slot 4 passes into the channel 8 in the coin chute 2 and strikes the signal gong 9 after which it continues through the channel 8 and passes from the

lower end of the coin chute 2 into a suitable container (not shown). The present invention is shown for the purposes of illustration, as applied to the quarter coin chute and its associated signal although obviously it may be applied to all signals.

On the inner wall 11 on the housing 1 is a boss 10 provided with a projecting screw 12 on which is secured a signal gong 9 and a damping unit in operative relation thereto by means of an elongated nut 13.

The damping unit comprises a bracket having a plate 14 and an arm 15 projecting at right angles from one side thereof. At the extremity of arm 15 is pivoted on a rod 18 a bell crank lever 17.

The bell crank lever 17 has a horizontal arm 19 and a vertical arm 20, the latter having an elongated inertia end 21 provided with an adjusting screw 22 and a lock nut 23. The end of the screw 22 normally rests against the end of the nut 13.

Projecting from opposite edges of the lower extremity of the plate 14 and in the opposite direction from the arm 15 are two lugs 35 between which is pivotally supported a control member 26 by means of the rod 25. On the face of the control member near its free end is cemented or otherwise suitably held thereon a damping pad 28 of felt or other suitable material adjacent the signal gong 9. The free end of the control member 26 is provided with two branches 29 and 36 integral therewith. The end of branch 36 is provided with a flat offset portion 31 which when the felt pad 28 is in contact with the signal gong 9, is adapted to extend into the path of a deposited coin. The branch 29 has a right angle projection 40 to which is secured a flat spring member 30 adapted to engage the arm 19 of the bell crank lever 17. An opening 16 in the bracket arm 15 is provided for the spring 30. The arm 15 is slightly offset to form a stop for the spring 30 so that regardless of the amplitude of the displacement of the control member 26, the spring 30 will always have a positive stop. The rod 25 which pivotally supports the control member 26 is wound with a spring 27 in order that the control member 26 will positively act to dampen the signal gong 9. Supported on the plate 14 by means of screws 33 is a flexible stop member 32 which extends up between the inner wall 11 of the housing 1 and the control member 26 to protect said control member 26 from blows on the housing 1 by controlling its displacement. The arm 15 is provided with a vertical right angle extension 34 as a shield for the bell crank lever arm 20 and a lug 24 for limiting the rotation of this arm.

The following describes briefly the operation of the device: The device is set as hereinafter described so that normally the bell crank lever 17 by its own weight rests

against the nut 13, as shown in Fig. 1. In this position the spring 30 abuts the end of the arm 19, as shown in Fig. 3, holding the control member 26 against the action of spring 27 so that the pad 28 is out of contact with the gong 9 which is now free to vibrate. The force of any blow on the housing 1 will be transmitted through the nut 13 to the bell crank lever 17 causing it to rotate as shown on Fig. 2, thus releasing the spring 30 so that the control member rotates under the action of spring 27 to apply the damping pad 28 to the gong 9 and thus prevent it from vibrating and signaling the operator. The bell crank lever 17 by its own weight returns to its normal position with the arm 19 and the spring 30 in overlapping relation as shown in Fig. 4.

The device is reset when a coin of the proper denomination is deposited in the coin collector. This coin travels along chute 8, for example, and strikes the flat offset portion 31 of the control member 26 as shown in Fig. 4. The impact is sufficient to rotate member 26 about the rod 25 against the force of spring 27, thus withdrawing spring 30 from beneath the arm 19, and allowing it to abut the end of this arm as in Fig. 1 and Fig. 3 to hold the pad 28 out of engagement with the gong 9 so that when at an instant later the coin strikes the gong the signal will be transmitted to the operator. The device remains in the set position until a blow is struck in the housing. The sensitivity of the device may be adjusted by means of the screw 22 to shift the weight of the arm 20 with respect to its axis and determine the amount of rotation required to release the spring 30.

Although the invention has been illustrated as applied to a multiple coin collector, it is obvious that it may be used in single coin collectors or other check or coin control apparatus where vibratory signals are used.

What is claimed is:

1. Coin collection apparatus comprising a housing, a coin chute within said housing, means for indicating the denomination of a coin deposited in said chute, and means for preventing fraudulent operation of said indicating means, said means comprising a spring controlled member, a latch, and a pivoted weight operable in response to a blow on said housing to release said latch thereby allowing said spring controlled member to render said indicating means inoperative.

2. Coin collection apparatus comprising a housing, a coin chute within said housing, a signal to be operated by a coin deposited in said chute, and means for preventing fraudulent operation of said signal, said means comprising a pivoted member mounted on said housing, a damper on said member, a spring engaging said member, means for holding said member against the tension of

said spring and means responsive to a blow on said housing for releasing said member and thereby causing said spring to operate said member allowing said damper to engage said signal.

3. Coin collection apparatus comprising a housing, a coin chute within said housing, a signal gong to be vibrated by coins deposited in said chute, and fraud preventative means comprising a spring controlled member, a damping pad thereon, a gravity controlled member, and a latch between said members, said gravity controlled member being responsive to a blow on said housing to release said latch and allow said damping pad to engage the said signal gong.

4. Coin collection apparatus comprising a housing, a coin chute within said housing, a signal gong to be vibrated by coins deposited in said chute, fraud preventative means comprising a spring controlled member, a damping pad thereon, a gravity controlled member, a latch between said members, said gravity controlled member being responsive to a blow on said housing to release said latch and allow said damping pad to engage said signal gong, and means on said spring controlled member operated by a deposited coin to disengage said damping member from said signal gong and reset said latch.

5. Coin collection apparatus comprising a housing, a signal gong associated therewith, damping means for said gong, said damping means comprising a spring controlled member, a damping pad and a latch mounted on said spring controlled member and means comprising a gravity controlled member for releasing said latch whereby said damping pad will engage said signal gong.

6. Coin collection apparatus comprising a housing, a signal gong associated therewith, damping means for said gong, said damping means comprising a spring controlled member, a damping pad thereon, a gravity controlled member, a latch between said members and means to operate said gravity member, thus releasing said latch and allowing said damping pad to engage said signal gong.

7. Coin collection apparatus comprising a housing, a signal gong associated therewith, damping means for said gong, said damping means comprising a spring controlled member, a damping pad mounted thereon, a pivoted gravity member, a latch between said members and means on said gravity member for varying the degree of sensitivity between said gravity member and said latch.

8. Coin collection apparatus comprising a housing, a signal gong associated therewith, damping means for said gong, said damping means comprising a bracket, said bracket having an arm with an opening therein, a pivoted gravity operated member comprising an arm mounted on said bracket arm, a spring controlled member mounted on said bracket,

a damping pad and a flat extension mounted on said spring controlled member, said flat extension extending into said opening of said bracket arm, and in contact with the upper side thereof and with the arm of said pivoted gravity member and means to operate said gravity member, thus releasing said flat extension and allowing said damping pad to engage said signal gong.

9. Coin collection apparatus comprising a housing, a signal gong associated therewith, damping means for said gong, said damping means comprising a spring controlled member, a damping pad thereon, a pivoted gravity controlled member, a latch between said members, means to restrict the rotation of said gravity member and means to operate said gravity member to release said latch and allow said damping pad to engage said signal gong.

10. Telephone apparatus, comprising a housing, a coin chute within said housing, means for indicating the denomination of a coin deposited in said coin chute, damping means for said indicating means, said damping means comprising a bracket, said bracket having an arm with an opening therein, a pivoted gravity member mounted on said bracket arm, said gravity member comprising two arms, means mounted on said bracket arm for restricting the rotation of said pivoted gravity member, a spring controlled member mounted on said bracket, a damping pad and a flat extension mounted on said spring controlled member, said flat extension extending into said opening of said bracket arm and in contact with the upper side thereof and with an arm of said pivoted gravity member, means responsive to a blow in said housing to operate said gravity member, thus releasing said flat extension and allowing said damping pad to engage said indicating means, means on the other arm of said gravity member to vary the degree of sensitivity between said gravity member and said flat extension and means on said spring controlled member operated by deposited coins to disengage said damping member from said indicating means and reset said spring member.

11. Coin collection apparatus comprising a housing, a signal gong, damping means for said gong, said damping means comprising a spring controlled member, a damping pad thereon, a pivoted gravity member, a latch between said members and means between said housing and said spring controlled member to protect said spring controlled member from blows on said housing.

In witness whereof, I hereunto subscribe my name this 20th day of March, 1930.

FREDERICK A. HOYT.