

March 9, 1937.

C. WAIT ET AL

2,073,129

COIN CONTROLLED DOORBELL SYSTEM

Filed July 17, 1933

3 Sheets-Sheet 1

Fig. 1

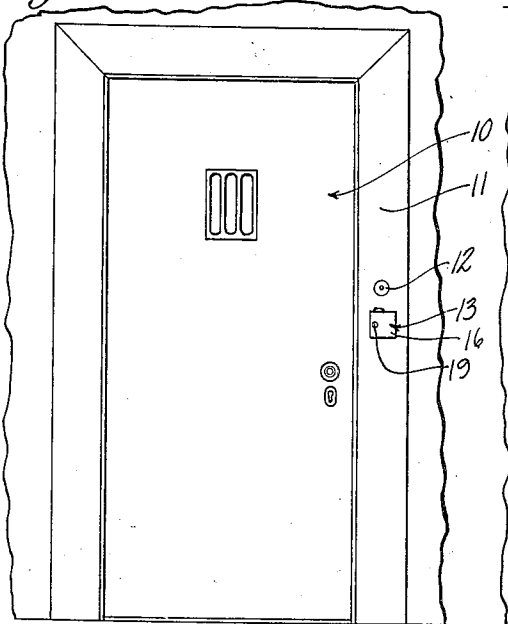
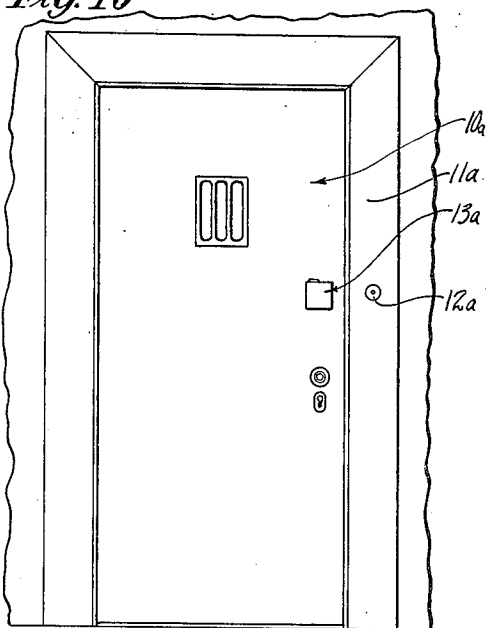
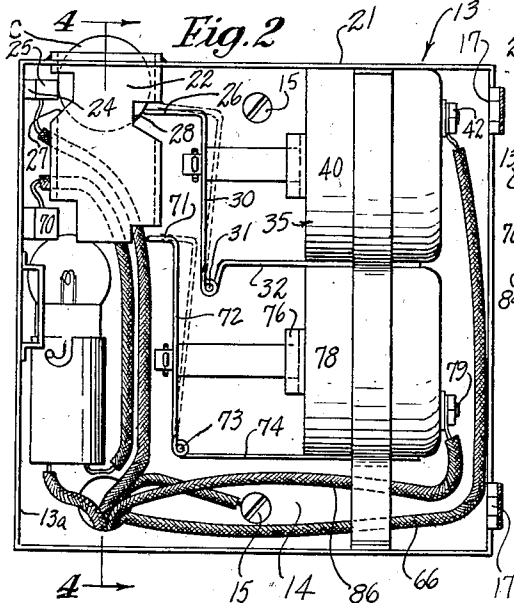
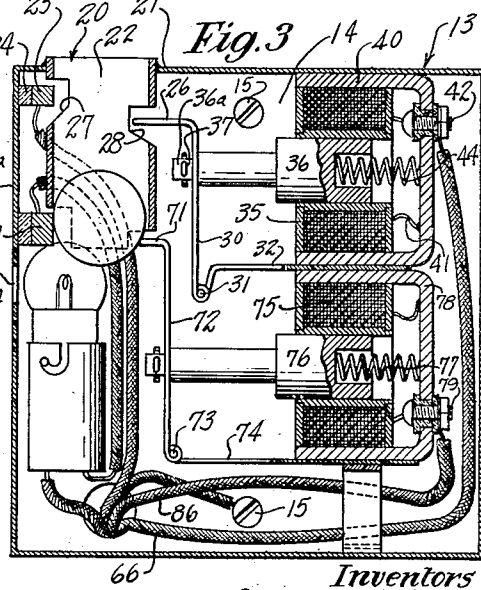
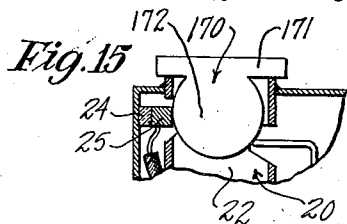


Fig. 10



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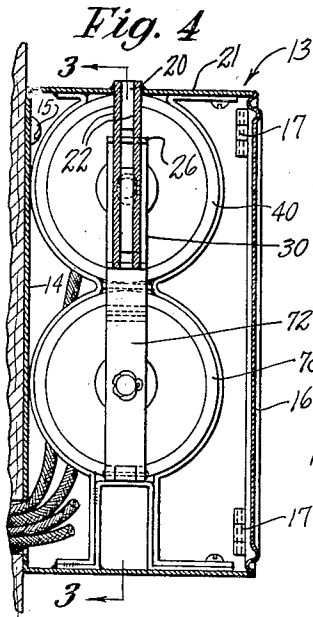
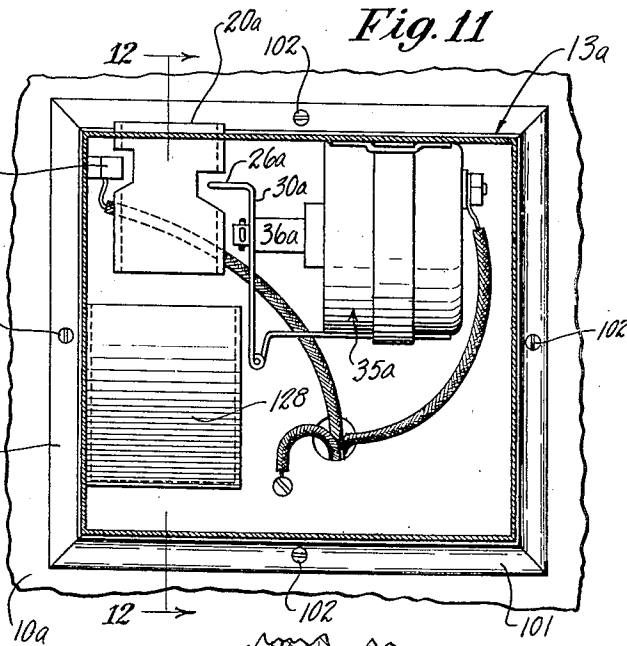
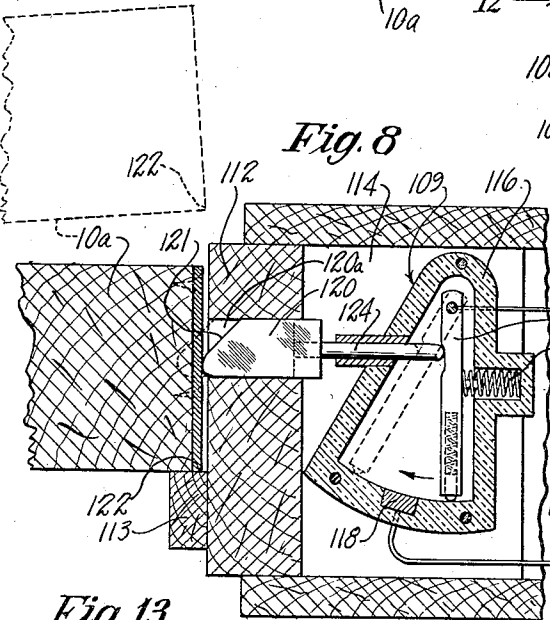
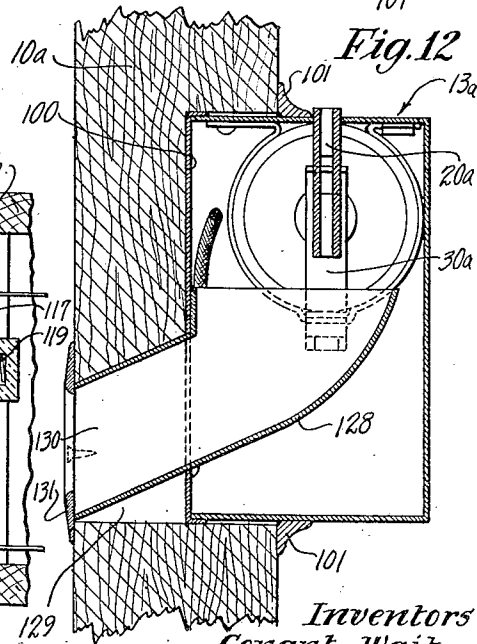
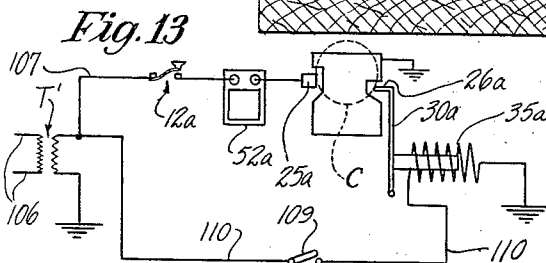
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COIN CONTROLLED DOORBELL SYSTEM

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3 Sheets-Sheet 2



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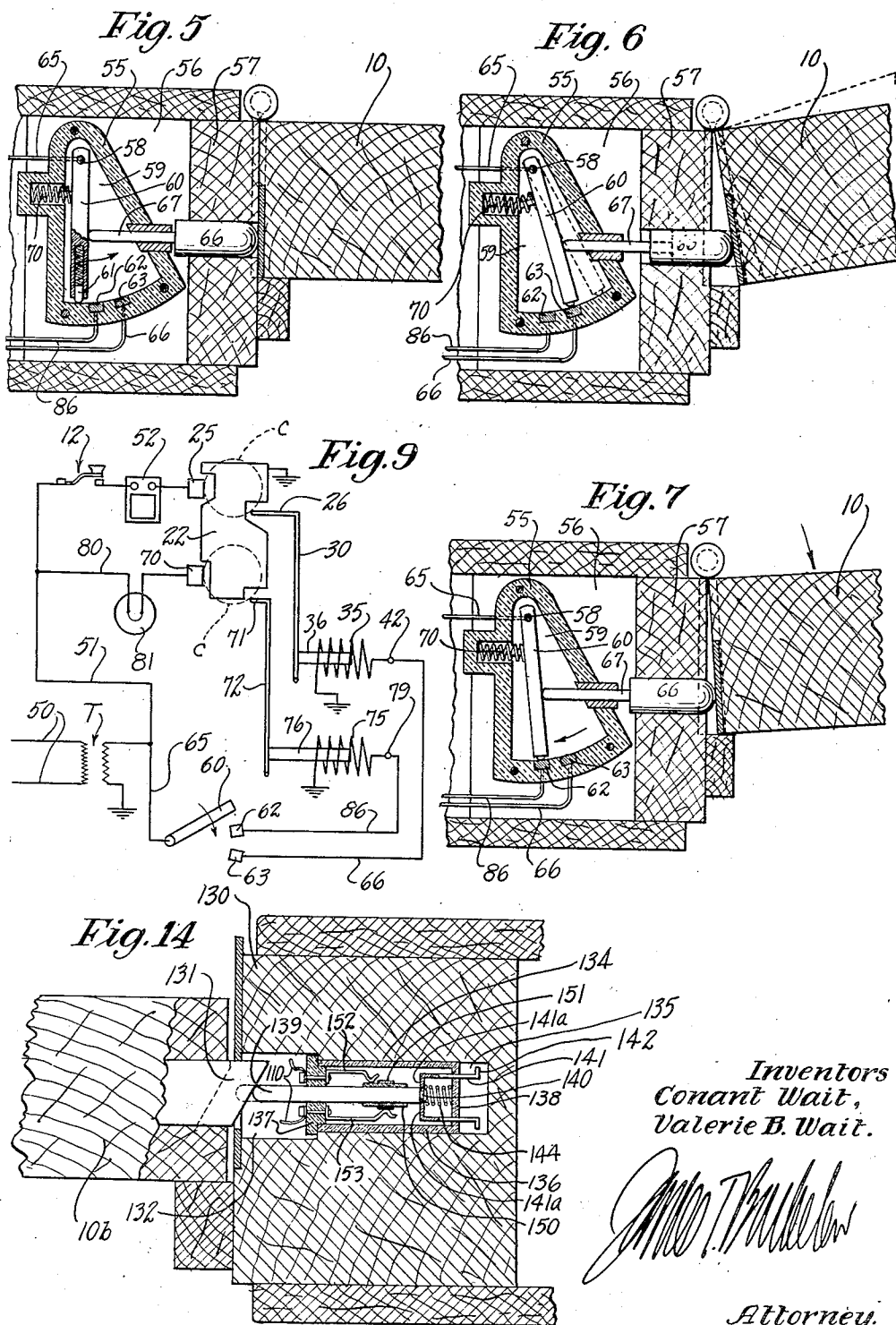
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COIN CONTROLLED DOORBELL SYSTEM

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UNITED STATES PATENT OFFICE

2,073,129

COIN CONTROLLED DOORBELL SYSTEM

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Application July 17, 1933, Serial No. 680,704

15 Claims. (Cl. 194—6)

This invention has reference to coin controlled doorbell systems wherein the deposit of a coin is required for the privilege of ringing the doorbell and having the door opened.

5 The nuisance to the householder in being forced to answer frequent and indiscriminate ringing of the residence doorbell by solicitors and such is well known, and it has previously been proposed to eliminate or minimize this nuisance
10 by utilizing a doorbell system that can be operated only after first depositing a coin. Such a system greatly discourages the indiscriminate ringing of doorbells as now practiced by solicitors and unwanted callers, but is disadvantageous in
15 that no provision is made for the caller to retrieve his coin in case the ring is not answered, which is especially undesirable in the case of an authorized or friendly caller.

It is accordingly an object of the present invention to provide an improved coin controlled doorbell system adapted to permit the coin to be retrieved by the caller in the event the ring is not answered.

In accordance with the present invention a
25 doorbell system is provided which requires the deposit of a coin before the bell can be rung, but until the ring is answered by opening of the door the deposited coin remains in a position from which it may be retrieved by the caller.
30 The operation of opening the door then causes the coin to move on beyond the control of the caller, or in other words to be collected. Thus if the ring is answered the coin is automatically collected by the operation of opening the door,
35 and if the ring is not answered the caller is at liberty to retrieve his coin. There is then provided, in certain forms of our invention, a signal means adapted to indicate the fact that the coin has been collected, this provision guarding against
40 the caller secretly retrieving his coin after the bell has been rung and before the door is opened.

There are other objects and features of the invention, but these may best be left to be described in connection with the following detailed
45 description of the preferred embodiment of the invention, reference for this purpose being had to the accompanying drawings, in which:

Fig. 1 is an elevation of a residence door and frame equipped with one form of our invention;

50 Fig. 2 is an elevation of the collection box of our invention, the front door thereof being swung open and broken away;

Fig. 3 is a vertical section taken on line 3—3 of Fig. 4;

55 Fig. 4 is a vertical section taken on line 4—4 of Fig. 2;

Figs. 5, 6, and 7 are similar detail horizontal sectional views showing successive operative positions of a door controlled switch;

60 Fig. 8 shows a modified door controlled switch;

Fig. 9 shows a circuit diagram for the system;

Fig. 10 shows a door and frame equipped with a modified type of installation according to the invention;

Fig. 11 shows the collection box of the form 5 of Fig. 10 with the front wall thereof broken away;

Fig. 12 is a section taken on line 12—12 of Fig. 11;

Fig. 13 is a circuit diagram for the form of 10 Figs. 11 and 12;

Fig. 14 is a sectional detail of a modified type of switch particularly suitable to the form of invention shown in Figs. 11 to 13, but also adaptable to the form of the invention shown in Figs. 1 15 to 4; and

Fig. 15 is a detail taken from Fig. 3 and showing a device for shooting out the control box.

Referring first to the form of the invention shown in Figs. 1 to 4, we show at 10 a usual residence front door and at 11 the surrounding frame, the usual doorbell switch being shown mounted on the door frame at 12, and the coin collection box 13 of the present invention being shown mounted in this instance on the door frame directly below the doorbell switch. Collection box 13 is shown to comprise a suitably closed sheet metal container, the rear wall 14 of which is adapted to be secured against the door frame as by screws 15, and the box is provided with a
30 swinging front door 16 hinged to one side wall, as at 17 (see Fig. 4). Any suitable lock is provided to lock door 16 in closed position, as indicated at 19 in Fig. 1.

The coin receiving slot 20 is formed in the top 35 21 of the box 13. This slot is defined by vertical slot walls 22, which project upwardly above box top 21 a short distance and downwardly below top 21 within the box as shown. The vertical slot 20 so formed is of course of the proper cross sectional length and width to just take a coin of the denomination which is to operate the system, for instance, a nickel. When such a coin is deposited within said slot 20, it comes to rest in a first or bell-ringing position, a coin C being
45 indicated in such position in Fig. 2. The coin in this position bridges across and is supported by a stationary coin-supporting electrical contact 25, mounted on insulation block 24, and a substantially horizontally movable coin-supporting element 26, members 25 and 26 projecting into notches 27 and 28, respectively, cut in opposite edges in slot member 22, as shown. The distance between contact 25 and supporting element 26, when the latter is in the full line position illustrated, is just slightly less than the diameter of the coin C, so that the coin is held in the position of Fig. 2 until movable element 26 is withdrawn to the dotted line position illustrated, whereupon the coin will descend to a second 60

position described hereinafter. Contact 25 and member 26 are so located that the coin C supported thereby projects slightly from the upper end of the slot, as clearly shown in Fig. 2, and it is evident that the coin in this position is easily retrievable from the slot. Once movable member 26 has been withdrawn to the dotted line position of Fig. 2, however, the coin descends further within the slot and is then beyond the control of the party who has deposited it. It may be noted that in the present form of the invention contact 25 serves both as an electrical contact and as a coin support although if desired this member may be considered as separated into an electrical contact and a separate coin support, since the two functions of the member may be independent of one another.

Movable coin-supporting member 26 is on the upper end of a substantially vertical arm 30 pivoted at its lower end, as at 31, on a bracket arm 32 mounted rigid with the box 13, so that member 26 receives its rearward or substantially horizontal movement from the full line position of Fig. 2 by swinging movement of arm 30 about pivot 31. Member 26 and arm 30 are so moved from the coin supporting full line position to the coin release dotted line position of Fig. 2 by means of an electromagnet in the form of a solenoid 35 having a horizontally movable core 36, the outer reduced end 36a of which extends through and is operatively connected to arm 30 as by cotter pin 37. The solenoid coil is mounted within a metallic sheath 40 which is mounted rigidly within box 13, to which it is electrically grounded. One side of the solenoid coil is shown connected by wire 41 to sheath 40, and is thus electrically grounded to the box, and the other side of the coil is connected to an insulated terminal 42 mounted in the rear wall of sheath 40. A compression spring 44 confined between the rear wall of sheath 40 and the inner end of plunger 36 acts to force the plunger outwardly to hold arm 30 and its forwardly bent coin supporting end 26 normally in the coin supporting position illustrated in full lines, and energization of coil 35 acts to move plunger 36 inwardly against said spring 44 and thereby withdraws coin supporting member 26, 30 to the dotted line position to cause the coin to descend from the position of Fig. 2.

As previously indicated, the coin in the position of Fig. 2 permits the bell circuit to be closed. A wiring circuit is shown in Fig. 9, in which a usual alternating current supply circuit 50 feeds a step down transformer T, the low tension secondary winding of which is electrically grounded at one side to the box 13, and the other side of which is connected to a lead 51 which connects doorbell switch 12 and doorbell 52 in series and then connects to the aforementioned stationary electrical contact 25 which forms one of the supports for the coin in the coin position of Fig. 2.

The coin in this position completes the circuit from contact 25 to the grounded walls 22 of the coin slot, and, as will be evident, thereby enables the doorbell to be rung by closure of doorbell switch 12.

Assuming a coin thus to have been deposited within the slot and to have dropped to the position of Fig. 2 and the doorbell then to have been rung as desired, if the bell is not then answered the coin is retrieved simply by grasping its upper edge and lifting it out of the slot. In the event the bell is answered, however, the householder in the operation of opening the door causes a

circuit to be closed which energizes solenoid 35 and so causes solenoid plunger 36 to withdraw arm 30 and its upper coin supporting end 26 to the coin release position illustrated in dotted lines in Fig. 2, whereupon the coin immediately descends out of reach of the caller. This closure of the energizing circuit of solenoid 35 may be accomplished automatically through a switch closed, for instance, through the initial opening movement of the door, or by virtue of the movement of the door latch, or it may be accomplished by means of a manually controlled switch. For the latter variation the switch 60, 63 shown in Fig. 9 may be considered as representative of a manual switch as well as of an automatically controlled switch.

In Figs. 5, 6, and 7 we have shown a solenoid controlling switch operated by virtue of door movement as the door is opened. The insulation case 55 of said switch is mounted in a recess 56 back of door jamb 57, in this case back of the jamb on which the door is hinged. Pivoted at 58 in a recess 59 within said case is a switch arm 60 having at its swinging end a brush 61 adapted to wipe successively over separated electrical contacts 62 and 63 mounted in the insulation material of the case. A switch operating plunger member 66 works through door jamb 57 and is operatively engaged by the rear edge of door 10. The switch case is so mounted that switch arm 60 is substantially at right angles to the direction of movement of this plunger 66, and the rear reduced portion 67 of said plunger extends through the switch case and engages switch arm 60 to transmit motion between the door and switch arm, in the manner clearly shown in the drawings. A compression spring 70 acts on switch arm 60 to move it and plunger 66, 67 forwardly or outwardly as the door is opened, as will be readily understood. In the door closed position of Fig. 5, switch arm brush 61 is back of the first electrical contact 62, and when the door is closed the door switch is accordingly opened. As the door is swung open switch arm 60 moves in the direction of the arrow in Fig. 5 to make electrical contact first with contact 62 and then, after a further angle of swing, with contact 63, the latter position being shown in full lines in Fig. 6. There is no function to the closure of switch 60 with contact 62 as the door is opened and contact 62 may be disregarded for the present. When, however, electrical contact is established between arm 60 and contact 63 (Fig. 6) solenoid 35 becomes energized and moves the coin supporting contact 25 rearwardly to permit the coin to drop from the position of Fig. 2. The circuit connections are shown in Fig. 9, switch arm 60 being connected by lead 65 with the ungrounded side of transformer T, and contact 63 being connected by lead 66 to the previously mentioned solenoid terminal 42. It will be evident from Fig. 9 that as switch arm 60 wipes across contact 63 during opening of the door, solenoid 35 becomes energized and operates in the manner described to release the coin from the initial bell ringing position in which it has theretofore rested. As the door is then swung further open switch arm 60 moves on to the dotted line position of Fig. 6, breaking with contact 63.

Thus as the door is opened in answer to ringing of the doorbell, a solenoid is automatically energized and acts to drop the coin beyond the reach of the depositor.

Now it will be apparent that it would be possible for a caller to deposit a coin and ring the bell, and then to retrieve the coin before the door is opened. Means are accordingly provided to indicate to the householder whether or not the coin has been properly allowed to descend into the box. This result may be accomplished in several ways. For instance, provisions may be made for the coin to descend to a position from which it can be immediately viewed by the householder, and such an arrangement is described hereinafter. In the form of our invention shown in Figs. 2 to 4, however, the coin drops across a second pair of electrical contacts and forms a circuit through an electrical signal means, as for instance an electric light conveniently visible to the householder, and in the event this light is not illuminated when the door has been opened the householder may know that the caller has improperly retrieved his coin and the interview may be refused.

In Fig. 3 the coin C is shown having dropped from the bell ringing position of Fig. 2 and resting on and between a stationary electrical contact 70 and a substantially horizontally movable coin supporting member 71, which are located just below the lower end of slot member 22. Movable member 71 is on the upper end of a vertical arm 72 pivoted at its lower end, as at 73, on a frame bracket arm 74, and arm 72 is moved between coin supporting and coin release positions by means of an electromagnetic means exactly similar to the previously described solenoid and plunger. Thus there is provided directly below solenoid 35 a solenoid coil 75 and plunger 76 connected to arm 72, the plunger being extended by spring 77 and being withdrawn by energization of coil 75. The solenoid 75 is shown mounted in a metal sheath 78 rigidly mounted within and electrically grounded to box 13. One side of coil 75 may be electrically grounded to sheath 78, and the other side of the coil is connected to an insulated terminal 79.

It will be seen from Fig. 9 that when coin C has dropped from its first or bell ringing position and occupies its second position, across contact 70 and member 71, a circuit is formed from one side of the transformer secondary through wire 51, branch wire 80, electric 81, contact 70, and thence through the coin to the grounded slot walls 22, thus completing a circuit to illuminate light 81. Light 81 may be mounted in any location conveniently visible to the householder, although it is here shown within the box and adjacent the side wall 13a of the box which is on the side of the door opening, and there is formed in said side wall 13a directly opposite the light an aperture 84 through which the light can be viewed.

Solenoid 75 is energized to release the coin from the signalling position of Fig. 3 by the door switch when the position of Fig. 7 is reached during subsequent closing of the door. At this position switch arm 60 makes contact with the previously mentioned contact 62, said contact 62 being connected by lead 86 to terminal 79 of lower solenoid 75, whereupon the plunger of solenoid 75 moves coin supporting member 71, 72 to release the coin to fall into the bottom of the box. A suitable tray, not shown, may be provided in the bottom of the box to receive the coin.

The complete operation of our system will now be understood, although a brief recapitulation may here be given. A proper coin deposited in the slot by a caller descends first to the position

shown in Fig. 2, and forms a part of the doorbell circuit so that said circuit can then be closed by operation of doorbell switch 12. In the event no answer is received to ringing of the bell the coin can be retrieved, and thus no charge is made against the caller if the bell is not answered. If the bell is answered, the operation of opening the door causes the switch arm 60 of the door switch to move from the position of Fig. 5 in the direction of the arrow and to wipe over contacts 62 and 63 in succession. As arm 60 wipes over contact 62 lower solenoid 75 is energized, but in the operation of opening the door such energization of solenoid 75 has no useful function and is disregarded. As switch arm 60 makes with contact 63, the door then having swung open for instance to the angle shown in dotted lines in Fig. 6, a circuit is formed from the switch arm and contact 63 through upper solenoid 35, whereupon coin supporting electrical contact 26 is withdrawn and the coin released to drop to the position of Fig. 3. In this latter position the coin bridges contacts 70 and 71 and closes the electrical circuit feeding signal light 81. The appearance of this light when the door has been opened signals to the householder that the coin has been properly collected, and non-appearance of the light indicates that the coin has been improperly retrieved by the caller. As the door is subsequently closed, the door switch arm first passes over contact 63 (which causes energization of upper solenoid 35 but has no useful function as the door is swung closed), and then passes over contact 62. As the latter contact is made, solenoid 75 is energized and acts to withdraw movable coin 71 back to the position indicated in dotted lines, whereupon the coin is finally dropped to the bottom of the box.

Figs. 10, 11, and 12 show a modification of our invention. In said figures numeral 10a designates the door, 11a the door frame, 12a the doorbell switch, and 13a the collection box, which latter is in the present instance shown mounted on the door itself rather than on the door frame as in the previous case, although this is not limitative on this form of the invention since it can obviously be mounted in the door frame as well. As shown in Figs. 11 and 12, box 13a differs from the box of the previous form in that provision is not made for access to the interior of the box from the front side of the door. The box is shown in Fig. 12 received in a recess 100 sunk in the outer surface of the door, although this is not essential, and the box is shown provided with flanges 101 adapted to meet the front surface of the door and to be fastened thereto as by screws 102. A coin slot 20a and an electrical contact 25a and a movable coin supporting member 26a are provided exactly similar to the corresponding members of the previously described embodiment, member 26a being on the upper end of a pivoted arm 32a operated by the plunger 36a of a solenoid 35a, also in the same manner as in the first form.

The coin deposited by the caller comes to rest across contacts 25a and member 26a, with its upper edge projecting out of the slot, as before, and completes the doorbell circuit from contact 25a to the grounded slot so that the bell can then be operated by closure of switch 12a. The wiring circuit is shown in Fig. 13, wherein numeral 106 designates the alternating current supply line, T' a step down transformer, one side of the secondary winding of which is grounded, and 107 is a lead from the other side of the

transformer secondary which connects switch 12a, doorbell 52a, and contact 25a in series. It will be evident that the presence of the coin across contact 25a and the grounded slot walls completes the circuit so that operation of switch 12a will cause the doorbell to ring.

One side of the coin releasing electromagnet 35a is grounded and the other side thereof is connected through a switch 109 and lead 110 to the ungrounded side of transformer T'. Switch 109 may be a manual switch conveniently located for operation by the householder, or it may obviously be of the same nature as the switch previously described in connection with the first mentioned form of the invention, or other types of switch may be used. For instance, Fig. 8 shows a variational type of switch adapted to be mounted back of the door jamb at the swinging edge of the door rather than at the hinged edge thereof as in the previous form. In Fig. 8 the door is indicated at 10a, the door jamb at 112, and the door stop at 113. The door switch 109 is mounted in recess 114 back of door jamb 112, and this switch may be exactly similar to that illustrated in Figs. 5, 6, and 7, except that in the present case but a single stationary electrical contact is needed. Thus there is an insulation switch case 116, a pivoted switch arm 117 mounted therein, said switch arm wiping over electrical contact 118, and a spring 119 acting on arm 117 to move it in one direction. The switch operating plunger 120 which operates through door jamb 112 to be engaged by the door differs from the plunger described in connection with Figs. 5, 6, and 7 in that it is adapted to be operated by the swinging edge of the door rather than by the hinged edge thereof, and for this purpose the forward end of plunger 120 is beveled, as at 121, so as to present an inclined surface toward the forward door corner 122 as the door is being swung closed. It will be obvious that this corner of the door will engage the inclined surface 121 of the latch and will force the latch rearwardly through the door jamb as it moves past, the door edge then holding the plunger back as the door is moved on against the door stop. Plunger 120 is preferably rectangular in cross section and works through a rectangular opening 120a in the door jamb, so as to prevent rotation of the plunger in the jamb. The rear reduced shank 124 of the plunger extends through the insulation switch case and engages switch arm 117 in the same manner as in the switch previously described. Thus as the door is opened and clear plunger 120, switch spring 119 moves switch arm 117 in the direction of the arrow towards the dotted line position, plunger 120, 124 moving correspondingly outwardly to its extended position, illustrated in dotted lines, and during this movement the switch arm makes contact with electrical contact 118 and so closes the electrical circuit energizing solenoid 35a. Thus during opening of the door the solenoid operates to withdraw plunger 36a and thereby causes release of the coin by correspondingly withdrawing coin supporting member 26a, 30a. As the door is subsequently closed its leading corner 122 engages the inclined surface 121 of plunger 120 and forces the plunger and switch arm 117 to move rearwardly against spring 119 to the position of Fig. 8. It will be obvious that this type of switch is also adaptable to the form of our invention illustrated in Figs. 1 to 4.

In the form of the invention illustrated in Figs. 11 and 12 no electrical signalling means is em-

ployed to indicate that the coin has descended from the bell ringing position (across the contact 25a and coin support 26a), but rather the coin moves immediately into view of the householder. For this purpose there is provided a chute 128 adapted to catch the coin dropped from the lower end of slot 20a when it is released from the electrical contacts above as described in the preceding paragraph, and this chute extends rearwardly and downwardly through the rear side of the collection box and through a passage 129 in the door (or door frame in case the box is mounted in the door frame) to an outlet 130 opening to the rear side of the door. This outlet may be projected by an inwardly projecting flange 131 adapted to confine the coin until it is removed by the householder.

Thus in this case the electrical signalling means is dispensed with and the coin itself appears at outlet 130 to inform the householder that the coin has been permitted to be properly collected.

Fig. 14 shows another modification of a switching arrangement which may be used in connection with either of the types of our invention disclosed above. For simplicity, we will describe this form of switch in connection with only the last form of collection box, in which case it becomes the switch 109 of Fig. 13, although it will be obvious that by addition of another pair of electrical contacts the switch may also be used in connection with the first described form of the invention. In this type of switch the switch contacts may be considered broadly closed by the operation of opening the door, but are actually closed by movement of the door latch rather than by virtue of swinging the door open. In Fig. 14 numeral 10b designates the door, numeral 130 the door jamb, numeral 131 the door latch, and 132 the aperture in the face of the jamb into which the latch is received. These parts may be of the usual construction. The switch designated by numeral 134, is preferably in the form of a cylinder and is mounted on the door jamb in a bore 135 drilled therein from the rear side of latch aperture 132, as shown. The case 136 of the switch is of insulation material and has closed forward and rear ends 137 and 138, respectively. Mounted to slide concentrically through forward end 137 is a switch plunger 139, the rear end of which is formed with a circumferential groove 140 which receives the inwardly extending ends 141a of guide members 141 which extend rearwardly and slide through apertures in rear switch case end 138. The rear ends of members 141 have extensions 142 adapted to engage the rear end of the switch case to provide a limit stop to forward movement of switch plunger 139. Between the rear end of plunger 139 and the rear end 138 of the switch case is confined a compression spring 144 adapted to extend plunger 139 forwardly from the switch to the limit set by stops 142. The forward end of plunger 139 is engaged by the inclined forward surface of door latch 131, and when the door is in closed position the door latch moves switch plunger 139 rearwardly against its spring 144 to the position illustrated in Fig. 14. When the door latch is withdrawn in the operation of opening the door, spring 144 acts to move switch plunger 139 forwardly, as just described. This movement of switch plunger 139 as the door latch is retracted is utilized to close the switch contacts energizing the coin releasing solenoid in the collection box. For this purpose, plunger 139 is provided with an

insulation sleeve 150, and on sleeve 150 is a metallic contact ring 151. Two spring switch arms 152 and 153 are arranged in the switch case to be engaged by contact ring 151 as switch plunger 129 is moved back and forth. In the arrangement shown in Fig. 14, one switch arm 153 is in engagement with contact ring 151 in the position of Fig. 14 and the other switch arm 152 is just forwardly of said ring 151. As switch plunger 129 moves forwardly with retraction of door latch 131, contact ring 151 comes into engagement with switch arm 152 and forms a circuit from said arm 152 to arm 153, with which it is still in contact. This completion of the circuit is momentary, however, since as the switch then moves on in its forward direction ring 151 breaks with switch arm 153 and thus again opens the circuit; but this momentary contact is designed to be of sufficient length to energize the coin releasing solenoid (solenoid 35a in Fig. 11) long enough to permit the solenoid plunger and arm 39a to be withdrawn to release the coin. Thus in this case movement of the door latch is utilized to collect the coin from the retrievable position in which it is placed by the caller, and, in case the form of our invention shown in Figs. 11 and 12 is employed, if the coin does not at once appear in the coin opening 130, the door need not be opened.

Fig. 15 shows a bridge piece 170 which may be inserted in the coin slot by the householder to engage and electrically connect together contact 25 and the grounded slot walls 22, this device being useful when it is desired to render the coin collecting system inoperative so that the door bell can be rung in the usual manner without depositing a coin. The bridge piece is shown to have a top part 171 of greater length than slot 20, and a depending part 172 adapted to extend downwardly within the slot and to engage electrical contact 25 to complete the doorbell circuit to ground. It will be seen that with this bridge piece in position the doorbell can be rung by simply operating the doorbell switch 12 without depositing a coin.

It will be obvious that various changes and modifications may be made in the invention without departing from the broad scope and spirit thereof, and that the invention is therefore to be limited only as may fairly be construed from the following claims.

We claim:

1. A coin controlled doorbell system, comprising the combination of a collection box having a coin receiving opening, means adapted to support a coin deposited in said opening in a position from which it can be withdrawn through said opening in the event the coin is not collected, said means adapted to be moved to cause the coin to move into a non-retrievable position within said box, a doorbell circuit including a pair of electrical contacts closed by virtue of the coin occupying said first mentioned position, and electromagnetic means and an electrical energizing circuit therefor controllable from outside the box to operate said coin supporting means to cause the coin to move into non-retrievable position within the box.

2. A coin controlled doorbell system, comprising the combination of a collection box having a coin receiving slot, releasable means in said box adapted to releasably support a deposited coin in a position with a portion of the coin projecting outside the slot, whereby the coin may be retrieved from said position, a doorbell circuit in-

cluding a pair of electrical contacts closed by virtue of the coin occupying said position, and electromagnetic means and an electrical energizing circuit therefor controllable from outside the box for actuating said releasable coin supporting means, whereby the coin descends within the box from said position.

3. A coin controlled doorbell system, comprising the combination of a collection box having a coin receiving opening, means adapted to support a coin deposited in said opening in a position from which the coin can be withdrawn through said opening in the event the coin is not collected, a doorbell circuit including a pair of electrical contacts closed by virtue of the coin occupying said position, means for causing the coin to move from said position to a non-retrievable position within the box, and electromagnetic means and an electrical energizing circuit therefor controllable from outside the box to operate said last mentioned means.

4. A coin controlled doorbell system, comprising, in combination with a door, a collection box having a coin receiving opening, means adapted to support a coin deposited in said opening in a position from which it can be retrieved by the depositor, said means adapted to be moved to cause the coin to move into a non-retrievable position within said box, a doorbell circuit including a pair of electrical contacts closed by virtue of the coin occupying said first mentioned position, an electromagnet adapted to move said coin supporting means to cause the coin to move into non-retrievable position, and an electrical energizing circuit for said electromagnet controlled by door operation.

5. A coin controlled doorbell system, comprising, in combination with a door, a collection box having a coin receiving opening, means adapted to support a coin deposited in said opening in a position from which it can be retrieved by the depositor, a doorbell circuit including a pair of electrical contacts closed by virtue of the coin occupying said position, means including an electromagnet for causing the coin to move from said position to a non-retrievable position within the box, and an electrical energizing circuit for said electromagnet controlled by door operation.

6. A coin controlled doorbell system, comprising, in combination with a door, a collection box having a coin receiving opening, means adapted to support a coin deposited in said opening in a position from which it can be retrieved by the depositor, said means adapted to be moved to cause the coin to move into a non-retrievable position within said box, a doorbell circuit including a pair of electrical contacts closed by virtue of the coin occupying said first mentioned position, an electromagnet adapted to move said coin supporting means to cause the coin to move into non-retrievable position, and an electrical energizing circuit for said electromagnet, said circuit including an electric switch closed by virtue of opening the door.

7. A coin controlled doorbell system, comprising, in combination with a door, a collection box having a coin receiving opening, means adapted to support a coin deposited in said opening in a position from which it can be retrieved by the depositor, said means adapted to be moved to cause the coin to move into a non-retrievable position within said box, a doorbell circuit including a pair of electrical contacts closed by virtue of the coin occupying said first mentioned position, an electromagnet adapted to move said coin

supporting means to cause the coin to move into non-retrievable position, and an electrical energizing circuit for said electromagnet, said circuit including an electric switch operatively associated with the door and held in open position by the door when the door is in closed position, said switch being arranged to close as the door is opened.

8. A coin controlled doorbell system, comprising, in combination with a door, a collection box having a coin receiving opening, means adapted to support a coin deposited in said opening in a position from which it can be retrieved by the depositor, a doorbell circuit including a pair of electrical contacts closed by virtue of the coin occupying said position, means including an electromagnet for causing the coin to move from said position to a non-retrievable position within the box and an electrical energizing circuit for said electromagnet, said circuit including an electric switch operatively associated with the door and held in open position by the door when the door is in closed position, said switch being arranged to close as the door is opened.

9. A coin controlled doorbell system, comprising the combination of a collection box having a coin receiving slot, releasable means in said box adapted to releasably support a deposited coin in a position from which it can be retrieved, a doorbell circuit including a pair of electrical contacts closed by virtue of the coin occupying said position, electromagnetic means for releasing said coin supporting means to cause the coin to descend from said position, an energizing circuit controlling said electromagnetic means, and means adapted to indicate that the coin has descended from bell ringing position.

10. A coin controlled doorbell system, comprising the combination of a collection box having a coin receiving slot, releasable means in said box adapted to releasably support a deposited coin in a position from which it can be retrieved, a doorbell circuit including a pair of electrical contacts closed by virtue of the coin occupying said position, electromagnetic means for releasing said coin supporting means to cause the coin to descend from said first mentioned position, an energizing circuit controlling said electromagnetic means, an electrical signal means and a circuit therefor, and a pair of contacts in said circuit adapted to be closed by the coin after descending from said first mentioned position.

11. A coin controlled doorbell system, comprising, in combination with a door, a collection box having a coin receiving slot, releasable means in said box adapted to releasably support a deposited coin in a position from which it can be retrieved, a doorbell circuit including a pair of electrical contacts closed by virtue of the coin occupying said position, electromagnetic means for releasing said coin supporting means to cause the coin to descend from said position, an energizing circuit for said electromagnetic means, a switch controlled by door operation for controlling said energizing circuit, an electrical signal means and a circuit therefor, and a pair of contacts in said circuit adapted to be closed by the coin after descending from said position.

12. A coin controlled doorbell system, comprising the combination of a collection box having a coin receiving slot, releasable means in said box adapted to releasably support a deposited coin in a position from which it can be retrieved, a doorbell circuit including a pair of electrical con-

tacts closed by virtue of the coin occupying said position, electromagnetic means for releasing said coin supporting means to cause the coin to descend from said position, releasable means adapted to releasably support the coin in a signalling position after said coin has descended from said first mentioned position, an electrical signal means and a circuit therefor, electrical contacts in said circuit closed by virtue of the coin resting on said last mentioned supporting means, electromagnetic means for releasing said last mentioned supporting means to cause the coin to descend within the box from said signalling position, and electrical switch means for successively energizing said first mentioned and said second mentioned electromagnetic release means.

13. A coin controlled doorbell system, comprising, in combination with a door, a collection box having a coin receiving slot, releasable means in said box adapted to releasably support a deposited coin in a position from which it can be retrieved, a doorbell circuit including a pair of electrical contacts closed by virtue of the coin occupying said position, electromagnetic means for releasing said coin supporting means to cause the coin to descend from said position, releasable means adapted to releasably support the coin in a signalling position after said coin has descended from said first mentioned position, an electrical signal means and a circuit therefor, electrical contacts in said circuit closed by virtue of the coin resting on said last mentioned supporting means, electromagnetic means for releasing said last mentioned supporting means to cause the coin to descend within the box from said signalling position, and electrical switch means controlled by door swinging to energize the first mentioned electromagnetic release means as the door is swung toward open position and to energize the second mentioned electromagnetic release means as the door is swung toward closed position.

14. A coin controlled signal system, comprising the combination of a collection box having a coin receiving opening, means adapted to support a coin deposited in said opening in a position from which it can be withdrawn through said opening in the event the coin is not collected, said means adapted to be moved to cause the coin to move into a non-retrievable position within said box, a signal circuit closed by virtue of the coin occupying said first mentioned position, and electromagnetic means and an electrical energizing circuit therefor controllable from outside the box to operate said coin supporting means to cause the coin to move into non-retrievable position within the box.

15. A coin controlled signal system, comprising, in combination with a switch, a collection box having a coin receiving opening, means adapted to support a coin deposited in said opening in a position from which it can be retrieved by the depositor, said means adapted to be moved to cause the coin to move into a non-retrievable position within said box, a signal circuit closed by virtue of the coin occupying said first mentioned position, an electromagnet adapted to move said coin supporting means to cause the coin to move into non-retrievable position, and an electrical energizing circuit for said electromagnet controlled by said switch.

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