H. A. DREW & G. M. MAZZA.

COIN COLLECTING APPARATUS.

APPLICATION FILED APR. 2, 1915.

1,227,403.

Patented May 22, 1917.

7 SHEETS—SHEET 1.

Fig. 1.

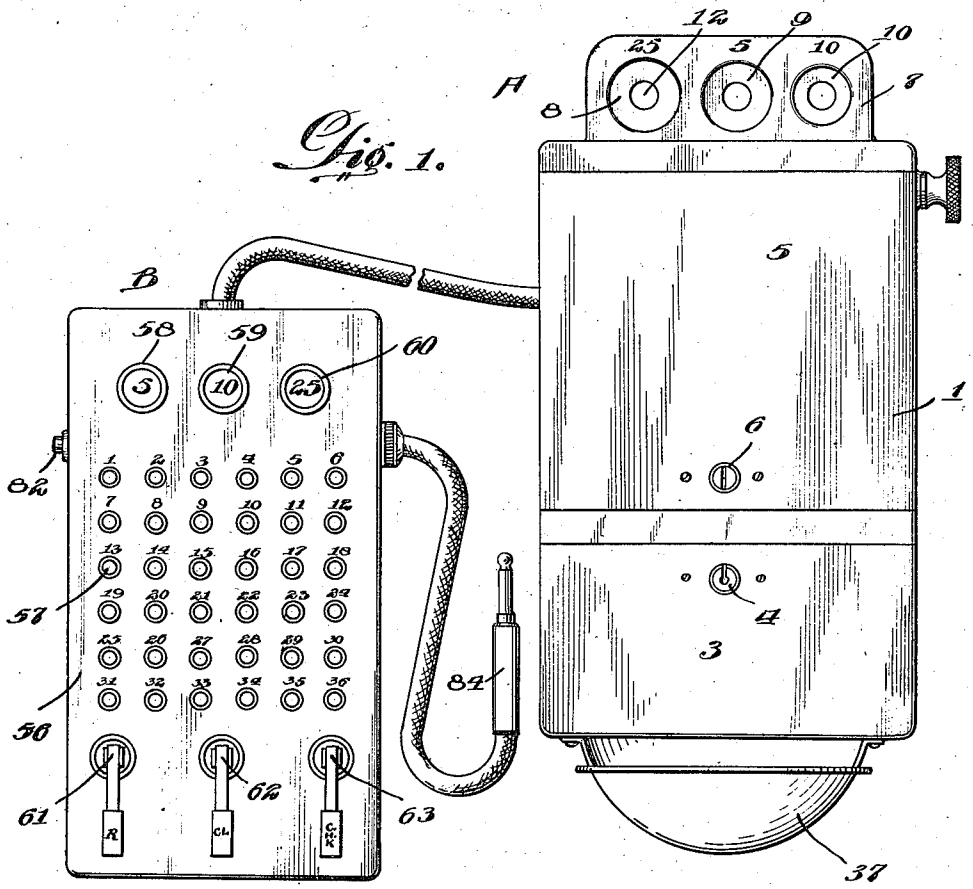
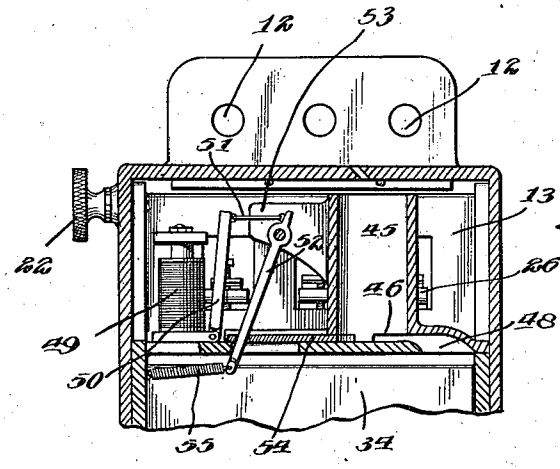


Fig. 7.



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7 SHEETS—SHEET 2.

Fig. 2.

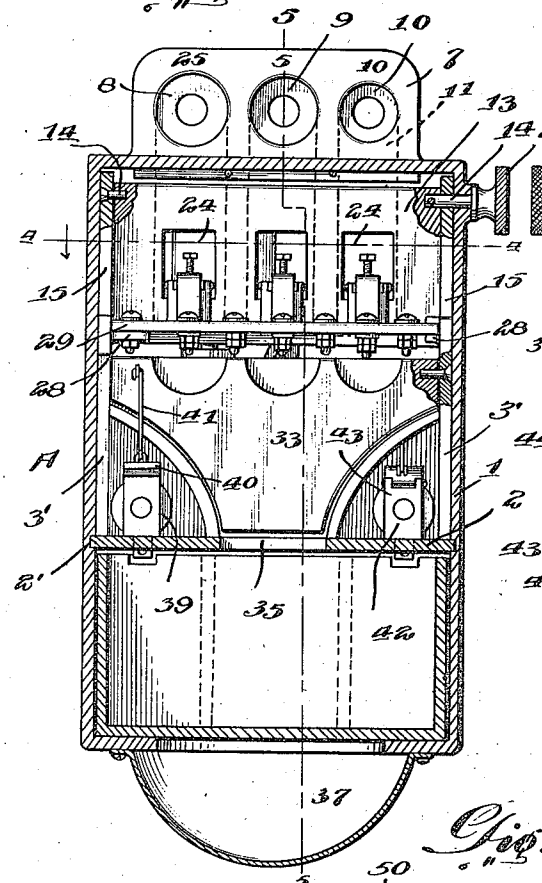


Fig. 3.

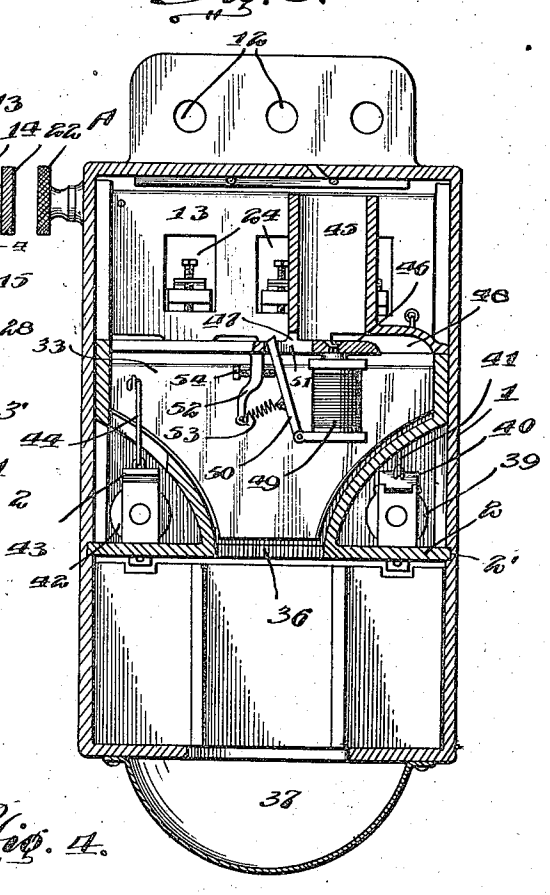
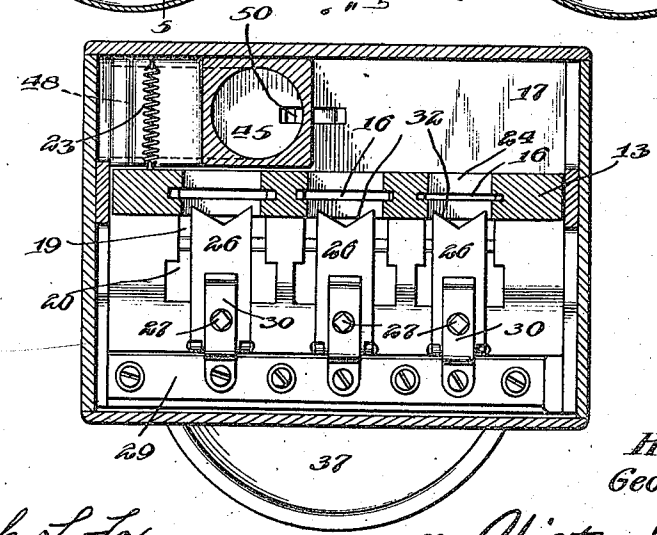


Fig. 4.



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7 SHEETS—SHEET 3.

Fig. 5.

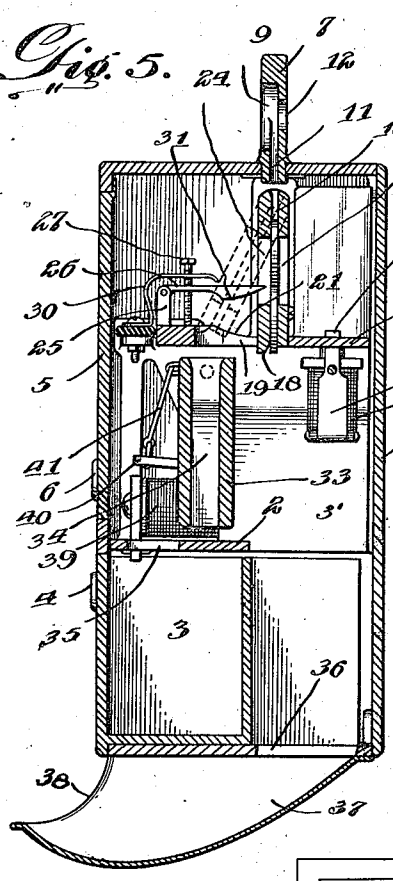


Fig. 6.

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7 SHEETS—SHEET 4.

Fig. 8.

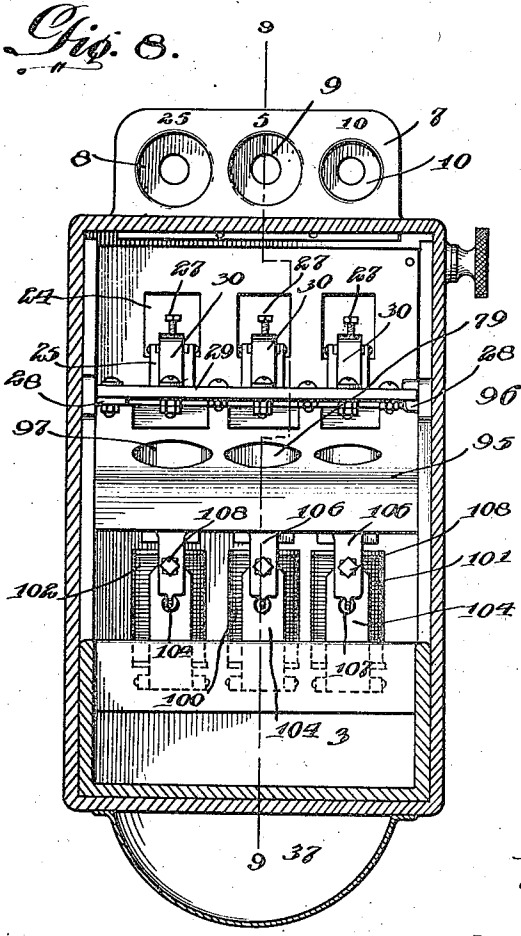


Fig. 9.

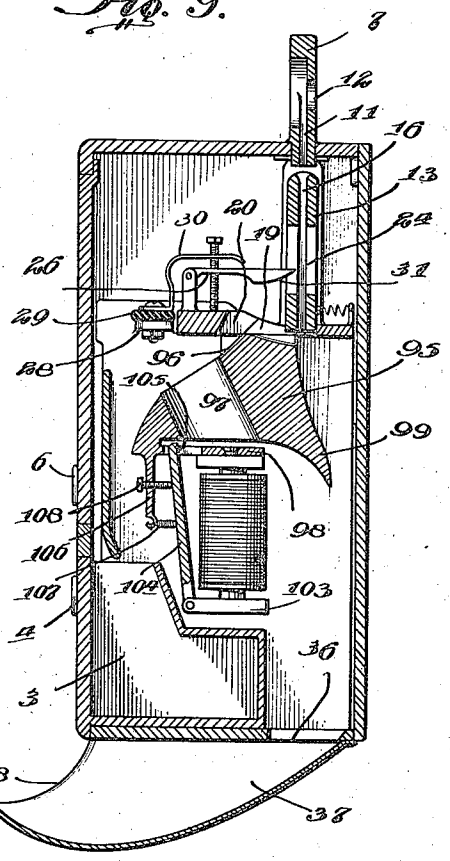
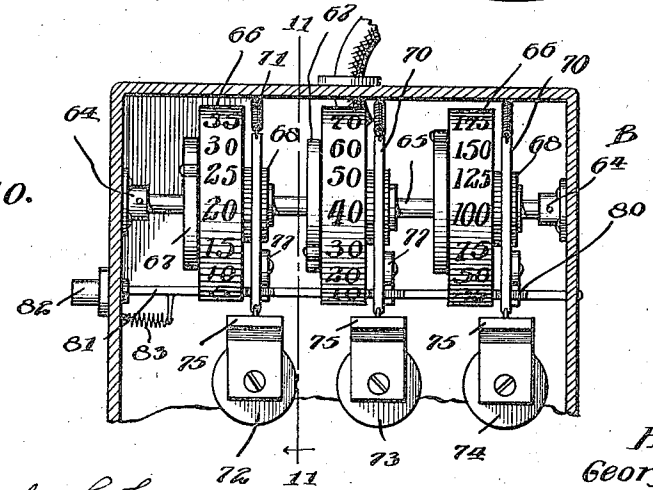


Fig. 10.



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Fig. 11.

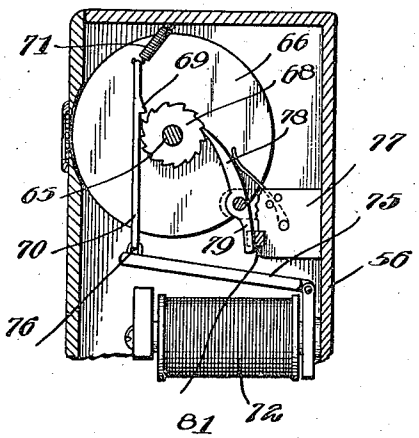


Fig. 12a.

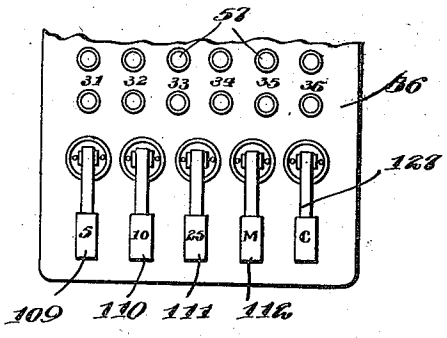


Fig. 14.

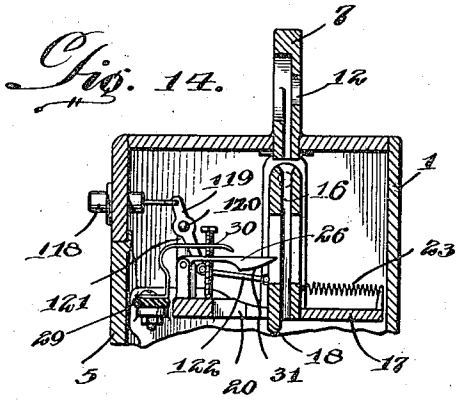


Fig. 15.

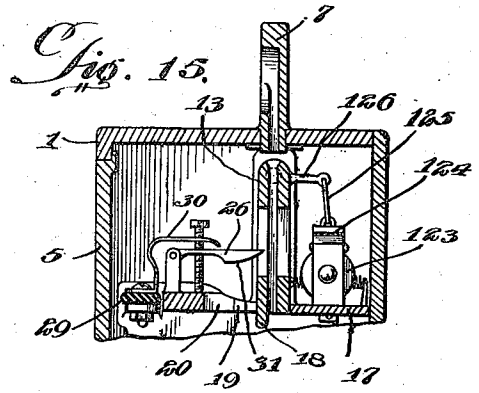
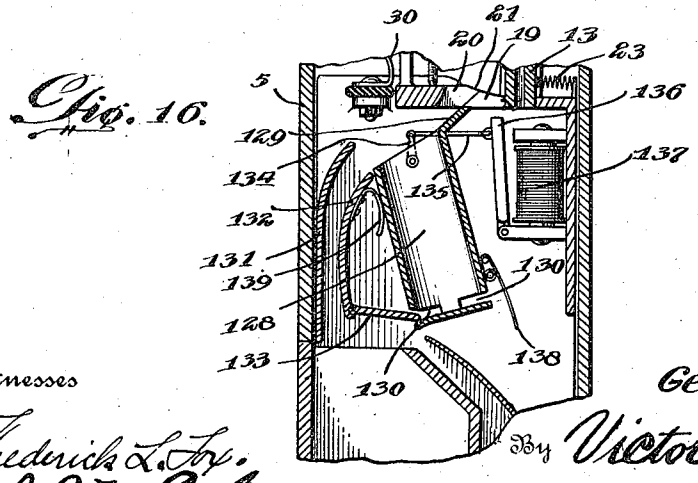


Fig. 16.



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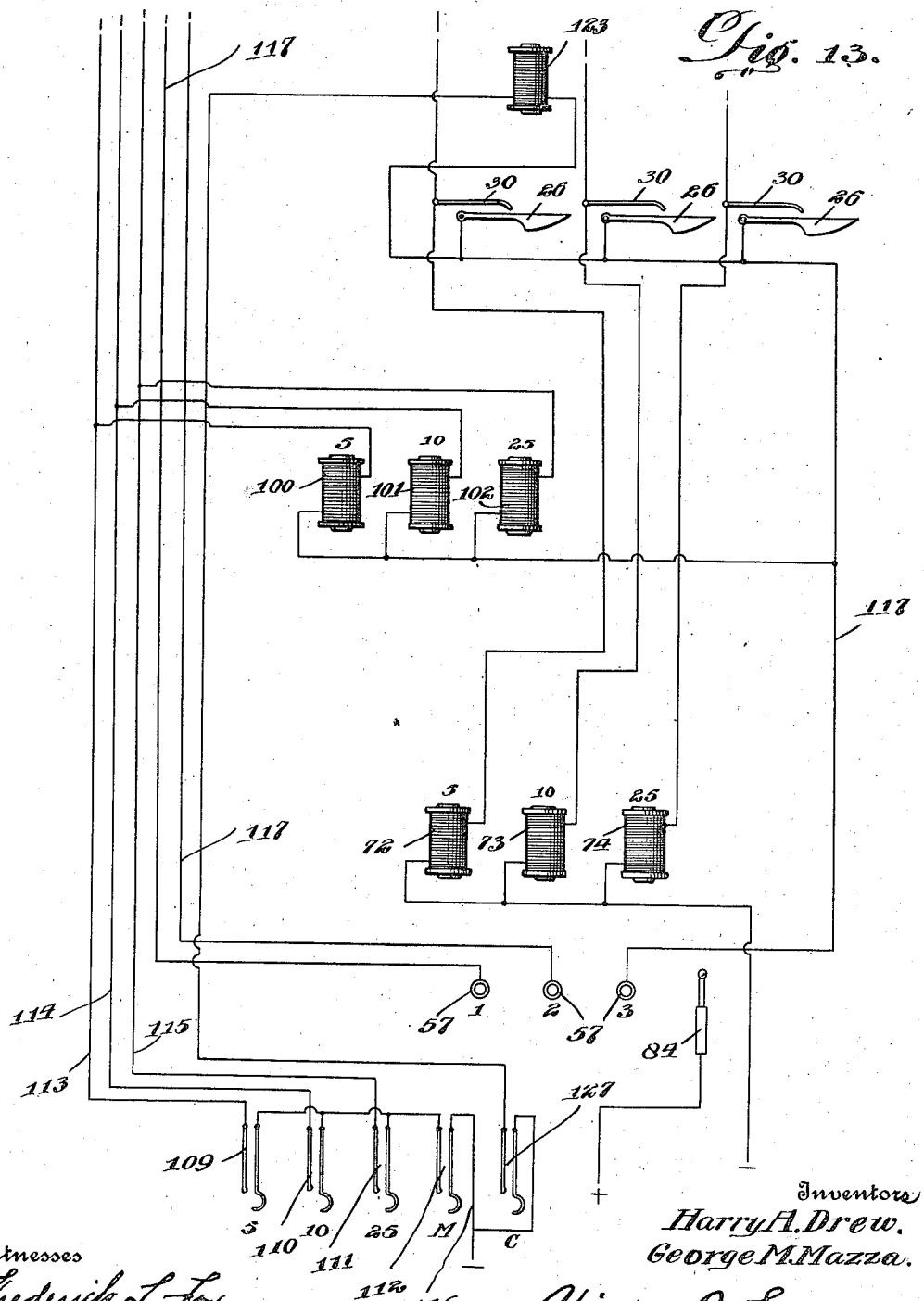
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Patented May 22, 1917.

7 SHEETS—SHEET 6.

Fig. 13.



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7 SHEETS—SHEET 7.

Fig. 17.

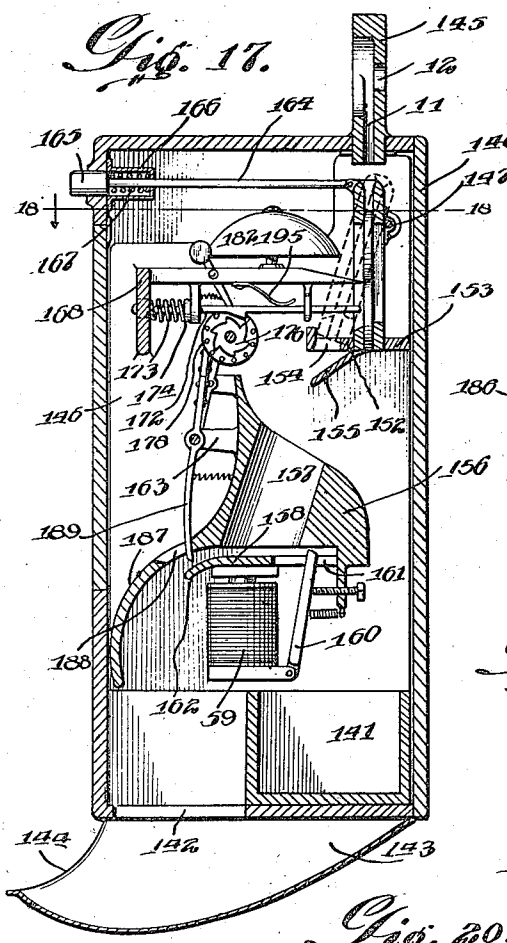


Fig. 18.

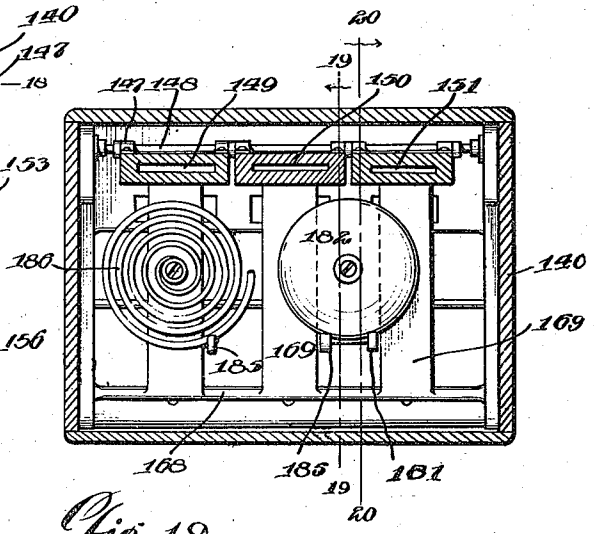


Fig. 19.

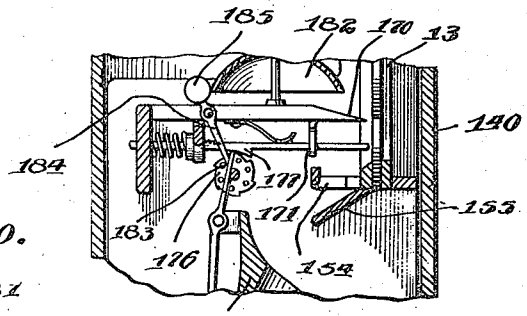
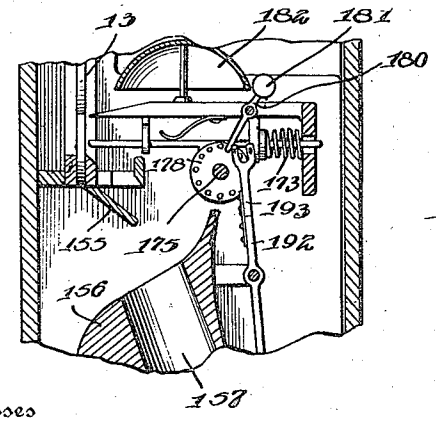


Fig. 20.



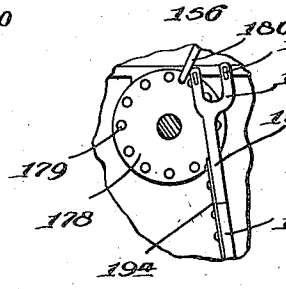


Fig. 21.

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UNITED STATES PATENT OFFICE.

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COIN-COLLECTING APPARATUS.

1,227,403. Specification of Letters Patent. Patented May 22, 1917.

Application filed April 2, 1915. Serial No. 18,730.

To all whom it may concern:

Be it known that we, HARRY A. DREW and GEORGE M. MAZZA, citizens of the United States, residing at West New York and Weehawken, respectively, in the county of Hudson and State of New Jersey, have invented new and useful Improvements in Coin-Collecting Apparatus, of which the following is a specification.

This invention relates to improvements in coin collecting apparatus for use in hotels, apartment houses, steamships and analogous places and has particular application to manually controlled coin collecting apparatus.

In carrying out the present invention, it is our purpose to provide coin collecting apparatus wherein the coin collecting machines located in the different rooms of a hotel or other structure will be under the control of a central operator and whereby such operator will be automatically advised of the denomination of the coin, or coins as the case may be, deposited in the machine in a particular room and whereby the operator will have complete control of such deposited coin or coins so that the money may be either returned to the depositor or collected by the particular machine.

It is also our purpose to provide apparatus of the class described whereby the central operator may cause a check to be delivered to the customer in the event of such customer not having coins, so that the customer may deposit the check in the machine in lieu of a coin, thereby enabling a record to be kept of the "charges" and the customer served without the inconvenience of looking for "change."

Another object of our invention is to provide coin collecting apparatus whereby the central operator may be advised by a customer whenever a coin is deposited in the particular machine and wherein the signals will correspond with the different denominations of coins respectively so that the operator will be notified as to the particular denomination of the coin deposited in the machine, and whereby the operator may cause any desired number of coins to be delivered to a customer, either for the purpose of making change or returning the equivalent of the deposited coin or coins.

With the above and other objects in view, the invention consists in the construction, combination and arrangement of parts hereinafter set forth in and falling within the scope of the claims.

In the accompanying drawings:

Figure 1 is a diagrammatic plan view of coin collecting apparatus constructed in accordance with the present invention, the central station and one collecting instrument being shown.

Fig. 2 is a vertical sectional view through the instrument.

Fig. 3 is a similar view taken in a plane parallel with Fig. 2.

Fig. 4 is a horizontal sectional view on the line 4—4 of Fig. 2.

Fig. 5 is a vertical sectional view taken on the line 5—5 of Fig. 2.

Fig. 6 is a diagrammatic view of the system.

Fig. 7 is a fragmentary vertical sectional view showing a modified construction.

Fig. 8 is a vertical sectional view through another modified form of instrument.

Fig. 9 is a vertical sectional view on the line 9—9 of Fig. 8.

Fig. 10 is a fragmentary vertical sectional view through the switch board showing the signal mechanism.

Fig. 11 is a sectional view on the line 11—11 of Fig. 10.

Fig. 12 is a fragmentary front elevation of a modified form of switch board.

Fig. 13 is a diagrammatic view showing the wiring of a system embodying coin collecting instruments shown in Fig. 8 and the switch board as shown in Fig. 12.

Fig. 14 is a fragmentary transverse sectional view through another modified form of instrument.

Fig. 15 is a similar view showing a still further modified construction of instrument.

Fig. 16 is a like view of a still further modified form.

Fig. 17 is a vertical sectional view through a modified form of coin collecting and change making machine showing another form of signal mechanism.

Fig. 18 is a section on line 18—18 of Fig. 17.

Fig. 19 is a fragmentary sectional view on the line 19—19 of Fig. 18 looking in the direction of the arrow.

Fig. 20 is a fragmentary sectional view

on the line 20—20 of Fig. 18 looking in the direction of the arrow.

Fig. 21 is an enlarged fragmentary sectional view showing detail of the signal mechanism.

Referring now to the drawings in detail, A designates a coin collecting instrument constructed in accordance with our present invention, while B indicates the switch board under the control of the central operator and capable of controlling any desired number of instruments A.

In the preferred embodiment of our invention, the coin collecting instrument A comprises a substantially rectangular casing 1 provided, interiorly, with a horizontal shelf 2 spaced apart from the bottom wall and parallel therewith and extending from the front wall to a point approximately centrally of the width of the casing. In the present instance, the shelf 2 is slidable into and out of horizontally alining grooves 2′ formed in the opposite side walls of the casing and formed on the shelf 2 adjacent to the opposite ends thereof and projecting upwardly therefrom are hangers 3′, 3′ having the outer surfaces thereof disposed in face to face contact with the respective side walls of the casing, while formed on the upper ends of the hangers 3′ and upstanding therefrom are bearing strips 15, 15. The space between the bottom wall and the shelf 2 constitutes a drawer space and registering with such space is an opening formed in the front wall of the casing and slidable into and out of such space by way of the opening in the front wall is a drawer 3 equipped with a lock 4 whereby the drawer may be locked in the casing. The front wall of the casing above the drawer opening therein is provided with a removable cover 5 equipped with a lock 6 and capable of removal so that access may be had to the interior of the casing. The top end wall of the casing is formed with an elongated longitudinally extending slot disposed adjacent to the rear edge thereof and disposed within such slot and suitably secured therein is a vertical plate 7 projecting upwardly from the top wall of the casing and having the front face thereof formed with circular depressions 8, 9 and 10 adapted to accommodate "quarters", "nickels" and "dimes" respectively, and formed in the plate 7 contiguous to the respective depressions therein and opening onto the lower edges of the plate are slots 11 through which the coins deposited in the depressions may pass. The rear walls of the depressions 8, 9 and 10 are preferably formed with relatively small openings 12.

Disposed within the casing 1 immediately below the lower end of the plate 7 is a vertically disposed receiver 13 and the end edges of the receiver 13, adjacent to the upper edge of such receiver, are equipped with outwardly projecting alining trunnions 14 mounted in alining openings formed in the bearing strips 15, 15 respectively, upstanding from the top ends of the hangers 3′. The receiver 13 is formed with vertical slots 16 registering with the slots 11 respectively and each of a width equal to the diameter of the particular coin. Secured in the casing 1 immediately below the lower edge of the receiver 13 is a horizontal plate 17. The lower edge of the receiver 13, at the lower ends of the slots 16 therein, is formed with depending lugs 18 disposed contiguous to the lower ends of the slots 16 in the receiver. These lugs 18 project through slots 19 formed in the plate 17 and extending toward the front wall of the casing. Each slot 19 is relatively narrow, as compared with the width of the corresponding slot 16 in the receiver, and the forward ends of the slots 19 are widened as at 20 to correspond with the similar dimensions of the slots in the receiver. The upper surface of the plate 17 contiguous to the sides of the slots 19 is slightly concaved as at 21 and these concaved portions form bearings for the lowermost coins in the slots of the receiver. Secured to one trunnion 14 of the receiver 13 and disposed upon the outer side of the casing is a knob 22. In practice, when a coin is deposited in any one of the slots 8, 9 and 10, or in all of such slots, such coin or coins drop through the slots 11 into the slots 16 in the receiver and the lowermost coins engage the concaved portions of the plate 17 at the opposite sides of the slots 19. The receiver 13 is now swung by the depositor under the action of the knob 22 and in the movement of the receiver the lowermost coins in the slots ride over the concaved surfaces 21 of the plate 17 and as soon as the lower ends of the slots in the receiver register with the widened portions 20 of the slots 19, the coins are relieved of the influence of the narrow portions of such slots and drop through the widened portions. In this movement of the receiver under the action of the knob 22 the lugs 18 serve as bearings for the coins, thereby preventing binding between the coins and the concaved surfaces of the plate 17. 23 designates a restoring spring having one end fastened to the back wall of the casing and the other extremity secured to the confronting face of the receiver, such spring acting to restore the receiver to normal or vertical position immediately succeeding the release of the knob 22.

In the present instance, the opposite walls of the slots 16 in the receiver 13 are formed with alining openings 24 respectively, and secured to the forward edge of the plate 17 and upstanding therefrom are brackets 25 disposed approximately centrally of the re-

spective alining openings 24. Pivoted upon the upper end of each bracket 25 is a horizontal contact finger 26 projecting toward the receiver 13 and having the forward end thereof terminating within the adjacent opening 24. Threaded through the contact finger 26 adjacent to the pivoted end thereof is an adjusting screw 27 having the lower end thereof in engagement with the plate 17 and capable of turning movement so that the rear end of the contact finger 26 may be elevated and lowered when it is desired to adjust such finger. Formed on the confronting faces of the hangers 3′, 3′ immediately behind the front wall of the casing are inwardly extending lugs 28 and resting upon the lugs 28 and suitably secured thereto is a strip 29 of insulating material disposed adjacent to the forward edge of the plate 17 and in the same plane as such plate. Secured to the strip 29 and upstanding therefrom are spring contact fingers 30 having the upper end portions thereof bent at an angle to the main body portions of the fingers and overlying the horizontal fingers 26 respectively, the horizontal portions of the fingers 30 being formed with openings to accommodate the adjusting screws 27. The under surface of each horizontal finger 26, at the rear end of such finger, is formed with a cam surface 31 adapted to be engaged by the coin in the adjacent slot 16 in the movement of the receiver. By means of this construction, it will be seen that when the receiver 13 is swung under the action of the knob 22, the upper edge portions of the bottom coins in the slots 16 will ride under and engage the cam surfaces 31 of the horizontal fingers 26, thereby swinging the latter upwardly to engage the respective fingers 30. In this form of our invention, the rear end edges of the horizontal fingers 26 are formed with V-shaped cutouts 32 respectively and in the movement of the coin receiver under the action of the knob 22 the upper edge portions of the coins ride under the outer extremities of the limbs of the V-shaped portions previous to the top edge portions of the bottom coins engaging the cam surfaces of the fingers, thereby insuring the proper operation of the fingers under the action of the coins. This centering of the fingers, as it may be called, and the engagement of the coins with the fingers take place in the initial swinging of the receiver and in the continued movement of the receiver the bottom coins are brought into registration with the enlarged portions 20 of the slots and so drop through such enlarged portions and release the horizontal fingers so that the latter may disengage the spring fingers 30 and be restored to normal position. After the initial movement of the coin receiver, as just described, any coins in the slots 16 of the receiver, above the lowermost coins in such slots, are held against downward movement in the slots, incident to the lower edge portions of the coins next adjacent to the lower coins riding upon the upper surfaces of the horizontal fingers 26. After the bottom coins have passed through the enlarged portions 20 of the slots 19 in the plate 17 the knob 22 is released and the spring 23 reacts to restore the receiver to normal position, thereby permitting the coins above the horizontal fingers to drop to the lower ends of the slots so that the above operation may be repeated when the receiver is again actuated by the knob 22.

Disposed between the hangers 3′, 3′ is a holding chute 33 formed with a vertical passage 34. The upper end of the passage 34 registers with the widened portions 20 of the slots in the plate 17, while the end walls of such passage converge toward each other to form a relatively narrow discharge opening at the lower end of the chute, such discharge opening being located approximately centrally of the length of the shelf 2. The end walls of the chute 33, adjacent to the upper end of such chute, are equipped with outwardly projecting axially alining trunnions journaled in openings formed in the hangers 3′ and acting to hold the chute suspended for swinging movement. Formed in the shelf 2 adjacent to the forward edge thereof is a slot 35 opening into the upper end of the drawer 3, while formed in the bottom wall of the casing 1 behind the drawer 3 is a slot 36 opening into a recovery pan 37 secured to the bottom of the casing and having the forward end thereof open as at 38 so that the fingers may be readily and conveniently inserted in the opening to remove any coins therefrom.

Mounted upon the shelf 2 adjacent to one end thereof and suitably fastened thereto is an electroresponsive device in the form of a magnet 39 controlling a pivoted armature 40 disposed within the influence of the pole of the magnet and connected through the medium of a link 41 with the holding chute at the front side of the latter. Also mounted upon the shelf 2 adjacent to the other end thereof is an electromagnet 42 controlling a pivoted armature 43 and the armature 43 is connected through the medium of a link 44 with the rear side of the holding chute. As the coins drop through the enlarged portions 20 of the slots 19, as hereinbefore described, such coins pass into the relatively wide mouth of the passage in the holding chute and gravitate toward the lower end of such chute and rest upon the shelf 2 at the lower end of the passage in the holding chute. Should the electromagnet 39 be energized the armature 40 will be swung with the effect to pull the link 41 and so swing the chute 33 to throw the coins off of the shelf 2, into the

rear portion of the casing, and through the slot 36 into the recovery pan 37, whence they may be removed by the depositor. On the other hand, should the electromagnet 42 be energized, the armature 43 will be swung and, through the medium of the link 44, swing the holding chute 33 in the reverse direction, thereby throwing the coins off of the shelf 2 through the slot 35 in the shelf and into the drawer 3, for collection.

Secured to the plate 17 behind the receiver 13 and upstanding from such plate is a receptacle 45 adapted to contain checks. In this instance, the receptacle 45 is cylindrical in cross section to correspond to the configuration of the checks, and the checks are of such size as to fit into the depression 9 in the plate 7, that is, the depression that receives "nickels." It is to be understood, however, that these checks may be of any desired size and, if necessary, checks corresponding to all of the depressions may be employed. Formed in the receptacle 45 at the lower edge thereof is a segmental slot 46 and disposed at a point diametrically opposite the slot 46 is a recess 47. The slot 46 communicates with an opening 48 formed in the adjacent portion of the plate 17, and suspended from the plate 17 is an electromagnet 49 controlling a pivoted armature 50. One end of the armature 50 works within a slot 51 formed in the plate 17 contiguous to the slot 47 in the lower edge of the receptacle 45 and such end of the armature is adapted to pass through the slot 47 and engage the check at the base of the stack of checks in the receptacle. It will be seen that when the magnet 49 is energized, the armature 50 will be swung quickly and in the movement of the armature the end thereof within the slot 51 will enter the bottom of the receptacle 45 by way of the slot 47 and kick the bottom check through the slot 46 and the opening 48, thereby permitting such check to fall into the bottom of the casing 1 through the slot 36 and into the recovery opening 37. Depending from the plate 17 is a bracket arm 52 and secured to the lower end of the bracket arm 52 is one extremity of a retractile spring 53, such spring having the remaining end thereof secured to the armature 51 and acting to restore such armature to normal position when the magnet 49 is deenergized. 54 designates an adjusting screw carried by the bracket 52 whereby the throw of the armature 50 may be varied.

In the modified construction shown in Fig. 7 of the drawings, we have shown the magnet 49 and armature 50 as mounted upon the upper surface of the plate 17 and the upper end of the armature 50 is connected through the agency of a link 51 with the upper end of a lever 52 pivoted between its ends upon a bracket 53 formed on the receptacle 45. Slidably mounted upon the upper surface of the plate 17 is an ejector finger 54 adapted to enter the lower end of the receptacle 45 by way of the slot 47 in such receptacle. The lower end of the lever 52 is passed through an opening in the ejector finger 54 and through a slot in the plate 17 and secured to the bottom end of such lever is one end of a restoring spring 55, such spring having the remaining end thereof fastened to the adjacent side wall of the casing. The receptacle end of the ejector finger 54 is concaved, as clearly shown in Fig. 7, so that when the finger is in normal position, the concaved edge thereof will form, in effect, a continuation of the wall of the check receptacle. When the magnet 49, in the modified form of our invention, is energized, the armature 50 is swung and in the movement of the armature 50 a pull is exerted through the link 51 upon the upper end of the lever 52, thereby swinging the latter about its fulcrum and sliding the ejector finger 54 against the action of the spring 55. The movement of the lever 52, under the action of the magnet 49 and armature 50, is very rapid so that the check at the base of the stack in the receptacle 45 is kicked out of the bottom of the receptacle through the slot 46 and delivered to the party at the machine, as previously described. Upon the deënergization of the magnet 49, the spring 55 reacts and restores the parts to normal position so that the above operation may be repeated when the magnet 49 is again energized.

In the preferred form of our invention, the switch board B comprises a substantially rectangular casing 56 having the front wall thereof equipped with jacks 57 corresponding in number with the rooms of the hotel, apartment house, steamship or other structure. Formed in the front wall of the casing 56 adjacent to the upper edge thereof and spaced apart transversely of such wall are sight openings 58, 59 and 60 covered by means of glass or other transparent material. Pivoted upon the front wall of the casing adjacent to the lower edge and spaced apart across such wall are cam lever switches 61, 62 and 63. It is conceivable, however, that other types of switches may be employed. Secured to the inner surfaces of the opposite side walls of the casing 56 adjacent to the upper end of such casing are horizontally alining bearings 64 and mounted within the bearings 64 are the respective ends of a horizontal rod 65 arranged immediately behind the openings 58, 59 and 60. Loosely mounted upon the rod 65 behind the openings 58, 59 and 60 respectively are counterwheels 66 held against longitudinal movement along the rod by any suitable means. Surrounding the rod 65 at one side of each counterwheel is a spring 67 having the inner convolution secured to the rod and the outer end fastened to the adjacent

wheel. Secured to each wheel 66 at the side opposite from the spring is a ratchet wheel 68 and coacting with the teeth of the ratchet wheel 68 is a dog 69 carried by a vertical rod 70. The upper end of the rod 70 is connected with the upper end wall of the casing through the medium of a retractile spring 71. Disposed below the respective wheels 67 and appropriately fastened to the back wall of the casing are electromagnets 72, 73 and 74 controlling swinging armatures 75 respectively and the armatures 75 are connected with the lower extremities of the respective rods 70, as at 76. Secured to the back wall of the casing adjacent to the ratchet wheels 68, respectively, are bracket arms 77 and pivoted upon each bracket arm 77 is a spring pressed pawl 78 engaging the teeth of the adjacent ratchet wheel 68 and acting to hold such wheel and the corresponding counterwheel against retrograde movement. The pivoted ends of the pawls 78 are formed with depending fingers 79 and these fingers 79 are under the control of cam shoes 80, respectively, formed on a rod 81 slidably mounted in alining bearings carried by the opposite side walls of the casing and having one end projecting through the corresponding side wall of the casing and equipped with a knob 82 whereby the rod may be moved longitudinally. A restoring spring 83 has one end secured to the rod and the other end fastened to the adjacent side wall of the casing. When it is desired to relieve the ratchet wheels 68 of the influence of the respective holding pawls 78, the rod 81 is actuated under the action of the knob 82 and against the action of the spring 83 and in this movement of the rod, the cam shoes 80 thereon engage the respective fingers 79 and swing the pawls 78 out of engagement with the ratchet wheels. When the knob 82 is released, the spring 83 reacts and restores the rod 81 to normal position. The counterwheel 67 behind the opening 58 in the casing 56 has the periphery thereof marked off and numbered to register the "nickels", while the counterwheels behind the openings 59 and 60 have the peripheries thereof marked off and numbered to register "dimes" and "quarters", respectively, the series of numbers on each wheel beginning with the value of the particular coin and adding the corresponding value as the highest end of the series is approached, as clearly illustrated in Fig. 10. 84 designates a plug adapted to coöperate with the jacks 57 and connected to one side of a suitable source of electrical energy.

Leading from the switches 61, 62 and 63 are common conductors 85, 86 and 87 respectively extending throughout the structure equipped with our improved coin collecting apparatus. Each conductor is connected to one side of the particular switch, as illustrated in Fig. 6, while the remaining sides of the switches are connected with a common conductor 88 terminally secured to the side of the source of energy opposite from that side connected with the plug 84. The electromagnets 39, 42 and 49 of each instrument each have one terminal connected with a common conductor 89 terminally connected with the corresponding jack 57 on the switch board, and the remaining terminals of the electromagnets 39, 42 and 49 are connected respectively with the conductors 85, 86 and 87. Each magnet 72, 73 and 74 has one terminal secured to a common conductor 90 terminally connected with the side of the source of energy opposite from that side connected with the plug 84 and the remaining terminals of the magnets 72, 73 and 74 are connected with conductors 91, 92 and 93 respectively, that extend throughout the structure equipped with our improved coin collecting apparatus. The fingers 30 of each instrument are tapped onto the respective conductors 91, 92 and 93, while the remaining fingers 26 of each instrument are connected by way of a common conductor 94 with the conductor 89 of that particular instrument. The fingers 30 connected with the magnets 72, 73 and 74 by way of the wires 91, 92 and 93 are controlled by coins deposited in the "nickel", "dime" and "quarter" slots, respectively.

When the occupant of a room in the hotel or other structure desires to make a purchase from the hotel, such occupant calls the central operator on the telephone and the operator, after receiving the order, directs the occupant to deposit a coin in the corresponding depression in the plate 7, and inserts the plug 84 in the particular jack 57. When the depositor places the coin in the particular depression, for instance, the depression 8, the coin drops through the corresponding slots 11 and 16 and engages the upper surface of the plate 17 at the particular slot 19. The depositor now swings the receiver 13 under the action of the knob 22 and in the movement of the receiver the upper edge of the coin therein rides beneath the adjacent contact finger 26 and elevates the latter into engagement with the contact 30 thereby closing the circuit to the particular signal magnet on the switch board, the magnet 74 in this instance. As the magnet 74 is energized the armature 75 is actuated to pull the rod 70 and in the movement of the rod 70 the dog 69 thereon rotates the ratchet wheel 68 and the counterwheel 66 behind the opening 60. This movement of the counterwheel brings the number thereon, indicative of the denomination of the coin in the receiver, into the sight opening, thereby notifying the operator of the denomination of the coin in the receiver. Current for the magnet 74 flows from one

side of the source of energy, through the plug and jack connection, the conductor 89, the closed contacts 26 and 30, the conductor 93, magnet 74, and back to the other side of the source by way of the conductor 90. This closing of the circuit of the particular signal controlling magnet takes place in the initial swinging movement of the receiver 13, and in the continued movement of such receiver the coin is relieved of the influence of the side walls of the particular slot 19 and enters the enlarged end portion 20 of such slot and falls through the enlarged end portion of the slot into the holding chute 33 and is brought to rest at the bottom of the holding chute by the shelf 2. Should the operator find that the order cannot be filled, such operator actuates the switch 61 thereby closing the circuit to the magnet 39 and when the magnet is energized the holding chute is swung to throw the coin into the back part of the casing 1 so that such coin may drop into the recovery pan 37 whence it may be removed by the depositor. On the other hand, should the order be filled, the operator closes the switch 62 and so energizes the magnet 42, thereby swinging the holding chute to throw the coin into the drawer 3. When the switch 61 is closed current flows from one side of the source of energy, through the plug and jack connection, the conductor 89, the winding of the magnet 39, the conductor 85 and back to the other side of the source of energy by way of the conductor 88, while when the switch 62 is closed, current flows from one side of the source of energy, through the plug and jack connection, the conductor 89, the winding of the magnet 42, the conductor 86, the switch, and then back to the other side of the source of energy by way of the conductor 88.

Should the occupant of the room discover that he, or she as the case may be, is minus the necessary change he so advises the central operator and the central operator then closes the switch 63, thereby energizing the electromagnet 49, current flowing from one side of the source of energy, through the plug and jack connection, conductor 89, the winding of the magnet 49, the conductor 87, the closed switch 63, and back to the other side of the source of energy by way of the conductor 88. When the magnet 49 is energized, a check is thrown out of the check receptacle 45, as previously described, and dropped into the pan 37. The depositor removes the check from the pan 37 and deposits the same in the corresponding depression, and then actuates the receiver, as just described.

Should the price of the order necessitate the placing of coins in all of the slots of the receiver, it will be seen that all of the counterwheels will be actuated to advise the operator of the denominations of the various coins, so that such coins may be collected, or returned to the purchaser. In the event of two coins occupying any of the slots 16 in the receiver, such coins will be disposed one above the other in edge to edge contact and when the receiver is first swung, the bottom coin will actuate the contacts to close the circuit to the particular signal magnet, while the upper coin will be held in the slot by the horizontal contact finger 26 and when the receiver is restored to normal position the remaining coin in the slot will drop to the bottom thereof so as to again close the circuit of the signal magnet when the receiver is swung a second time.

In the operation of the counterwheels, the holding pawls 78 and the ratchet wheels 68 maintain the counterwheels in actuated position irrespective of the deënergization of the respective magnets 72, 73 and 74, and when the operator desires to restore all of the counterwheels to normal position, such operator slides the rod 81 against the action of the spring 83 by means of the knob 82, thereby swinging the holding pawls 78 out of engagement with the respective ratchet wheel so that the springs 67 may react to restore the counterwheels to normal position, the springs being placed under tension in the operation of the counterwheels in the operation of the magnets.

In the modified form of our invention illustrated in Figs. 8, 9, 12 and 13, we have shown a combined coin collecting and change making apparatus and a system of control therefor. In this form of our invention, the shelf 2, the holding chute 33 and the operating magnets for such chute, and the check receptacle 45 and its magnet 49 are eliminated; and secured to the under surface of the plate 17 and depending therefrom is a casting 95 having the upper surface inclined downwardly and forwardly as at 96 and disposed contiguous to the enlarged portions 20 of the slots 19. Formed in the casting 95 are vertically disposed inclined bores 97 corresponding in number with the coin slots in the receiver 13 and disposed in such positions as to communicate with the respective enlarged end portions 20 of the slots 19 in the plate 17. These bores 97 are of various diameters in order to accommodate the respective coins, and formed on the bottom of the casting 95 is a shelf 98 underlying the bores 97 and spaced apart from the lower ends of such bores a distance equal to the thickness of a coin. Formed on the rear end of the casting 95 and projecting downwardly therefrom is a deflecting lip 99 having the lower face thereof rounded and forming a continuation of the bottom wall of the casting. Secured to the shelf 98 and depending therefrom are electromagnets

100, 101 and 102 disposed below the bores 97 communicating with the slots in the receiver that receive the "nickels", "dimes" and "quarters", respectively. Secured to the lower end of each magnet 100, 101 and 102 is a base block 103 and pivoted to one edge of the base block 103 is the lower end of a vertical armature lever 104. The upper ends of the armature levers 104 work within slots 105 formed in the shelf 98 adjacent to the forward edge thereof and disposed contiguous to the respective bores 97. Depending from the casting 95 and disposed in advance of the armature levers 104, respectively, are bracket arms 106 and secured to the lower end of each bracket arm is a retractile spring 107 such spring being connected to the adjacent armature lever to hold the latter in normal or inactive position. Threaded through each bracket arm is a set screw 108 disposed in the path of movement of the adjacent armature lever and capable of regulating the throw of such lever. The lower end of the inclined upper surface of the casting 95 communicates with the money drawer 3, while the rear end of the space between the bottom of the casting 95 and the shelf 98 communicates with the slot 36 and the recovery pan 37.

In the operation of the machine illustrated in the modified form of the invention, the coins that pass through the enlarged portions of the slots 19 slide down the inclined upper surface 96 of the casting 95 and fall into the respective bores 97 and when the bores are filled with coins, the remaining coins deposited in the machine and passed through the enlarged portions of the slots in the plate 17 slide down the inclined upper surface 96 of the casting 95 and fall into the money drawer 3, thereby collecting the remaining incoming coins. When any one of the electromagnets 100, 101 and 102 is operated, the particular armature lever under the control of such magnet is swung against the action of the spring 107 and in this swinging of the armature lever the upper end thereof kicks the coin at the base of the stack in the particular bore off of the shelf 98 and the deflecting lip 99 directs such coin into the rear portion of the casing through the slot 96 and into the recovery pan 37. Should all of the electromagnets 100, 101 and 102 be energized simultaneously, all of the armature levers will be swung and a coin from each bore thrown into the recovery pan, as is readily apparent.

In the modified form of the invention just referred to, the switch board embodies switches 109, 110 and 111, and a master switch 112. These switches are preferably of the cam lever type, although any other construction of switch may be used. Extending through the structure equipped with our coin collecting and change making apparatus are conductors 113, 114 and 115 having the switch board terminals thereof connected with the switches 109, 110 and 111 respectively, at one side of such switches. The remaining sides of the switches 109, 110 and 111 are connected by way of a common conductor 116 with one side of a suitable source of electrical energy and connected in series in the conductor 116 is the master switch 112. The remaining portion of the switch board is identical in construction to the switch board hereinbefore described and shown in the preferred embodiment of the invention, and the plug 84 is connected with the side of the source of energy opposite from the common conductor 116. The electromagnets 100, 101 and 102 of each instrument each has one side connected with a common conductor 117 terminally connected with the particular jack 57 on the switch board and the remaining terminals of said electromagnets are tapped onto the conductors 113, 114 and 115, respectively. The contact fingers under the control of the coins and the signal magnets at the switch board are connected in circuit as previously described.

In practice, should the occupant of the room in the hotel or other structure give an order over the telephone to the central operator, such operator directs the occupant of the room to deposit the proper coin in the particular depression in the plate 7 and when the coin is released by the depositor, such coin falls through the alining slots 11 and 16 and is brought to rest at the bottom of the slot 16 by the side walls of the slot 19 in the plate 17. The depositor now swings the coin receiver and in the initial movement of the coin receiver the indicating mechanism of the switch board is operated, as hereinbefore described, so that the operator will be advised as to the denomination of the coin deposited in the machine. In the continued movement of the coin receiver, the coin drops through the enlarged portion 20 of the particular slot 19 and slides down the inclined surface 96 of the casting 95 into the money drawer, assuming that the bore adapted to receive the coin is filled. Of course, if the bore is not filled to its capacity, the coin will fall into such bore and be retained therein. Should the central operator find it necessary to return the value of the deposited coin, in coins, less the price of the order, such operator manipulates the switches on the switch board controlling the change making magnets to return the coins of proper denominations to the depositor. To illustrate; let us assume that the occupant of the room deposited a twenty-five cent piece in the proper slot and is to receive fifteen cents in change. After the central operator has been advised that the coin of proper denomination has been

deposited in the machine, such operator closes the switches 109 and 110, thereby closing the secondary breaks in the circuits of the magnets 100 and 101. Succeeding the closing of the switches 109 and 110, the central operator closes the master switch 112 and so energizes the magnets 100 and 101 whereby the armature levers will throw the proper coins off of the shelf 98 and into the recovery pan 37. By means of the master switch 112, it will be seen that the operator is automatically checked so that such operator will be assured of the closing of the proper switches before closing the master switch, thereby preventing the return of too many coins to the depositor.

In Fig. 14 of the drawings, we have shown a modified form of operating mechanism for the coin receiver and in this instance such mechanism comprises a plunger shank 118 slidably mounted in an opening in the front wall of the casing and having the inner end thereof connected with the upper extremity of a lever 119 pivoted between its ends as at 120 upon a vertical standard 121 uprising from the plate 17. The lower end of the lever 119 is connected by means of a link 122 with the coin receiver. Thus, it will be seen that when the plunger shank 118 is depressed, the lever 119 will be swung about its fulcrum 120 and so swing the coin receiver against the action of the restoring spring 23.

In Fig. 15 is shown still another modified form of operating mechanism for the coin receiver. In this case, the mechanism embodies an electromagnet 123 secured to the plate 17 behind the coin receiver and controlling a pivoted armature 124 connected by means of a link 125 with the outer end of an arm 126 secured to the adjacent side of the coin receiver at the upper edge of such receiver. This magnet 123 is connected in circuit with a controlling switch 127 on the switch board and with the source of energy of the apparatus. When the switch 127 is closed the magnet 123 is energized and upon the energization of the magnet the armature 124 pulls upon the link 125 and the arm 126 with the effect to swing the coin receiver.

In Fig. 16, we have shown a modified form of coin collecting and change making machine and in this form of instrument the coin holders swing and the ejectors remain stationary, in contradistinction to the stationary coin holder and movable ejector, represented by the casting 95 and armature lever 104, respectively, shown in Figs. 8 and 9 of the drawings. This change making mechanism illustrated in Fig. 16 comprises a tubular receptacle 128 located below each enlarged end portion 20 of the slots in the plate 17 and pivotally supported by means of trunnions formed on the receptacle at diametrically opposite points adjacent to the upper end thereof. This receptacle is inclined relatively to the vertical as shown in Fig. 16 and the upper end thereof is formed with an upwardly extending lip 129 normally resting against the bottom of the plate 17 at the juncture of the adjacent slot 19 and the enlarged portion of such slot. This lip 129 is inclined and forms a bearing surface for the coin so that the latter may fall into the receptacle when relieved of the influence of the narrow portion of the slot 19. The lower end of the receptacle 128 is closed and formed in the side wall thereof immediately above the bottom end wall are diametrically opposed segmental slots 130. Disposed in advance of the receptacle 128 are guide plates 131, 132 spaced apart to form a guideway for the coins and the lower end of the way communicates with the coin drawer, while the upper end of the inner plate 32 is disposed contiguous to the top edge of the receptacle 128 so that any coins sliding over the upper end of the receptacle, incident to the receptacle being filled to its capacity, will be directed into the way between the plates 131 and 132 and into the money drawer. Pivoted to the lower end of the plate 132 is an ejector finger 133 resting upon the bottom of the receptacle 128 and adapted to work within the adjacent slot 130. The remaining slot 130 opens into the rear portion of the casing 1. Secured to one pintle on each receptacle 28 within the casing 1 and uprising therefrom is an arm 134 and connected to the upper end of the arm 134 is one end of a link 135 having the remaining end thereof pivotally connected with an armature 136 capable of swinging movement and disposed within the influence of the pole of an electromagnet 137. The magnets 137 in the casing correspond with the magnets 100, 101 and 102 respectively shown in Figs. 8 and 9. When the magnet 137 is energized, the link 135 pulls the arm 134 and so swings the receptacle 128 about its pivot point and in the swinging movement of the receptacle the ejector finger 133 enters the bottom thereof through one of the slots 130 and forces the coin at the base of the stack in the receptacle through the other slot 130 so that such coin will drop into the recovery pan within reach of the depositor. 138 indicates a deflector finger of some suitable construction disposed adjacent to the discharge slot 130 in the receptacle in the path of movement of the coins and acting to deflect the latter through the slot in the bottom wall of the casing and into the recovery pan. In the present instance, the upper end of the deflector finger 138 is secured to a pin and the pin constitutes a stop and is disposed in the path of movement of the receptacle 128, and

secured to the inner surface of the plate 132 is a restoring spring 139 acting to restore the receptacle 128 to normal position upon the deënergization of the magnet 137 and when the receptacle is swung under the action of the spring the lower end portion thereof engages the securing pin of the finger 138 and such pin serves to limit the movement of the receptacle under the action of the spring and bring such receptacle to a stop at the proper position.

In Figs. 17 to 21 inclusive of the drawings, we have shown a modified form of signaling mechanism or indicating mechanism and when using the mechanism shown in this form of the invention, the magnets 72, 73 and 74, the counterwheels controlled by such magnets, and the pairs of contacts 26 and 30 corresponding with such magnets are eliminated. In this instance, we have shown the modified form of signaling mechanism as employed in the combined coin collecting and change making machine. In this embodiment of the invention, each machine comprises a substantially rectangular casing 140 having one side wall thereof formed with a drawer opening at the lower end of such wall and adjacent to the back wall and slidably mounted within the casing and capable of removal therefrom by way of the drawer opening is a money drawer 141, while formed in the bottom wall of the casing in front of the money drawer is a slot 142 communicating with a recovery pan 143 secured to the bottom of the casing and provided with an entrance opening 144 contiguous to the front wall of the casing. Formed in the top wall of the casing 140 adjacent to the back wall is a longitudinally extending slot and disposed within the slot and suitably secured therein is a plate 145 identical in construction to the plate 7 hereinbefore described. In the present instance, the rear wall of the casing 140 is removable and disposed within the casing and capable of removal therefrom is a hanger frame 146 embodying side walls spaced apart in parallelism and having the outer faces thereof disposed in face to face contact with the respective side walls of the casing and secured to such side walls. Secured to the confronting faces of the side walls of the hanger frame adjacent to the upper end of the casing are horizontally alining bearings 147 and secured within such bearings is a horizontal rod 148 disposed below the lower edge of the plate 145 and slightly rearwardly of such plate, as shown in Fig. 17. Pivoted upon the rod 148 are coin receivers 149, 150 and 151 disposed side by side and formed with vertical slots alining with the slots 11 respectively in the plate 145. Formed in the front and back walls of each coin receiver are alining openings while formed on the lower edges of the front and back walls of each receiver are depending segmental lugs that ride within the narrow portions of grooves 152 formed in a plate 153 carried by the side walls of the hanger frame 146 and disposed in a horizontal plane. This plate 153 is disposed adjacent to the back wall of the casing and the slots 152 project toward the front end edge of such plate and the front ends of the slots are relatively wide as at 154, while secured to the bottom of the plate 153 and projecting downwardly and forwardly therefrom is a deflector strip 155 disposed beneath the relatively wide portions 154 of the slots 152. Supported by the side walls of the hanger frame 146 and disposed in a plane below and slightly in advance of the plate 153 is a casting 156 and formed in the casting 156 below the enlarged forward end portion of each slot 152 is a bore 157 disposed at an angle relatively to the vertical. The top wall of the casting 156 is inclined downwardly from the forward edge toward the rear edge thereof, while formed on the bottom of the casting is a shelf 158 underlying the bores 157 and spaced apart from the lower ends of such bores a distance substantially equal to the thickness of a coin. Secured to the plate 158 and depending therefrom below each bore 157 is an electromagnet 159 and pivoted to the base of the magnet 159 is the lower end of a vertical armature lever 160 having the upper end working within a slot 161 formed in the shelf 158 adjacent to the rear edge of such shelf and in proximity to the lower end of the bore 157. The forward end of the shelf 158 is downturned as at 162, while formed on the bottom of the casting 156 at the forward end edge thereof is a downwardly projecting curved deflector plate 163 struck on an arc corresponding with that of the curved end 162 of the shelf and coacting with such end of the shelf to direct the coins thrown off of the shelf through the opening 142 and into the pan 143. Pivotally connected with the upper end edge of each coin receiver 149, 150 and 151 and projecting forwardly from such receiver is a rod 164 and connected with the forward end of the rod 164 is a button 165 slidably mounted within an opening in the front wall of the casing. Secured to the back side of the front wall of the casing and surrounding the rod 164 is a thimble 166 and disposed within the thimble 166 is an expansion spring 167 having one end abutting the rear end of the thimble and the remaining extremity abutting the rear end of the button, such spring acting to hold the coin receiver in normal or vertical position. Secured to the side walls of the hanger 146 in advance of the coin receivers is a cross bar 168 and formed

on the upper edge of the cross bar 168 and projecting toward the coin receivers respectively are horizontal supporting arms 169 having the rear ends thereof pointed as at 170 and disposed within the openings in the front walls of the respective coin receivers. Depending from each arm 169 and suitably secured thereto are horizontally alining bearings 171 and slidably mounted within the bearings 171 is a rod 172 having the rear end thereof terminating flush with the corresponding end of the supporting arm and the forward end slidably mounted within an opening in the cross bar 168. A coiled expansion spring 173 surrounds the forward end portion of each rod 172 and one end of the spring engages a collar 174 on the rod while the remaining end abuts the cross bar 168, the spring acting to hold the rod 172 in normal position. 175 designates a rod having the ends thereof suitably fastened within bearings carried by the confronting faces of the side walls of the hanger frame. This rod is disposed in a horizontal plane immediately below the rods 172 and extends at right angles to the rods 172. Surrounding the rod 175 below each rod 172 and frictionally engaging the rod 175 is a ratchet wheel 176 and cooperating with the ratchet wheel 176 is a dog 177 carried by the rod 172. Disposed concentrically of the rod 175 and secured to the ratchet wheel 176 thereon below the rod 172 carried by the arm 169 corresponding with the coin receiver 151 is a disk 178 of greater diameter than the ratchet wheel and secured to one face of the disk 178 adjacent to the peripheral edge thereof and projecting outwardly therefrom are pins 179 spaced apart about the disk. In the present instance, the pins 179 are adapted to engage the lower end of a lever 180 pivoted between its ends to the edge of the adjacent arm 169 and having the upper end thereof equipped with a tapper 181 adapted to strike a gong 182 supported upon the arms 169, 169 corresponding to the coin receivers 150, 151. The pins 179 on the disk 178 are equal in number to twice the number of teeth on the ratchet wheel and each tooth on the ratchet wheel corresponds to two pins on the disk so that each time that the disk is rotated under the action of the ratchet wheel and the pawl 177 on the rod 172, the disk will be rotated through an angle to move two pins 179 into and out of engagement with the lower end of the lever 180 thereby swinging the tapper 181 to strike the gong 182 twice. The ratchet wheels 176 below the remaining arms 169 are equipped with outwardly projecting pins 183 respectively. The pins 183 are secured to each ratchet wheel adjacent to the periphery thereof and spaced apart about such ratchet wheel and disposed within the influence of the pins is the lower end of a lever 184 pivoted between its ends upon the edge of the adjacent supporting arm 169. The upper end of each lever 184 is equipped with a tapper 185 and the tapper 185 connected to the lever carried by the arm 169 corresponding to the receiver 150 is adapted to strike the gong 182, while the remaining tapper is adapted to strike a spiral gong 186 carried by the remaining arm 169. The pins 183 on each ratchet wheel 176 correspond in number to the teeth on the ratchet wheel and are spaced apart distances equal to the length of the teeth on the ratchet wheel, so that each time that the ratchet wheel is rotated under the action of the dog 177 on the particular rod 172, the lower end of the corresponding lever 184 will be engaged by the adjacent pin and the tapper actuated to strike the particular gong once.

Suitably secured to the front side of the casting 156, or formed integral therewith, and projecting outwardly therefrom are bracket arms 187 disposed below the respective ratchet wheels 176, and formed in the deflector plate 163 are slots 188 disposed below the bracket arms 187 respectively and in alinement with such arms, the slots 188 being disposed in proximity to the lower ends of the respective bores 157. A vertical lever 189 is pivoted between its ends upon each bracket arm 187 and the lower ends of the levers 189 projects through the slots 188 respectively, while the upper extremities of the levers are disposed in proximity to the lower ends of the respective levers 180 and 184. The upper ends of the levers 189 cooperating with the tapper levers 184 are adapted to actuate such tapper levers in the swinging of said levers 189 so that the tappers will strike the respective gongs, while the upper extremity of the lever 189 corresponding to the tapper lever 180 is forked or bifurcated as at 190, as shown clearly in Fig. 21 of the drawings, and the limbs of the forked end are equipped with laterally projecting pins 191, respectively, adapted to alternately engage and release the lower end of the tapper lever 180 in the swinging of said lever 189 whereby said tapper lever 180 will be operated to cause the tapper thereon to strike the particular gong twice. In the present instance, each lever 189 is formed of a lower section 192 and an upper section 193 and these sections are secured to each other by means of a flat leaf spring 194 fastened to the rear edges of the sections 192 and 193 and forming a pivot joint between the sections whereby the upper section may swing in one direction, relatively to the lower section.

The rods 172 are capable of vertical movement in the respective bearings 171, for a purpose which will presently appear, and

secured to the under surfaces of the respective supporting arms 169 are leaf springs 195 bearing against the upper portions of the respective rods 172 and acting to hold such rods normally against vertical movement and to restore the rods to normal position succeeding such movement thereof.

In the use of the combined coin collecting and change making machine shown in Figs. 17 to 21 inclusive, of the drawing, the occupant of the room calls the central operator on the telephone and after placing the order is directed, by the central operator, to deposit a coin of the proper denomination in the corresponding depression in the plate 145. Such coin drops through the alining slots 11 and 16 and is brought to rest at the bottom of the slot 16 in the particular coin receiver, for instance, the receiver 149. After the coin has been thus stopped by the plate 153, the depositor pushes the button 165 connected with the particular coin receiver 149 and so swings such coin receiver. In the initial movement of the coin receiver under the action of the push button 165 and the rod 164, the upper portion of the coin in the receiver rides below the pointed end of the adjacent arms 169, while the coin engages the adjacent end of the rod 172 and so forces the latter forwardly against the action of the spring 173 and in this movement of the rod 172 under the action of the coin, the dog 177 idles over the adjacent tooth of the ratchet wheel 176, the rod moving upwardly against the action of the spring 195 to permit the dog thereon to pass the adjacent tooth of the ratchet wheel. In the continued movement of the coin receiver, the coin drops through the enlarged end portion 154 of the slot 152 and is directed, by the deflector strip 155, into the corresponding bore 157 in the casting 156, or, in the event of the bore in the casting being filled to its capacity, into the money drawer 141. As the rod 172 is relieved of the influence of the coin that falls through the enlarged end portion 154 of the slot, such rod is moved rearwardly under the action of the spring 173 and in the rearward movement of the rod the dog thereon engages the adjacent tooth of the ratchet wheel with the effect to rotate the latter and so cause the pin thereon in engagement with the particular tapper lever to swing such lever whereby the tapper will strike the gong, the spiral gong being sounded in this instance. When the gong is struck the sound waves are transmitted over the telephone line to the central operator in charge of the switch board and owing to the tone of the sound, the operator is advised of the particular denomination of the coin deposited in the machine, it, of course, being understood that the machine is located in proximity to the telephone instrument.

In the above illustration we have assumed that a twenty-five cent piece was deposited in the machine, and should the cost of the order amount to only ten cents, it will be necessary for the operator to return the remaining fifteen cents to the depositor. To do this the operator in charge of the switch board causes the magnets 159 below the bores 157 containing the "nickels" and "dimes", respectively, to be energized thereby swinging the armature levers 160 with the effect to kick the coins, at the bases of the stacks in said bores off of the shelf 158 and as the coins leave the shelf 158 such coins strike the lower ends of the adjacent levers 189 and subsequently fall through the slot 142 into the recovery pan 143, whence they may be removed by the depositor. As the "nickel" strikes the particular lever 189, the upper end of such lever actuates the corresponding tapper lever 184 to cause the tapper 185 to strike the companion gong once, while the upper forked ends 190 of the lever 189 struck by the "dime" carries the pins 191, alternately, into and out of engagement with the lower end of the tapper 180, thereby causing the tapper of such lever to strike the gong twice. Thus the operator will be notified that the proper coins have been returned to the depositor.

It will be seen that the change making magnets are under the complete control of the central operator and may be energized either simultaneously, or one after the other, thereby enabling the operator to return any desired number of coins to the depositor.

While we have herein shown and described certain preferred forms of our invention, by way of illustration, we wish it to be understood that the invention is not limited to the precise details of construction herein described and delineated, as modification and variation may be made within the scope of the claims and without departing from the spirit of the invention.

It will be noted that when two coins are deposited in any one coin receiver, such coins will lie one above the other in edge to edge contact and in the swinging of the coin receiver the lower portion of the top coin rides upon the upper surface of the adjacent end of the supporting arm 169 so that the top coin is held in the receiver while the lower coin is discharged therefrom. Upon the release of the push button 165 the spring 167 re-acts and restores the coin receiver to normal position and as the coin receiver is restored to normal position the coin therein is relieved of the influence of the arm 169 and falls to the lower end of the coin slot.

When the particular change making magnet 159 is energized by the central operator closing the controlling switch of such magnet, and the bell fails to sound, incident

to the particular coin holding bore being empty, the operator is advised as to the condition of such bore so that steps may be taken to replenish the bore with the proper coins.

What is claimed is:—

1. In money collecting apparatus, a receiver adapted to receive coins of various denominations, variable signal mechanism under the control of the coins in said receiver and adapted to be actuated from said coins in accordance with the denominations thereof to indicate the presence of the coin in the receiver, means for releasing the coins from said receiver, coin receptacles adapted to receive the coins of the respective denominations from the receiver, and means for delivering coins from said receptacles respectively independently of one another.

2. In money collecting apparatus, a receiver adapted to receive coins of different values and capable of movements to release the coins therefrom, means for moving said receiver to release the lowermost coins, means for holding the remaining coins in the receiver in the movement thereof, registering devices corresponding to the respective values of the coins, electro-responsive devices controlling said registering devices respectively, and means operable from the lowermost coins in the movement of said receiver to effect the energization of said electro-responsive devices.

3. In money collecting apparatus, a receiver adapted to receive coins of various denominations and capable of swinging movement, variable signal mechanism under the control of the coins in said receiver and adapted to be actuated from such coins in accordance with the denominations thereof to indicate the presence of the coins in the receiver, means for swinging said receiver to release the coins therefrom, coin receptacles adapted to receive the coins of the respective denominations from said receiver, and means for delivering coins from said receptacles, respectively, independently of one another.

4. In money collecting apparatus, a receiver capable of swinging movement and adapted to receive coins of different denominations and hold the coins of each denomination, one above the other, and in edge to edge contact, means for moving said receiver after the coins have been deposited therein to discharge the lowermost coins therefrom, means for holding the remaining coins in said receiver during the discharge of the lower coins, and variable signal mechanism under the control of said lower coins and operable therefrom in accordance with the denomination thereof to indicate the presence of the coins in the receiver.

5. In money collecting apparatus, a receiver adapted to receive coins of various denominations, variable signal mechanism under the control of the coins in said receiver and adapted to be actuated from said coins in accordance with the denominations thereof to indicate the presence of the coins in the receiver, means for releasing the coins in said receiver, coin receptacles adapted to receive the coins of the respective denominations and hold the coins one upon the other in stack formation, and means for delivering the lowermost coins from said receptacles respectively independently of one another.

6. In money collecting apparatus, a receiver adapted to receive coins of various denominations, variable signal mechanism under the control of the coins in said receiver and adapted to be actuated from said coins in accordance with the denominations thereof to indicate the presence of the coins in the receiver, coin receptacles adapted to receive the coins of the respective denominations from the receiver and hold the coins one upon the other in stack formation, and electro-responsive means for delivering the lowermost coins from said receptacles respectively independently of one another.

7. In money collecting apparatus, a receiver adapted to receive coins of different values, registering devices under the control of the coins in said receiver and adapted to be actuated from said coins in accordance with the values thereof, means operable from the coins in said receiver to actuate said registering devices whereby the total represented by the coins of each value may be ascertained, means for releasing coins from said receiver, coin receptacles adapted to receive the coins of different values from said receiver, and means for delivering said coins from said receptacles independently of one another.

8. In money collecting apparatus, a receiver adapted to receive coins of different values and capable of movement to release the coins therefrom, means for moving said receiver to release the coins, registering devices under the control of the coins in said receiver and adapted to be actuated from said coins in accordance with the values thereof, electro-responsive devices controlling said registering devices respectively, means operable from the coins in the movement of said receiver to effect the energization of said electro-responsive devices to actuate said registering devices in accordance with the values of the coins, and means for resetting said registering devices.

9. In money collecting apparatus, a receiver adapted to receive coins of different values and capable of movement to release the coins therefrom, means for moving said receiver to release the coins, registering devices under the control of the coins in said receiver and adapted to be actuated from

said coins in accordance with the values thereof, electro-responsive devices controlling said registering devices respectively, means operable from the coins in the movement of said receiver to effect the energization of said electro-responsive devices to actuate said registering devices in accordance with the values of the coins, means holding said registering devices in actuated position, and means for operating said last named means to release said registerng devices so that the latter may be reset.

10. In money collecting apparatus, a receiver adapted to receive coins of different values and hold the coins of each value one above the other and in edge to edge contact, means for moving said receiver after the coins have been deposited therein to discharge the lowermost coins therefrom, means for holding the remaining coins in said receiver during the discharge of the lower coins, variable signal mechanisms under the control of the lower coins and operable therefrom in accordance with the values thereof to indicate the presence of the coins in the receiver, and means for operating said signal mechanisms in a step by step manner as the coins are released from the receiver.

In testimony whereof we affix our signatures in presence of two witnesses.

HARRY A. DREW.
GEORGE M. MAZZA.

Witnesses as to signature of Harry A. Drew:

BENNETT S. JONES,
JOHN J. MCCARTHY.

Witnesses as to signature of George M. Mazza:

JOHN GLUECK, Jr.,
HENRY A. GIEGOLD.