

March 17, 1959

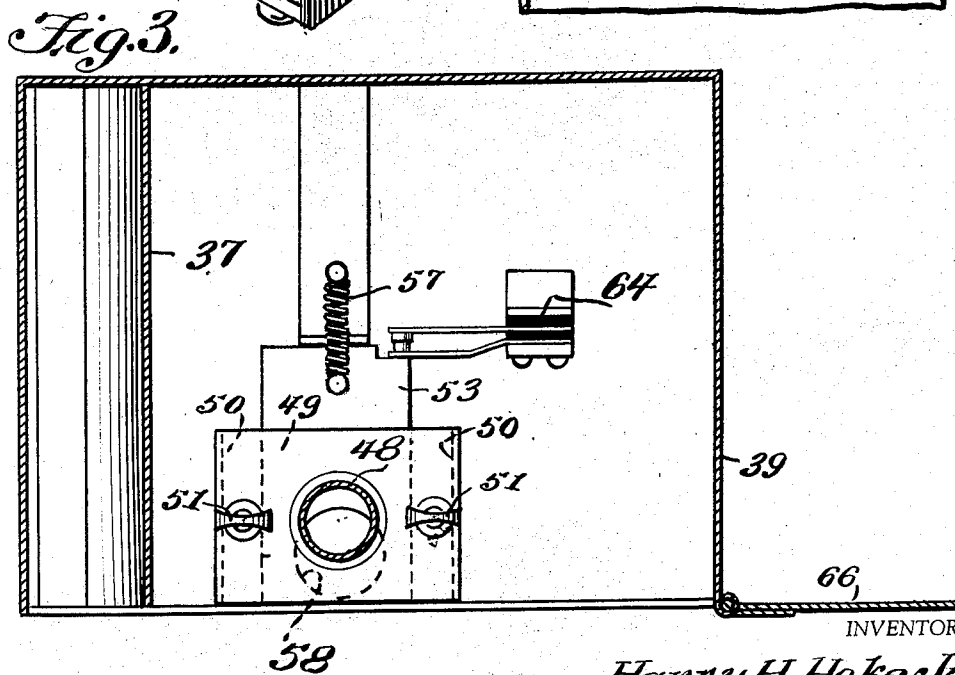
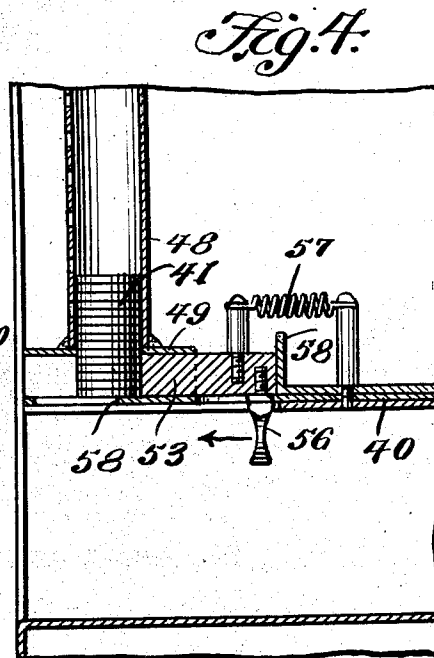
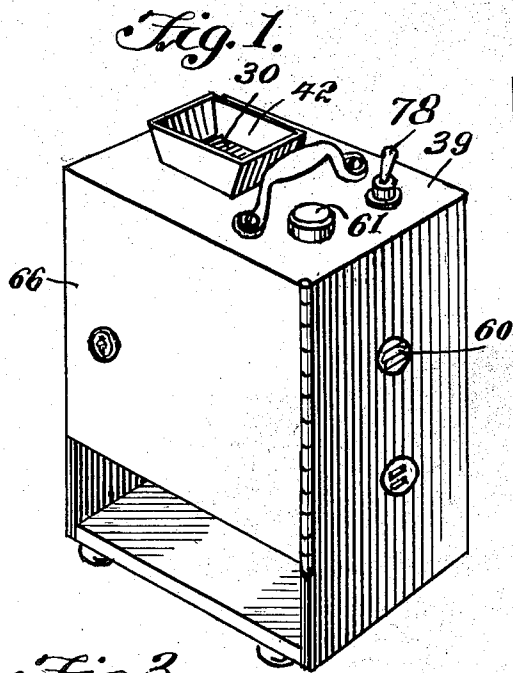
H. H. HOKE, JR

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COIN DISPENSERS

Filed Oct. 13, 1955

6 Sheets-Sheet 1



INVENTOR

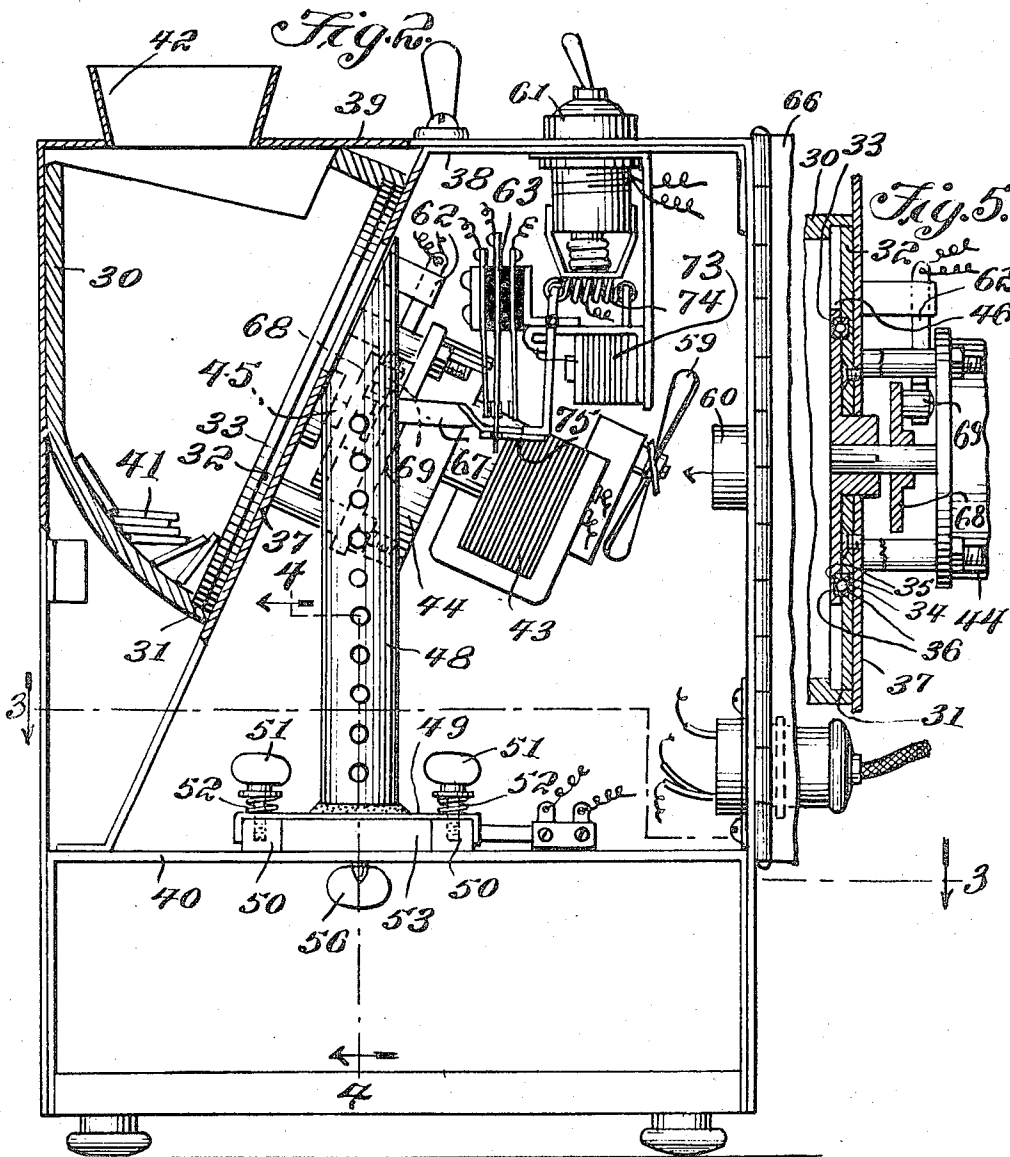
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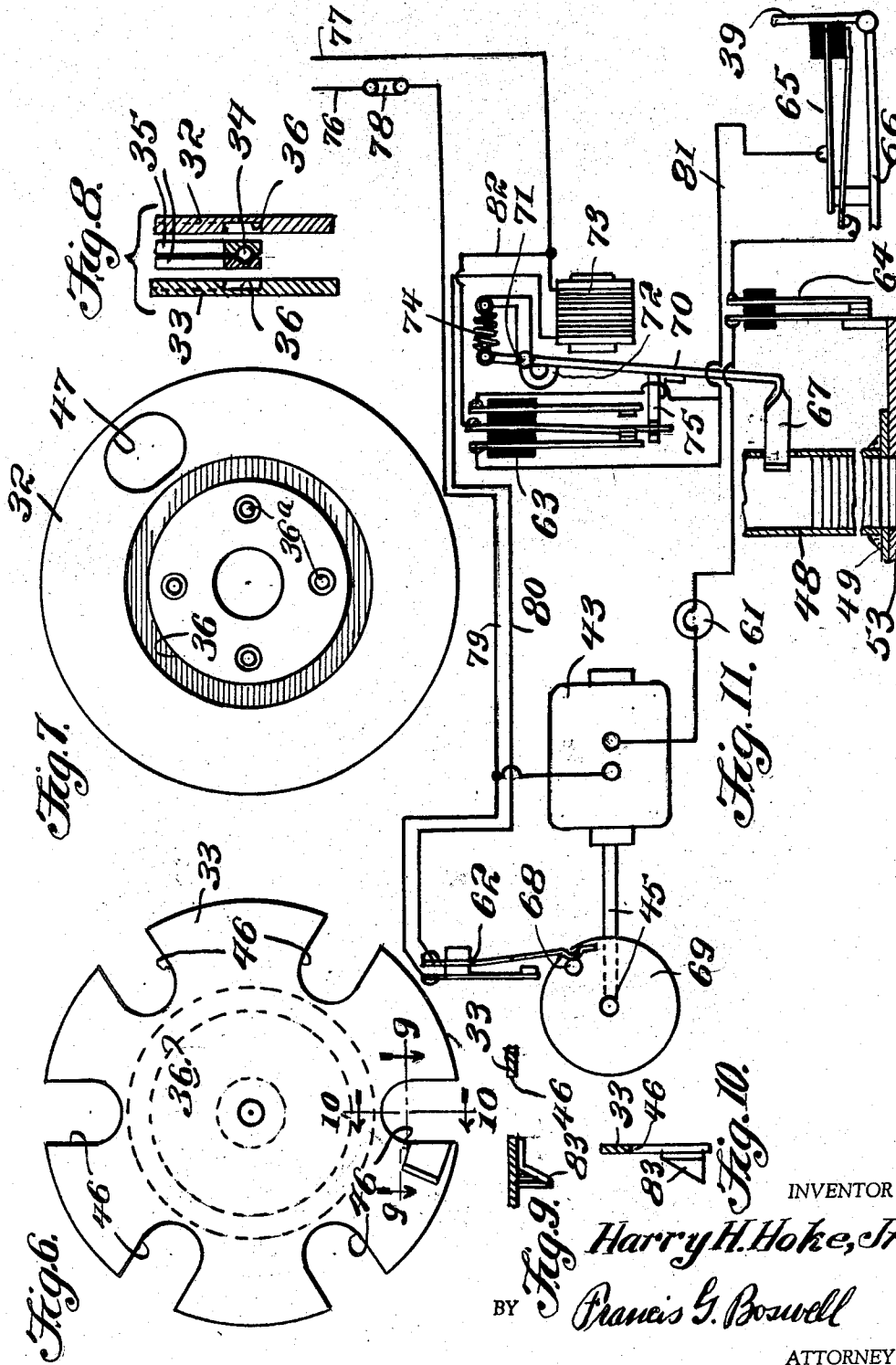
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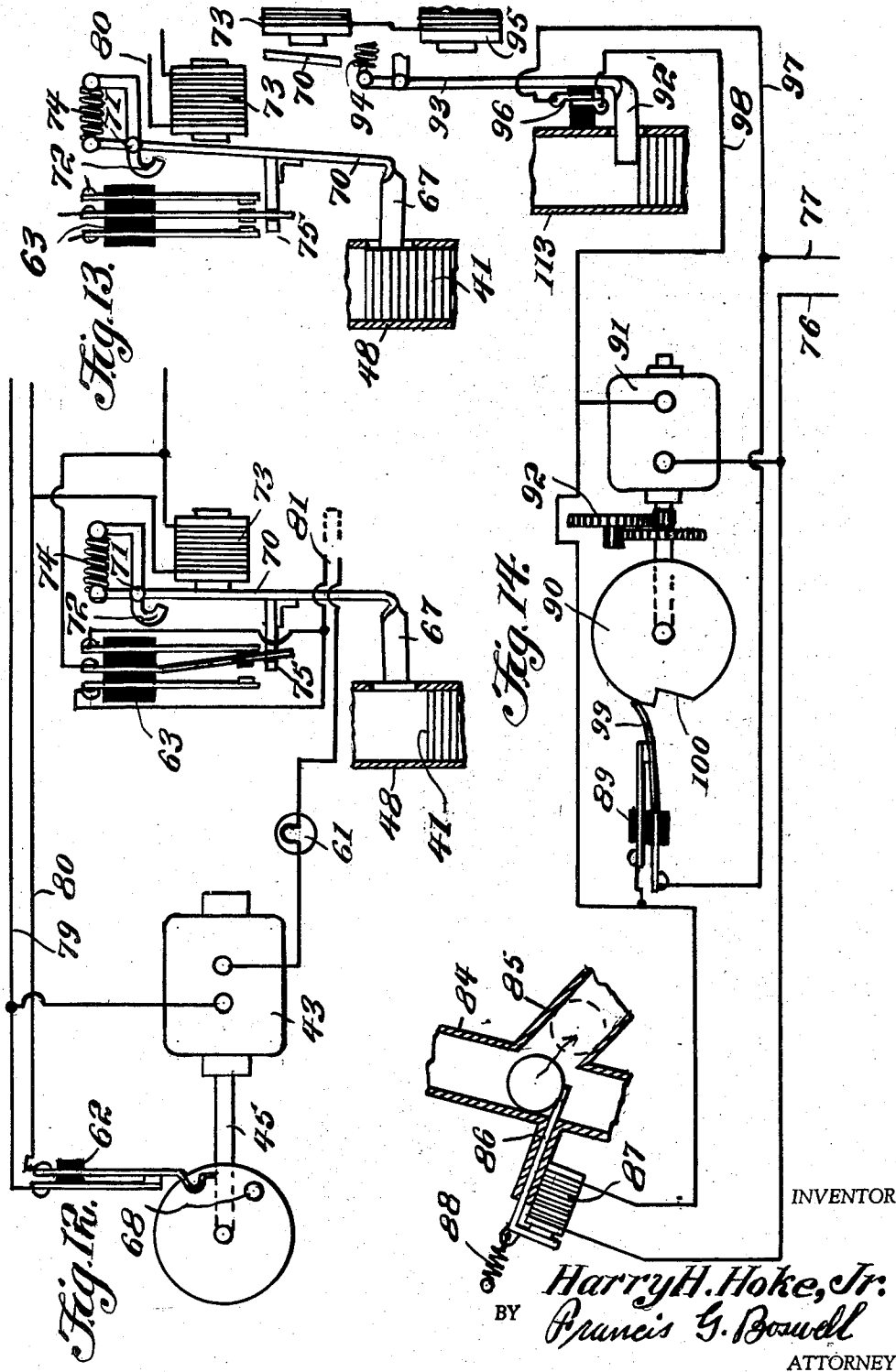
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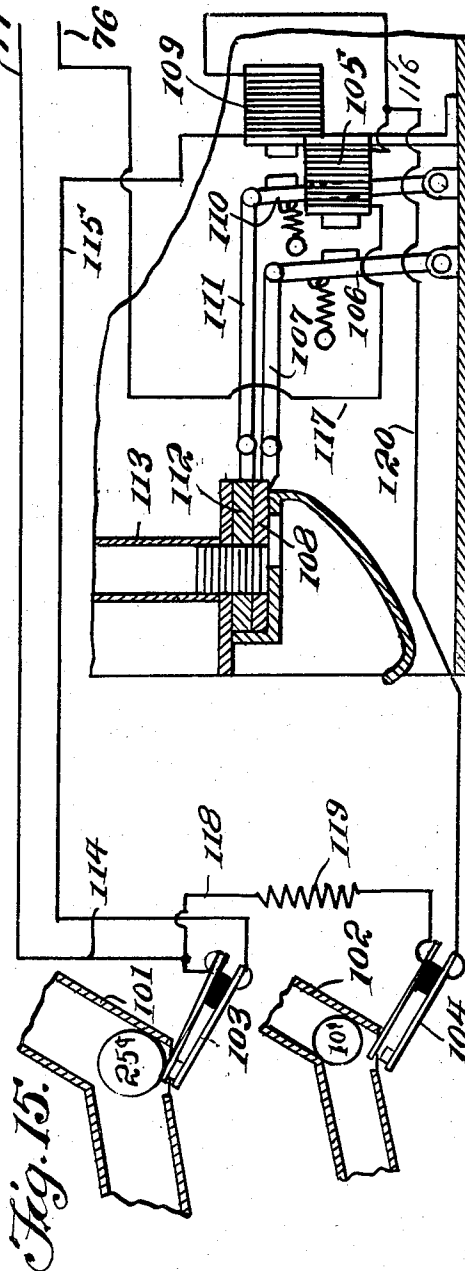
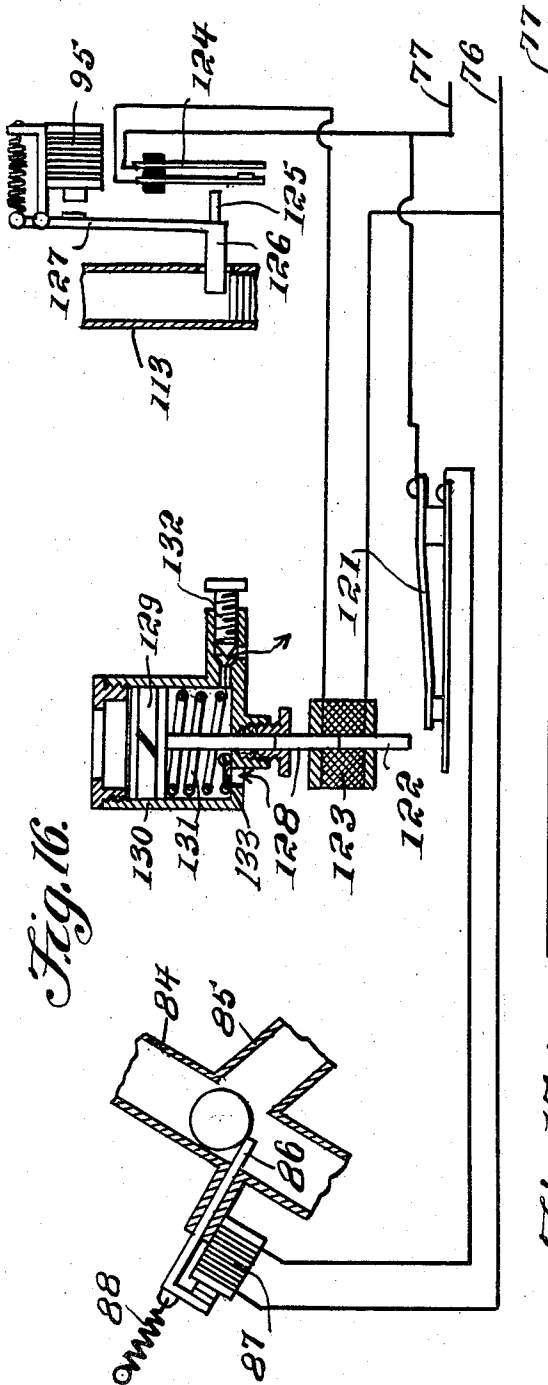
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H. H. HOKE, JR
COIN DISPENSERS

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6 Sheets-Sheet 5



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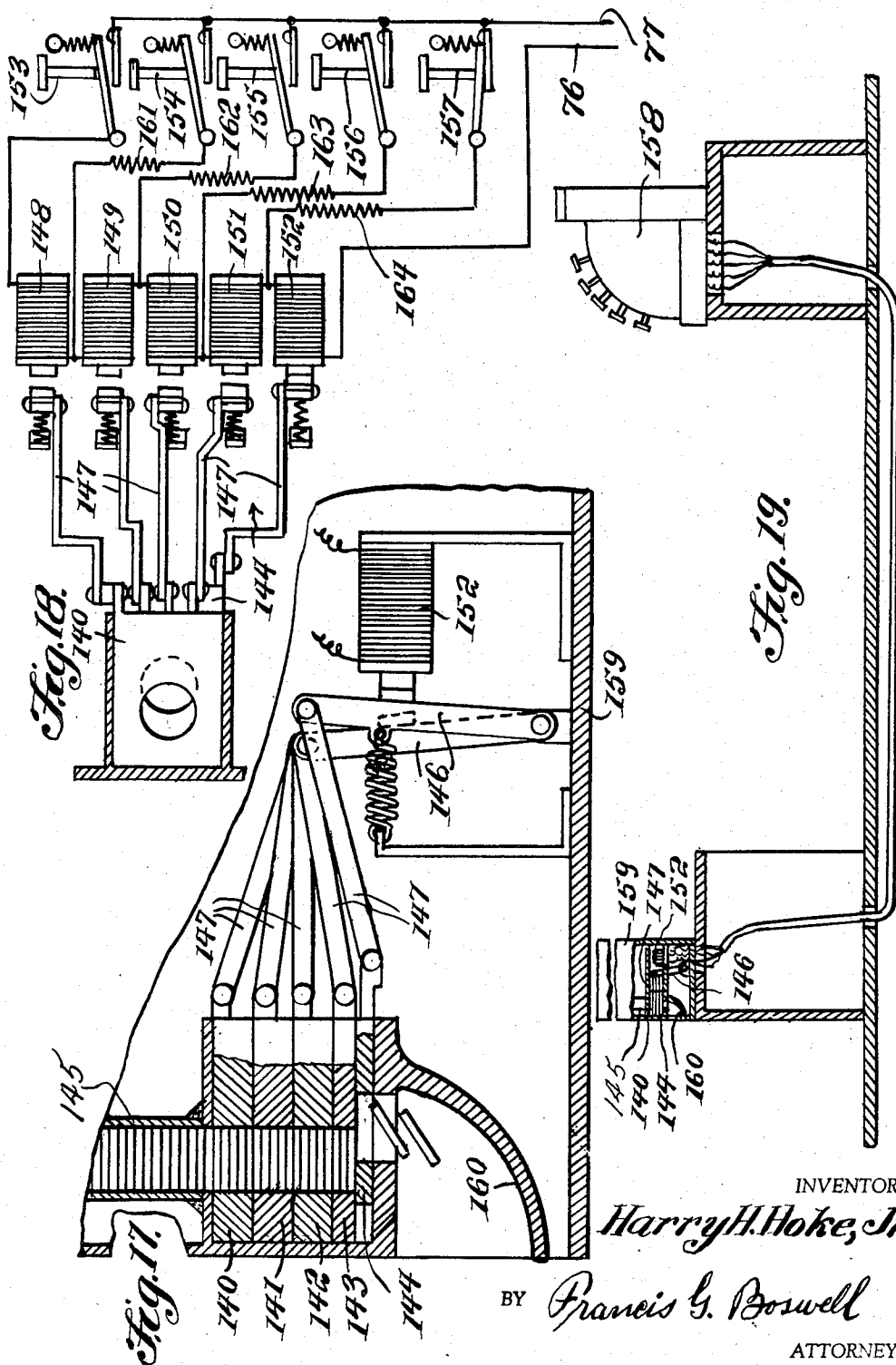
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COIN DISPENSERS

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COIN DISPENSERS

Harry H. Hoke, Jr., Capitol Heights, Md.

Application October 13, 1955, Serial No. 540,283

7 Claims. (Cl. 133—4)

The object of the invention is to provide a coin dispenser for coins of uniform denomination, such as are used in games of different kinds for which a charge is made and for musical instruments, such as juke boxes and the like; to provide a device of the kind indicated in which coins in bulk are placed in a hopper and discharged from the latter into a dispensing tube from which they are ejected in specified amounts, either by manual operation of the ejecting means or by automatic operation of the latter; and generally to provide a coin dispenser for coins of uniform denomination which, for the functions performed, is comparatively simple in operation, unlikely to become impaired under constant operation and hard usage, and which is susceptible of comparatively cheap manufacture and sale.

With this object in view, the invention consists in a construction and combination of parts of which preferred embodiments are illustrated in the accompanying drawings, wherein:

Figure 1 is a perspective view of the invention in its simplest form;

Figure 2 is a view partly in elevation and partly in section of the structure of Figure 1, with the access door open;

Figure 3 is a sectional view on the plane indicated by the line 3—3 of Figure 2;

Figure 4 is a sectional view on the plane indicated by the line 4—4 of Figure 2;

Figure 5 is a detail sectional view of the gathering plate and its associated parts, taken diametrically of said plate;

Figure 6 is a plan view of the gathering plate;

Figure 7 is a plan view of the stationary sub-plate on which the gathering plate is mounted;

Figure 8 is a detail sectional view illustrating the ball-bearing mounting of the gathering plate;

Figure 9 is a detail sectional view of the plane indicated by the line 9—9 of Figure 6;

Figure 10 is a detail sectional view on the plane indicated by the line 10—10 of Figure 6;

Figure 11 is a diagrammatical view illustrating the feeler finger and the means of control of the latter, the positions of the parts being indicated, as when the feeler finger may invade the dispensing tube;

Figure 12 is a view similar to Figure 11 but showing the parts when the feeler finger is in the retracted position;

Figure 13 is a view of part of the structure of Figure 12 but showing the position of the parts when the feeler finger is precluded from entering the dispensing tube by reason of the presence of coins therein to a height above the plane of the feeler finger;

Figure 14 is a diagrammatical view illustrating one form of the time control feature in the automatic form of the invention;

Figure 15 is a diagrammatical view illustrating the operation of the discharge slides in the automatic form of the invention;

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Figure 16 is a diagrammatical view of a second or modified form of time control;

Figure 17 is a detail sectional view of the multiple discharge slide form of the invention;

Figure 18 is a top plane view of the structure of Figure 17; and

Figure 19 is a sectional view illustrating the remote control for that form of the invention illustrated in Figures 17 and 18.

In the simplest form of the invention, as where it is charged in bulk with coins of like denomination and the latter gathered into a dispensing tube from which they are withdrawn by manual operation of the discharge slide, they are first received in a hopper consisting generally of a form of a casting 30 open on one side and undercut at the edge thereof as indicated in 31, this open side being closed by sub-plate 32 having resting thereon the gathering plate 33 between which and the plate 32 there is an anti-friction bearing consisting of a series of balls 34 received in complementary grooves in race rings 35 which are set in slots 36 formed in the plates 32 and 33 respectively.

The plate 32 constitutes the supporting means for the hopper and is carried by legs 37 and 38 which are secured to the top wall of case 39, as well as to an intermediate partition 40 in the latter. The plate 33 is supported in an inclined position, so that the coins 41 delivered to the hopper through the chute 42 will gravitate to the bottom of the hopper and toward the gathering plate which, when the machine is in operation, is rotated by a motor 43 supported on the back of the plate 32 with the gear reduction 44 interposed between it and the output shaft 45 which is connected to the gathering plate at the center thereof.

The periphery of the gathering plate enters the undercut portion 31 of the casting 30, so that there may be no chance of it being raised at the periphery in its operation of gathering the coins from the hopper.

The coin seats in the gathering plate are in the form of U-shaped slots 46 cut radially into the plate and uniformly spaced there around. The slots have a breadth equal to the diameter of the coins to be gathered and, when the peripheral edge of the plate is under the undercut portion 31 of the casting, having a radial dimension equal to the diameter of the coin for which the gathering plate is designed.

The gathering plate is rotated at a comparatively low speed by the motor, due to the gear reduction between it and the plate, and the coins are caused to drop into the seats, as the latter pass through the bottom of the hopper, and are successively carried up, sliding over the upper face of the plate 32 until they reach the opening 47 through which they drop into the dispensing tube 48 which is behind the plate 32 but is not integrally connected with the latter, being supported on a base plate 49 resting upon blocks 50 which are welded to the partition plate 40.

The base plate 49 overhangs the blocks 50 and is secured to the latter by set-screws 51, between shoulders on which and the base plate, comparatively heavy compression springs 52 are mounted. The purpose of this arrangement is to allow the dispensing tube to yield, or rather to allow the base to yield, should a distorted coin increase the height of the stack of coins to be discharged by an amount that would bind the discharge slide 53 in its dispensing operation. The discharge slide is mounted between the blocks 50 which jointly constitute a guide for the slide, and the partition 40 is formed with a slot to provide a clearance space for the stem of the finger-piece 56. The discharge slide is held, by means of a tension spring 57, against an abutment 58, when the coin receiving opening in the slide is in axial coincidence with

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the dispensing tube 48. The slide is of a thickness to hold a specified number of coins, as for example, five nickels, and as the tube is charged, the coins first fill the slide. To withdraw a specified number of coins, the slide is moved forward until the coin opening in the latter registers with the discharge opening 58 in the partition 40. Then release of the slide results in its return by the spring 57 to its normal position when it again is filled with coins from the coin chute.

The motor 43 is provided with a cooling fan 59 and the case 39 has, in the side wall opposite the fan, an air vent 60 by which cool air may be drawn into the case, so as to keep the motor cool.

The casing at the top has a pilot light 61 which is energized when the motor is operating, the light being connected in series with the motor which is also connected in series with a periodically opening switch 62, a single-pole double-throw switch 63, and a single-pole discharge slide operated switch 64. There is also a single-pole switch 65 which is in the series and is normally held in open position but is shifted to closed position when the case door 66 is closed.

The double-throw switch 63 controls the operation of the motor 43 in either of the two circuit-closing positions of which it is susceptible. The switch 62 controls the operation of the feeler finger 67 which in turn controls the operation of the intermediate member of the double-pole switch. The switch 62 is normally held in closed position but is opened by a trip lug 68 carried by the disc 69 which is on the output shaft 45 of the motor 43. Thus with every revolution of the output shaft and therefore every revolution of the gathering plate, the switch 62 is opened.

The feeler finger 67 is the lower turned end of a lever 70 pivotally mounted at 71 and moves between the stop 72 and the pole of the magnet 73. It is yieldingly held against the stop 72 by means of a tension spring 74. The lever 70 carries an arm 75 through which the center blade of the switch 63 projects and by which the center blade is moved into contact with either of the two outside blades which are cross connected, so that in either position of the center blade, the motor will be energized and be de-energized only when the center blade assumes a position intermediate between the two outer blades, as will be the case when the feeler finger 67 bears upon the coins contained in the tube 48 which, of course, will be only at the time when the stack of coins will reach the level of the feeler finger.

As before stated, the switches 65, 64, 63, are in series with the light 61 and motor 43 across the lines 76—77, while the switch 62 is in series with the magnet 73 across the said line. Thus when the switch 62 is closed, as it will be except when opened by the operation of the trip 68, the lever 70 will be attracted by the magnet 73, thus bringing the intermediate blade of the switch 63 into engagement with the right-hand contact of said switch and current will pass over the line conductor 76, through the main control switch 78, the conductor 79, the switch 62, the conductor 80, the magnet 73, and the conductor 77. At the same time current passing over the conductor 79 will pass through the motor 43, the light 61, the switch 64, the switch 65 (the door being closed), the conductor 81, the right-hand contact of the switch 63, the center blade 64, the conductor 82, to the conductor 77.

In every revolution of the gathering plate, the switch 62 will be opened, thus de-energizing the magnet 73 and allowing the spring 74 to force the feeler finger 77 into the coin tube and, as it enters the tube as shown in Figure 11, will engage the center blade of the switch 63 with the left-hand blade, thus keeping the motor in operation. But the feeler finger will be in the gathering tube only for the instant that the switch 62 is open, for as soon as the trip member 68 passes the switch, the magnet 73 will be energized and the feeler finger will be withdrawn. But with each revolution of the disc, the feeler finger will

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be released and will enter the coin tube and be withdrawn therefrom, until the stack of coins deposited in the tube reaches a height that will result in the feeler finger engaging on the periphery of the coins, when the center blade of the switch 63 will be held in an intermediate position, as illustrated in Figure 13, when the motor circuit will be broken. And this will occur at a time when the switch 62 is open, as the feeler finger cannot be released otherwise. Thus the motor will remain inoperative until the coins in the coin tube drop below the plane of the feeler finger, which, when it enters the coin tube, will again set the apparatus into motion for the tube filling operation.

In order to preclude the arising of a condition in which the coins would not readily enter the coin seats in the gathering plate, the latter carries a periodic agitator in the form of lug 83 which, on each revolution of the gathering plate, stirs the accumulation of coins at the bottom of the hopper thus tending to prevent their lying flat and thus in a position where they are not likely to enter the seats in the gathering plate.

The switch 64 being in series with the motor 43 and being opened by the operation of the discharge slide, will thus stop the operation of the motor and the gathering plate for each interval that the discharge slide is being operated. This so that coins will not be deposited in the dispensing tube at the instant others are being withdrawn therefrom. Obviously the switch 65 is a safety switch to preclude operation of the apparatus when the door 66 is open.

The apparatus as heretofore described, relates only to the manual operation of the ejecting slide and to that form of the invention in which the money to be changed is delivered to the attendant of the machine and he, in turn, withdraws the specified number of coins from the device. But the invention is susceptible of automatic operation by substituting for an attendant, a coin operated apparatus designed to use the conventional coin chute which divides coins of different denominations, directing them to supplementary chutes designed for the particular coin. But in the automatic form of the invention, this coin chute above referred to is preceded with a chute 84 formed with a lateral return chute 85 which, at its point of communication with the chute 84, receives coins diverted into it by the stop-slide 86. The purpose of this stop-slide is to return the coin (a quarter, a half dollar, or dime) if the coin chute be empty or of insufficient contents to pay out the amount of the coin deposited in the chute 84. This stop-slide 86, except when it is attracted by magnet 87, is pulled out of obstructing relation to chute 84 by the spring 88, but is pulled into obstructing relation with said chute when the magnet 87 is energized, as it will be when the switch 89 is closed, a condition accomplished by the disc 90 driven by the motor 91 through a gear reduction 92. The disc 90 is designed to make one revolution while the coin tube is being filled and the operation of the motor is controlled by a lower feeler finger 92' carried by lever 93 similar to lever 70 and pulled into tube invading position by the spring 94 and withdrawn from such position by the magnet 95 which is connected in parallel with the magnet 73. Thus when the magnet 73 is energized, so will be the magnet 95 and the feeler finger 93 will be withdrawn from tube-invading position and open the switch 96, of which the movable contact is carried by the lever 93 and engaged with or disengaged from the stationary contact. The switch is in series with the motor 91 across the lines 76—77, so that when the finger 92 is in the tube-invading position, the motor will be operated by current flowing over the conductor 97, the switch 96, the conductor 98, the motor 91, back to the conductor 76. But the switch 89 is in parallel with the switch 96 and is held in closed position until the protruding portion of the blade 99 drops into the clearance space 100 in the periphery of the disc 90. Under such a condition, the switch 89 will be in open position

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but if the switch 96 be closed, the motor 91 will be operated, thus operating the disc 90 and thereby closing the switch 89. Thus, the switch 96 initiates operation of the motor 91 when the magnet 95 is de-energized in unison with the magnet 73 but since it is thereafter almost immediately energized, the motor will remain in operation by reason of the switch 89 having been closed. But when the feeler finger 92 is retracted by the magnet 95 and the switch 96 is thereby opened, the latter will remain open if the coins have risen to a point to prevent invasion of the dispensing tube by the feeler finger. But as the magnet 87 is connected in parallel with the motor it is energized when either the switch 89 or the switch 96 is operated to close the motor circuit which will be de-energized when the motor circuit is opened, as will be the case when both the switches 89 and 96 are open. As before explained, when the magnet 87 is de-energized, the stop slide 86 will be withdrawn and coins reaching the chute 84 may pass on through the latter to the selecting chute to be directed into the chute 101 or the chute 102, depending on the denomination of the deposited coin. If the coin be a 25-cent piece, it will, in passing through the chute 101, operate the switch 103. If it be a dime it will, in passing through the chute 102, operate the switch 104. The closing of the latter switch will result in energizing the magnet 105 which is operatively connected by means of lever 106 and link 107 with slide 108 having a thickness equal to that of two nickels. If it be the switch 103 that is closed, the magnet 105 will be energized as well as the magnet 109 which is operatively connected by means of the lever 110 and link 111 with the slide 112 having a thickness equal to that of three nickels. Both slides have coin seats which, when the slides are in normal position, register with the coin tube 113. If a quarter be dropped into the chute 101, the switch 103 will be closed and current will pass from the line 77 over conductor 114, through the switch 103, the conductor 115, the magnet 109, the conductor 116, the magnet 105, the conductor 117, and to the main line conductor 76.

Thus, both magnets 109 and 105 will be energized, and both slides 108 and 112 will be withdrawn jointly to deposit five nickels in the delivery chamber. Now suppose that a dime is dropped in the slot 102 and results in the closing of the switch 104, current will then flow from the line 77 over the conductor 114, the conductor 118, the ballast resistance 119, the switch 104, the conductor 120, the magnet 105, the conductor 117 and back to the line conductor 76. Thus only the magnet 105 will be energized and the slot 108 will be withdrawn, thus depositing two nickels in the delivery hopper. Magnets 109, 105 are connected in series across the line 76—77 and both are operated by the switch 103, while only the magnet 105 is operated by the switch 104. Accordingly the ballast resistance 119 is interposed in the conductor 118 to effect a corresponding drop across it that is effected across the magnet 109 when in circuit.

In Figure 14 there is shown one form of closing the coin intake chute while the coin tube is being filled, but there is still another form for accomplishing the same result and this is shown in Figure 16 but the chute-closing means in this latter form is identical with that shown in Figure 14, although the manner of operation is different from it. The magnet 87 is connected across the line 76—77 through a switch 121 which consists of two spring blades of which one is longer than the other. These blades are normally in contact until the longer one is separated from the other by the stem 122 which is part of the core of a solenoid 123 which is also connected across the line 76—77 but through a switch 124 which also consists of two spring blades which are normally separated but which are moved into contact by the lateral extension 125 which is on the rear of the feeler finger 126, the latter being carried by lever 127 of the same form as that shown in the other

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figures and being spring impelled toward the coin tube but pulled away from the latter when the magnet 95 is energized, as is done in the manner heretofore described with respect to the other figures. When the magnet 95 is energized, the feeler finger 126 will be withdrawn from the coin tube and the blades of the switch 124 pressed into contact. But both blades yield and as the stack of coins rises above the level of the feeler finger, so that the latter may not enter the coin tube, the blades are still held in contact, thus keeping the switch 124 closed and thereby energizing the magnet 123 by current flowing from the service line 77, through the switch, through the magnet and back to the line 76. With the switch 121 closed, current flows from the line 77 through the switch 121, through the magnet 87 and back to the line 76. The stem 122 is an extension of the core 128 of the magnet and this, of course, is magnetic material, while the extension is not. This core is the rod of a piston 129 movable in a cylinder 130 which is open at the upper end but closed at the lower end and packed where the rod or core passes through it. A compression spring 131 is within the cylinder and tends to raise the piston toward the open end, and a manual valve 132 controls a port in the lower end of the cylinder to regulate the rate at which air may be ejected therefrom when the piston is pulled down against the pressure of the spring, as is the case when the magnet 123 is energized. When the magnet is de-energized, the spring raises the piston, and an inwardly opening check valve 133 breaks the partial vacuum that would otherwise obtain in raising the piston. The check valve 132 is adjusted so as to regulate the time in which the piston is drawn down when the magnet 123 is energized and this will be a time interval long enough for the gathering plate to fill the coin tube. As long as switch 121 is closed, magnet 83 will be energized and the coin chute will be obstructed so as to return any coin placed therein but will be opened at the time the coin chute is filled, because then, the feeler finger 126 will have been withdrawn from the coin tube and will bear at intervals only on the stack of coins in the tube. But whether the feeler finger is entirely withdrawn from the coin tube or bears on the coins therein, the switch 124 will be closed so that the magnet 123 will be energized. Initially, of course, the magnet 123 will not immediately open the switch 121 but will do so after a time interval determined by the setting of the valve 132, because the dashpot which the cylinder 130 and its piston 129 constitute will permit only a gradual lowering of the piston and the extension 121 of the core 128. At the conclusion of the coin tube filling operation, the stem 122 will open the switch 121, thus breaking the circuit on the magnet 87 and allowing the chute obstructing plate 86 to be withdrawn, and any deposited coin in the coin chute will operate the coin delivery slides, as explained with reference to Figure 15.

In Figures 17—19 inclusive, there is illustrated a form of delivery in which the coins are stacked by the construction shown in Figure 1 but are delivered by one or more of several discharge slides 140—144 inclusive, clearly shown in section in Figure 17. The slides are mounted one above the other with the coin openings in registration when the slides are in normal position and in registration with the coin tube 145 which is a counterpart of the coin tube 48 illustrated in Figure 2. Each of the slides is operatively connected with an actuating magnet by means of pivotally mounted levers 146 and links 147. Since the magnets are arranged in a row horizontally disposed, certain of the links are formed with offset bends in order that they may be readily connected with their respective levers 146. The magnet 148 is the operating medium of the slide 140 while the magnets 149, 150, 151 and 152 are respectively the operating mediums for the slides 141—144 inclusive. The magnets are serially connected across the line 76—77

and are selectively energized by closing the switches 153-157 inclusive. These switches are electrically connected in between adjacent magnets, so that either the whole five, or four, or three, or two, or one magnet may be energized. But the switches are not mounted on the dispenser but on a remote instrument, such as a cash register 158 and the conductors therefrom lead to the dispenser 159 mounted on a counter where the delivery chamber 160 is available to the person to whom the coins are to be delivered. Since the magnets are connected in series, there is a drop of $\frac{1}{2}$ of the line potential over each and, where one magnet is left inactive, the potential drop that would take place over it takes place over a biasing resistance, so that there is such a resistance 161 in series with the switch 154, a still greater resistance 162 in series with the switch 155, a still further greater resistance 163 in series with the switch 156 and a still further greater resistance 164 in series with the switch 157. If a person seeks two nickels, he will deliver a dime to the attendant who will depress the switch 157, when current will flow from the line through the said switch 157, the resistance 164, the magnet 152 and back to the line. The magnet then will withdraw only the slide 144 and thus will discharge two nickels into the delivery chamber 160. If the switch 155 be depressed, it will call for the operation of the slides 144, 143, 142, current flowing from the line 77, through the switch 155, the resistance 162, magnets 150, 151 and 152, back to the line 76, the resistance 162 effecting a potential drop over it equal to that would obtain across the magnets 148 and 149 were all in circuit. The operation of the aforesaid switch will result in the withdrawal of the slides 142, 143 and 144, and the discharge into the delivery chamber 160 of ten nickels. Thus, the apparatus is susceptible of effecting a change into coins of a single denomination of coins of 10¢, 25¢, 50¢, and \$1.00, or the combination of a 50-cent piece and a 25-cent piece.

In the operation of the invention where it is of the manual form described in Figure 2, the coins are deposited in the hopper 30 of which the gathering plate 33 constitutes one inclined wall. The coins gravitate to the bottom of the hopper and, as the gathering plate rotates, it raises the coins and deposits them in the coin tube 48 from which they are withdrawn manually by operation of the coin slide 53 through the instrumentality of the finger piece 56. The motor 43 actuating the gathering plate is controlled by the switch actuated by the feeler finger 67 and is energized when the feeler finger invades the coin tube or when it is withdrawn therefrom by the magnet 73. But when the feeler finger impinges on the edges of the coins stacked in the tube, operation of the motor is cut off because of the fact that the switch 63 is then in open position. This open position of the switch is accomplished for a small time interval during each revolution of the gathering disc, when the latter effects opening of the switch 62. And if the motor be idle, its rotation is initiated by the operation of the discharge slide, when it closes the switch 64.

The invention having been described, what is claimed as new and useful is:

1. A coin dispenser comprising a coin tube, a coin hopper having a gathering plate mounted therein and provided with coin seats, a motor for rotating the gathering plate, a discharge slide below the coin tube and movable to withdraw coins from the latter, a motor control provided with a movably mounted element terminally provided with a feeler finger, the movable element being spring actuated for effecting invasion of the coin tube by the feeler finger, and motor actuated means for shifting the movable element to withdraw the feeler finger from the coin tube, the said movable element in either the withdrawn or invading positions of the feeler finger effecting closure of the motor circuit, the feeler finger when the coins in the coin tube rise to a height above

its plane impinging on the stock of coins to retain the movable members in neutral or open circuit position.

2. A coin dispenser comprising a coin receiving hopper, a gathering plate rotatively mounted in the hopper and provided with coin seats for picking up coins therefrom, a motor for rotating the gathering plate, a coin tube into which the gathering plate discharges the collected coins, a discharge slide below the coin tube to withdraw coins from the latter, a feeler finger movably mounted to invade the coin tube or be withdrawn therefrom, a switch controlling the operation of the motor and actuated by the feeler finger when the latter invades the coin tube or when it is withdrawn therefrom, and motor actuated means for effecting withdrawal of the feeler finger on every revolution of the gathering plate, the feeler finger having a switch opening position on impinging on the coin edges when the column of coins rises above the level of the feeler finger at which time the gathering plate motor is rendered inactive.

3. A coin dispenser comprising a coin hopper, a gathering plate rotatively mounted in the coin hopper and provided with coin seats for picking up individual coins, a coin tube into which the gathering plate deposits the gathered coins, means for removing the coins from the lower end of the coin tube, a motor actuating the gathering plate, a swingingly mounted feeler finger spring impelled toward the gathering tube to invade the latter, a magnet for withdrawing the feeler finger from the coin tube, a double-throw single-pole switch controlling the operation of the motor, and actuated by the feeler finger to render the motor operative when the feeler finger invades the coin tube or when it is withdrawn therefrom by the said magnet, the feeler finger when impinging on the coins of a column which has risen to a height above the plane of the feeler finger, holding the said switch in neutral position to render the motor inactive, and a motor-actuated switch controlling the circuit of said magnet.

4. A coin dispenser comprising a coin hopper, a gathering plate rotatively mounted in the coin hopper and provided with coin seats for picking up individual coins, a coin tube into which the gathering plate deposits the gathered coins, means for removing the coins from the lower end of the coin tube, a motor actuating the gathering plate, a swingingly mounted feeler finger spring impelled toward the coin tube to invade the latter, a magnet for withdrawing the feeler finger from the coin tube, a double-throw single-pole switch controlling the operation of the motor, and actuated by the feeler finger to render the motor operative when the feeler finger invades the coin tube or when it is withdrawn therefrom by the said magnet, the feeler finger when impinging on the coins of a column which has risen to a height above the plane of the feeler finger, holding the said switch in neutral position to render the motor inactive, a motor-actuated switch controlling the circuit of said magnet, a discharge slide below the coin tube to withdraw coins therefrom, and a normally closed switch in series with the said double-throw switch and moved to an open position on operation of the discharge slide.

5. A coin dispenser comprising a coin hopper, a gathering plate rotatively mounted in the coin hopper and provided with coin seats for picking up individual coins, a coin tube into which the gathering plate deposits the gathered coins, means for removing the coins from the lower end of the coin tube, a motor actuating the gathering plate, a swingingly mounted feeler finger spring impelled toward the coin tube to invade the latter, a magnet for withdrawing the feeler finger from the coin tube, a double-throw single-pole switch controlling the operation of the motor, and actuated by the feeler finger to render the motor operative when the feeler finger invades the coin tube or when it is withdrawn therefrom by the said magnet, the feeler finger when impinging on the coins of a column which has risen to a height above the

plane of the feeler finger, holding the said switch in neutral position to render the motor inactive, and a motor-actuated switch controlling the circuit of said magnet, a discharge slide below the coin tube to withdraw coins therefrom, and a normally closed switch in series with the said double-throw switch and moved to an open position on operation of the discharge slide, a case enclosing the entire apparatus and provided with a swingingly mounted door and having an open delivery chamber below the discharge slide, and a switch in series with the discharge slide switch and the double-throw switch and moved to open position when the said door is open but to closed position upon closing said door.

6. A coin dispenser comprising a coin hopper, a gathering plate rotatively mounted in the coin hopper and provided with coin seats for picking up individual coins, a coin tube into which the gathering plate deposits the gathered coins, means for removing the coins from the lower end of the coin tube, a motor actuating the gathering plate, a swingingly mounted feeler finger spring impelled toward the coin tube to invade the latter, a magnet for withdrawing the feeler finger from the coin tube, a double-throw single-pole switch controlling the operation of the motor, and actuated by the feeler finger to render the motor operative when the feeler finger invades the coin tube or when it is withdrawn therefrom by the said magnet, the feeler finger when impinging on the coins of a column which has risen to a height above the plane of the feeler finger, holding the said switch in neutral position to render the motor inactive, and a motor-actuated switch controlling the circuit on said magnet, a discharge slide below the coin tube to withdraw coins therefrom, and a normally closed switch in series with the said double-throw switch and moved to an open position on operation of the discharge slide, a case enclosing the entire apparatus and provided with a swingingly mounted door and having an open delivery chamber below the discharge slide, a switch in series with the discharge

slide switch and the double-throw switch and moved to open position when the said door is open but to closed position upon closing said door, and a pilot light mounted in top of the casing and in series with said switches and motor for illumination when the latter is in operation.

7. A coin dispenser comprising a coin tube, a coin hopper having a gathering plate mounted therein and provided with coin seats, a motor for rotating the gathering plate, a discharge slide below the coin tube and movable to withdraw coins from the latter, a motor control provided with a movably mounted element terminally provided with a feeler finger, the movable element being spring actuated for effecting invasion of the coin tube by the feeler finger, and motor actuated means for shifting the movable element to withdraw the feeler finger from the coin tube, the said movable element in either the withdrawn or invading positions of the feeler finger effecting closure of the motor circuit, the feeler finger when the coins in the coin tube rise to a height above its plane impinging on the stack of coins to retain the movable members in neutral or open circuit position, the discharge slide being operatively connected with the motor to render the latter inoperative when such slide is withdrawing coins from the coin tube.

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