C. McDERMOTT.

CHANGE MAKING MACHINE.

APPLICATION FILED MAY 18, 1915.

1,195,829.

Patented Aug. 22, 1916.

4 SHEETS—SHEET 1.

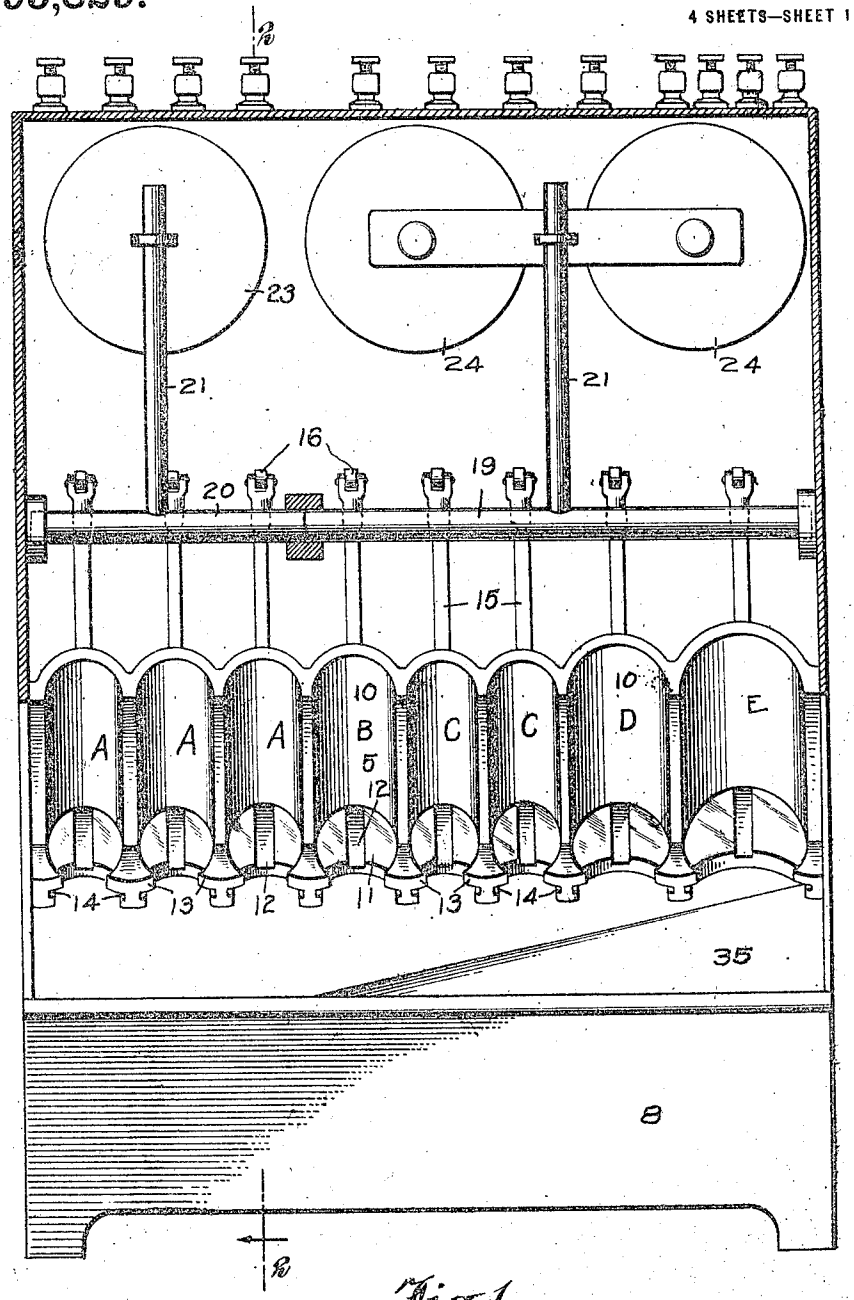


Fig. 1.

WITNESSES:

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4 SHEETS—SHEET 2.

Fig. 6.

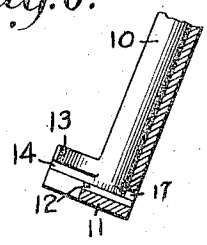
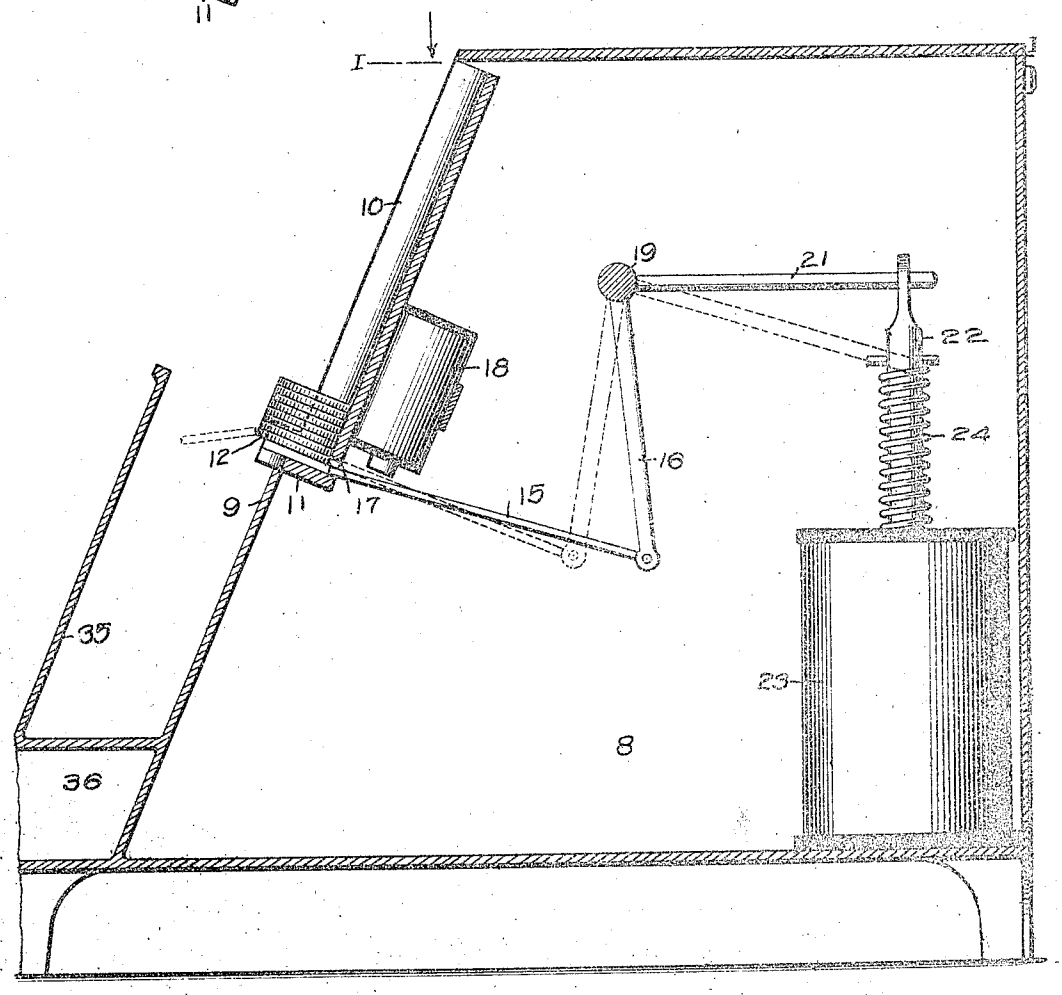


Fig. 2.



WITNESSES:

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4 SHEETS—SHEET 3.

Fig. 3.

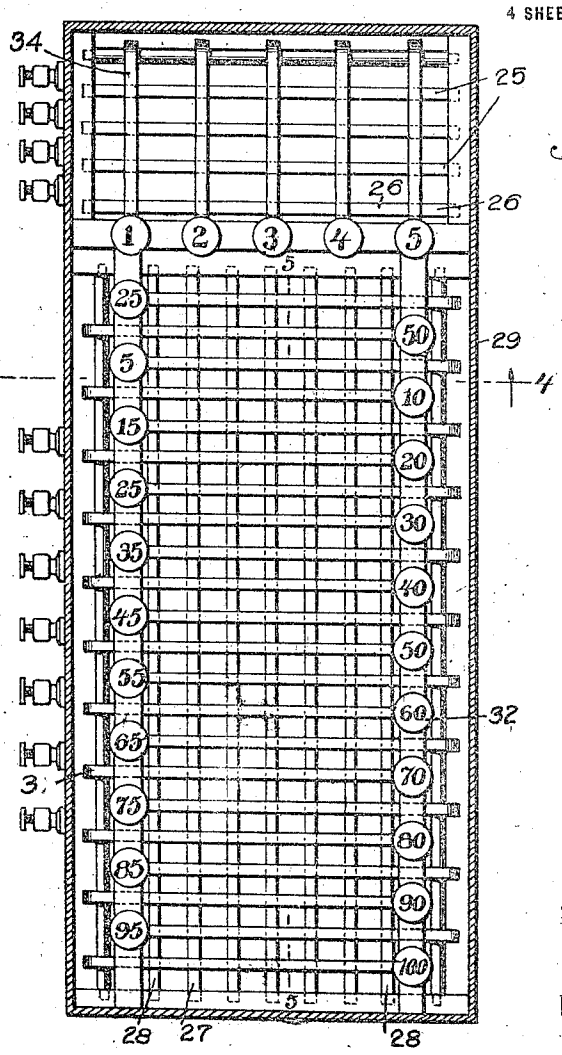


Fig. 5.

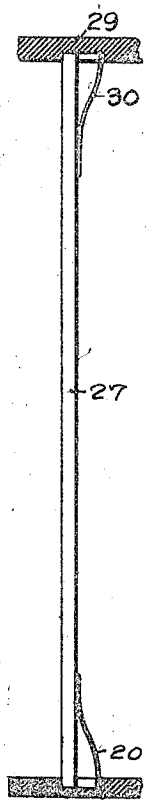
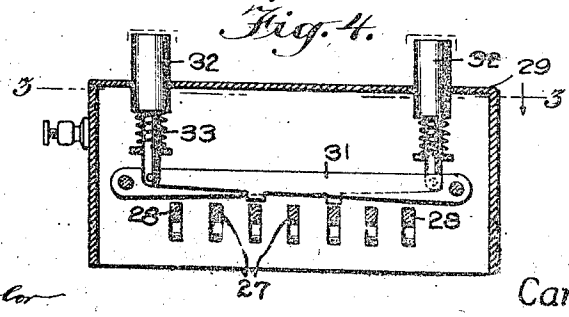


Fig. 4.



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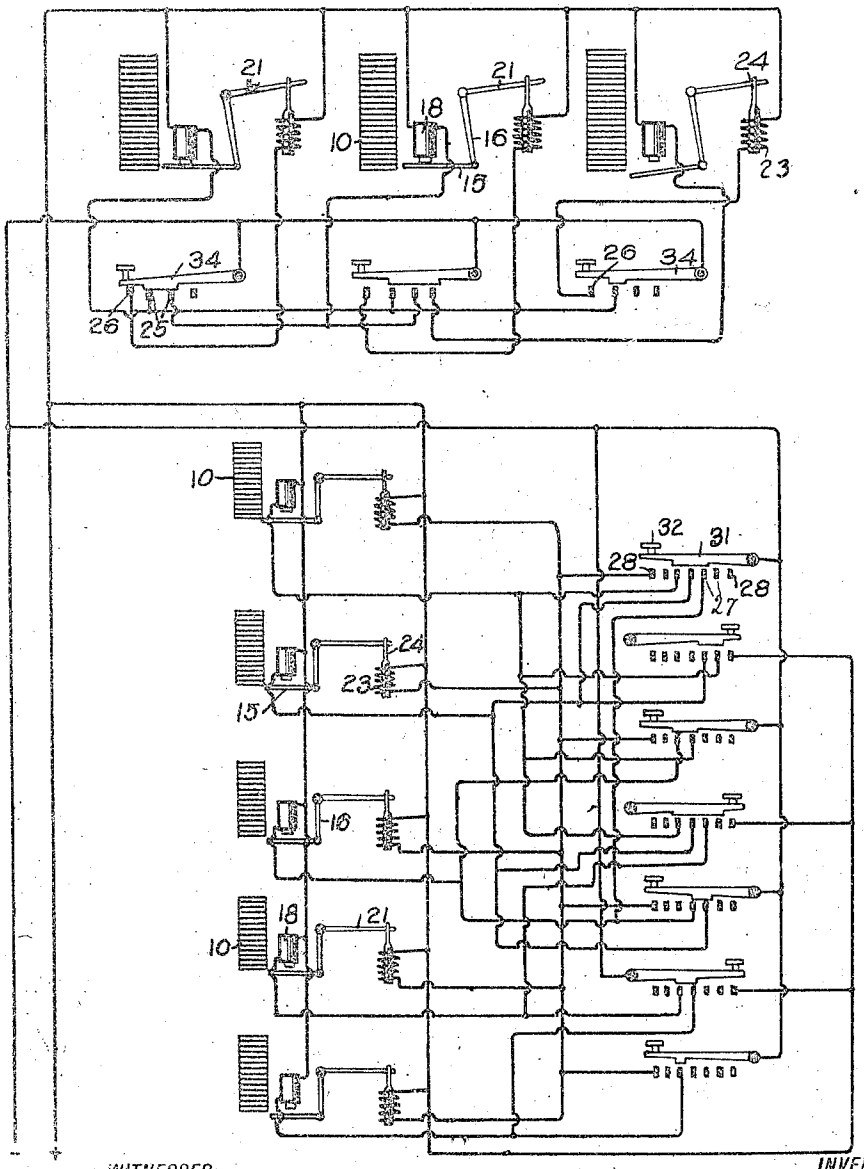
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4 SHEETS—SHEET 4.

Fig. 7.



WITNESSES:

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[illegible]

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UNITED STATES PATENT OFFICE.

CARL McDERMOTT, OF FREEHOLD, NEW JERSEY.

CHANGE-MAKING MACHINE.

1,195,829. Specification of Letters Patent. Patented Aug. 22, 1916.

Application filed May 18, 1915. Serial No. 28,860.

To all whom it may concern:

Be it known that I, CARL McDERMOTT, a citizen of the United States, and a resident of Freehold, in the county of Monmouth and State of New Jersey, have invented a new and Improved Change-Making Machine, of which the following is a full, clear, and exact description.

My invention relates to change making machines, and has reference more particularly to an electrically operated machine whereby the delivery mechanism and the controlling mechanism can be located at any different suitable places.

The object of the invention is to provide a simple, strong, efficient and inexpensive change making machine whereby any change within one dollar can be easily and quickly delivered by the displacement of a proper button associated with a selector.

With the above and other objects in view, the nature of which will more fully appear as the description proceeds, the invention consists in the novel construction, combination and arrangement of parts as herein fully described, illustrated and claimed.

In the accompanying drawings, forming part of the application, similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a horizontal section on line 1—1, Fig. 2, illustrating my change making machine; Fig. 2 is a vertical section on line 2—2, Fig. 1; Fig. 3 is a horizontal section of the keyboard on line 3—3, Fig. 4; Fig. 4 is a cross section on line 4—4, Fig. 3; Fig. 5 is a section on line 5—5, Fig. 3, showing only the details of the contact bar; Fig. 6 is a section through a coin receptacle showing the details thereof; and Fig. 7 is a diagram of the electrical control of the apparatus.

Referring to the drawings, 8 represents the frame or casing of the change making machine, which has, preferably, an inclined front 9, making the casing narrower at the top than at the bottom. The front 9 of the casing is provided with semi-cylindrical recesses 10, each having a bottom 11 partly projecting out of the front 9. These semi-cylindrical recesses 10 form coin receptacles in the frame. The said receptacles can be made independent of the casing, and set into the front. If desired all of the coin receptacles formed by the semi-cylindrical recesses 10 can be provided with a cover. Each of the coin receptacles has a slot 12 in the bottom thereof directed from the rear to the front of the coin receptacle. Lips 13 are formed in the front of the coin receptacle, at the bottom, which are intended to encompass the lowermost coins within the receptacle and lock their movement toward the front. The lips 13 of each coin receptacle have undercut grooves 14 above the bottom 11. These grooves 14 are substantially equal to the thickness of a coin or coins for which the coin receptacle is intended, so that a coin or two placed on the bottom 11 registers with the grooves 14.

A push-bar 15 is provided for each coin receptacle, and it engages with one of its ends the rear end of the corresponding slot 12. The other end of the bar 15 is pivotally connected to an arm 16 which is mounted to oscillate within the casing. It will be noted that each push-bar is disposed inoperatively to the outlet of the coin receptacle, and to bring the same into operative relation with the outlet of the coin receptacle, a notch 17 is provided in the back of the receptacle in plane with the grooves 14, which form the outlet of the coin receptacle. To bring the end of the push bar into the notch 17, that is, into plane with the grooves 14, a magnet 18 is provided above each bar. Said magnets are preferably secured to the back of the coin receptacles.

All of the arms 16 associated with the push-bars engaging the coin receptacles containing the five, ten, twenty-five and fifty cent pieces are connected to a key-rocking shaft 19. The arms associated with the push-bars 15, which engage the one-cent receptacles, are connected to another rocking shaft 20. The two shafts are preferably in alinement, and each has a rigid arm 21, the end of which arm loosely engages a solenoid core 22 or an extension thereof. The core 22 is normally maintained out of the solenoid coil 23 by a coil-spring 24 mounted on the core. It will be noted that whenever a solenoid engaged by the corresponding arm 21 is energized, all the arms 16 connected thereto will be rocked, causing the push-bars 15 to move toward the front of the receptacle within the slot 12, unless certain magnets 18 are energized, in which case the push bar will be brought in a plane with the lowermost coin and, the same can be forced through the grooves 14 out of the receptacle.

My change machine in its smallest form,

will contain three one-cent receptacles A, one five-cent receptacle B, two ten-cent receptacles C, one twenty-five cent receptacle D, and a fifty-cent receptacle E. The one-cent receptacles have a keyboard independent from the other receptacles. The reason for this will appear hereinafter. The keyboard of the one-cent receptacles contains contact bars 25 disposed parallelly to each other and each connected to a corresponding magnet 18. A similar contact bar 26, disposed parallelly, is connected to the solenoid coil 23 which operates the push-bars of the one-cent receptacles. The keyboard of the other receptacles contains contact bars 27, disposed parallelly, and each connected to a corresponding magnet 18. A similar contact bar 28 is provided on each side of the series of contact bars 27. The said contact bars 28 are in connection with the solenoid coils 23 which operate the push-bars 15 of the receptacles B to E inclusive.

All of the contact bars 27 are depressible within the frame 29 of the keyboard, resilient members 30 being provided for the contact bars to bring them to their normal position within the frame 29. Disposed transversely of the contact bars 27 are keys or selectors 31, one end of which key is pivoted within the frame while the other end carries a pivotally connected plunger 32 with which a resilient member 33 is associated, and which normally tends to maintain the key 31 above the contact bar. The alternate keys 31 are pivoted on opposite ends, so that a larger number of keys can be provided in a small space. The keys 34 controlling the one-cent receptacles are hinged on the same side, and there are three keys.

From the diagram shown in Fig. 7, it will be noted that the engagement of the key 34 with contact bar or bars 25 takes place before the engagement of the said key with the contact bar 26. Therefore, the corresponding push-bar 15 is brought into operative relation with the lowermost penny or pennies in the receptacle according to which of the bars is depressed. The subsequent engagement of the key with the contact bar 26 causes the rocking of all the arms connected to the rocking shaft 20. As shown in Fig. 7, the key 34 for the numeral 2 is depressed, thus engaging a contact bar 25; therefore the corresponding magnet 18 is energized and the corresponding push-bar brought into plane with the two lowermost pennies. One of the penny receptacles has its grooves 14 equal to the thickness of a penny. The other two receptacles have their grooves 14 equal to the thickness of two pennies. Therefore, from two receptacles the displacement of the bar will cause a displacement of two pennies. The said key 34 also engages the contact bar 26 which causes the displacement of the push-bars. When the key 34 having the number 4 on its plunger is depressed, two contact bars 25 will be engaged by the depression, and, consequently, two push-bars 15 will be placed into operative relation with their corresponding penny receptacles. The subsequent engagement of the key 34 with the contact bar 26 will rock the shaft 20 and cause the lowermost coins to be forced out of the coin receptacles. In the keyboard for the other coins, each key is so arranged that when a key carrying a certain number of units is depressed the proper contact bars 27 are engaged previous to the engagement of the key with the contact bar 28, and, therefore, the corresponding proper coins will be ejected from their receptacles, equal to the number carried by the key. To deliver ninety-five cents, the corresponding key is depressed, causing the engagement with four contact bars in connection with the magnets which control the push-bars associated with the fifty-cent receptacle, twenty-five cent receptacle and the two ten-cent receptacles respectively. It will also engage a contact bar 28, causing the rocking of all the push-bars; but the other push-bars remain in inoperative position, that is, they are not brought into plane with the lowermost coins, and, therefore, only those coins will be delivered that have been enumerated. The ejected coins fall into a trough 35 provided at the front 9 of the keys below the bottoms 11 of the coin receptacles. This trough has preferably an inclined bottom 36 leading to any suitable place where the coins are to be delivered.

It will be seen from Fig. 3 that there are two keys having on their plungers or buttons the numerals 25 and 50. This is to permit the machine to dispense, in addition to the change for twenty-five and fifty cents, twenty-five and fifty-cent coins.

From the above description it will be seen that in my change making machine the coin-delivery member is normally in inoperative position, and the means for actuating said member, which are controlled by the key, causes the operation of the means which brings the delivery member into operative relation with the coin before the actuating mechanism is operated. Furthermore, the selection of the proper delivery members is obtained simultaneously with the operation of the actuating mechanism.

While I have described the principle of operation, together with the device which I now consider to be the best embodiment thereof, I desire to have it understood that the device shown is merely illustrative and that such changes may be made as are within the scope of the appended claims.

I claim:

1. In a change-making machine, a coin receptacle having an outlet adjacent the bot-

:om thereof wherethrough coins can be delivered, a push-bar engaging the receptacle at the bottom thereof and disposed inoperatively to the outlet, means for bringing said push-bar into the plane of the outlet, means for forcing said push-bar across the receptacle toward the outlet end thereof, and means for operating the actuating means adapted to operate the means for bringing the push-bar into the plane with the outlet before the actuating means are operated.

2. In a change making machine, a coin receptacle having under-cut grooves adjacent the bottom thereof forming an outlet from the receptacle wherethrough coins can be delivered, said receptacle having lips above the under-cut grooves adapted to lock the coin above the lowermost one within the receptacle, a push-bar engaging the receptacle at the bottom thereof and normally disposed in a different plane from the plane of the under-cut grooves, means for bringing the push-bar into the plane of the under-cut grooves, actuating means for moving the push-bar across the receptacle, and means for operating the actuating means adapted to operate the means for bringing the push-bar into the plane with the under-cut grooves before it operates the actuating means.

3. In a change making machine, a coin receptacle having grooves adjacent the bottom thereof forming an outlet from the receptacle wherethrough coins can be delivered, said bottom having a slot central with said grooves, a push-bar engaging the slot, means for actuating the push-bar whereby the same is moved toward the grooves forming an outlet, means for bringing the push-bar into the plane with the grooves, and means controlling the operation of the actuating means adapted to operate the means for bringing the push-bar into the plane with the grooves before the actuating means are operated.

4. In a change-making machine, a coin receptacle having an outlet wherethrough coins can be delivered, a push-bar disposed inoperatively to the coin outlet, electromagnetic means for bringing the push-bar into operative relation with the coin outlet, means for actuating the push-bar, including a solenoid, and a double switch controlling the electromagnetic means and solenoid so that the circuit to the electromagnetic means is established before the circuit of the solenoid.

5. In a change making machine, a plurality of coin receptacles each having an outlet wherethrough coins can be dispensed, a push-bar for each of the receptacles disposed inoperatively to the outlet thereof, oscillating arms each connected to a corresponding push-bar, means for oscillating said arms whereby the push-bars are actuated, means for bringing each of the push-bars into operative relation to the corresponding outlet of the receptacle, and keys, each adapted to cause the operation of a predetermined number of means for bringing the push-bars into operative relation, each of said keys also adapted to cause the operation of said means for oscillating the arms after the means for bringing the push-bars into the operative relation has been operated.

6. In a change making machine, a plurality of coin receptacles each having an outlet wherethrough coins can be dispensed, a push-bar for each of the receptacles disposed inoperatively to the outlet thereof, oscillating arms each connected to a corresponding push-bar, a solenoid for oscillating said arms whereby the push-bars are actuated, a magnet for each of the push-bars to bring the same into operative relation with the corresponding outlet of a receptacle, and keys, each forming a switch adapted to cause the operation of a predetermined number of magnets for bringing the corresponding push-bars into operative relation, and also adapted to operate the solenoid, the solenoid becoming operative after the magnets have been operated.

7. In a coin-delivery machine, the combination with a coin holder, of an expelling member for delivering coins from the holder, electrically-controlled means for operating said expelling member, electrically-controlled means for positioning the expelling member, and a circuit-controlling key through the operation of which the positioning means is caused to operate to position the expelling member and the operating means is thereafter caused to operate to give the expelling member its delivery movement.

8. In a coin-delivery machine, the combination with a plurality of coin holders, of delivery devices for delivering coins from the holders, electrically-controlled means for controlling said delivery devices to determine the coins to be delivered, electrically-controlled means for operating said delivery devices, and a plurality of circuit-controlling keys whereby circuit is closed to cause said controlling means to be selectively operated and the selected delivery device to be thereafter operated to deliver the desired coins.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CARL McDERMOTT

Witnesses:
JOSEPH McDERMOTT,
EDWARD TAYLOR.