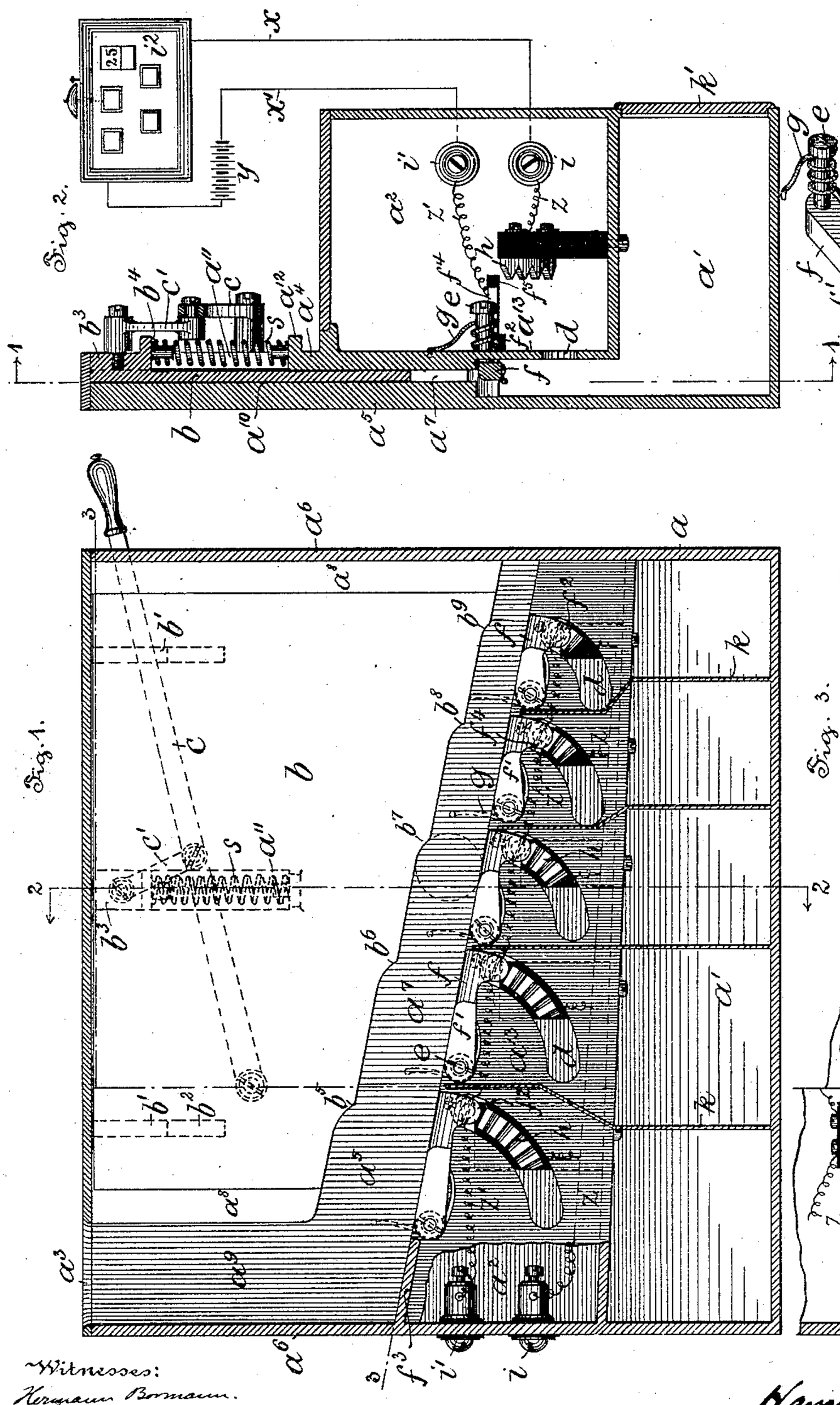
(No Model.)

H. M. HAMRICK.

COIN CONTROLLED ANNUNCIATING MACHINE.

No. 452,785. Patented May 26, 1891.



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UNITED STATES PATENT OFFICE.

HARRY M. HAMRICK, OF PHILADELPHIA, PENNSYLVANIA.

COIN-CONTROLLED ANNUNCIATING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 452,785, dated May 26, 1891.

Application filed February 24, 1891. Serial No. 382,624. (No model.)

To all whom it may concern:

Be it known that I, HARRY M. HAMRICK, a citizen of the United States, residing at the city of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Coin-Controlled Annunciating-Machines, of which the following is a specification.

The principal objects of my present invention are, first, to dispense with the services of an attendant at each pay or local telephone-station and to substitute therefor a coin-controlled machine for automatically advising an operator at a central station that some one has deposited one or more coins in the machine and desires to use the telephone, and also for automatically apprising the operator at the central office of the denomination or denominations of the coin or coins deposited, and, second, to provide a simple, durable, and compact coin-controlled machine capable of receiving and separating or assorting coins of various denominations and of depositing them in a suitable receptacle and adapted to transmit an electrical impulse or series of impulses controlled and regulated by the respective coins deposited therein.

A machine embodying features of my invention may be employed for various purposes, and is especially adapted for use in connection with long and short distance telephone systems. In this instance the machine is located at a pay or local station and is connected by an electric circuit with an annunciator or other signaling device located at a central station, so that a person desiring to have the telephone at the pay-station connected with another telephone may accomplish this result by depositing in a slot a number of coins of the same or of various denominations and equal in value to the required tariff, then actuating a hand-lever to notify the operator at the central office, and finally communicating to the operator at the central station by means of the telephone the number or name of the required connection. As soon as a coin or coins is or are deposited in the machine by means of the hand-lever the operator at the central station is apprised by the annunciator or other signaling device of the fact that some one desires to use the telephone and of the denomination or value of the coin or coins that have been deposited, and if the value thereof represents the correct tariff for the required connection establishes the same. If, however, the value of the coins deposited is less than the required amount, the operator telephones to the person at the local station to deposit additional coins, and if this is not done the operator may refuse to establish the connection until the required amount has been deposited. When this is done, the operator is apprised by the annunciator, as in the first instance, and can establish the required connection.

My invention consists of a coin-controlled machine having a slot for the reception of coins of various denominations, a coin-receptacle, spring-actuated contact-switches located above the coin-receptacle and adapted to normally support coins, a movable plate provided with lugs for separating the coins and detaining those of like denomination above certain of said switches and beneath said movable plate, and means for shifting said plate in order to cause said coins to turn and actuate said switches and to be deposited in the receptacle.

My invention further consists of the combination, with a coin-controlled machine comprising an opening for the reception of coins of various denominations, electrical switches operated, respectively, by coins of certain denominations, and means for separating said coins and causing the same to actuate said switches, of an annunciator or other signaling device and an electric circuit connected therewith and controlled by said switches, in order to cause said annunciator to indicate the denomination or denominations of the coins deposited in the machine.

My invention further consists of the improvements hereinafter described, and particularly pointed out in the claims.

The nature and objects of my present invention will be more fully understood from the following description, taken in connection with the accompanying drawings, forming part hereof, and in which—

Figure 1 is a longitudinal section on the line 1 1 of Fig. 2, showing a side elevation of the principal working parts of a coin-con-

trolled annunciating-machine embodying features of my invention. Fig. 2 is a transverse section on the line 2 2 of Fig. 1, showing an annunciator connected with the machine by means of an electric circuit. Fig. 3 is a horizontal section on the line 3 3 of Fig. 1, showing the rear portion of the machine removed or broken away; and Fig. 4 is a perspective view of one of the coin-controlled switches.

In the drawings, a is the housing or case of the machine, comprising a coin-receptacle a' and a receptacle a^2 for a series of electric contacts and for protecting the same from dust and dirt.

a^3 is a slot formed in the top of the housing a and adapted for the reception of coins of various denominations—for example, in the present instance, dollars, half-dollars, quarter-dollars, dimes, and nickels. The upper portion of the front plate a^4 and back plate a^5, together with the end plates a^6 of the housing, form between them an oblong-shaped passage a^7, located beneath and registering with the slot a^3. This passage a^7 is divided by means of strips a^8 into a chute a^9 for the coins and ways a^{10}, adapted for the reception of a sliding plate b, that may be worked up and down therein.

b' are feathers attached to the rear of the plate b and adapted to work in vertical guides b^2, formed on the interior surface of the front plate a^4 of the housing a, in order to permit the plate b to be shifted vertically, but not horizontally.

a^{11} is an open slot communicating with the interior of the housing and formed in the front plate a^4 thereof.

b^3 is a lug attached to or formed integral with the sliding plate b and protruding through the slot a^{11} to and slightly beyond the exterior face of the front plate a^4.

b^4 is a recess formed upon the under side of the lug b^3.

s is a spiral spring interposed between the recess b^4 and a bracket a^{12}, attached to or formed integral with the front plate a^4 and adapted to maintain the sliding plate b normally in an elevated position, as shown in Fig. 1.

c is a hand-lever pivotally attached to the outside of the front plate a^4 and pivotally connected with the lug b^3 by means of a link c', so that when the hand-lever c is pushed downward in Fig. 1 the link c' shifts the lug b^3 downward in the slot a^{11}, and thus depresses the plate b.

b^5, b^6, b^7, b^8, and b^9, Fig. 1, are a series of lugs depending from the lower portion of the plate b and adapted, respectively, to separate or detain coins of like denomination. In the present instance the lug b^5 detains dollars, the lug b^6 half-dollars, the lug b^7 quarter-dollars, the lug b^8 nickels, and the lug b^9 dimes. However, these lugs may be readily proportioned so as to detain coins of other denominations—for example, one-cent pieces.

a^{13} is an offset formed at the lower portion of the front plate a^4 and having a series of curved slots d formed therein, for a purpose to be presently fully described.

e is a series of studs or journals secured to the offset portion a^{13} of the front plate a^4 and disposed diagonally with relation to the top of the housing, Fig. 1. Upon these lugs are pivotally mounted a series of switches f, provided with sidewise-projecting portions f', Fig. 4, susceptible of retaining the coins beneath the lugs b^5, b^6, b^7, b^8, and b^9 and adapted to permit of the coins being readily forced past the switches when the sliding plate b is depressed.

f^2 are pins attached to or formed integral with the switches f and extending through the curved slots d into the chamber a^2, so that when the switches f are rotated around the lugs e the pins f^2 work freely in the slots d.

g are spiral springs for retaining the switches f normally in an elevated position and in contact with the upper edge of the offset portion a^{13} of the plate a^4, as shown in Fig. 1, so as to support the coins until the sliding plate b is depressed.

f^3 is a plate or bracket located at the bottom of the chute a^9 in order to direct the coins therefrom onto the series of switches f, along which they roll on edge by gravity until they are checked by one of the depending lugs b^5, b^6, b^7, b^8, or b^9, and are thus brought to rest upon one of the switches f and beneath the sliding plate b, so that when the latter is depressed by means of the hand-lever or in any other preferred manner the coins are caused to turn the switches f and are forced into the receptacle a'.

In the chamber a^2 is a series of insulated contacts h, whereof one has five projecting points of conducting material, another four, and so on until the last one of the series has a single contact-point.

f^4 is a series of conducting-strips of spring metal supported in but insulated from the bifurcated extremities of the pins f^2. These strips f^4 normally occupy positions above and out of contact with the contacts h, but are adapted to contact with the same whenever the switches f are turned.

x and x' are conductors leading from the respective poles of a battery y and attached to the binding-screws i and i'.

i^2 is an annunciator or other signaling device located at any convenient point and interposed in the conductor x.

z is an insulated wire attached to the binding-screw i and connecting the series of contacts h.

z' is a similar conductor attached to the binding-screw i' and connecting the series of spring-strips f^4, so that whenever any one of the series of switches f' is turned downward the spring f^2 attached thereto is brought into electrical contact with the points of one of the contacts h, and thereby makes and breaks the circuit as many times as there are points

on the contact, and these makes and breaks cause the bell connected with the annunciator to be sounded and also cause a certain signal to be exposed upon the face of the annunciator. For example, if the center switch in Fig. 1 be turned it causes the number "25" to be exposed at the face of the annunciator, Fig. 2. It may be remarked that whenever any one of the series of switches f' is being turned upward into its normal position by means of the spring g the insulating-tip f^5, of rubber or similar material, slides over the points of the contact h without in any wise affecting the circuit.

In the drawings the chamber a' is represented as divided into five compartments by partitions k for the reception of coins of different denominations; but these partitions may, if preferred, be omitted.

k' are doors for affording access to the interior of the chamber a' in order to permit of the removal of the coins therefrom.

The mode of operation of a machine of the general character hereinbefore described is as follows: A coin of any of the various denominations that the machine is adapted to receive—for example, in the present instance, a dollar, a half-dollar, a quarter-dollar, a dime, or a nickel—is deposited in the slot a^3 and descends vertically through the chute a^9 until it contacts with the guide-plate f^3, whereupon it will roll on its edge by gravity along one or more of the switches f until it is checked by one of the depending lugs b^5, b^6, b^7, b^8, or b^9, that is long enough to engage a coin of such denomination and retain it upon one of the switches f. The plate b is then shifted downward by means of the hand-lever c, and the downward motion of the plate b pushes the coin downward and causes it to overcome the resistance of one of the springs g and to turn one of the switches f, thus permitting the coin to drop past the projection f' into the coin-receptacle a'. The turning motion of the switch f causes the spring-strip f^4 attached thereto to contact with one of the contacts h, thus closing the circuit and notifying the operator at the central office by means of the annunciator i^2 that a coin has been deposited in the machine. Moreover, the electrical contact between the strip f^4 and the contact h will be broken and made as many times as there are points on the contact h, and these makes and breaks will of course produce corresponding changes in the circuit, and these changes cause the annunciator to indicate the value of the coin deposited—for example, by exposing a numeral corresponding to the value of the coin deposited. For the sake of a further description of my invention it will be assumed that a quarter-dollar is deposited or dropped in the opening a^3. The quarter-dollar will descend vertically through the passage a^9 until it contacts with the guide-plate f^3, and it will then roll edgewise along the two switches f, past the lugs b^5 and b^6, and contact with the lug b^7 and come to rest over the switch f and beneath the plate b, as shown in dotted lines in Fig. 1. The hand-lever c is then depressed and the quarter forced into the receptacle a', while at the same time the strip f^4 slides over the contact h, thereby making and breaking the circuit three times. These three makes and breaks cause the bell or other signal at the central station to be sounded or given and also cause the figures "25" to be exposed to view upon the face of the annunciator i^2, as illustrated in Fig. 2. It will be seen that a coin must be actually deposited in the opening a^3 before any of the switches f can be caused to actuate the strips f^4, because unless a coin is deposited in the machine the hand-lever c may be depressed without in any way affecting the switches and signaling mechanism.

Although a machine has been described which is adapted to receive dollars, half-dollars, quarter-dollars, dimes, and nickels, still my invention is not limited to such exact construction, as it is clearly within the spirit of the present invention to adapt the machine for the reception of coins of other denominations, with the value in cents indicated by means of an annunciator and an electric circuit connected therewith.

Having thus described the nature and objects of my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A coin-controlled machine having a slot for the reception of coins of different denominations, a series of spring-actuated contact-switches connected together by a conductor leading to one electrode of a battery, a series of contacts connected together by a conductor leading to the other electrode of the battery, a movable plate, lugs for separating the coins and detaining those of like denominations above certain of said switches and beneath said movable plate, and means for shifting said plate in order to cause said coins to turn said switches into engagement with said contacts, substantially as and for the purposes set forth.

2. A coin-controlled machine having a slot for the reception of coins of different denominations, a series of spring-actuated switches provided with insulated contact-strips connected by a conductor, a series of contacts having contact-points and connected by a conductor, a battery-circuit, connections to said conductors and battery, a movable plate, lugs for separating the coins and detaining those of like denominations above certain of said switches and beneath said movable plate, and means for shifting said plate in order to cause said coins to turn said switches and cause said strips to travel over said contact-points, substantially as and for the purposes set forth.

3. A coin-controlled machine having a slot for the reception of coins of different denominations, a coin-receptacle, a series of spring-actuated contact-switches connected together by a conductor leading to one electrode of a battery, a series of contacts connected to-

gether by a conductor leading to the other electrode of the battery, a movable plate, lugs for separating the coins and detaining those of like denominations above certain of said switches and beneath said movable plate, and means for shifting said plate to cause said coins to be forced past said switches into said receptacle, substantially as and for the purposes set forth.

4. A coin-controlled machine having a slot for the reception of coins of different denominations, a coin-receptacle, a series of spring-actuated contact-switches connected together by a conductor and provided with side projections, a series of contacts having conducting-points and connected by a conductor, a battery, circuit connections to said conductors and battery, a movable plate, lugs for separating the coins and detaining those of like denominations above the side projection of certain of said switches and beneath said movable plate, and means for shifting said plate in order to deposit said coins in the receptacle and to actuate said switches, substantially as and for the purposes set forth.

5. A coin-controlled machine comprising an opening for the reception of coins of various denominations, electrical switches adapted to be operated, respectively, by coins of a certain denomination, lugs for separating and detaining coins of like denomination upon one of said switches, a movable plate for forcing said coins past their corresponding switches, means for shifting said plate, an annunciator or other signaling device, and an electric battery and circuit connected therewith and controlled by said switches, substantially as and for the purposes set forth.

6. The combination, in a coin-controlled machine, of an opening for the reception of coins of various denominations, a series of receptacles for coins of like denominations, a series of switches provided with contact-strips connected with a conductor, a series of contacts connected by a conductor and provided with contact-points, a battery, an annunciator, circuit connections to the battery and annunciator, lugs for detaining coins of like denominations upon certain of the switches, a movable plate for shifting the coins past their respective switches into their corresponding receptacles, and means for actuating the movable plate, substantially as and for the purposes set forth.

In witness whereof I have hereunto set my signature in the presence of two subscribing witnesses.

HARRY M. HAMRICK.

Witnesses:
THOMAS M. SMITH,
RICHARD C. MAXWELL.