

(No Model.)

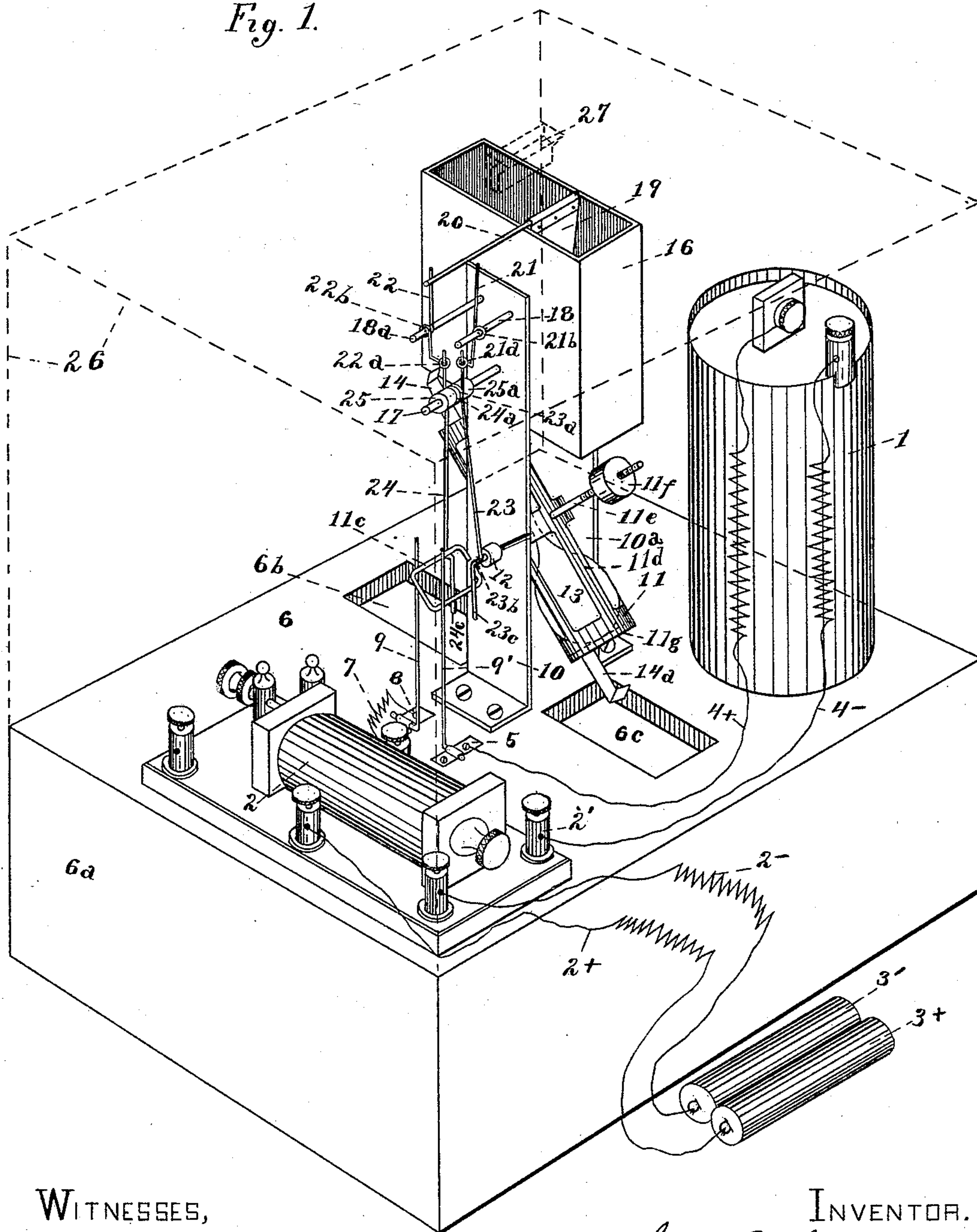
3 Sheets—Sheet 1.

I. RICHARDSON.
COIN CONTROLLED MACHINE.

No. 527,886.

Patented Oct. 23, 1894.

Fig. 1.



WITNESSES,

W. M. Fawcett.
E. E. Osborne

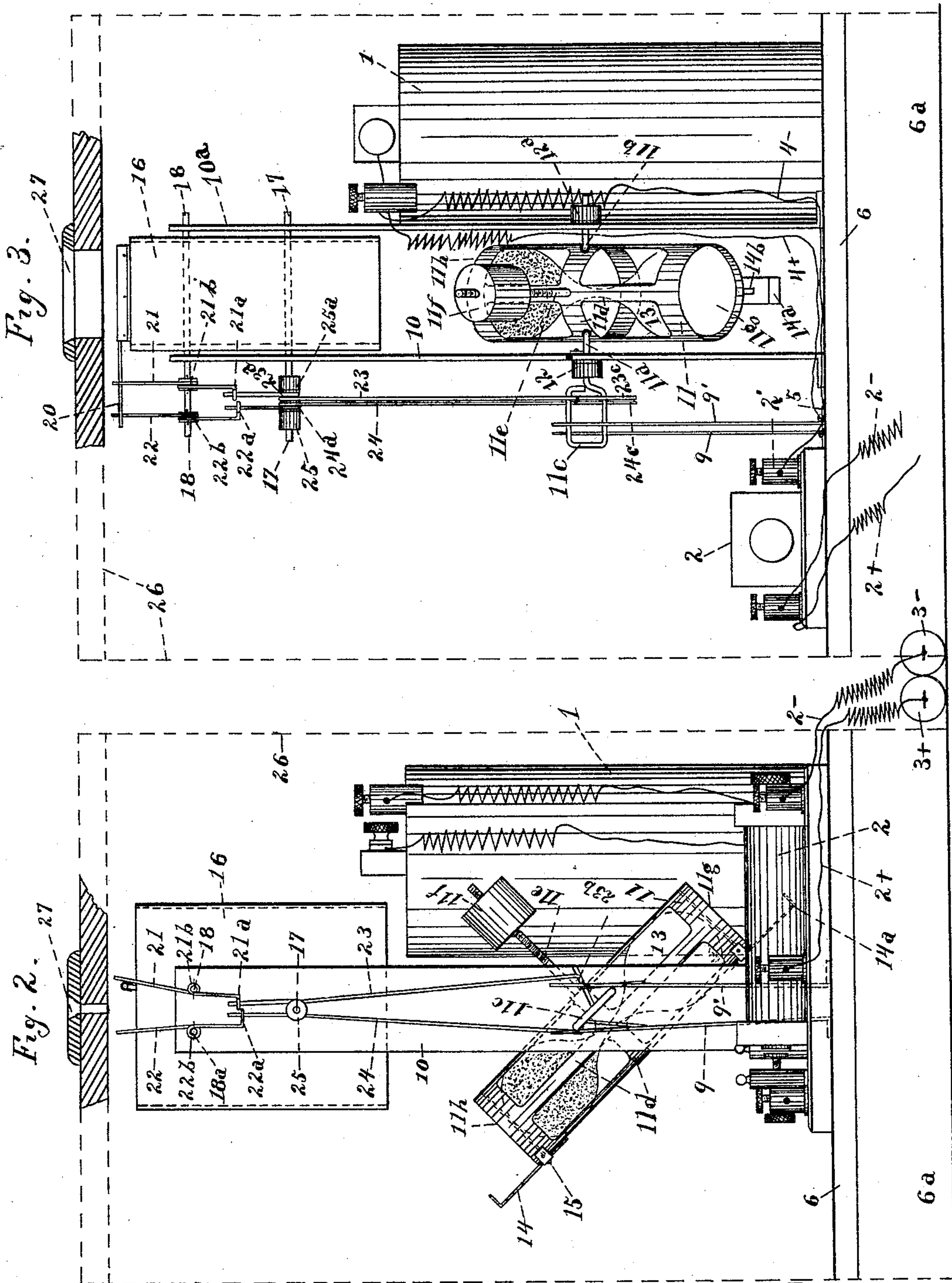
INVENTOR.

Isaac Richardson,
By J. A. Osborne & Co.,
Attorneys.

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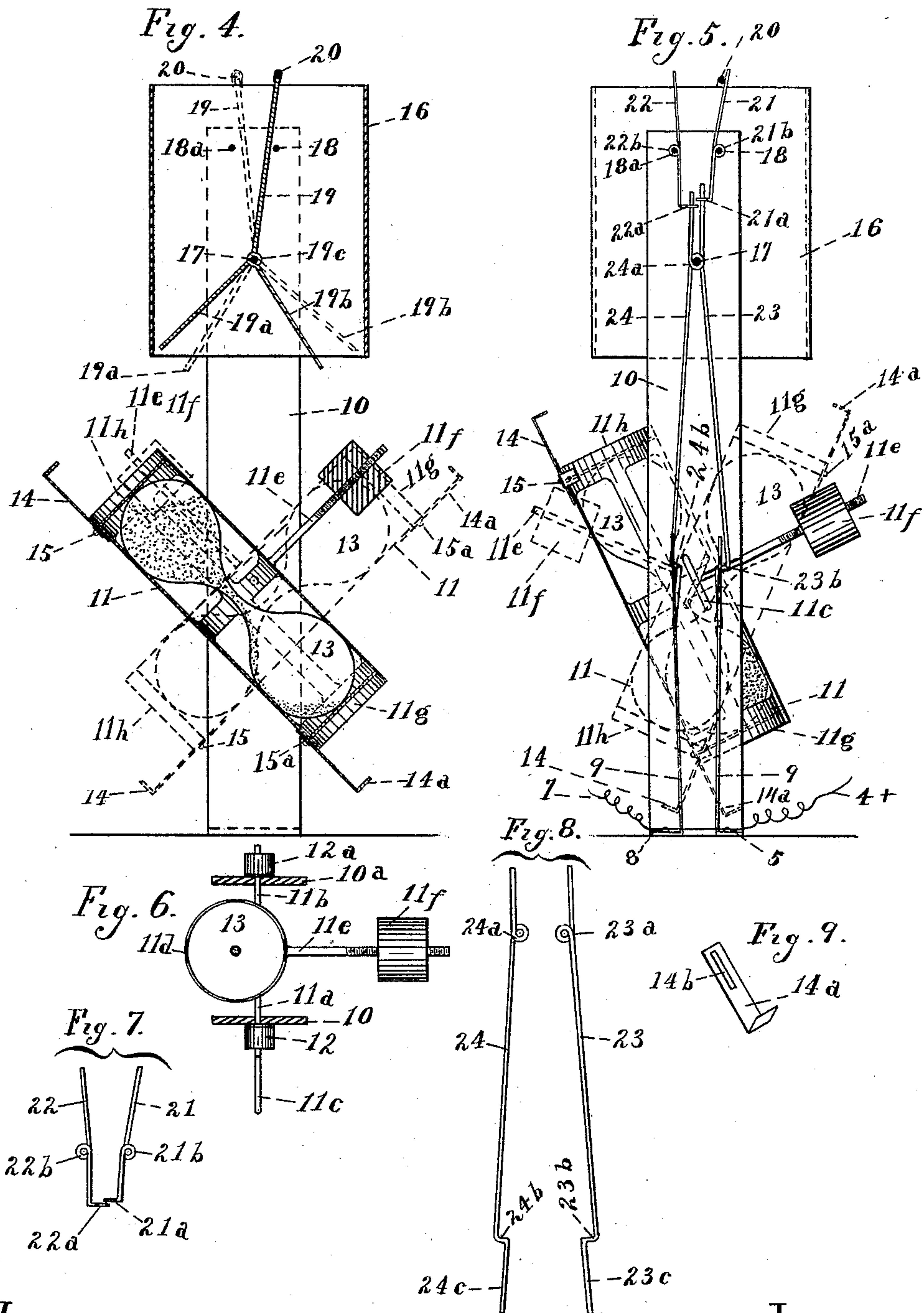
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UNITED STATES PATENT OFFICE.

ISAAC RICHARDSON, OF CLEVELAND, OHIO.

COIN-CONTROLLED MACHINE.

SPECIFICATION forming part of Letters Patent No. 527,886, dated October 23, 1894.

Application filed January 22, 1894. Serial No. 497,608. (No model.)

To all whom it may concern:

Be it known that I, ISAAC RICHARDSON, a citizen of the United States, residing at Cleveland, county of Cuyahoga, State of Ohio, have invented certain new and useful Improvements in Coin-Controlled Machines, of which the following, with the accompanying drawings, is a specification.

My invention relates to machines into which a coin of some denomination is dropped through a slot to set in motion mechanism with a view to accomplishing some desired purpose, particularly to a class of coin controlled machines in which electrical connection is made for some desired purpose.

The object of my invention is a construction which dispenses with the employment of springs and clock work as the actuating mechanism, and the substitution therefor of a balance cylinder with simple connections; and the invention consists in the construction, arrangement and combination of parts described herein and defined in the claims.

In the drawings, Figure 1 is a perspective of my invention connected with an electro-induction coil and a dry cell. Fig. 2 is a front view of the same with a fragmental section of the cover of the closing case shown, and Fig. 3 is a side elevation of the same. Fig. 4 is a vertical section illustrating the position of the rotatable cylinder immediately after the coin shall have been dropped into the machine, and Fig. 5 is a side elevation illustrating the position of the parts after a completed operation of the machine; and Fig. 6 is a cross-section of Fig. 4 on a line above the pivoted point of the trip cylinder. Fig. 7 illustrates the swinging levers. Fig. 8 illustrates the swinging trips, and Fig. 9 is a plan of the trip cylinder adjustable slides.

In the different figures of the drawings like reference-figures refer to like parts.

In Figs. 1, 2 and 3, the inclosing case, or housing of the machine, is shown in the dotted outline, a broken section of the top of the inclosing case being shown in full lines in Figs. 2 and 3 for the purpose of illustrating the position of the slot through which coin is dropped into the machine.

In Figs. 1, 2 and 3 I have shown a dry battery cell, 1, and a small induction coil, 2, which are of the usual construction and need

no description. 2- and 2+ are two wires connected with the negative (-) and positive (+) poles of the battery, and are supplied with handles, 3- and 3+, for grasping in the hands. The dry cell, 1, is connected with the induction coil 2 by means of the connections 4+ and 4-, one of which is attached to the plate 5 that rests upon the floor 6, and the other of which is attached to the pole 2' of the induction coil. The wire, 7, connects the induction coil with the plate 8 which is attached to the floor 6; and two vertical rods, 9 and 9', are attached to the plates 5 and 8. The circuit is opened and closed by connecting the wires 9 and 9', as hereinafter described.

I will now describe my invention.

10, 10^a, are two vertical supports attached to the floor 6 for the purpose of supporting the operative mechanism of my machine. Between said two supports 10 and 10^a is swung what, for convenience, I term a trip-cylinder, 11. This trip-cylinder is supported by means of rods, 11^a and 11^b, which pass through bearings in the supports 10 and 10^a. The rods 11^a and 11^b are attached to the cylinder 11 off its center so that by gravity the cylinder will stand approximately in some one of the positions illustrated when not in movement after the dropping of a coin into the machine. To the outside of the supports 10 and 10^a, upon the rods 11^a and 11^b, are placed keepers, 12 and 12^a, to prevent lateral motion of the cylinder. Upon the outer end of the rod 11^a is formed or fixed a rectangular frame 11^c, which is of greater width than the distance between the vertical rods 9 and 9', so that when the rectangular frame 11^c is turned approximating a horizontal position the sides of said rectangular frame will touch both vertical rods 9 and 9', and remain free of said rods under the conditions hereinafter stated. The trip-cylinder is illustrated as composed of an open cylindrical frame, 11^d, though it may be of any other construction. A balance rod, 11^e, projects from the upper side of the cylinder at its middle part in the circular line with the axle rods 11^a and 11^b, said balance rod 11^e being threaded at its outer end; and a weight, 11^f, bored centrally and threaded, is screwed upon the balance rod 11^e. The balance rod 11^e and weight 11^f form a

balance or counter-weight to the cylinder 11, and can be adjusted by screwing the weight 11^f out or in upon the rod 11^e. Inside of the cylinder 11 is fitted an hour-glass 13, which is shorter than the cylinder 11. By having the hour-glass 13 shorter than the cylinder 11, cups, 11^g and 11^h, are formed at the ends of the cylinder for the purpose of catching coin dropped into the machine. The hour-glass and the cylinder are of very light construction so as to reduce the weight of these two elements to a minimum. The amount of sand put into the hour-glass is regulated to occupy as many minutes as desired in running, say three, or five, or ten, or fifteen minutes. At the outer ends of the cylinder 11, to what I call the under side, are attached adjustable slides 14 and 14^a, for the purpose of increasing or shortening the length of the cylinder in order that the machine may be adapted to be operated by the reception of coins of different denominations, for instance, the penny, nickel, dime, &c. The slides 14 and 14^a are adjustable upon the cylinder 11 by means of the screws 15 and 15^a which pass through the slot 14^b into the cylinder, as illustrated.

The chute, 16, is carried at the top of the supports 10 and 10^a, as illustrated. The bar, 17, passes through the chute 16 and the supports 10 and 10^a near the lower portion of the chute and midway between its two ends; and two bars, 18 and 18^a, pass through the chute 16 and the supports 10 and 10^a above the bar 17, and at approximately equal distances to the right and left of a vertical line with said bar 17. Within the chute 16 is placed a coin guide, 19, of the form illustrated in Fig. 4, the coin guide being approximately of a Y-shape. At the junction of the wings 19^a and 19^b with the body 19 of the coin guide is formed a hub, 19^c, through which the bar 17 passes, the bar 17 forming an axle upon which the coin guide rocks or swings. The rods 18 and 18^a that pass through the top of the chute 16 limit the throw of the coin guide in its rocking movement. From the upper end of the body 19 of the coin guide projects laterally a rod 26, as shown. Upon the rod 18 is hung a swinging lever 21, and upon the rod 18^a is hung a swinging lever 22. The lower ends of the swinging levers 21 and 22 carry rings or loops 21^a and 22^a. The construction of the swinging levers 21 and 22 illustrated is that of wires having coils, 21^b, and 22^b at their center for the purpose of forming bearings for the rods 18 and 18^a. Upon the projecting ends of the bar 17 are swung two swinging trips, 23 and 24. The form of these trips is illustrated by Fig. 8. They are made of wire, having a coil near their upper ends, 23^a and 24^a, to form bearings for the reception of the rod 17, and near their lower ends are formed offsets, 23^b and 24^b to engage the elevated side of the rectangular frame 11^c, as hereinafter described; and the lower ends, 23^c and 24^c of the swinging trips are opened outwardly to clear the rectangular

frame 11^c. Upon the bar 17, to the outside and to the inside of the trips 23 and 24, are keepers, 25 and 25^a, to prevent movement of the swinging trips 23 and 24 longitudinally upon the bar 17, but which allow free rotary movement of said swinging trips upon the bar 17. The lower ends of the swinging trips 23 and 24 pass to the outside of the rectangular frame 11^c, and their upper ends pass through the loops or rings 21^a and 22^a of the levers 21 and 22.

The machine stands upon a box 6^a, the top of which, 6, forms the floor upon which the machine rests. Through the floor 6 are two openings, 6^b and 6^c, through which coin passes into the box 6. The housing of the machine stands upon the box 6, as illustrated by the dotted lines 26. Through the top of the housing is made a slot, 27, through which coin is dropped into the machine.

Having fully described the construction of my machine, its operation will be readily understood. When in its normal position, the parts of the machine will stand approximately in the position illustrated by Figs. 1, 2, and 3, and by the full lines of Figs. 4 and 5, or in approximately the position illustrated by the dotted lines of Figs. 4 and 5. The position of the parts as illustrated by Figs. 1, 2, 3, and 4 shows them just after the cylinder has been turned upon its axis or pivoted point by the dropping of a coin into the machine and as the sand commences to run from the elevated end of the hour-glass into the lower end. The full lines of Fig. 5 illustrate the position of said parts after the sand has all run into the depressed end of the hour-glass. Before turning to the positions illustrated by Figs. 1, 2, and 3 and to the positions illustrated by the full lines of Figs. 4 and 5, the parts stood in the position illustrated by the dotted lines of Figs. 4 and 5. Having completed one revolution of the machine to the position illustrated by the full lines of Fig. 5, and approximately to the position illustrated by Figs. 1, 2, and 3, a coin is dropped through the slot 27 and passes down to the left of the coin guide 19 and strikes the wing 19^a which guides the coin to the cup 11^h in the elevated end of the cylinder 11. Before dropping the coin into the machine, the sand is in the depressed end of the hour-glass. The momentum of the coin and its weight strikes the cup 11^h of the cylinder 11 and tips said cylinder down far enough to carry the weight 11^f beyond a vertical line with the axis 11^a—11^b, when the momentum of the coin having been spent the weight 11^f will help to carry the cylinder on in its partial revolution to the position indicated by the dotted lines in Fig. 4; and as the cylinder becomes tipped to the direction opposite that illustrated by the full lines, the coin will drop into the opening 6^b and the sand in the hour-glass will run from the elevated end of the hour-glass into the depressed end of the hour-glass, until the cylinder stands in the position illustrated by the dotted lines of Fig. 5. As

the momentum and weight of the inserted coin carries the cylinder over, as described, the rectangular frame 11^c tips to an angle opposite to that illustrated so that what is now its lower side will pass above the hook 23^b of the swinging trip 23 so that said hook 23^b will engage that side of the rectangular frame 11^c and prevent the cylinder from rocking back before the sand runs from the elevated end to the depressed end of the hour-glass. As the coin guide 19 is swung from one side to the other, it strikes the lever 21 or 22 and so swings in the trip 23 or 24 that it may engage the rectangular frame 11^c and throws out the trip 24 or 23 so that the hook 24^b or 23^b will clear the rectangular frame 11^c and allow the cylinder to turn; and as the sand runs from the elevated end to the depressed end of the hour-glass, the rectangular frame is brought around so that it clears both trips. During the time that the sand is running from the elevated to the depressed end of the hour-glass, and before assuming the position indicated by Fig. 5, or the same position at the opposite angle to that shown by the full lines of Fig. 5, the sides of the rectangular frame are in contact with the vertical rods 9 and 9', as shown by Figs. 1 and 2, so that the electric circuit is open through said vertical rods 9 and 9' and the rectangular frame 11^c. When the sand runs into the depressed end of the cylinder, the frame is freed of the vertical rods 9 and 9' and the electrical circuit is broken. It will be seen that by the tipping of the trip cylinder by the dropping of a coin into the machine, the electrical circuit is opened and remains open one or more minutes, according to the arrangement of the hour-glass, as described.

By the arrangement illustrated in the drawings, the machine may sell to one dropping coin into it; a current of electricity of a determined duration; but this is but one use to which the invention can be applied, as it can be used for making connection with electrically operated toys to be attached to or placed upon, or used with the machine in any suitable manner. By its use, a music box may be made to run for a determined time by the use of an electric current which is opened by my mechanism; and various toys of known construction may be brought to view or into operation by means of an electric current opened by my device.

The weight 11^f a little more than balances the cylinder and hour-glass so as to hold the same at one angle of inclination after being operated by the dropping of the coin into the machine. By adjusting the slides 14 and 14^a coins of various size may be used to operate the machine. The lighter weight coins require the slides to be extended farther out than the heavier weight coins in order to get the advantage of the greater leverage gained by lengthening the slides.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a coin controlled machine, a cylinder pivoted off its center in combination with an electric circuit, the cylinder being adapted to be partially turned on its pivot by the striking of a coin upon the cylinder to open the electric circuit, substantially as described. 70

2. In a coin controlled machine, a cylinder pivoted off its center and having an adjustable balance weight, the cylinder being adapted to be turned a partial revolution by the striking of a coin upon one end of the cylinder, substantially as described. 75

3. In a coin controlled machine, the combination of a cylinder, an hour-glass inclosed within the cylinder, and an electric circuit, the cylinder being pivoted off its center and adapted to be turned through a partial revolution by the striking of a coin upon one end of the cylinder, substantially as described. 80 85

4. In a coin controlled machine, a cylinder, an hour-glass inclosed within the cylinder and an adjustable balance weight, the cylinder being adapted to be turned through a partial revolution by the striking of a coin upon one end of the cylinder, substantially as described. 90

5. In a coin controlled machine, a cylinder having cups formed at its ends, and an adjustable balance weight connected with the cylinder, substantially as described. 95

6. In a coin controlled machine, a cylinder having cups formed at its ends, an adjustable balance weight connected with the cylinder, and an hour-glass inclosed within the cylinder, substantially as described. 100

7. In a coin controlled machine, a cylinder having cups formed at its ends, an adjustable balance weight attached thereto, and adjustable slides secured to the cylinder, substantially as described. 105

8. In a coin controlled machine, a cylinder having cups formed at its ends, an adjustable balance secured to the cylinder, adjustable slides connected with the cylinder, and an hour-glass inclosed within the cylinder, the cylinder being adapted to be turned through a partial revolution by the striking of a coin upon one end of the cylinder, substantially as described. 110 115

9. In a coin controlled machine, an electric circuit, a cylinder adapted to be turned through a partial revolution by the striking of a coin upon one end of the cylinder, and connection between the cylinder and the electric circuit whereby the circuit is opened and broken by the turning of the cylinder, substantially as described. 120

10. In a coin controlled machine, an electric circuit, two rods which form a part of the electric circuit, a cylinder adapted to be turned through a partial revolution by the striking of a coin upon one end of the cylinder, and a rectangular frame adapted to be turned by the turning of the cylinder whereby the turning of the cylinder opens and closes the electric circuit by bringing the sides of said rectangular frame into contact with the rods 125 130

forming a part of the electric circuit, substantially as described.

11. In a coin controlled machine, a combination of a chute, a coin guide within the
5 chute, two swinging levers adapted to be operated by the coin guide, two swinging trips connected with the swinging levers, a cylinder adapted to be turned through a partial
revolution by the striking of the coin upon
10 one of its ends, an electric circuit, two vertical rods forming a part of the electrical cir-

cuit and a rectangular frame adapted to be turned by the turning of the cylinder whereby the turning of the cylinder opens and closes the electric circuit, substantially as described. 15

In testimony whereof I affix my signature, in the presence of two witnesses, this 20th day of January, 1894.

ISAAC RICHARDSON.

Witnesses:

E. E. OSBORNE,
J. A. OSBORNE.