

(No Model.)

2 Sheets—Sheet 1.

A. M. PIERCE.

AUTOMATON.

No. 398,276.

Patented Feb. 19, 1889.

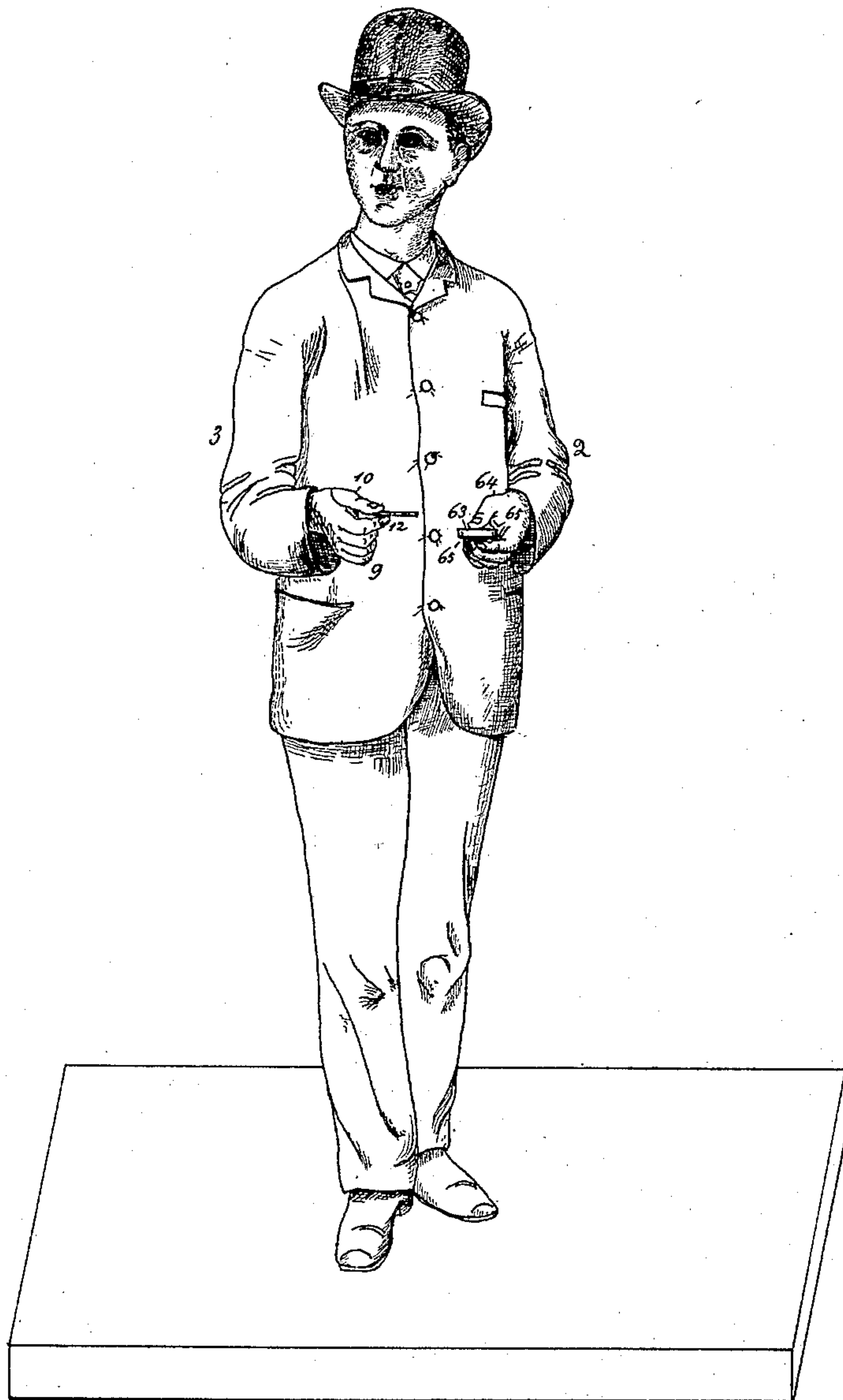


FIG. 1.

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(No Model.)

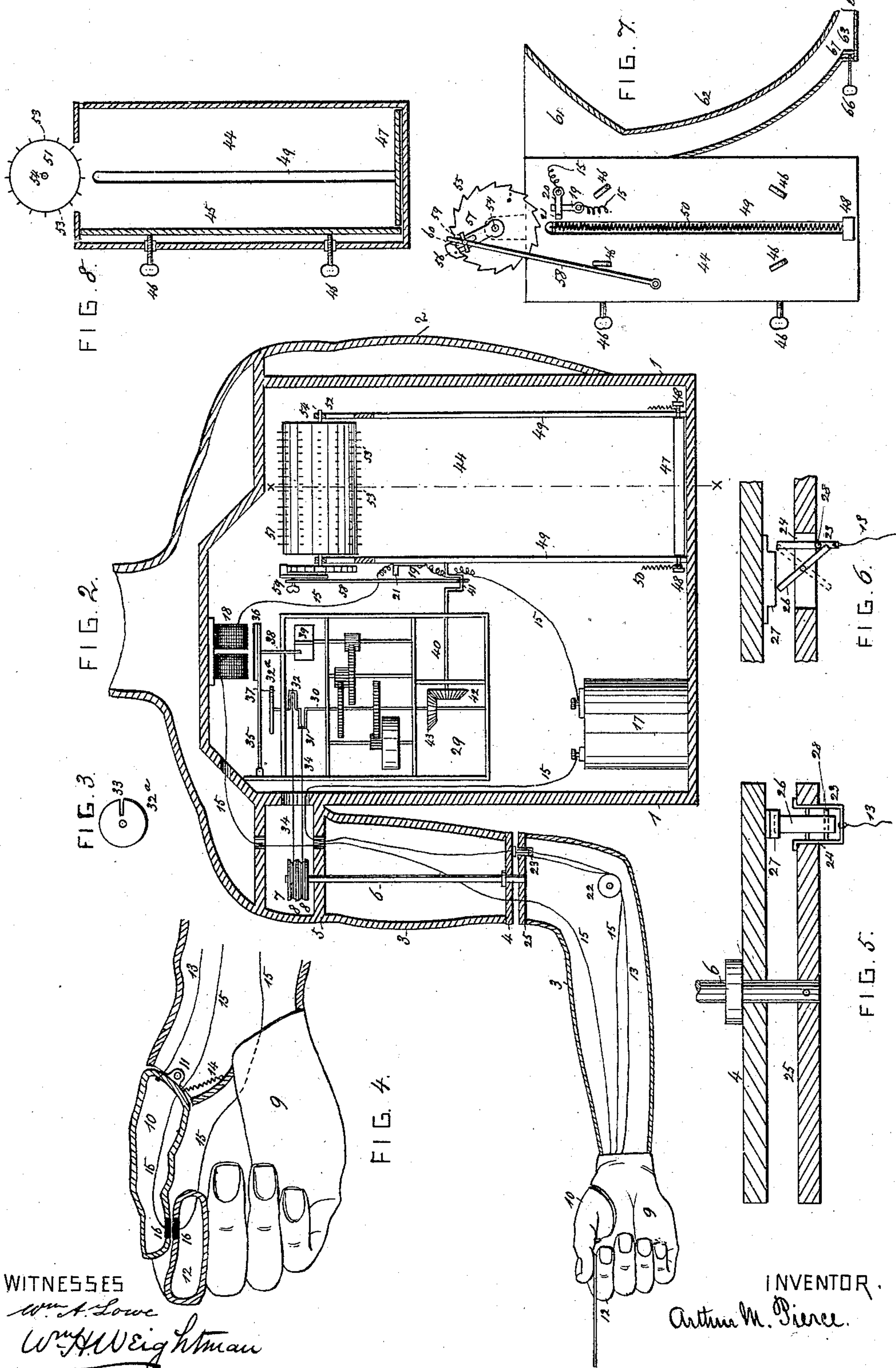
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ARTHUR M. PIERCE, OF LYNDHURST, NEW JERSEY.

AUTOMATON.

SPECIFICATION forming part of Letters Patent No. 398,276, dated February 19, 1889.

Application filed August 27, 1887. Renewed July 21, 1888. Serial No. 280,686. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR M. PIERCE, a citizen of the United States, and a resident of Lyndhurst, in the county of Bergen and State of New Jersey, have invented certain new and useful Improvements in Automaton, of which the following is a specification.

My invention relates especially to that class of devices known as "automatons," and has for its object the provision of an automaton for distributing cards, circulars, &c.

To attain the desired end my invention consists, essentially, in a figure representing a human being. One of the arms and the hand thereon is made movable in such a manner that it will hold one of the cards to be distributed in an extended position until removed, the cards being supplied by automatic feeding mechanism within the trunk or body of the figure; and my invention also involves certain other novel and useful combinations or arrangements of parts and peculiarities of construction and operation, all of which will be hereinafter first fully described, and then pointed out in the claims.

In the drawings, Figure 1 is a front elevation of my automaton, showing the right arm extended. Fig. 2 is a cross-sectional view of the trunk and arm of the automaton, showing the location and arrangement of the actuating mechanism. Fig. 3 is a plan view of the regulating-wheel of the motor. Fig. 4 is an enlarged view of the right hand of the figure. Figs. 5 and 6 are enlarged detail views of the joint at the elbow of the right arm, showing the mechanism employed for moving the thumb. Fig. 7 is a side view of the card-holder and feeding mechanism, the delivery-chute being shown in section. Fig. 8 is a vertical sectional view at line *xx* of Fig. 2.

Like letters of reference, wherever they occur, indicate corresponding parts in all the figures.

1 is the trunk of the figure, made of any approved material and supported upon legs resting on a standard in any desirable manner. The arms 2 and 3 are made of wire-work or other light material. The right arm 3 is made in two sections, the section joined to the body being rigid and terminating at the elbow in a disk, 4. A bearing, 5, is located in arm 3 at or near the point of union with the trunk.

Mounted within the rigid section of the right arm is a shaft, 6, which finds a support in the bearing 5 and disk 4, as indicated in Fig. 2. The upper extremity of shaft 6 bears a pulley, 7, wherein are grooves 8. The lower or movable portion of arm 3 from the elbow is made separate from the part above described, and is fixed to the lower extremity of shaft 6. This forearm is bent in such a manner that the hand 9 will strike the trunk near the waist when the arm is moved theretoward, and will hold the hand extended when moved in the opposite direction.

The hand 9 is rigidly secured to the forearm, the thumb 10 having a slight upward and downward movement independent of the swinging of the arm. The thumb 10 is mounted upon a pivot, 11, within the hand in such a manner as to permit it to rise slightly from the extremity of the forefinger 12, the elevation of the thumb being effected through the medium of a cord or wire, 13, passing to the elbow-joint and to actuating mechanism, which will be explained below. The thumb is normally held down against the forefinger by a spring, 14, within the hand.

15 are insulated electrical conductors passing from metallic contact-pieces 16, fixed in the thumb 10 and forefinger 12, to a battery, 17. An electro-magnet, 18, is located within the trunk of the figure. An electric switch composed of a fixed contact, 19, and a swinging contact, 20, bearing an arm, 21, is interposed in the magnet-circuit for the purpose of automatically breaking said circuit when the cards are exhausted from the holder, locking the actuating mechanism against movement, as will be fully explained hereinafter.

The wire or cord 13 passes from the base of the thumb 10 around a pulley, 22, to a vertical slide, 23, playing in a slot, 24, in the disk 25, forming the inner extremity of the movable forearm. Pivoted in slot 24 is an arm or lever, 26, the upper end whereof impinges against a step, 27, secured to the under side of disk 4. The lever 26 bears against a cross-bar, 28, of the slide 23 when the disk 25 is turned toward the trunk of the figure, and swings away from the slide when the disk moves in the opposite direction, as indicated by the dotted lines in Fig. 6.

29 is a spring-motor employed for moving

the arm and feeding the cards, said motor being secured within the trunk of the figure. 30 is the driving-shaft provided with two cranks, 31 and 32, the upper extremity of said shaft bearing a wheel, 32^a, wherein is a perforation or slot, 33. Passing from the cranks 31 and 32 are wires or cords 34, which extend around the grooved pulley 7 in opposite directions, their extremities being secured within the grooves.

35 is a lever pivoted to the frame of the motor, and bearing at its free end an armature, 36, located in front of the poles of the magnet 18.

37 is a downwardly-extending arm secured to lever or bar 35 in such a position that when said bar is depressed arm 37 will drop into the slot or perforation 33 in wheel 32^a, but when raised will ride upon the upper face of the wheel.

38 is a second depending arm attached to bar 35 in such a position that when depressed it will be struck by the regulating fly-fan 39 of the motor; but when raised it will permit the free movement of the same.

40 is a horizontal shaft driven by bevel-wheels 43 and 42.

44 is a card-holder located in the trunk of the figure, the back and one side being provided with a movable lining, 45, which may be closed up or drawn out by means of set-screws 46, in order to accommodate different sizes of cards. Within the holder 44 is a supporting-platform, 47, arms 48 upon each side thereof extending through slots 49 in each side of holder 44 and engaging with springs 50. The upper ends of springs 50 are secured near the top of the holder.

51 is a drum, its shaft 54 being mounted in bearings 52 at each side of the top of the holder. The face of the drum is provided with short spurs 53. One end of shaft 54 bears a ratchet-wheel, 55, and a ratchet, 56, is mounted upon the extremity of an arm, 57, pivoted upon the drum-shaft. 58 is a pitman passing from crank 41 to a set-screw, 59, adjustably secured in a slot, 60, in arm 57.

At the front of holder 44 is located a hopper, 61, terminating in a curved chute, 62, extending through the trunk of the figure to a card case or receiver, 63, which is clasped by the left hand, 64, of the figure. 65 are light springs fixed at the mouth of the receiver 63, which, while permitting a card to be withdrawn from the receiver, prevent its accidentally falling therefrom.

66 is a set-screw passing through the back of receiver 63, and engaging with a movable gage or back, 67, in order that the depth of the receiver may be regulated for different widths of cards.

When constructed and arranged in accordance with the foregoing description, the operation of my card-distributing automaton is as follows: Cards being supplied to the holder, they are held up against the feeding-roller. The motor being wound up and the magnet-

circuit closed, the right hand will move toward the receiver in the left hand, grasping the card between the thumb and forefinger when the receiver is reached. The card opens the magnet-circuit, permitting the arm 37 to drop against the wheel 32^a, and when the hand has reached its limit of outward movement the said arm 37 drops into the slot 33, and the escapement of the motor is brought to a standstill by striking arm 38. The hand will remain in an extended position until the card is removed, by which act the magnet-circuit is closed, raising the stop from the escapement, and the hand will again grasp a card, which in the meantime has been fed to the receiver, and this movement will be repeated until all the cards are exhausted. When the card-support reaches the switch 19 20, the arm 21 will be raised, breaking the magnet-circuit, preventing further action of the automaton until more cards are supplied to the holder.

Having now fully described my invention, what I claim as new therein, and desire to secure by Letters Patent, is—

1. An automaton having an electrically-controlled movable arm, the hand whereof is adapted and arranged to grasp a card or its equivalent and hold the hand in an extended position until the card is removed therefrom, when the contact is established and the electric circuit completed, substantially as shown and described.

2. In an automaton representing a human being provided with a single movable arm, the hand thereon being adapted and arranged to grasp a card or its equivalent, in combination with a device located within said automaton for feeding the cards to said hand, substantially as shown and described.

3. In an automaton of the character herein specified, an actuating-motor, in combination with a fixed upper arm, a movable forearm the hand thereon being provided with a movable thumb, a card-holder located in the body of the figure, and a chute leading to a receiver grasped by the stationary hand of the figure, toward which said movable arm is carried when the electric circuit is completed and the motor set in operation, substantially as shown and described.

4. In an automatic card-distributor consisting of a figure provided with a swinging forearm, the combination, with a hand adapted and arranged to grasp and hold a card, of a card receiver and holder provided with an intermittently-moved feeding-roller, and a motor for imparting motion to the whole, substantially as shown and described.

5. In an automaton of the character herein specified, the combination, with a hand the thumb whereof is made movable, of a swinging arm, electrical conductors passing through the arm and hand to contact-pieces upon the thumb and forefinger, by means of which the electric circuit may be completed or broken, an electro-magnet and battery located in the

circuit of which said conductors form a part, the armature of the magnet bearing an arm adapted and arranged to control the movement of the actuating mechanism of the automaton, substantially as shown and described.

6. In an automaton, the combination, with an actuating-motor provided with a regulating fly-fan, and the bar or lever 35, pivoted above the same and provided at its free end with an armature, 36, and with a downwardly-projecting arm, 38, of an electro-magnet arranged in juxtaposition to said armature, and a battery, 17, situated below the whole, and provided with conducting-wires 15, leading to contact-pieces 16 16, situated in the forefinger and thumb, respectively, of the figure, substantially as and for the purposes herein set forth.

7. In an automaton of the character herein specified, the combination, with the electric circuit and magnet controlling the movement of the actuating mechanism, of a switch located in said electric circuit and composed of an immovable contact-piece, 19, and swinging contact 20, provided with an arm, 21, on the same, whereby the circuit is automatically opened when the cards are exhausted from the holder, substantially as and for the uses and purpose shown and described.

8. In an automaton, the combination, with an actuating-motor the main shaft of which being provided at its upper end with a slotted disk, 32^a, and an arm or lever pivoted above the same and provided with the two downwardly-projecting arms 37 and 38, and at its free end with an armature, 36, of an electro-magnet, 18, situated above said armature, and the battery located below said magnet and provided with conducting-wires 15 15, leading to contact-pieces 16 16 in the thumb and forefinger of the figure, substantially as described.

9. The combination, with the motor having a regulating fly-fan, 39, and the main driving-shaft bearing a slotted wheel, 32^a, of a bar, 35, pivoted above the same and provided with inwardly-projecting arms 37 and 38 and with an armature, 36, on its free end, conductors 15, leading from the battery 17 to contact-pieces 16, situated in the thumb and forefinger, respectively, of the figure, and an electric switch composed of a fixed contact, 19, and swinging contact 20, the movement of which is controlled by the support 48 within the card-holder, substantially as shown and described.

10. The combination, with the hand 9, of the movable thumb 10, mounted upon a pivot, 11, and normally held against the forefinger 12 by a spring, 14, a cord or wire, 13, passing to a slide, 23, mounted in disk 25, the movement of said slide being controlled by a pivoted arm, 26, and a step, 27, fixed on disk 4, substantially as shown and described.

11. In an automaton, the combination, with the main driving-shaft, of the cranks 31 and 32, formed on the same, and the cords or wires

34, connecting said cranks with the wheel 7, rigidly attached to the shaft 6, to the extreme lower end of which is fastened the movable forearm, substantially as and for the purposes set forth.

12. In an automaton, the combination, with the main driving-shaft, of the actuating-motor provided with cranks 31 and 32, formed thereon, to which are attached the ends of the cords or wires 34, wound oppositely around the periphery of the wheel 7, rigidly attached to the upper end of the shaft 6, to the lower end of which is fastened the swinging forearm and hand provided with the vertically-movable thumb, substantially as and for the purposes set forth.

13. In an automaton of the character described, an actuating-motor, 29, the driving-shaft 30 of which is provided with the cranks 31 and 32, formed thereon, to which are attached the cords or wires 34, wound oppositely around the periphery of the wheel 7, attached to the upper end of the shaft 6, to the lower end of which is fastened the swinging forearm provided with an integral hand, 9, having a vertically-movable thumb normally held in a lowered position by means of a spring, 14, and to which is attached the cord or wire 13, leading therefrom to a slide, 23, the movements of which are controlled by means of a swinging arm, 26, and step 27, substantially as described, and as herein set forth.

14. In an automaton of the character described, the combination, with the driving-shaft 30, provided near its lower end with a bevel gear-wheel, 43, meshing with a similar gear-wheel, 42, rigidly attached to one end of an axle, 40, near the other end of which is a crank, 41, of a pitman, 58, connecting this crank 41 with the ratchet-bar 57, to which is attached the separate ratchet 56, acting in conjunction with the ratchet-wheel 55, to the axle of which is rigidly fastened the feeding-drum 51, substantially as and for the purposes set forth.

15. An automaton representing a human being, and in combination with the same, a card-holder containing cards, a spur feeding-roller above and adapted to intermittently remove the cards from the same, and an actuating-motor within said automaton and adapted to operate said spur feeding-roller, substantially as described.

16. In an automaton of the character described, the combination, with the card-holder hopper 61, and chute 62, located near the same and leading to a card-receiver, from which the cards are removed by the hand 9, on the movable forearm, of a feeding-roller located above them and adapted to transfer the cards singly from said holder to said chute, with an intermittent movement corresponding with the motions of said hand 9, substantially as and for the purposes set forth.

17. The combination, with the card-receiver to which the cards are intermittently fed, of a hand mounted upon a swinging arm adapted

and arranged to automatically remove the cards from said receiver, and mechanism for moving said arm, substantially as shown and described.

5 18. In an automaton, the combination, with the card-holder 44 and feed-roller 51, located above the same, of the hopper 61, with chute 62, leading from its lower end to a receiver, 63, provided with a screw-actuated adjustable
10 back, 67, substantially as described, and for the purposes herein set forth.

19. In an automaton, a card-receiver located in the stationary hand, to which cards are intermittently fed as fast as removed by the
15 other and swinging hand attached to an oscillating forearm, the whole being operated

by a motor situated in the body of the device and adapted to be automatically stopped and started by electrical means, substantially as and for the purposes set forth. 20

20. The combination, with a card-holder, 44, a supporting-platform, 47, being mounted in said holder, and to which are attached springs 50, exerting a constant pressure upward, of the movable lining 45, inside of said holder, 25 provided with adjusting-screws 46, substantially as shown and described.

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Witnesses:

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