No. 698,984. Patented Apr. 29, 1902.

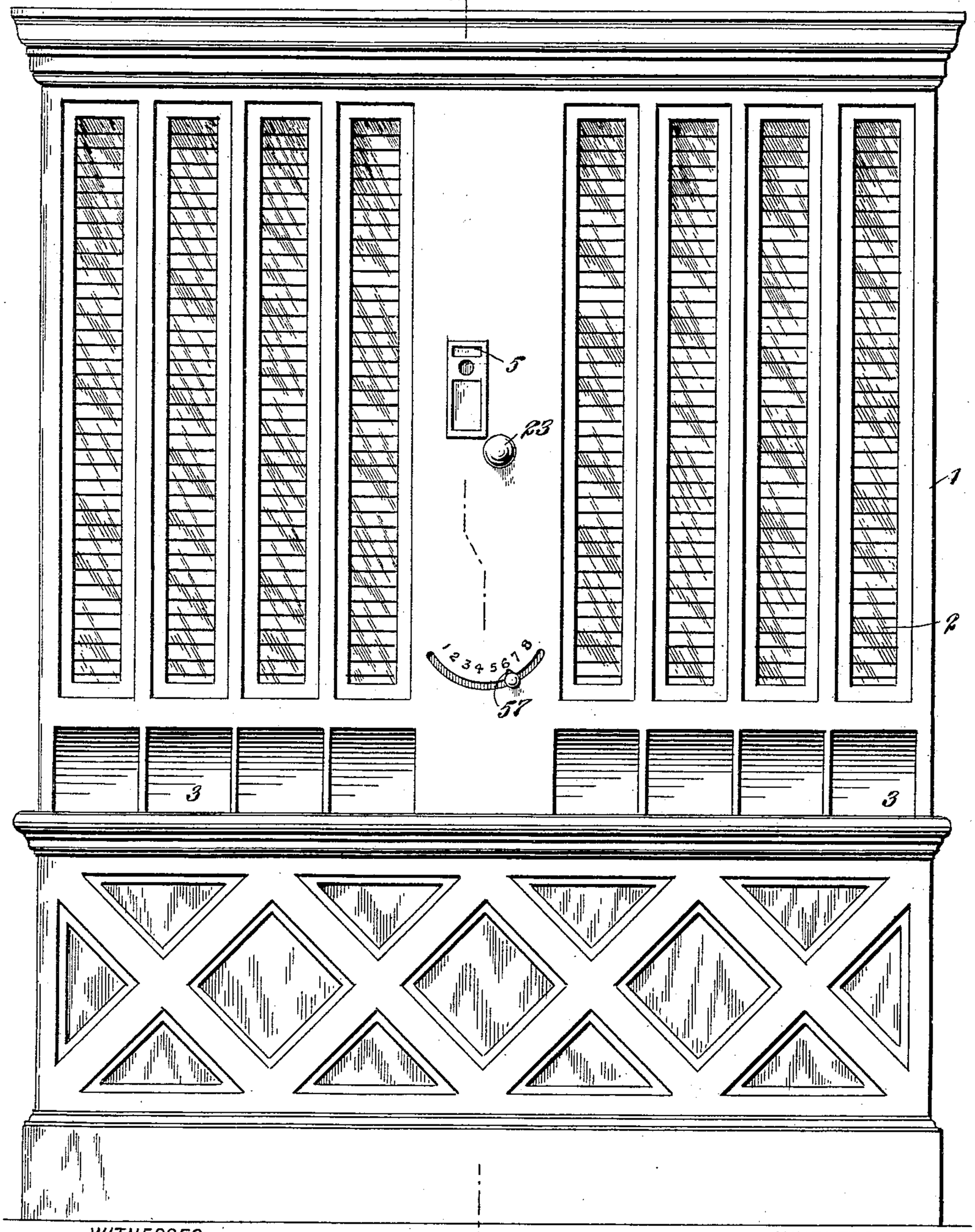
F. LYNES.

COIN CONTROLLED VENDING MACHINE.

(Application filed June 1, 1901.)

(No Model.) 7 Sheets—Sheet 1.

Fig 1



WITNESSES:

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C. R. Ferguson

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BY Munn & Co

ATTORNEYS

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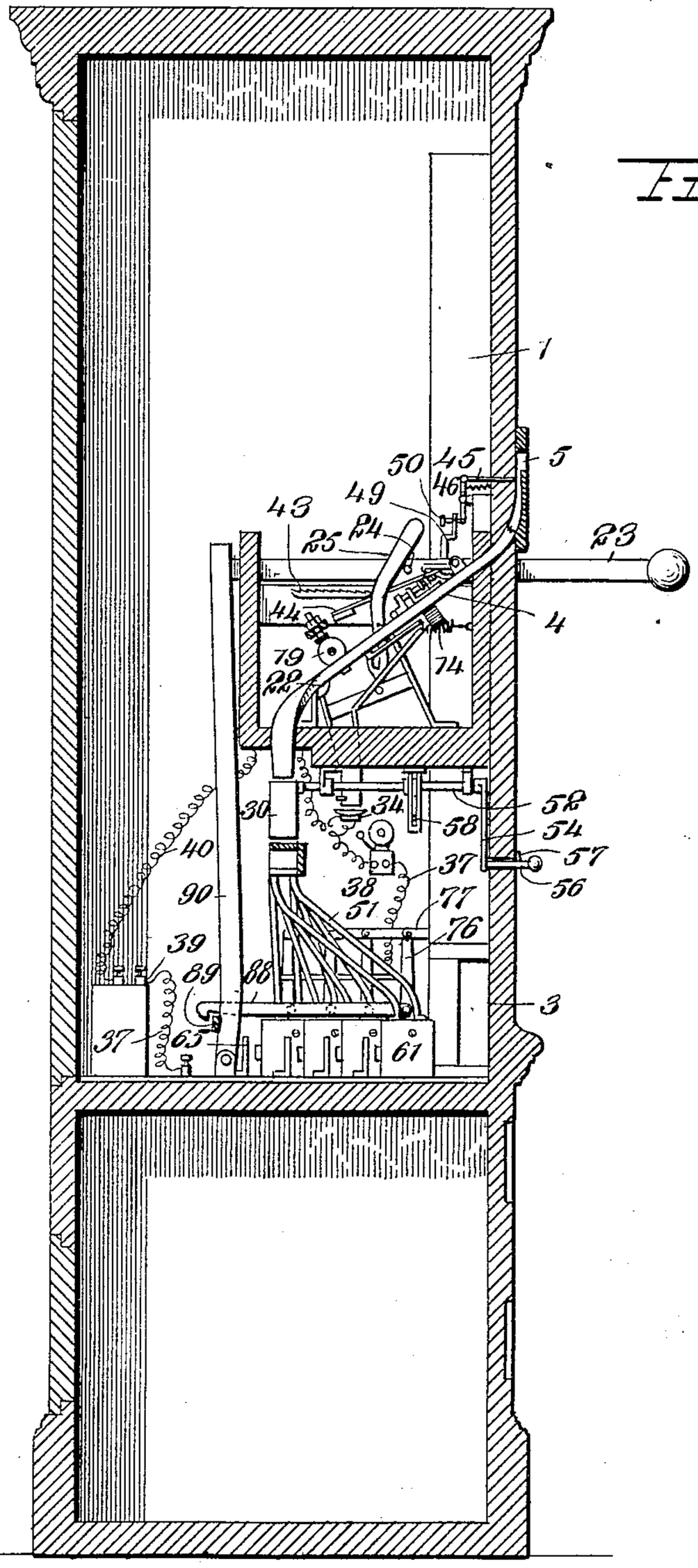
(No Model.) 7 Sheets—Sheet 2.

Fig 2



WITNESSES:
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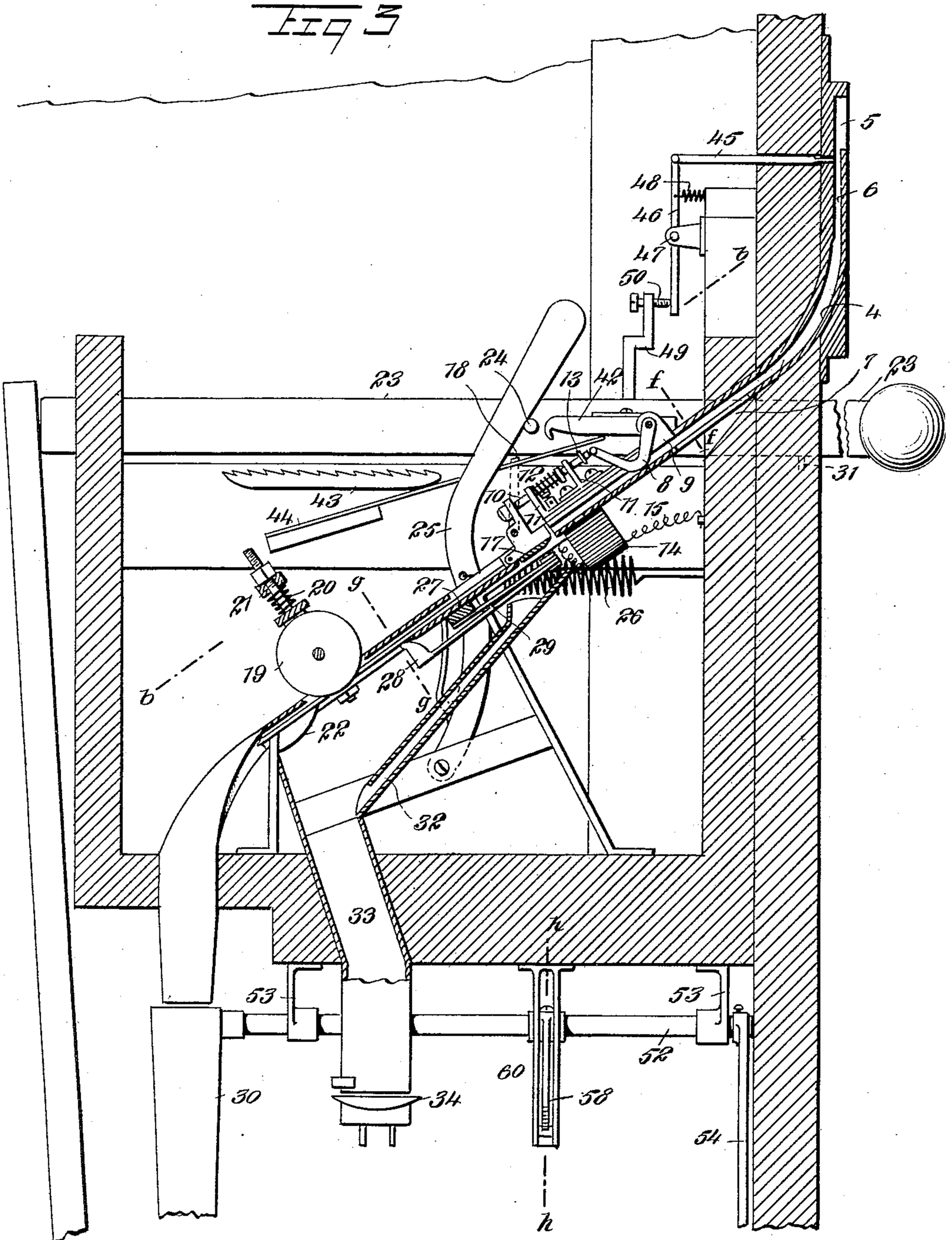
(No Model.) 7 Sheets—Sheet 3.

Fig 3



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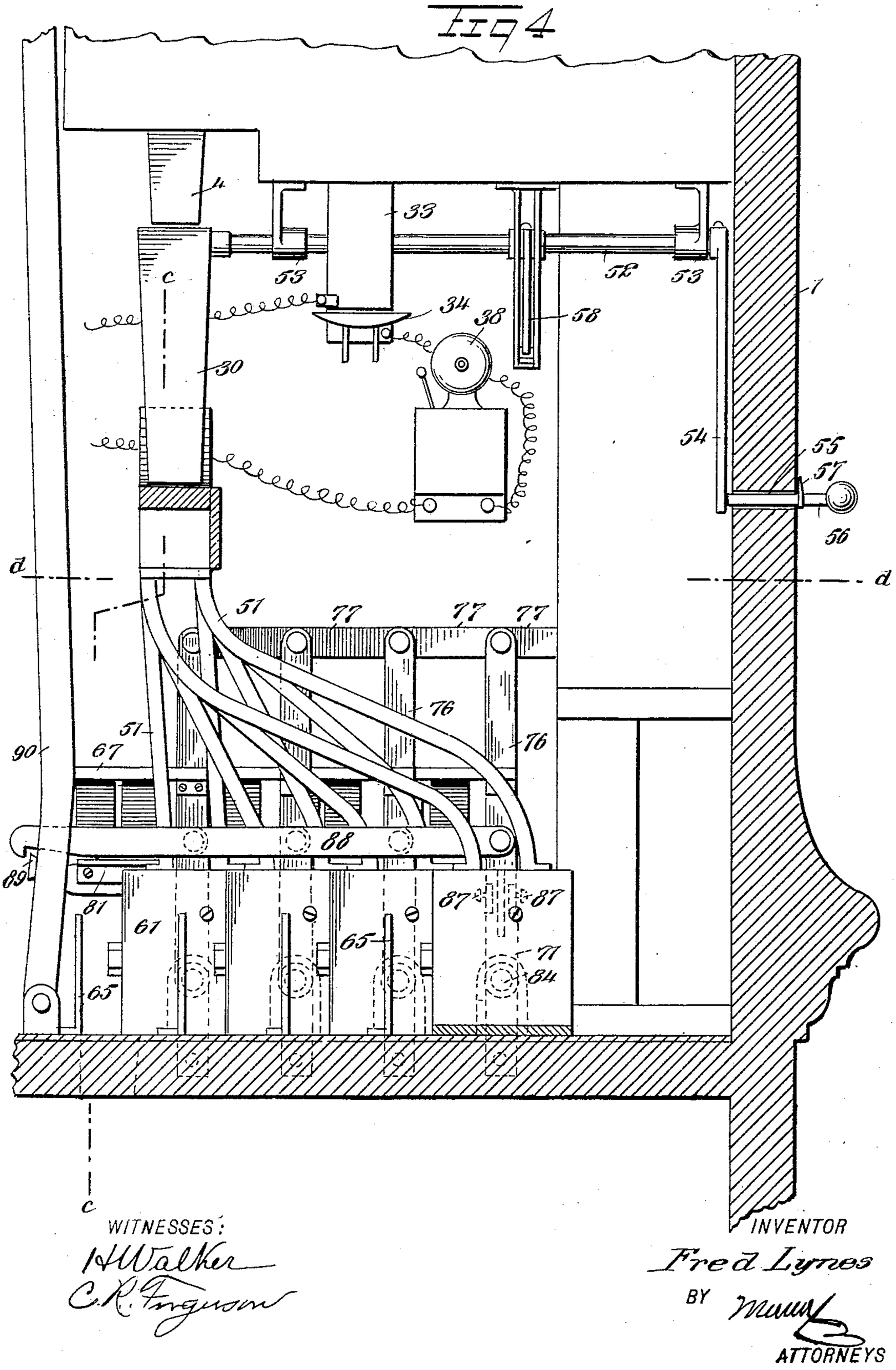
(No Model.) 7 Sheets—Sheet 4.

Fig 4



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(No Model.) 7 Sheets—Sheet 5.

Fig 5

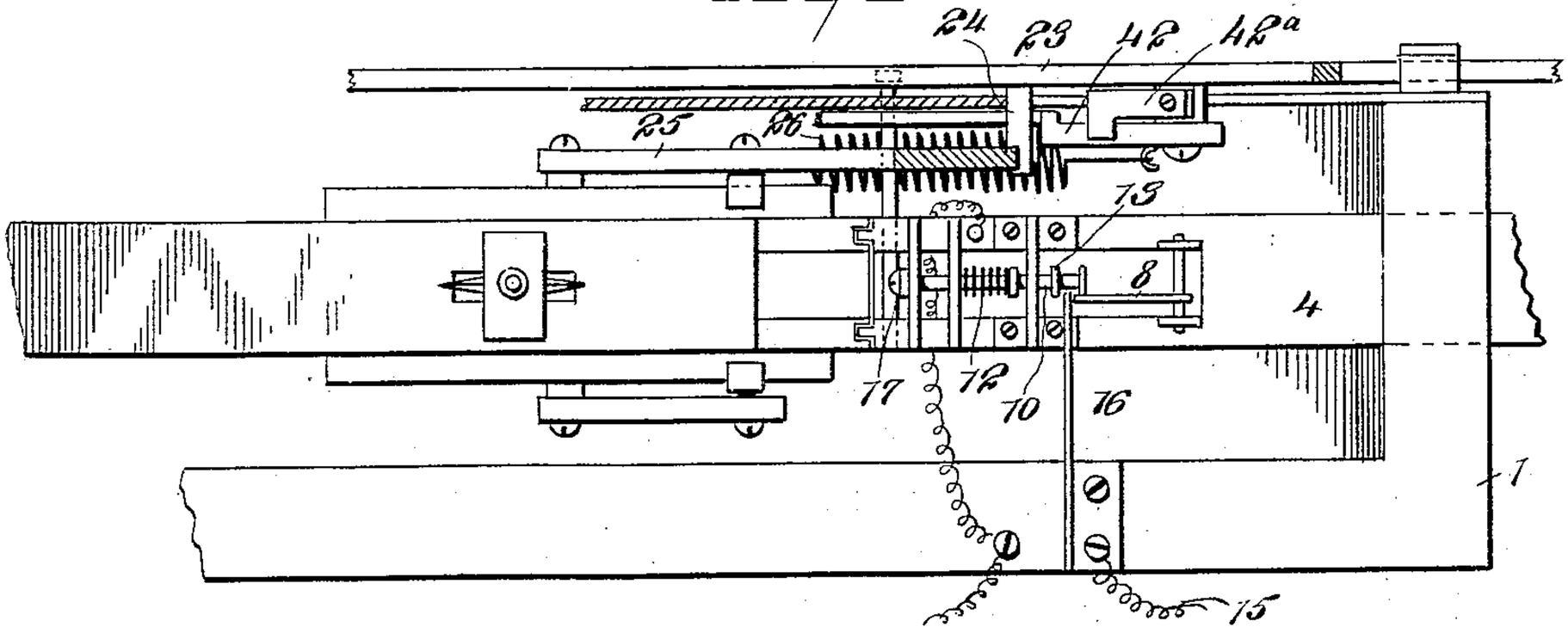


Fig 9

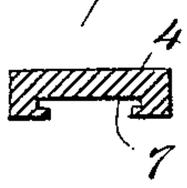


Fig 10

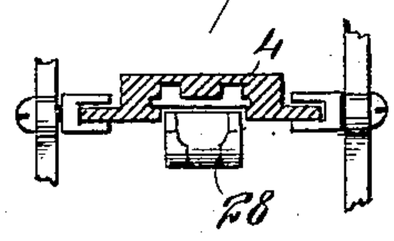


Fig 11

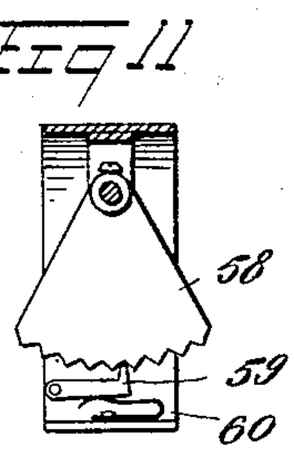


Fig 12

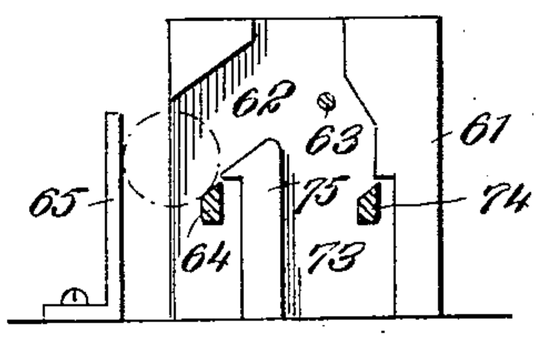


Fig 13

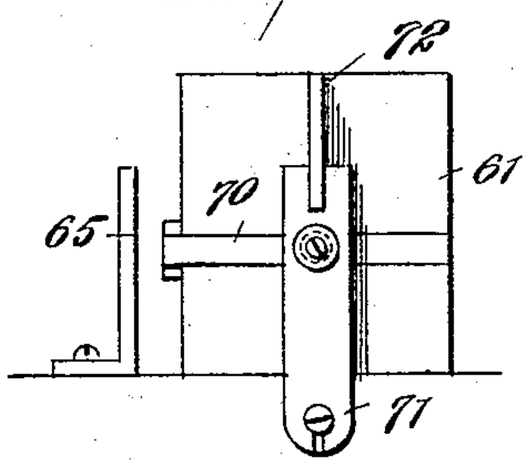
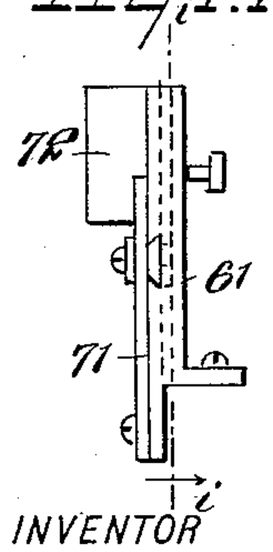


Fig 14



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COIN CONTROLLED VENDING MACHINE.

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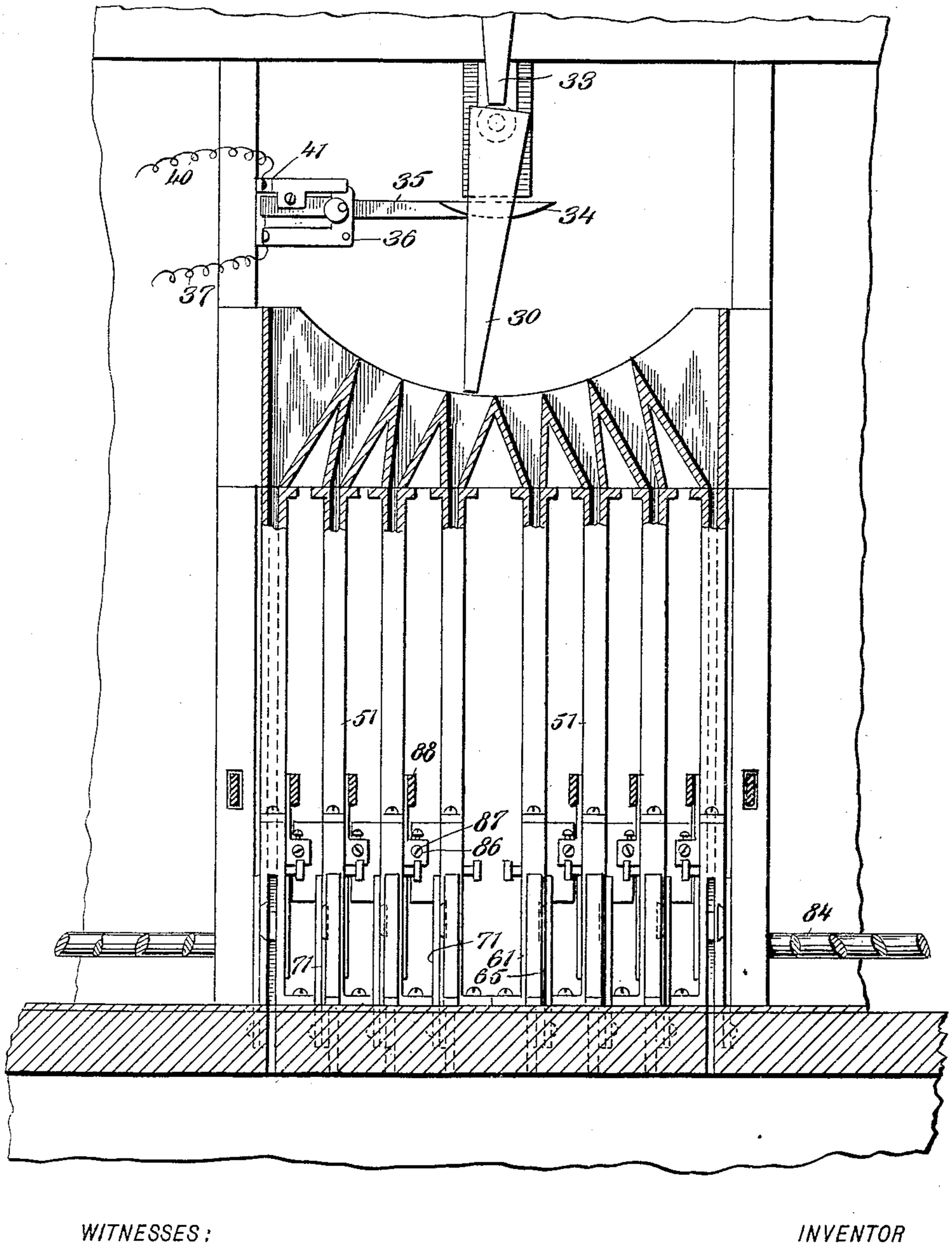
(No Model.) 7 Sheets—Sheet 6.

Fig 6



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(No Model.) 7 Sheets—Sheet 7.

Fig 7

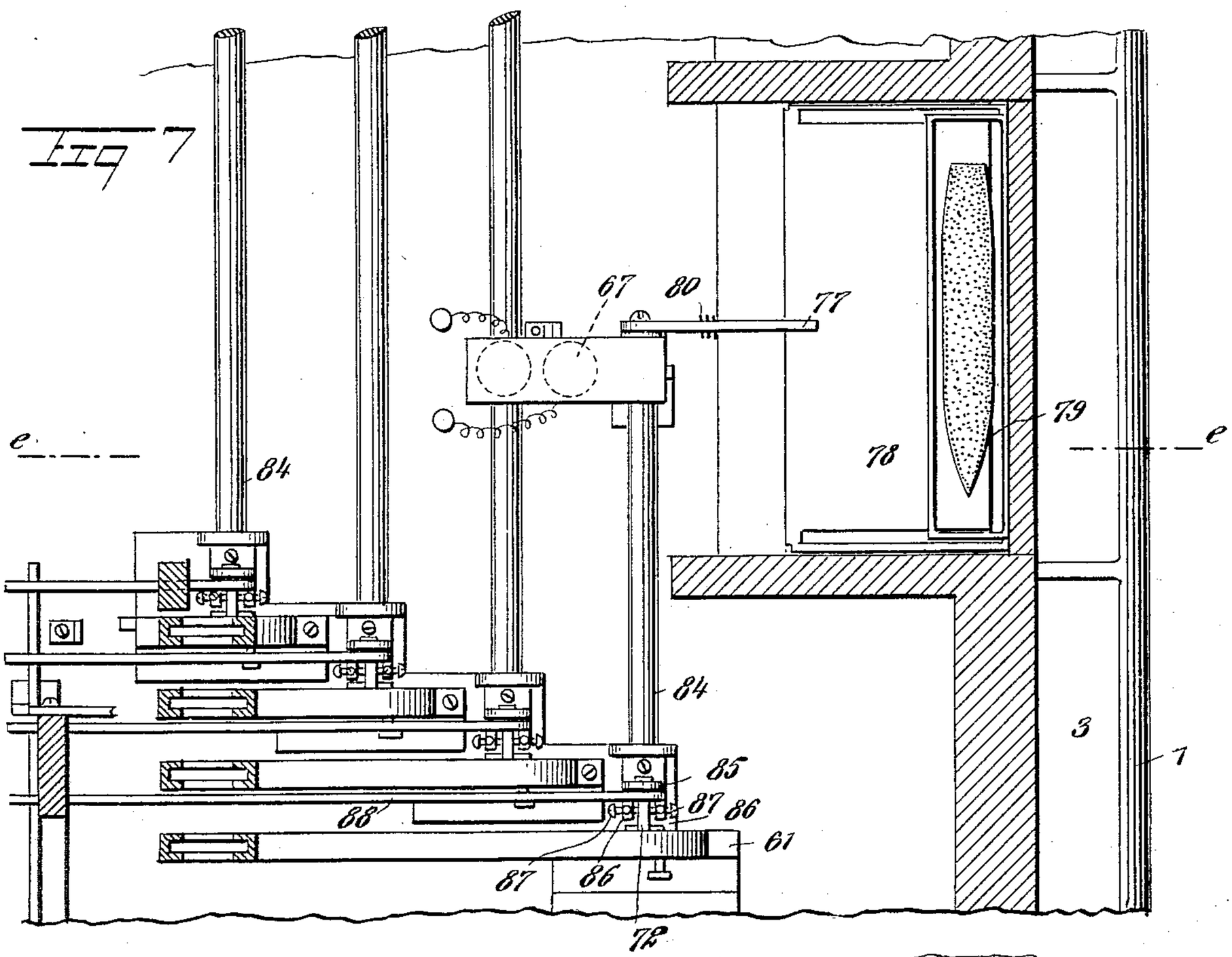
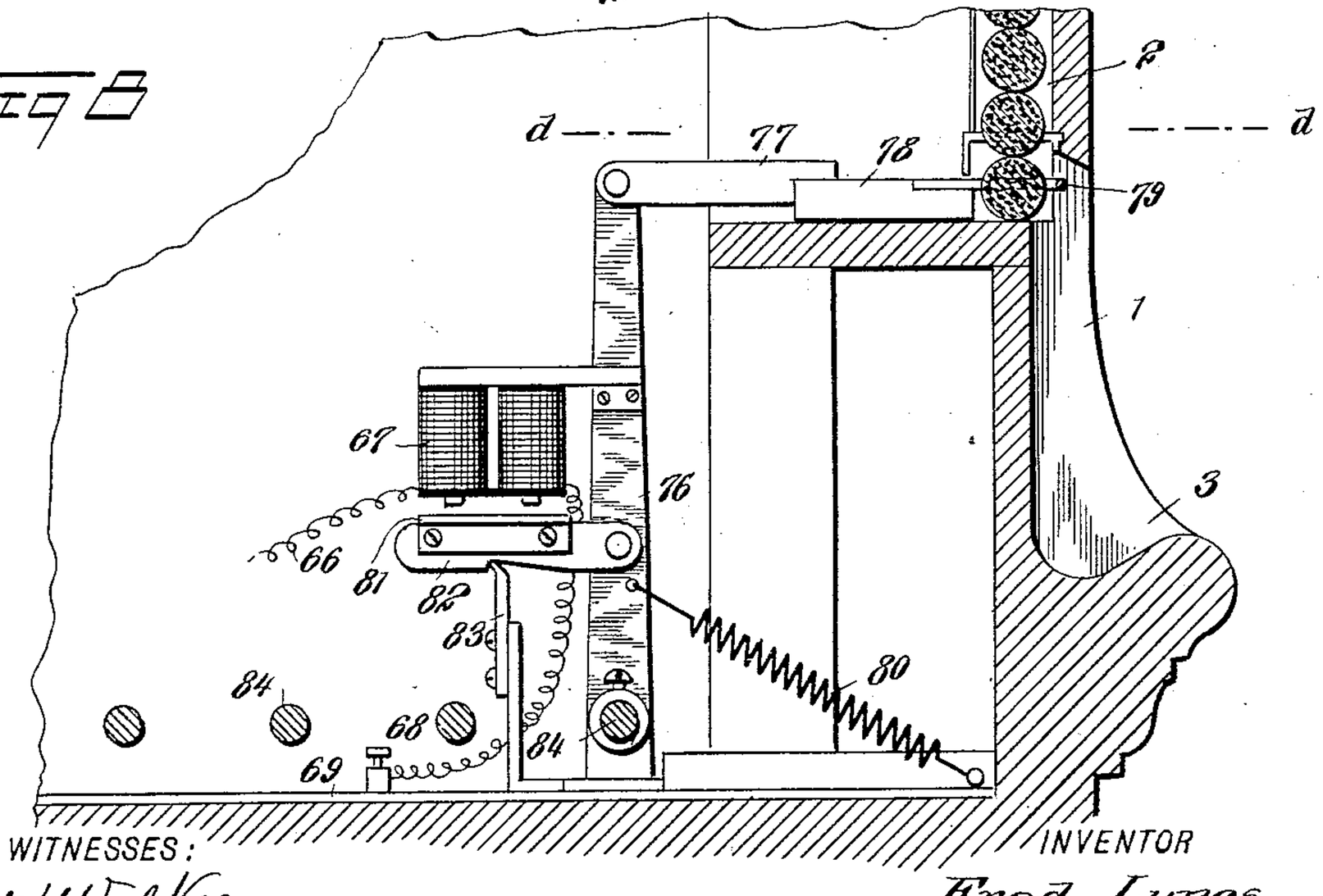


Fig 8



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UNITED STATES PATENT OFFICE.

FRED LYNES, OF JOHNSTOWN, NEW YORK.

COIN-CONTROLLED VENDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 698,984, dated April 29, 1902.

Application filed June 1, 1901. Serial No. 62,714. (No model.)

To all whom it may concern:

Be it known that I, FRED LYNES, a citizen of the United States, and a resident of Johnstown, in the county of Fulton and State of New York, have invented a new and Improved Coin-Controlled Vending-Machine, of which the following is a full, clear, and exact description.

This invention relates to coin-controlled vending-machines; and the object is to provide a vending-machine adapted to contain articles of different values or grades and to deliver an article from any desired one of the several receptacles upon the insertion of a coin and directing it by means of a novel device to the controlling mechanism for the desired receptacle.

A further object is to so construct the parts that two coins may be inserted with but one of them acting on the mechanism.

Still another object is to provide a simple device for preventing devices other than the required coin from operating the machine.

I will describe a vending-machine embodying my invention and then point out the novel features in the appended claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a front elevation of a vending-machine embodying my invention. Fig. 2 is a section on the line *a a* of Fig. 1. Figs. 3 and 4 are sectional elevations substantially on the same line as Fig. 2, but showing the upper and lower mechanisms as broken apart and on a larger scale. Fig. 5 is a section on the line *b b* of Fig. 3. Fig. 6 is a section on the line *c c* of Fig. 4. Fig. 7 is a section on the line *d d* of Figs. 4 and 8. Fig. 8 is a section on the line *e e* of Fig. 7. Fig. 9 is a detail section on the line *f f* of Fig. 3. Fig. 10 is a detail section on the line *g g* of Fig. 3. Fig. 11 is a detail section on the line *h h* of Fig. 3. Fig. 12 is a section on the line *i i* of Fig. 14 and illustrating the receiver of a coin prior to its dropping into a hopper or receptacle, and Figs. 13 and 14 are respectively side and edge views of said receiver.

Referring to the drawings, 1 designates a casing which is divided into several sections, each section being designed to receive the articles to be vended. As here shown, each section is provided with a glass front 2, and the article discharged from each receptacle is designed to drop into a tray 3, formed below the section. In the case of cigars being the article vended the cigars may be placed in suitable boxes, one cigar upon another, the front of the box of course being removable.

Extended downward at an angle within the casing is a coin-chute 4. This coin-chute at its outer end, which is arranged at substantially the center of the casing, is provided with an opening 5, into which the coin is to be inserted flatwise. This opening 5 is made of a diameter equal to the coin to be inserted—say a five-cent piece—and a larger coin cannot be inserted. Below the opening 5 the chute is restricted in width, as at 6, the width being substantially equal to the thickness of the coin.

Arranged in the bottom of the chute, within the casing, is an opening 7, which will permit of a cent or similar small coin to pass through it and fall to the bottom of the casing. The ledges at the sides of this opening, however, will form guides for the five-cent piece. Below this opening 7 is an angle-arm 8, which is pivoted to a stud 9, and its angular portion passes through an opening in the top of the chute and normally engages with the bottom wall of the chute. The free end of this arm 8 normally engages with a pin 10, which forms an electrical contact, as will be hereinafter described. This pin 10 is mounted to slide in uprights 11, supported on the chute, and is pressed forward or toward the arm 8 by means of a spring 12, which abuts against a contact point or collar 13, which has electrical connection with a source of electricity and with an electromagnet 14, attached to the lower side of the chute and having its core extended through the bottom wall. From one end of the coil of this electromagnet a wire 15 extends to a connection with the source of electricity. The contact 13 is designed to engage with a contact-point 16, which is in connection with the wire 15.

Arranged in the bottom wall of the chute below the electromagnet is an opening which is controlled by a trap-door 17. This trap-door has an upward projection connecting with a pin 10, and on the pivot-shaft of this trap is an arm 18, designed to be engaged to operate the trap, as will be hereinafter described.

Arranged at the lower portion of the chute

is a stop-wheel 19, which extends at its lower portion through an opening in the top of the chute and also extends somewhat into an opening or slot in the lower wall of the chute. This wheel has a stem portion 20, movable in a guide 21, and a spring engages at one end with the yoke, in which the wheel is supported, and at the other end with said guide and normally holds the stop-wheel yieldingly downward. Below this stop-wheel at the under side of the chute is a cutting-blade 22. A push-bar 23 is movable inwardly and outwardly relatively to the casing. This push-bar extends outward through the front wall of the casing near the center and is provided with a ball-shaped handpiece. On this push-bar is a pin 24, designed to engage with a lever 25, which is held yieldingly forward by means of a spring 26. This lever has connection with a bar 27, upon which a coin-pushing dog 28 is mounted. This coin-pushing dog has connection with a spring-plate 29, said spring-plate being connected to the bar 27.

In the operation of the device so far described when the proper coin is inserted in the opening 5 it will pass down the chute, raising the arm 8, and therefore releasing the contact-pin 10, which will engage with the contact 16 and close the electrical circuit through the electromagnet. Then upon pushing inward the push-bar 23 the pin 24, engaging with the lever 25, will rock said lever, causing the coin-pushing dog 28 to move downward, and by its spring-yielding tendency the said dog will pass upward through the slot in the bottom wall of the chute and engage with the upper edge of the coin that has been stopped by the stop-wheel 19. Then upon pushing the bar 23 farther inward the coin will be forced underneath said wheel and passed downward and fall into a hopper 30, the object of which will be hereinafter described. Should a cent or coin smaller than a nickel designed to be employed be inserted in the opening 5, it will pass downward and fall through the opening 7, as before described. Should a disk of iron or similar material having magnetic quality be inserted, it will pass downward, moving the arm 8 upward, releasing the pin 10, which will close the circuit, as before described, through the magnet 14. Therefore the disk acting as an armature will be held by the said electromagnet. Then as the push-bar 23 is moved still farther inward a pin 31 thereon will engage with the arm 18, which will rock the trap-door 17 upward and at the same time by pulling the rod 10 rearward to its normal position will break the circuit through the electromagnet, and then the disk of iron or the like will be released and will slide downward and will fall through the opening controlled by said trap 17. It will then pass into a chute 32 and into a main chute 33 and fall into a pan 34, attached to a lever 35, which is mounted to swing on a bracket 36, having a wire connection 37 with a bell or alarm 38, which is in connection with a battery 39, from which a wire 40 leads to a contact 41, designed to be engaged by the lever 35 to close the electric circuit as the said lever is moved downward by the weight of the device in the pan 34, thus giving the alarm. The disk of iron or the like will then slide down the pan 34 and drop to the bottom of the casing. Should a disk of lead be inserted, it will pass downward until it engages the stop-wheel 19. Then as the push-rod and the parts operated thereby are manipulated the lead disk will be forced underneath the wheel 19, and the force of the spring 20 will cause the wheel to bend the lead disk, and it will be further bent or cut by engaging with the blade 22. The disk will then pass downward through the chute 33 and into the pan 34, when the same operation will take place as described in connection with the iron disk.

From the above it will be seen that nothing but the required coin will pass to the lower mechanism or to the hopper 30, and therefore the machine will not be operated by inferior devices.

To prevent the push-bar 23 from being drawn outward before it shall have reached the limit of its inward movement, a hook-latch 42 is mounted to swing on said bar 23 and is designed to engage with the teeth of a fixed rack 43. Upon reaching the end of the fixed rack the hook-latch will swing downward and engage upon the upper surface of an inclined track 44, so that the push-rod may be drawn outward, and during this movement the latch 42 will be moved to its normal position, as indicated in Fig. 3, and rest upon the upper end of said inclined guide.

As will hereinafter appear, it may sometimes be desired to insert two coins of the same denomination—such, for instance, as two nickels—to purchase a ten-cent article or cigar. At other times it is only necessary to insert one coin, and to prevent the insertion and loss of a second coin before the first coin shall have performed its work I employ a stop-rod 45, which is movable through an opening in the front of the casing and is designed to pass across the chute 6 just below the opening 5. This stop-rod 45 is connected to a lever 46, pivoted to a lug 47, and from the lever 46 at a point above the point 47 a spring 48 extends to a connection with a fixed portion of the casing. Attached to the upper side of the push-bar 23 and extended upward therefrom is an arm 49, carrying an adjustable tappet 50, which when the bar is in its outer position engages with the lower end of the lever 46, holding the rod 45 with its end within the chute, so that a coin may be inserted. Immediately, however, upon pushing the push-bar inward the spring 48 will actuate the rod 45 to place it in the path of any other coin that may be inserted in the opening 5.

For each compartment in the casing there is a slideway or chute 51, any one of which is designed to receive a coin from the hopper 30. As indicated in Fig. 6, the upper ends of these

chutes 51 are made somewhat funnel-shaped, so as to insure the dropping of the coin therein. The hopper 30 is mounted on a shaft 52, which has bearings in hangers 53, and on the forward end of this shaft is a crank 54, and extended outward from this crank 54 through an opening 55 in the front of the casing and which is made in the form of an arc slot is a hand-rod 56, on which is mounted a pointer 57, movable over a series of figures which indicate the different compartments. A holding device consisting of an arc-shaped rack 58 is mounted on the shaft 52 and is designed to engage with a spring-pressed pawl 59, mounted in a hanger 60. The notches in this rack are so formed that the shaft may be rotated thereon in either direction, but will be held when moved to the desired point from accidental movement.

Each one of the chutes 51 leads to a receiver 61 for the coin, and the coin dropping into said receiver is designed to release a cigar or other article from the compartment with which it coacts. Each receiver is made in box-like form and has an inclined channel 62, through which a coin is directed by a pin 63, and the coin passing into said channel 62 will engage with a stop-lug 64 and also a contact-point 65, the said contact-point having a connection 66 with an electromagnet 67, and from this electromagnet a wire 68 extends to a connection with a plate 69, upon which all of the receivers 61 are placed. The several contact-points 65 may be also connected one with another or placed upon a plate common to them all. The lug 64 is mounted on a slide-bar 70, movable on one side of the receiver 61, the said lug being extended through a slot in the side wall of the receiver. This slide-bar 70 is connected to a lever 71, which is pivoted at its lower end, and on its upper end is an outwardly-extended wing 72. A coin upon being released by the lug 64, as will be hereinafter described, will drop into the receptacle or drawer in the lower part of the casing. As I have before stated, however, it may be desired to insert two coins of the same denomination to receive an article of a higher price. Therefore I provide each receiver 61 in addition to the channel 62 with an auxiliary channel 73, into which a stop-lug 74 extends from the slide-bar 70. In using this device the pin 63 must be removed. Then when two coins are passed into the opening 5, one directly above the other and engaging thereon, the two will pass down through the chutes and into the receiver 61. The first coin will be deflected by the bridge-piece 75 into the channel 73, where it will be held momentarily by the lug 74, permitting the upper coin to pass down into the channel 62 to close the electric circuit to energize the electromagnet 67 to force the article out of the compartment, as will be hereinafter described.

Upon the discharge of the article the two coins will be released by the lugs 64 and 74, so that they may drop into the receptacle.

Each electromagnet 67 is mounted on a discharging-lever 76, having a link connection 77 at its upper end with a push-plate 78, having at its outer portion a yoke or frame 79, designed to receive the lowermost cigar or other article in the compartment, and obviously by an outward movement of the plate 78 the article will be discharged through the opening at the bottom of the compartment and fall into the tray, from which it may be removed by the purchaser. This outward movement or discharging movement of the discharge-lever is performed by a spring 80, connected at one end to said discharging-lever and at the other end to the casing.

An armature 81 coacts with the electromagnet, and this armature is mounted on a latch arm or lever 82, pivoted to the discharge-lever 76 and engaged by a dog 83. Obviously upon closing the circuit by means of a coin through the electromagnet 67 the armature will be drawn upward, releasing the latch 82 from the dog 83, permitting the spring 80 to operate the discharging device.

It will be noted that each discharging-lever 76 is mounted on a shaft 84, and extended upward from the end of the shaft adjacent to the receiving device 61 is an arm 85, projected from which are lugs 86, supporting tappet-screws 87, which are designed to engage with the wings 72 on the levers 71, and connected to each arm 85 is a draw-bar 88, and these several draw-bars 88 extend rearward and ride upon a bar 89, extended in both directions from a lever 90, the said lever 90 having its upper end in the path of movement of the push-bar 23. The draw-bars 88 are provided with hook ends to engage with said bar 89. By this arrangement when the push-bar 23 is moved inward the several draw-bars 88 will rock their respective levers, which will first cause an inward movement of the discharging-levers 76 and at the same time move the lugs 64 and 74 in the position to be engaged by coins, and at this time the electromagnet 67 is energized, the circuit of which has been closed by the coin, so that its lever 76 is released to move the cigar or other article outward, as before mentioned. Then upon moving the push-bar 23 outward the tension of the draw-bars 88 will be relieved, permitting the discharging-lever 76 to perform its discharging work and permitting the several other discharging-levers to move merely to their normal position. It will therefore be seen that the push bar or rod 23 must be first moved inward and then moved outward before the article is discharged. It is quite obvious that by means of the shaft 52 the hopper 30 will be swung to any desired chute 51, and therefore the discharge of the proper article or that paid for is insured.

Having thus described my invention, I

claim as new and desire to secure by Letters Patent—

1. In a vending-machine, a plurality of receptacles for goods to be sold, a discharging device for each receptacle, a coin-receiver for each discharging device, electrically-operated means controlled by a coin for releasing the discharging device, chutes leading to said receivers, a coin-chute common to all the first-named chutes, and a swinging hopper under the control of the operator for directing a coin from the coin-chute to any one of the first-named chutes, substantially as specified.

2. In a vending-machine, a series of compartments, a discharging device for each compartment adapted when released to discharge an article therefrom, a coin-receiving device for each discharger, a chute leading into each receiver, an electrically-operated device for releasing the discharger, a contact movable in the receiver and having connection with said electric device, a chute extended from each receiver, a coin-chute having an opening at the front of the machine, and means under the control of the operator for directing a coin from said coin-chute into any one of the first-named chutes, substantially as specified.

3. In a coin-controlled vending-machine, a receiver for a coin, having two communicating channels, contact and stop lugs movable in said channels, contact-points adjacent to the receiver, and electrical connections closed by the coin for releasing a discharging device, substantially as specified.

4. In a coin-controlled vending-machine, a compartment or receptacle for goods, a discharging device for the goods, comprising a lever, means for moving said lever in discharging direction, an electromagnet carried by the lever, an armature carried by the lever and having swinging connection therewith, a latch for engaging with a notch in the armature, and contact-points adapted to be closed by a coin for closing the circuit through the electromagnet, substantially as specified.

5. In a vending-machine, a series of compartments, a discharge device for each compartment, a coin-receiving device for each discharger, a chute leading into each receiver, a coin-chute having an opening at the front of the machine, and means under the control of the operator for directing a coin from said coin-chute into any one of the first-named chutes.

6. In a coin-controlled vending-machine, a series of receptacles for articles to be sold, the said receptacles being independent one of another, a coin-receiver for each receptacle, a discharging device for each receptacle, the said discharging device having an electromagnet for causing its release, the circuit through the magnet being closed by a coin in the receiver, chutes leading to the receivers, a coin-chute, a hopper for receiving the coins from the coin-chute, a shaft on which said hopper is mounted, whereby it may be moved to discharge a coin into any of the first-named chutes, a crank on said shaft having a handle portion extended through an arc slot in the machine-casing, and a retarding device for the shaft, substantially as specified.

7. In a coin-controlled vending-machine, a plurality of compartments or receptacles for articles to be sold, a discharging device for each receptacle, a shaft for each of the discharging devices, a coin-receiver for each of the receptacles, a lug mounted to slide in each receiver, the said lug being moved by connections with the shaft, draw-bars having connection with the shafts, the said draw-bars having hook ends, a bar on which the draw-bars slide and which is designed to be engaged by said hook ends, an upwardly-extended lever to which the bar is attached, and a push-rod for moving said bar in one direction, substantially as specified.

8. In a vending-machine, a series of compartments, a discharge device for each compartment, a coin-receiving device for each discharger, a chute leading into each receiver, a coin-chute having an opening at the front of the machine, a hopper for receiving the coins from the coin-chute, a shaft on which said hopper is mounted, whereby the hopper may be moved to discharge a coin into any one of the first-named chutes, and means for holding the shaft in the desired position, substantially as specified.

9. In a coin-controlled vending-machine, a compartment or receptacle for goods, a discharging device for the goods comprising a lever, a spring for moving the lever in the discharging direction, an electromagnet mounted on said lever, an armature, an arm carrying said armature and pivoted to the discharging-lever, means for engaging said arm to hold the discharging-lever in inactive position, a coin-receiver, and contact-points adapted to be engaged by a coin to close the circuit through the electromagnet, substantially as specified.

10. In a vending-machine, a plurality of receptacles for goods to be sold, a discharging-lever for each receptacle, a shaft for each of the discharging-levers and provided with an arm, a coin-receiver for each of the receptacles, a stop-lug for the coin mounted to slide in each receiver, connections between said stop-lugs and the respective arms on the shafts of the levers, draw-bars connected with said arms and having hook ends, a bar on which the draw-bars slide and adapted to be engaged by the hook ends, a lever to which the bar is attached, and a push-rod for moving said lever in one direction as set forth.

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

FRED LYNES.

Witnesses:
GODFREY MOORE,
BARNEY J. WEMPLE.