

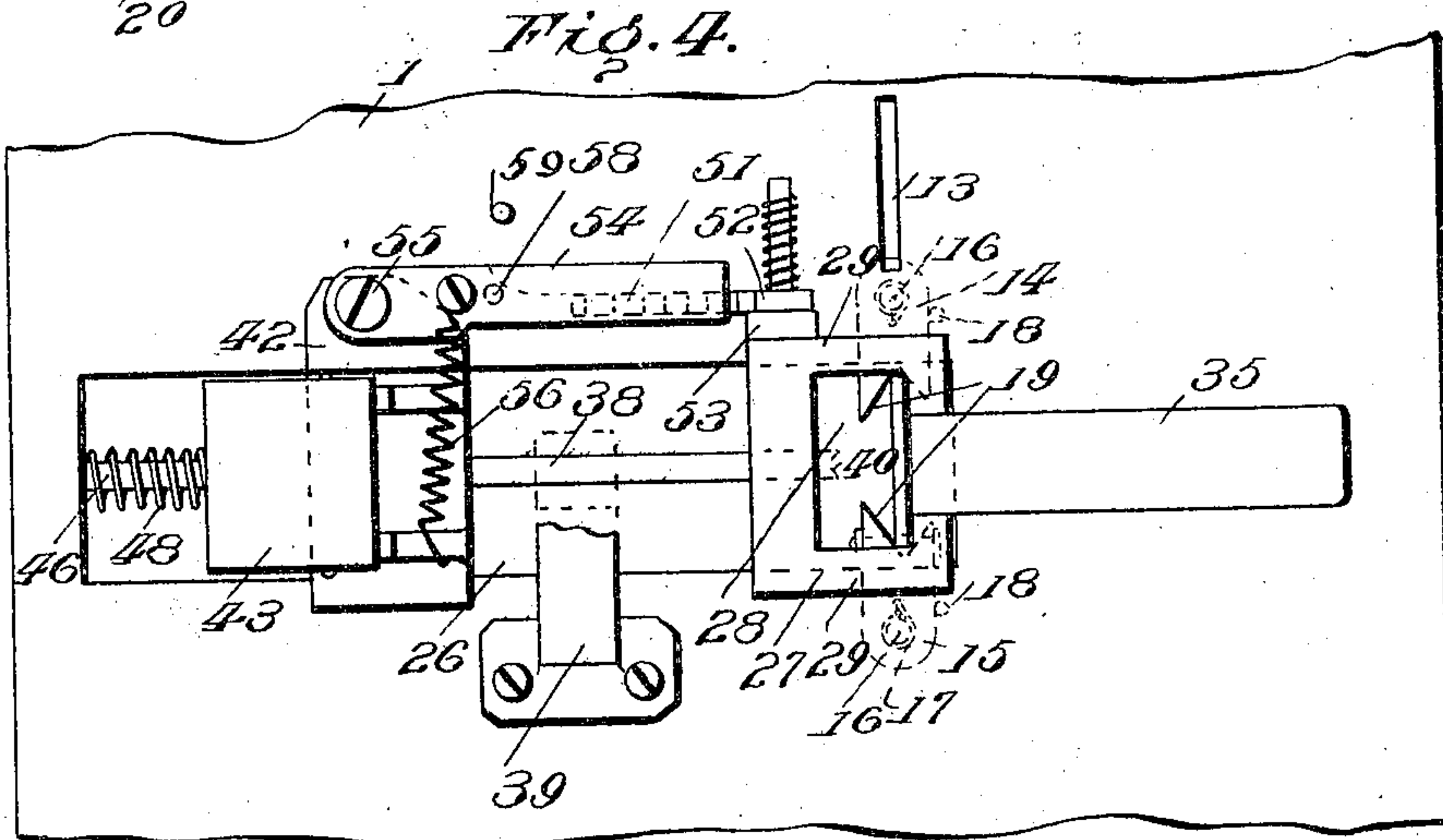
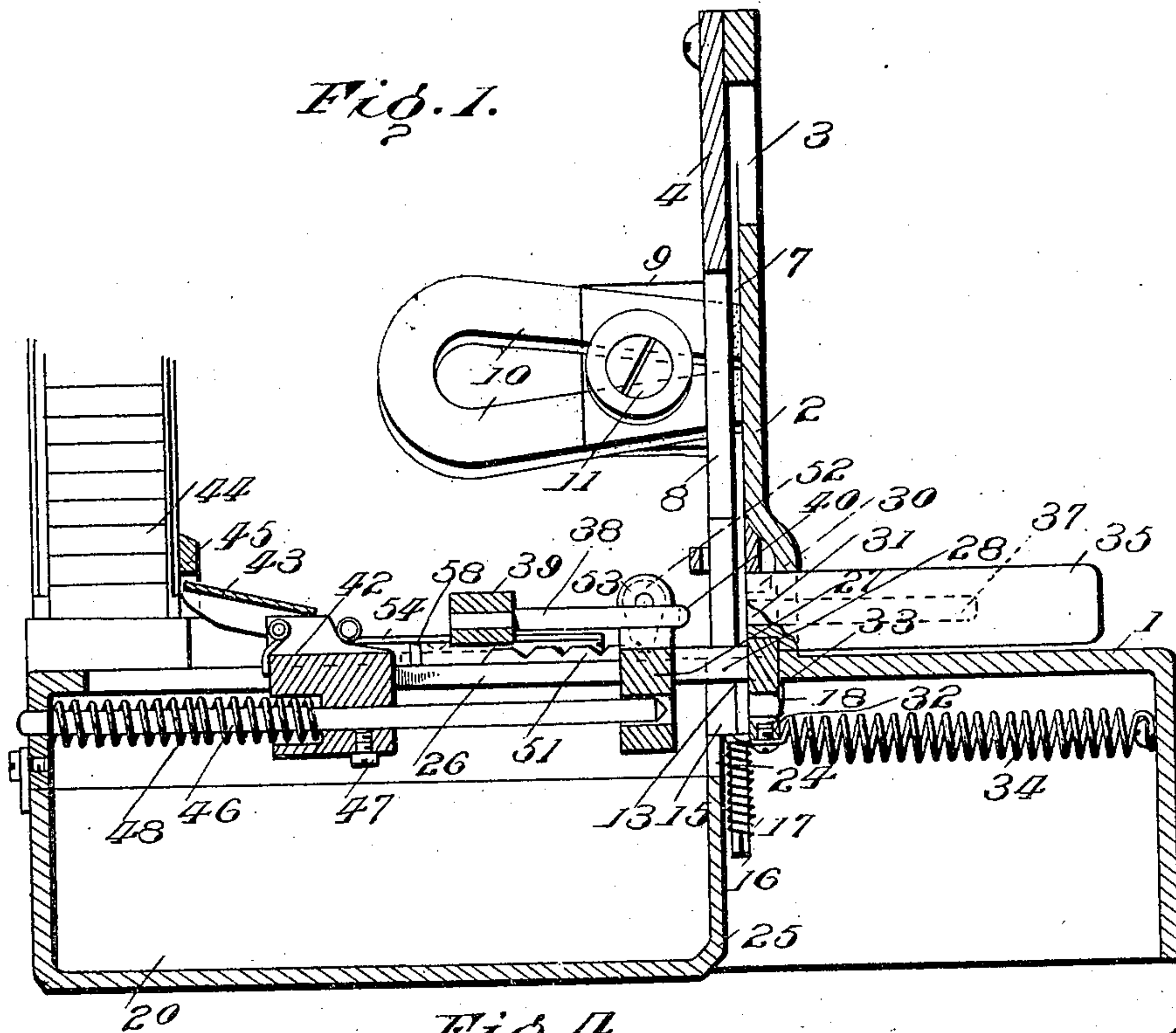
No. 810,747.

PATENTED JAN. 23, 1906.

F. E. HALL & A. MACLEOD.  
COIN CONTROLLED VENDING MACHINE.

APPLICATION FILED OCT. 6, 1904.

2 SHEETS—SHEET 1.



*Fig. 5.*

*Fig. 7.*

Witnesses

*Francis S. Meyers*

Inventors  
*Fred E. Hall*  
*Alexander MacLeod*

*J. H. [Signature]*  
Attorney

No. 810,747

PATENTED JAN. 23, 1906.

F. E. HALL & A. MACLEOD.  
COIN CONTROLLED VENDING MACHINE.

APPLICATION FILED OCT. 6, 1904.

2 SHEETS—SHEET 2.

Fig. 2.

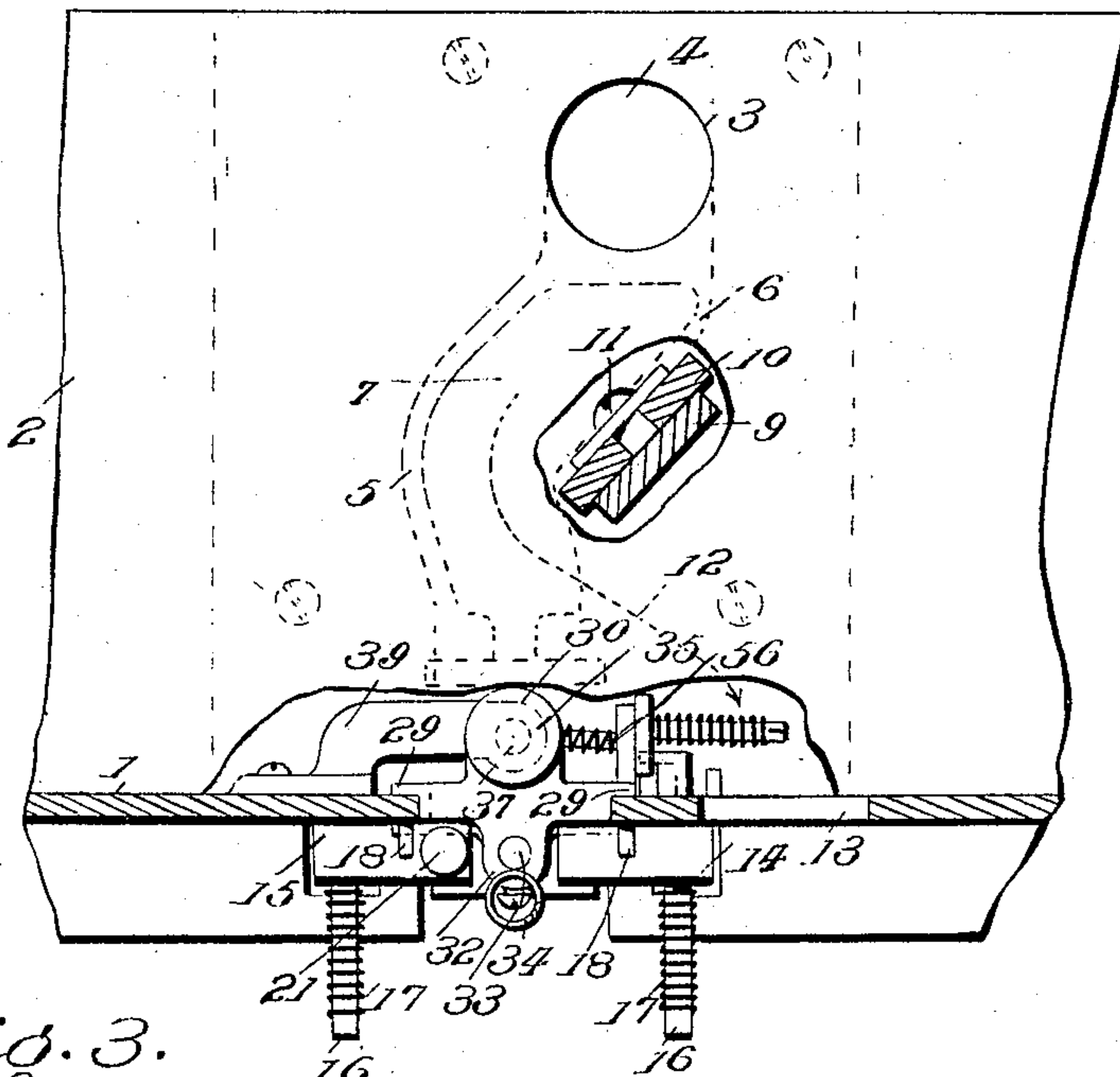


Fig. 3.

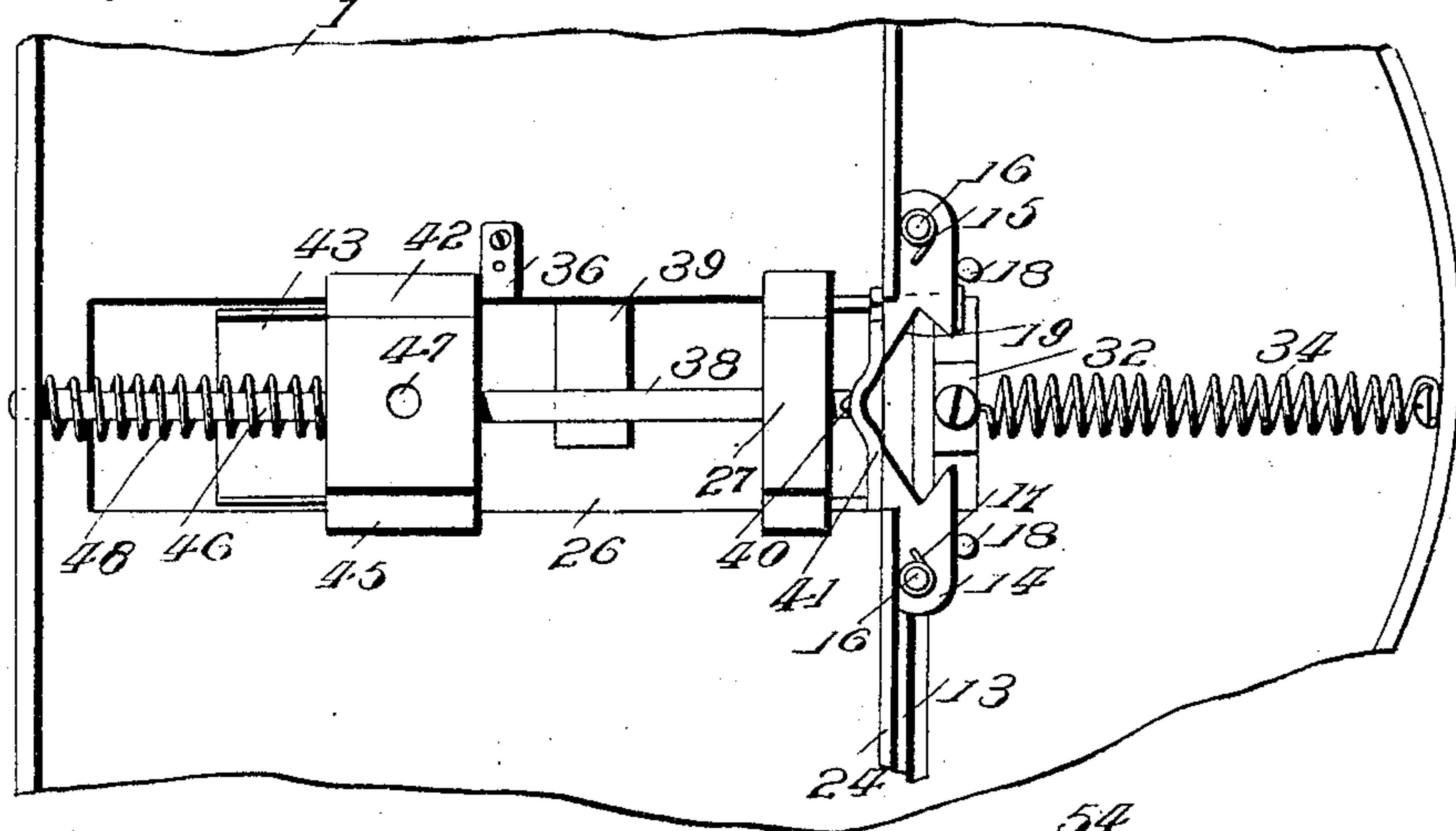


Fig. 8.

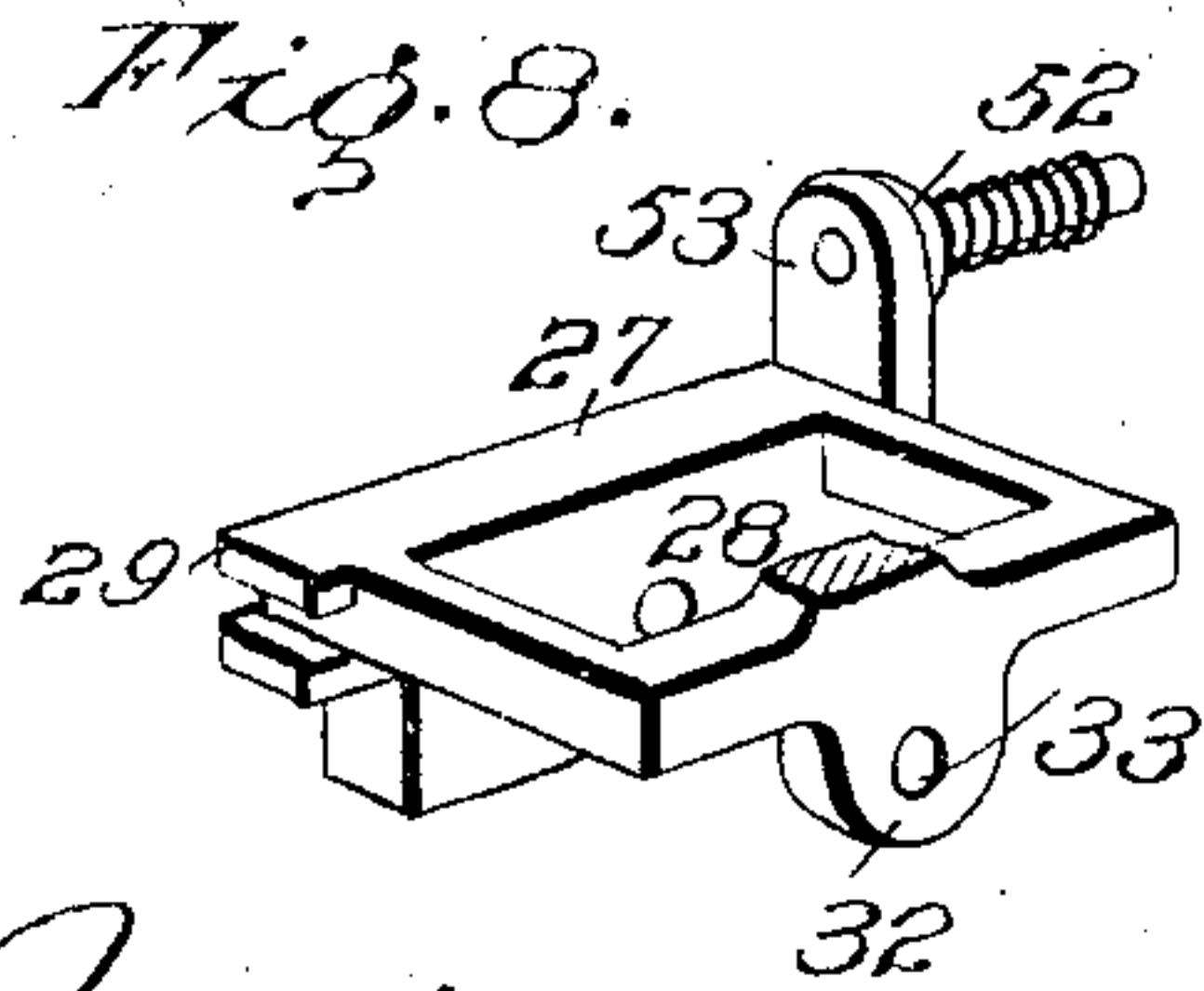
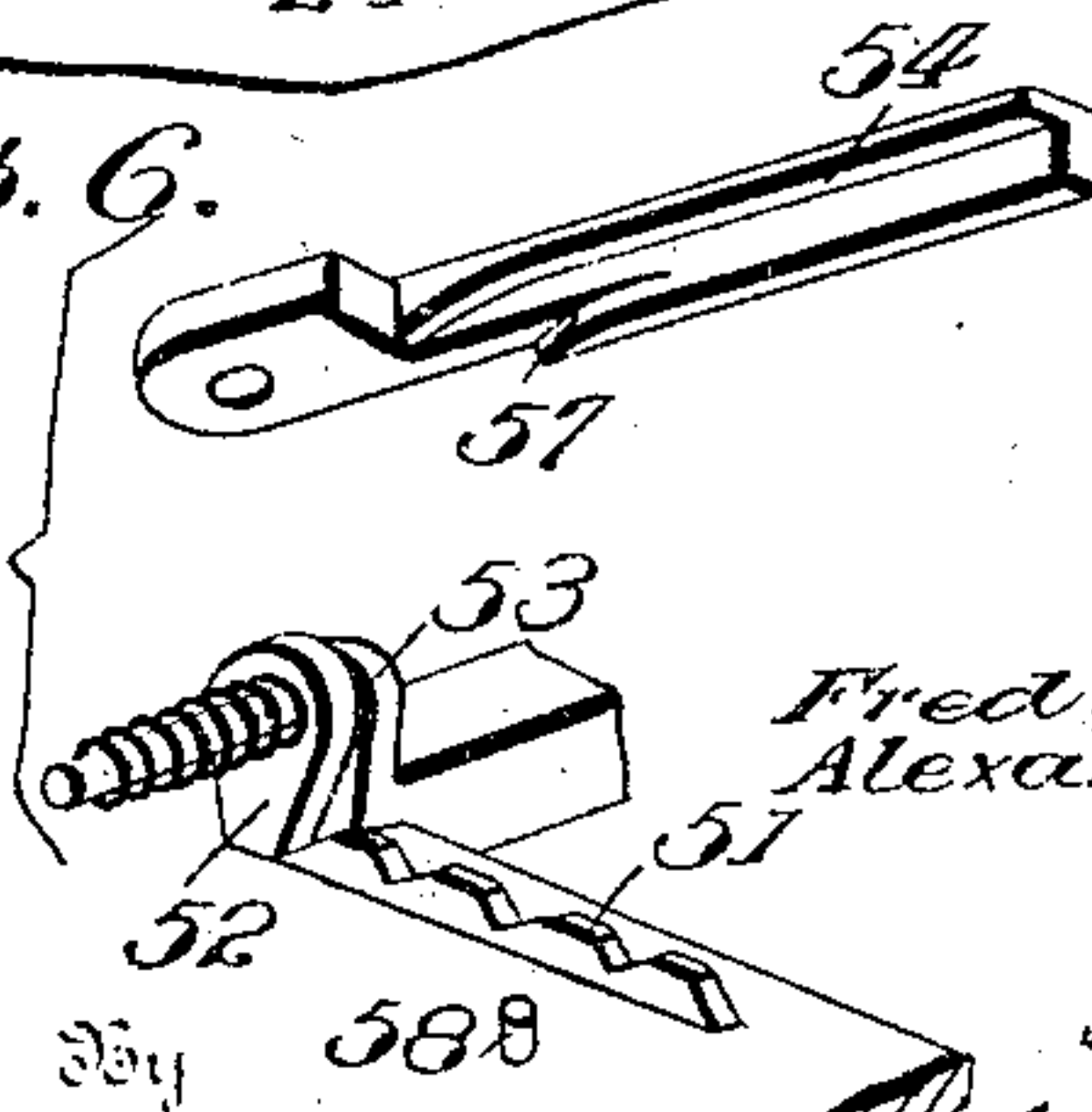


Fig. 6.



Witnesses

John Mirie.  
Francis S. Haynes

Inventors  
Fred E. Hall  
Alexander MacLeod

Attorney



# UNITED STATES PATENT OFFICE.

FRED E. HALL, OF BROOKLINE, AND ALEXANDER MACLEOD, OF BRIGHTON,  
MASSACHUSETTS, ASSIGNORS TO UNITED STATES VENDING CORPORA-  
TION, OF BOSTON, MASSACHUSETTS, A CORPORATION OF MAINE.

## COIN-CONTROLLED VENDING-MACHINE.

No. 810,747.

Specification of Letters Patent.

Patented Jan. 23, 1906.

Application filed October 6, 1904. Serial No. 227,488.

*To all whom it may concern:*

Be it known that we, FRED E. HALL, of Brookline, Norfolk county, and ALEXANDER MACLEOD, of Brighton, Suffolk county, State of Massachusetts, have invented certain new and useful Improvements in Coin-Controlled Vending-Machines; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The primary object of this invention is to provide an improved coin-controlled vending-machine which shall be simple in construction and highly efficient in operation and one which can be operated only by legitimate coins.

Further objects are to effectively discard spurious disks or slugs and discharge them, so that they may not clog the operating parts, and to generally simplify the construction and promote the efficiency of machines of this character.

The invention will be hereinafter fully set forth, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a vertical longitudinal sectional view, the inclosing casing of the machine being omitted and parts of the merchandise-holding tubes broken away. Fig. 2 is a front elevation with parts in section and parts broken away. Fig. 3 is a bottom plan view. Fig. 4 is a top plan view with parts omitted. Fig. 5 is a view in perspective of the cord-cutting rod. Fig. 6 shows the parts for preventing the ejecting mechanism from being again operated until returned to its normal position. Fig. 7 shows in section one of the coin-supporting levers and its adjuncts. Fig. 8 is a view of the actuating - frame with parts broken away.

Referring to the drawings, 1 designates a plate or casting forming the bed of the operative parts of the machine. It may be of such width as to accommodate any desired number of mechanisms and is ordinarily mounted within an inclosing casing (not shown) of any preferred form. From this plate extends an upright or vertical plate 2, in which are formed a series of coin-inlet openings 3, of which only one is shown, such openings corre-

sponding in number and position to the number of separate ejecting mechanisms used. In the present description only one such mechanism will be referred to. To the rear of plate 2 is secured a plate 4, the space between the two plates being sufficient to permit of the passage of a coin. Such coin after passing the inlet-opening 3 is guided in a tortuous course by ribs 5 and 6, the space between the ribs forming a passage-way 7. It is thus difficult, if not impossible, to force coins or slugs through the passage-way at a greater speed than that of ordinary gravity. The plate 4 is formed with a cut-out 8 extending over a portion of the passage-way to form an opening through which bits of paper, wires, or other material will pass if inserted in the inlet-opening.

To a lug 9, extending from plate 4, a magnet 10 is secured by a screw and clamp 11. This magnet is placed at an angle of about forty-five degrees to the vertical, paralleling the lower side of one branch of the passage-way 7, and its poles are extended through a slot formed in plate 4, so as to intersect the passage-way on a line continuous with rib 6. In this way coins or slugs descending the passage-way will roll for a part of their course across the poles of the magnet. A coin or non-magnetic disk will drop from the magnet to the operating mechanism immediately beneath, while a disk of iron or steel will be whirled to one side between plates 2 and 4, as indicated by the curved line 12, Fig. 2, and will be discharged through an opening 13 without reaching the coin-controlled mechanism, such opening being formed in plate 1 to one side of the operating parts.

14 and 15 designate two levers mounted upon bearing-pins 16, depending from plate 1, such levers being held in their normal retracted positions by coil-springs 17, their movements being limited by stop-pins 18. Normally the levers are in an approximately straight line with each other, their inner opposed ends being directly beneath the lower end of the coin passage-way 7. These ends of the levers are notched out at 19, the space between the two notches being slightly less than the diameter of a proper coin. If a disk of less diameter or thickness should fall between the notched ends of the levers, it will



not lodge on the latter, but will drop out in front of the machine and be returned to the patron. It has been found in practice that with the notches beveled at about the angle indicated in Fig. 7, which is approximately a right angle, with one wall slightly longer than the other, very fine distinctions may be made in the diameter or thickness of coins and slugs; but in order to provide for the utmost accuracy and nicety in guarding against coins of improper dimensions we provide means for regulating or adjusting the depth or angularity of the notch of one of the levers, so as thereby to increase or diminish the space between the two levers. For this purpose a pin 21 is passed transversely through lever 15, the opening therefor intersecting the vertex of the notch. This pin (see Fig. 7) is itself provided with a notch 22, designed to register with the walls of the notch of the lever. By turning this pin on its axis the distance between the centers of the notches of the two levers may be increased or decreased with the greatest nicety. When in position, this pin is held tight by a jam-nut 23. In their normal positions the notched levers 14 15 occupy a plane slightly in advance of a dividing-wall 24, in line with which is the normally forward wall 25 of the cash-drawer 20. The result is that imperfect coins or disks of inferior size which do not lodge between the notched levers will fall forward of the wall 24 and drop out in front of the machine, thus being returned to the depositor. On the other hand, coins which remain between the levers, being discharged therefrom after the latter have been moved rearward, fall into the money-drawer rearward of wall 24. In plate 1 is formed a rectangular opening 26, beneath the front end of which the levers 14 and 15 are located.

27 designates an actuating-frame formed with a central opening 28 and grooved sides 29, which are designed to slide along the parallel edges of the rectangular opening 26, the central opening 28 normally being above the notched levers 14 and 15. This frame has at its front a flat wall in the form of an upper ear 30, having an opening 31, and a lower ear 32, having an opening 33. To this lower ear a retaining-spring 34 is secured, while to the upper ear is attached the operating-plunger 35, which passes outwardly through an opening in plate 2 to the front of the machine. By pushing inwardly on this plunger the frame 27 may be forced rearwardly, its movement being limited by contact with a stop 36. (See Fig. 3.) The width of the lower ear 32 being less than the distance between the two notched levers, such ear is free to pass between the latter without interfering therewith. The opening 31 of ear 30 is coincident with a bore 37 of plunger 35, and in line therewith is a horizontally-disposed rod 38, mount-

ed upon a casting 39, secured to plate 1. The forward end of this rod is sharply notched, as shown at 40, Fig. 5. When the plunger is pushed rearward, it telescopes rod 38, so that if an attempt should be made to repeat the operation of the machine by a coin or disk attached to a string such string will be caught by the notched end of the rod and being forced into the opening 31 and possibly also into the plunger will be cut off. The string will naturally follow the coin to which it is attached and will thus occupy a position about in the vertical center of the plunger. In order to define this position more accurately, a notched cross-piece 41 is secured to plate 4 near the lower edge thereof and extends across the passage-way 7 with its central notch in line with the notched end of the string-cutting rod 38.

The ejecting part of the mechanism embraces a block or casting 42, provided with side grooves for hugging the parallel edges of the rectangular opening 26. Upon this casting is mounted a spring-held ejector 43 for engaging the lowermost article of merchandise within tube 44, such tube being provided with a guide-plate 45, which serves to guide the ejector in its proper path. Through a depending portion of block 42 is passed a rod 46, which is firmly held by a set-screw 47. A coil-spring 48, encircling this rod, holds the block in its normal position against the stop 36. This rod 46 is in direct line with the opening 33 of ear 32 and about midway between the notched levers. When a coin has been properly positioned between the latter and the actuating-frame 27 is pushed rearwardly by pressure on the plunger, causing the notched levers to turn on their fulcrums, the coin will before being freed of engagement with the levers contact with rod 46 and will push it and the ejector 43 rearwardly. The coin is now held firmly between the end of rod 46 and the lower ear 32. Upon the return of the parts to their normal positions the coin cannot reënter the notches of the levers: but as soon as it is free from engagement with rod 46 and being no longer supported between it and ear 32 will fall into the money-drawer. If the attempt should be made to operate the machine by means of a washer, the rod 46 will pass through the hole in the latter when the plunger is pushed rearwardly, and hence the ejector will not be operated. When the plunger is actuated, the washer will be released from engagement with the notched levers, the same as a coin, and when the plunger is released the washer will be drawn back along the rod by means of the forward wall of frame 27 until it shall have reached the end of the rod (which passes through such wall) and will then fall into the cash-drawer.

In order that the same coin may not be



used for a second operation, we provide improved means for making it impossible to again push the plunger rearward after completing one operation until the engaging coin 5 has been discharged. For this purpose a horizontally-disposed rack 51 is mounted on plate 1 adjacent to one side of opening 26. A spring-held two-way pawl 52 is carried on a pivot mounted on an upright 53 of frame 27, 10 such pawl being designed to engage the rack and prevent the actuating member from being returned to its normal position until its full stroke has been completed, at which time the pawl will be relieved from engagement 15 with the rack. When the return stroke begins, a reverse engagement exists between the pawl and the rack, so that the actuating member cannot be pushed rearwardly again until the return stroke has been completed. Before the completion of such stroke 20 the coin will fall through opening 26, as heretofore described. It is necessary that the actuating member shall be freely movable back and forth without operating the machine in 25 order that it may always return to its normal position if the plunger is pushed without the previous deposit of a coin. For this purpose a movable shield 54 is placed over rack 51. It is pivoted at its rearward end by a 30 shouldered screw 55, fitted in one side of block 42, and is held over the rack by a spring 56. Thus the shield is designed to travel back and forth with the ejector member. This shield on its under side is beveled at 35 57 to form a cam, which upon being brought into contact with a stationary pin 58 will be forced laterally as against the tension of its spring 56. When the shield is in its normal position covering the rack, the pawl 40 cannot engage with the latter, but will slide back and forth along the upper surface of the shield. When, however, a proper coin has been inserted in the notched levers and the ejector-block is pushed rearwardly with the 45 actuating member, the shield will be forced to one side upon its beveled wall 57 engaging pin 58, and the rack will thus be exposed, so that the pawl will come in engagement therewith in the manner described. The 50 lateral movement of the shield is limited by a stop-pin 59.

The plunger 35 is not directly below the center of passage-way 7, but is a little to the side opposite the side discharge-opening 13. 55 If, therefore, the plunger should be pushed in first and the coin inserted afterward, such coin upon contacting with the plunger will roll off to one side and pass through opening 13 to the front of the machine, the plunger preventing the coin from reaching the 60 notched levers.

From what has been said it will be seen that a machine constructed in the manner herein described is very efficient and reliable under

the presence of a proper coin, but that its operation by the fraudulent methods usually 65 practiced is difficult, if not impossible.

We claim as our invention—

1. In a coin-controlled machine, in combination, a forwardly-movable coin-support 70 comprising opposite horizontally-disposed pivoted members notched at their inner ends, and between which ends a coin is designed to rest in a vertical position, said members being constructed and arranged to swing forward at their free ends together with a coin 75 supported thereby, said free ends being gradually moved apart, a fixed support for said members, an actuating member for engaging a coin supported by the latter, and an 80 ejector member against a part whereof a coin is designed to be held by said actuating member as it is freed from the hinged members at or near the limit of the forward movement of the latter. 85

2. In a coin-controlled machine, in combination, a forwardly-movable coin-support comprising opposite horizontally-disposed 90 laterally-movable pivoted members between the free ends of which a coin is designed to rest in a vertical position, said members being constructed and arranged to swing forward at their free ends with a coin supported 95 thereby, said free ends being gradually moved apart, a fixed support for said members, an actuating member having a flat wall for engaging a coin supported by said members, and an ejecting member having a rod in line 100 with the center of coin and against which the latter is designed to be forced as it is about to be freed from said laterally-movable members at or near the limit of the forward movement of the latter. 105

3. In a coin-controlled machine, in combination, a coin-support comprising opposite 110 horizontally-disposed laterally-movable pivoted members between the free ends of which a coin vertically disposed is designed to rest, said members being constructed and arranged to swing forward at their free ends with a coin 115 supported thereby, said free ends being gradually moved apart, a fixed support for said members, an actuating member comprising a frame having a wall formed with an opening, and an ejecting member having a rod coincident with said opening and against which a 120 coin designed to be forced by said wall as a coin is about to be freed from said laterally-movable members at or near the limit of the forward movement of the latter. 125

4. In a coin-controlled machine, in combination, a coin-support comprising oppositely-disposed laterally-movable members having 125 inner opposite V ends wherein a coin is designed to rest, a fixed support for said members, an actuating member comprising a frame having a depending ear formed with an opening, said ear being normally for-



ward of the coin-support, and movable between the members thereof, and an ejecting member having a rod coincident with said opening and against which the coin is designed to be forced by said ear as it is about to be freed from its support upon the actuating member being pushed inwardly.

5. In a coin-controlled machine, in combination, a fixed plate having an opening formed with parallel edges, an actuating member comprising a frame movable in said opening, a coin-support fixed to the under side of said plate at the forward end of said opening, a portion of said frame being designed to intersect the coin-support, an ejecting member having a block also movable in said opening, a rod carried by said block extended forwardly on a plane above the coin-support and in line with that portion of said frame movable in a plane intersecting the coin-support for forcing the coin from the latter against said rod.

6. In a coin-controlled machine, in combination with an actuating member, a coin-support comprising oppositely-disposed horizontally-movable levers fulcrumed at their outer ends and having inner V-shaped ends, a fixed support therefor, said levers being capable of being swung forward on their vertical pivots when said actuating member is forced inwardly, and springs for returning said levers to their normal positions.

7. In a coin-controlled machine, in combination with an actuating member, a coin-support comprising opposite horizontally-disposed levers having inner opposite V-shaped ends, and a pin mounted in one of the levers intersecting the space between such ends for increasing or diminishing the same, said levers being constructed and arranged to swing forward with a coin supported thereby, the V-shaped ends of said levers being gradually moved apart.

8. In a coin-controlled machine, in combination, a coin-support, an actuating member movable on a plane above said support and having a bore or opening, and a cord-cutting rod in line with said opening notched at its forward end for cutting a cord from which a coin is suspended said rod entering said bore or opening.

9. In a coin-controlled machine, in combination, a coin-support, an actuating member movable on a plane above said support, a plunger for said actuating member having a central bore, and a cord-cutting rod in line with said bore having its forward end notched for severing a cord forced thereby into said bore.

10. In a coin-controlled machine, in combination, a coin-support, an actuating member movable on a plane above said support and having a bore or opening, a cord-cutting rod in line with said opening notched at its forward end, and a stationary plate having a

central notch in line with the notch of said rod.

11. In a coin-controlled machine, in combination, an actuating member carrying a spring-held two-way pawl, an ejecting member, a stationary rack with which said pawl is designed to engage, and a shield normally covering such rack to prevent the pawl engaging therewith.

12. In a coin-controlled machine, in combination, an actuating member carrying a spring-held two-way pawl, an ejecting member, a stationary rack with which said pawl is designed to engage, a shield normally covering said rack to prevent the pawl engaging therewith, and means for automatically shifting such shield so as to permit the pawl to engage with the rack when the ejecting member is moved by the actuating member.

13. The combination with the actuating member carrying a spring-held two-way pawl, and a stationary rack with which such pawl is designed to engage, of the ejecting member, the shield carried thereby normally covering such rack, a spring for holding such shield over the rack, and means for forcing the shield away from the rack when the ejecting member is moved by the actuating member.

14. The combination with the actuating member carrying a spring-held two-way pawl, and a stationary rack with which such pawl is designed to engage, of the ejecting member, the shield carried thereby normally covering such rack, a spring for holding such shield over the rack, said shield having a beveled wall, and a stationary pin with which said wall is designed to engage for forcing the shield away from the rack when the ejecting member is moved by the actuating member.

15. In a coin-controlled machine, in combination, with an actuating member, a coin-support comprising oppositely-disposed levers having inner spaced-apart notched ends, and a pin inserted transversely through the notched end of one of the levers, intersecting the inner end of the notch, and itself having a notch coincident with that of the lever.

16. In a coin-controlled machine having a horizontally-disposed plate a depending wall in advance of the cash-drawer, a coin-support beneath said plate, actuating and ejecting mechanism movable on the plate and having a plunger designed to move above said support when pushed inwardly, and a coin passage-way through which said plunger extends, and a return-opening to one side of the plunger, whereby a coin deposited in the passage-way when the plunger is pushed inwardly will be deflected through the return-opening.

17. In a coin-controlled machine, in combination, a coin-support, an actuating member comprising an open-top frame having forward and rearward walls formed with coincident openings, a coin or washer when on said

support being located between said walls in  
line with said openings, an ejecting member  
having a rod normally projecting into the  
opening of the rearward wall, such ejecting  
5 member being operated by the engagement  
of a coin with said rod, the said rearward wall  
of said frame serving to remove washers from  
such rod upon the release of pressure on the  
actuating member.

In testimony whereof we have signed this  
specification in the presence of two subscrib-  
ing witnesses.

FRED E. HALL.  
ALEXANDER MacLEOD.

Witnesses:

GEO. E. SEWALL,  
G. R. CRAWFORD