

No. 616,324.

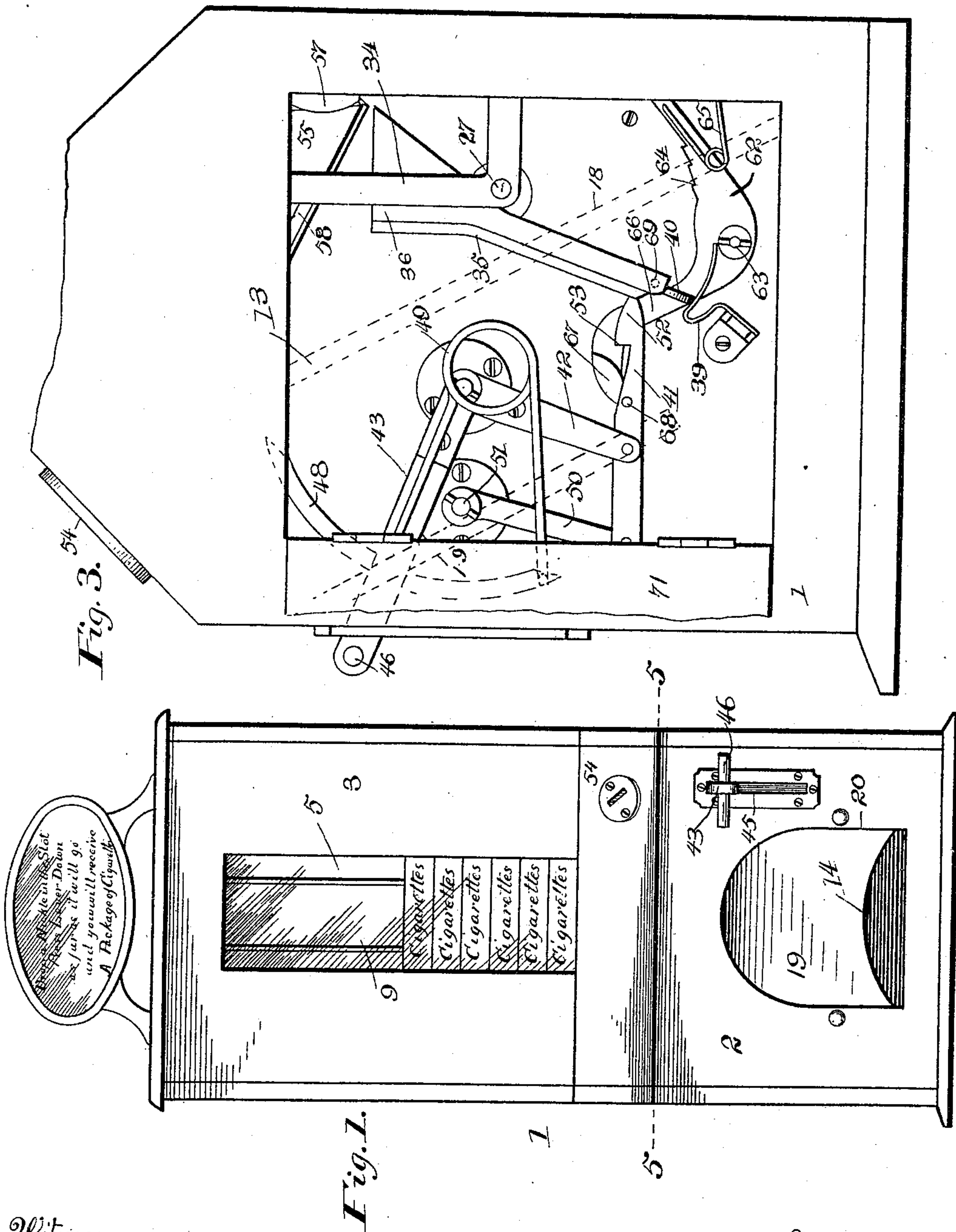
Patented Dec. 20, 1898.

G. HEIDENREICH.
CIGAR VENDING MACHINE.

(Application filed Dec. 21, 1897.)

(No Model.)

3 Sheets—Sheet 1.



Witnesses
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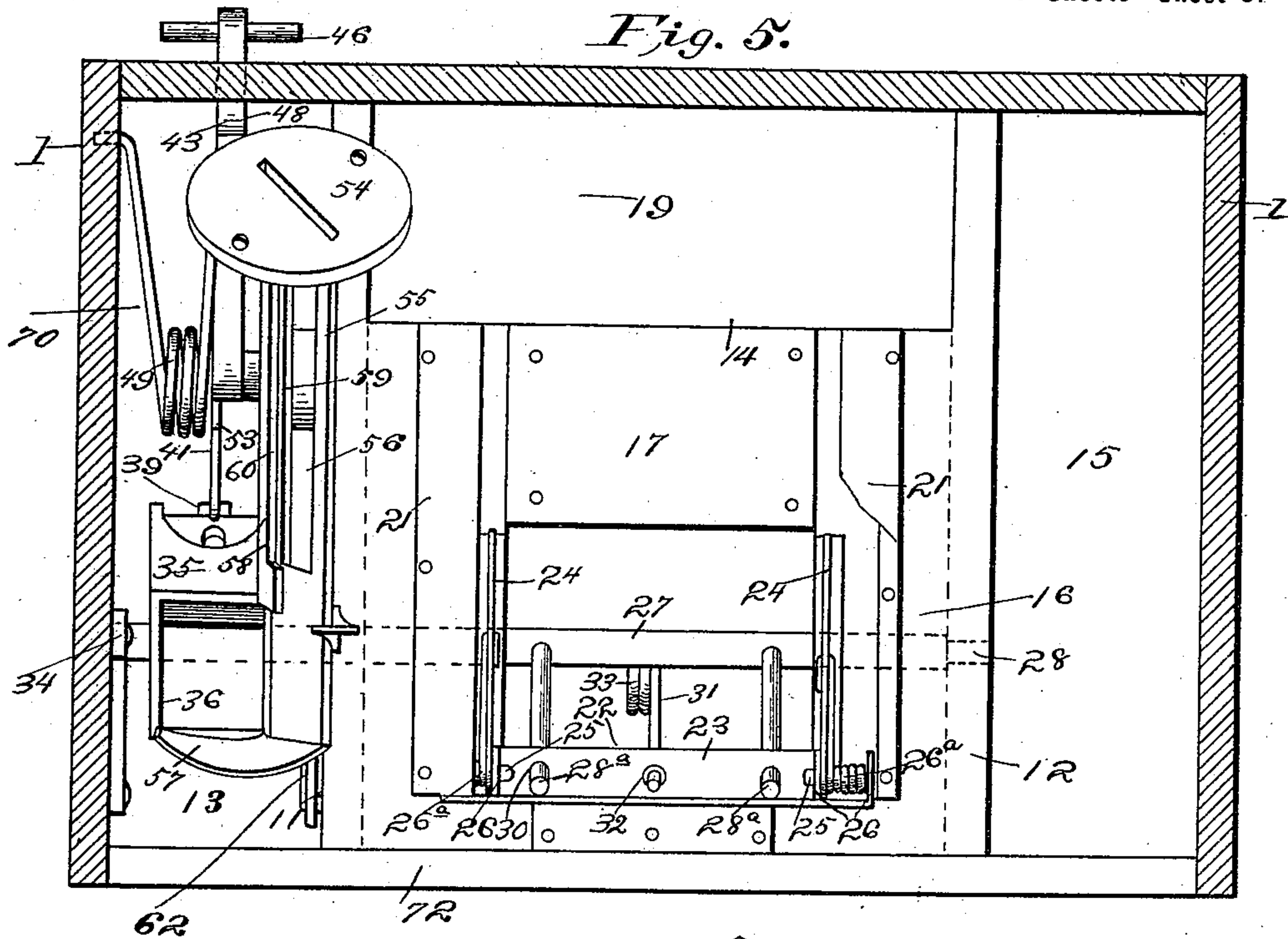


Fig. 4.

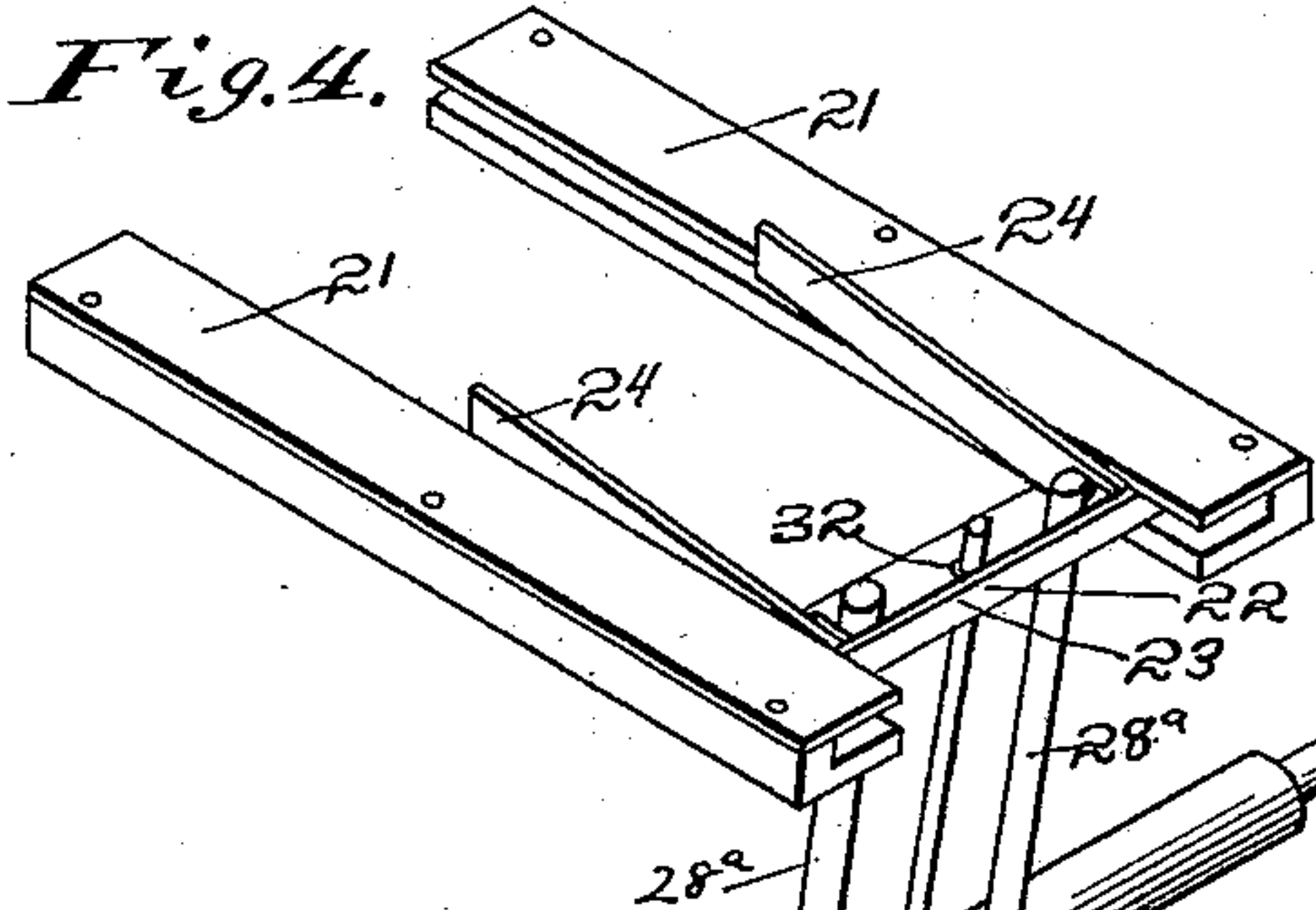


Fig. 4^b.

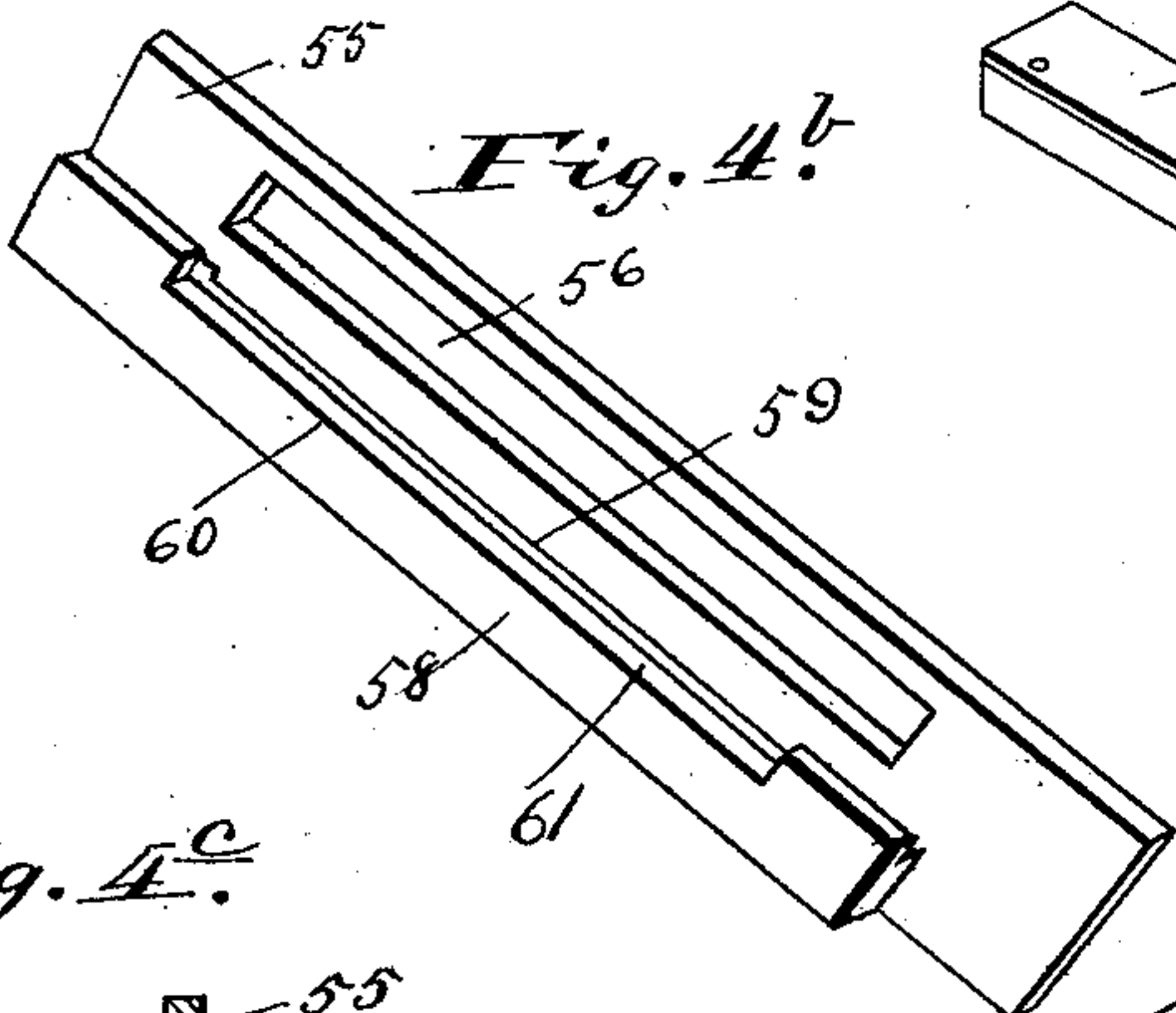


Fig. 4^c.

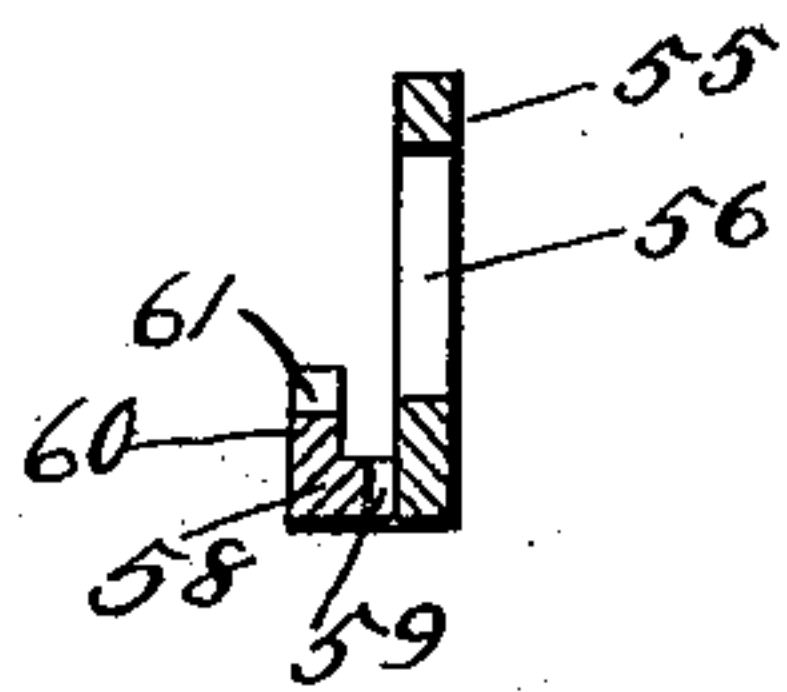
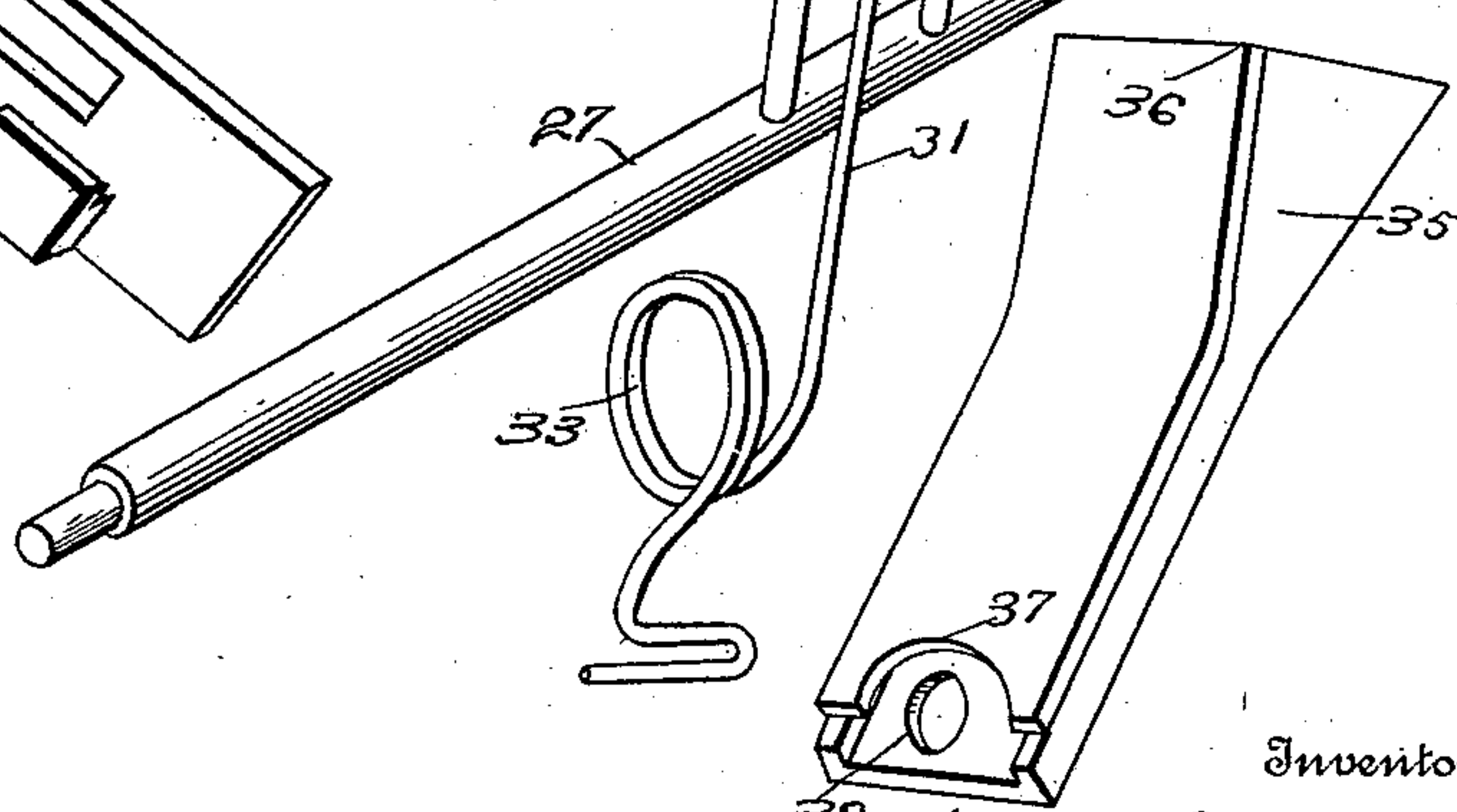


Fig. 4^a.



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UNITED STATES PATENT OFFICE.

GEORGE HEIDENREICH, OF LOCKPORT, NEW YORK.

CIGAR-VENDING MACHINE.

SPECIFICATION forming part of Letters Patent No. 616,324, dated December 20, 1898.

Application filed December 21, 1897. Serial No. 662,811. (No model.)

To all whom it may concern:

Be it known that I, GEORGE HEIDENREICH, a citizen of the United States, residing at Lockport, in the county of Niagara and State of New York, have invented certain new and useful Improvements in Cigar-Vending Machines; and I 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.

My present invention relates to improvements in coin-controlled vending-machines, the object being to provide an apparatus of this character which will eject a package of cigarettes or other commodity upon the insertion of the proper coin and not otherwise and which will be of exceedingly simple and durable construction.

To the accomplishment of this and other objects subordinate thereto the invention consists in providing a suitable casing designed to contain the commodity to be vended, with ejecting mechanism consisting of a number of elements depending for their operative relation upon the presence of a coin which is dropped into a slot in the casing and is deposited at the proper point to enable the purchaser by pulling upon a handle to cause the operation of the device and the ejection of the cigarettes or other article, as the case may be, provision being made for the dislodgment of the coin after the operation for the purpose of preventing the delivery of other packages until another coin has been deposited in the machine.

Referring to the drawings, Figure 1 is a front elevation of my device complete. Fig. 2 is a perspective view thereof, looking toward the rear side of the casing and showing the several doors thrown open. Fig. 3 is a side elevation, on a somewhat enlarged scale, of the lower part of the casing and the contained mechanism, the side door being thrown open. Fig. 4 is a detail perspective view of the ejecting mechanism. Fig. 4^a is a detail perspective of a movable chute. Fig. 4^b is also a perspective of the coin-race. Fig. 4^c is a cross-section of the race illustrated in Fig. 4. Fig. 5 is a sectional view on the line 5 5 of Fig. 1, showing parts of the mechanism in plan.

Referring to the numerals on the drawings, 1 indicates the casing of my vending-machine, constructed in a manner to provide a comparatively large chamber 2 at its bottom, designed to contain the mechanism, and a comparatively narrow receptacle 3, extending upwardly from the chamber 2, subdivided longitudinally by two or more partitions 4, dividing the receptacle 3 into a central reservoir 5 for the reception of the articles or packages to be ejected, and a pair of vertical storage-receptacles 6, closed at their lower ends by horizontal strips 7, upon which stacks of the articles may be placed and retained until it is desired to replenish the supply within the reservoir. The front of the reservoir is preferably fitted with a suitable glass 9, through which the contents of the device may be seen, and the rear side of the receptacle 3 is closed by a hinged door 10, provided with a suitable lock 11^a. The comparatively large receptacle or chamber 2 is subdivided by two vertical partitions 11 and 12 into a coin-chamber 13 adjacent to one side of the casing, a medial chute-chamber 14, and a receptacle 15 at the opposite side of the chamber, designed to receive an account-book in which the accounts of the machine are kept.

16 indicates a horizontal ejector-platform supported by the partitions 11 and 12 and extending from the rear of the chamber 2 to a point directly underneath the front wall of the chamber 3 and is provided directly under the reservoir with a block 17 of slightly less width than the reservoir and upon which the packages are supported.

18 indicates an inclined wall located between the partitions 11 and 12 and extending from the lower rear edge of the casing 2 to the upper forward edge of the ejector-platform, and 19 indicates a similarly-inclined guard-wall inclined downwardly and rearwardly from the top of an opening 20 in the front wall of the chamber 2 a suitable distance to permit the package ejected from the reservoir to be extracted from the machine by passing the hand through the opening and under the guard-wall, the lower edge of the latter being preferably recessed to facilitate the removal of the package.

It will be seen that a package thrown forward from the block upon the ejector-plat-

form will drop between the partition 18 and the guard-wall 19 and will be deposited upon the bottom of the casing, whence they may be removed by the purchaser in the manner pointed out, and I shall now proceed to a description of the mechanism by means of which the packages are successively thrown forward from the block as the coins are dropped into the machine and the ejecting mechanism operated by a pull upon a knob or handle.

21 indicate a pair of parallel guides located upon opposite sides of the block and extending nearly to the rear edge of the ejector-platform and upon which is designed to reciprocate the ejector 22, consisting of the slide 23 and a pair of pivoted ejector-arms 24, mounted upon shafts 25, carried by the bars 26 upon the slide and urged into slightly-upwardly-inclined relation to the slide by a coiled spring 26^a, wound around the shafts and secured at their opposite ends to the bearings and to the ejector-arms, respectively. As the slide is fed forward the ends of the arms, slightly elevated above the block, contact with the bottom package and discharge it downwardly between the wall 18 and the guide-wall 19. The purpose of the springs is to yieldingly retain the ejector-arms in a manner to permit their ready retraction notwithstanding the superimposition of the packages within the reservoir, it being evident that as soon as the package is discharged the superimposed packages will drop upon the block and will depress the ejector-arms, which latter will, however, be instantly elevated sufficiently to contact with the next package when the slide has been retracted and the arms thereby removed from the position under the packages.

27 indicates the rock-shaft, journaled in suitable bearings 28, carried by the partition 12, and bracket 34, operatively connected with the slide, as by a pair of upwardly-extending fingers 28^a, which pass through apertures 30 in the slide intermediate of the arms, and 31 indicates a spring secured to the inclined partition 18 and passing through an aperture 32 in the slide intermediate of the fingers and preferably coiled, as indicated at 33. The purpose of said spring is to restore the slide and its connecting mechanism to their normal positions after each operation of the device. One end of the rock-shaft extends across the coin-chamber and is terminally journaled in a bearing-bracket 34, secured to one of the side walls of the casing, and upon the shaft within said chamber is keyed a movable chute 35, provided with a flaring upper end or hopper 36 and having its front wall cut away, as indicated at 37, and its rear wall apertured at 38.

39 indicates the coin-bracket or stop, preferably extending from the partition 11 and located immediately below the lower end of the chute when the latter is in its normal position and intended for the purpose of retaining the coin 40 in position to receive the contact of what may be termed the "plunger"

41, pivotally secured at or about its center to one arm 42 of a bell-crank operating-lever 43, the long arm of which extends through an elongated vertical slot 45 in the front of the casing 1 and is provided at its extremity with a handle or knob 46 and adjacent to the inner surface of the front wall of the casing with a curved guide 48. The long arm of the operating-lever is normally retained in its elevated position, as by a stout spring 49, secured thereto and to the side of the casing 1. In order to insure the retention of the horizontal position of the plunger as it reciprocates under the impulse of the operating-lever, its rear end is preferably pivotally connected to and supported by a swinging arm 50, mounted upon a trunnion 51, projecting from the partition 11 immediately in front of the pivot of the operating-lever. The forward end of the plunger is preferably pointed, as indicated at 52, and is provided at a short distance from its end with a notch 53, the purpose of this construction being to permit the plunger to pass through the opening in a washer in the event of the latter being employed as a dummy or blank in an attempt to surreptitiously operate the device, the washer being dropped into the notch upon the plunger and removed from the lower end of the chute when the plunger is retracted after such ineffectual attempt to extract a package.

54 indicates a slotted plate screwed or otherwise secured upon the casing at any suitable point, but preferably just below the chamber 3 and immediately above the coin-receptacle, and from which extends rearwardly and downwardly within the casing what may be termed the coin "race" or "rail," composed of a flat plate 55, extending from one side of the slot in the plate to a point just over the flared end or hopper of the chute in its normal position, the plate 55 being preferably of slightly greater width than the diameter of the nickel or other coin designed to be employed and provided with a comparatively large slot or cut-away portion 56 and at its lower extremity with a fixed chute 57, designed to direct the coin into the movable chute and located directly thereover. The plate 55 is preferably inclined both laterally and longitudinally, as shown, and is provided along its lower edge with a rail 58, provided along its edge adjacent to the plate 55 with an elongated recess 59 and along its opposite edge with a flange 60, extending substantially parallel to the plate 55, said flange being provided with a similar recess 61. The recess 59 forms, in effect, an elongated slot at the bottom of the coin rail or race formed by the plate 55 and the rail 58, and it will now be apparent that when the coin is dropped through the slotted plate it will, if it is of the proper dimensions, roll along the rail and will be discharged into the fixed chute and thence dropped into the movable chute and finally upon the stop or coin-bracket. In this manner the movable chute and plunger are

brought into operative relation, and a downward pull upon the knob or handle upon the extremity of the operating-lever will cause the plunger to be urged rearwardly and into contact with the coin. Continued movement will then cause the lower end of the movable chute to be swung, effecting a similar movement of the rock-shaft and causing the fingers extending upwardly therefrom to reciprocate the ejector in the proper direction to cause the ejector fingers or arms to force the packages to be vended from the block in the manner described.

After the coin is removed from the coin-bracket by the oscillation of the movable chute it is held in place simply by the frictional contact of its interposition between the plunger and the rear wall of the chute, and as it is desired that the coin shall be displaced as soon as one package has been ejected in order to prevent the repetition of the operation I employ what may be termed a "latch-lever" 62, pivotally mounted, as at 63, and provided with a notched rearwardly-extending tailpiece 64, urged upwardly by a spring 65 and having a forwardly-extending trip-arm 66, provided with a trip 67 in operative proximity to a trip-pin 68, carried by the plunger. The lower end of the movable chute is provided with a latch-pin 69, designed to engage the notches in the tailpiece of the latch-lever. A money-drawer 70 is preferably placed in the bottom of the coin-receptacle, and the side of said receptacle is provided with a door 71, by means of which access may be had to the coin-receptacle and to the mechanism contained therein, and the rear side of the chamber 2 is likewise provided with a door 72, hinged at its bottom and designed ordinarily to be used when it is desired to extract the money and to make a proper entry in the account-book.

The operation of my device is as follows: Supposing the reservoir to have been filled with packages of cigarettes, tobacco, or any other commodity and the several doors of the casing to have been locked, the device is ready for use. The purchaser is informed as to the proper coin by a sign preferably mounted upon the top of the casing and the coin is dropped into the slot. If it is the proper coin, it will roll down the race into the fixed chute, thence downward through the movable chute, and will be supported at the lower end thereof upon the coin-bracket in the manner pointed out. The purchaser then grasps the handle and by a downward pull swings the operating-lever upon its pivot and urges the plunger rearwardly, causing the trip-pin, which under normal conditions has retained the trip of the latch-lever slightly elevated and the tailpiece thereof slightly depressed, to pass beyond the trip and permit the elevation of the tailpiece of the latch-lever under the impulse of the attached spring. At the same time the plunger will be brought into contact with the coin held at the lower end of the chute and will

cause the oscillation of the latter and the corresponding reciprocation of the injector to effect the ejection of the package. The latch-pin upon the chute will engage the rear-most notch in the latch-lever, and when the plunger is retracted under the impulse of the spring connected to the operating-lever the coin will drop into the money-drawer in the bottom of the coin-receptacle. Just before the plunger reaches the limit of its forward movement, however, the trip-pin will again engage the trip upon the latch-lever and will slightly elevate the same and cause the depression of the tailpiece and the consequent disengagement of the latch-lever from the latch-pin upon the chute, and the ejector and movable chute will then be restored to their normal positions by the spring in engagement with the ejector-slide, and the apparatus is ready for a repetition of the operation. If, however, the coin deposited is smaller than the coin for which the machine is proportioned, it will roll down the race a short distance and will fall through the aperture and will not be deposited into the chute. If, on the other hand, the coin is of the diameter of the proper coin, but is thinner, it will drop through the slot formed by the bottom recess in the rail, and if a washer having both the dimension and thickness of the proper coin be used the plunger when thrust rearward will pass through the central opening therein without effecting a corresponding movement of the chute and when retracted will catch the washer, which will drop into the notch of the plunger and will be removed to prevent it from clogging or interfering with the operation of the device.

It will thus be seen that I have produced a simple, durable, and efficient coin-controlled vending-machine which when the proper coin is introduced will discharge a package and in which provision is made against the surreptitious employment of coins other than those for which the machine is designed.

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

1. In a vending-machine, the combination of ejecting mechanism, a rock-shaft operatively connected with said mechanism, a chute keyed to the rock-shaft, a coin bracket or support for retaining a coin in operative relation with the movable chute, and a push-rod or plunger for engaging the coin and operating the chute, substantially as described.

2. In a vending apparatus, the combination of an ejector, a rock-shaft operatively connected with the ejector, a vibratory chute keyed to the rock-shaft, a coin bracket or support for sustaining a coin in operative relation with the movable chute, a push-rod or plunger for engaging the coin and operating the chute, and means for releasing the coin when the plunger is retracted, substantially as described.

3. In a vending-machine, the combination

with an oscillatory chute and a reciprocatory ejector and a rock-shaft intermediate of and operatively connected to said elements, a reciprocatory plunger, mechanism for actuating
5 said plunger, and means for retaining a coin in a position to operatively connect the plunger and chute, substantially as specified.

4. In a vending-machine, the combination with an ejector and an oscillatory chute, of a
10 reciprocatory plunger and a coin-bracket below the chute and designed to retain the coin in position to be engaged by the plunger, substantially as specified.

5. In a vending-machine, the combination
15 with a reciprocatory ejector and a spring designed to retract the same, of a rock-shaft provided with fingers in engagement with the ejector, an oscillatory chute carried by a rock-shaft, a reciprocatory plunger designed to be
20 operatively connected to the chute through the medium of a coin, and a spring-retracted operating-lever connected to the plunger, substantially as specified.

6. In a vending-machine, the combination with a reservoir designed to contain the com- 25
modity to be vended and a reciprocatory ejector provided with yielding arms, of a rock-shaft operatively connected with the ejector, an oscillatory chute carried by the shaft, a coin-race located above the chute and pro- 30
vided with means for rejecting improper coins, a coin-bracket below the chute, a spring-actuated latch-lever in operating relation with the chute and provided with a trip, a reciprocatory plunger provided with a trip-pin and 35
a spring-retracted operating-lever operatively connected with the plunger, substantially as specified.

In testimony whereof I affix my signature in presence of witnesses.

GEORGE HEIDENREICH.

Witnesses:

WILLIAM MAIDENS,
FRED W. WEBBER,
PETER H. MCPARLIN.