

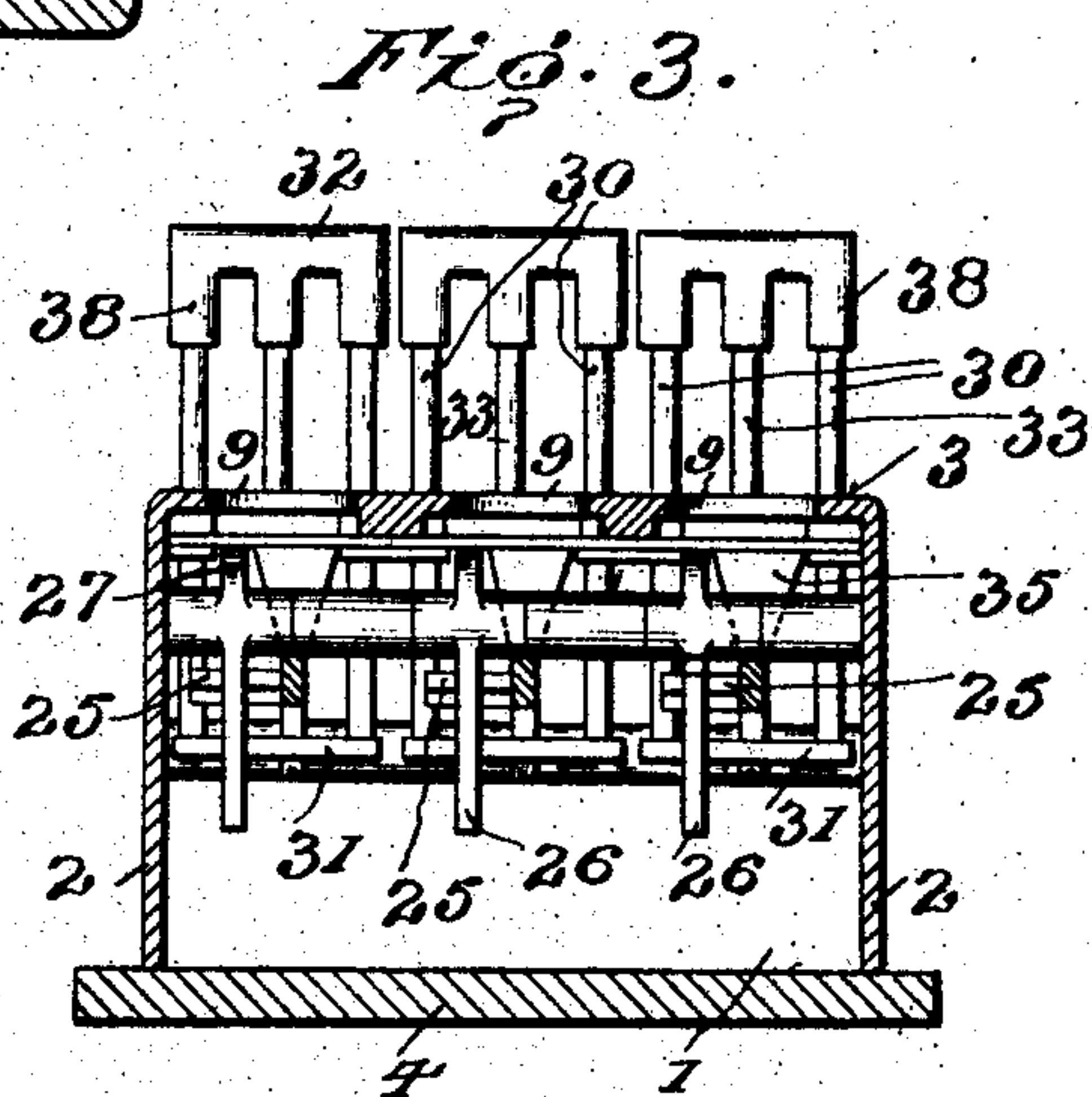
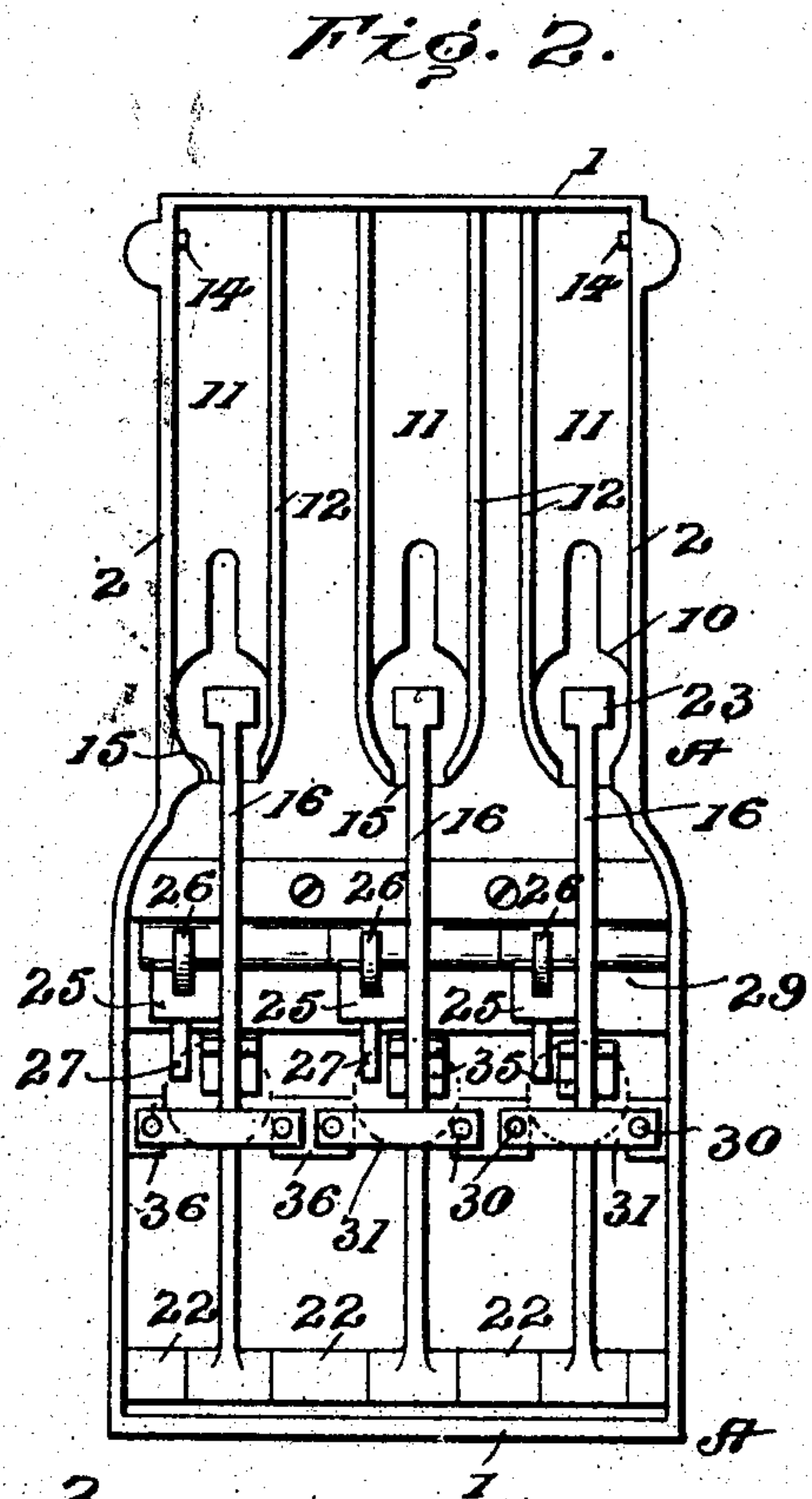
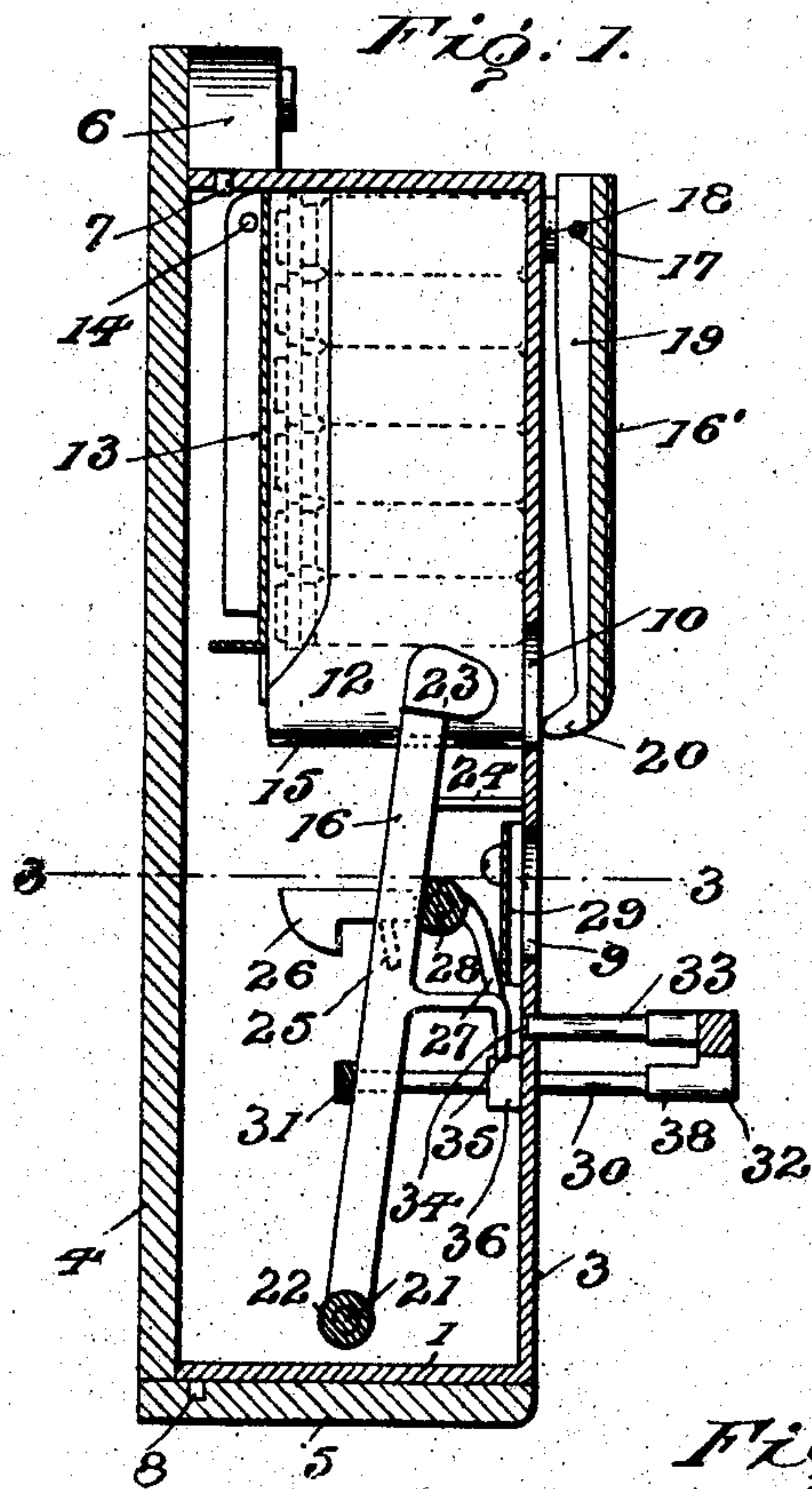
No. 897,801.

PATENTED SEPT. 1, 1908.

S. M. STROOCK.
VENDING MACHINE.

APPLICATION FILED OCT. 25, 1907.

2 SHEETS—SHEET 1.



Inventor

S. M. Stroock.

Witnesses

Jno. D. Miller
C. M. Catlin.

By

Wm. R. Catlin Attorney

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Fig. 4.

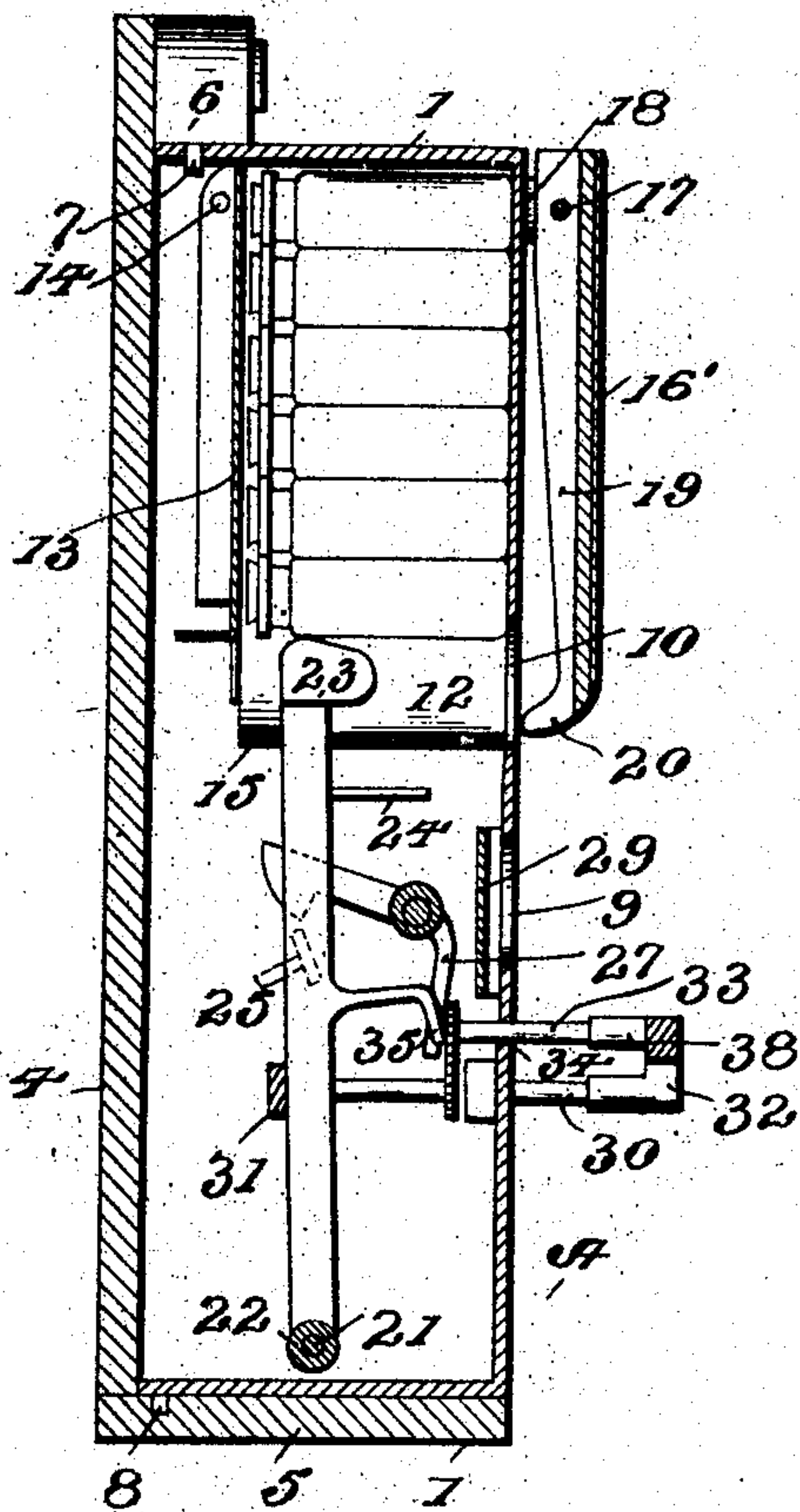


Fig. 5.

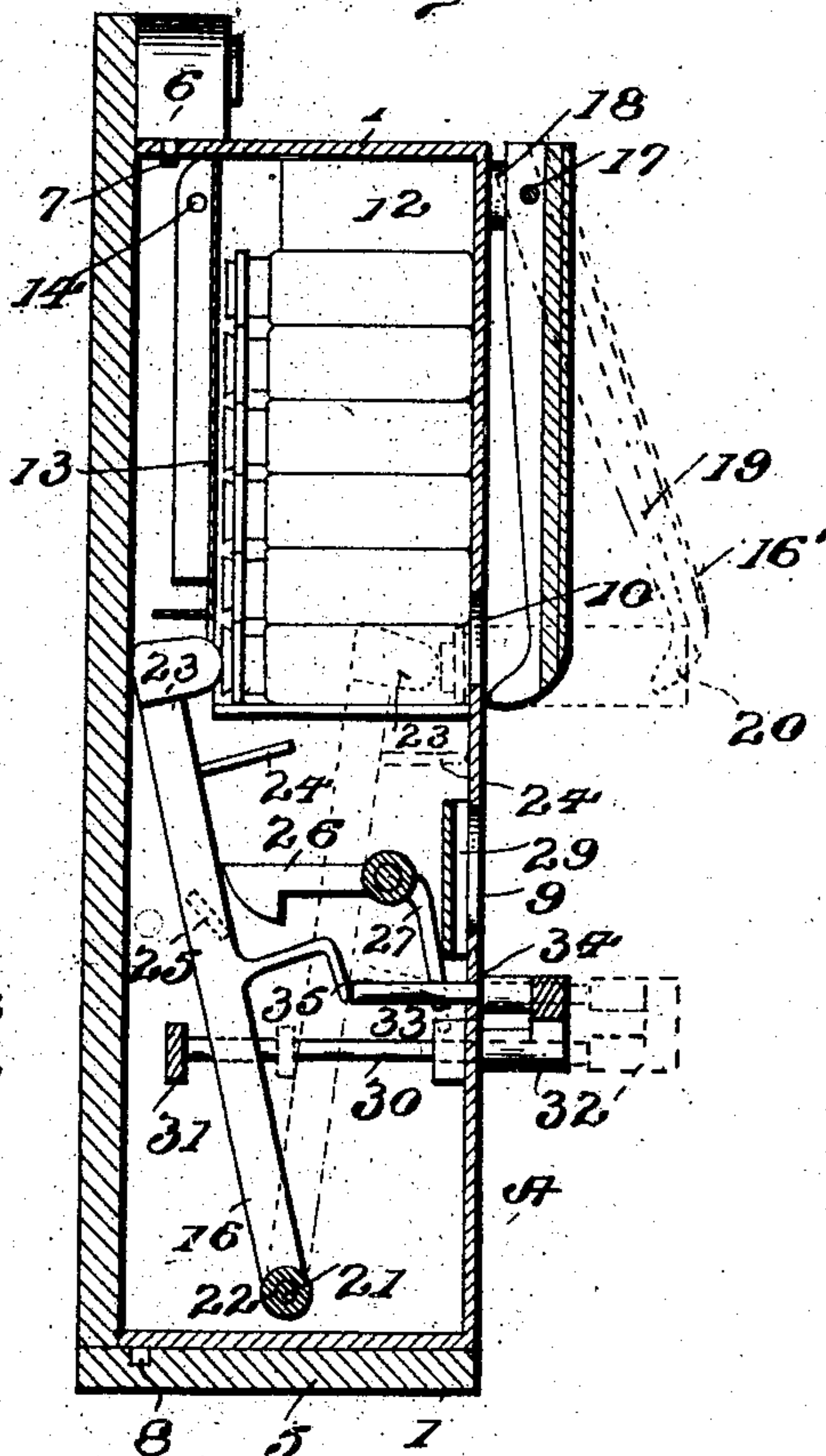
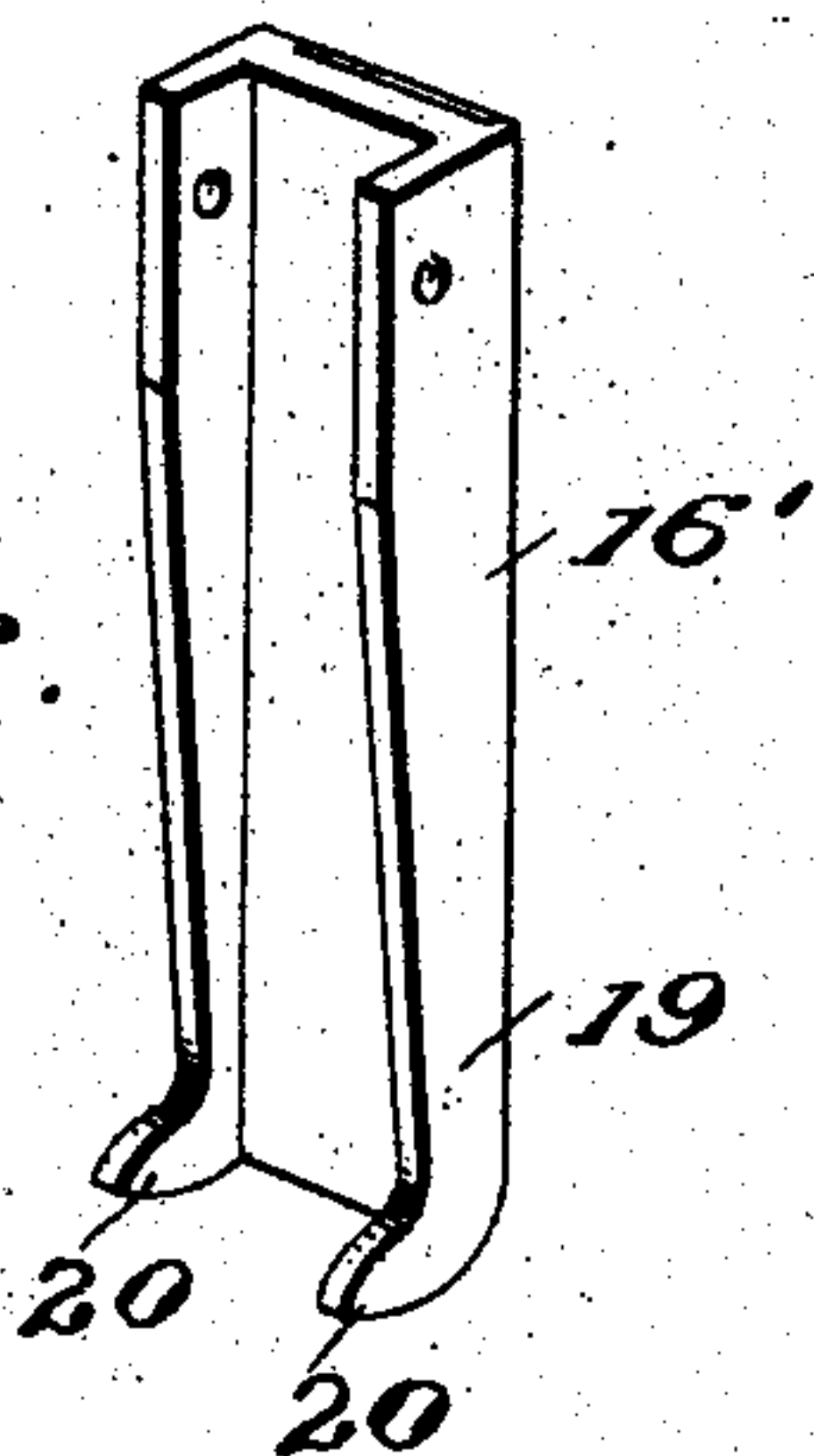


Fig. 6.



Witnesses

John D. Miller
C. M. Catlin

Inventor

S. M. Stroock

By

Ray. R. Badin Attorney

UNITED STATES PATENT OFFICE

SAMUEL MICHAEL STROOCK, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO AUTOMATIC INVENTIONS COMPANY, A CORPORATION OF PENNSYLVANIA.

VENDING-MACHINE.

No. 897,801.

Specification of Letters Patent.

Patented Sept. 1, 1908.

Original application filed March 5, 1907, Serial No. 360,675. Divided and this application filed October 25, 1907. Serial No. 399,163.

To all whom it may concern:

Be it known that I, SAMUEL MICHAEL STROOCK, a resident of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in 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 pertains to make and use the same, this being a division of my pending application.

The invention relates to vending machines provided with magazine chutes for holding various articles, as bottles of witch hazel, bay rum, containers for collar buttons, matches, confections, postage stamps, and other articles of general use.

The object of the invention is to simplify machines of the kind named and cheapen their construction, and increase their efficiency and durability, and to secure other advantages.

The invention consists in the construction hereinafter described and particularly pointed out.

In the accompanying drawing which illustrates the invention and forms part of the specification,—Figure 1 is a vertical section of the machine showing the parts in normal position; Fig. 2 is a rear view of the machine with the back removed; Fig. 3 is a horizontal section on line 3—3 of Fig. 1 looking down; Fig. 4 is a vertical section showing a coin situated between the dispensing lever and the lever-actuating rods; Fig. 5 is a vertical section taken when the lever-actuating rods have completed their inward movement, the extreme inner and outer situation of the parts being indicated by full and broken lines respectively. Fig. 6 is a perspective of a gravitating pendent shutter cooperating with the article-ejecting or dispensing lever to modify the action of said lever.

Referring to the drawing, A designates a casing preferably formed with the ends and sides 1 and 2 integral with the front 3, and with its back closed by a plate 4 that has a bottom plate 5 adapted to engage under the casing A, there being a suitable lock 6 for holding the back in position. A lock bolt 7 enters an opening in the top of the casing and cooperates with a dowel 8 on the bottom of the casing and engages the bottom plate

5 to hold the back in place; making it impossible to remove the machine from its fastenings without unlocking the machine or destroying it. The front 3 of the casing has one or more coin-receiving openings 9 and article-discharging opening or openings 10. In the present instance, a vending machine is illustrated having three magazine chutes 11 that are formed by the sides 2 of the casing, and a plurality of spaced partitions 12 extending rearwardly from the inner surface of the front 3, the chutes being open at the rear for permitting them to be re-charged. A cover or door 13 suspended on pintle lugs 14 closes the rear of the chutes. The chutes 11 have their walls converged at their lower ends to retain articles in the chutes. The lower ends of the magazine chutes 11 are slotted at 15 from the front to the rear to permit the dispensing lever 16 to move as indicated by full and broken lines in Fig. 5.

To prevent articles from being forcibly ejected from the discharge openings 10, a pivotally supported pendent shutter 16' is suspended over each opening to retard or arrest the movement of the article as it is ejected. Each shutter comprises a body hinged, pendent or pivoted on a rod 17 supported in lugs 18 extending from the upper front portion of the casing. These shutters 16' swing outwardly at their lower ends and each has rearwardly extending longitudinal flanges 19, the lower ends of which are formed into lugs 20, as shown in Fig. 6, for preventing the articles being discharged from dropping out laterally. The shutters each by gravity resists and partly overcomes the momentum of the discharging lever and the article to prevent too sudden ejection, and preferably are made of such weight as to fully arrest entire ejection and hold the article in manner indicated by broken lines in Fig. 5.

To limit the path or movements of each of the dispensing levers or of their respective heads to as short an arc as practicable and to one of small curvature, said lever is pivoted at its foot near the bottom of the casing and at a point directly below the vertical center of a column of articles in a magazine chute. It is also provided with a stop pin 24 in front, and is stopped by the casing at the rear, and is so situated and arranged that the head of said lever is normally in contact with

the inner end of the article to be discharged, as shown in Fig. 5, whereby initial momentum of the ejector head against the article to be ejected and danger of consequent noise or injury is avoided. This head has an upper forwardly inclined surface as shown whereby it may be moved under the next to the lowest article without obstruction, and has also a rounded face whereby when the head is returned to its rear position the rear end of the superincumbent articles slides easily down to rest upon the side walls of the chute immediately over the slot 15. The forward movement of the dispensing lever is arrested by the pin 24 or the like before the article has passed entirely out of the chute.

Each of the shutters 16' is pivoted near the top of the casing by preference and is provided at its lower end with projections 20 which receive and guide the end of the article pushed by the ejector against the body of the shutter. This pivoted shutter extends to the lower plane of the article exit and has sufficient length and leverage to hold the article against the face of the ejector-head until it is disengaged by hand. By this means a fall of the article into a receptacle such as often provided is avoided.

The dispensing levers 16 are fulcrumed at their lower ends on a shaft 21 supported in the sides of the casing and are held in alignment with their respective chutes 11 by spacing sleeves 22 on the shaft 21. The upper ends of the levers 16 have forwardly extending heads 23 on which articles in the chutes 11 are normally supported. Below the head 23 of each lever is a stop pin 24 arranged to engage the front of the casing to arrest the forward or ejecting movement of the lever. Extending laterally from one side of each lever is a lug 25 that cooperates with a coin-actuated locking device for holding the lever against actuation except when a coin is dropped into the machine. This locking device comprises a pivotally supported hook shaped detent 26 having a depending arm 27 in the path of the coin employed to operate the dispensing lever associated with the locking device. The detents 26 of the locking devices are fulcrumed on a horizontal shaft 28 supported by the sides of the casing, and disposed behind the coin-receiving openings 9. Back of said openings is a horizontally extending guard plate 29 for guiding the insertion of the coins.

The coin-actuating means for the dispensing means and locking devices each comprises a pair of spaced rods 30 passing through openings in the front 3 of the casing, and connected at their rear or inner ends by a yoke 31, and at their forward ends by a grip or hand hold 32, and carried by the hand hold is a push-and-pull finger or rod 33 that extends through an opening 34 in the casing front to engage an abutment 35 on the dis-

persing lever arranged in line with the actuating means. The abutment 35 of each dispensing lever is a hook shaped projection between which and the adjacent push finger 33 a coin is adapted to enter to act as a medium through which said finger pushes rearwardly the companion dispensing lever. The depending arm of each detent 26 is situated in the path of the pushed coin and serves as a key for operating the detent, the relative position of the coins to the levers and detents being as shown in Fig. 2. Arranged below each coin-receiving opening 9 are spaced projections 36 on the rear side of the front 3 which receive the coins and hold them in operative relation with the push fingers 33, abutments 35, and arms 27 of the detents.

Each lever 16 extends between the rods 30 of the push-and-pull device for actuating the same, and the yoke 31 serves to move the adjacent lever 16 forwardly for ejecting the bottom article of the column held in the chute. The push-and-pull devices by means of the central fingers 33, swing the dispensing levers backwardly from the columns of articles so that these can move bodily downward and thereby place the lowermost articles in line with the discharging openings, and these push-and-pull devices further serve by means of yokes 31 to move the levers forwardly to eject such lowermost articles.

The hand holds 32 of the push-and-pull devices are preferably castings having parallel sockets 38 into which the outer ends of the rods 30 and 33 are engaged, the castings being substantially in the shape shown in Fig. 3. The inner ends of the socketed arms 38 of the hand holds or grips are adapted to strike the front surface of the casing 3 and thus act as stops for limiting the inward movement of the push-and-pull devices and of the dispensing levers operated thereby.

From the foregoing description taken in connection with the drawings, the advantages of the constructions and of the method of operation will be apparent to those skilled in the art to which the invention appertains.

In operation the machine is charged by first removing casing A with the attached parts from the back 4, by unlocking the same, and then raising the chute cover 13 so that the chutes can be supplied with the articles, which in the present instance are illustrated as bottles. The machine being thus charged the back is secured in place and the machine is ready for use. On the shutter 16' may be applied suitable words or advertising to indicate the articles contained in the chutes. A person desiring one of the articles, places a coin in an opening 9 below the chute in which the desired article is contained. The coin drops between the inner end of the push finger 33 below said opening and the adjacent arm 27 of the locking device and abutment 35 of the dispensing lever 16. The grip 32

is then pushed causing finger 33 to operate through the coin to release the locking device and swing the lever 16 rearwardly from under the column of articles in the chute, where-
 5 upon the articles in the chute fall to bring the lowermost one opposite the discharge opening 10. The lever 16 is now in the full line position shown in Fig. 5, and the coin
 10 has been dropped to the bottom of the casing. The grip 32 is then pulled forward to cause the lever whose head is engaged be-
 hind the lowermost bottle, to move said bot-
 15 tle through the opening 10, the bottle coming into engagement with the shutter which latter is moved to the dotted line position
 shown in Fig. 5, and retards the ejection of the article or holds it in the opening as shown
 as determined by the weight of the gravitat-
 20 ing shutter. The grip 32 can be actuated by one hand of the operator, while the other
 hand is held under the discharge opening 10 to take the bottle while it is thus held or af-
 25 ter it has been ejected. During the forward movement of the lever 16, the lug 25 thereof engages the detent 26 and raises it to permit
 it to drop behind said lug to prevent the dis-
 pensing lever from being pushed backwardly without first putting a coin into the machine.

The improvement is not limited to coin-
 30 controlled vending machines, nor to the particular ejecting devices set forth, nor to other features, except as pointed out.

In case an ejector stop is employed it may be carried by the ejector, or be fixed to the cas-
 35 ing, and in either case it will by preference be so situated as to stop the ejector before it reaches the discharge opening.

The invention is adapted to the safe pre-
 sentation to the customer of certain articles
 40 requiring protection from the moisture, dust or germs of the atmosphere, and particularly by the means of breakable receptacles such
 as bottles made of thin glass. The mucilage of postage stamps exposed to the atmos-
 45 phere is liable to soften and adhere to stamps or to an inclosure in contact therewith. Cer-
 tain remedies also deteriorate in such ex-
 posure, and confections are injured from the same cause. Where practicable it is pre-
 50 ferred to inclose articles liable to such injury in bottles or receptacles made of thin glass for economy of space and material, which
 receptacles can be sealed with corks. As in-
 dicated in the drawings such corks may be
 55 placed to receive the pressure of the ejector head. As thin glass or other receptacles are
 liable to fracture, means are provided to hold them in the magazine exit in such situation
 that they may be removed without being
 60 dropped or shoved entirely out of the maga-
 zine. The operation of a means for this pur-
 pose is indicated by broken lines in Fig. 5. The invention is not however limited to the
 particular details of construction, though the
 65 avoidance of any preliminary momentum of

the ejector by its initial contact with a cork closing the receptacle contributes to free-
 dom from breakage. It is obvious that the
 advantages set forth would follow, in part or
 wholly, in case articles delivered were frangi- 70
 ble whether or not contained in frangible re-
 ceptacles.

Having thus described the invention what I claim is,—

1. In a machine of the character described, 75
 the combination of a magazine having a slot-
 ted bottom adapted to support articles con-
 tained therein, an ejector to push the lowest
 article into the magazine exit, and means to
 retain the article in the exit after the ejecting 80
 operation of the ejector.

2. In a machine of the character described,
 the combination of a magazine having a slot-
 ted bottom, an ejector, a retarding device
 having a movement approximately equal to 85
 the width of the magazine whereby it may
 bear on the end of an ejected article until it
 is removed by hand, and said ejector being
 adapted to normally bear on the bottom of
 the lowest article in the magazine above the 90
 one being ejected to support the superin-
 cumbent column of articles, and also to bear
 on the rear end of the article ejected to hold
 it against the retarder.

3. In a machine of the character described, 95
 the combination of a magazine, an ejector,
 and a pivoted retarding device having projec-
 tions adapted to embrace the article being
 ejected at its sides.

4. In a machine of the character described, 100
 the combination of a slotted magazine, an
 ejector, and a retarding device pivoted near
 the top of the magazine and extending to a
 point adjacent the exit from the magazine
 slot, said ejector having a movement ap- 105
 proximately equal to the width of the maga-
 zine and the length of articles for which the
 magazine is adapted and bearing on the end
 of the article ejected in opposition to the re-
 tarding device to retain the article in said 110
 exit.

5. In a machine of the character described,
 the combination of a casing, a slotted maga-
 zine, an article-ejector lever movable in the
 slot, and a stop for the forward movement 115
 of the ejector operative while the article is
 held in the magazine exit after the ejecting
 operation of the ejector, and means to hold
 the article in said exit until removed at will.

6. In a machine of the character described, 120
 the combination of a casing, a slotted maga-
 zine, an article-ejector lever movable in the
 slot, and a stop for the forward movement of
 the ejector operative while the article is held
 in the magazine exit, and means to hold the 125
 article in said exit after the ejecting operation
 of the ejector until removed at will.

7. In a machine of the character described,
 the combination of a casing, a slotted maga-
 zine, and an article ejector having a head 130

and a stop, the head extending from the casing wall to the plane of its entrance to the magazine, the stop arresting said head before it reaches the opposite side or edge of the magazine, and means to hold the article in the magazine while the ejector head bears on said article.

In testimony whereof, I have signed this specification in the presence of two subscribing witnesses:

SAMUEL MICHAEL STROOCK.

Witnesses:

ISRAEL LIEBERMAN,
FRANK LITTLE.