

No. 686,650.

Patented Nov. 12, 1901.

W. H. GARLAND.
COIN CONTROLLED VENDING MACHINE.

(Application filed Nov. 30, 1900.)

(No Model.)

2 Sheets—Sheet 1.

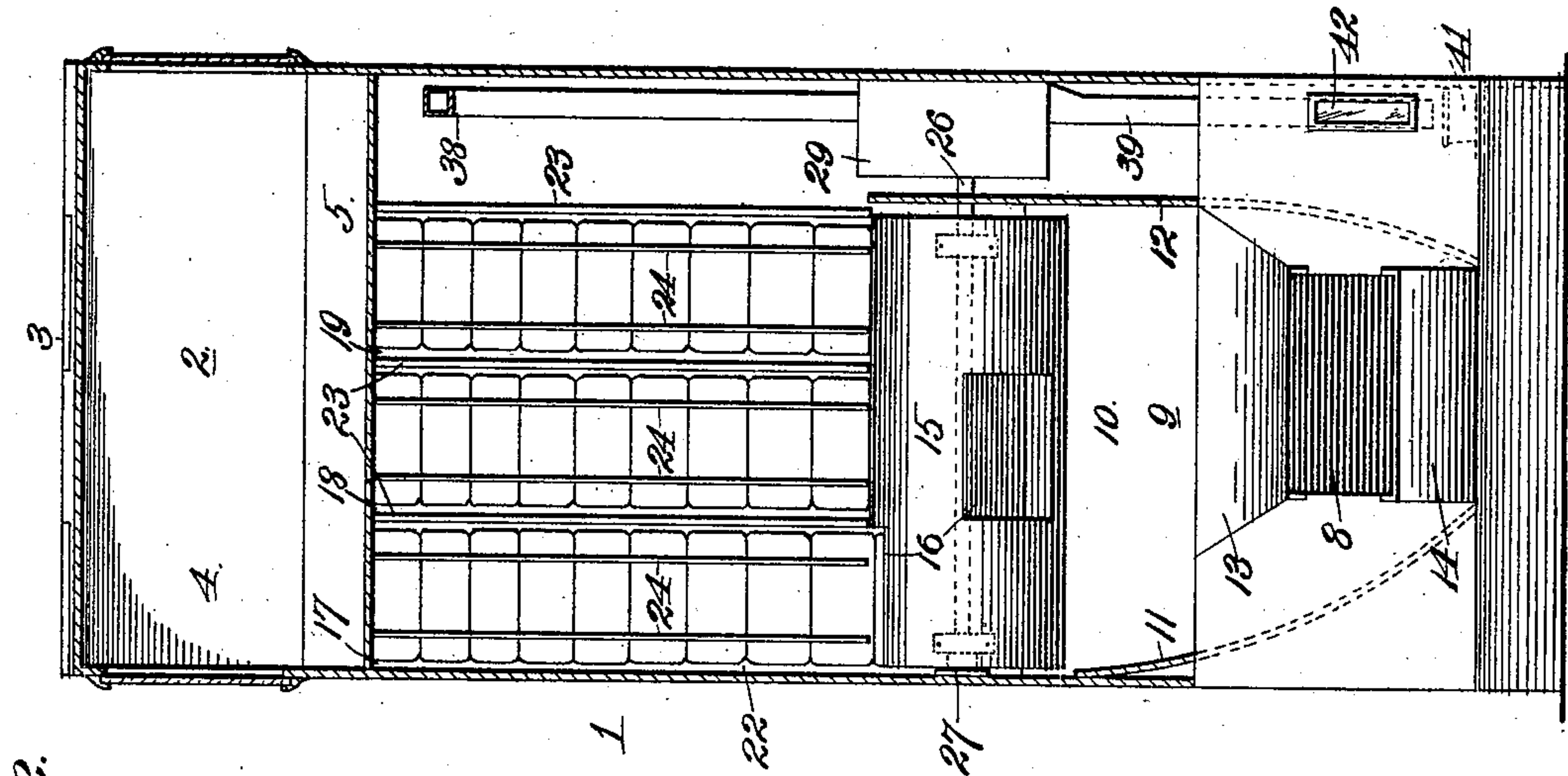


Fig. 2.

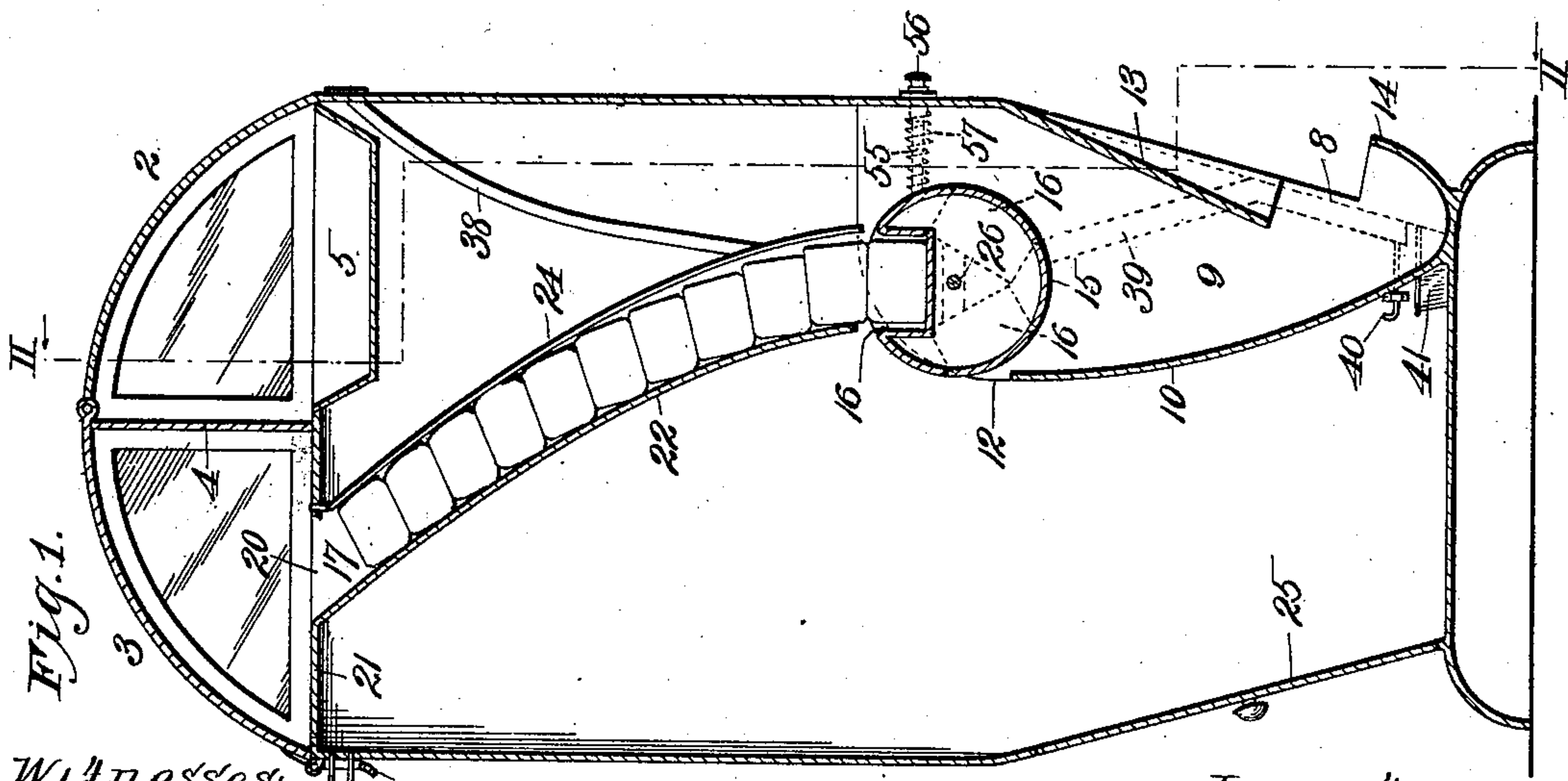


Fig. 1.

Witnesses:
H. C. Rodgers.
A. Thorpe.

Inventor:
Wm. H. Garland
By, Fischer & Thorpe
attys.

No. 686,650.

Patented Nov. 12, 1901.

W. H. GARLAND.
COIN CONTROLLED VENDING MACHINE.

(Application filed Nov. 30, 1900.)

(No Model.)

2 Sheets—Sheet 2.

Fig. 4.

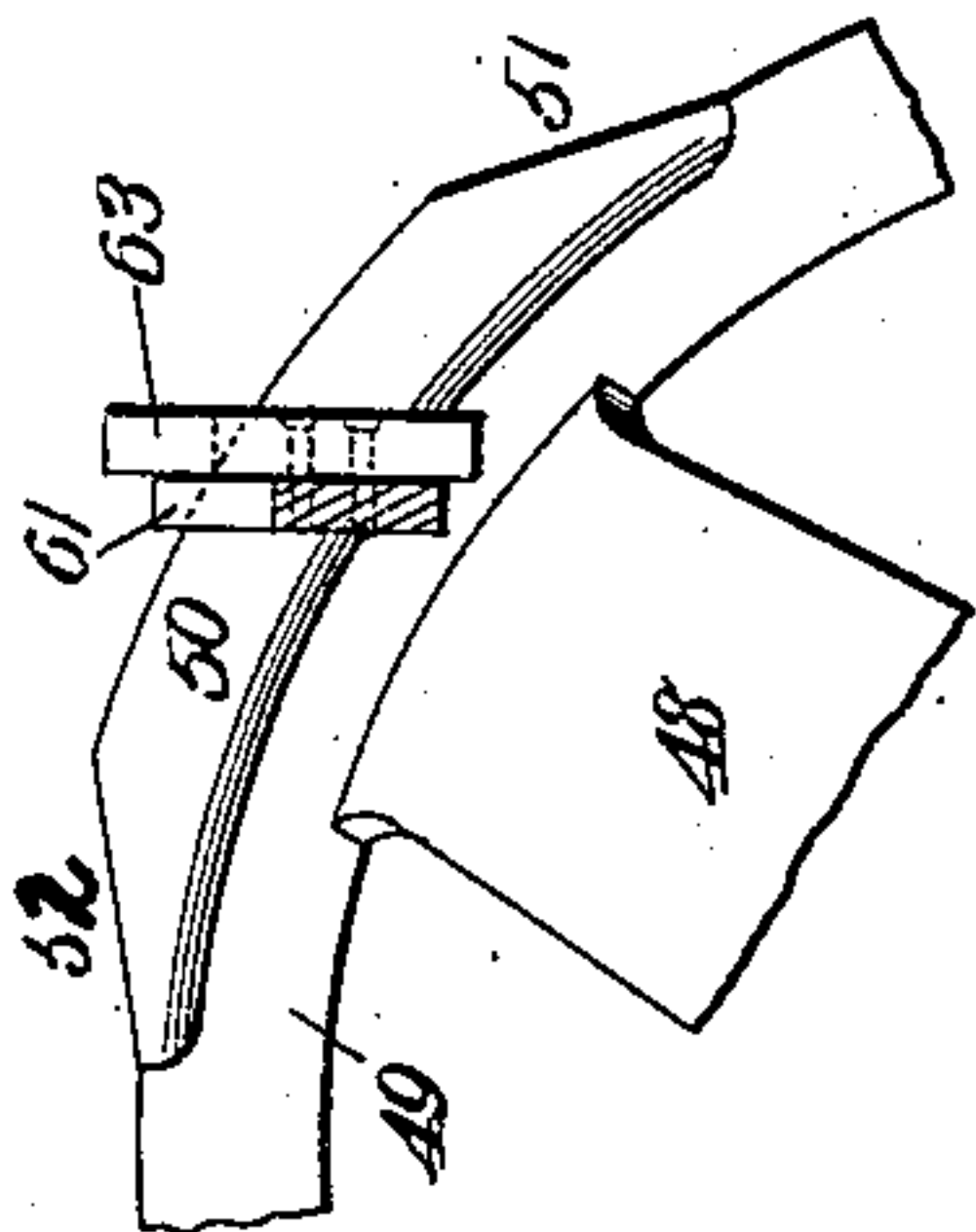
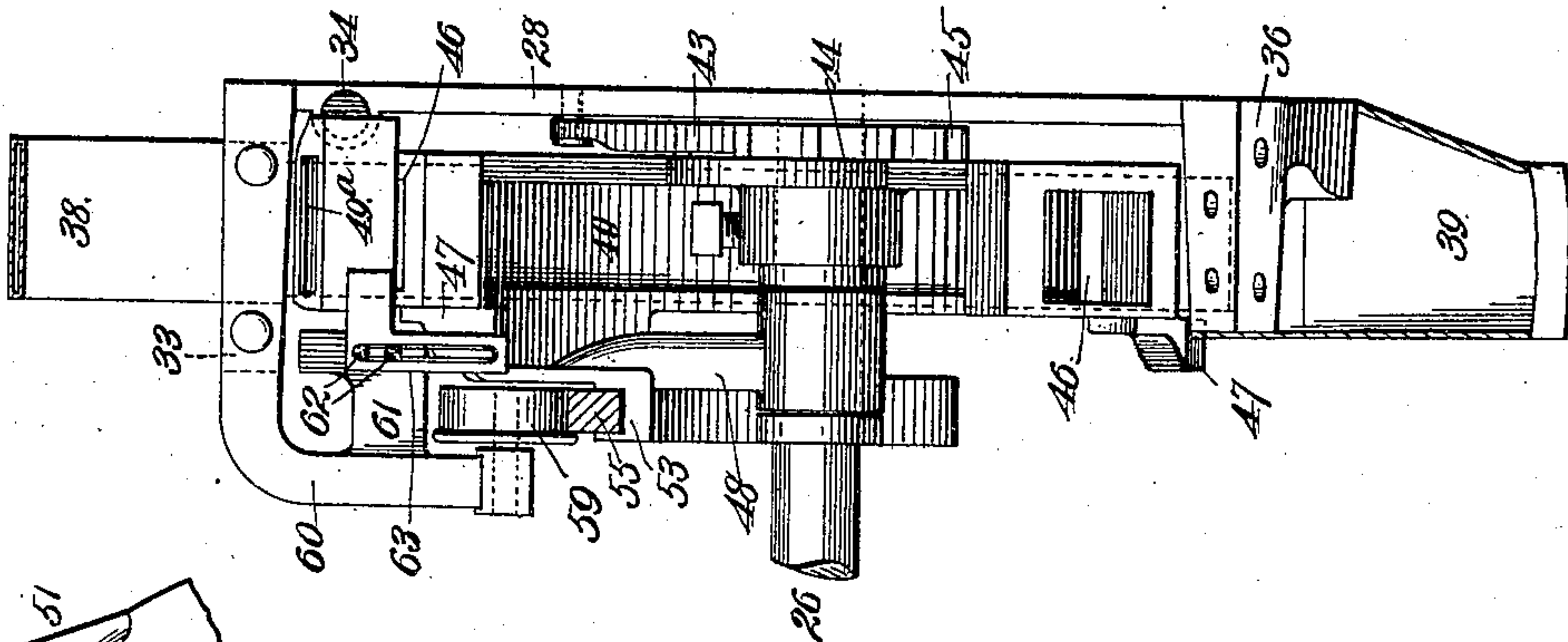


Fig. 5.

Fig. 6.

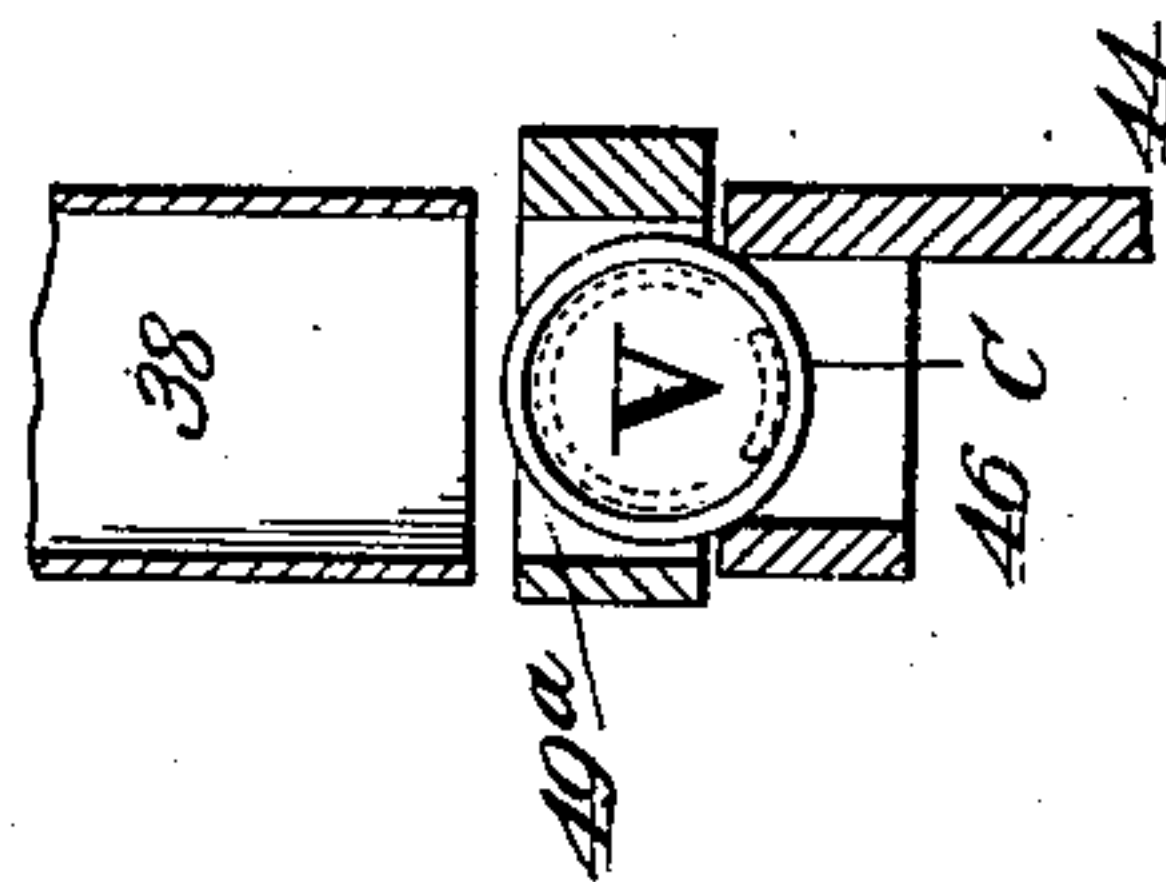
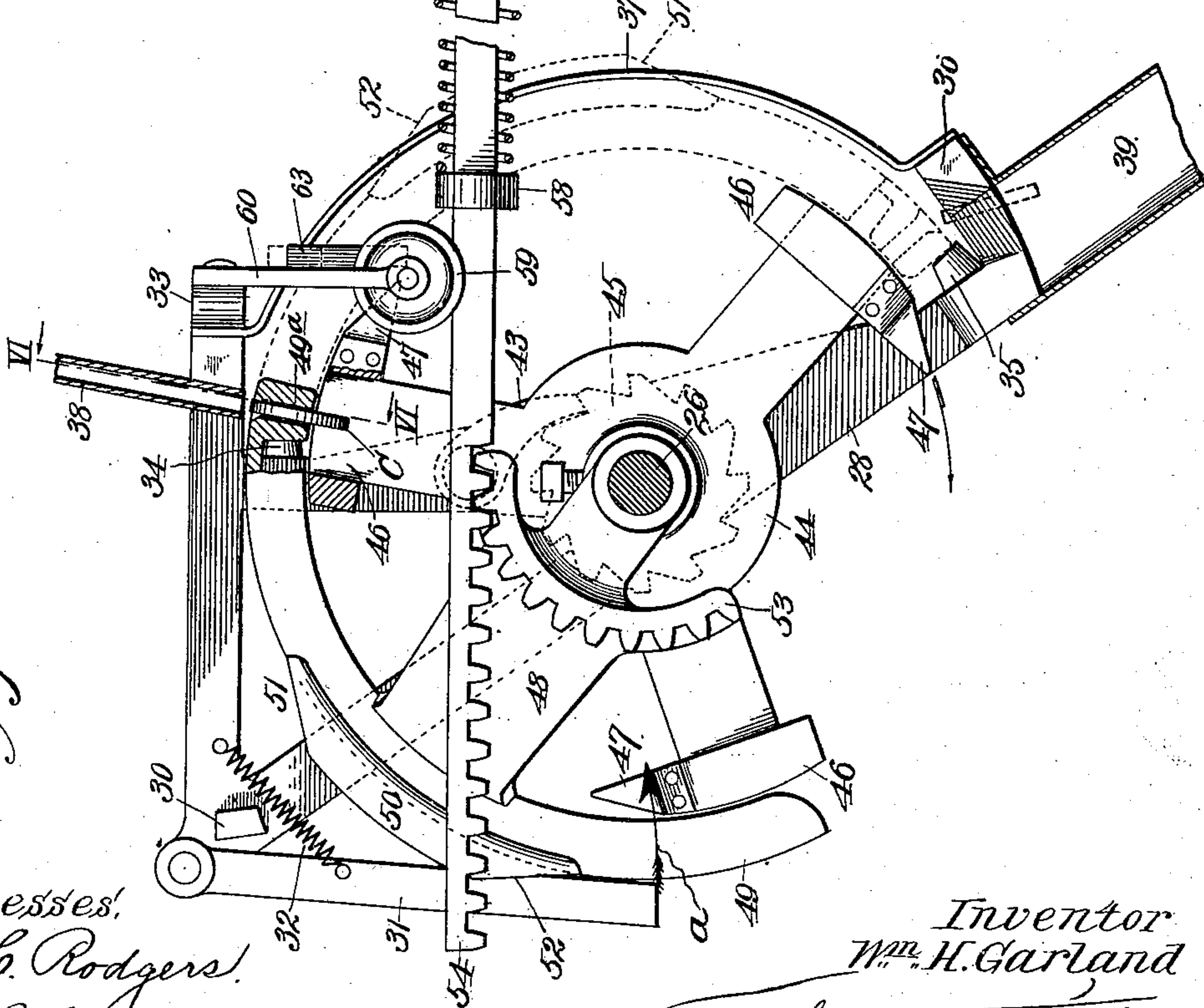


Fig. 3.



Witnesses:
H. C. Rodgers.
A. Thorpe.

Inventor
W. H. Garland
By Fischer & Thorpe
Attys.

UNITED STATES PATENT OFFICE.

WILLIAM H. GARLAND, OF KANSAS CITY, MISSOURI, ASSIGNOR TO JAMES P. LOMBARD, OF KANSAS CITY, MISSOURI.

COIN-CONTROLLED VENDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 686,650, dated November 12, 1901.

Application filed November 30, 1900. Serial No. 38,249. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. GARLAND, a citizen of the United States, residing at Kansas City, Jackson county, Missouri, have invented a new and useful Coin - Controlled Vending-Machine, of which the following is a specification.

My invention relates to coin - controlled vending - machines, and more especially to that type which under manipulation by the purchaser after receiving the coin delivers the required package of peanuts, popcorn, or other article contained therein, and has for its object the provision of a machine of this character which is positive and reliable in operation and of simple, strong, durable, and inexpensive construction.

With these general objects in view the invention consists in certain novel and peculiar features of construction and combinations of parts, as hereinafter described and claimed, and in order that it may be fully understood reference is to be had to the accompanying drawings, in which—

Figure 1 represents a vertical section of a coin-controlled vending-machine embodying my invention. Fig. 2 represents a section taken on the line II II of Fig. 1. Fig. 3 represents an enlarged view, partly in elevation and partly in section, of the coin-controlled mechanism proper. Fig. 4 is a front view of the same. Fig. 5 is a detail view showing the locking-bolt elevated to inoperative position by the primary lever. Fig. 6 is a section taken on the line VI VI of Fig. 3.

Referring to the drawings in detail, where like reference characters designate corresponding parts in all the figures, 1 designates the casement of the machine, the same being preferably vertically elongated and of rectangular form, with its lower end tapering downward. Its upper end is topped by a rounded or segmental cap, partially transparent by preference, said cap consisting of the front stationary portion 2 and the rear portion 3, the curved part of the latter forming a hinged door having a depending wall 4, forming when down a partition between the front and rear chambers. When the hinged door is raised, access to the tray 5 of the front cham-

ber is had below partition 4. The door may be locked by means of the hinged hasp 6, staple 7, and a padlock (not herein shown or described) to engage the staple. The special form and construction of the top of the machine, and, indeed, of the casement generally, forms no material part of the invention and is susceptible of modification in various particulars.

Centrally of the front side and at the lower end thereof a delivery-opening 8 is provided for the articles vended, which opening is provided at the lower end of the chamber 9, formed within the casement in conjunction with the front wall thereof by the partitions 10, 11, and 12, the former forming the back and partitions 11 and 12 the sides of said chamber, and all of them preferably taper downward to reduce the lower end of chamber 9 to the same dimension as delivery - opening 8, as shown most clearly in Fig. 2. To more effectually defeat the attempt of any person to abstract articles from the machine, the front wall of the casement and of chamber 9 is depressed, as at 13, and is provided with an upwardly and outwardly projecting flange 14, the latter also serving to support the articles as successively delivered in a position convenient of removal by the vender or vendee.

Arranged transversely and horizontally in the upper end of chamber 9 is a cylinder 15, provided in this instance with three pockets 16, occupying different vertical planes and at angles of thirty-three and one-third degrees to each other and adapted to successively register with the three chutes or passages 17, 18, and 19, arranged side by side and terminating vertically and centrally above the cylinder, the upper ends of said chutes registering with a feed-opening 20 in plate 21, forming the bottom of chamber 3. These chutes may be straight or curved, as shown, and by preference are constructed with the back plate 22 in common, partitions 23 forming the sides of chutes 18 and 19 and one side of chute 17, the adjacent side wall of the casement forming the opposite side of the last-named chute. The front sides of the chutes are preferably of skeleton construction, consisting simply of rods 24 substan-

tially parallel with each other and the back, and in this connection it may be stated that the particular construction of the chutes is unimportant, as if constructed wholly of wire rods the articles would slide therethrough with equal facility.

In practice the cylinder always stands with one of its pockets registering with the companion chute or passage, and consequently has one of the articles in said pockets, as shown in Fig. 1, all of the chutes being charged with the articles as long as the machine is in service, as indicated in Fig. 2. The undermost articles of the other chutes are therefore resting upon the cylinder, so as to be ready to drop in their respective pockets as soon as the latter attains positions vertically below them.

Before going further it may also be well to state that when the machine is to be used as a peanut or popcorn vender a large supply of filled sacks is adapted to be stored in the tray 5 and in the bottom of the casement externally of chamber 9, a lamp or other burner being utilized to keep the same warm, access to the interior of the casement being had through the door 25.

26 designates the shaft of cylinder 15, the same being journaled in a casting 27, secured to the wall near the cylinder, and in a cast bracket 28, secured to the opposite side wall of the casement, the last-named bracket, together with the coin-controlled mechanism proper, being protected from dust by a boxing 29. (Shown only in Fig. 2.)

The bracket 28 is preferably of skeleton construction and is formed at its upper rear corner with a stop-lug 30 to limit the forward movement of the stop-bar 31, pivoted at its upper end to said bracket and pressing forward constantly toward the stop-lug under the power of the retractile spring 32, connected at its front end to the bracket. At its front upper end the latter is provided with a horizontal arm 33, projecting laterally toward the cylinder, for a purpose which hereinafter appears, and rearward of the same carries a buffer 34, preferably of rubber. At its lower end it carries a similar buffer 35 and forward of the same is formed with a laterally-projecting arm 36, said arm being connected by a curved guard 37, (omitted from Fig. 4,) extending concentrically of the shaft, with the arm 33 above referred to, the purpose of this guard being to insure the retention of the nickel or other coin employed in its proper relation until the point of release is reached, as will hereinafter appear.

38 designates the tube through which the coin is introduced, the same extending from the upper right-hand corner of the casement down to about the plane of the horizontal bracket-arm 33 and slightly rearward thereof, being retained rigidly in such position in any suitable manner.

39 designates the storage-tube for the coin

after its work is performed, the lower end of the same being closed by a slide-plate 40 and adapted to deliver into a removable cash-box 41 when said slide is opened, and in order that the person in charge may know that the machine is operating and the coins are being stored properly the front wall of the casement, which forms the lower part of said tube, is provided coincidently with the latter with a transparent plate 42, through which the accumulating coins may be observed.

43 designates a dog, preferably of the gravity type, pivoted to the inner side of bracket 28 and successively engaging the ratchet-teeth 45 of the triple arm or secondary lever 44, said lever being rigidly mounted on shaft 26 and provided at the outer end of each arm with a pocket or opening 46 too narrow to admit of the passage clear through of the coin employed, and secured to said arms in advance of said pockets are cams 47 for a purpose which hereinafter appears.

A segmental primary and trip lever, journaled and adapted to oscillate upon the shaft inward of and adjacent to the secondary lever, comprises an arm 48 and a laterally-projecting flange 49, the latter occupying a different vertical plane from the former for a purpose which hereinafter appears and of length to overlap a pair of the coin pockets or openings 46 of the secondary lever and having at its front end a radial coin-slot 49^a, and said flange is adapted to operate between lever 44, the guard 37, and stop-bar 31. This primary or trip lever is provided peripherally with a double cam 50, having inclined or cam surfaces 51 52 at its front and rear ends, and is also provided with a gear-segment 53 in constant engagement with a rack-bar 54, forming a continuation of the pull-bar 55, extending through the front wall of the casement, and provided with a handle 56 at its front end. This pull-bar is held normally within the casement—its inoperative position—by means of a surrounding spiral spring 57, bearing at its opposite ends against the front wall of the casement, and a collar or enlargement 58 upon the bar, as shown clearly in Fig. 3, and the bar is held in its proper operative relation with the gear-segment by means of the flanged roller 59, journaled in the lower end of bracket 60, secured to the arm 33 of bracket 28. Bracket 60 is also provided with an arm 61, having a pin or pins projecting forwardly as a guide and support for the slotted locking-bolt 63, of right-angle form, the function of said locking-bolt being to prevent the pull-bar being drawn forward unless the proper coin has been first deposited in the machine.

The operation of the machine is as follows: Assuming that the parts are as shown in full lines, it will be obvious by reference to Fig. 1 that the rotation of cylinder 15 one-third of a circle will discharge one sack of peanuts, for instance, into chamber 9, the sack drop-

ping through opening 8, from which it is taken by the vender or vendee. To effect this one-third revolution of the cylinder, the pull-bar 55 must be grasped by handle 56 and drawn outward; but even before this can take place the nickel or other coin must be dropped into coin-tube 38, from which it passes into the registering slot 49^a of the primary lever and registering pocket or opening 46 of the secondary lever, as shown clearly in Fig. 3. When thus positioned, the forward movement of the pull-bar, through the medium of the cog-gearing, at first causes the primary lever to move independently of the secondary lever, this movement, however, continuing only until the coin (lettered C) strikes the front wall of said pocket 46. As this takes place the coin, moved by the primary lever, moves the secondary lever forward, and almost instantly after this movement begins the cam 47 next preceding said pocket engages the lower end of the vertical or slotted arm of slide-bolt 63 and raises the same until its horizontal arm is just above and out of the path of the primary-lever flange 49, upon which said bolt rides as the forward movement of the lever continues until the surface 51 of the double cam 50 of the primary lever engages the lower edge of the horizontal arm of the bolt and elevates the latter still higher—i. e., high enough to clear the arm 48, as shown clearly in Fig. 5. Said bolt-arm thus rides upon said cam 50 in the forward movement of the levers, and shortly before such movement is terminated rides down the surface 52 of said cam and again rests upon the flange 49, where it remains until the forward movement of lever 48 is arrested by the contact of the front end of the flange 49 with buffer 35. (See dotted line, Fig. 3.) As this takes place the momentum acquired by the secondary lever causes the latter to move forward slightly, and thus remove its pressure from the coin and permit the latter to fall by its own weight out of the slot 49^a down into the storage-tube 39, wherein the coins accumulate in front of the transparent portion 42, hereinbefore referred to. Just before the release of the coin takes place the rear end of the primary-lever flange 49 has moved forward sufficiently to permit the spring-actuated stop-bar 31 to swing inward to a position in the path of the secondary-lever arm next in advance of the one holding the coin (see arrow *a*, Fig. 3) in order that as the coin is released and the momentum of the secondary lever carries it farther onward, as described, it shall only move forward until its third or upper pocket 46 is in alinement with the coin-tube 38. It will be noted that these pockets, too narrow for the coin to pass through, are long enough to permit of independent movement by the secondary lever after that of the primary lever has ended, because if the movement of both terminated at the same time they would probably bind so

tightly upon the coin that in the majority of cases it would not be released when the point of release was attained. By the use of the pawl and ratchet back movement of said lever 70 is prevented, while the stop-bar 31 permits the secondary lever to move forward sufficiently to positively release the coin, but not far enough to throw the proper pocket out of alinement with the coin-tube 38. As the pull-bar 75 is released the spring 57 forces it inward and through the cog-gearing throws the primary lever from the position shown in dotted lines back to the position shown in full lines. At this time it will be remembered the horizontal arm of the locking-bolt 63 is resting on lever-flange 49. Consequently the rearward movement of said lever through the engagement of surface 52 with said arm raises and holds the bolt upon cam 50 until arm 48 has 85 passed, when it rides down surface 51 to and upon the flange 49, and as the front end of said flange clears the bolt the latter drops down to its original position, as shown most clearly in Fig. 4. In its rearward movement 90 said lever also strikes and forces stop-bar 31 out of the path of the secondary lever, (see Fig. 3,) and as such movement terminates by its slotted end striking buffer 34 its coin-slot 49^a registers with the coin-tube 38 and the 95 other pocket 46 of the secondary lever. In the downward movement of the levers it is obvious that there is no possibility of the coin dropping out of pocket 46 and slot 49^a, because of the guard 37. 100

It is obvious that without the coin the manipulation of the pull-bar will not effect the rotation of the shaft, and consequently the deliverance of articles or merchandise, such manipulation simply resulting in the oscillation back and forth of the primary lever. 105 This, however, is undesirable, and to prevent it I have provided the cam-actuated locking-bolt 63, which, occupying the path of movement of the primary lever, permits the latter 110 to move forward only a slight distance unless through the medium of the coin the secondary lever and these cams are utilized to raise said bolt out of the way.

From the above description it will be apparent that I have produced a coin-controlled vending-machine which embodies the features of advantage enumerated as desirable in the statement of invention, and while I have illustrated and described the preferred 120 embodiment of the same it is to be understood that it is susceptible of modification in various particulars without departing from the spirit and scope or sacrificing any of its advantages. For instance, as the parts are 125 shown and proportioned the double cam 50 of the primary lever is used solely for the purpose of moving the vertical portion of the locking-bolt out of the path of the arm 48 of said lever as it travels in either direction. It is 130 therefore obvious that a slight change in the detail construction or proportion of the parts

may dispense entirely with the necessity of said cam.

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

1. In a coin-controlled vending-machine, a secondary lever provided with a coin-pocket, a primary lever to engage the coin therein, a locking-bolt, mounted on a stationary part of the machine in the path of the primary lever, and a cam upon the secondary lever to cause the locking-bolt to move and permit the primary lever to pass.
2. In a coin-controlled vending-machine, a secondary lever provided with a plurality of equidistant coin-pockets, a primary lever to engage the coin in one of said pockets, a locking-bolt, mounted on a stationary part of the machine in the path of the primary lever, a cam upon the secondary lever to trip said bolt and permit the primary lever to operate, and means to operate the primary lever and thereby move the secondary lever the distance between two of its contiguous pockets.
3. In a coin-controlled vending-machine, a secondary lever provided with a coin-pocket, a primary lever to oscillate about the same center and adapted to engage the coin in said pocket, a locking-bolt, mounted on a stationary part of the machine in the path of the primary lever, a cam upon the secondary lever to move said bolt out of the path of the primary lever, and an arc-shaped flange on the primary lever to hold the bolt inoperative until the said lever has attained its original position.
4. In a coin-controlled vending-machine, a secondary lever provided with a plurality of equidistant coin-pockets, a stop-bar to limit each movement of said lever to the distance between contiguous pockets, a primary lever to engage the coin in one of said pockets, and an arc-shaped flange on the primary lever to move said stop-bar out of the path of the secondary lever.
5. In a coin-controlled vending-machine, a secondary lever provided with a coin-pocket, a primary lever to engage the coin in said pocket, means to operate said primary lever and thereby said secondary lever, a stop-bar to arrest the secondary lever at the proper point, and means to return the primary lever to its original position and remove the stop-bar from the path of the secondary lever, substantially as described.
6. In a coin-controlled vending-machine, a secondary lever provided with a coin-pocket, a primary lever engaging the coin in said pocket, means for moving the primary lever and the coin until the latter engages the front wall of the pocket, and thereby moves the secondary lever, means for arresting the movement of the primary lever, means for arresting the secondary lever as it releases the coin by continuing its movement after that of the primary lever terminates, and

means to return the primary lever to its original position and remove the obstruction for arresting the movement of the secondary lever, substantially as described.

7. In a coin-controlled vending-machine, a secondary lever provided with a plurality of equidistant coin-pockets, a primary lever embodying a segmental flange concentrically surrounding the secondary lever and exceeding in length the distance between the centers of two adjacent pockets, and provided at its forward end with a slot registering with the adjacent pocket, means to rotate said primary lever and thereby said secondary lever, a stop-bar to arrest the movement of the secondary lever after that of the primary lever has terminated, and means, after the coin is released, to return the primary lever to its original position and thereby force the stop-bar out of the path of the secondary lever, substantially as described.

8. In a coin-controlled vending-machine, a secondary lever provided with a plurality of equidistant coin-pockets, a stop-bar to limit each movement of said lever to the distance between contiguous pockets, a primary lever to engage the coin in one of said pockets, a locking-bolt, mounted on a stationary part of the machine in the path of the primary lever, a cam upon the secondary lever to move the locking-bolt out of the path of the primary lever, and an arc-shaped flange on the primary lever to hold the locking-bolt inoperative until said lever has attained its original position.

9. In a coin-controlled vending-machine, a secondary lever provided with a coin-pocket wherein the coin has play concentrically of the axis of the lever; said pocket being of less width than the diameter of a coin to prevent the passage of the latter therethrough, a primary lever to engage the coin in said pocket, means to operate the primary lever and thereby cause the coin to move to the front wall of the pocket and then impart corresponding movement to the secondary lever, and means to check the movement of the latter after that of the primary lever ceases to effect the reliable release of the coin.

10. In a coin-controlled vending-machine, a secondary lever provided with equidistant coin-pockets wherein the coin has play, a primary lever to engage the coin in one of said pockets, means to operate the primary lever and thereby cause the coin to move to the front wall of the pocket and then impart corresponding movement to the secondary lever, a spring-actuated stop-bar to check the movement of the secondary lever after that of the primary lever ceases, and means to return the primary lever to its original position and thereby trip said stop-bar out of the path of the secondary lever.

11. In a coin-controlled vending-machine, a secondary lever provided with a coin-pocket narrower than the diameter of the

coin to prevent the passage of the latter therethrough, a primary lever having a coin-slot to embrace that portion of the coin projecting out of the coin-pocket of the secondary lever, and provided with a gear-segment, a pull-bar having a rack-bar continuation engaging said gear-segment, and a spring to return the pull-bar and the connected parts to their original position after the coin is released, substantially as described.

12. In a coin-controlled vending-machine, the combination of a pair of tubes, one for the introduction and the other for the storage of the coin, a secondary lever, provided with equidistant coin-pockets wherein the coin has play, and adapted to successively register with said tubes, a primary lever having an arc-shaped flange interposed between the pocket containing the coin and said tubes, and engaging the coin in said pocket, means to operate the primary lever and thereby cause the coin to move to the front wall of the pocket, and then impart corresponding movement to the secondary lever, and means to check the movement of the latter after that of the primary lever ceases to effect the reliable release of the coin.

13. In a coin-controlled vending-machine, the combination of a pair of tubes, one for the introduction and the other for the storage of the coin, a secondary lever, provided with equidistant coin-pockets wherein the coin has play, and adapted to successively register with said tubes, a primary lever having an arc-shaped flange interposed between the pocket containing the coin and said tubes, and engaging the coin in said pocket, means to operate the primary lever and thereby cause the coin to move to the front wall of the pocket and then impart corresponding movement to the secondary lever, means to check the movement of the latter after that of the primary lever ceases to effect the reliable release of the coin, and a curved guard arranged between the delivery and discharge tubes for the coin and adapted to hold the latter in engagement with said levers while the latter are in operation.

14. In a coin-controlled vending-machine, a secondary lever provided with a coin-pocket, a primary lever partly surrounding the secondary lever and engaging the coin in said pocket, a locking-bolt in the path of the primary lever, means to operate said primary lever and thereby said secondary lever, a cam secured to the latter in advance of its pocket to engage and move the locking-bolt out of the path of the primary lever, and means to return the primary lever to its original position and permit the locking-bolt to resume its original position also, substantially as described.

15. In a coin-controlled vending-machine, a secondary lever provided with a cam and a coin-pocket rearward of the cam, a primary lever partly surrounding the secondary lever

and engaging the coin in said pocket and provided with a double cam, a locking-bolt occupying the path of the lever and said cams, means to rotate said primary lever and thereby said secondary lever and cause the cam of the latter to engage and raise the locking-bolt above and out of the path of the primary lever, and then cause the double cam to engage and elevate the bolt still higher up out of the path of the arm of the primary lever, and means, after the coin is released, to return the primary lever to its original position and in such return cause the opposite end of its double cam to reelevate the bolt to its highest plane to permit the primary-lever arm to pass, substantially as described.

16. In a coin-controlled vending-machine, a suitable casing, a shaft journaled therein, and provided with mechanism for receiving and discharging packages, a secondary lever mounted on said shaft and movable in a vertical plane, and provided with an elongated pocket too narrow for a coin to pass therethrough and of suitable length to permit the coin to move concentrically of the lever-axis and before the lever movement begins, a primary lever partially encircling the secondary lever and provided with a coin-slot registering with the coin-pocket and embracing that portion of the coin projecting from the latter, means for moving the last-named lever and by forcing the coin against the front wall of the pocket, imparting corresponding movement to the secondary lever which continues after that of the primary lever ceases, substantially as described.

17. In a coin-controlled vending-machine, a suitable casing, a shaft journaled therein, and provided with mechanism for receiving and discharging packages, a secondary lever mounted on said shaft and provided with a pocket wherein a coin has play, a primary lever to engage the coin in said pocket, means for moving the last-named lever and by forcing the coin against the front wall of the pocket, imparting corresponding movement to the secondary lever which continues after that of the primary lever ceases, means to check the movement of the secondary lever, and means for causing the primary lever to swing back to its original position and trip out of the path of the secondary lever the means which interrupted its movement, substantially as described.

18. In a coin-controlled vending-machine, a suitable casing, a casting mounted therein, and provided with buffers, tubes for the introduction and storage of coin attached to said casing, a secondary lever provided with equidistant coin-pockets wherein the coins have play, means to prevent back rotation of said lever, a primary lever having an arc-shaped flange surrounding the secondary lever and provided with a slot, and adapted at its extremes of motion to strike the buffers, means to operate said lever and by moving

the coin engaging said slot and the registering pocket of the secondary lever rotate the latter, means to arrest the secondary lever after the movement of the primary lever
5 ceases under contact with one of said buffers, and means to return the primary lever to its original position and trip out of the path of the secondary lever the said means which in-

terrupted its movement, substantially as described. 10

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

WILLIAM H. GARLAND.

Witnesses:

H. C. RODGERS,
G. Y. THORPE.