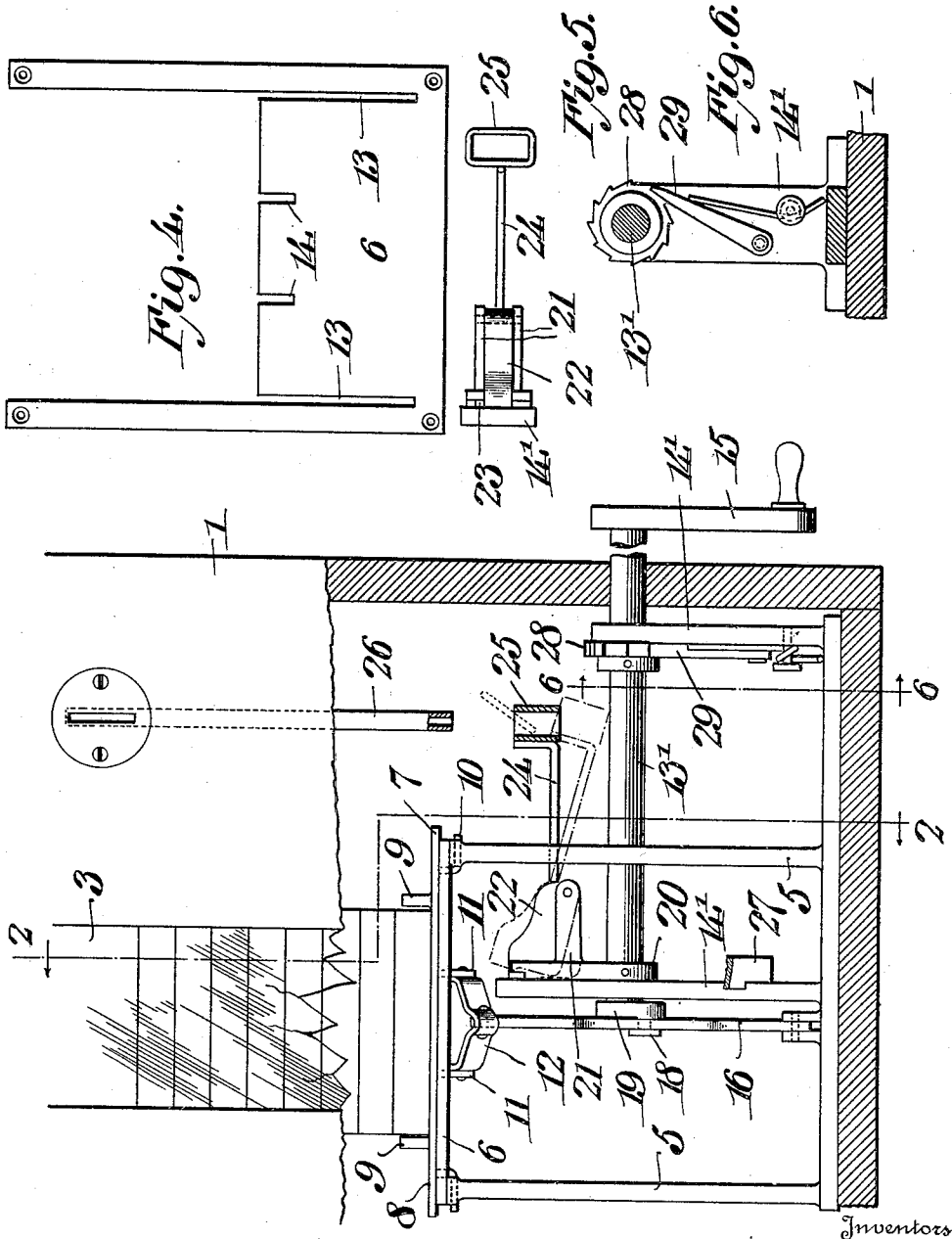


M. C. QUIGLEY & L. TREES.
VENDING MACHINE.
APPLICATION FILED JUNE 1, 1914.

1,131,955.

Patented Mar. 16, 1915.
2 SHEETS—SHEET 1.



Witnesses
J. R. Smith
W. M. Graham

Fig. 1.

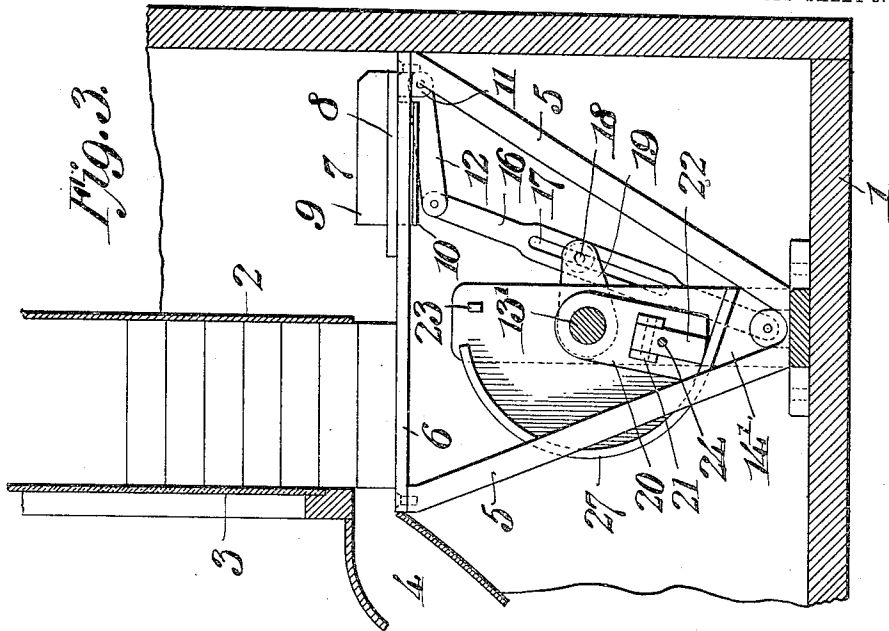
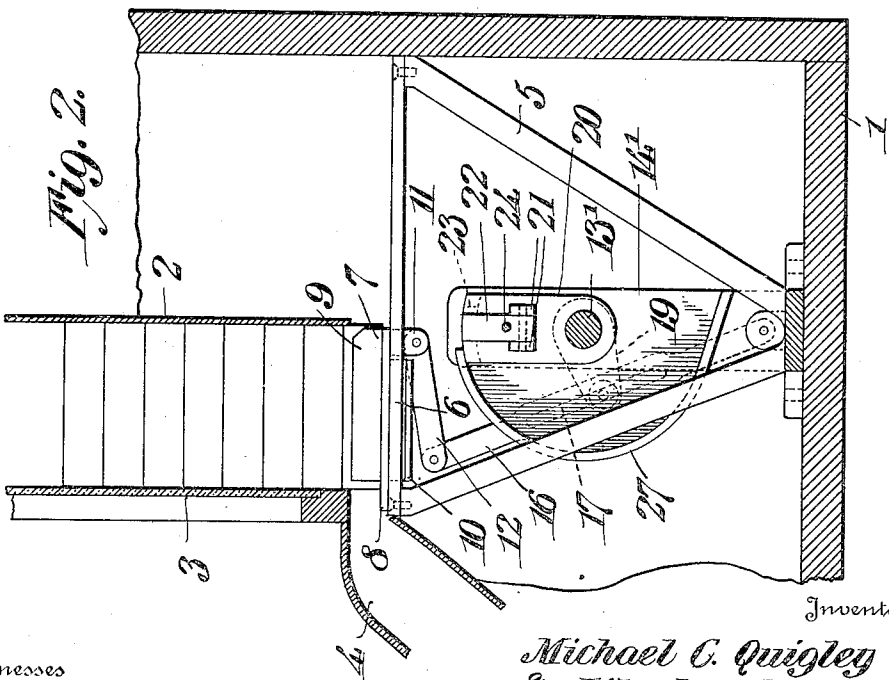
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Witnesses

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UNITED STATES PATENT OFFICE.

MICHAEL C. QUIGLEY AND LIBERTY TREES, OF GREENFIELD, INDIANA.

VENDING-MACHINE.

1,131,955.

Specification of Letters Patent.

Patented Mar. 16, 1915.

Application filed June 1, 1914. Serial No. 842,054.

To all whom it may concern:

Be it known that we, MICHAEL C. QUIGLEY and LIBERTY TREES, citizens of the United States, residing at Greenfield, county of Hancock, and State of Indiana, have invented certain new and useful Improvements in Vending-Machines, of which the following is a specification.

This invention relates to vending machines, and may be more particularly associated with vending machines wherein the operating mechanism is released for operation upon the insertion of a check or coin.

The primary object of our invention is to provide a device of this character whereby upon the insertion of a coin of the correct denomination the mechanism will be released for operation for the delivery of an article, and which insures the delivery of but a single article with each operation.

A further object of our invention is to provide a device of this character which will be impossible of operation except upon the introduction of a coin of correct denomination.

A still further object of our invention is to provide a vending machine of this type further characterized by improved means for discharging the inserted coin from the vending mechanism and for automatically resetting the operating mechanism after an article has been ejected from the machine.

A still further object of our invention is to provide a device of this character which shall be simple in construction, cheap of manufacture, composed of comparatively few readily assembled parts and yet which will prove thoroughly efficient in use.

With these objects in view, together with others which will appear as the description proceeds, our invention consists in the novel combination and arrangement of parts, all as will be described fully hereinafter, and pointed out more particularly in the appended claims.

Our invention will be more readily understood with reference to the accompanying drawings, in which—

Figure 1 is a fragmentary front view of a vending machine illustrating a practical embodiment of our invention, Fig. 2 is a vertical section taken substantially upon the line 2—2 of Fig. 1, and looking in the direction

indicated by the arrows, Fig. 3 is a view similar to Fig. 2, illustrating the operating mechanism in a different position, Fig. 4 is a plan view of the article supporting table used in connection with our improved mechanism, Fig. 5 is a detail top plan view of the mechanism releasing device and coin receptacle, and, Fig. 6 is a fragmentary detail view of an approved mechanism for preventing retrograde movement of the operating shaft of the machine, the view being taken upon the line 6—6 of Fig. 1.

Referring now more particularly to the drawings, 1 represents generally the casing of the ordinary vending machine, provided with a package or article receptacle 2 within which the articles to be vended are positioned, preferably piled one upon the other; a glass 3 being provided in the front of the machine adjacent the package receptacle in order that a purchaser may ascertain the character of articles contained in the machine, or to ascertain whether or not there are articles in the machine for delivery. A discharge opening 4 is provided adjacent the lower end of the article receptacle in order that the articles, upon operation of the vending mechanism, may be delivered from the machine to the purchaser.

The improved mechanism for vending the articles stored within the casing is positioned adjacent the lower end of the article receptacle, and is mounted within a frame 5. The frame 5 supports, at its upper end, a table 6, which lies directly beneath the lower end of the article receptacle 2, and upon which the stack of articles to be vended is adapted to rest. It is to be observed that the distance between the upper face of the table 6 and the lower edges of the open end of the article receptacle 2 is slightly greater than the thickness of one of the articles to be vended, the reason for which arrangement will be more fully described hereafter. An ejector 7 is mounted for reciprocation upon the table 6, and comprises preferably a base plate 8, from the upper face of which extends guards 9 spaced apart a distance sufficient to permit of the accommodation of the articles to be vended. The ejector is provided at opposite sides with depending guide arms 10, formed at their free ends with laterally

extending portions adapted to engage beneath the edges of the table 6. It will be understood from this arrangement that the ejector is supported by and is free to reciprocate upon the table 6, and when in operation is adapted to slide beneath the open end of the article receptacle 2, as shown in Fig. 2. Depending from the ejector 7 is a pair of lugs 11, to which is pivoted a yoke shaped connecting link 12. To accommodate the several depending members of the ejector, namely, the guide arms 10, and lugs 11, the table 6 upon which the ejector slide is provided with cut out portions or slots 13 and 14, respectively as shown in Fig. 4. From this arrangement it will be seen that the ejector 7 is free to slide upon the table 6, and as the ejector slides forwardly from the position shown in Fig. 3, the lowermost package or article which rests upon the table 6, will be engaged by the forward edge of the base plate 8 and slid from beneath the article receptacle and into the discharge opening or outlet 4, from which it may be taken by the vendee or operator. It is also to be observed that during the ejection of the lowermost article, the article next above will drop upon the base plate 8 of the ejector, as shown in Fig. 2, and the thickness of the base plate 8 is such as to make the distance between the upper face thereof and the lower edges of the article receptacle 2 less than the thickness of the package or article, and in this manner the article is held against movement either forward or backward, so that the delivery of but a single article is insured. Upon reverse movement or retraction of the ejector, the lowermost article will drop down and rest upon the table 6, as shown in Fig. 3, to be ready to be ejected from the machine upon the next forward movement of the ejector.

As an improved means for imparting the necessary movement to the ejector 7 for its above mentioned operations, a shaft 13' is employed. This shaft is mounted in suitable supports 14' preferably below the table and ejector, and extends at one end beyond the side of the casing 1 to be provided with an operating handle 15. A pitman 16 is pivoted at one end adjacent the opposite end of the shaft 13', and is connected at its free end with the yoke shaped connecting link 12 secured to the ejector. The pitman is provided intermediate its ends with a longitudinally extending slot 17 within which extends a pin 18 from a crank arm 19 secured upon the said opposite end of the shaft 13'. By this construction it is readily seen that upon rotation of the shaft, the pitman 16 will be rocked from one extreme position to the other and back again, and obviously this rocking movement will be transmitted through the link 12 to reciprocate the ejector 7.

Secured upon and to rotate with the shaft 13' is a bracket 20. This bracket is secured upon the shaft in a position preferably to rotate adjacent the innermost of the supports 14'. From this bracket extends a pair of arms 21, between the free ends of which is pivoted a latch 22, extending inwardly to a position adjacent the face of the support 14'. Formed, or in any other preferred way secured upon the face of the support 14' adjacent the rotating bracket, is a lug or stop 23, which is so positioned upon the bracket as to lie directly in the path of rotation of the latch 22, whereby it will be readily seen that rotary movement of the shaft in one direction will be prevented; means hereinafter described being provided to prevent movement in the opposite direction. Extending from the opposite end of the latch is an arm 24, upon the free end of which is secured a coin receptacle 25; the latch being so balanced upon its pivot as to be normally in position to engage the lug or stop 23, but upon introduction of a coin of the correct weight to the receptacle 25 upon the free end of the arm, this balance will be overcome and the latch tilted to such extent as to disengage from the lug or stop 23 upon the support 14'. The extent of tilting movement of the latch is shown by dotted lines in Fig. 1. The coin receptacle 25 is bottomless, in order that coins of less diameter than those required may pass on through the receptacle and into the casing without effecting the shaft locking mechanism. The coin receptacle is also a trifle narrower in extent than the diameter of the coin of the desired denomination, in order that upon introduction of such coin the same will be caught and held within the edges of the receptacle. It is also obvious that the coin receptacle 25 is in a direct communication with the discharge end of the coin chute 26 of the machine when the shaft is in locked position, and upon introduction of the correct coin, the latch 22 will be moved to such an extent as to be released from engagement with the lug 23 upon the support 14', and as the shaft is rotated by the handle 15, the coin will be deposited in the bottom of the casing as the coin receptacles assumes inverted position.

An arcuate guide 27 is secured upon the support 14' in order to engage the end of the tilted latch 22 upon continued rotary movement of the shaft 13', to reset the said end to insure its engagement against the lug or stop 23 upon a complete revolution of the shaft. Thus it will be seen that another coin must be inserted in the machine before the vending mechanism can further operate.

In order to prevent retrograde movement of the shaft 13', a ratchet wheel 28 is fixed to the shaft, and a spring pressed pawl 29 is

pivoted upon the opposite support 14' in engagement therewith. It is to be understood, of course, that the ratchet teeth of the wheel 28 are so disposed as to permit the pawl 29 to play over the said teeth when the shaft is being rotated in the correct direction, but the teeth and pawl will cooperate to prevent rotation of the shaft in the opposite direction. It is obvious from this arrangement that upon the introduction of the correct coin to the coin chute 26, the same will gravitate to the receptacle 25, and the balanced latch will be tilted by the weight of the coin to such extent as to release the shaft and to permit of rotation thereof, whereupon a single article will be ejected from the machine. It is obvious also that a coin of smaller diameter than that desired cannot in any way effect the shaft locking mechanism, and it is also apparent that by limiting the size of the slot at the coin receiving end of the chute, coins of larger diameter than those desired cannot be inserted. The arrangement also presents novel and improved means for removing the coin from the receptacle, and resetting the pivoted lever to lock the shaft upon a complete rotation of the same. It will be observed that the device is of such simple construction as to insure perfect operation of the various parts at all times, with the chances of derangement or breakage of any of the parts being exceedingly small.

We claim:—

1. In a device of the class described, a shaft, a latch carried by said shaft and normally holding the shaft against rotation, a receptacle in connection with said latch whereby upon introduction of a coin or check to said receptacle the latch will be operated to release the shaft, a guide for resetting said latch upon a complete revolution of said shaft, and means for rotating said shaft, substantially as described.

2. In a device of the class described, a support, a shaft mounted for rotation in said support, a stop on said support, a bracket fixedly secured to said shaft adjacent said support, a normally balanced latch pivoted in said bracket provided at one end with a coin receptacle and adapted at its opposite end to normally engage said stop, a coin chute communicating with said coin receptacle, and means for rotating said shaft, substantially as described.

3. In a device of the class described, a casing provided with a coin chute, a support, a shaft rotatably mounted in said support, a lever pivoted upon said shaft and adapted at one end to cooperate with said support to hold said shaft against rotation and provided at its opposite end with a coin receptacle adapted to communicate with said coin chute when the shaft is in locked position, whereby upon introduction of a coin to the receptacle the

lever will be operated to release said shaft, and means for rotating said shaft, substantially as described.

4. In a device of the class described, a casing provided with a coin chute, a support, a shaft rotatably mounted in said support, a latch pivoted upon said shaft adapted at one end to cooperate with said support to hold said shaft against rotation and provided at its opposite end with a coin receptacle, adapted to communicate with said coin chute when said shaft is in locked position whereby upon introduction of a coin to the receptacle the latch will be operated to release said shaft, a guide for resetting said latch upon complete rotation of the shaft, and means for rotating said shaft, substantially as described.

5. In a device of the class described, a coin chute, a rotary shaft, a support, a stop on said support adjacent said shaft, a balanced latch pivoted upon said shaft and adapted normally to cooperate with said stop to hold said shaft against rotation, said latch being provided with an arm extending into communication with said coin chute, and an arcuate guide secured to said support and adapted to be contacted by said latch in its rotary movement for resetting the same to contact said stop, substantially as described.

6. In a device of the class described, a support, a shaft rotatably mounted in said support, a latch carried by said shaft normally holding the same against rotation, means for operating said latch to release said shaft, a guide on said support, adapted to adjust said latch to normal position upon a complete rotation of said shaft, said guide comprising an arcuate member in the path traversed by said latch when rotating, being concentric with said shaft for a portion of its extent and being straight for the remainder of its length to receive said latch when in released position, substantially as described.

7. In a device of the class described, a support, a shaft mounted in said support for rotation in one direction, a latch carried by said shaft and cooperating normally with said support for holding the shaft against rotation, a receptacle in connection with said latch whereby upon introduction of a coin to said receptacle said shaft will be released, and a guide for resetting said latch to lock the shaft upon a complete revolution thereof, substantially as described.

8. In a device of the class described, a support, a shaft mounted for rotation in said support, a bracket secured to said shaft and extending at right angles thereto adjacent said support, a pair of arms secured to said bracket and extending outwardly therefrom in spaced parallel relation to said shaft, a latch pivoted to said arms and lying normally balanced therein parallel to said

shaft and in locking engagement at one end
with said support, and a coin receptacle at
the opposite end of said latch, whereupon
said latch will be unbalanced and disengaged
5 from said support upon introduction of a
coin to said receptacle, substantially as de-
scribed.

In testimony whereof we have signed our

names to this specification in the presence of
two subscribing witnesses.

MICHAEL C. QUIGLEY.
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Witnesses:

JOHN BRANDENBURG,
JOHN B. HALSALL.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."