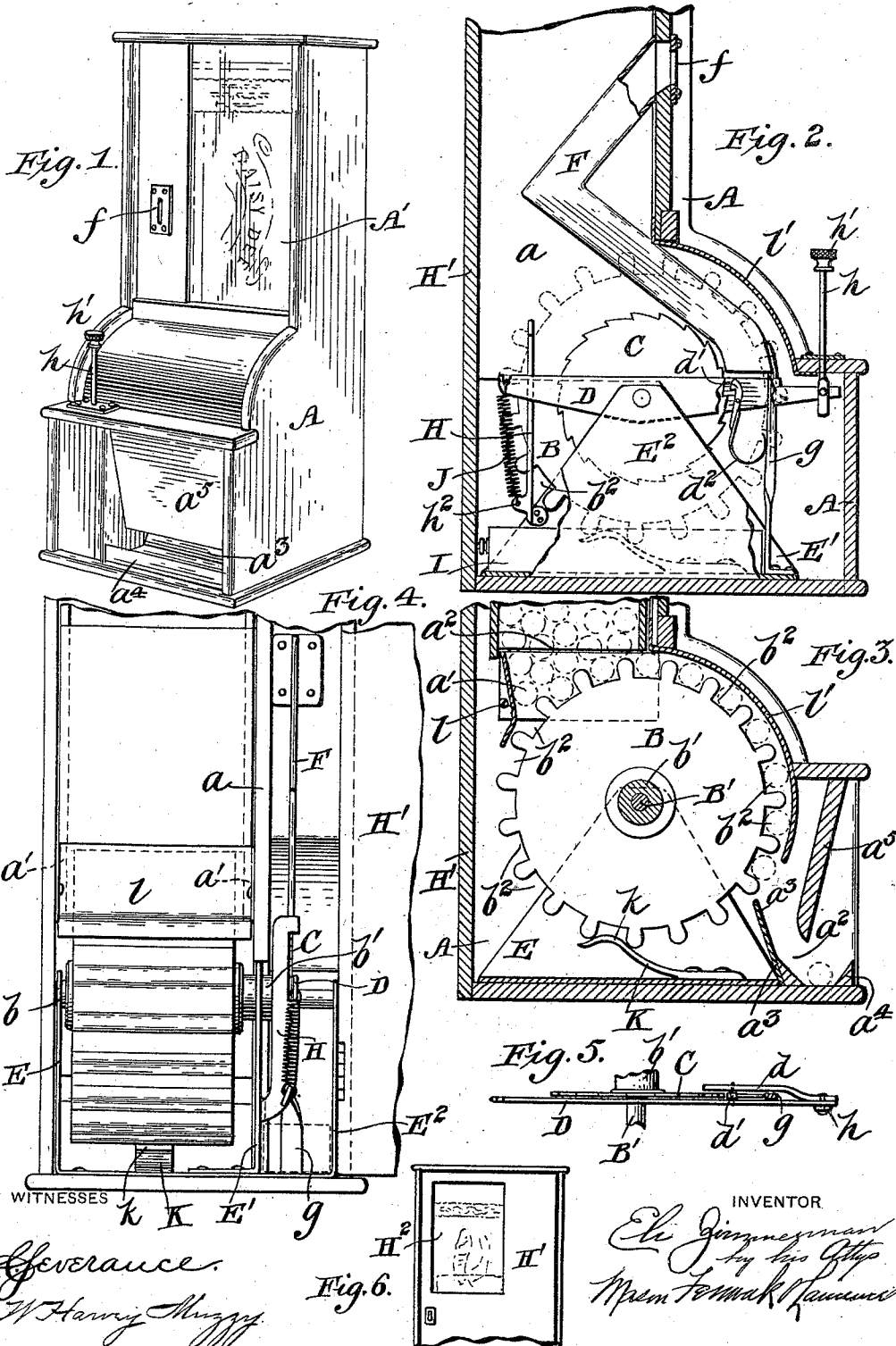


(No Model.)

E. ZIMMERMAN.
AUTOMATIC VENDING MACHINE.

No. 537,378.

Patented Apr. 9, 1895.



UNITED STATES PATENT OFFICE.

ELI ZIMMERMAN, OF WEST SUPERIOR, ASSIGNOR OF ONE-HALF TO WILLIAM G. TUBBS, OF SOUTH RANGE, WISCONSIN.

AUTOMATIC VENDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 537,378, dated April 9, 1895.

Application filed December 27, 1894. Serial No. 533,072. (No model.)

To all whom it may concern:

Be it known that I, ELI ZIMMERMAN, a citizen of the United States, residing at West Superior, in the county of Douglas and State of Wisconsin, have invented certain new and useful Improvements in Automatic 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 invention relates to improvements in automatic vending machines and is particularly adapted for the vending of cigars.

The invention consists of the combination of a suitable casing, a feeding drum provided with a ratchet wheel, a pawl adapted to be brought into engagement with said ratchet wheel, by a coin striking and resting upon it, means for conducting a coin to said pawl, and means for operating the pawl from the outside of the casing.

It also consists of the combination of a suitable casing, a peripherally grooved feeding drum provided with a ratchet wheel, a pivoted lever adapted to be operated from the outside of the casing, a spring pressed pawl pivoted in said lever and adapted to be forced into engagement with the ratchet wheel by the weight of a coin, and a tube for conducting a coin from the outside of the casing to said pawl.

It also consists of certain other novel constructions, combinations and arrangements of parts, all of which will be hereinafter more particularly set forth and claimed.

In the accompanying drawings forming part of this specification, Figure 1 represents a perspective view of the casing of my vending machine. Fig. 2 represents a side elevation, partly broken away, of my improved machine, one side of the casing being removed. Fig. 3 represents a vertical transverse section through the casing, feeding drum and cigar compartment. Fig. 4 represents a rear elevation, partly broken away, of my said machine, the door of the casing being open; and Fig. 5 represents a detail top plan view of the ratchet wheel, pivoted lever, and pawl carried

thereby. Fig. 6 represents a rear elevation 50 of the door and casing, partly broken away, and showing the glazed window through which the cigar box within can be seen.

A in the drawings represents the casing; B, the grooved feeding drum; C, the ratchet 55 wheel attached to the same; D, the pivoted lever or walking beam; E E' E², the trunnion standards, and F the coin conducting tube. The feeding drum B is provided at each end with a trunnion or journal *b b'* respectively 60 which are mounted and supported in the trunnion supports or standards E E' which are preferably of metal and secured to the bottom of the casing in any suitable manner. A shaft B' passes through the trunnions and 65 also the drum and has its outer exposed end journaled in the standard E². The drum is provided about its periphery with cigar receiving grooves *h*² which are the same width at their bottoms as at their tops so that the 70 cigars cannot become wedged therein. The trunnion *h'* of the drum has rigidly mounted thereon the ratchet wheel C by which said drum is revolved. The pivoted lever or walking beam D is loosely mounted upon the shaft 75 B' just to one side of said ratchet wheel and is provided at its forward end with a rearwardly extending angular tongue *d* that passes backward on the opposite side of the ratchet wheel. A pawl *d'* is pivoted between the lever 80 D and the tongue *d* so that when it is thrown forward by the weight of a coin upon it, it will engage the teeth of the ratchet wheel. The lower end of the pawl is provided with a downwardly and forwardly curved 85 spring *d*² which keeps the pawl normally out of engagement with the ratchet wheel by pressing against a standard *g*. This standard is preferably a flat piece of metal secured to the base and twisted near its middle so that 90 its upper end can readily pass between the lever D and the tongue *d*.

The outer end of the lever D is provided with a plunger rod *h* pivotally secured thereto and this rod passes upward through the casing 95 A and is provided at its upper end with a handle or knob *h'*. The rear end of the lever D is limited in its movements by a notched plate

H which is secured to the standard E', the end of the lever working in the notch of said plate. A coil spring J is secured to the rear end of said lever and to a projection h^2 on the plate H and holds the forward end of the lever normally up with the plunger rod extending out of the casing.

The coin tube F is preferably angular in form and is connected at its top with a plate f which has an aperture the exact size of the coin that must be used to operate the machine. The lower end of the tube discharges just above the pawl d' and is supported by the upper end of the standard g . The distance between the rear edge of the pawl and the forward edge of the standard g is just sufficient to cause the predetermined coin to lodge between the two, but in such a manner that it will drop the instant that the distance is increased between the pawl and said standard g . A money drawer I is adapted to be slid in from the back of the casing, through the open doorway so as to come directly beneath the pawl d' and thus receive all the coins as they drop. A spring K is attached to the base of the casing so that its free upwardly turned end k will engage with the grooves b^2 and thus prevent the drum from revolving except when operated by the pawl d' . The casing is provided with a rear door H' through which the interior may be reached to replenish cigars or remove the coins. The casing is also provided with a vertical partition a which begins just above the standard E' and extends to the top of the casing thus forming a cigar box retaining space above the feeding drum. The cigar box has one of its ends removed and is supported above said drum on side brackets a' and the cigars drop through the lower open end of said box into the grooves of the feeding drum, a plate l preventing the cigars from dropping to the rear of the drum and another plate l' forming part of the casing and following the curve of the drum, preventing the cigars from dropping out of the grooves as the drum revolves. This plate l' extends downward to very near the top of a transverse partition a^3 for a distance equal to the width of the drum as shown in Fig. 3, but its lower portion is cut away, as shown in Fig. 2, to the left of the partition a so as not to interfere with the action of the lever D.

The lower part of the casing A is open, as at a^2 to permit the cigars that drop from the grooves after the same have passed below the lower end of the plate l' , to be reached from the outside. The transverse partition a^3 is provided to direct the cigars forward along the front of the casing and a ridge a^4 is formed at the front edge to prevent the cigars from dropping altogether out of the machine. The front wall a^5 of the casing is inclined downward and backward to allow the fingers to be readily inserted to grasp the cigar resting against the ridge a^4 . The upper part of the casing is provided with a window or ap-

erture A' covered with glass so that the cigar box in said casing can be readily seen from the outside, and thus the brand of the cigars as well as the revenue stamp is apparent to persons desiring to purchase. A glazed window H² will be placed in the rear door and is of a size sufficient to show all the cigar box and the factory notices, revenue stamps, &c., contained in said box, but none of the operating mechanism.

The operation is as follows: The end is first torn from the cigar box and it is then inserted in the position shown in the drawings. The drum is revolved until the first groove containing a cigar is just at the end of the plate l' . The next movement of the drum will discharge the cigar at the point a^2 . The person desiring to operate the machine places the proper coin in the tube F down which it slides until it wedges between the pawl d' and standard g , which wedging will throw said pawl forward and cause it to engage the ratchet wheel. The operator then presses down the plunger rod h which operates the lever carrying the pawl and thus the groove drum is fed forward one notch and a cigar discharged. As the lever and pawl descend the distance between the back of the pawl and the front of the standard g increases, as the lever is turning on its fulcrum, and the coin drops into the money drawer as it no longer has any support. The distance between the pawl and the standard g is such that the instant said distance is increased it will become greater than the width of the coin and thus the coin will drop as before described. The spring T returns the lever to its normal position and the spring d^2 disengages the pawl from the ratchet wheel and keeps it so until another coin is inserted. A coin that is too large will not pass through the slot in the plate f and one that is too small will pass down the tube F and between the pawl and the standard g without moving the former to engage the ratchet wheel.

What I claim as my invention is—

1. In an automatic vending apparatus the combination of a suitable casing, a feeding drum, a pivoted lever, a pawl pivoted in said lever and adapted to be brought into engagement with a portion of said drum by a coin striking and resting upon it, means for conducting a coin to said pawl, and means for operating the pivoted lever from the outside of the casing to revolve the drum, substantially as described.

2. In an automatic vending apparatus the combination of a suitable casing, a peripherally grooved feeding drum provided with a ratchet wheel, a pivoted lever adapted to be operated from the outside of the casing, a spring pressed pawl pivoted in said lever and adapted to be forced into engagement with the ratchet wheel by the weight of a coin, and a tube for conducting a coin from the outside of the casing to said pawl, substantially as described.

3. In an automatic vending apparatus the combination of a suitable casing, a feeding drum having recesses adapted to receive the articles to be vended and provided with a ratchet wheel, a spring bearing upon said drum so that it must revolve under friction, a pivoted spring-restrained lever adapted to be operated from the outside of the casing, a pawl pivoted in said lever and adapted to be forced into engagement with the ratchet wheel by the weight of a coin, and means for conducting a coin from the outside of the casing to said pawl, substantially as described.

4. In an automatic vending apparatus the combination of a casing provided with a glazed window through which a portion of the interior may be seen, a peripherally grooved feeding drum, a pivoted spring restrained lever, a pawl pivotally mounted in said lever and adapted to be brought into engagement with a portion of said drum by a coin striking and resting upon it, means for conducting a coin to said pawl, and means

for operating the pivoted lever from the outside of the casing, substantially as described. 25

5. In an automatic vending apparatus the combination of a suitable casing, a feeding drum provided with a ratchet wheel, a pivoted lever adapted to be operated from the outside of the casing and provided with a tongue extending parallel therewith a pawl provided with a spring and pivoted between said lever and tongue, and adapted to be forced into engagement with the ratchet wheel, a standard attached to the base and adapted to engage the lower end of the spring on the pawl and keep the latter normally out of engagement with the ratchet wheel, and a tube for conducting a coin from the outside to said pawl, substantially as described. 30 35 40

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

ELI ZIMMERMAN.

Witnesses:

JAMES T. WATSON,
JNO. JENSWALD, Jr.