

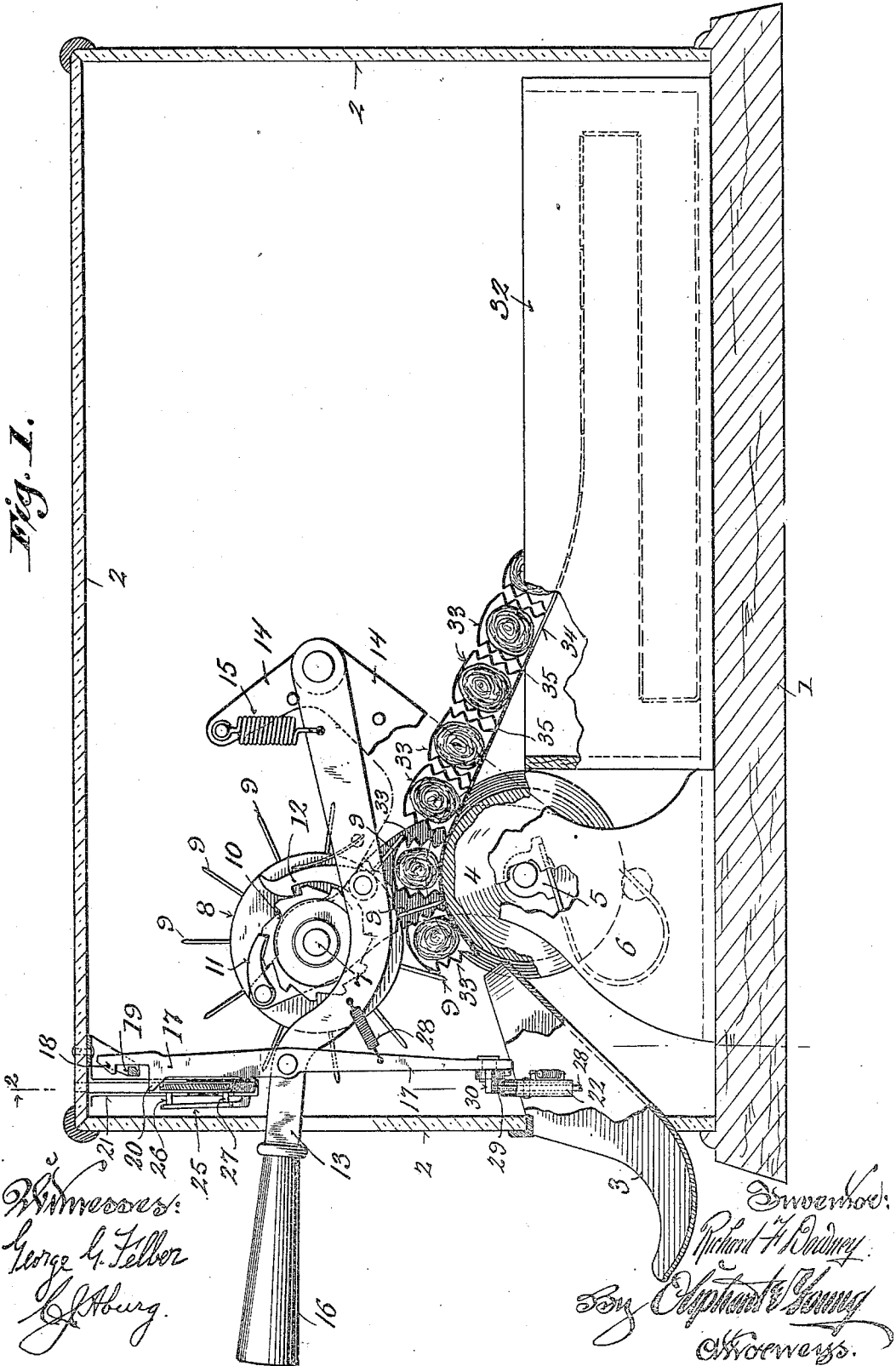
R. F. DOWNEY.
VENDING MACHINE.

APPLICATION FILED MAY 20, 1909.

958,237.

Patented May 17, 1910.

2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

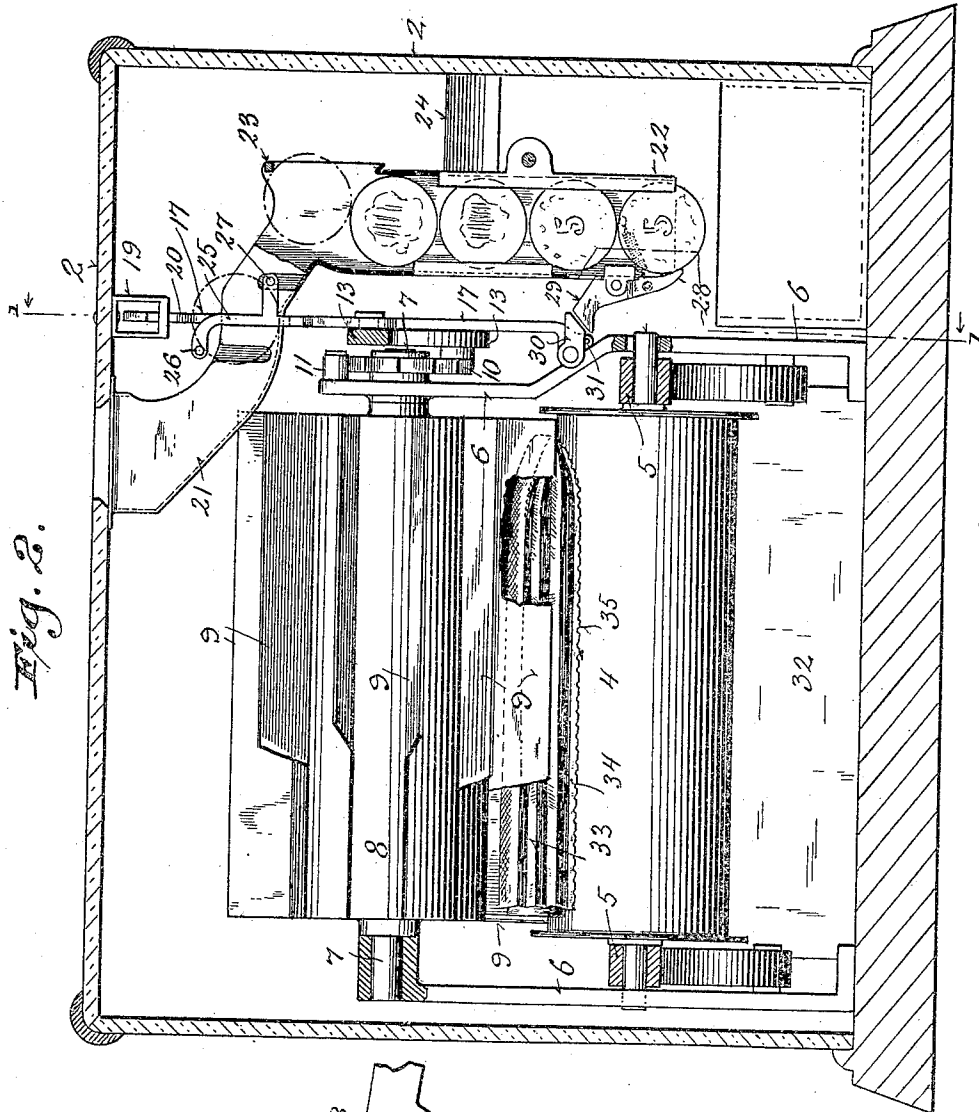
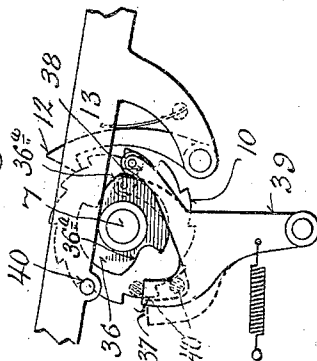


Fig. 2.

Witnesses:
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Fig. 3.



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UNITED STATES PATENT OFFICE.

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VENDING-MACHINE.

958,237.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, RICHARD F. DOWNEY, a citizen of the United States, and resident of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Vending-Machines; and I do hereby declare that the following is a full, clear, and exact description thereof.

The object of my invention is to provide a simple, and effective coin-controlled vending machine, especially designed for the sale of cigars or like articles. Heretofore it has been the practice in this class of machine to feed cigars one by one from the original package by mechanism operating directly upon the cigar in one form or another and owing to changes in temperature, the wrappers of the cigars are frequently broken while being manipulated by the machine. Such machines also require a more or less complicated mechanism to insure accuracy of feed, even though the feed be assisted by gravity.

I propose to overcome the above mentioned objections by employing a tape of any desired form, upon which tape the cigars are secured prior to being packed in the original package. By these means any simple form of feeding mechanism may be employed to draw the tape upon which the cigars are secured from the box, the first cigar on the tape being severed either by a cutting mechanism or tearing the same, the severed cigar being then delivered to the purchaser in perfect condition.

In carrying out my invention I prefer to utilize a perforated cellular tape such as is shown in the patent granted to O. L. Parmenter, February 1, 1898, No. 598,485, the wax lining within the cells of this tape being practically moisture-proof will thus preserve the cigars and also provide a neat and compact package for the same when delivered.

The invention therefore consists in certain peculiarities of construction and combination of parts as hereinafter fully set forth with reference to the accompanying drawings and pointed out in the claims of this specification.

Figure 1 represents a sectional elevation of a machine embodying the features of my invention, the section being indicated by line 1—1 of Fig. 2, and parts of the machine being also broken away to better illustrate the

invention, Fig. 2, a sectional view of the same, as indicated by line 2—2 of Fig. 1, the section being taken looking from the feed-end, and Fig. 3, a detail view of a modified form of the feed-mechanism.

Referring by numerals to the drawings, 1 indicates a base in which is secured a rectangular casing 2, being preferably composed of glass panels and provided at its feed-end with a delivery-chute 3. The rear extension of the chute terminates adjacent to a roller 4, which is preferably provided with an exterior yielding-surface, such as rubber or wood, the roller being provided with trunnions mounted in spring-controlled boxes 5, which boxes are secured to standards 6, through their spring-connection as shown, the trunnions being also guided in slots formed in said standards. A spindle 7 is mounted in bearings in the standards of the roller 4, the spindle carrying a spool 8, which spool is provided with a series of longitudinally disposed cutting-blades 9, arranged to be opposed by the spring-controller roller 4. The spindle has secured to one end thereof a ratchet-wheel 10, which ratchet-wheel is engaged by a gravity-controlled check-dog 11, that is carried by the adjacent standard. The ratchet-wheel is designed to be actuated by a spring-controlled pull-pawl 12 that is fulcrumed upon a hand-lever 13, which hand-lever is also pivoted upon an arm 14 of one of the standards 6, the lever being held in its normal position by a coil-spring 15 connecting the arm, there being suitable stops for said lever carried by said arm. The free end of the hand-lever projects through a slot in the casing and is provided with a suitable grip 16. A locking-latch 17 is pivoted to the forward end of the lever 13, being provided with a nose 18, arranged to engage a stirrup 19 that is secured to the top panel of the casing. The nose is normally disposed in the path of the stirrup but slightly above the same. Just under the latch-nose the same is provided with a tooth 20 that is arranged to overhang a coin-trough 21, which trough communicates with a slot in the upper panel of the casing, and is formed with a horizontally disposed section directly aligned with the locking-latch, the trough being thereafter inclined downwardly terminating in a horizontally disposed well-portion 22, which is arranged to receive and hold a

series of coins that are deflected therein by a gage-bar 23 carried by the downwardly inclined section of the trough. Should a coin of less diameter than that of the standard coin required to operate the machine be inserted in the trough, the coin or slug would pass under the gage-strip and be discharged upon a deflector 24, which deflector would deliver the coin or slug to a suitable receptacle, it being understood that a coin or slug larger than that required to operate the mechanism could not be inserted in the receiving-slot in the upper panel. The locking-latch 17 has an arm 25 that extends parallel with the latch but upon the opposite side of the trough, as shown in the drawings, the said arm being provided with pins 26, 27, the former being arranged to engage the upper rear side of a coin that is seated in the trough, while the lower pin 27 is designed to hold the coin in the correct position to be actuated upon by the locking-latch. The locking-latch is held in its engaging-position relative to the stirrup 19, by means of a coil-spring 28, which spring connects said latch and the hand-lever, it being understood that the under side of tooth 20 in this position serves to arrest a coin of the correct diameter.

As clearly shown in Fig. 2 of the drawings, the bottom coin of a series within the well-portion 22, is held by means of a tail-portion 28 of a spring-controlled trigger 29, which trigger is fulcrumed to the said well-portion 22. The head-portion of the trigger is designed to be engaged and actuated by a finger 30 that is fulcrumed to the lower end of the locking-latch, the finger being supported by a pin 31 carried by said latch.

The operation of the coin-mechanism is as follows: When a coin of the proper dimension and value is inserted in the machine, it will be stopped by the tooth 20 which extends in the path of the coin. The operator will now pull down the handle causing the tooth 20 of the latch-plate to ride over the upper edge of the coin and thus free the nose 18 of said latch from the stirrup, whereby the handle is free to make its full stroke, causing the spool 8 to rotate through its pawl-and-ratchet connection with said handle. The action of the tooth 20 of the latch having caused the latter to swing rearward, its arm 25 by this movement is swung so that its pin 26 extends over the upper rear edge of the coin and its pin 27 under the forward lower edge thereof thereby holding the same as the latch-dog moves down, the said coin being finally expelled from the seat by the pin 26. In the meantime, the finger 30 has passed under the head of the trigger, and as the hand-lever is retracted by its spring, the same is rocked by said finger causing a release of the last coin simultaneous with a locking movement of the coin

above, which locking movement is effected by the head of the trigger. After the hand-lever has been entirely retracted to its normal position, the spring-controlled trigger again assumes the position as shown in Fig. 2, whereby the coin previously locked by the head will drop down and be engaged by the tail 28, to thus cause the entire stack of coins to move down in order that the last coin received in the trough may assume its proper position. Thus by arrangement of the well-portion in connection with the coin-trough, a series of coins are always displayed as a protection against fraud, it being unlikely that operators of the machine would use a slug or spurious coin, in view of the fact that the coin or slug would remain exposed to view during several succeeding operations of the machine.

As shown in Fig. 1 of the drawings, a box 32 is placed in position rearward of the roller 4, being the receptacle in which the cigars are originally packed. The cigars are first inserted into individual cells 33 of a paper-tape 34, which paper-tape is preferably transversely perforated between the cells, as indicated at 35. The tape carrying the cigars is thereafter nested or folded back and forth within the box as shown, the end thereof being inserted about the face of the roller 4 with the cells containing the cigars disposed radially thereof due to the curved surface of said roller. In the above position one of the blades 9 normally engages the adjacent surface of the roller and thus severs the tape and first cigar contained in the cell thereof. The blades 9 upon opposite sides of the said blade overlap or mesh with the adjacent cells of the tape and thus the forward blade holds the severed cigar while the rear blade is in position to feed the second cigar to the cutting position. Now if a coin be inserted into the trough, it is evident that the locking mechanism will be disengaged when the feed-mechanism is actuated by the hand-lever, whereby the severed cigar which had previously been held by the forward blade is delivered to the purchaser simultaneously with the movement forward and severing of the next cigar from the tape. Thus the tape may be entirely fed from the box and each cigar severed therefrom in its turn, the arrangement of the folds of the tape being such as to insure free movement of said tape at all times.

In Fig. 3 of the drawings, a feed-mechanism is shown whereby at every sixth operation of the machine two cigars will be delivered to the purchaser for the price of one, thus rendering it possible for the machine to vend six cigars for the price of five even though the previous purchases may have been made by different individuals. In order to effect the above result, the hand-lever 13 is provided with a stop-pin 40, 130

which pin normally abuts an arm 37 of a spring-controlled pivoted bracket 39. An arm 38 of this bracket engages a cam-disk 36, which is carried by the feed-ratchet 10, the ratchet in this instance being provided with twelve teeth, which would correspond in number to the spool blades, not shown. By this construction, the hand-lever movement would cause the pull-pawl 12 to rotate its ratchet-wheel the distance of two teeth and thereby feed and sever two cigars in one operation. This operation is caused by the movement of the cam-disk, which permits the arm 38 of the bracket 39 to swing over and cause its arm 37 to swing out of the path of travel of stop-pin 40, whereby the hand-lever is free to move down its full distance and actuate the feed-mechanism ratchet-wheel, moving the latter the distance of two teeth. The next movement of the feed-mechanism causes the arm 37 to move into the path of travel of the stop-pin, as shown, it being understood that the aforesaid cam-disk is provided with two pockets 36^a, diametrically opposite each other whereby, with each half revolution of the blade-spool two cigars would be delivered for the price of one, and thus the feed of the tape is varied at predetermined intervals.

I claim:

1. In a vending machine, a nested tape-section having series of transversely disposed cells throughout its length for the reception of vendable articles, the tape-section being perforated between cells, a feed-spool, a driving gear carried by the feed-spool, a spring-controlled hand-lever, a pawl carried by the hand-lever for engagement with the driving gear, a cam-wheel rotative with said

driving gear, a spring-controlled shiftable arm engageable with the cam-wheel, and a stop pin carried by the hand lever for engagement with the shiftable arm whereby movement of said hand-lever is controlled.

2. In a vending machine, a nested tape-section having series of transversely disposed cells throughout its length for the reception of vendable articles, the tape-section being perforated between cells, a feed-spool, a driving gear carried by the feed-spool, a spring-controlled hand-lever, a pawl carried by the hand-lever for engagement with the driving gear, and a cam-controlled arm for engagement with the hand-lever whereby the stroke of the same is controlled.

3. In a vending machine, a nested tape-section having series of transversely disposed cells throughout its length for the reception of vendable articles, the tape-section being perforated between cells, a feed-spool, a driving gear carried by the feed-spool, a spring-controlled hand-lever, a pawl carried by the hand-lever for engagement with the driving gear, a cam-wheel rotative with the driving gear and a spring-controlled arm for engagement with the cam-wheel, the arm being adapted to control movement of the feed-spool relative to movement of said hand-lever.

In testimony that I claim the foregoing I have hereunto set my hand at Milwaukee in the county of Milwaukee and State of Wisconsin in the presence of two witnesses.

R. F. DOWNEY.

Witnesses:

GEORGE G. FELBER,
N. E. OLIPHANT.