No. 799,996. PATENTED SEPT. 19, 1905.

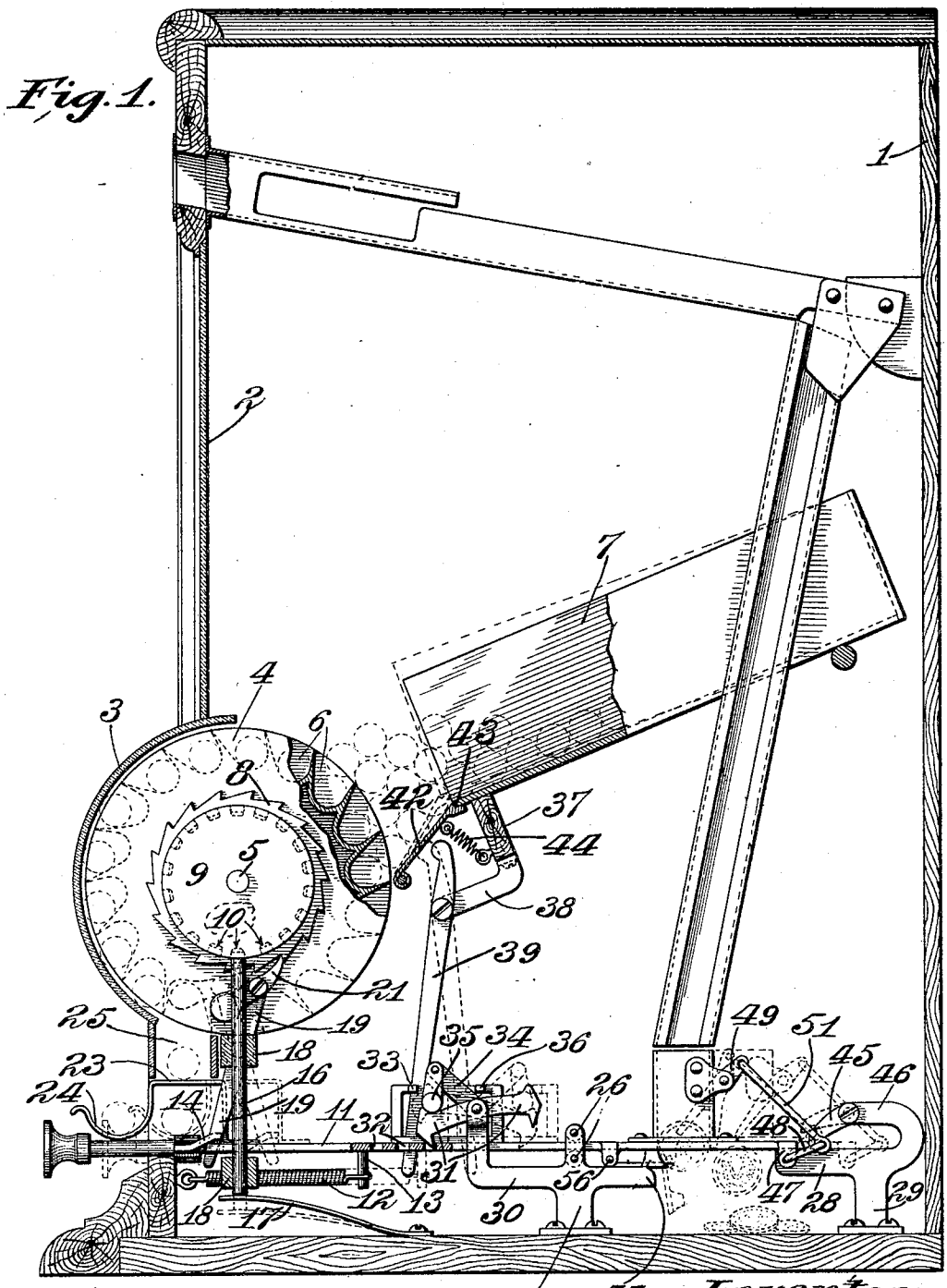
F. E. MacCORDY.

VENDING MACHINE.

APPLICATION FILED OCT. 24, 1904.

2 SHEETS—SHEET 1.

Fig. 1.



Witnesses:
G. A. Pennington
B. F. Funk

Inventor:
Frank E. MacCordy,
by Bakewell Cornwall
Attys.

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VENDING MACHINE.

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2 SHEETS—SHEET 2.

Fig. 2.

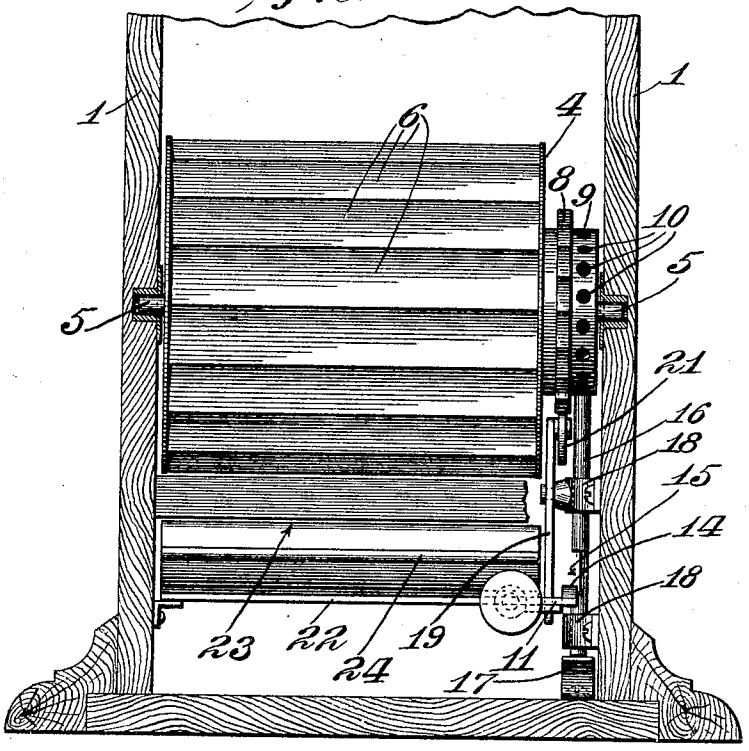
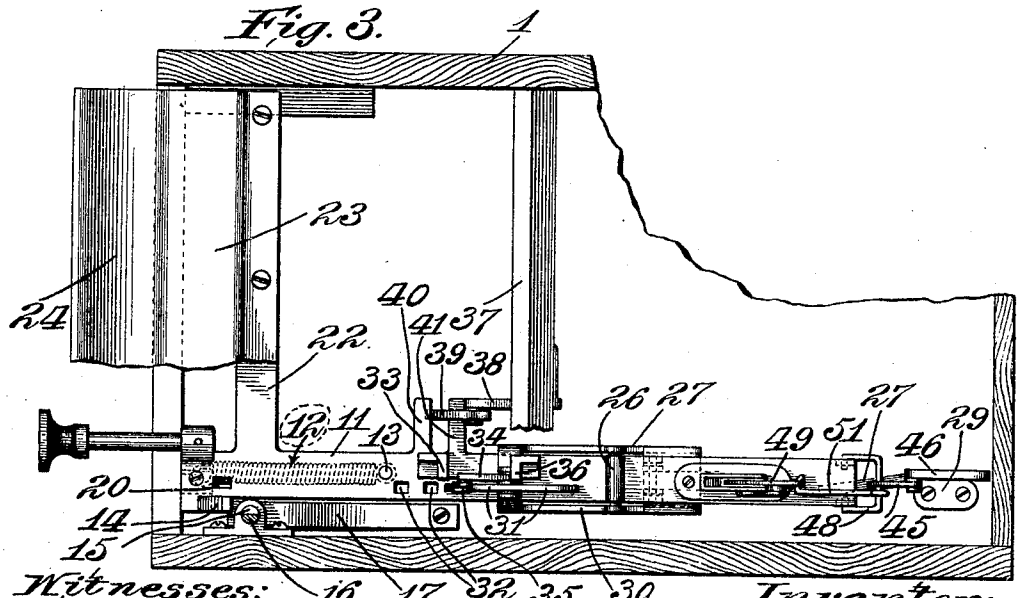


Fig. 3.



Witnesses:
G. A. Pennington
B. F. Finck

Inventor:
Frank E. MacCordy,
by Bakewell & Cornwall
Attys.

UNITED STATES PATENT OFFICE.

FRANK E. MacCORDY, OF CHICAGO, ILLINOIS, ASSIGNOR TO MacCORDY CIGAR VENDING MACHINE COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

VENDING-MACHINE.

No. 799,996. Specification of Letters Patent. Patented Sept. 19, 1905.

Application filed October 24, 1904. Serial No. 229,808.

To all whom it may concern:

Be it known that I, FRANK E. MacCORDY, a citizen of the United States, residing at Chicago, Illinois, have invented a certain new and useful Improvement in Vending-Machines, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a vertical longitudinal sectional view through a vending-machine constructed in accordance with my invention. Fig. 2 is a cross-sectional view through the casing, the mechanism being shown in elevation; and Fig. 3 is a top plan view of a portion of the mechanism, part of the casing being shown in section.

This invention relates to a vending-machine, and it is particularly adapted for vending cigars, although it may be modified to vend pencils, stick-candy, or packages of material, and I therefore do not limit myself to the use of the machine for the purpose of vending cigars.

One of the principal objects of the invention is to provide a vending-machine which cannot be operated except by the insertion of a suitable check, token, or coin of the required weight and size.

Another object of the invention is to provide means whereby the mechanism will be operated to release a single article or package at each operation of the mechanism.

Another object is to provide means for temporarily locking the delivery mechanism against actuation.

Another object of the invention is to provide means for agitating the receptacle containing the articles to be vended.

A further object of the invention is to provide means whereby the device for actuating the mechanism will have to travel a determined distance in one direction before its direction of movement can be reversed.

Other objects and advantages as well as the novel details of construction of this invention will be specifically described hereinafter, it being understood that changes in form, proportion, and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages thereof.

The casing inclosing the mechanical parts of this invention is illustrated as being approximately rectangular; but it may be of any suitable form. This casing is designated by the reference-numeral 1 and is preferably provided with a front panel 2, of glass, and having a concavo-convex panel 3 conforming to the curvature of the rotatable discharge-drum 4. This drum is fixed on trunnions 5, which are journaled in the side of the casing, and it is provided with a plurality of equidistantly-arranged pockets 6 to receive the cigars as they are fed from the box or receptacle 7, located within the machine. The drum is provided with a ratchet 8, fixed with relation thereto, and beyond the ratchet is a hub 9, having a plurality of concavities or recesses 10 therein. Below the drum is a sliding element designated as a bar 11, which bar is normally spring-retracted by means of the spring 12, secured at one end to the front of the casing and at the other end to a depending projection 13, fixed with relation to the bar. The bar carries a cam or offset 14, which is adapted in its movement to engage a groove 15 in the spring-pressed locking-pin 16, which has a vertical movement imparted thereto by means of the leaf-spring 17, fast at one end to the bottom of the casing and at the other end bearing against the bottom of said pin. This pin is guided in the guide-lugs 18 and is provided with a beveled end which is adapted to successively engage the respective recesses in the hub on the drum, as will be explained hereinafter. Pivoted intermediate its ends at a suitable point, but preferably on one end of the guide-lugs is a rocking lever 19, one end of which projects through an opening 20 in the sliding bar 11. The other end of the lever carries a gravitating or weighted pawl 21, the pointed end of which is adapted to be successively brought into contact with the teeth of the ratchet 8.

Carried by the sliding bar 11 is a right-angularly disposed arm 22, which supports a valve 23, the front end of which is shaped into a trough 24, the rear end valving the chute 25 beneath the drum, and through which the articles to be vended pass onto the

top of said valve preparatory to being dropped into the trough 24. The slide 11 is guided between the antifriction-rollers 26, which are carried by the standard 27, supported by the bottom of the machine, and the rear end of the slide is supported upon the arm 28 of the standard 29, which is also fixed to the bottom of the casing.

It is desired that the machine operate only upon a given stroke of the slide 11, and in order to accomplish this I have provided a bracket-arm 30, which carries a double-acting dog 31, intermediately pivoted to said bracket-arm above the plane of the slide 11. The slide 11 is provided with a plurality of openings or perforations 32, and when in its retracted position one end of the double-acting dog 31 will engage one of the perforations 32. However, when it is necessary to impart motion to the slide to expand the spring 12 this can be done by the projection 33, which will actuate the weighted reversing device comprising the arm 34, on which is a pivoted weight 35. The projection 33 will throw the arm 34 beyond its pivot on the side opposite that in which it is illustrated in Fig. 1, so that it will assume the position illustrated in the dotted lines in Fig. 1, causing the weight 35 to tilt the rear end of the dog 31 in the position shown in dotted lines in Fig. 1, so that the slide will be free to move. If the entire stroke is not imparted to the slide, however, and the slide begins to retract previous to having a full stroke imparted thereto, the return movement of the slide will cause the projection 36 to strike the arm 34, so as to throw the weight 35 against the forward end of the dog 31 and cause it to engage one of the openings in the slide 11. Therefore it will be seen that it will be necessary to impart a full movement to the slide in order to actuate the machine and release the contents.

The box will preferably rest upon a support 37, from which projects a bracket-arm 38. This bracket-arm supports a pivoted lever 39, one end of which is interposed between two transversely-disposed projections 40 and 41, carried by the slide 11. The opposite end of this lever 39 is adapted to contact with the apron 42, pivoted at its lower edge and at its upper edge provided with a shoulder 43, against which one end of the box rests. This apron 42 is spring-controlled by the coil-spring 44, and at each actuation of the slide motion will be imparted to the lever 39, so that the free end thereof will be caused to strike against said apron, and thereby impart a vibratory motion thereto to agitate the contents of the box.

Before the slide can be actuated it will be necessary to overcome the locking device, which normally prevents movement being imparted to said slide. This locking device is illustrated as comprising a dog 45, which is pivoted to the arm 46 above the plane of the arm 28, said dog normally resting against or adjacent to the end of the slide 11, which slide is guided on the arm 28 by the depending lugs 47. The lugs 47 support a link 48, which is beneath the dog 45, and this link is connected to a trip-lever 49, which may be operated to cause an upward movement of the dog 45, so as to permit the rearward sliding movement of the slide 11. By depressing the trip-lever 49, so that the dog 45 will be raised above the plane of travel of the slide 11, and by pushing in the slide 11 movement will be imparted to the lever 19, causing the dog 21 to move rearwardly to engage one tooth of the ratchet 8 in rear of the tooth which it previously engaged. At the same time the offset on the slide 11 will engage with the edge of the groove in the locking-pin 16 to move it out of engagement with the recess which it may at that time be engaging.

Synchronously with the operation just described the projection 33 will throw the lever 34 rearwardly beyond its pivotal point to depress the rear end of the double-acting dog 31, and thereby permit the further movement of the slide and cause the free end of the lever 39 to knock against the apron 42 to agitate the articles resting thereon and to further agitate the articles in the box or receptacle 7. The full rearward movement of the slide 11 will move the valve 23 beyond the chute 25 and cause the trough 24 to be positioned immediately beneath the chute 25, so that one of the articles to be vended may drop therein. As soon as the pressure is relieved on the slide 11 the spring 12 will retract it, valving the chute 25 and bringing the article contained in the trough 24 into an accessible position. Synchronously with this operation the upper end of the lever 19 will have been forced into a rearward direction, imparting a partial rotation to the drum 4, so that the next succeeding article in the pockets 6 of the drum 4 will be dropped through the chute onto the valve 23, and the spring 17 will force the locking-pin 16 into engagement with the next succeeding recess in the hub 9, so that it will be impossible to impart further rotation to the drum unless the slide is again moved toward the rear of the machine; but this rearward movement will be prevented by the fact that during the retraction of the slide 11 the dog 45 will have dropped into the position indicated in Fig. 1, so as to prevent an appreciable movement of the slide 11 in a rearward direction. Each succeeding operation of the machine may be carried on in a manner substantially as heretofore described.

Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is—

1. In a vending-machine, the combination

with a rotatable drum having article-receiving pockets, a ratchet carried by the drum, a slide below the drum, a lever connected to the slide, a dog carried by one end of the lever for successive engagement with the teeth on the ratchet to actuate the drum, a recessed hub on the delivery-drum, a reciprocatory pin for engagement with the recessed hub, a spring on which the pin rests for normally holding the pin in engagement with the recessed hub, and means on the slide and movable therewith into engagement with the pin prior to the actuation of the drum to withdraw the pin from engagement with the hub; substantially as described.

2. In a vending-machine, a rotatable delivery-drum, a ratchet mechanism for actuating the drum, a hub on the drum having a plurality of recesses, a vertical reciprocatory locking-pin for successively engaging the recesses, a slide having means for actuating the drum, and a projection carried by the slide and approximately parallel with the body portion thereof, said projection having movement into engagement with the pin prior to the actuation of the drum to withdraw the pin from engagement with one of the recesses; substantialy as described.

3. In a vending-machine, a rotatable delivery-drum, a ratchet mechanism for actuating the drum, a hub on the drum having a plurality of recesses, a spring-pressed locking device for successively engaging the recesses of the hub, said locking device comprising a pin having a transverse groove therein, a slide for actuating the ratchet mechanism, and a projection on the slide for engagement with the groove in the pin for temporarily releasing said pin from engagement with the recesses in the hub; substantially as described.

4. In a vending-machine, the combination with a rotatable delivery-drum, means for actuating said drum, a resiliently-supported pin for temporarily preventing rotation of the drum, a slide, and a projection on the slide for engagement with the pin to temporarily withdraw it out of engagement with the drum; substantially as described.

5. In a vending-machine, a rotatable delivery-drum, a ratchet on the drum, a recessed hub adjacent to the ratchet, means for engagement with the ratchet to rotate the drum, a vertical reciprocatory pin for engagement with the recessed hub, means for normally holding the pin in engagement with the hub, said pin having a transverse groove, and a projection 14 for engagement with the transverse groove for temporarily withdrawing the pin out of engagement with the recessed hub; substantially as described.

6. In a vending-machine, a rotatable delivery-drum, a ratchet on the drum, a recessed hub adjacent to the ratchet, a vertically-reciprocating pin for engagement with the recessed hub, a flat spring on which the pin rests for normally holding the pin in engagement with the recessed hub, and means movable into engagement with the pin prior to the actuation of the drum to withdraw the pin from engagement with the hub; substantially as described.

7. In a vending-machine, the combination with a rotatable delivery-drum, a ratchet mechanism for rotating the drum including a slide, a spring-pressed pin for normally holding the drum against actuation, said pin having a groove in one side, and an offset carried by the slide for engagement with the pin to temporarily withdraw it from engagement with the drum; substantially as described.

8. In a vending-machine, the combination with a rotatable delivery-drum, a chute beneath the drum, a ratchet mechanism for actuating the drum including a slide, means for closing the discharge end of the chute and movable with the slide away from the discharge end of the chute, a spring-pressed pin for normally holding the drum against actuation, and means movable with the slide for moving the pin out of locking engagement with the drum; substantially as described.

9. In a vending-machine, the combination with a rotatable delivery-drum, a vibratory apron adjacent the drum and having means at one end for supporting a box or receptacle, a slide, means actuated by the slide for rotating the drum, and means actuated by the slide for vibrating the apron; substantially as described.

10. In a vending-machine, the combination with a rotatable delivery-drum, a vibratory apron adjacent the drum and having means at one end for supporting a box or receptacle, a slide, means actuated by the slide for rotating the drum, and a lever actuated by the slide for vibrating the apron; substantially as described.

11. In a vending-machine, the combination with a rotating drum, means for actuating the drum including a slide, a vibratory apron adjacent the drum and having a shoulder at one end to receive the edge of a receptacle, and means actuated by the slide to momentarily contact with the apron to vibrate it, whereby the contents of the receptacle will be agitated; substantially as described.

12. In a vending-machine, the combination with a rotating drum, means for actuating the drum including a slide, a spring-controlled vibratory apron adjacent the drum and having a shoulder at one end to receive the edge of a receptacle, and means actuated by the slide to momentarily contact with the apron to vibrate it, whereby the contents of the receptacle will be agitated; substantially as described.

13. In a vending-machine, the combination with a discharge element, means for ac-

tuating the discharge element including a slide provided with perforations, a double-acting dog mounted upon the slide and adapted when in one position to successively engage the perforations in the slide, and means carried by the slide for reversing the position of the dog to move the dog out of engagement with the perforations; substantially as described.

14. In a vending-machine, the combination with a casing, a delivery part carried by the casing, means for actuating the delivery part including a perforate slide, a dog mounted above the slide to successively engage the perforations therein, a pivoted weight normally bearing upon the engaging end of the dog, and means carried by the slide for causing the weight to bear against the other end of the dog when a determined amount of travel is imparted to the slide, so that the engaging end of the dog will be raised above and out of engagement with the perforate portion of the slide; substantially as described.

15. In a vending-machine, the combination with a casing, of a delivery part carried by the casing, means for actuating the delivery part including a slide, a pivoted member above the slide for successively engaging the slide, and a projection carried by the slide for temporarily throwing the pivoted member out of engagement with the slide; substantially as described.

16. In a vending-machine, the combination with a casing, a rotatable drum, means for rotating the drum including a perforate slide, a bracket for supporting the slide and having an arm projecting above the same, a pivoted dog for successively engaging the perforations in the slide, a pivoted weight normally bearing upon the engaging end of the dog, means carried by the slide for moving the weight to the opposite end of the dog, and means carried by the slide for restoring the weight to the engaging end of the dog; substantially as described.

17. In a vending-machine, the combination with a casing having a rotatable drum therein, of a delivery-chute beneath the drum, means for actuating the drum including a slide, a laterally-projecting arm carried by the slide, means on the arm for normally closing the discharge end of the delivery-chute, a trough carried by said means and normally accessible, a spring-pressed locking-pin for normally preventing actuation of the drum, and means carried by the slide for withdrawing the pin from engagement with the drum; substantially as described.

18. In a vending-machine, the combination with a rotatable delivery-drum, mechanism for rotating the drum including a perforate slide, a standard having antifriction-rollers between which the slide is adapted to move, an arm carried by the standard and extending above the slide, a pivoted dog adapted to successively engage perforations in the slide, means for raising the dog out of engagement with the perforations, and means for restoring the dog to a position for engaging the perforations; substantially as described.

19. In a vending-machine, the combination with a casing, of a rotatable drum therein having a recessed part, means for rotating the drum including a slide, a vertically-moving locking-pin having a groove in one side thereof and adapted to temporarily engage the recessed part of the drum, an offset carried by the slide for temporarily withdrawing the pin from engagement with the recessed part of the drum, parallel lateral projections on the slide, a pivoted lever, one end of which is positioned between the parallel projections, a vibratory apron adjacent the opposite end of the lever and having a box-receiving shoulder, and means for preventing actuation of the drum, unless a determined stroke is imparted to the slide; substantially as described.

In testimony whereof I hereunto affix my signature, in the presence of two witnesses, this 20th day of October, 1904.

FRANK E. MacCORDY.

Witnesses:

B. F. FUNK,

GEORGE BAKEWELL.