

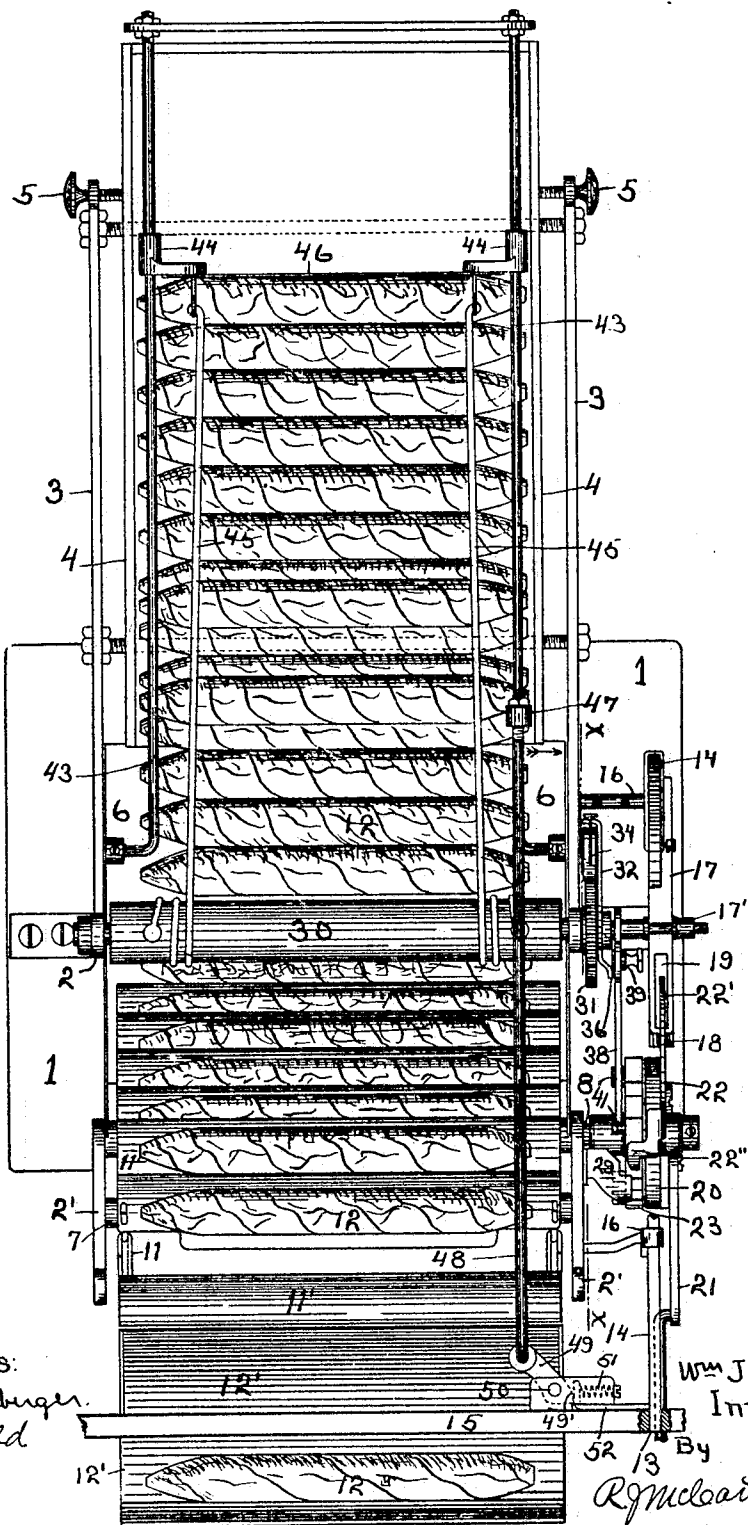
No. 781,996.

PATENTED FEB. 7, 1905.

W. J. BRENNAN.
VENDING MACHINE.
APPLICATION FILED JULY 15, 1904.

3 SHEETS—SHEET 1.

Fig. 1.



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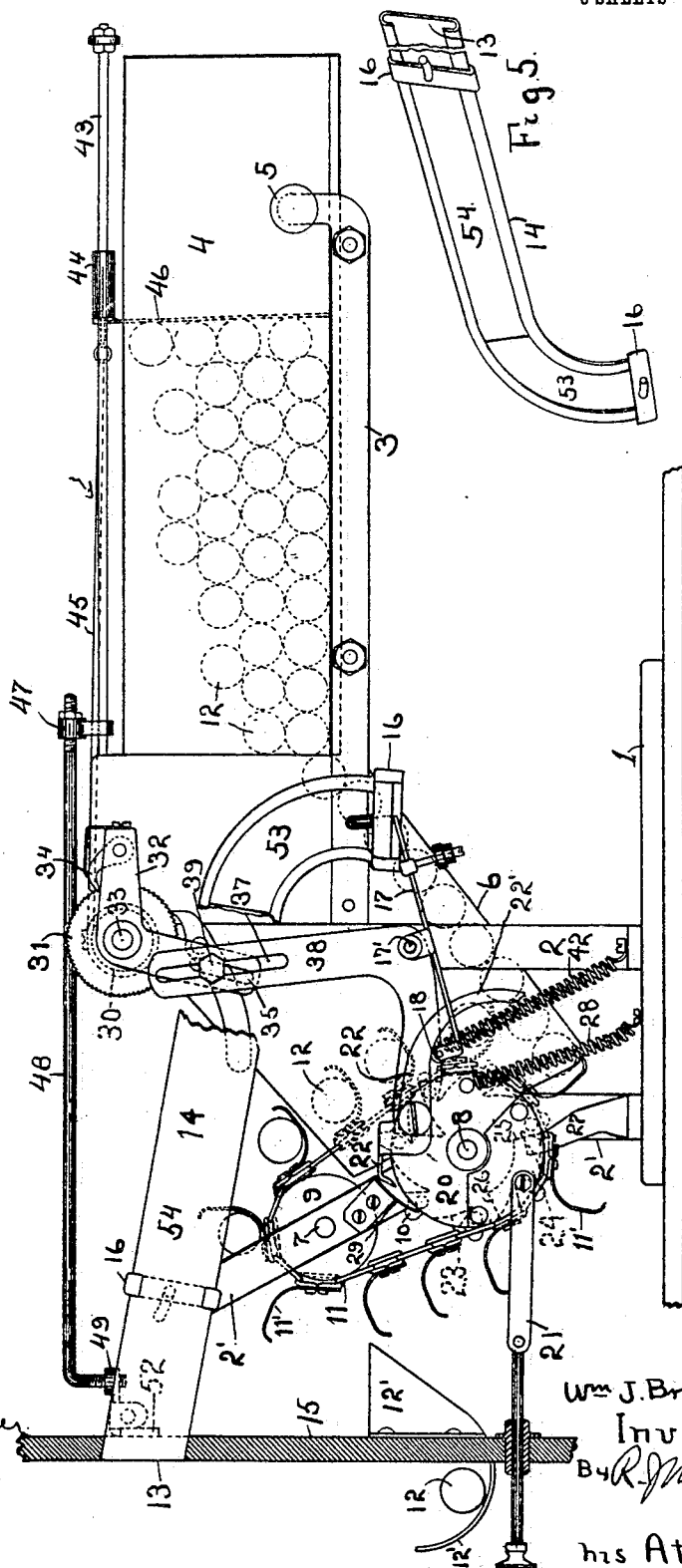


Fig. 2.

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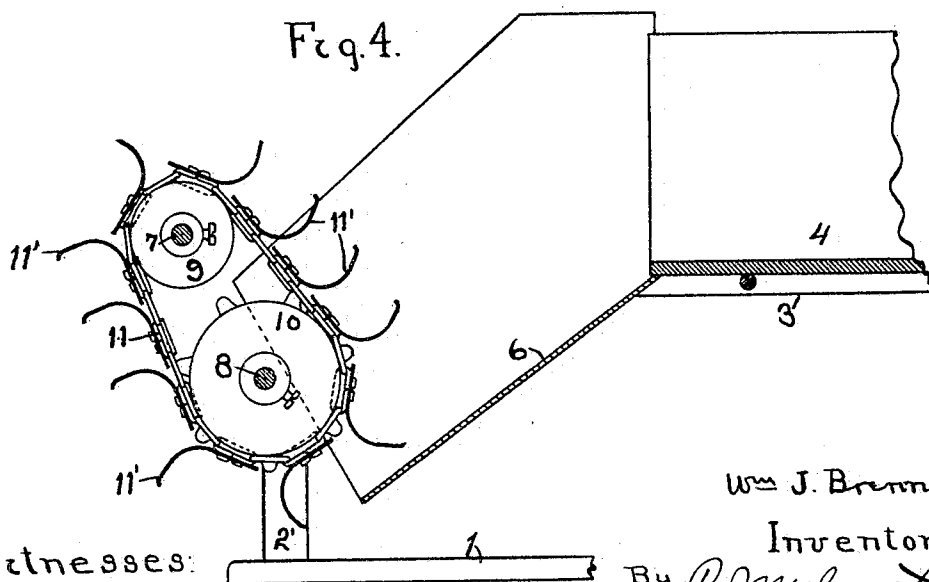
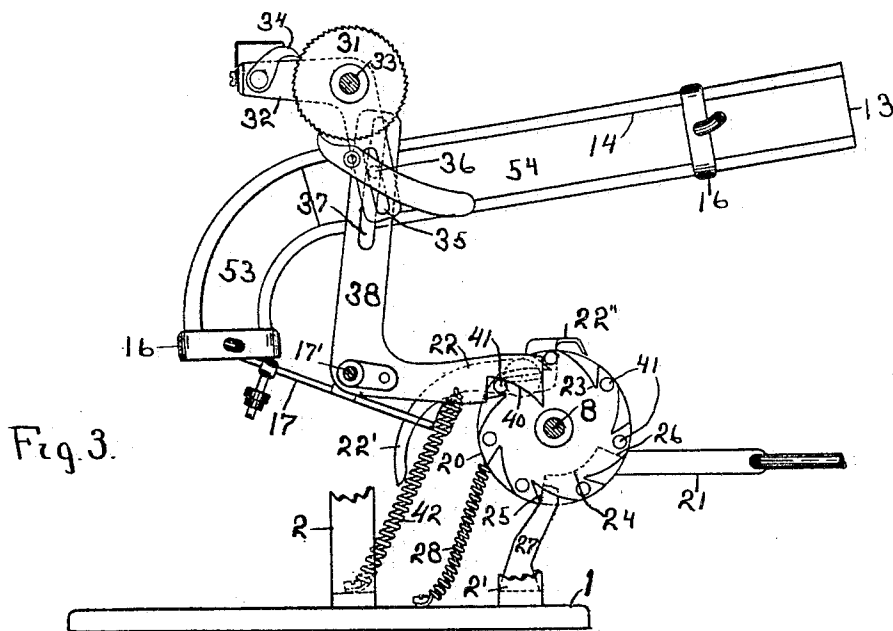
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APPLICATION FILED JULY 15, 1904.

3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

WILLIAM J. BRENNAN, OF DAYTON, OHIO.

VENDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 781,996, dated February 7, 1905.

Application filed July 15, 1904. Serial No. 216,639.

To all whom it may concern:

Be it known that I, WILLIAM J. BRENNAN, a citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Vending-Machines; and I do 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, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in vending-machines, and more specifically to that class used in vending cigars, candies in stick form, or any other class of goods sold in like form.

Preceding a detail description of the invention reference is made to the accompanying drawings, of which—

Figure 1 is a top plan view of the machine. Fig. 2 is a side elevation of the same. Fig. 3 is a section on the line *xx* of Fig. 1 looking in the direction of the arrow. Fig. 4 is a sectional view of the carrier or elevator and the chute leading thereto. Fig. 5 is a detail of the coin-chute.

Throughout the specification similar reference characters indicate corresponding parts.

1 designates a plate or base from which rise standards 2'. Supported between these standards is an inclined chute 6. Projecting rearwardly from the sides of the chute 6 is a frame 3, upon which is supported a receptacle 4 in which the goods is contained. The receptacle is held in place by means of thumb-screws 5. The original receptacle containing the goods may be used by removing the forward end to allow the contents thereof to be fed into the chute. Supported in the front standards 2' are shafts 7 and 8. Upper shaft 7 carries a grooved wheel 9 and lower shaft 8 a toothed wheel 10. Passing over wheels 9 and 10 is a chain elevator or carrier 11. The said elevator consists of pockets or buckets 11', connected at each alternate link of chain 11, as shown in Figs. 2 and 4. It will be observed that the pockets 11' are attached to the links by

projecting the ends of the links through the pockets and clenching them.

It will be observed in Figs. 2 and 4 that as the pockets of the elevator pass the exit end of the chute 6 they are widely separated and are thus enabled to pick up the cigars 12 or other articles from the chute. It will be observed that as the pockets move up the space intervening between the pockets becomes smaller, so that only one article of any kind can be retained. The contents of the pockets 11' are retained until said pockets start down on the forward side, when the contents are dropped into the trough 12', which opens outside of the casing in which the machine is placed. (See Fig. 2.) The necessary movement is given the elevator as follows: 14 designates a coin-chute having an opening in the casing 15, as at 13. The chute is supported on standard 2' and frame 3 by brackets 16. At the lower or exit end of the chute is a lever 17, fulcrumed at 17', one arm of said lever closing the opening of the chute. On the extreme end of the other arm of the lever is a roller 18. Extending in the rear of said roller 18 on lever 17 is an opening 19. 20 designates a crank-wheel mounted loosely on shaft 8. Connected to crank-wheel 20 and passing through the casing 15 is a push-rod 21. Pivoted on the outer surface of said crank-wheel is a lever-pawl 22, having a curved arm 22' passing over roller 18 and through opening 19 of lever 17. 22'', the pawl proper of lever 22, is in a position above a ratchet 23 to engage said ratchet at the proper time. Ratchet 23 is rigidly mounted on shaft 8, and any movement thereof will also move the elevator or carrier 11. From the foregoing description it will be seen that a coin dropped in the chute 14 passing the exit end will move lever 17 to elevate the roller 18, raising the curved arm 22' of the lever-pawl 22, causing the pawl 22'' to engage ratchet 23. Pushing inwardly on rod 21 will move crank-wheel 20 and by means of the pawl thereon will move the ratchet 23, and thus give movement to the carrier or elevator.

In order that only one pocket of the elevator be emptied by each operation as described above, the following device is used: The in-

ner surface of crank-wheel 20 contains a depression 24, the ends of which form shoulders 25 and 26. 27 designates a stop rising from the base, said stop engaging shoulder 25 on crank-wheel 20 when the machine is not in operation, due to a coil-spring 28. When the push-rod 21 is operated, it can move the crank-wheel 20 only until the stop 27 engages the shoulder 26. When the crank-wheel has moved this distance, pawl 22", which has been held in engagement with ratchet 23 by a plate-spring 29, is released, having passed beyond the end of said spring, and rising above the spring is drawn back with crank-wheel 20 by a spring 28. This forward movement of the crank-wheel has been sufficient to discharge the contents of one pocket of the carrier. It is obvious that during this movement, as described above, the end of the lever 17, covering the exit end of chute 14, will be lowered to such an extent as to allow the coin to drop from the chute, and thus leave the machine ready for another operation.

In order that the contents of the receptacle may be gradually and continuously fed toward the chute, the following devices are employed: In the upper end of the standard 2 is mounted a drum 30, having on its outer end a ratchet 31. A bell-crank lever 32 is fulcrumed at 33 and carries a pawl 34, which engages ratchet 31. The lower end of said lever contains an elongated opening 35, through which passes a pin 36. Pin 36 is adjustable in a slot 37 of a second bell-crank lever 38, fulcrumed at 17' by means of a tap 39 to increase or decrease the feed of the ratchet 31. The lower end of bell-crank lever 38 contains a cam-surface 40, which engages studs 41 on ratchet 23, due to a spring 42. Extending rearwardly from the side casings of chute 6 are rods 43, which have sliding sleeves 44 thereon, said sleeves being connected to drum 30 by a cord or other flexible connections 45. Connected to the sleeves 44 and extending down into the receptacle is a plate 46, which acts as a follower to move forward the contents thereof.

From the above description it will be seen that the movement of the carrier or elevator by means of the ratchet 23 will be accompanied by a forward movement of the follower as follows: The studs 41 on ratchet 23 will actuate the bell-crank lever 38 to give movement to the lever 32 through pin 36. Pawl 34 on lever 32 will revolve the ratchet 31, thus winding the cord 45 on drum 30 and gradually moving forward the follower 46.

Means are also provided in the machine to close coin-chute 14 when the contents of the receptacle have been exhausted as follows: A sliding member 47 rests on one of the rods 43 and has connected thereto a rod 48. The forward end of rod 48 is connected to a lever 49, having a cam-surface 49' pivoted at 50. Held normally by spring 51 against said cam and

away from the opening 13 of the coin-chute is a slide 52. From Fig. 1 it will be seen that any forward movement of rod 48 will move the lever 49 to throw the slide 52 across the opening 13 of the chute. This necessary movement is given when the follower 46 reaches the forward end of the receptacle and the sleeves 44 engage the sliding member 47.

It will be observed in Fig. 5 that the coin-chute 14 is inclined in two directions—namely, toward the exit end to insure the passage of the coin throughout its length and transversely to its length. It will also be observed that the upper portion of the chute is closed on the inclined side, as at 54, while at the end of the chute it is open, as at 53. The object of this inclination and the opening at the end is to insure the use of the proper coin. For instance, if the machine is intended to be operated by a nickel and a coin of smaller diameter, as a penny, is used the machine will not operate. The penny will follow the chute as long as it is supported by the wall of said chute; but upon reaching the opening 53, owing to the inclination of the chute, it will drop out before reaching the lever 17, and therefore fail to operatively set the machine. These machines are mounted in suitable casings, portions of which are shown in the various views of the drawings.

Having described my invention, I claim—

1. In a vending-machine, a supporting-frame for the goods-receptacle, a coin-chute, a main actuating-wheel, a push-rod operatively connected with said wheel, a follower, a drum with which said follower is connected, and lever-and-ratchet devices interposed between said main actuating-wheel and said drum, substantially as set forth.

2. In a vending-machine, a main actuating-wheel, a push-rod connected with said wheel, a main ratchet-wheel movable with said main actuating-wheel, a follower, a drum with which said follower is connected, a ratchet-wheel on the shaft of said drum, a lower bell-crank lever tripped by the main ratchet-wheel, an upper bell-crank lever actuated by said lower bell-crank lever, and a ratchet-pawl carried upon said upper lever and engaging with the ratchet-wheel on the drum-shaft, substantially as set forth.

3. In a vending-machine, a main actuating-wheel, a push-rod operatively connected with said wheel, a ratchet-wheel adjacent to said main actuating-wheel, a lever-pawl pivoted to said main actuating-wheel with its engaging end in the path of the ratchet-wheel, a coin-chute, and a lever with one end projected below the exit end of said coin-chute, and the other end of said lever engaging the pawl-lever, substantially as set forth.

4. In a vending-machine, an elevator, a follower to feed the goods to said elevator, a main actuating-wheel, a push-rod operatively connected with said wheel, a ratchet-wheel

adjacent to said main actuating-wheel, a drum to which the follower is connected, a coin-chute; lever-and-ratchet connections interposed between the exit end of said coin-chute and the main actuating-wheel and ratchet-wheel, and lever-and-ratchet connections interposed between said ratchet-wheel and the drum of the follower, substantially as set forth.

5. In a vending-machine, a follower or feeder, a drum, flexible connections between said drum and said follower, a ratchet on the end of said drum, a main actuating crank-wheel, a ratchet containing studs on one face thereof, a pawl interposed between said main actuating crank-wheel and said ratchet, and a system of levers interposed between the studs on said ratchet and said drum-ratchet to actuate the drum to move forward the follower.

6. In a vending-machine, a main actuating-wheel, a push-rod operatively connected to said wheel, a carrier, means interposed between said wheel and carrier to move the carrier, a depression on one face of said wheel

forming shoulders thereon, and a stop engaging one of said shoulders and adapted to engage the other of said shoulders when the wheel has had a sufficient movement to discharge one pocket of said carrier, substantially as set forth.

7. In a vending-machine, the combination with a coin-chute and a follower, of a horizontal longitudinally-movable rod engaged by said follower when the latter has reached the limit of its discharging movement, a laterally-movable slide lying adjacent to the mouth of the coin-chute and adapted to be moved across said mouth, a lever having a cam-surface interposed between said slide and said horizontal rod, and a spring normally holding said slide away from the mouth of the coin-chute, substantially as set forth.

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

WILLIAM J. BRENNAN.

Witnesses:

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