S. M. COFFMAN.

VENDING MACHINE.

APPLICATION FILED MAY 28, 1913.

1,120,907.

Patented Dec. 15, 1914.

2 SHEETS—SHEET 1.

Fig. 2.

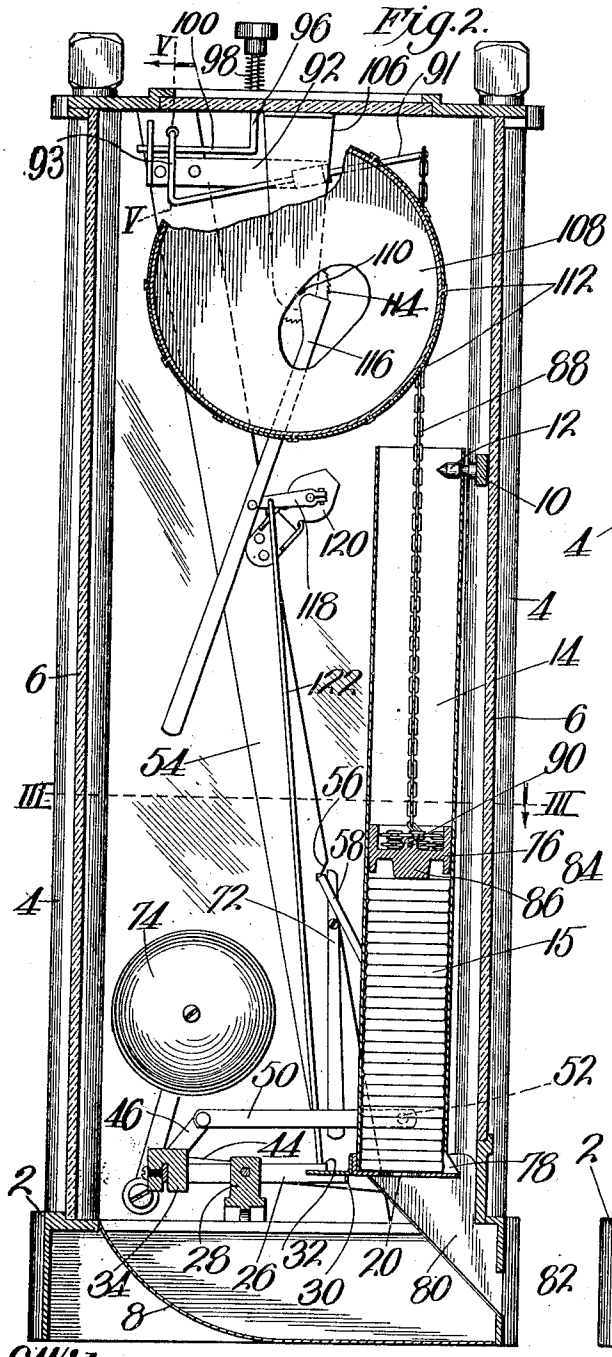
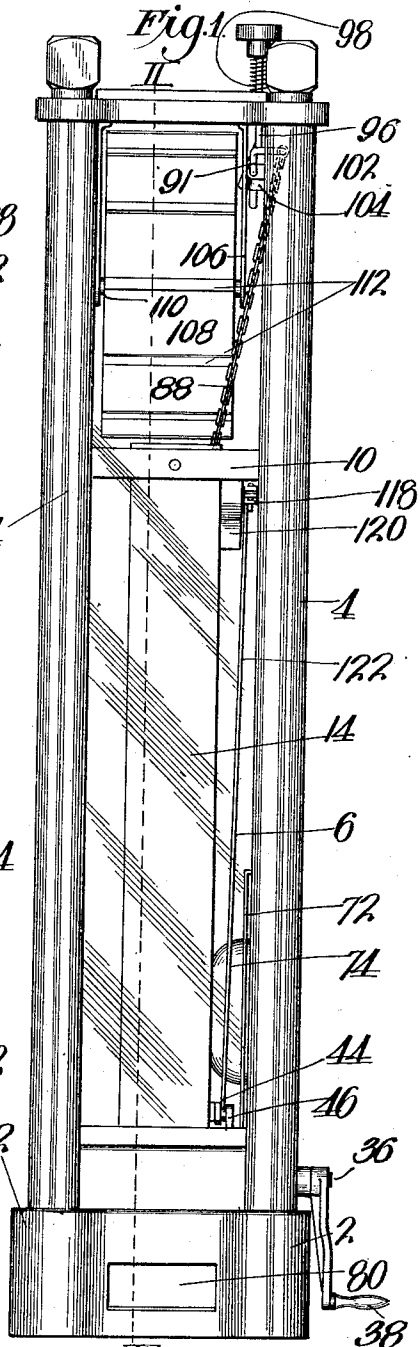


Fig. 1.



Witnesses

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2 SHEETS—SHEET 2.

Fig. 3.

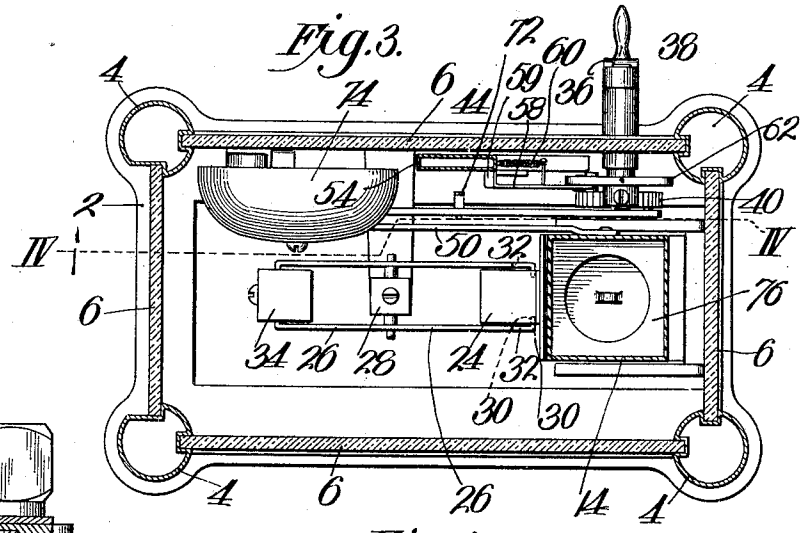


Fig. 5.

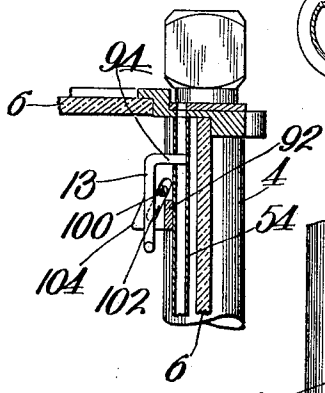


Fig. 4.

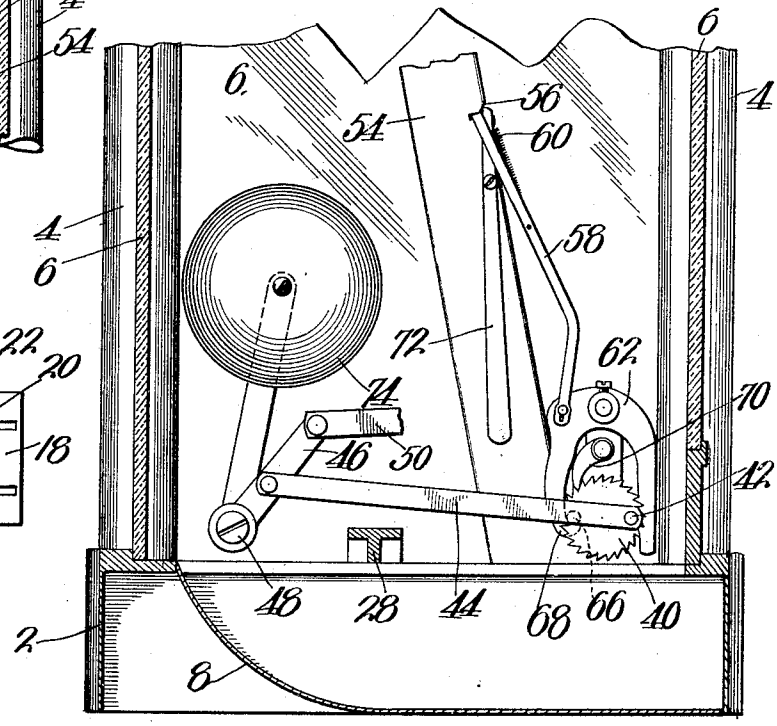
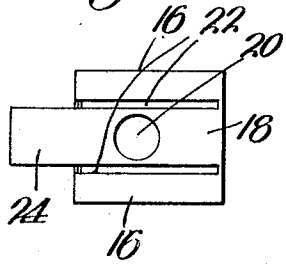


Fig. 6



Witnesses

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UNITED STATES PATENT OFFICE.

SAMUEL M. COFFMAN, OF KANSAS CITY, MISSOURI, ASSIGNOR TO COFFMAN MANUFACTURING COMPANY, OF KANSAS CITY, MISSOURI, A CORPORATION OF NEVADA.

VENDING-MACHINE.

1,120,907. Specification of Letters Patent. **Patented Dec. 15, 1914.**

Application filed May 28, 1913. Serial No. 770,362.

To all whom it may concern:

Be it known that I, SAMUEL M. COFFMAN, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Vending-Machines, of which the following is a specification.

This invention relates to vending machines and particularly to that class of machines in which the delivery mechanism is normally locked but may be released by the introduction of a coin into the machine whereupon the delivery mechanism may be operated by the customer to deliver one of the articles which the machine is designed to vend.

My object is to provide an improved delivery mechanism for this type of machine and further to associate with such mechanism a connection with the coin tube of the machine adapted to close said tube against the insertion of any further coins after the magazine of the machine has become empty.

A further object is to provide a connection between the vending mechanism and an advertising device comprising a drum which will be given a partial rotation upon each operation of the vending mechanism.

With these objects in view the invention consists in certain novel and peculiar features of construction and organization as hereinafter described and claimed, and in order that it may be fully understood reference is to be had to the accompanying drawings, in which—

Figure 1, is a front elevation of a machine embodying my improvement. Fig. 2 is a vertical section on the line II—II of Fig. 1. Figs. 3 and 4 are sections along the lines III—III of Fig. 2, and IV—IV of Fig. 3, respectively, the same being taken on an enlarged scale and the upper part of the machine being broken away in Fig. 4, and the chain omitted in Fig. 3. Fig. 5, is a section along the line V—V of Fig. 2, and Fig. 6, is a bottom plan view of the magazine tube.

Referring to the drawings, the frame of the machine comprises a bottom section 2, supporting a set of corner posts 4 between which are suitably fitted glass plates 6, forming the sides of the case. Within the bottom is a till 8 acting as a receptacle for the coins introduced into the machine. The front posts 4 are connected by a cross bar 10 toward the top of the case, from the rear side of which bar projects a stud 12 upon which is loosely hung a magazine tube 14 for the articles 15 such as tablets of gum to be vended. The bottom of the tube 14 is formed with flanges 16 spaced from a plate 18 having a central perforation 20 the spaces between the flanges and plates forming slots 22 to receive a part of the delivery mechanism. The plate 18 has a rearward extension 24 projecting between the front arms of a rock lever 26 which is journaled upon a post 28 carried by the bottom of the case. The front ends of said arms are provided with inward projecting lugs 30 which bear against the extension 24 as well as against the bottom of the plate 18 as the shoulders 32, also formed on said arms above the lugs 30, ride through the slots 22 when the tube 14 moves rearward. The shoulders 32 are designed to engage the rear edge of the bottom packet in the tube and push the same from beneath the stack during the movement of the tube. A weight 34 is secured to the rear end of the lever 26 in order to rock the front end of the lever upward with the lugs 30 resting against the extension 24.

The tube 14 is oscillated in order to effect the vending operation by means of a shaft 36 carrying a crank 38 at its outer end, and a ratchet wheel 40 at its inner end. One face of the wheel 40 is provided with a crank pin 42 for mounting a pitman 44 which is connected with an intermediate point on an oscillating arm 46 pivoted at 48 to the frame of the machine. To the upper end of the arm 46 is pivoted one end of a link 50 the other end of which is pivoted to one side of the tube 14 at 52. The shaft is normally locked by check controlled mechanism which does not form any part of the subject matter of this application but is made the subject of a separate application, but the parts of which mechanism and the operation thereof may, however, be briefly indicated as follows: A coin tube 54 is supported in the frame of the machine in an inclined position and is notched at 56 to receive one end of the detent 58 which has a finger 59 supported in the notch against the action of a spring 60 attached at one end to the coin tube. The other end of the detent is pivoted to a U-

shaped locking dog 62 which is pivoted to a post 64 with its arms astraddle the shaft 36 in position to engage a pin 66 on the opposite face of the ratchet wheel 40 from the pin 42. One arm of the dog is provided with a hook 68 for engaging the pin 66 to normally lock the wheel, but on tripping of the detent by a coin introduced into the coin tube, the spring 60 pulls the detent up, thereby disengaging the hook 68 and permitting the shaft to be rotated. When the pin 66 engages the other arm of the dog 62, the latter is swung to restore the hook 68 to the path of said pin in position to relock the wheel and pull down on detent 58 to reengage the notch 56. The ratchet wheel 40 is locked against backward rotation by a pawl 70 mounted on the post 64. A gravity dog 72 is pivotally mounted on the coin tube below the notch 56 with its upper end resting normally against the finger 59. When the detent is tripped by a coin the lower end of the dog 72 is swung rearward into contact with a bell 74 to signalize the fact that the locking mechanism has been released.

A weight 76 is mounted in the tube 14 for the purpose of resting on the stack of articles to be vended and insure the delivery of the last articles of the stack by maintaining the same in alinement with the opening 78 at the bottom of the tube, so that they will be forced out through the same by the shoulders 32 and dropped upon the inclined chute 80 communicating with the opening 82 in the bottom of the case. The weight is provided with corner lugs adapted to come to rest upon the flanges 16 and with a central boss 86 longer than the lugs 84, which bears upon the top of the stack and is adapted to pass through the opening 20 in the plate 18 after the last article has been ejected from the tube. The top of the weight is cup-shaped to receive the collapsed portion of the chain 88 so long as the weight is above the bottom of the tube. The chain is connected at its lower end to a lug 90 carried by the weight and at its upper end to one arm 89 of a rock shaft 91 which is journaled in a bracket 92 secured to one side of the coin tube 54. The other arm 93 of said rock shaft is provided with a finger 94 extending opposite an opening 96 near the mouth of the coin tube. The purpose of this finger is to prevent the insertion of another coin in the mouth of the coin tube whenever the supply of articles in the magazine tube is exhausted, the shaft 91 being rocked to project the finger 94 within the opening under the pull of the weight 76 after the chain 88 has become fully extended due to the weight having reached the bottom of the tube 14. The long boss 86 which is adapted to pass through the opening 20 provides for a sufficient drop of the weight after the last article is vended to insure the operation of the rock shaft. In connection with the arm 93 of the rock shaft 91 I also provide means whereby the shaft may be rocked in a reverse direction to withdraw the finger 94 in case a customer should desire to insert a coin regardless of the fact that the tube 14 should be empty, which might be the case where the same coin tube is arranged with a delivery mechanism for delivering articles from two or more different magazines. This means comprises a push rod 96 normally upheld by a spring 98, the other end of the rod 96 carrying a right-angle extension 100. This extension is adapted to be moved in contact with the arm 93 as it rides in an inclined slot 102 formed in the bracket 104 mounted on the upper end of the coin tube 54. The arrangement is such that downward movement of the rod 96 causes its extension 100 to move downward and inward thereby forcing the arm 93 inward and rocking the shaft 91 against the pull of the weight 76.

A pair of brackets 106 is supported from the interior of the top of the machine case and between the brackets is mounted a drum 108 carried by shaft 110, journaled in the lower ends of the brackets. The periphery of this drum is provided with a series of card holding flanges for receiving advertising matter. One end of the shaft carries a ratchet wheel 114 fixed thereto and designed to be engaged by a ratchet operating link 116 pivoted at a point intermediate its ends to a lever 118 which connects with a meter 120 whereby each complete oscillation of the lever 118 is registered. The mounting of the lever 116 is such that its upper end is held yieldingly engaged by gravity with the ratchet wheel 114. The lever 118 is also connected by a link 122 with rock lever 26 so that the lever 118 will be operated once for each revolution of the shaft 36, the connections being such that the drum will be turned through the space of one card for each operation of the machine.

The manner of the operation of the machine has been sufficiently indicated during the description thereof and will not require any further details of the same.

It is understood that while I have illustrated the invention by means of one preferred form of the same, I do not restrict myself to the precise embodiment shown but reserve the right to all changes and modifications falling within the spirit and scope of the appended claim.

I claim—

In a vending machine, a pivoted magazine tube having a bottom provided with a pair of parallel slots extending from front to rear, the portion of the bottom lying between said slots being provided with a rearward projecting extension, a pivoted rock

lever having arms embracing the sides of said extension and provided with a pair of shoulders projecting upward through said slots in position to engage the rear edge of the lowermost article in the tube, said arms being provided also with lugs slidingly engaging the bottom surface of said extention and the bottom of the tube to limit the upward movement of said lever, and means acting to hold said arms with said lugs yieldingly engaged with the under surface of said bottom and extension.

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

SAMUEL M. COFFMAN.

Witnesses:
CHAS. W. GERARD,
G. Y. THORPE.

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