

H. B. COOLEY.
VENDING MACHINE.
APPLICATION FILED JULY 15, 1911.

1,074,696.

Patented Oct. 7, 1918

2 SHEETS-SHEET 1

Fig. 1.

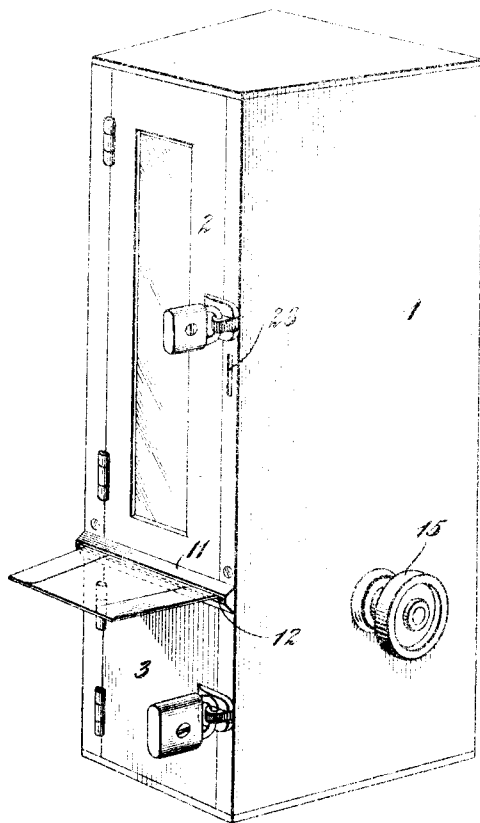


Fig. 2.

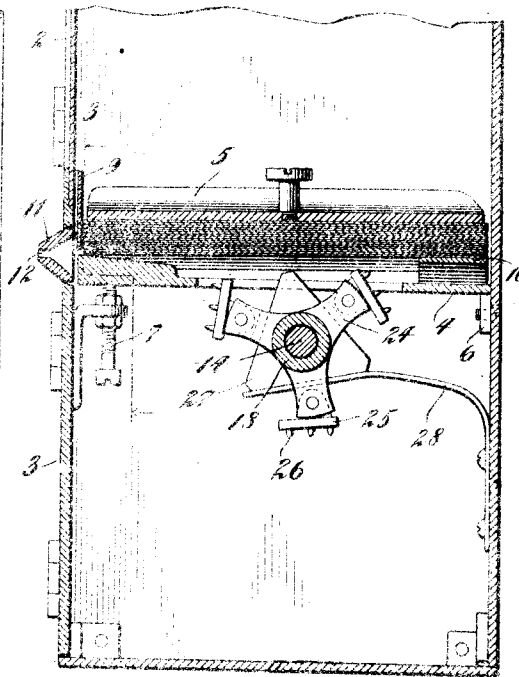


Fig. 4.

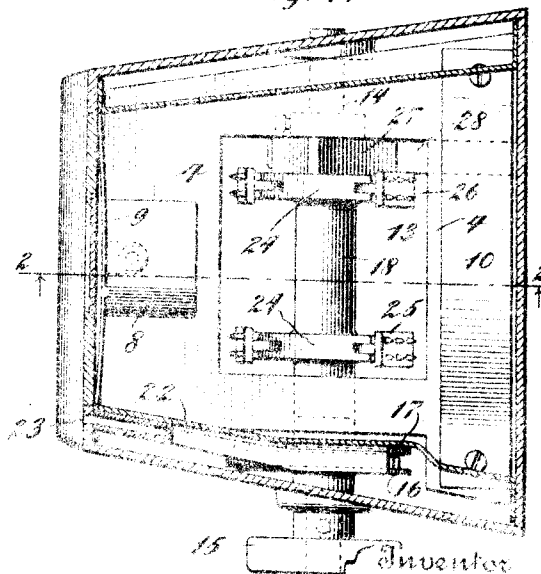
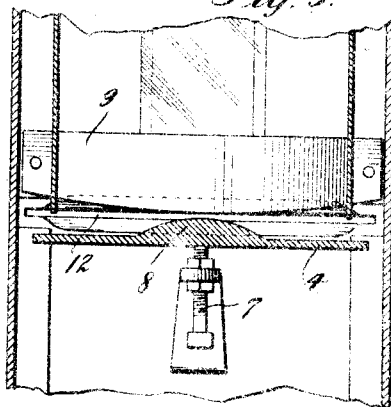


Fig. 3.



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2 SHEETS—SHEET 2.

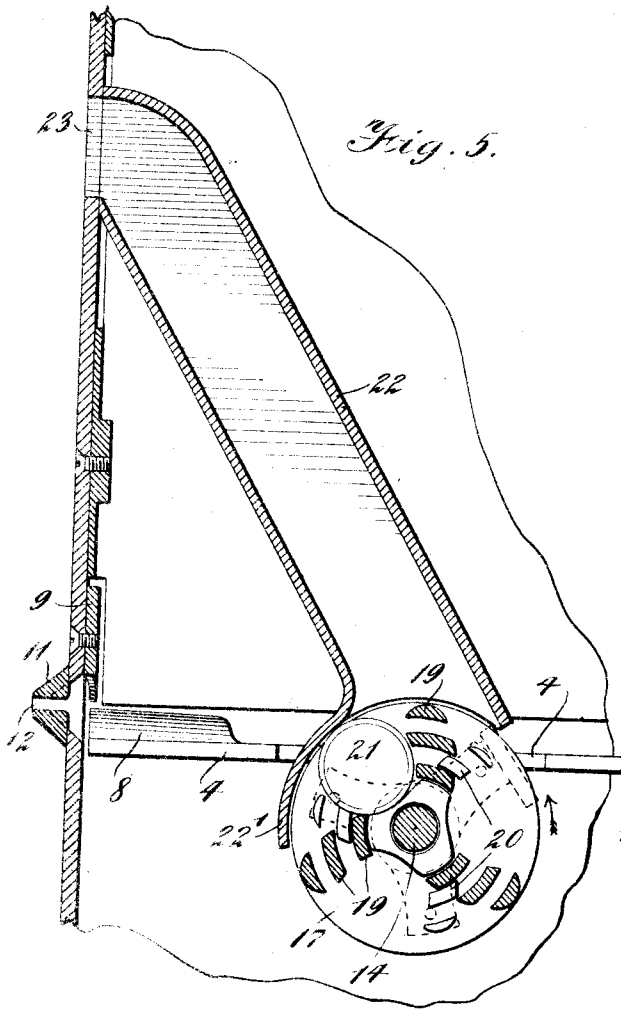


Fig. 5.

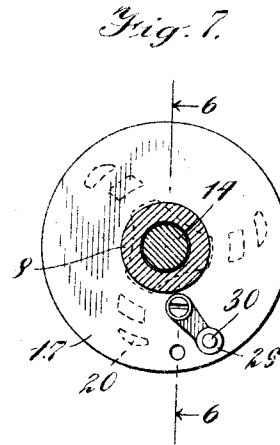


Fig. 7.

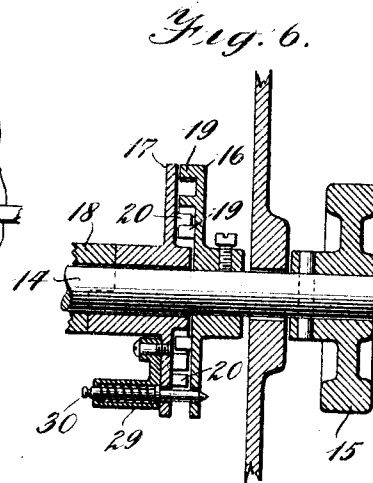
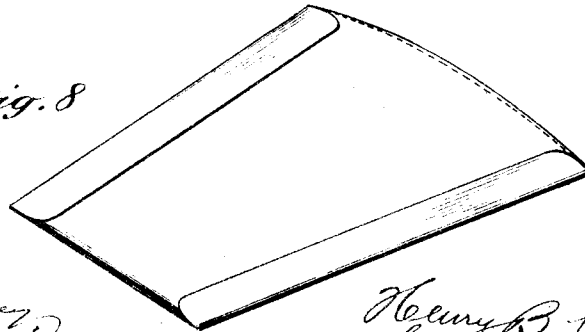


Fig. 6.

Fig. 8



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UNITED STATES PATENT OFFICE.

HENRY B. COOLEY, OF NEW BRITAIN, CONNECTICUT, ASSIGNOR TO THE AMERICAN PAPER GOODS COMPANY, OF KENSINGTON, CONNECTICUT, A CORPORATION OF NEW JERSEY.

VENDING-MACHINE.

1,074,696.

Specification of Letters Patent.

Patented Oct. 7, 1913.

Application filed July 13, 1911. Serial No. 639,205.

To all whom it may concern:

Be it known that I, Henry B. Cooley, a citizen of the United States, residing at New Britain, county of Hartford, State of Connecticut, have invented certain new and useful Improvements in Vending-Machines, of which the following is a specification.

My invention relates to an apparatus for the sale or delivery of articles stored in a pile in loose form in a magazine. The article to be delivered is the lowermost one of the pile, and, in the instance shown, is a paper cup which, in the magazine, is laid flat, and which, when delivered from the machine, may be opened for drinking purposes. I do not, however, restrict the use of the invention to the delivery of any particular commodity, provided, however, that it is of such character as to be delivered by the mechanism described.

The invention will be understood by reference to the accompanying drawings in which—

Figure 1 is a perspective view of the apparatus showing a cup in the delivery outlet; Fig. 2 a vertical section on the plane of the line 2-2 of Fig. 4; Fig. 3 a vertical section on the plane of the line 3-3 of Fig. 2; Fig. 4 a horizontal section above the base of the magazine; Fig. 5 an enlarged vertical section showing the coin chute and the clutch; Fig. 6 a sectional detail view of the clutch members on the plane of the line 6-6; Fig. 7 a side view of one of the clutch members; and Fig. 8 a view of the vendable commodity, in this instance, a paper drinking cup.

Similar reference numerals indicate similar parts in the several views.

The mechanism to be described is contained in a suitable casing 1, preferably of metal, having a door 2 giving access to the magazine, and a door 3 giving access to the coin-collecting chamber in the lower part of the casing.

The paper cup rests upon the floor 4 of the magazine, as indicated in Fig. 2, a weight 5 on the top of the pile insuring sufficient pressure upon the lowermost cup to secure a positive engagement thereof by the ejector. The floor 4 has downwardly-projecting lugs 6 by which it is secured to the rear wall of the casing. This is the only

means of attachment of the floor to the casing, permitting thereby a slight adjustment of the front of the floor by means of a threaded bolt 7 upon which the front of the floor rests. As shown more particularly in Figs. 3 and 4, the floor 4 is formed at the front, or has secured thereto, an upwardly curved block 8. Secured to the front wall of the casing above the block is a guide plate 9 having its lower edge curved, as shown in Fig. 3. By means of the threaded bolt 7 the front of the floor 4 may be adjusted relatively to the guide plate 9 so as to form an opening of sufficient width to permit the passage therethrough of a single cup at each operation of the machine. At the rear of the floor 4 is an upwardly bowed plate 10, the cups resting directly at one end upon said plate and at their forward ends upon the block 8. These features provide for a slight curving of the lowermost cup and insure its passage through the space between the block 8 and guide plate 9. Secured across the front of the casing between the doors 2 and 3 is a delivery chute 11 having a horizontal delivery opening 12 in line with the space between the crevice of the block 8 and plate 9. The delivery mechanism or ejector is adapted to project through an opening 13 in the floor 4, as indicated in Figs. 2 and 4, said ejector being constructed and operated as follows: Passing through the coin-collecting section of the casing below the floor 4 is a shaft 14 having suitable bearings in the casing and adapted to be rotated by a hand-wheel 15. For the purpose of locking the ejector or feeding device to the shaft 14, I provide clutch members, one of which, 16, is fast to the shaft 14, and the other, 17, is connected to a collar 18 loose on said shaft. The opposing faces of these clutch members are provided with a series of projecting lugs 19 and 20, respectively, there being three series of three each on each member, the individual lugs being so disposed relatively to those on the opposing faces that, when the apparatus is free, and the member 16 rotated, its lugs will pass through the spaces between the lugs 20 on the member 17, and no motion will be imparted to the latter or to the ejector. The series of lugs are set apart 120 degrees, or an amount sufficient to permit the entrance

of a coin or check 21 between two of the series of lugs 19, when the apparatus is in its normal position. The coin or check is suitably delivered through a chute 22 secured within the casing near one of the side walls and which communicates with an opening 23 in the front wall of the casing. As shown in Fig. 5, the chute 22 has a downwardly-extending hood 22' to guide the coin or check 21 until the clutch is sufficiently rotated to permit the coin to drop therefrom. As will be readily understood, when a coin or check is deposited, it will be received between two of the series of lugs 19 on clutch member 16, so that, when the handle 15 is rotated, the power applied thereto will be transmitted from shaft 14 through member 16, the coin or check 21, the lugs 20 of member 17, to collar 18.

The ejector or feeding device proper comprises two sets of three radial arms 24 integral with collar 18, and shoes 25 pivoted to said arms so as to have a slight rocking movement over the ends of the arms. These shoes carry projecting pin points 26 which, when the arms are rotated, engage the lowermost cup and give it a positive forward feeding movement between the block 8 and guide plate 9, the arms being rotated through 120 degrees on each operation of the machine. To insure a quick feeding movement of the cup after its front edge has passed the block 8, I provide a triangular cam 27 which is secured to collar 18 and rotates therewith. This cam is normally set, as shown in Fig. 2, so that a side thereof rests against the free end of a spring 28 secured to the casing. As the cam is rotated in the direction of the arrow the forward high point thereof will bear down upon spring 28 and put it under tension so that, when the active high point passes the vertical plane of the axis of shaft 14, the spring will give said cam, and, therefore collar 18 and the feed arms thereon, a quick movement of rotation which will cause the cup to project a considerable distance beyond the delivery chute, as shown in Fig. 1, to enable its complete removal by hand. The parts will then be in normal position with the next side of the cam resting upon spring 28. The high points of cam 27 are approximately midway of the arms 24 so that spring 28 begins to act to give its movement to the feeding arms about midway of the complete movement of rotation of said arms.

As shown in the drawings a horizontal section of the casing is of the form of a regular trapezoid, and the cup, shown in Fig. 8, is of substantially the same form, the narrower end of the cup being presented toward the delivery opening. As also shown I provide two inner side walls 31, the said walls being substantially par-

allel with the outer side walls and so disposed that the horizontal distance between them shall be sufficient to accommodate the article to be vended. These side walls terminate a short distance above the plane of the delivery opening so as to permit the wide end of the cup as it is being withdrawn to pass into the space between the outer side walls below the lower edges of the inner walls 31. That is, the outer side walls below the lower edges of the inner walls provide guiding edges substantially the width of the widest section of the cup. This arrangement preserves the proper position of the cup for delivery.

In the foregoing description I have referred to the machine in condition for being operated by a coin or check. If it is desired to make the machine one for the free delivery of the article, it may be done by simply securing the shaft 14 and collar 18 together in any suitable manner. I have shown one way of doing this which permits the change to be readily made from a coin-controlled to a free machine, or vice versa. On the side of clutch member 17 I pivot an arm or bracket 29 in which is slidably supported a spring-pressed pin 30. In the position shown in Fig. 6 the bracket 29 has been swung to permit the pin 30 to project through aligned openings in clutch members 17 and 16. When so positioned, it is obvious that, without the insertion of a coin, the rotation of shaft 14 will be imparted to collar 18 and the feed arms 24. To change to a coin-controlled machine, the pin 30 is withdrawn from the openings in the members 17 and 16 and the arm or bracket 29 swung to one side, as shown in Fig. 7, so that the end of pin 30 will rest against the side of member 17. The insertion of a coin is then essential or necessary to effect the locking together of the two clutch members.

What I claim and desire to secure by Letters Patent of the United States is:—

1. In a vending apparatus, a casing having a magazine and a delivery outlet, a floor for said magazine having a convex raised section at its forward end in proximity to the delivery outlet, a guide plate above said raised section, said guide plate having its lower edge curved, and an ejector and means for operating the same.

2. In a vending apparatus, a casing having a magazine and a delivery outlet, a floor for said magazine having a convex raised section at its forward end in proximity to the delivery outlet, a guide plate above said raised section, said guide plate having its lower edge curved, means for adjusting the height of the forward end of the floor relative to said plate, and an ejector and means for operating the same.

3. In a vending apparatus, the combina-

tion of a casing having a magazine and a delivery outlet, a floor for said magazine having an opening therein, an ejector comprising arms having shoes pivoted thereon
 5 and adapted to engage the lowermost article in the magazine through said opening and to eject it through the delivery outlet, and means for rotating said arms and shoes.

4. In a vending apparatus, the combination of a casing having a magazine and a delivery outlet, an ejector having pivoted shoes, projecting points on said shoes to engage the article to be delivered, a cam rotating with said ejector, and a spring cooperating with said cam to impart a quick movement to the ejector after it has engaged the article to be delivered.
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5. In a vending apparatus, the combination of a casing having a magazine and a delivery outlet, an ejector comprising a plurality of radial arms having surfaces adapted to engage the article to be delivered, means for rotating said arms, a cam having its high points midway of the arms, and a spring cooperating with said cam to impart a quick movement to the ejector after it has engaged the article to be delivered.
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6. In a vending apparatus, the combina-
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tion of a casing having a magazine and a delivery outlet, a floor for said magazine having an opening therein, a shaft below the floor, an ejector comprising two sets of arms secured to said shaft, shoes pivoted on the ends of said arms, said shoes having pins thereon, and means for rotating said shaft
 35 and arms to cause the shoes to engage the lowermost article in the magazine through the floor opening and to eject it through the delivery outlet.

7. In a vending apparatus, the combination of a casing having a magazine and a delivery outlet, a floor for said magazine having an opening therein, a rotatable ejector comprising pivoted shoes having pins thereon, and means for rotating the same to
 40 cause said shoes to engage the lowermost article in the magazine through said opening and to eject it through the delivery outlet.

In testimony whereof I have hereunto signed my name in the presence of two subscribing witnesses.
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HENRY B. COOLEY.

Witnesses:

MAURICE LEBACH,
 JOHN McCABE.