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J. F. MOULTON.
VENDING MACHINE.
APPLICATION FILED JULY 28, 1909.

Patented Apr. 12, 1910.

3 SHEETS—SHEET 1.

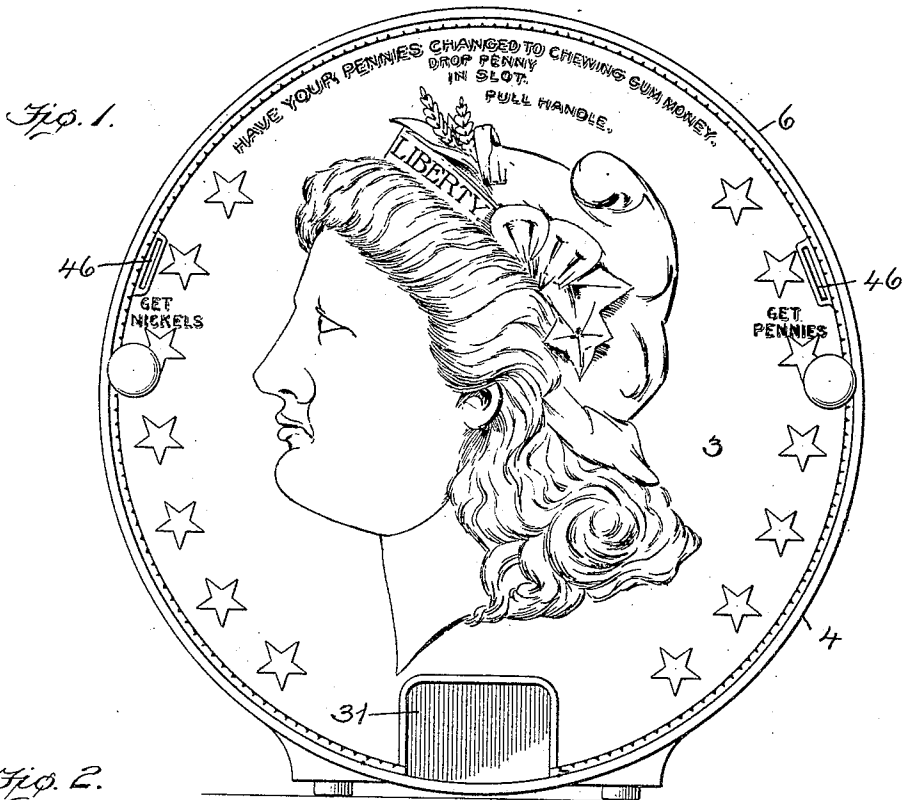
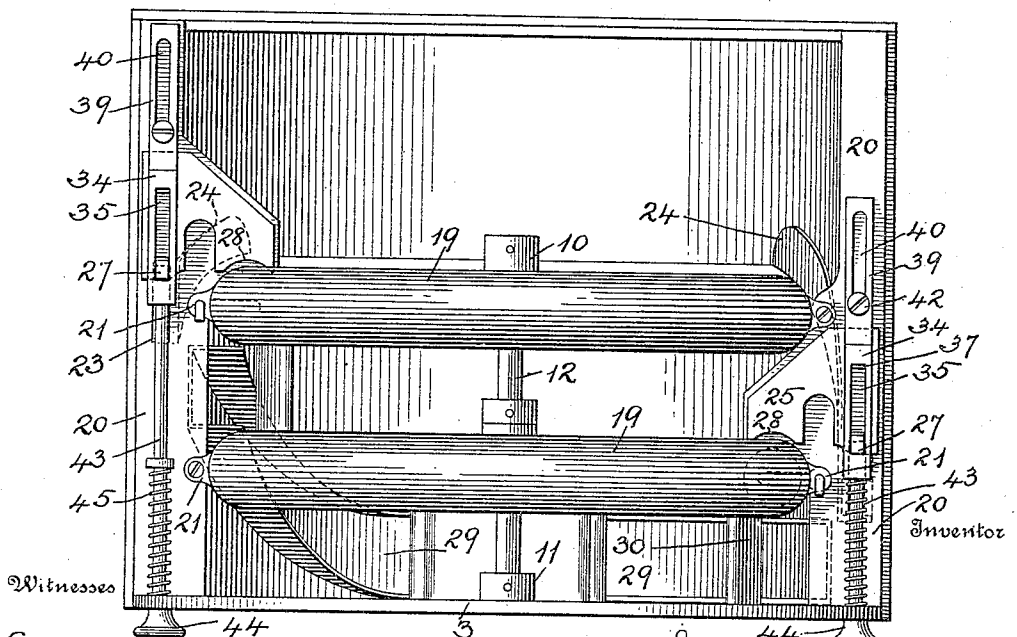


Fig. 2.



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Edwin L. Bradford.
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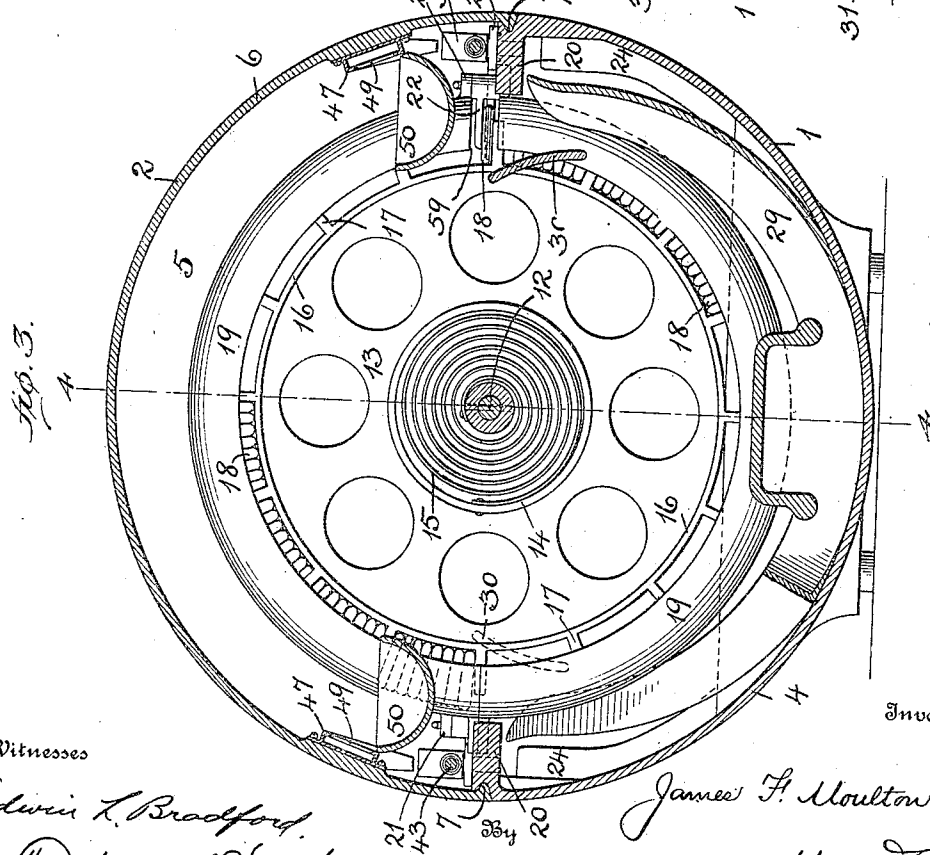
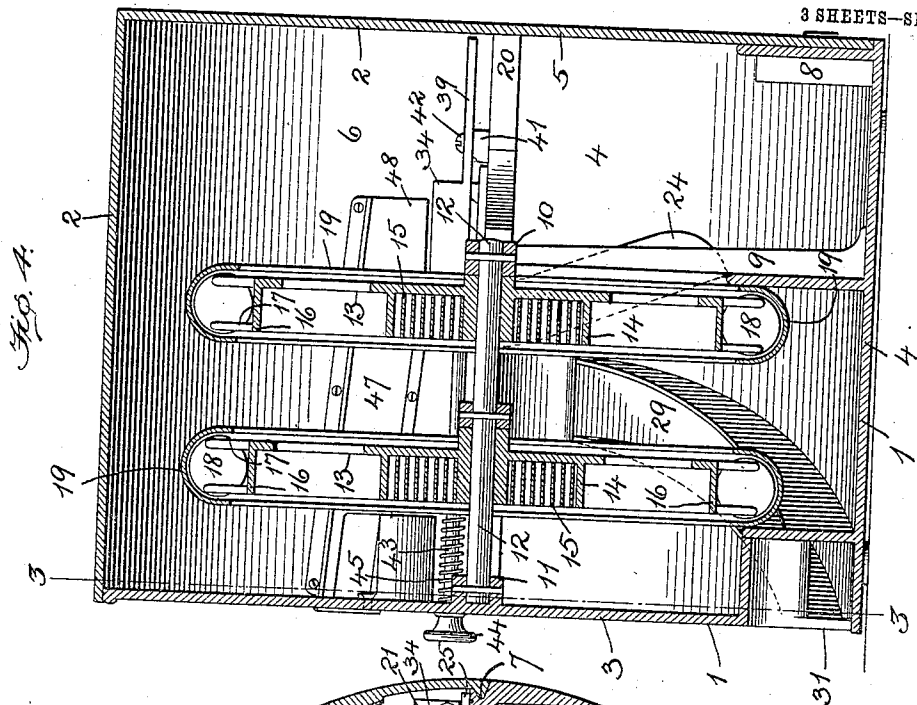
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Inventor

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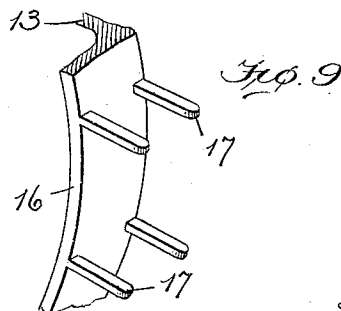
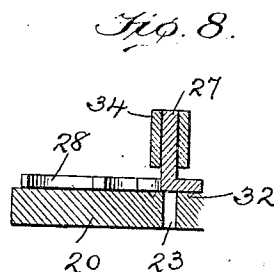
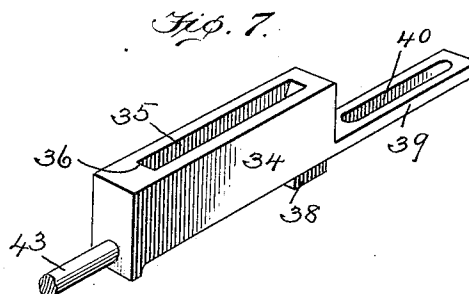
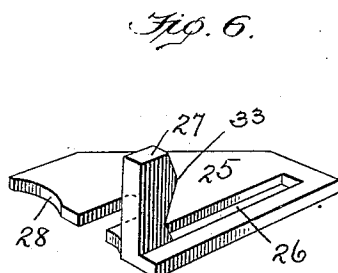
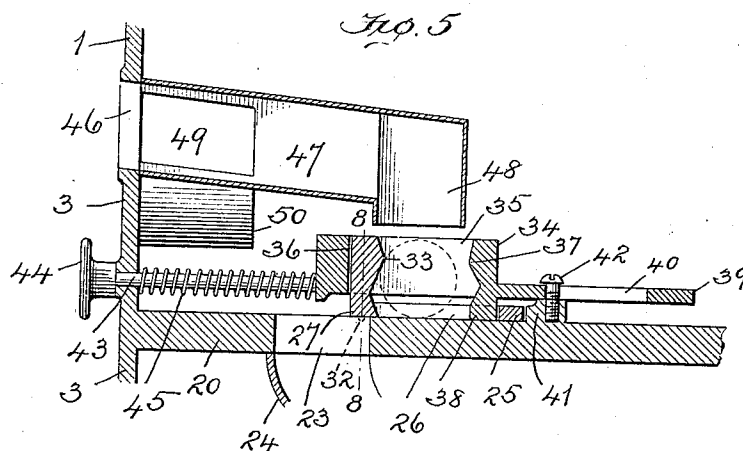
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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

JAMES FRANK MOULTON, OF BALTIMORE, MARYLAND.

VENDING-MACHINE.

954,873.

Specification of Letters Patent.

Patented Apr. 12, 1910.

Application filed July 28, 1909. Serial No. 510,097.

To all whom it may concern:

Be it known that I, JAMES FRANK MOULTON, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Vending-Machines, of which the following is a specification.

This invention relates to improvements in vending machines and has for its object to provide an improved construction of machine for delivering articles of merchandise upon the deposition of a coin.

One object of the invention is to provide an improved construction of rotary article carrier wherein the ejection of one article will permit the carrier to rotate sufficiently to present another article for ejection.

Another object is to provide an improved construction of rotary article carrier which will be held against rotation by the articles themselves.

A further object is to provide an improved construction and combination of actuating and ejecting mechanism which are operatively connected through the medium of a coin, and another object is to provide an improved construction, combination and arrangement of machine as will be hereinafter described and particularly pointed out in the claims.

The invention is illustrated in the accompanying drawings in which,—

Figure 1 is a front elevation of the machine. Fig. 2, a top plan view of the same,—the top and rear portion of the machine having been removed. Fig. 3, is a vertical sectional view through the machine immediately at the rear of the front wall,—the section being taken on the line 3—3 of Fig. 4. Fig. 4, is a central vertical section,—this section being taken on the line 4—4 of Fig. 3. Fig. 5, is an enlarged vertical section through the coin slot and the mechanism that is to be actuated through the medium of a coin. Fig. 6, is a perspective detail of the ejector plate. Fig. 7, a similar view of the actuating member. Fig. 8, a vertical section through the ejector and actuating member,—the section being taken on the line 8—8 of Fig. 5, and Fig. 9, is a

perspective detail of a portion of the article carrier which presents the articles to the ejector plate in readiness for delivery.

Referring to the drawings it will be noted that the casing of the machine has a drum-like form and comprises two separable sections 1, and 2, respectively. The section, 1, comprises the front wall, 3, and the lower half of the curved side and bottom wall, 4, while the section, 2, embraces the rear wall, 5, and the upper half of the side and top wall, 6. By reference to Fig. 3 it will be seen that the side walls of the two sections are joined by means of a tongue and grooved joint which is designated, 7, in the drawing. A suitable lock, 8, is provided at the rear of the machine to lock the two sections together.

The entire operating mechanism is carried by or sustained in the section, 1, so that it may be accessible upon removal of the upper section, 2.

By reference to Fig. 4 of the drawing it will be seen that the lower section, 1, of the case is provided with a vertical partition or support, 9, which has a collar or bearing, 10, at its upper edge. The front wall, 3, of the case is also provided at its inner side with a central support or boss, 11, and a rod or axle, 12, has its ends sustained by the said bearing, 10, and support, 11, and extends horizontally between the two. The position of this rod or axle is about central with respect to the walls of the case. On the rod or axle I mount a plurality of rotary carriers, 13, which are independently revoluble with respect to each other and each carrier is provided at one side with a laterally-projecting circular flange, 14, which is concentric with the axis and central hub. A coiled spring, 15, is located at the side of each carrier and between the axis and flange, 14, and the inner end of the coil is secured rigidly with respect to the axle or rod, 12, while the outer end thereof is connected to said flange. These springs constantly tend to turn the carriers about the rod and serve to move them around step-by-step for a purpose presently to be explained. The carriers are provided with laterally-extending circumferential flanges, 16, from which ra-

dial fingers, 17, project. These fingers, see Figs. 3, 4 and 9 are in the present instance arranged in pairs with a space intervening between the fingers of each pair, and each pair of fingers is preferably spaced circumferentially from the next adjacent pair of fingers. It is thus to be understood that the carriers are provided with circumferentially spaced-apart pairs of fingers so that the articles to be vended, in the present instance disks of chewing gum, 18, may be placed in piles between adjacent pairs of fingers. In order to retain the disks of gum in place around the peripheries of the carriers I provide semi-cylindric casings, 19, whose ends are brought close together at one side so as to encircle the carriers but are separated at the opposite side so as to form a horizontal slot or outlet, 59, through which the disks may be ejected one after another, as will presently appear. In order to sustain the semi-cylindric casings, I provide the upper edge of the side walls, 4, with horizontal flanges or ledges, 20, and the ends of the two-part casings are provided with lugs, 21, which are secured to said ledges. At the side adjacent the slots or outlets, 59, I provide a stationary finger, 22, which extends horizontally toward the rim of the carrier. This finger has position in a vertical plane so as to project between the two radial fingers, 17, of each pair. By this relative arrangement of the stationary finger, 22, with the movable fingers, 17, the latter may pass the former as the carrier is permitted to turn step-by-step. It will be understood that as the stationary finger, 22, projects centrally between the two movable fingers of each pair, it will form a stop against which the foremost disk, 18, of gum will be pressed. By this means the gum disk and stationary finger, 22, together hold the carrier in check and prevent rotation of the latter until the said foremost disk is removed through the horizontal slot or outlet, 59, by means which will now be described.

By reference to Figs. 2 and 5 it will be seen that the ledge or flange is provided with a vertical coin slot, 23, from the bottom of which a coin-chute, 24, extends downwardly and rearwardly so as to direct the coin to the rear of the case. On top of the ledge I mount an ejector plate, 25, which is provided with a vertical slot, 26, adjacent its outer edge and having a vertical lug, 27, at the forward end of and in line with said slot. At the inner side this plate is provided with a concave forward edge, 28, which has position behind and in a horizontal plane just beneath the stationary finger, 22. The position of this concave edge, 28, of the ejector plate is such that when it is moved forward it will be projected through the slot or outlet, 59, and against the edge of the foremost disk be-

neath the finger, 22, so as to push said disk laterally from the carrier where it can drop into the delivery chute, 29. In order to facilitate the dropping of the ejected disk into the delivery chute I provide an inclined deflector plate, 30, between the slot, 19, and chute, 29, against which the disk will strike upon being discharged, and when it enters the delivery chute it is directed thereby toward the opening, 31, in the front wall of the case where it may be removed by hand. The bottom side of the ejector plate is provided with downwardly-projecting spuds, 32, which have position at opposite sides of the coin-slot, 23, and the upper surface of the ledge, 20, has slight depressions or cavities which receive said spuds when the ejector plate is in the retracted or normal position, the object of which will presently be described. By reference to Figs. 5 and 6 it will be seen that the vertical lug, 27, on the ejector plate has a V-shaped projection, 33, at its inner side which performs a useful function during the ejecting operations which will also presently be described.

An actuating member has a rectangular body, 34, with a vertical slot, 35, extending therethrough and the wall, 36, at the forward end of this slot is vertical which at the rear or opposite end the wall of said slot has a V-shaped projection, 37, corresponding to the projection, 33, on the lug, 27. A lug, 38, projects downwardly from the lower or bottom side of the body, 34, while an extension or arm, 39, projects rearwardly from said body and is provided with a longitudinal slot, 40. This arm, 39, projects over and beyond a lug, 41, on the ledge, 20, and a screw, 42, passes down freely through said slot and into said lug, 41, and serves as a rear guide as well as a stop for the actuating member. At the forward end the actuating member is provided with a rod, 43, which extends forwardly from the body and passes through a perforation in the front wall, 3, and the outer projecting end of said rod is provided with a knob or head, 44, by means of which the rod and body may be drawn forward over the ledge, 20. A spiral spring, 45, is coiled around the rod, 43, and by expansion keeps the rod and body pressed rearwardly.

By reference to Fig. 5 it will be seen that when in the normal position and ready for operation, the ejector plate, 25, has position flat down on the upper surface of the ledge, 20, with the bottom or downwardly-projecting spuds, 32, seated in the cavities in the upper side of the ledge. When in this normal position the vertical lug, 27, of said ejector plate will have position above the coin-chute, 24, while the slot, 26, of said plate will be in line with but directly to the rear of the coin slot, 23.

The body, 34, of the actuating member

will normally seat down on top of the ejector plate and the lug, 36, of the latter will project up through the slot, 35, of the body, 34, while the lug, 38, on the bottom of the latter will project down into the slot, 26, of the ejector plate. It will therefore be seen that the two slots, 26, and, 35, will normally register. If when in this position and during the absence of a coin in said registering slots, a person should grasp the knob, 44, and draw the rod, 43, outwardly the actuating member would alone move forward and the lug, 38, thereof would simply slide freely in the slot, 26, without moving the ejector plate with it. To more certainly hold the ejector plate stationary during such an operation and during the absence of a coin, the spuds, 32, are provided and consequently as the ejector plate will not move there will be no discharge of a gum disk.

Above the knob, 44, the front plate, 3, is provided with a coin entrance slot, 46, and at the inner side of said plate I provide an inclined coin chute, 47, which extends rearwardly and has an inner end, 48, that terminates over the slot, 35, of the body, 34. This coin chute, 47, is attached to and movable with the wall, 6, of the upper section, 2, of the case, and by reference to Fig. 3, it will be seen that said chute has a slightly inclined or tilted position. A slot, 49, is provided in the side of the coin chute and a receptacle or cup, 50, is located at the side of the chute and beneath said slot. The purpose of this slot is to permit slugs or buttons that are smaller in diameter than the intended coin to be used, to tilt and drop sidewise out through the slot and into the receptacle, 50, and thus prevent them from rolling down the chute and dropping into the slot, 35, of the body, 34.

In the machine herein shown two complete sets of mechanisms are employed,—that is two coin-entrance slots; two ejector and actuating members and two rotary disk or article carriers. If the article to be vended is chewing gum in the form of disks one carrier may be charged with disks resembling pennies while the other may carry disks somewhat resembling nickels and the flavors of the two kinds of disks may vary. As both of these mechanisms are precisely alike a description of one of them is deemed sufficient.

In the operation of the machine a coin is inserted in the slot, 46, and is conveyed by the chute, 47, and deposited in an upright position,—that is on its edge, in the slots, 26, and, 35, respectively, as indicated by circular broken lines in Fig. 5. The knob, 44, is then drawn outwardly whereupon the body, 34, of the actuating device will move forward so that the V-shaped projection, 37, will push the coin forward against the similarly-shaped projection, 33, on the lug, 27, of

the ejector plate. In thus forcing the coin forward it will slightly elevate the forward end of the ejector plate thus raising the spuds, 32, out of the cavities in the ledge, 20, whereupon the ejector plate and actuating member will move forward together. During this forward movement the concave edge, 28, of the ejector will embrace the gum disk, 18, and push it laterally from beneath the stationary finger, 22, and drop it into the chute, 29. As soon as the disk is thus ejected the ejector plate is returned by means of the spring, 45, and the carrier will turn until the next disk comes into contact with said stationary finger. It will therefore be seen that the disks to be vended coast with the stationary finger, 22, to prevent the rotation of the carriers and that the latter can only turn as the disks are successively removed or ejected. Upon ejecting the article the coin will drop through slot, 23, and be conveyed rearwardly by chute, 24, to the rear of the lower section, 1, of the case.

Having thus described my invention what I claim and desire to secure by Letters Patent is,—

1. The combination with a case, of a rotatable article carrier therein; means operating continuously to force the rotatable carrier in one direction continuously; means for engaging the articles on the carrier to lock the carrier against rotation and an ejector for discharging one article at a time.

2. The combination with a case, of a circular carrier having means at its periphery for sustaining a plurality of articles; means tending continuously to rotate the carrier; means for engaging the article next to be ejected and thereby hold the carrier against rotating and an ejector for removing the engaged article.

3. The combination with a case, of a circular carrier having means at its periphery for sustaining a plurality of articles; a casing encircling the carrier and the articles; means adjacent the axis of the carrier to continuously press the carrier in one direction; a stationary device to engage the foremost article and thereby hold the carrier against movement and an ejector for pushing the held article from the carrier and thereby permitting the carrier to turn.

4. The combination with a case, of a circular carrier having spaced-apart radially-projecting fingers arranged in pairs for sustaining the articles; a stationary finger projecting in the path of the articles and in a vertical plane between the spaced-apart fingers of each pair to engage the articles and thereby hold the carrier from movement; means for continuously pressing the carrier in one direction and means for forcing the held article from the carrier.

5. The combination with a case, of a circular carrier having means at its periphery

for sustaining the articles; a coiled spring
adjacent the axis of the carrier for continu-
ously pressing the same in one direction;
means for engaging the article to prevent
5 the rotation of the carrier and means mov-
able across the periphery of the carrier to
push the held article therefrom.

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

JAMES FRANK MOULTON.

Witnesses:

CHAS. B. MANN,
LOUIS C. KLERLEIN.