No. 815,173. PATENTED MAR. 13, 1906.

F. A. HUSER.

VENDING MACHINE.

APPLICATION FILED JULY 19, 1905.

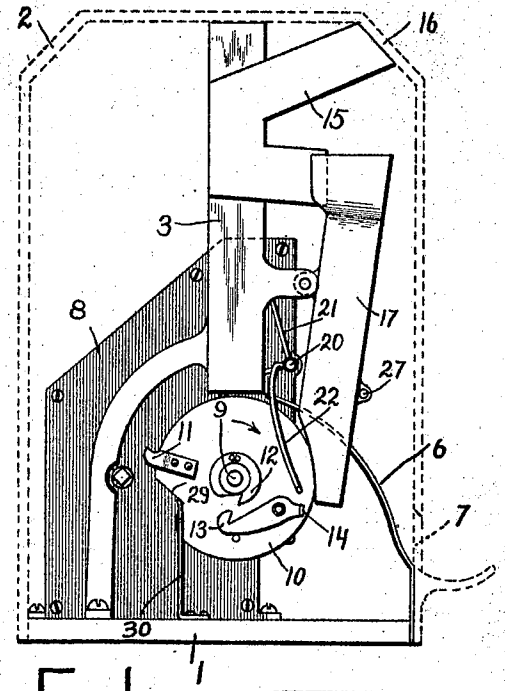


Fig. 1.

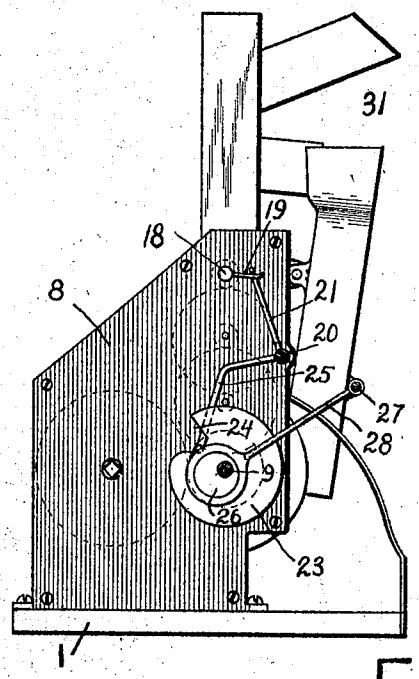


Fig. 2.

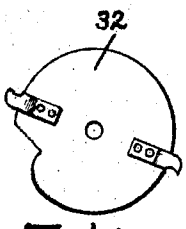


Fig. 4.

Fig. 3.

Witnesses:
Elmer R. Shipley.
Robert M. See.

Frank A. Huser
Inventor
by James W. See
Attorney

UNITED STATES PATENT OFFICE.

FRANK A. HUSER, OF HAMILTON, OHIO.

VENDING-MACHINE.

No. 815,173. Specification of Letters Patent. Patented March 13, 1906.

Application filed July 19, 1905. Serial No. 270,325.

To all whom it may concern:

Be it known that I, FRANK A. HUSER, a citizen of the United States, residing in Hamilton, Butler county, Ohio, (post-office address Box 174, Hamilton, Ohio,) have invented certain new and useful Improvements in Vending-Machines, of which the following is a specification.

This invention, pertaining to improvements in check-controlled vending-machines, will be readily understood from the following description, taken in connection with the accompanying drawings, in which—

Figure 1 is a side elevation of a vending-machine exemplifying my invention, the inclosing casing appearing in dotted lines; Fig. 2, a vertical section of the same in the plane of line *a* of Fig. 1; Fig. 3, a front elevation; and Fig. 4, a side elevation of the drag-claw arranged for double delivery—that is to say, to deliver two articles at one impulse of the machine.

The improvements relate to a provision of multiple vending devices operated by a single motor and designed to effect delivery from selective magazines. The machine is adapted for the vending of goods in small packages or in such form as to lend themselves to storage in vertical piles in magazines subject to the withdrawal of units from the base of the piles.

A machine having magazines suitable for the vending of packages of gum, candy, or the like has been chosen for exemplification.

In the drawings, 1 indicates the base of the machine; 2, an inclosing casing; 3, a vertically-disposed magazine adapted to hold a pile of the articles to be vended; 4, inwardly-projecting side lips at the base of the magazine, which base is otherwise open, these lips supporting the pile of goods in the magazine; 5, the pile of goods in the magazine, the pile being illustrated in Fig. 3 as being in the right-hand magazine only, while the general description will for the present be limited to the left-hand magazine and its accessories; 6, a sloping chute leading forwardly from the base of the magazine for guiding the delivered article to its point of final discharge from the casing; 7, an opening in the casing to permit the outward passage of the delivered article; 8, a spring-motor of a character common in machines of this general class; 9, the main shaft of the machine, disposed below the base of the magazine and arranged to be turned by the motor in the direction of the arrow seen in Fig. 1; 10, a drag-disk loose on the main shaft immediately below the magazine; 11, a pair of drag-claws projecting radially from the drag-disk and adapted as the disk turns to sweep forwardly through the base of the magazine and withdraw therefrom the lowermost article therein and deliver the same upon chute 6, the pair of claws 11 being disposed on opposite sides of the disks and at such distance apart as to cause them to take a fair bearing against the lowermost article in the magazine, the normal idle position of the claws 11 when the disk has but a single set of claws being to the rear of the magazine, as seen in Fig. 1; 12, a clutch-hook fast on the main shaft 9 near the drag-disk; 13, a hooked pawl loosely pivoted to the drag-disk and adapted to engage clutch-hook 12 and cause the main shaft to turn the disk, this hooked pawl being normally out of engagement with the clutch-hook and held in such idle position by the action of gravity; 14, a tailpiece projecting laterally from the heel of the hooked pawl; 15, a coin-chute of ordinary form; 16, entry-slot thereinto for the coins; 17, a downward extension of the coin-chute, this extension being mounted on a horizontal pivot so as to act as a cut-off, as usual, the lower end of this coin-chute extension being in such position that a coin in reaching its lower end will engage tailpiece 14 of the hooked pawl and rock that pawl into engagement with clutch-hook 12, and thereby lock the drag-disk to the main shaft; 18, a shaft turned by the spring-motor at comparatively high speed; 19, an arm projecting therefrom; 20, a rock-shaft; 21, an arm projecting from this rock-shaft and having a hook normally engaging over arm 19 and preventing the operation of the motor; 22, another arm projecting from rock-shaft 20, its lower end being in such position relative to the foot of coin-chute 17 that a coin reaching the base of the chute extension will engage the arm 22 and so rock rock-shaft 20 as to disengage arm 21 from arm 19, and thus permit the motor to operate; 23, a time-disk fast on main shaft 9; 24, a notch in the time-disk; 25, an arm projecting from rock-shaft 20 and having a portion lying normally within notch 24, but, when the main shaft is in motion, riding upon the periphery of the time-disk so as to prevent reëngagement of arm 21 with arm 19 until the main shaft shall have completed its rotation, at which time the notch 24 permits arm 21 to again stop the motor; 26, an eccentric

on the main shaft; 27, a rod extending transversely of pivoted coin-chute extension 17; 28, an eccentric-rod connecting the eccentric with rod 27, whereby a turn of the main shaft rocks the pivoted coin-chute extension 17; 29, a notch in the periphery of drag-disk 10 with an inclined or cam-shaped shore presenting in a direction against that of the rotation of the drag-disk, and 30 a spring whose free end engages in notch 29 and tends by its inward movement to advance the drag-disk a certain distance beyond the point at which the spring first enters the notch, the spring also serving upon reaching the foot of the notch to hold the drag-disk in its normal idle position, as illustrated in Fig. 1.

As seen in Fig. 3, there is at the right of the spring-motor a second magazine. This magazine is in all respects similar to the one that has been described and is equipped with precisely similar accessories and has precisely similar association with the motor, the rock-shaft 20, and chute-rocking rod 27. For the present ignore any consideration of this right-hand magazine and its immediate accessories. The motor is normally wound up and potent for action and is restrained from motion by the engagement of arm 21 with arm 19. A coin being placed in slot 16 passes through chute 15 and its extension 17 and strikes arm 22, thus unlocking the motor, and strikes tailpiece 14 of hooked pawl 13, thus locking the drag-disk to the shaft, the coin then falling to the base of the machine. The motor, having been released, proceeds to rotate the main shaft and the drag-disk, the effect being that drag-claws 11 withdraw the lowermost article from the pile in the magazine and urges it down chute 6, which chute is suitably slotted to permit the sweeping motion of the drag-claws. As the main shaft completes its turn arm 24 drops into the notch of time-disk 23 and permits arm 21 to bring the motor to rest in normal idle position. At this time notch 29 in drag-disk 10 has reached the end of spring 30, which starts to enter the notch and, the main shaft having come to rest, the action of the spring upon the inclined wall of the notch turns drag-disk 10 a trifle in advance of the position to which it was propelled by the clutch, the hooked pawl 13 being thus relieved from any strain, drops free of clutch-hook 12, leaving the drag-disk unlocked from the main shaft and held in normal idle position. Immediately upon the starting of the motor, as the result of the presence of a coin, the eccentric 26 rocks the upper end of coin-chute extension 17 rearwardly, thus temporarily closing the general chute against the passage of a second coin, which second coin can only proceed onward through the machine after the main shaft shall have completed its turn.

The description thus far given has applied to the left-hand one of the two magazines. In the described operation of the motor upon the mechanism pertaining to that magazine nothing has occurred in connection with the mechanism pertaining to the right-hand magazine, except that its coin-chute extension was rocked. The idleness of the delivering mechanism of the right-hand magazine was due to the fact that its drag-disk remained normally unlocked from the main shaft. If now a coin were presented to the coin-chute pertaining to the right-hand magazine instead of the left-hand one, then in that event the drag-disk of the left-hand magazine would remain normally unlocked from the main shaft, while the coin would bring about the locking to the main shaft of the drag-disk pertaining to the right-hand magazine, under which circumstances the delivery of goods would be effected not from the left-hand magazine, but from the right-hand one. It is thus seen that when the motor is started into motion by the action of a coin that motion will be effected only on the delivery mechanism pertaining to the magazine being immediately dealt with by the presented coin. It is thus seen that while there is but a single motor and while the delivery is of automatic character a selection of goods can be made from a plurality of magazines, two magazines being shown in exemplification; but the system obviously lending itself to any desired number of individual magazines, &c., brought into association with a single motor-shaft on which their drag-disks are normally loose, but capable of being selectively locked.

Goods from either magazine may be gotten by presenting a coin to the coin-chute pertaining to the given magazine, or, if desired, coins may be presented to the chute of both magazines. In other words, the system is non-interfering and the individual members may be utilized singly or simultaneously.

With the construction of drag-disk illustrated in Fig. 1 one impulse of the machine effects the withdrawal and delivery of a single article, owing to the fact that there is but a single pair of drag-claws on the drag-disk. In short, one turn of the main shaft delivers but one unit of goods from the magazine; but if the drag-disk be provided with an additional set of drag-claws, as illustrated in Fig. 4, then one turn of the main shaft will bring about the delivery of two units of goods and simultaneously a drag-disk may be provided with any reasonable number of sets of drag-claws, and the drag-disk pertaining to one magazine may manifestly be arranged to deliver a single unit of goods, while the drag-disk of the other magazine delivers a plurality of units of goods. Thus, for instance, assume the machine employed for the vending of cigars. One magazine may contain cigars to be vended at the rate of one cigar per coin, while the other magazine may

contain cigars to be vended at two or more cigars per coin. The capacity of the individual members in this respect may be changed at will by the substitution of drag-disks with varying numbers of sets of drag-claws. In the exemplification the drag-disks are illustrated as disks, in fact; but the disk form is merely a preferable one, as the drag-claws which constitute the withdrawing devices might be viewed as mere radial element mounted on the main shaft.

By the expression "drag-disk" is therefore meant a member preferably in disk form and mounted loosely on the main shaft for carrying the drag-claws.

In Fig. 3 the main-shaft line, rock-shaft 20, and chute-tipping rod 27 are shown as extended and broken at the left. This is merely to indicate that these members may extend as far as desired to suit additional magazines, with their accessories.

I claim as my invention—

1. In a vending-machine, the combination, substantially as set forth, with a motor having a main shaft, mechanism normally restraining the motor from motion, and a magazine for supporting a pile of the articles to be vended, of a drag member loose on said main shaft and having claws adapted to sweep the lowermost article from the pile in the magazine, a normally disengaged clutch device serving to lock the drag member temporarily to said shaft, and a coin-chute having its discharge end in position to deliver a passing coin against a releasing-arm connected with the motor-restraining device and against a member serving to effect the engagement of said clutching device.

2. In a vending-machine, the combination, substantially as set forth, with a motor having a main shaft, mechanism normally restraining the motor from motion, and a magazine for supporting a pile of the articles to be vended, of a drag member loose on said main shaft and having claws adapted to sweep the lowermost article from the pile in the magazine, a normally disengaged clutch device serving to lock the drag member temporarily to said shaft, a spring acting on the drag member and serving to impart to it a motion of angular advance upon said shaft after the motor comes to rest, and a coin-chute having its discharge end in position to deliver a passing coin against a releasing-arm connected with the motor-restraining device and against a member serving to effect the engagement of said clutching device.

3. In a vending-machine, the combination, substantially as set forth, with a motor having a main shaft, mechanism normally restraining the motor from motion, and a plurality of magazines for supporting individual piles of the articles to be vended, of a drag member loose on said main shaft below each magazine and having claws adapted to sweep the lowermost article from the pile in the magazine, a normally disengaged clutch device for each drag member serving to lock the drag member temporarily to said shaft, a releasing-arm connected with the motor-restraining device and a coin-chute for each magazine having its discharge end in position to deliver a passing coin against the releasing-arm and against a member of the clutching device pertaining to the appropriate drag member.

4. In a vending-machine, the combination, substantially as set forth, of a motor, a main shaft therefor, a motor-restraining device serving, when released, to arrest the motion of the motor at the end of one turn of said shaft, a series of drag members loose on said shaft and each provided with drag-claws, individual clutch devices normally disengaged but serving to lock the drag members temporarily to the shaft, an individual magazine over each drag member for supporting a pile of the articles to be vended in position to have the lowermost article withdrawn by said drag-claws, a motor-starting arm appropriate to each magazine and adapted, when moved, to release the motor, an arm forming a part of each individual clutching device and serving when moved to cause the appropriate clutching device to engage, and a coin-chute for each magazine with its discharge end in position to deliver a passing coin against the appropriate motor-starting arm and clutch-engaging arm.

5. In a vending-machine, the combination, substantially as set forth, of a motor, a main shaft therefor, a motor-restraining device serving, when released, to arrest the motion of the motor at the end of one turn of said shaft, a series of drag members loose on said shaft and each provided with drag-claws, individual clutch devices normally disengaged but serving to lock the drag members temporarily to the shaft, an individual magazine over each drag member for supporting a pile of the articles to be vended in position to have the lowermost article withdrawn by said drag-claws, a motor-starting arm appropriate to each magazine and adapted, when moved, to release the motor, a clutch-engaging arm forming a part of each individual clutching device and serving when moved to cause the appropriate clutching device to engage, a coin-chute for each magazine with its discharge end in position to deliver a passing coin against the appropriate motor-starting arm and clutch-engaging arm, and a spring engaging each drag member and serving to give to the drag member a motion of angular advance after being unclutched from the shaft.

FRANK A. HUSER.

Witnesses:
JAMES FITTON,
M. S. BELDEN.