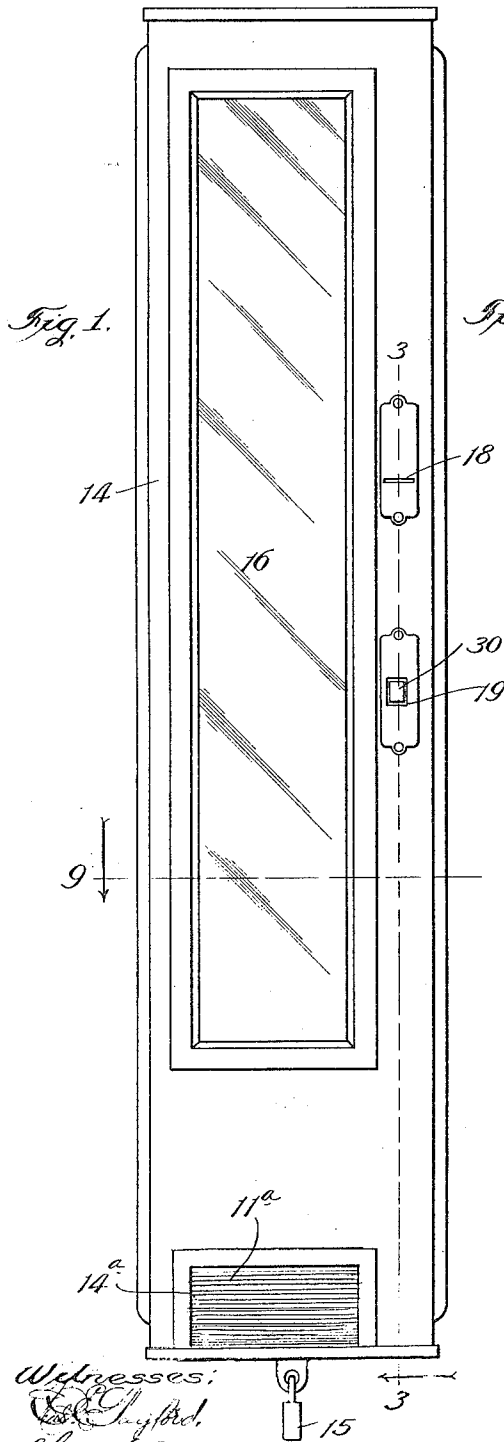
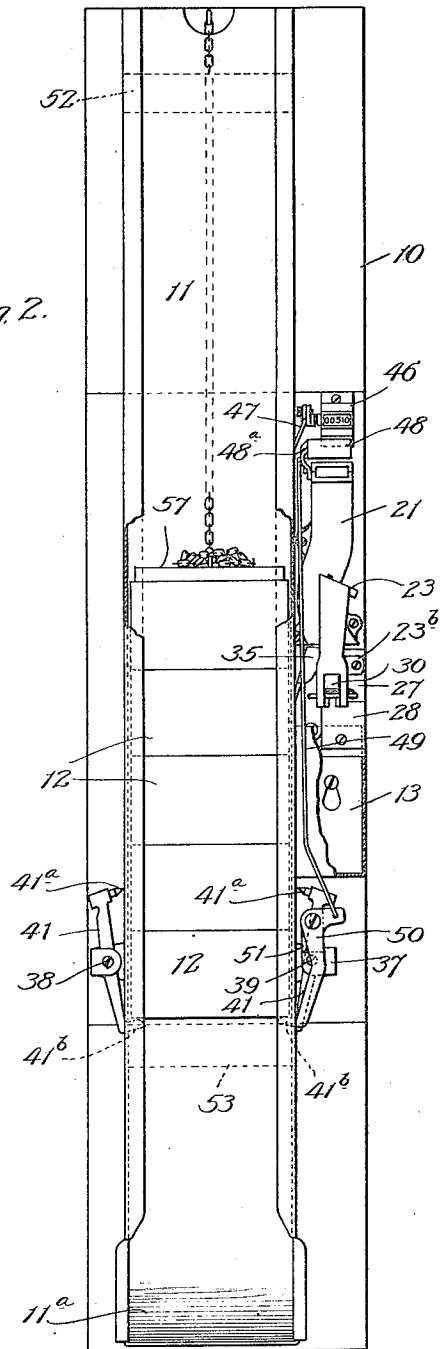


H. S. MILLS.
COIN OPERATED VENDING MACHINE.
APPLICATION FILED NOV. 22, 1915.

Patented Mar. 14, 1916.

3 SHEETS—SHEET 1.

1,175,469.



Witnesses:
J. C. Mayfield,
Chas. H. Bull

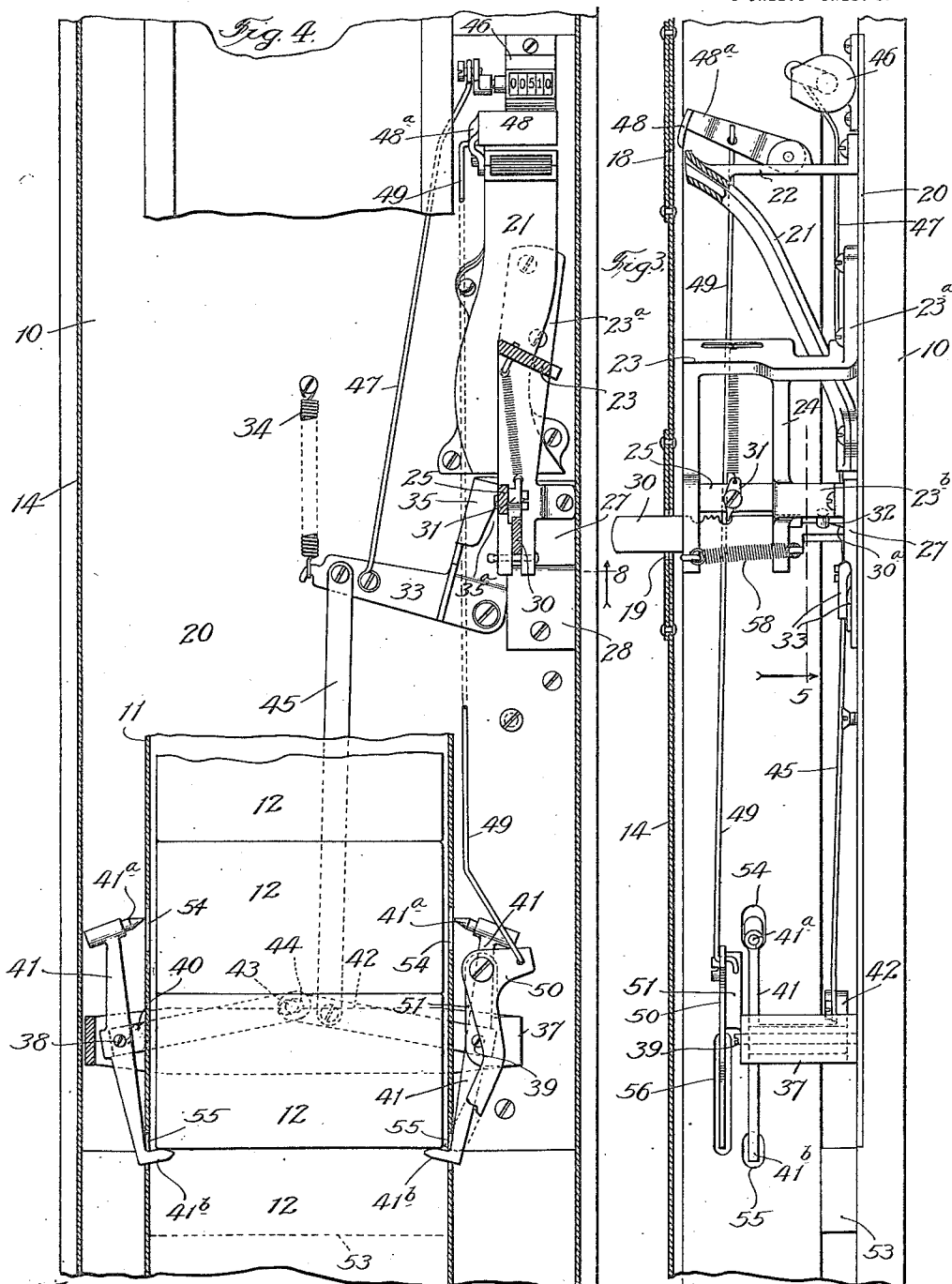
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3 SHEETS—SHEET 2.



Witnesses:
 J. J. Taylor,
 Chas. H. Buel.

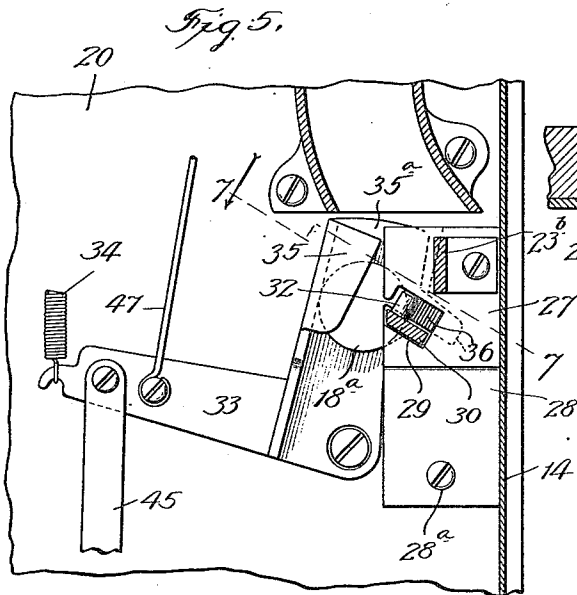
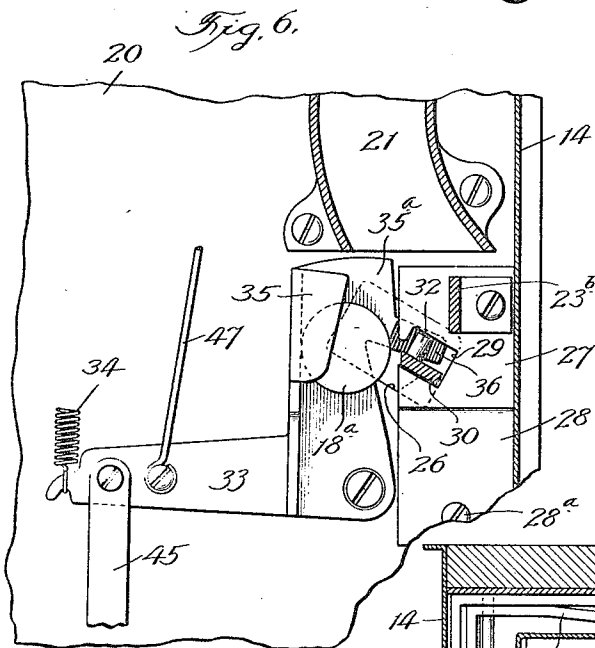
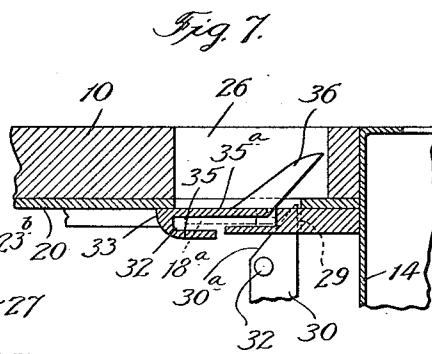
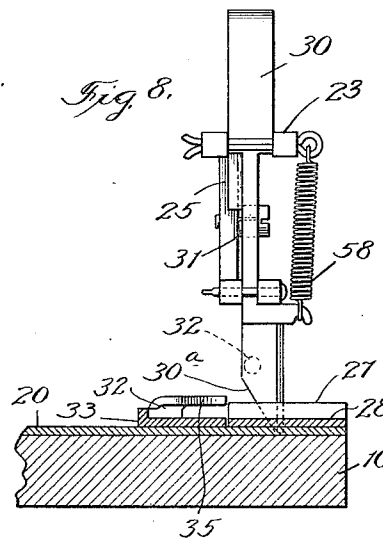
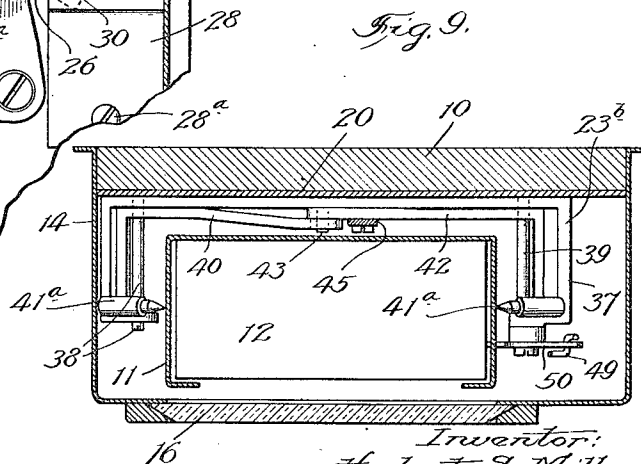
Inventor:
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H. S. MILLS.
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3 SHEETS—SHEET 3.



Witnesses:
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Inventor:
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UNITED STATES PATENT OFFICE.

HERBERT S. MILLS, OF OAK PARK, ILLINOIS.

COIN-OPERATED VENDING-MACHINE.

1,175,469.

Specification of Letters Patent.

Patented Mar. 14, 1916.

Application filed November 22, 1915. Serial No. 62,751.

To all whom it may concern:

Be it known that I, HERBERT S. MILLS, a citizen of the United States, residing at Oak Park, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Coin - Operated Vending - Machines, of which the following is a specification.

My invention relates to an improvement in the class of machines for vending articles in package form from a magazine containing a pile of the packages to be released, one at a time, for delivery by escapement means normally supporting the pile at its base and actuated, to effect the release, by mechanism requiring the insertion into it of a coin or token to render it operative.

In the accompanying drawings, Figure 1 shows my improved vending machine by a view in front elevation; Fig. 2 is a similar but partly broken view of the same with the housing cover for the mechanism removed; Fig. 3 is a section on line 3—3, Fig. 1; Fig. 4 is a section on line 4, Fig. 3; Fig. 5 is an enlarged broken sectional view, in the full size of the machine, showing the coin-operated mechanism with a coin introduced therein to render it operative, the section being taken on line 5, Fig. 3; Fig. 6 is a similar view showing the same while undergoing operation through the medium of the inserted coin; Fig. 7 is a section on the irregular line 7, Fig. 5; Fig. 8 is a section on line 8, Fig. 4, and Fig. 9 is an enlarged section on line 9, Fig. 1.

In the illustrated embodiment, the machine comprises an oblong-rectangular base 10, preferably of wood, for carrying the coin-operated mechanism, the escapement operatively connected with it, a magazine 11 for the articles to be vended in cartons 12, a coin-receptacle 13, and a housing or casing 14 covering the mechanism on and fitting about the edges of the base, to which it is fastened by a padlock 15 at coinciding perforated ears projecting respectively from the lower ends of the casing and base. The casing, which is shown to carry a mirror 16 centrally on its face, is provided near the right-hand edge of the mirror with an insertion-slot 18 for coins 18^a, as silver dimes, an aperture 19 for the push-bar to work through in coöperating with an inserted coin to produce delivery from the magazine, and a lower delivery-opening 14^a.

About midway between the ends of the

wooden base is countersunk into its face a metal plate 20. On this plate is secured, near its right-hand edge, coin-operated mechanism of the following-described construction: A coin-chute 21 is fastened at its upper end, to register its mouth with the insertion-slot 18, by a rear brace 22 to the base 10, and the chute curves thence downwardly to bear at its lower end against the plate, where it is rigidly fastened, as by screws. A cast bracket 23 (Fig. 3) is secured, at an upper vertical foot 23^a thereon, to the plate 20, and near this foot the horizontal member of the bracket is notched to let into it and thus clear the adjacent edge of the coin-chute. A bar 24, forming part of the casting, depends at the outer end of the aforesaid notch and is connected by a lower brace-bar 25 with the forward vertical member of the bracket; and this bar has extending rearwardly from it a foot 23^b. The base contains an aperture 26 (Fig. 7), over a section of which extends the thickened or head-portion 27 of an oblong rectangular bar 28 fastened, at 28^a, through its tail-piece or lower-end portion to the plate 20. The head 27, to which the foot 23^b of the bracket is fastened, is undercut from its inner toward its outer edge to space it throughout about one-half of its length, from the surface of the plate 20; and this undercut portion of the head contains a recess 29 of general rectangular shape. The lower end of the vertical bracket-member and that of the bar 24 are provided with alining slots, in which is supported from underneath by cotters and guided to work through the recess 29, a spring-retracted push-bar 30 projecting at its outer thickened end through the casing-slot 19, thus into accessible position for operating the machine. A spring-pressed pawl 31 is pivoted on the brace-bar 25 to engage a ratchet on the upper edge of the push-bar, as a common expedient for preventing retraction of the bar before completion of its inward stroke. The push-bar has its inner-end portion extending flatwise or slightly inclined from a right-angle relative to the part provided with the aforesaid ratchet on its upper edge; and this flattened portion is beveled at 30^a to render it cam-like, and carries a stud 32 on its upper face adjacent to the rear end of the bevel, for purposes hereinafter explained.

A bell-crank 33 is fulcrumed at its angle to the plate adjacent to the lower end of the

bar 28. The shorter arm of this bell-crank bears, under the pressure of a spring 34 connected with the end of its longer arm, normally against the inner edge of the head 27.

5 The shorter bell-crank arm has its inner-edge portion bent upon itself to form an inclined or cam-like pocket-member 35 registering with the space behind the undercut portion of the head 27; and that arm is expanded laterally at its upper-end portion, as shown at 35^a, Fig. 7, to project into the space behind the head 27, the expanded section 35^a carrying on its side-edge a cam-finger 36 projecting backwardly into the base-aperture 26 and extending there into the path of the push-bar stud 32.

On the plate 20 near its lower end is secured, to extend transversely of the plate, a bracket 37 of general U-shape having the ends of its forwardly projecting arms bent toward each other to form corresponding bearings for the forward ends of pivot-bolts 38 and 39, the bearings for their opposite ends being in the bracket 37. An L-shaped lever 40 is pivoted near its angle on the bolt 38 to extend its longer arm along the face of the base of the U-shaped bracket 37, and is provided on the extremity of its shorter arm with an escapement-finger 41, centrally through which the bolt 38 also passes. The upper end of this finger carries an inwardly projecting point 41^a for penetrating the adjacent end of a carton, and a foot-like ledge 41^b projects inwardly on its opposite end.

35 A companion-finger 41, in all respects like the finger already described, including a point 41^a on its upper end and a foot-like ledge 41^b on its lower end, is provided on the extremity of the shorter arm of an L-shaped lever 42 pivoted on the bolt 39, the longer arm of this lever extending along the base of the bracket 37 and carrying a stud 43 near its inner end, which is overlapped by the adjacent end of the lever 40, where it contains a slot 44 in which the stud 43 works. A link 45 connects the lever 42, at a point thereon near the adjacent end of the companion-lever 40, with the end of the longer arm of the bell-crank 33, whereby the spring 34 normally maintains the fingers 41 resiliently in the position in which they are represented in Fig. 4.

An ordinary Veeder counter 46 is shown to be fastened to the face of the plate 20 above the bracket 23 and has the crank on its operating shaft connected by a rod 47 with the longer bell-crank arm between its ends (Fig. 4) to cause the counter to show the number of times the machine has been operated by working the bell-crank as hereinafter described.

The mouth of the coin-chute is closed, when the magazine hereinafter described, is empty, by a cover 48 on the forward end of an arm 48^a loosely pivoted at its opposite

end to an upwardly projecting ear on the brace 22 and having a link-connection 49 with the end of the shorter arm of a bell-crank 50 fulcrumed on a bearing 51 rising on the adjacent inwardly-turned end of the bracket 37. The longer arm of the bell-crank 50 is slightly bent and performs the function, hereinafter more definitely described, of preventing closure of the coin-chute mouth by the cover 48 until the magazine has become empty.

The magazine 11, which is open along its face and provided with inwardly projecting flanges on its sides for retaining the cartons 12, is of a width to adapt it to extend through the bracket 37, and of the length of the base 10. It is fastened through its back to transverse strips 52 and 53 secured to the face of the base respectively near its upper end and at the lower end of the metal plate 20. These strips serve to space the back of the magazine from the face of the base 10 and to permit the parts of the mechanism in that space to work freely. With the magazine loaded with cartons containing articles to be vended, and the casing covering it in place, the lower outlet-end 11^a of the magazine registers with and curves forwardly toward the discharge-opening 14^a in the casing. In that position of the magazine, also, the points 41^a register with and work through apertures 54 in its sides as do the feet 41^b through the apertures 55 in the same to support the pile of cartons; and the bent longer arm of the bell-crank 50 registers with a vertical slot 56 in the adjacent side of the magazine for the purpose hereinafter explained.

The parts of the mechanism are illustrated in their normal relative positions in Figs. 2 and 5, with a pile of cartons 12 in the magazine resting on the feet 41^b and a follower-weight 57 suspended by a chain from the upper end of the base 10 to bear against the top of the pile for insuring the delivery.

To operate the machine, a suitable coin is inserted into the slot 18 to enter and drop through the coin-chute and lodge in the pocket-member 35 and supplemental member formed by the space produced by the undercut head 27, wherein the coin is arrested in the inner corner of the recess 29 with a portion of its edge in the path of the cam-edge 30^a on the end of the push-bar. By then operating the push-bar that cam-edge bears against the edge of the coin, forcing the latter against the pocket-member 35 and out of the aforesaid supplemental pocket-member, but holding the coin against dropping by its confinement between the lower corner of the recess 29 and the incompletely moved pocket-member. In the meantime, the pawl 31 holds the push-bar against retraction under the force of its retracting spring 58. That partial inward stroke of

the push-bar has caused the coin to turn the bell-crank 33 sufficiently to depress the link 45 and turn the two levers 40 and 42 far enough to cause the points 41^a to spear the ends of the carton immediately above the lowermost and prevent delivery of more than one, the lowermost package. This mutually approaching movement of the points is insufficient, however, to spread apart the feet 41^b far enough to free the lowermost package and enable it to drop for delivery at the casing-opening 14^a. In completing the stroke of the push-bar, the stud 32 encounters and engages the cam-finger and thus effects further turning of the bell-crank to release the coin, which drops into the receptacle 13, and further depression of the link 45 and longer arms of the L-shaped levers on their fulcrums 38, 39, with the result of driving the points somewhat deeper into the carton-ends penetrated by them and withdrawing the supports 41^b from the lowermost package, which thereupon drops to delivery.

On completing the inner stroke of and releasing the push-bar it is retracted by the spring 58 into normal position, and the spring 34 restores the bell-crank 33 and parts connected therewith by the link 45 to their normal positions, wherein the points 41^a are withdrawn through the casing-apertures 54 and the ledges 41^b are protruding into the casing through the apertures 55 for the supporting purpose.

The lowermost package in the magazine bears against the end of the lever 50 to keep the latter out of its path, with the effect of causing the link-rod 49 to keep the pivotally carried chute-cover 48 raised above the mouth of the chute, as represented. When the magazine is empty, the weight of the cover and parts connected with it causes it to drop in front of the chute-mouth, thereby incidentally turning the bent end of the lever 50 through the slots 56 into the magazine, since there is nothing in the latter to obstruct such entry of the lever-end and the accompanying dropping of the cover.

Each complete movement (back and forth) of the bell-crank 33, through its link-

connection 47 with the counter 46, operates the latter.

The somewhat complicated construction of the present machine has rendered necessary, for readily understanding it and the operation, the foregoing detailed description of its parts. I realize, however, that considerable variation is possible in the details of construction thus shown and described, and I do not intend by illustrating such specific or preferred embodiment of my invention to be limited thereto; my intention being in the following claims to claim protection upon all the novelty there may be in my invention as broadly as the state of the art will permit.

What I claim as new and desire to secure by Letters Patent is:—

1. In a package-vending machine involving a casing-covered base, coin-operated mechanism on said base, comprising a bracket, a spring-retracted push-bar supported on the bracket and provided with a beveled inner end and a stud, a head spaced from the base and containing a recess through which the push-bar operates, a spring-retracted bell-crank having a pocket-member adjacent to said head and provided with a cam-finger extending into the path of said stud, and a coin-chute discharging to said pocket-member.

2. In a package-vending machine involving a casing-covered base, coin-operated mechanism on said base, comprising a bracket, a spring-retracted push-bar supported on the bracket and provided with a beveled inner end and a stud, a head forming a coin-lodging space and containing a recess through which the push-bar operates, a spring-retracted bell-crank having a cam-like pocket-member adjacent to and cooperating with the space under said head and provided with a cam-finger extending into the path of said stud, and a coin-chute discharging to said pocket-member and space.

HERBERT S. MILLS.

In presence of—

A. W. LOBB,
M. B. MILLS.