Oct. 7, 1947. F. H. OSBORNE 2,428,579

PACKAGE VENDING APPARATUS

Filed July 13, 1944

Fig. 1.

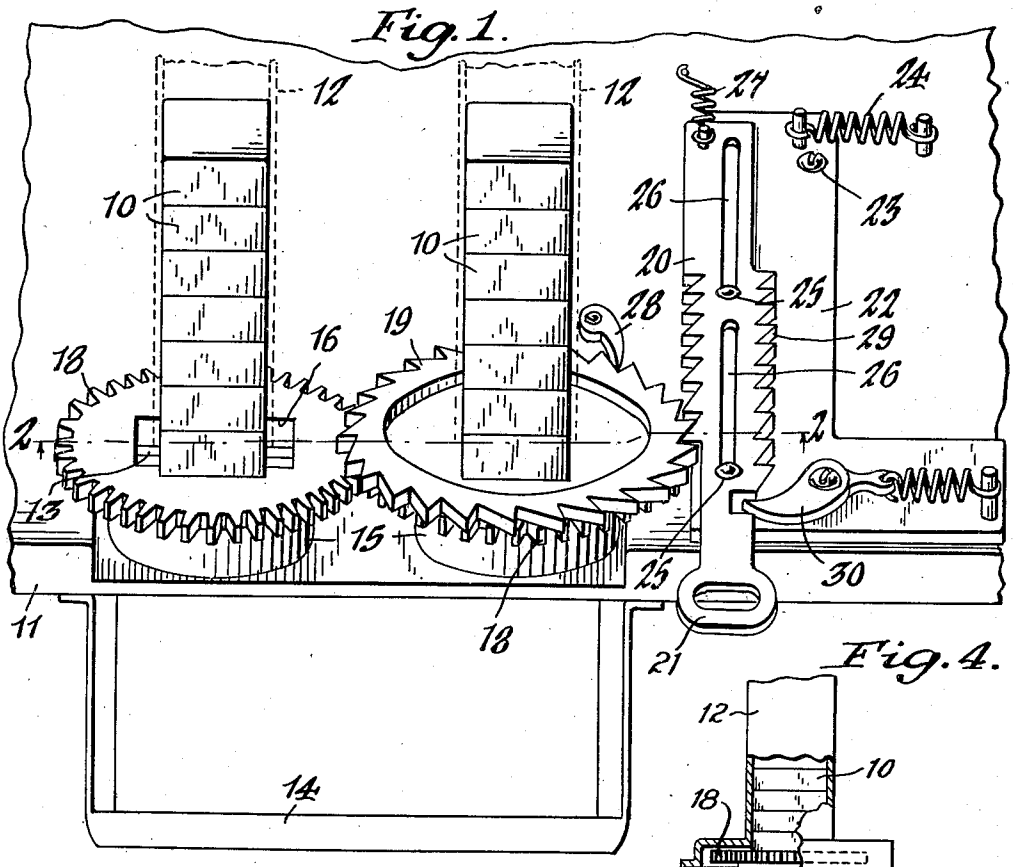
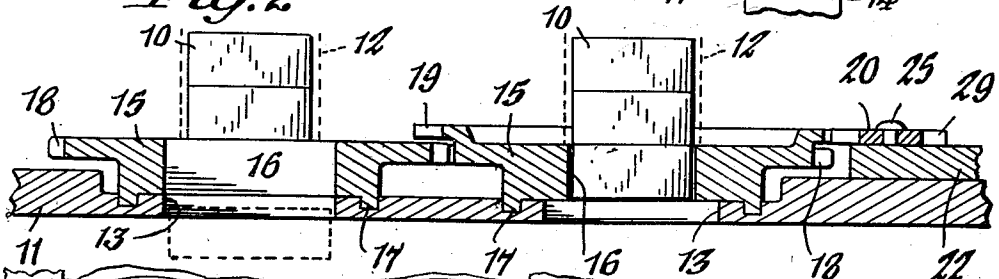


Fig. 4.

Fig. 2



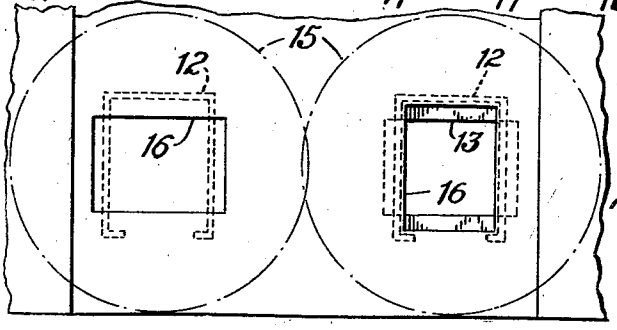


Fig. 3

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Patented Oct. 7, 1947

2,428,579

UNITED STATES PATENT OFFICE

2,428,579

PACKAGE VENDING APPARATUS

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Application July 13, 1944, Serial No. 544,709

1 Claim. (Cl. 312—63)

1

This invention relates generally to certain new and useful improvements in vending machines, but more particularly to an apparatus for dispensing packages or the like from a magazine.

One of its objects is to provide an apparatus of this character which is so designed and constructed as to render it in constant readiness to deliver a package and simultaneously with the dispensing of a package to the patron to discharge another package from the magazine into the package-receiving and dispensing-control means of the apparatus.

Another object of the invention is to provide the apparatus with a novel means for controlling the successive discharge of the packages from the magazine into a revolving carrier and from the latter to the patron, the carrier having a package-receiving opening therein adapted to assume different relative positions for registration in one position with the magazine to receive a package therefrom and in another position to register with the discharge station of the apparatus for dispensing the package to the patron.

A further object is to provide an apparatus for dispensing package merchandise which is designed during its operation to effectually separate or break the packages loose from one another should they have a tendency to stick together in the magazine.

A still further object is to provide a package dispensing apparatus which is simple, compact and inexpensive in construction, which is positive and reliable in operation, and which is not liable to get out of order.

Other features of the invention relate to the construction and arrangement of parts hereinafter described and particularly pointed out in the appended claim.

In the accompanying drawings:

Figure 1 is a perspective view of the dispensing apparatus embodying my invention. Figure 2 is an enlarged cross section thereof taken in the plane of line 2—2, Figure 1, showing the parts of one unit in a package-dispensing position and the parts of the companion unit in a position for receiving a package from the magazine. Figure 3 is a fragmentary top plan view of the supporting table or platform showing the disposition of the discharge or dispensing opening therein in relation to the magazine, the latter being represented in dotted lines. Figure 4 is an end view, partly in section, showing the disposition of the magazine in relation to the companion dispensing control unit.

2

Similar character of reference indicate corresponding parts throughout the several views.

In the embodiment of the invention shown in Figures 1–3, which is designed for the handling and dispensing of rectangular-shaped packages 10, such for example as cigarette packages, 11 indicates a supporting table or platform on which the working parts of the apparatus are mounted and 12, 12 indicate a pair of magazines in which the packages to be dispensed are stacked. These magazines are disposed side by side above the platform and supported in any suitable fashion in a substantially upright position as shown in Figure 4. Two magazines are shown, by way of example, in the drawings with accompanying dispensing control units whereby when one of the magazines is operative to discharge a package therefrom into its dispensing control unit, the companion unit is operative to dispense its package to the patron or customer. The platform is provided in axial alinement with the respective magazines with companion dispensing openings 13, 13 which are of the same shape as the packages but slightly larger to permit their ready discharge therethrough by gravity onto the receiving trough 14 suspended from the underside of the platform. These openings are disposed with their longer dimension out of register with the longer dimension of the packages as they are positioned in the magazine, and by preference at substantially right angles to the disposition of the magazine which necessitates a turning movement of each package from its magazine-contained position to a position in registering alinement with the companion platform-dispensing opening 13.

Interposed in the space between the discharge ends of the magazines 12 and the top side of the platform 11 and axially of the dispensing openings in the latter are revolvable package-conveying members or carriers 15, 15 constituting dispensing control units, each of which functions at one time to support the packages contained in the respective magazine and at another time to receive the lowermost package from that magazine, part it from the stack and convey it to the discharge station or to the companion dispensing opening 13 in the platform 11. Each revolvable member contains an axially-disposed opening 16 therein of a shape and size to receive a package from the magazine when such opening is presented in alined registration with the companion magazine. The axial dimension of the package-receiving opening 16 in the revolvable member is equal to the vertical dimension or thickness of

the packages 10 and when one of the latter is deposited into such opening it rests flatwise on the platform 11 with its top side flush with the contiguous top surface of such revolvable member, so that when the latter is turned the package contained therein is parted from the stack and brought into registering relation with the platform-opening 13 and dispensed therethrough by gravity.

Each package-conveying member 15 is supported on the platform 11 and journaled in a suitable bearing 17 applied thereto, and they are so connected as to be turned simultaneously in opposite directions through an operative stroke of approximately 90 degrees. For this purpose these members are provided thereon with intermeshing spur gears 18 of equal size and applied to one of them is an actuating ratchet wheel 19 adapted to be driven in one direction to impart an operative stroke to the dispensing control units by a manually-actuated rack bar 20 disposed in meshing engagement therewith and having a handle 21 at its front end. This rack bar is disposed transversely of the platform and is mounted on a laterally swinging plate 22 pivoted at its rear end at 23 to the platform and having a spring 24 connected thereto for urging the rack bar into engagement with the ratchet wheel. Guide pins 25 and slots 26 serve to guide the rack bar and limit or define its fore and aft movements, and after each operative stroke a spring 27 connected to this bar serves to return it to its initial position. A hold-back pawl 28 in engagement with the ratchet wheel 19 prevents turning of the same and its associated parts during the spring-urged return movement of the rack bar. During such return movement the rack bar together with its supporting plate 22 is cammed to the right, viewing Figure 1, by its teeth sliding over those of the ratchet wheel. To compel movement of the rack bar through its full stroke it is provided along its outer edge with a row of ratchet teeth 29 and cooperating therewith is a spring-pressed pawl 30.

In operation, assuming the parts to be in a normal or at rest position shown in Figure 1, the left hand dispensing control unit is in its dispensing position, having just discharged a package through the companion platform-opening 13 and with the lowermost package in its magazine resting in endwise supporting engagement across the smaller dimension of the opening 16 in the companion package-conveying member 15. The right hand dispensing control unit is in its package-charged position, having just received the lowermost package in its magazine with the package resting on the platform at a right angle across its companion discharge opening 13. Thus, when an operative stroke is imparted to the rack bar 20 to turn the package-conveying members a quarter of a revolution, the package in the right hand dispensing unit is moved into register with the platform-opening 13 and is discharged by gravity therethrough into the trough 14, and the lowermost package in the left hand unit is dropped into the companion package-conveying member as soon as the receiving opening 16 therein is presented in register with such package, the package being supported on the platform crosswise of its companion discharge opening 13. Should the packages have a tendency to adhere to one another, the rotation of the conveying member relative to the magazine will effectually part or separate the lowermost package from the adjoining one and there is therefore no tendency to plug or jam the apparatus.

I claim as my invention:

A package dispenser, comprising a pair of magazines disposed side by side in spaced relation for receiving packages in stack-like fashion to be discharged individually from the bottom thereof, a platform disposed in spaced relation beneath the discharge ends of said magazines and having a pair of companion openings therein for the discharge of the packages, a pair of revolving, package-conveying members disposed in the space between said magazines and said platform and each constituting, at predetermined times, a support for the stacked packages in the companion magazines, each of said members having an opening therein conforming in shape to the packages for registration at one time with its companion magazine to receive a package therefrom in supporting relation to the platform and at another time for registration with its companion platform-opening to discharge a package therethrough, intermeshing gears applied to said package-conveying members and including a ratchet wheel associated with one of them, a plate pivoted to said platform alongside the ratchet wheel for movement toward and from the same, a reciprocating rack bar guided on said plate in operative engagement with said ratchet wheel, and means connected to said plate and platform for urging the plate in a direction to maintain its rack bar in engagement with the ratchet wheel.

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