May 12, 1931. E. M. JONES 1,804,534

PACKAGE DISPENSING APPARATUS

Filed Jan. 7, 1929 3 Sheets-Sheet 1

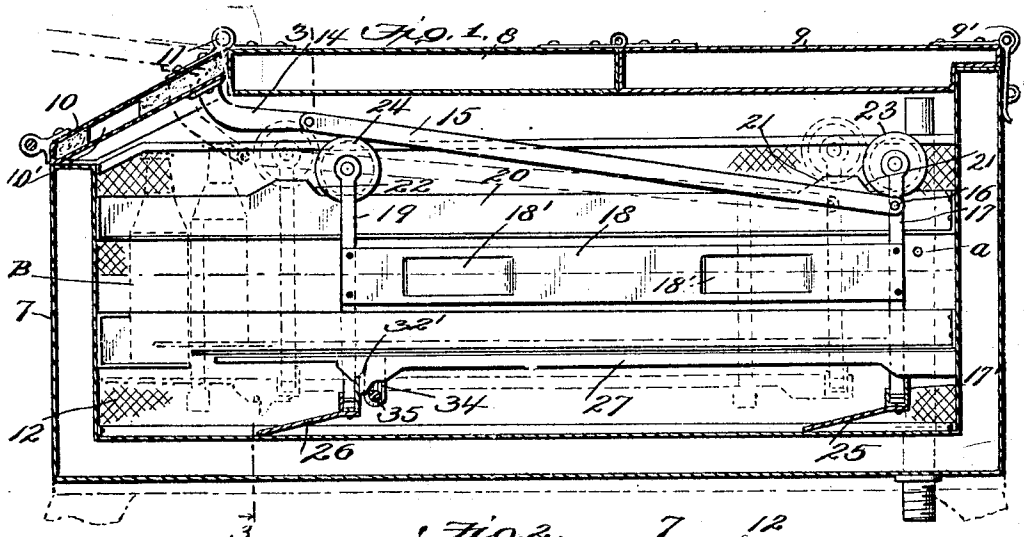


Fig. 1.

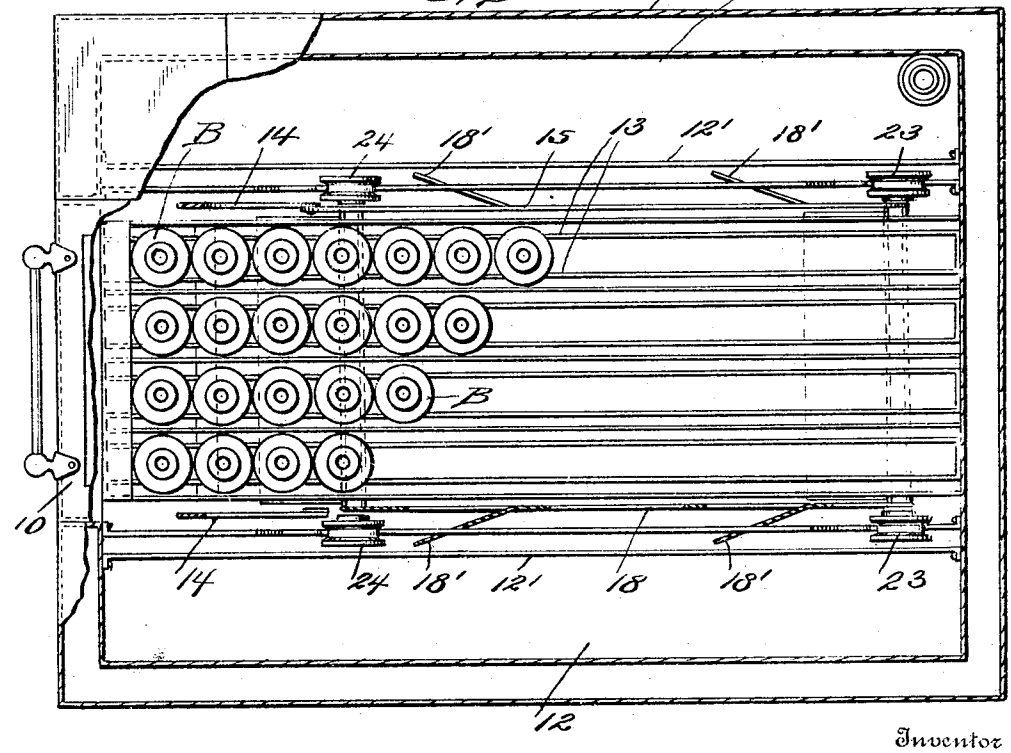


Fig. 2.

Inventor

Elmer M. Jones

By James L. Morris Attorney

May 12, 1931. E. M. JONES 1,804,534

PACKAGE DISPENSING APPARATUS

Filed Jan. 7, 1929 3 Sheets-Sheet 2

Fig. 3.

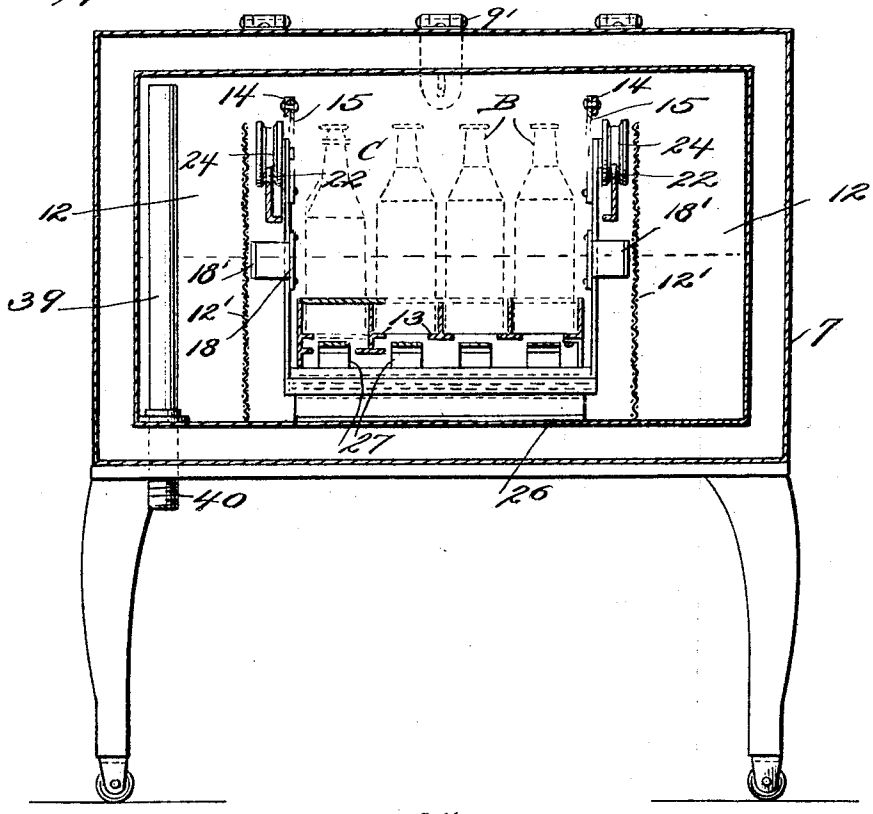
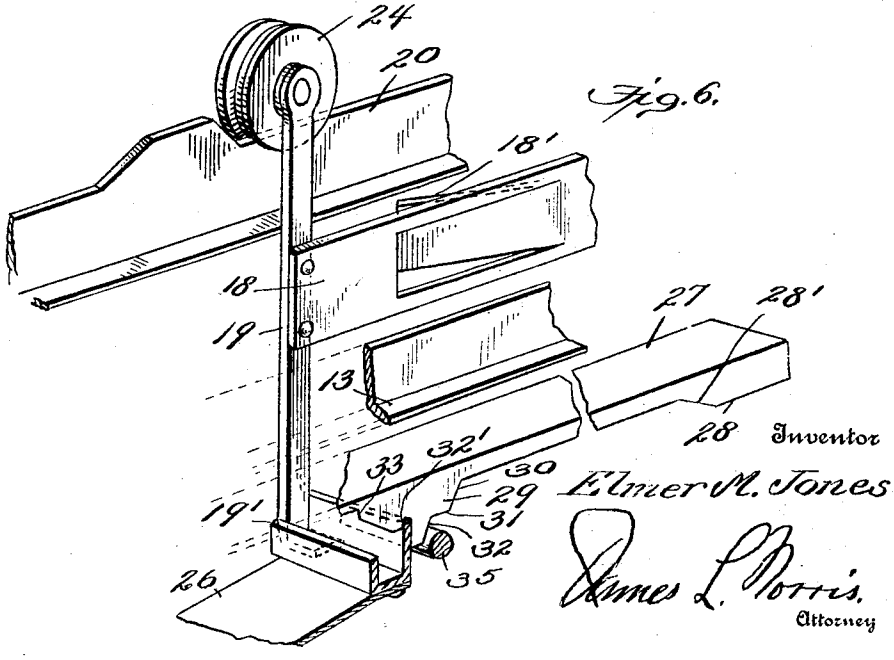


Fig. 6.



Inventor
Elmer M. Jones
James L. Morris.
Attorney

May 12, 1931. E. M. JONES 1,804,534

PACKAGE DISPENSING APPARATUS

Filed Jan. 7, 1929 3 Sheets-Sheet 3

Fig. 4.

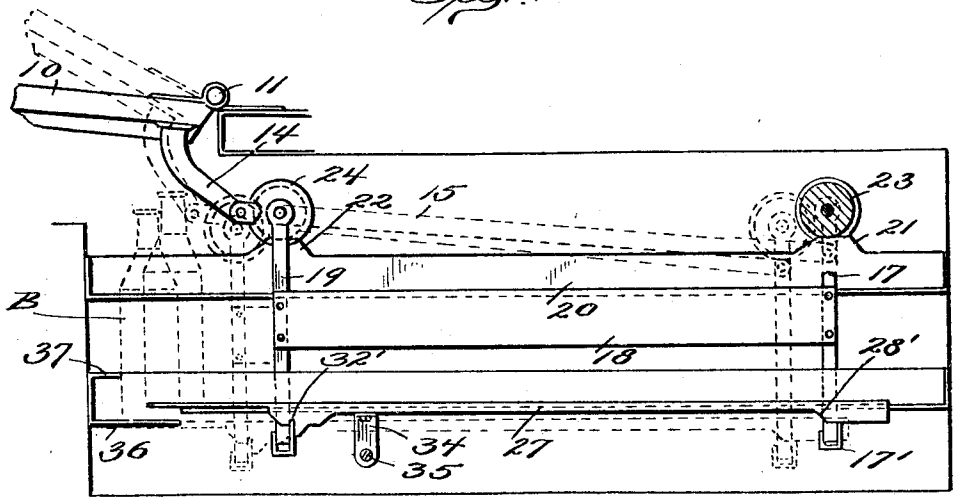
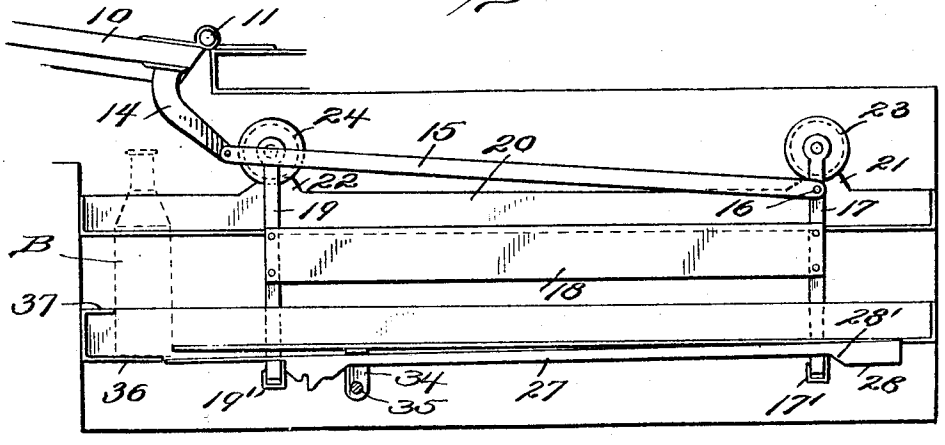


Fig. 5.



Inventor
Elmer M. Jones

By James L. Norris.

Attorney

Patented May 12, 1931 1,804,534

UNITED STATES PATENT OFFICE

ELMER M. JONES, OF ATLANTA, GEORGIA

PACKAGE DISPENSING APPARATUS

Application filed January 7, 1929. Serial No. 330,844.

This invention relates to improvements in package dispensing apparatus, one object of the invention being the provision of an apparatus which will dispense packages in an upright position and which is particularly desirable for use in dispensing bottled drinks, the apparatus being so constructed that, by the manipulation of the closure of the outlet of the container the packages are successively moved, one at a time, into position to be accessible and removed through said outlet, the closing of the closure acting to return the feeding mechanism to normal or reset position.

A further object of this invention is the provision of a device of this character which may be used for delivery of a single package from a single series of packages or for delivery of one or more packages from a plural series of packages and which may be used with or without cooling means for the packages, it being preferable and desirable to use cooling means when bottles of soft drinks are to be dispensed.

With the foregoing and other objects in view, which will appear as the description proceeds, the invention resides in the combination and arrangements of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed can be made within the scope of the claims without departing from the spirit of the invention.

In the accompanying drawings:—

Fig. 1 is a longitudinal sectional view through the container showing the parts in normal position with the exit closure closed, dotted lines illustrating the position assumed by the several parts when the closure is only partially opened;

Figure 2 is a longitudinal sectional view through the upper portion of the container;

Figure 3 is a vertical cross-section taken on line 3—3 of Figure 1;

Figure 4 is a diagrammatic view showing two positions assumed by the several parts during the delivery of a package to the outlet;

Figure 5 is a view similar to Figure 4 showing the parts in the position they assume just before they are fully returned to normal position by the closing of the closure or lid; and

Figure 6 is a perspective view of one of the tracks, the forward portion of one side of the delivery frame and adjacent part of the package guideway.

Referring to the drawings, the numeral 7 designates the container, which may be made in any desired shape, but is here shown as an insulated body in order that the outside atmosphere may affect the inside as little as possible, a fixed portion 8 sealing the central portion of the top and a hinged lid 9 having a hasp 9′ being provided to close the opening for the admission of the packages, here shown as bottles B. A lid or closure 10 is hingedly connected, as at 11, to the section 8 for closing the outlet opening 10′ of the container, through which outlet the desired bottle or bottles B may be removed.

The container as here shown is divided into a central compartment C and the two ice compartments 12 by means of a pair of vertical foraminous partitions 12′ which permit, as will presently appear, circulation of the cooling water from around the ice into the compartment C, and also prevent the ice from leaving the respective compartments 12.

Disposed within the compartment C and extending longitudinally thereof are supports 13 which are here shown arranged in four spaced pairs, but any number may be used as the occasion may require. These are fixed and support the bottles B so that the same may be properly elevated, as will presently appear, and deposited below the outlet 10′.

A pair of curved arms 14 each has its forward and rear ends pivotally connected, respectively to the under side of the hinged lid 10 and the forward end of link 15, and these links are connected at their rear ends, as at 16, to the two uprights 17, the lower ends of said uprights being connected by means of a cross-bar 17′, the purpose of which will presently appear.

Connected to each of the uprights 17 and extending forwardly therefrom is a plate

18, the forward ends of which plates are connected to the uprights 19 which, in turn, have their lower ends connected together by means of a cross-bar 19′, the purpose of which will presently appear. By this arrangement a framework, constituting the main carrying portion of the delivery mechanism, is formed while disposed in the upper portion of the container adjacent the partitions 12′ are two tracks 20, each of which is constructed similarly and is provided with a pair of ramps 21 and 22. Carried in the upper end of each standard 17 is a pulley or grooved wheel 23, and in the upper end of each standard 19 is a similar pulley or grooved wheel 24, these wheels travelling on the tracks 20 and supporting the frame therefrom. By this means, when the lid 10 is raised, the frame is moved forwardly so that the wheels 23 and 24 will roll upon the tracks and simultaneously ride up the ramps 21 and 22 and thus elevate the cross-bars 17′ and 19′ and with them lift the bottle-elevating members 27, which are longitudinally slidable on the cross-bars 17′ and 19′. As shown in Figure 6, the under surface of each elevating member 27 adjacent its rear end is inclined downwardly and rearwardly, as at 28, and then extends rearwardly parallel with the upper surface of said member to form a cam surface 28. A second cam surface 29 is formed on the under side of each elevating member 27 adjacent its forward end. For this purpose the under surface of each member 27 is inclined downwardly and forwardly, as at 30, then extends forwardly as at 31 substantially parallel to the upper surface of said member, as at 31, then downwardly and forwardly, as at 32, and then extends upwardly and forwardly to form a shoulder 33 and is then inclined upwardly and forwardly. A rounded depression 32′ is formed in the under side of each member 27 in advance of the shoulder 33 and rearwardly of the upwardly inclined portion for a purpose to be hereinafter set forth. Mounted within the container in a fixed position and supported in the depending lugs 34 is a cross-bar or rod 35, the same being in the path of the inclined surfaces 30 and 32 of the members 27 and is engaged by said surfaces upon the rearward movement of the members 27, the purpose of which will appear.

The cross bars 17′ and 19′ are preferably each formed of a section of channel iron of which the rear vertical member has its edge extending above the edge of its other member.

When the parts are in their normal position, shown in Figure 1, the pulleys or grooved rollers 23 and 24 are located, respectively, rearwardly of the ramps 21 and 22, the cam surfaces 28 of the bottle elevating members 27 rest upon the higher edges of the channel-shaped cross bar 17′, and the higher edge of the cross bar 19′ is seated in the depressions 32′ of the members 27.

A plurality of bottle receptacles 36 are secured to the inner side of the front wall of the container, one opposite the forward ends of each pair of bottle supports 13. Each of the bottle receptacles 36 has a limiting strip 37 extending therefrom at a distance from its base, and the base of each of said bottle receptacles is formed by a pair of spaced fingers. When the bottle elevating members 27 are moved forwardly, downwardly and rearwardly, as will be explained later, the forward end of each of said members will pass between the fingers constituting the base of one of the bottle receptacles 36 to deposit a bottle in each of said receptacles.

Assuming that the parts are in the position as shown in Figure 1, and that there are no bottles in the receptacles 36, movement of the lid 10 into open position will, through the links 15, cause the frame, including the two members 17 and 19 connected by the strips 18, to ride upon the tracks 20 over the ramps 21 and 22. During this movement, the bars 17′ and 19′ being in engagement with the cam surfaces 28 and 29 of the bottle-elevating members 27, will lift said members to engage the bottoms of all of the bottles resting upon the respective guides 13 and thus elevate said bottles above and out of contact with said guides. The continued movement of the lid to an upright position will thus move the frame and the members 27 with their bottles forwardly, and if no bottles are in the exit or delivery receptacles 36, the several parts will be moved first into the position indicated in broken lines in Figure 1 and then into the position shown in broken lines in Figure 4, and as the wheels or pulleys 23 and 24 pass off of the ramps 21 and 22 the forward ends of the members 27 will move downwardly and deliver the bottles carried thereby to the receptacles 36 and then contact with the front wall of the container. The continued forward movement of the frame will cause the cross-bars 17′ and 19′ to ride off the cam surfaces 28 and 29, respectively, which will lower the upper surfaces of the members 27 below the fixed bottle supports 13. On the other hand, if any of the receptacles 36 still contains a bottle, the forward end of the delivery member 27 in line therewith will engage such bottle and thus will be checked in its forward movement and on continued movement of the delivering frame will slide rearwardly and from engagement with the respective cams 28 and 29, and thus assume the position shown in Figure 5 without delivering a bottle or bottles to such receptacle or receptacles. Upon the closing of the lid 10, the frame will be moved rearwardly, and

the wheels 23 and 24 riding over the ramps 21 and 22, will lift said frame but inasmuch as the members 27 have all fallen to the position shown in Figure 5, the bar 19′ will engage the shoulder 33, and as the members 27 are below the guides 13, the bottles previously supported by the members 27 will have been deposited upon said guides and will not be engaged by the members 27 in their rearward movement, the final closing of the lid causing the inclined surfaces 30 to be engaged by the fixed rod 23 and the bar 17′ to engage the inclined surface 28′ of the cam 28, causing the elevation of said member 27 to a reset position with the end of the member 27 abutting the rear wall of the container, as clearly illustrated in Figures 1 and 2.

Where the present device is used for cooling soft drinks, ice is placed in the compartments 12 and water is also placed within the container up to approximately the level *a* of the outlet standpipe 39 provided with the threaded outlet 40. It is also desirable to circulate the water within the present container so that the packages or bottles contained therein will be more efficiently cooled, and at the same time the colder water at the bottom of the container will be circulated through the body thereof. In order to accomplish this, the plates 18 are provided with fins 18′, the fins of each plate being bent toward the fins of the other plate, so that when the carriage is moved forwardly, the water is forced inwardly through the openings formed by the fins against the upright bottles, while the two fins 25 and 26 extending forwardly and downwardly from the cross-bars 17′ and 19′, respectively, will cause the water adjacent the bottom of the container to be directed upwardly and toward the bottom of the bottles, these fins providing an agitating means which tends, as the carriage is moved forwardly, to agitate the water and force it inwardly and upwardly.

From the foregoing description, taken in connection with the drawings, it is evident that with a device of this character packages may be dispensed properly, one at a time, and that a plural number of dispensing guideways and delivering means may be controlled simultaneously through a single medium, for instance, the exit lid 10. Also, regardless of whether or not the delivery receptacle contains a package, the mechanism will operate efficiently without disturbing the package in such receptacle and, where the receptacle is empty, the desired foremost package will be delivered thereto, thus providing a mechanism which will feed forwardly, when necessary, one package at a time.

It will be noted that where a package or bottle is occupying the receptacle opposite any of the members 27, the movement of the lid does not lift such member, and that, therefore, the weight of the bottles of only those rows opposite which there is no bottle in the receptacle 36 is imposed upon the movable frame; that is, should all of the front or dispensing receptacles be occupied when the lid is raised, the bottles in the rows are undisturbed and their elevating and shifting members 27 will be inoperative to move the rows of bottles above the same forwardly.

Since, when the frame is moved forwardly, one edge of the cross bar 19′ is in the recess 32′, the resistance offered to the elevator 27 against its sliding off of the cross-bar 19′ can be predetermined and thus made to suit any requirement. Also, the yielding connectors between the lid and the elevators eliminate any possibility of the machine jamming.

I claim:—

1. A package dispensing apparatus including a container, a movable exit closure for said container, a guideway for the packages mounted in said container, a receptacle for one package independent of the guideway and adjacent the exit of the container, and means operative by the opening movement of the closure to engage and move all of the packages on the guideway toward said receptacle, deliver one of them to said receptacle and deposit the remaining packages on the guideway, said means being restored to normal position by the closing movement of said closure.

2. A package dispensing apparatus comprising a container having a package delivery opening, a package receptacle adjacent said delivery opening, a closure movable relatively to said opening for covering and uncovering said opening, fixed means in said container to support a plurality of packages, and means actuated by the movement of said closure in one direction for lifting packages from said package supporting means, moving them toward and depositing one of them in said receptacle and depositing the others on said guideway, said last-named means comprising a member normally below said guideway and movable upwardly, then longitudinally and then downwardly relatively to said guideway.

3. A package dispensing apparatus including a container having a delivery opening, a closure movable relatively to said opening for covering and uncovering the latter, a guideway for the packages mounted in said container, a receptacle for one package adjacent the exit of the container, a package-engaging member disposed adjacent the guideway and normally out of engagement with the packages supported by the guideway, and elevating and moving mechanism operably connected to the clo-

sure, said mechanism being operable by the opening movement of the closure to elevate and move said package engaging member toward said receptacle for lifting the packages from the guideway and depositing one of them in said receptacle, said mechanism being operable by the movement of said closure to closed position to restore said package engaging member to normal position and deposit the remaining packages on said guideway.

4. A package dispensing apparatus including a container having a package exit, a closure movable relatively to said exit for covering and uncovering said exit, a guideway for the packages mounted in said container, a receptacle for one package adjacent the exit of the container, a package-engaging member disposed adjacent the guideway and normally out of engagement with the packages supported by the guideway, and elevating and moving mechanism operably connected to the closure and operable by the closure for moving the package-engaging member into and out of package-engaging position as the closure is moved into and out of closed position, said package engaging member remaining disengaged from the packages during the early part of the closing movement of the closure and being restored to normal position by said elevating and moving mechanism during the latter part of the closing movement of the closure.

5. A package dispensing apparatus including a container having a package exit, a closure movable relatively to said exit for covering and uncovering said exit, a guideway for the packages mounted in said container, a receptacle for one package adjacent the exit of the container, a strip disposed adjacent to and below the guideway, said strip having a plurality of cam surfaces projecting from its lower face, a longitudinally movable carriage mounted within the container and operably connected to the closure for reciprocation by said closure during the opening and closing movements of the latter, said carriage having members normally underlying the cam surfaces of said strip and slidable out of engagement therewith to permit the depression of said strip relatively to said carriage, means associated with said carriage and operative by the movement of the carriage in one direction to elevate the carriage and said strip to lift the packages from said guideway and carry them toward said receptacle, the cam surfaces of said strip being caused as the carriage approaches the end of such movement to slide off the underlying members of the carriage for depositing one of the packages in said receptacle and the other packages on said guideway.

6. A package dispensing apparatus including a container, a horizontal package supporting guideway mounted in said container, a member movable longitudinally of and vertically through said guideway, means for imparting longitudinal reciprocating movement to said member, means operative when said member is moved longitudinally in one direction to cause said member to move upwardly and through said guideway to lift the packages from said guideway and then downwardly through and below said guideway to deliver one of the packages to said receptacle and to deposit the other packages on said guideway, and means operative when said member is moved longitudinally in the opposite direction to restore said member to normal position.

7. A package dispensing apparatus including a container having an exit opening adjacent one of its ends, a movable exit closure for said exit, a package supporting guideway having a longitudinally disposed opening therethrough, a package receptacle and delivery member at the forward end of the container and in alinement with the guideway, a strip normally below and adjacent the opening of the guideway and capable of movement through the opening of said guideway and longitudinally of the latter, a frame comprising two substantially U-shaped members connected together in spaced relation with the connecting portion thereof below and engaging said strip, means connecting said frame to the lid and operative to move the frame forwardly when the lid is opened and to move the frame rearwardly when the lid is closed, means disposed transversely of the container for engaging and elevating the forward end of the strip when the frame is moved rearwardly, means for elevating the two connecting portions of the U-shaped members and the strip when the frame is moved forwardly, and coacting supporting and guiding means for the frame for elevating and lowering the frame during the opening and closing of the lid.

8. A package dispensing apparatus including a container having an outlet opening, a movable closure for said opening, a package supporting guideway having a longitudinally disposed opening therethrough, a package receptacle and delivery member at the forward end of the container and in alinement with the guideway, a strip normally below and adjacent the opening of the guideway and capable of movement through the opening of the guideway and of longitudinal movement relative thereto, a delivery frame comprising two substantially inverted U-shaped members connected together in spaced relation on the connecting portions of which U-shaped members said strip is slidably supported, means connecting said frame to said closure and operative to move said frame forwardly when the closure is opened and to move said frame rearwardly

when said closure is closed, a cross-bar disposed transversely of the container for engaging and elevating the forward end of the strip as the frame is moved rearwardly, and a pair of tracks mounted in the container and provided each with two ramps, the terminals of the U-shaped members during their reciprocation being slidable upon said tracks and engageable with the ramps whereby their connecting portions and the strip are elevated during the engagement with the ramps and lowered when in normal engagement with the tracks.

9. A package dispensing apparatus including a container having an exit, a movable exit lid for said exit, a pair of tracks in said container, a carriage slidably mounted upon said tracks for movement toward and away from said exit, said tracks being provided with portions to elevate the carriage as the carriage is moved thereabong, means operably connecting the carriage to the lid whereby the carriage is moved forwardly as the lid is opened and is moved rearwardly when the lid is closed, means for supporting packages within the container, and means carried by the carriage and disposed adjacent the package-carrying means, said last named means engaging and carrying said packages forwardly with the carriage when the lid is opened and being disengaged from the packages when the lid is closed.

10. A package dispensing apparatus including a container having a package exit, a movable exit closure for said container, a guideway for packages, a receptacle for one package adjacent said exit and in alignment with said guideway, and package delivery mechanism operatively connected to the closure and adjacent the guideway, said mechanism comprising a frame movable toward and away from said receptacle and a member slidable on said frame for engaging the packages and carrying them forwardly and of which the forward movement is prevented by a package already occupying said receptacle.

11. A package dispensing apparatus according to claim 1, wherein the means for moving the packages toward the receptacle comprises a longitudinally slidable member which when the package receptacle is occupied engages with and is prevented from having forward movement by said occupying package.

12. A package dispensing apparatus according to claim 2, wherein the means for moving the packages toward the receptacle comprises a member which when the package receptacle is occupied engages the package in such receptacle and is checked in its delivery movement.

13. A package dispensing apparatus according to claim 3, in which when the package receptacle is occupied the package engaging member is held against delivery movement by the occupying package.

14. A package dispensing apparatus according to claim 4, in which when the package receptacle is occupied the package engaging member is held against delivery movement by the occupying package.

15. A package dispensing apparatus according to claim 5, in which when the package receptacle is occupied, the strip in its delivering movement engages the occupying package and is prevented from further movement in delivery direction.

16. A package dispensing apparatus according to claim 7, in which a package in the receptacle will be abutted by the forward end of the strip and will act to preent further delivery of a package.

17. A package dispensing apparatus according to claim 8, in which a package in the receptacle will be abutted by the forward end of the strip and will act to prevent further delivery of a package.

18. A package dispensing apparatus according to claim 9, in which a delivered package when not removed after delivery acts to halt the forward movement of the remaining packages.

In testimony whereof I have hereunto set my hand.

ELMER M. JONES.