March 13, 1956 W. F. SHEPHERD 2,738,102

VENDING MACHINE DELIVERY MECHANISM

Filed March 27, 1951 2 Sheets-Sheet 1

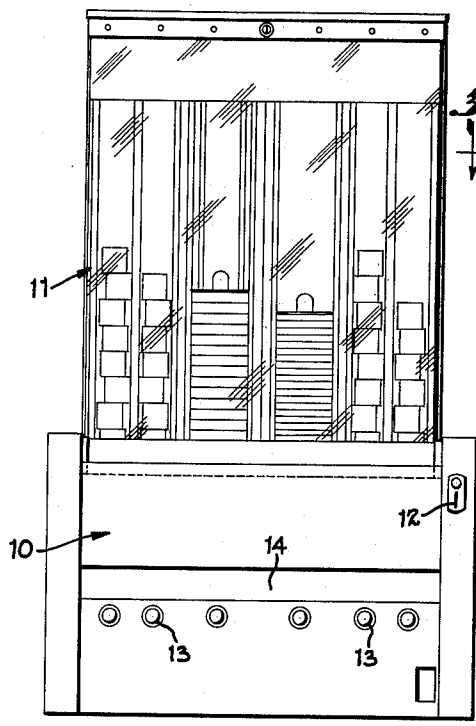


Fig. 1

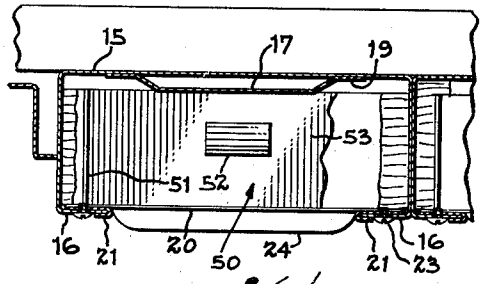


Fig. 3

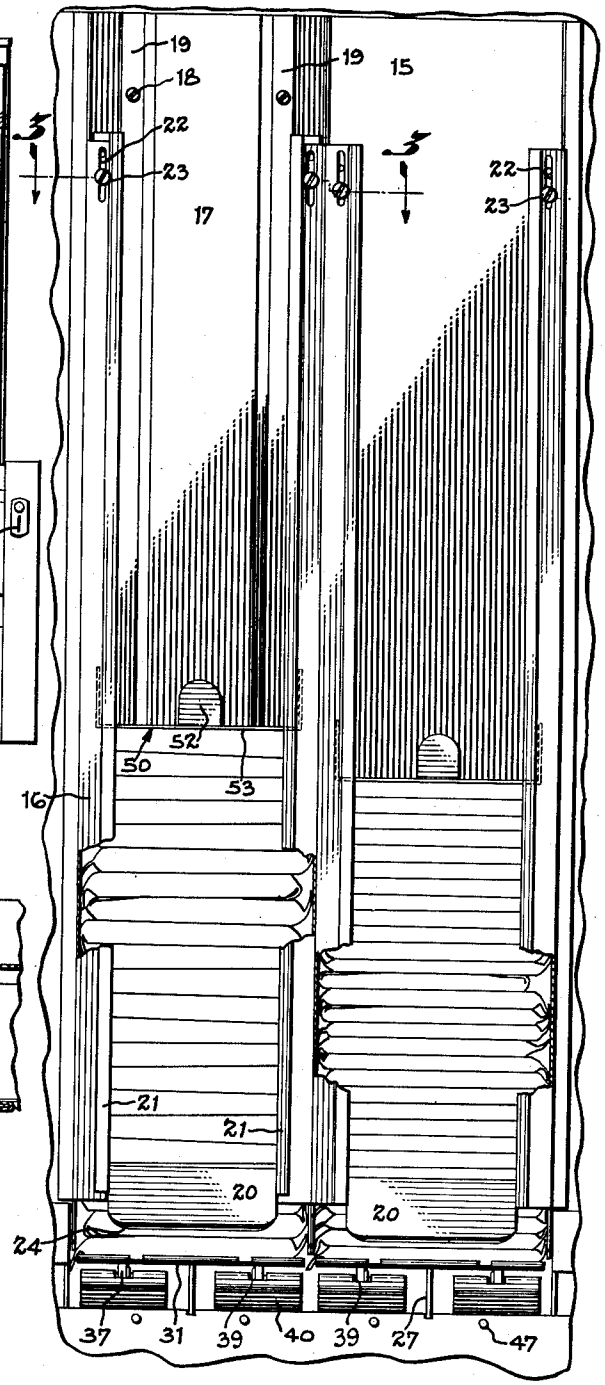


Fig. 2

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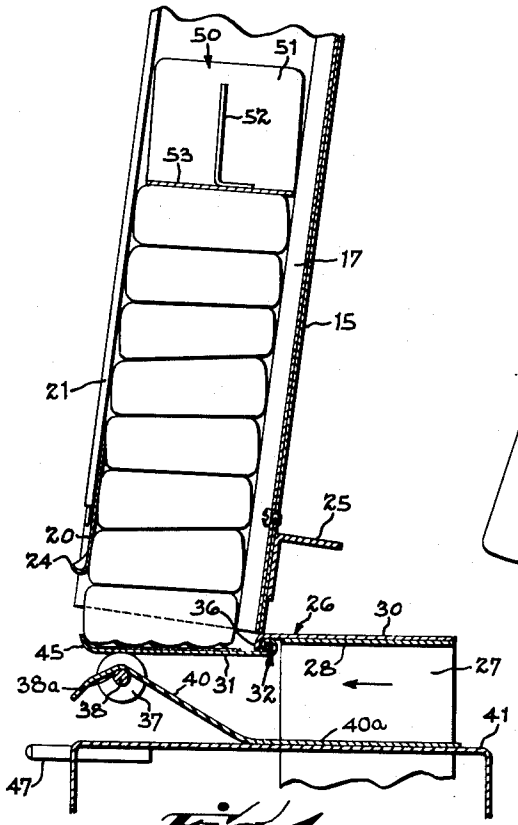


Fig. 4

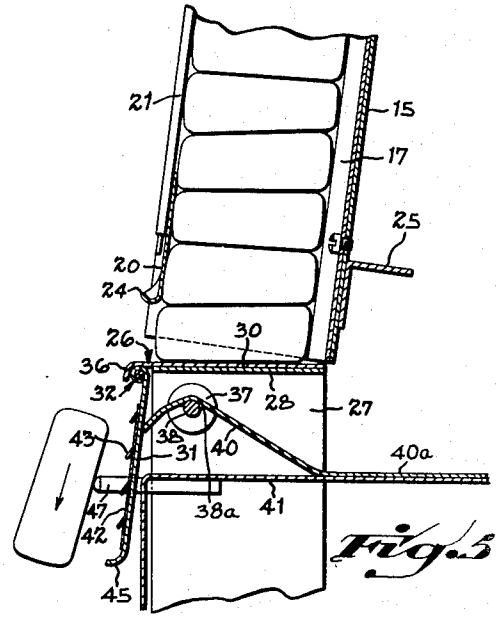


Fig. 5

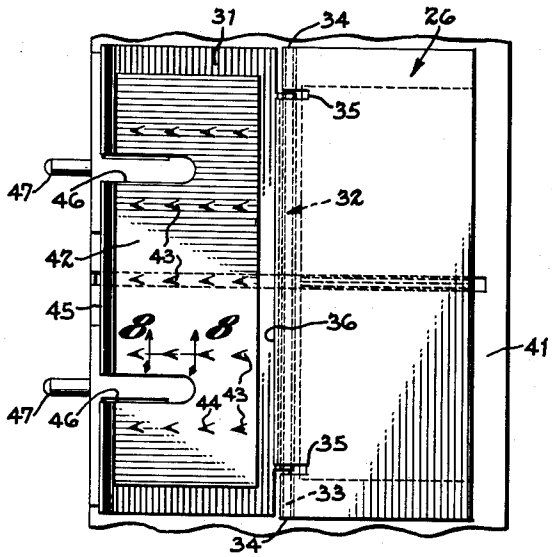


Fig. 7

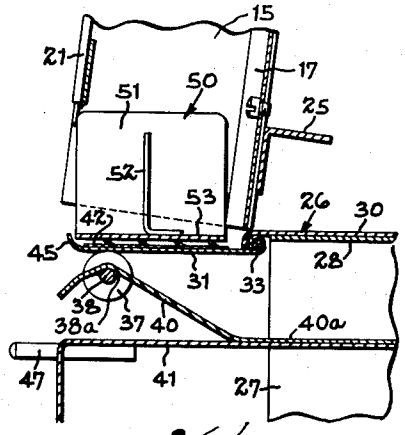


Fig. 6

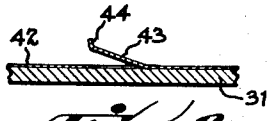


Fig. 8

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2,738,102

VENDING MACHINE DELIVERY MECHANISM

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Application March 27, 1951, Serial No. 217,737

8 Claims. (Cl. 221—243)

This invention relates to coin operated vending machines and particularly to mechanism for delivering one package at a time from the bottom of a stack of packages. More specifically, the invention concerns delivery mechanism which is designed to dispense packages of less than uniform size or shape.

The problem of dispensing non-uniform packages is one which has troubled vending machine designers for a number of years. With merchandise such as packages of peanuts and certain types of candy bars, it is impossible for the packages or manufacturers to make each and every article exactly the same size. For the most part, non-uniform types of packages have been dispensed by vending machines having a series of individual compartments, one for each article, and in these machines it was necessary to provide indexing mechanism to bring each compartment in turn to a discharge point. Such constructions have been expensive to manufacture, difficult to service, and necessarily quite large.

Both from a servicing point of view and from an economy of space point of view, it is more desirable to have the packages to be dispensed stacked one directly on top of the other with no dividing members between them. This arrangement is used in machines designed to dispense chewing gum or cigarettes, but there is a decided difference between these articles and loosely packed bags of nuts, or candy bars which vary in size.

It is not difficult to separate one uniform and rigid package from the other at the discharge point, but when the stacked packages are deformable and vary in size also, the dispensing mechanism must be such that it automatically compensates for these factors. The stacking of non-uniform articles is no particular problem if the articles have some semblance of shape. The difficulty arises right at the discharge point and entails providing dispensing mechanism which is not dependent on a package being a particular size nor on its being rigid.

However, the problem of dispensing non-uniform articles is further complicated by the fact that vending machine delivery mechanism in general must be absolutely fool-proof, discharging one package, but only one, each time that a coin is inserted in the machine and the appropriate lever operated. This is of considerable practical importance, not only to protect the customer from wasting his coin, but to protect the machine from the spontaneous wrath of the customer who has pulled at the lever fruitlessly. The problem is further complicated by the fact that the machine must be absolutely tamper-proof so that no package is dispensed unless a coin is inserted into the machine. A shortcoming of a machine in this respect is instantly taken advantage of, if for no other reason than the sport involved in "beating" the machine.

An additional complication arises because of the fact that tastes differ with localities, and in order for the machines to be efficient they should accommodate a variety of packaged articles. Thus, it is highly desirable that

the delivery mechanism accommodate packages of different sizes and shapes, taking into consideration the variations between different kinds of articles, and also the variations in size of articles of a particular kind.

With these considerations in mind, it is the primary object of the invention to provide efficient and economical delivery mechanism for dispensing one package at a time from the bottom of a stack of packages in a vending machine in which the packages are of less uniform size and not necessarily rigid. Another object is to provide delivery mechanism of this type which is absolutely food-proof, in that a package is dispensed each time the mechanism is operated.

An important object is to provide delivery mechanism for vending machines which can be adjusted easily to accommodate different types of articles.

It is a further object of the invention to provide means for locking the delivery mechanism of a particular stack when it is exhausted so that a customer's coin is not lost to him; this locking means being simple in construction and fool-proof in operation.

It is a further object of the invention to provide means associated with the delivery mechanism which insures that packages being dispensed are positively discharged; this means serving an anti-jam function.

It is a further object of the invention to provide a delivery mechanism which requires little effort to operate.

Other objects and further advantages of the invention will be disclosed in the following detailed descriptions of the drawings in which:

Figure 1 is a front elevational view of a vending machine incorporating the improved dispensing mechanism of this invention.

Figure 2 is an enlarged fragmentary front elevational view of the central stacks of the vending machine shown in Figure 1.

Figure 3 is a cross sectional view taken on the line 3—3 of Figure 2.

Figure 4 is a section which provides a side view of the bottom of one of the stacks shown in Figure 2.

Figure 5 is a view similar to Figure 4 showing the dispensing mechanism after the withdrawal of the lever for a discharge of a package.

Figure 6 is a view similar to Figure 4 showing the stack empty.

Figure 7 is a top plan view of the delivery carriage.

Figure 8 is a fragmentary cross sectional view taken on the line 8—8 of Figure 7.

In general, the vending machine shown in Figure 1 comprises a housing **10** on which is mounted a magazine structure **11**. A conventional coin slot **12** is disposed at the right side of the housing **10** and conventional delivery levers **13** positioned along the front of the machine. The housing and magazine shown are designed to be affixed atop a base cabinet or a table structure. When the machine is operated, the packages are fed from the magazine **11** and delivered to the discharge chute **14** which extends across the front of the machine just above the operating levers **13**. The cabinet structure shown is the subject of my copending patent application Serial No. 222,769, filed April 25, 1951.

The central stacks of the machine in Figure 1 are shown in greater detail in Figure 2. Each stack of packages is maintained by a stack housing which comprises an outwardly facing channel member **15** of such depth that the channel encompasses the outline of the package to be dispensed from the stack. The forward edge of each side wall of channel member **15** is flanged inwardly as at **16** to provide a skeletal front for the stack whereby the packages are retained within the outline of the flanged channel but are visible from the front

of the machine. It will be noted that the packages in the stack at the left are thicker than those in the stack at the right and less wide. In order to compensate for the difference in width, a spacer member 17 is secured to the back wall of channel 15 and held therein by bolts 18 which pass through marginal flanges 19 upon spacer 17 and thread into the back wall of channel 15. The central portion of spacer 17 between the two marginal flanges extends outwardly toward the front of the machine sufficiently to make up for the difference in width between packages in the channel at the left and those at the right. The packages are shown diagrammatically only. However, those on the left stack are intended to represent bags of loosely packed peanuts and those at the right to represent peanut brittle bars.

Although it is not absolutely necessary to the successful operation of the present machine, it is suggested that the articles which are to be dispensed be packaged in double wrappings of cellophane. This is done conventionally at present in the case of packaged nuts and nut bars to keep them fresh. It has been determined however, that a single thickness of cellophane wrapping is sufficient and it will be apparent to those skilled in the art that other types of wrappings may be utilized if desired.

At the bottom of each of the stacks, a package retainer plate 20 is provided. This plate extends across the open front of the channel and is secured, preferably by welding, at its opposite ends adjacent the upper edge thereof to a pair of vertical, channel shaped strips 21—21 which respectively embrace the inturned flanges 16 of the respective sides of channel member 15 in slip-fit relationship. As shown in Figure 2, the package retainer plate depends sufficiently below the respective lower ends of the strips 21 to permit the plate to flex outwardly slightly should this be necessary upon the discharge of an oversize package as will be explained below. For uniformity of appearance, the channel strips 21 extend almost to the top of the magazine so that their tops are hidden by the opaque portion of the transparent front panel of the machine shown in Figure 1. Their specific design is not particularly important. However, the provision made for adjusting them vertically is important to the successful operation of the delivery mechanism since they carry the retainer plate 20. It will be noted that the upper ends of the flanges 16 are slotted as at 22, and bolts 23 engage through the slots and thread into the channel strips 21 behind the flanges 16. These bolts when tightened serve to lock the channel strips 21 against vertical movement relative to channel member 15 and thus, in effect, serve to position the stack retainer plate 20 relative to the dispensing mechanism located at the bottom of each of the stacks. It will be obvious that other means for adjusting the vertical relationship of plate 20 to the dispensing mechanism may be utilized. The lower edge of plate 20 is turned outwardly to provide a curved lip 24, the function of which will be described below.

The stack housing members 15 just described, define the means for maintaining the packages in vertically stacked relationship over the package delivery mechanisms which are mounted directly under the housing members. The stack housing members may be fixed in position inside an appropriate cabinet enclosure by such means as the angle 25 shown in Figure 4 which may be spot-welded to the backs of the respective channels 15. In the instance shown, it will be noted that the stacks are slanted. This is a servicing expedient and has nothing to do with the present invention, since the present delivery mechanism would operate were the stacks straight up and down.

The package delivery mechanism in general comprises a carriage 26 which is adapted to move forwardly from the position shown in Figure 4 to the position shown in Figure 5 upon actuation of the hand lever 13. The carriage in this instance is mounted upon a support plate 27 which is disposed vertically and secured to the carriage by flanged portions 28. The support plate in turn is linked to one of the levers 13 through appropriate latching mechanism. However, the linkage and latching mechanism may be of conventional type and for this reason is not shown. The carriage itself comprises two elements, a table 30 which is mounted directly upon the support plate 27 and a drop leaf 31 which is affixed to the table by a novel hinge indicated generally at 32. The hinge is shown best in Figure 7 and includes a hinge pin 33 which is seated at its respective ends in journals 34 which are formed by bending over tabs struck out from the table and wrapped around the respective ends of the hinge pin. Between the two journal portions of the table and defined from them by the slots indicated at 35—35, the forward edge of the table is turned down around the front of the hinge pin to provide an abutment 36 which rests on top of the rear edge of drop leaf 31 when the carriage is in the horizontal position shown in Figure 4. The drop leaf 31 is connected to the hinge pin in between the two journals 34—34 by wrapping the rear edge of the drop leaf around the pin behind abutment 36. By this arrangement, it will be noted that the drop leaf is lower than the table by the amount provided by the hinge. When the carriage is in the position shown in Figure 4, the drop leaf is supported in the horizontal position by means of a pair of rollers 37. These rollers are individually spring mounted and respectively engage the underside of the drop leaf in spaced relationship. Each roller is rotatably journalled upon a pin 38 at the center thereof. The opposite ends of each pin are affixed, such as by the welding shown at 38*a* in Figures 4–6, to the underside of a spring plate member 40. The plate member is slotted as at 39 to accommodate the roller so that it extends above the plate, through the slot, where it is in position to contact and thereby support the drop leaf. Each plate member is turned downwardly at its forward end ahead of the roller which it mounts so as to not obstruct the operation of the delivery mechanism. At the rear of the roller each plate slants downwardly to a horizontally disposed foot portion 40*a*. In each instance the foot portion 40*a* of the spring plate member is affixed as by spot welding to a base plate 41 of the machine at the rear underneath table 30 and has a free arm slanting upwardly beneath the stack, on which the pin 38 is mounted. The spring plates thus provide a certain amount of give to the drop plate 31 which action will be discussed below.

Perhaps the most important feature of the invention is the thin metal, barbed plate 42 which is mounted on top of the drop leaf 31. This plate preferably is formed from stainless steel which is less than one-hundredth of an inch thick, preferably five to seven thousandths (.005–.007) of an inch thick. The barbed plate 42 has a plurality of V-shaped tangs or barbs 43 struck upwardly from it. The particular pattern of these barbs is not important. However, it is suggested that a greater number of small ones provides greater efficiency of operation than does a few large ones. Figure 8 shows one of these barbs or tangs greatly enlarged. The exact shape of these tangs is important to the successful operation of the dispensing mechanism. It will be noted that the outer end or point of the barb is turned upwardly as shown at 44. Since the tangs are directly beneath the stacks and must bear the weight of a full stack were the tangs 44 not bent up vertically, the barbs, through long use, might become ineffective. However, as formed, no matter how much weight is placed on the stack, the vertical portion 44 is disposed so that it bites into the wrapping material of the package. It is further suggested that these barbs be quite sharp, which sharpness can be attained in stamping the barbs out of very

thin plate material of the type noted above. The forward end of the drop leaf table is turned up as at **45** to provide a package retaining lip. Were this lip not on the drop leaf, it might be possible, by merely jiggling the dispensing mechanism, to inch a package off the forward edge of the drop leaf because of the angular disposition of the barbs.

The drop leaf is cut to provide a pair of slots **46** which extend inwardly from the lip as approximately half way back into it. These slots are disposed respectively just inwardly of the drop leaf rollers **37** and are designed to cooperate with a pair of kick-off pins **47** which are mounted in the base plate **41** of the machine at points where they will engage in slots **46** when the delivery mechanism is moved forward to the position shown in Figure 5. In this position, the drop leaf is forward of the supporting rollers **37** and thus free to swing downwardly under its own weight and the weight of the package on it. It will be noted that the drop leaf swings on past the outer ends of pins **47** so that the package being dispensed is pushed from it positively.

In operation, as disclosed in Figure 5, the carriage moves forwardly, the drop leaf **31** carrying with it the lowermost package of the stack. As the drop leaf moves forwardly, it is free to pivot downwardly to drop the package carried by it toward discharge, the kick-off pins **47** assisting in the discharge. At the same time, the table **30** of the carriage moves underneath the stack of packages and supports it while the drop leaf is displaced in its forward position. Upon release of the operating lever, the carriage moves back under the action of a spring, not shown, to bring the drop leaf into stack supporting position on the rollers **37**. Both in the forward and backward movement of the carriage, the rollers serve as anti-friction members to make the movement an easy one.

As shown in Figure 8, the prongs are struck upwardly from the bottom of the barb plate at such an angle that they bite into the package wrapping on the forward movement of the drop leaf relative to the stack, but slide under the package upon retraction of the drop leaf to stack supporting position. During the forward movement of the carriage, the stack retainer plate holds the package second from the bottom against movement forward with the package being dispensed. Now, if the particular package on the drop leaf happens to be one which is slightly oversize, so that it is larger than the discharge opening defined by the out-turned lip **24** on the retainer plate and the top of the drop leaf, the drop leaf in coming forward forces the spring plates **40** underneath it downwardly, when the package on the drop leaf engages lip **24**. It might appear that if the package were way outsize that the barbs of plate **42** would tear through the package material. However, it has been determined that if the great number of small barbs are utilized, twenty such barbs are shown in Figure 7, a doubly wrapped cellophane package of unusual size can be forced through the discharge opening. Of course, the adjustability of the package retainer plate **20** permits the discharge opening to be preset to the average sized package of a particular article of merchandise so that it is only variations in size exceeding the general average which must be compensated for by action of the spring plate **40** and the flexing of plate **20**.

When the present mechanism is used for dispensing packages such as those used for loosely wrapped peanuts and the like, which are enclosed within envelopes made of cellophane or other air tight material, the sharp, needle-like points on the barbs serve an additional function. The usual package in which loose peanuts are sold consists of a sleeve of cellophane or the like which is filled and then heat sealed at its respective opposite ends. Little difficulty is encountered in getting substantially the same number of peanuts into each package. Despite this, the packages vary considerably in size due to differences in the volumes of air entrapped when the ends of the cellophane sleeves are heat sealed. The barbs, as has been pointed out above, slant upwardly toward the discharge opening which is defined by the outwardly turned lip **24** on the lower edge of plate **20** and the package retaining lip which is at the forward edge of the drop leaf **31**. The material from which the barbs are formed is exceedingly thin and thus may be flexed. When the drop leaf starts forward toward the discharge, the barbs bite into the package. If, by chance, the package being discharged is one which has an unusually large volume of air entrapped in it and is, therefore oversized so that resistance is met at the discharge opening, the barbs flex upwardly and bite into and through the cellophane package to release the entrapped air and thus deflate the bag so that it easily passes through the discharge opening defined by lips **24** and **45**.

In order to insure that a customer's coin is not lost when he attempts to make delivery from an exhausted stack of packages, a follower element **50** is utilized, the follower serving as a lock to prevent operation of the discharge mechanism under these conditions. The follower is quite simple and comprises sheet metal which is bent into U-shape providing a pair of upright arms **51** at the two sides of the elements. The follower may be made roughly the size of the stack so that it is embraced within the channel flanges **16** and channel strips **21**. A small tab such as **52** may be provided on the follower so that it can be picked up easily. The follower is merely placed on top of the stack of packages at the time the magazine is filled, so that it rides down as packages are dispensed. When the last package of a particular stack is dispensed, the horizontal run **53** of the U-shaped follower rests atop drop leaf **31** where it can be engaged by abutment **36** of the table portion of the carriage when the carriage is moving forward slightly, see Figure 6. The two arms **51** at the ends of the follower are of such a size that when the follower is resting on the drop leaf they engage the flanges **16—16**, at the respective sides of the stack. Thus, when an attempt is made to discharge from an exhausted stack, the follower is wedged between the flanges and the abutment and the carriage is prevented from coming forward.

The abutment **36** also provides another function in that it prevents the drop leaf from becoming fouled under conditions in which the operating lever is released suddenly from its full out position. The return springs usually utilized on vending machines of this sort are rather strong and if the lever were released suddenly, when the drop leaf got back to a point where it first contacted the rollers **37**, it would tend to fly up, and were it not held down by the abutment **36**, it might catch on the lip **24** of the stack retaining plate.

It will be noted from Figure 4 that there is a space between the back of the package which is on the drop leaf and abutment **36**. In actual practice, with wider packages not requiring spacer member **17**, the package may rest against the abutment. However, abutment **36** performs no positive pushing action on the package. The package is pulled forward by the barbed plate alone. Preferably, abutment **36** is rounded at its upper edge as shown so that, when table **30** comes forward under the next-to-lowermost package in the stack, it slides smoothly under it.

Attention is directed to Figure 2 and the cross sectional views in Figures 4–6 which show the retainer plate **20** in place at the bottom of the stack. It will be noted that this plate includes a pair of ears which project from its opposite side edges adjacent its upper edge, which ears respectively are spot welded to the channel strips **21** adjacent its upper edge so that approximately one-half of the plate depends below the support provided by the strips. Thus, the lower portion of plate **20** can flex outwardly to a certain extent. Therefore, when an oversized package is to be dispensed, plate **20** and the drop leaf can flex

to increase the distance between the lip 24 and the forward edge of drop leaf 31. The package holding force of the barbs on plate 42 is considerable and once the drop leaf is started forward, the package on it must go forward with it toward the opening between the lip and drop leaf. It is preferred therefore that the metal used for plate 20 be of the type which will flex readily without being permanently deformed.

From the above, it will be seen that the dispensing mechanism is not dependent upon a package being rigid nor upon its being of a particular size or outline. It is primarily intended for such hard-to-handle packages as loosely packaged nuts or candy, however, it can be utilized just as efficiently for uniform packages if desired. Also, it will be appreciated that changes in structure, in order to adapt the mechanism to particular articles, can be made within the scope of the invention as defined by the following claims.

Having described my invention, I claim:

1. In a coin operated package vending machine in which the packages are stacked one on top of the other, package dispensing mechanism comprising a carriage, said carriage including a table and a drop leaf, said drop leaf pivotally hinged to the forward edge of the table, a plurality of package engaging barbs having sharply pointed ends extending forwardly and upwardly from said drop leaf, said carriage adapted to be moved forwardly from a position in which the drop leaf is beneath the stacked packages to a position in which the table is beneath the stacked packages, the sharply pointed ends of the package engaging barbs biting into and pulling the lowermost package from beneath the stack during said movement, and stationary means adapted to support the drop leaf in the former position only, whereby upon movement of the carriage to the latter position the drop leaf is free to swing downwardly to permit the pulled package to fall from said barbs.

2. In a coin operated package vending machine, a horizontally disposed table having a drop leaf pivotally hinged to its forward edge, stationary means for supporting said drop leaf in a substantially horizontal position, a housing for maintaining a plurality of packages in stacked relationship above the drop leaf with the lowermost package in the stack resting upon the drop leaf, the front of the housing spaced above the front of the drop leaf a distance greater than the thickness of a single package but less than the thickness of two packages, means for moving the table and drop leaf forwardly as a unit, whereby the table is brought into stack supporting position and the drop leaf is clear of the stationary supporting means and free to swing downwardly, and said drop leaf provided with a plurality of forwardly and upwardly extending package engaging barbs having sharply pointed ends which bite into and pull the lowermost package from the stack upon said forward movement of the table and drop leaf.

3. In a coin operated package vending machine, a horizontally disposed table having a drop leaf fastened to its forward edge by a hinge construction, said hinge construction including means adapted to permit the drop leaf to swing downwardly but to prevent upward swinging movement past the horizontal position, a housing for maintaining a plurality of packages in stacked relationship above the drop leaf with the lowermost package resting upon the drop leaf, a roller, spring means mounting said roller beneath the drop leaf, whereby the roller engages the underside of the drop leaf and thus resiliently supports it in said horizontal position, means for moving the table and drop leaf forwardly as a unit whereby the table is brought into stack supporting position and the drop leaf is clear of the roller and free to swing downwardly, and said drop leaf provided with a plurality of forwardly and upwardly extending package engaging barbs having sharply pointed ends therein adapted to bite into and pull the lowermost package from the stack upon said forward movement of the table and drop leaf.

4. In a coin operated package vending machine, a horizontally disposed table having a drop leaf pivotally hinged to its forward edge, means for supporting said drop leaf in a substantially horizontal position, a housing for maintaining a plurality of packages in stacked relationship above the drop leaf with the lowermost package in the stack resting upon the drop leaf, a plurality of package engaging barbs extending forwardly and upwardly from the drop leaf, the outer ends of said package engaging barbs being sharply pointed and adapted to bit into the package resting thereon upon forward movement of the drop leaf and pull said package out from under the stack, means for moving the table and drop leaf forwardly as a unit whereby the table is brought into stack supporting position and the drop leaf is clear of the supporting means and free to swing downwardly, said drop leaf having a slot cut into its forward edge, and a kick-off pin which is adapted to pass through the slot when the leaf swings downwardly and thereby free the package from the barbs.

5. In a coin operated package vending machine, a substantially open-faced, channel-shaped housing for maintaining a plurality of packages in a stack one on top of the other, a horizontally disposed table having a drop leaf pivotally hinged to its forward edge, said drop leaf normally positioned beneath the housing with the lowermost package of the stack resting upon it, a package retaining plate secured to the front of the channel-shaped housing adjacent to the lower end thereof, said retaining plate having an outwardly turned lip along its lower edge, said lip spaced above the front of the drop leaf a distance slightly greater than the thickness of a single package but substantially less than the thickness of two packages, means supporting said drop leaf in horizontal position beneath said stack, means for moving the table and the drop leaf forwardly as a unit, whereby the table is brought into stack supporting position and the drop leaf is moved from beneath the stack and is thereby clear of said support means and free to swing downwardly, said drop leaf provided with a plurality of forwardly and upwardly extending package engaging barbs having sharply pointed ends thereon adapted to bite into and pull the lowermost package from the stack upon forward movement of the table and drop leaf, and said support means being resilient to permit the drop leaf to flex downwardly in the event of an oversized package engaging the outwardly turned lip during said forward movement.

6. In a coin operated package vending machine, dispensing mechanism adapted to accommodate non-rigid packages of less than uniform size, said dispensing mechanism comprising a housing for maintaining said packages in a stack one on top of the other, a horizontally disposed table having a drop leaf pivotally attached to its forward edge, said drop leaf normally positioned beneath the housing with the lowermost package of the stack resting upon it, a package retaining plate at the front of the housing adjacent to its lower end, an outwardly turned lip on the lower edge of said retaining plate, means for vertically adjusting the position of said plate relative to the drop leaf, whereby the distance between the lip and the forward edge of said drop leaf when said drop leaf is in its normal position may be set at slightly greater than the thickness of the average size package of those stacked in the housing, means supporting said drop leaf horizontally in its normal position beneath the stack, means for moving the table and drop leaf forwardly as a unit whereby the table is brought into stack supporting position and the drop leaf is moved from beneath the stack and is thereby clear of said support means and free to swing downwardly, said drop leaf provided with a plurality of forwardly and upwardly extending package engaging barbs, the ends of said barbs being sharply pointed and adapted to bite into and pull the lowermost package from the stack upon said forward movement of the table and drop leaf, and said support means being resilient to permit the drop leaf to flex

downwardly in the event of an oversized package engaging the outwardly turned lip during said forward movement.

7. In a coin operated package vending machine in which the packages are arranged in a stack one on top of the other, package dispensing mechanism comprising a horizontally disposed table having a drop leaf pivotally hinged to one edge thereof, a plurality of sharply pointed package engaging barbs extending upwardly from said drop leaf, said table and drop leaf adapted to be moved from a position in which the drop leaf is beneath the stack to a position in which the table is beneath the stack, the sharply pointed barbs biting into and pulling the lowermost package from beneath the stack during said movement, and stationary means adapted to support the drop leaf in the former position only, whereby upon movement of the drop leaf to the latter position the drop leaf is free to swing downwardly to permit the pulled package to fall from said barbs.

8. Package dispensing mechanism as set forth in claim 7 in which said barbs extend upwardly from said drop leaf at an angle to present the sharply pointed ends thereof in the direction of movement of said drop leaf, and said barbs being disposed in spaced relationship over substantially the entire upper surface of said drop leaf, whereby upon biting into the package upon said movement of the drop leaf the package is held firmly against the upper surface of said drop leaf over substantially the entire area of the package which contacts the drop leaf.

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