Oct. 9, 1962 O. A. TURMAN 3,057,513

PACKAGE DISPENSING MACHINE

Filed May 4, 1959 3 Sheets-Sheet 1

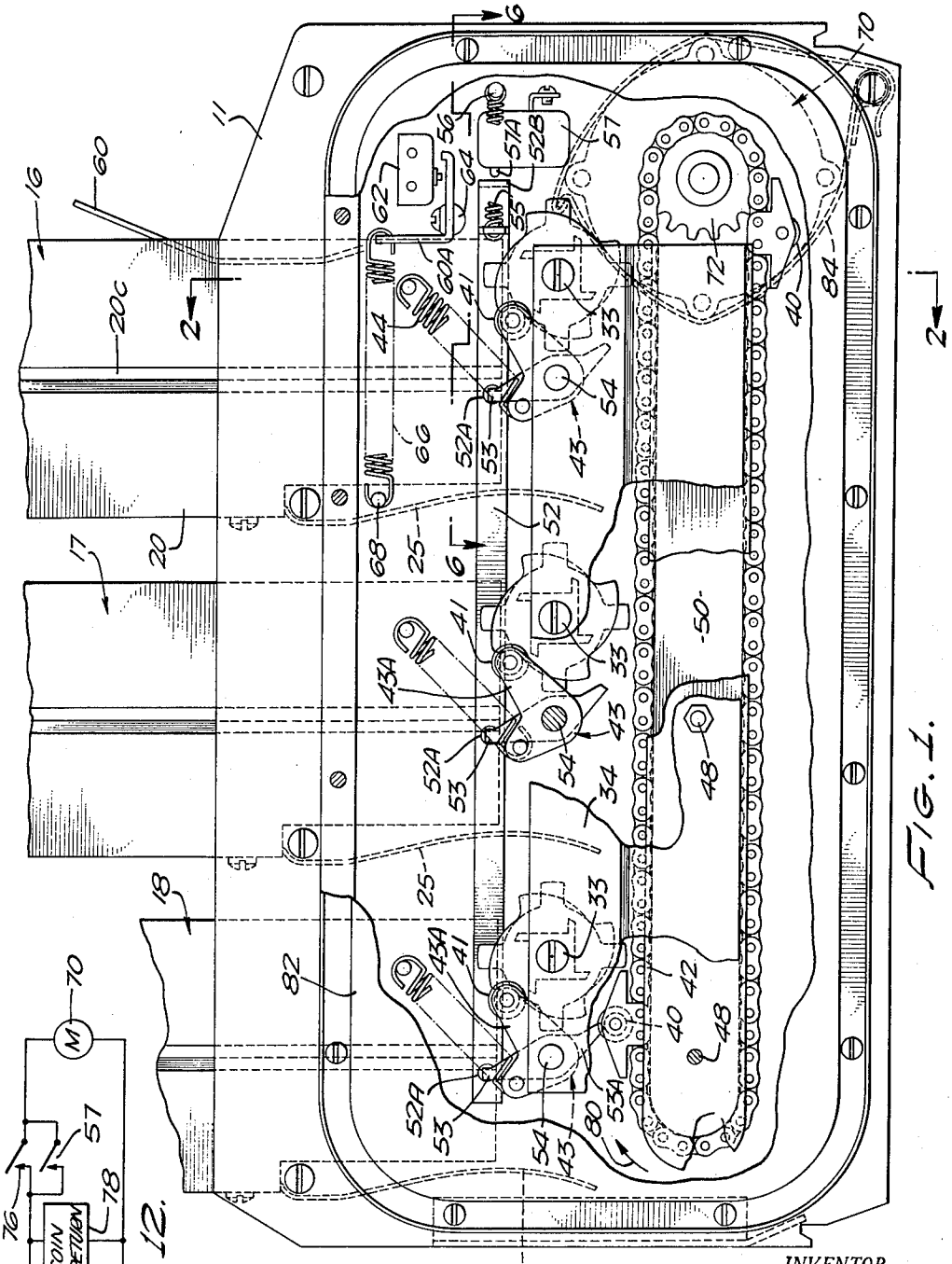


FIG. 1.

FIG. 12.

INVENTOR.
ODIS A. TURMAN
BY Lyon & Lyon
ATTORNEYS

Oct. 9, 1962 O. A. TURMAN 3,057,513

PACKAGE DISPENSING MACHINE

Filed May 4, 1959 3 Sheets-Sheet 2

FIG. 2.

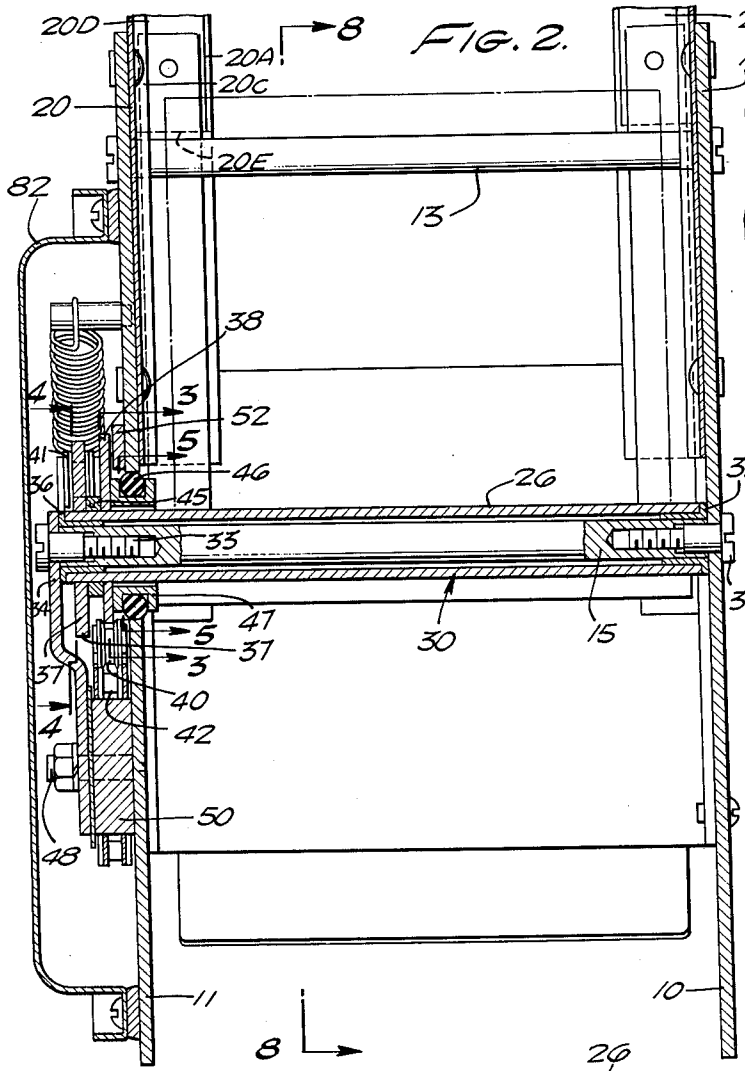


FIG. 3.

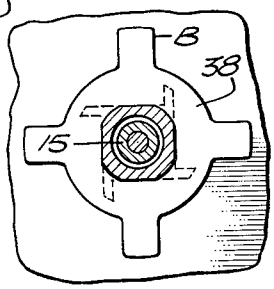


FIG. 4.

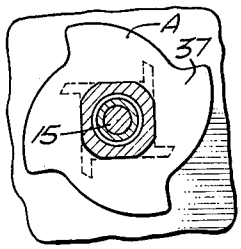


FIG. 5.

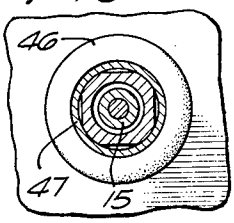


FIG. 6.

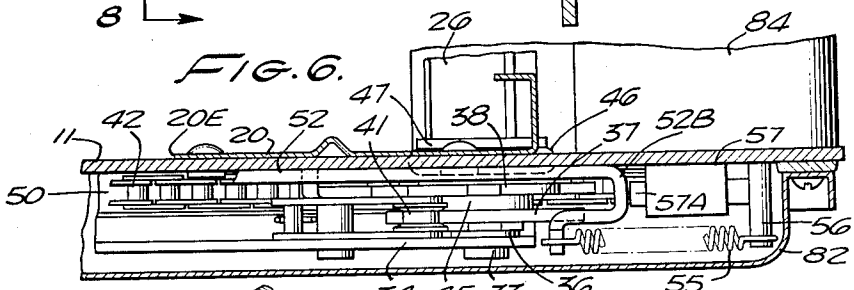
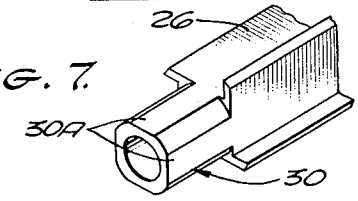


FIG. 7.



INVENTOR.
ODIS A. TURMAN
BY
Lyon & Lyon
ATTORNEYS

Oct. 9, 1962 O. A. TURMAN 3,057,513

PACKAGE DISPENSING MACHINE

Filed May 4, 1959 3 Sheets-Sheet 3

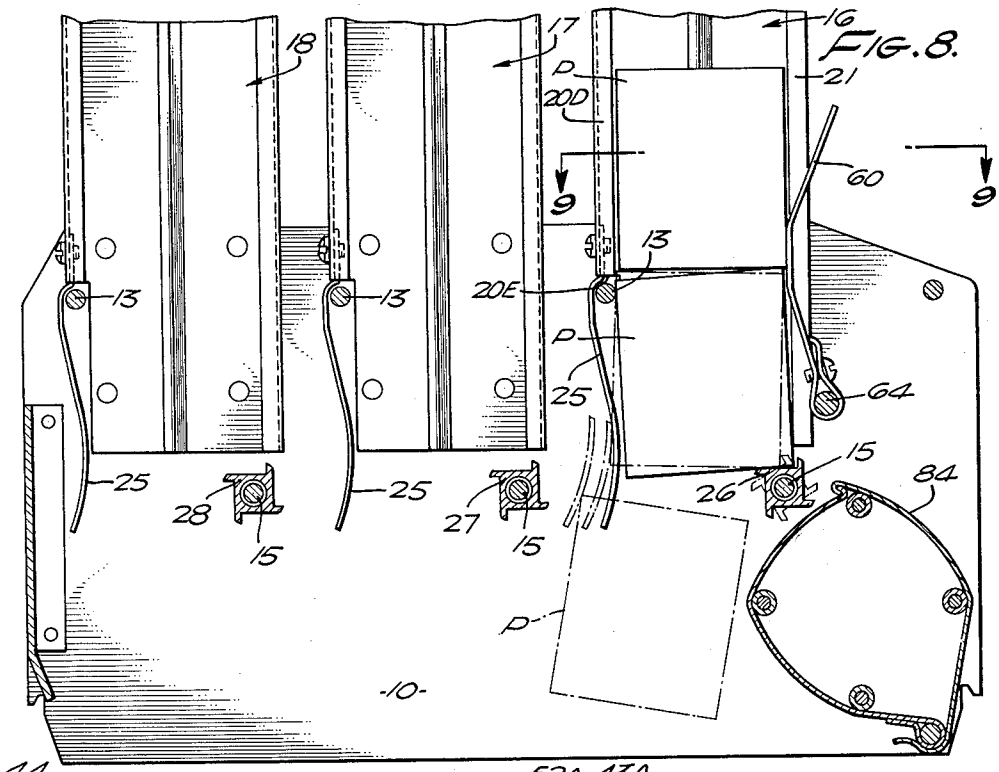


FIG. 8.

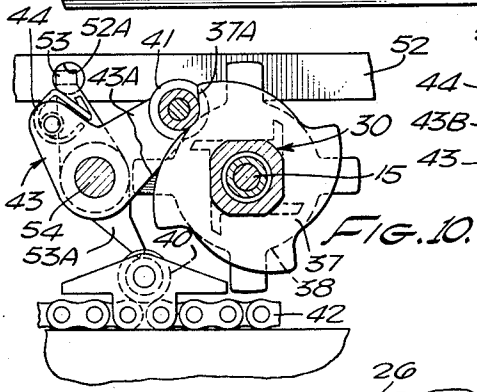


FIG. 10.

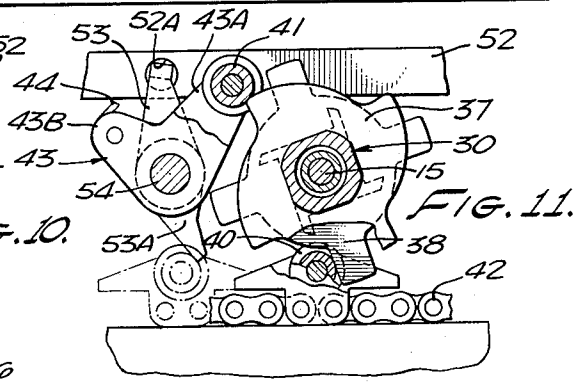


FIG. 11.

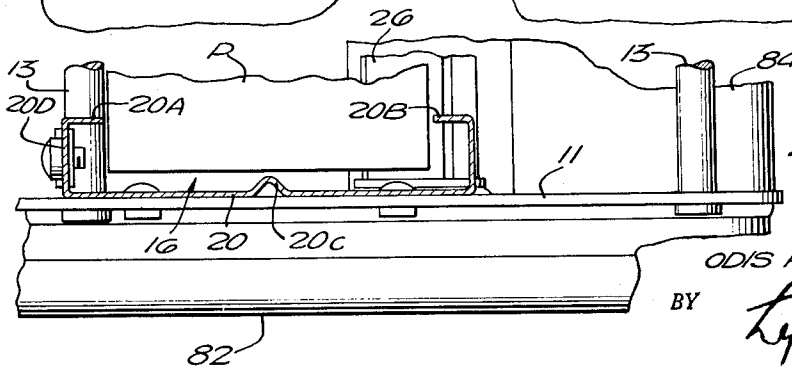


FIG. 9.

INVENTOR.
ODIS A. TURMAN
BY Lyon Lyon
ATTORNEYS

United States Patent Office

3,057,513

Patented Oct. 9, 1962

3,057,513

PACKAGE DISPENSING MACHINE

Odis A. Turman, 20511 Wells Drive, Woodland Hills, Calif.

Filed May 4, 1959, Ser. No. 810,750
16 Claims. (Cl. 221—114)

The present invention relates to package dispensing machines and more particularly to a dispensing machine designed to receive and hold in separate columns or tiers a number of boxes or packages, one upon another, with mechanism for moving the lowermost box or package from its support to a drop position for discharge from the machine successively from different columns or tiers to achieve an operation referred to herein as a "first out—first in" operation.

The term "first in—first out" has reference to the fact that the machine assures dispensing of the first articles loaded in the machine. This feature is considered of importance considering practical aspects. In practice it has been found that when package dispensing machines of this character are loaded periodically by a serviceman, he is inclined, because of time and other considerations, to merely load the machine with packages without taking into consideration that the packages which he may load at that particular time may be dispensed prior to those packages in the machine at the time of his visit. Following such practice there is a likelihood that the comestibles in the packages may become stale or spoiled. This likelihood is particularly present in those prior art machines containing a plurality of columns or tiers and which operate such that dispensing from one tier is not accomplished until an adjacent tier is empty of packages. In such case a serviceman who may be inclined to be lazy or tired in replenishing the supply may merely replenish the packages by loading packages in the machine without transferring packages already in the machine to the first column or tier from which the packages are dispensed. In accordance with an important aspect of the present invention packages are dispensed successively from each of the tiers or columns so that it then becomes unnecessary for the serviceman to rearrange the packages in assuring obtainance of this "first in—first out" operation.

Another important aspect of the present invention involves the particular mechanism for dispensing a package featured by the fact that the lowermost package in a column is subjected to a rocking or tilting movement so as to increase greatly the likelihood of breaking of any ice bond or film between adjacent packages when such packages are maintained in a refrigerated condition.

It is therefore an object of the present invention to provide an improved package dispensing machine incorporating the above features.

In furtherance of this object, a specific object of the present invention is to provide a mechanism which, when operated successively as, for example, upon insertion of successive coins in a coin slot, dispenses successively the lowermost package in adjacent columns or tiers.

Another specific object of the present invention is to provide an improved machine of this character incorporating this so-called "first in—first out" feature.

Another specific object of the present invention is to provide an improved machine of this character whereby servicing problems are facilitated with assurance that the packaged comestibles will not be spoiled but always dispensed in a fresh condition.

Another specific object of the present invention is to provide an improved machine incorporating a mechanism which not only provides this novel "first in—first out" feature but also in its operation causes the lowermost package in each column to be rocked during the time it is dispensed to assure breaking of any ice film between such package and its adjacent package.

Another specific object of the present invention is to provide an improved package dispensing machine characterized by its simplicity, reliability and ease and inexpensiveness of manufacture and maintenance.

The features of the present invention which are believed to be novel are set forth with particularity in the appended claims. This invention itself, both as to its organization and manner of operation, together with further objects and advantages thereof, may be best understood by reference to the following description taken in connection with he accompanying drawings in which:

FIGURE 1 is generally a view in side elevation of an improved machine embodying features of the present invention with parts thereof broken away to illustrate details of the internal construction.

FIGURE 2 is generally a sectional view taken substantially on the line 2—2 of FIGURE 1.

FIGURES 3, 4 and 5 are generally sectional views taken substantially on the corresponding lines 3—3, 4—4 and 5—5 in FIGURE 2.

FIGURE 6 is a sectional view taken generally along the line 6—6 in FIGURE 1.

FIGURE 7 is a perspective view illustrating the end of one of the rotatable package supporting members.

FIGURE 8 is a sectional view taken generally on the line 8—8 in FIGURE 2.

FIGURE 9 is generally a sectional view taken substantially on the line 9—9 of FIGURE 8.

FIGURE 10 is a sectional view illustrating the relationship of the various elements of the mechanism shown in FIGURE 1 after completion of a package dispensing operation.

FIGURE 11 is a sectional view like FIGURE 10 but with the parts shown in different operating positions and FIGURE 11 also illustrates the manner in which the cam lever is raised by the roller on the chain, such roller on the chain being shown in phantom lines for illustrative purposes.

FIGURE 12 illustrates generally the electrical wiring of the apparatus.

The single embodiment of the invention shown in the drawings includes two parallel spaced stationary plates 10 and 11 of sheet metal comprising the frame or supporting structure for the mechanism presently described.

These parallel supporting plates or frame members 10, 11 are maintained in stationary fixed relationship by a plurality of rods 13 and rods 15 as illustrated in FIGURE 2. These rods 13 and 15, one for each package column or tier, serve additional functions as described later.

These frame members 10 and 11 have mounted thereon vertical columns or tiers 16, 17 and 18 (FIGURES 1 and 8), and although three such columns or tiers are illustrated, it will be understood that the number of the same is not limited to three in number.

Since the construction of each one of these channels, columns or tiers 16, 17 and 18 is essentially the same, a detailed description of only one of the channels 16 suffices for a description of the other channels 17 and 18.

The channel 16 is constructed to receive loosely vertically stacked packages containing comestibles indicated by the reference numeral P.

The channel 16 is defined generally by two C-shaped or modified U-shaped sheet metal members 20 and 21. Each one of these members 20 and 21 is of identical construction, the member 20 being bolted or riveted to the side plate 11 and the other like member 21 being bolted or riveted to the other side plate 10.

These identically constructed channel members 20 and 21 are so constructed as to confine a package P with a

minimum amount of contact area between the package and the channel members. For this purpose, as illustrated in FIGURE 9, the channel member 20 has its ends bent inwardly at 20A and 20B so that only the edges of the sheet metal channel member 20 are engageable with opposite sides of the package P; and also the channel member 20 is ribbed at 20C, as shown in FIGURE 9, so as to again offer a minimum contact area for another side of the package P. Thus, it will be understood that the package P may engage only limited contact areas of the two identically constructed channel members 20 and 21 to assure limited contact areas where otherwise relatively large surfaces may be present between which ice may form. In other words, by providing such limited contact areas any ice film of limited cross sectional area is easily broken during operation of the machine.

It is noted in FIGURES 1, 2 and 8 that a lowermost portion of the channel web 20D is removed at 20E to allow a package to fall through such cutout portion in operation of the machine; but at the same time, to prevent the package from falling completely out of the bottom of the channel 20, the aforementioned rod 13 is provided adjacent the lower end of the web member 20D to serve as a fulcrum about which a package is pivoted during a dispensing operation as described later.

Also mounted below the channel web 20D and secured thereto is a cantilever-supported leaf spring 25 which offers some resistance to movement of a package during the time it is being dispensed.

The stack of packages in each of columns 16, 17 and 18 is supported on rotatable abutments 26, 27 and 28 and since these abutments 26–28 and the mechanism associated therewith are of essentially identical construction, it will be sufficient to describe only the structure associated with abutment 26.

The abutment 26 is constructed, as indicated in FIGURE 7, as an integral part of a tubular element 30 which is rotatably mounted on the stationary supporting pin 15 with such abutment 26 extending substantially the full width of the package P.

As illustrated in FIGURE 2, the pin 15 is secured at its right end to the plate 10 by machine screw 32 and at its left end by a similar machine screw 33 which fastens that end of the pin 15 to a bracket member 34 spaced and secured to the other frame member 11.

The sleeve-like abutment 26 is rotatably mounted on the bushings 35 and 36 and, as shown in FIGURE 7, is formed to provide flat faces 30A for non-rotatably supporting thereon the cam member 37 (FIGURE 4) and the star wheel 38 (FIGURE 3). The star wheel 38, as described later, is engaged and moved by a roller 40 (FIGURE 11) mounted on a motor driven chain 42 while the cam member 37 cooperates with the roller 41 rotatably mounted on one end 43A of a lever 43, a second end 43B of lever 43 being biased upwardly by tension spring 44 to cause the roller 41 to follow the contour of the cam member 37. It will be noted that this roller 41 which, as shown in FIGURE 2, has a V-shaped grooved peripheral, maintains the cam plate 37 in a predetermined position on the member 30, being spaced from the star wheel 38 by spacer ring 45.

Preferably a sealing structure is provided between the rotatable member 30 and the casing wall 11 and such sealing structure is illustrated in FIGURES 2 and 5 as comprising an O-ring 46 which is retained in a channeled ring 47 with the outer periphery of the rubber O-ring 46 pressing against the adjacent circular apertured portion in the plate 11.

It is noted that the aforementioned bracket member 34, which is fastened by bolts 48 to the frame member 11 and spaced therefrom by spacer 50, is so shaped as to allow clearance for rotation of the cam member 37 and the star wheel 38.

The operating mechanism includes also a longitudinally movable bar or strip 52 (FIGURES 1, 2, 10 and 11) which is apertured along the length thereof, as indicated at 52A in FIGURES 10 and 11, to receive a hooked end of a pawl 53 which has its lower end 53A in the path of movement of the chain roller 40. This pawl 53 and the previously described cam follower arm 43 are each rotatably mounted about the axis of a common pivot pin 54 which is secured to the frame plate 11. This bar 52 has attached thereto one end of a coil tension spring 55 having its other end stationarily anchored on pin 56 to urge such bar 52 to the right in FIGURE 1 to thereby tend to move the upturned end 52B of bar 52 into engagement with the actuating member 57A of the microswitch 57. However, in the normal condition of the machine such bar end 52B is maintained out of engagement with the switch actuating member 57A due to the engagement of one of the pawl ends 53A with the chain roller 40 as illustrated in FIGURE 10. Thus, normally in the condition shown in FIGURE 10 the switch 57A is allowed to remain in its normally open position.

It is noted that only the first channel 16 has a cantilever-supported arm 60 (FIGURES 1 and 8) associated therewith for sensing the presence of a package P and for causing operation of the microswitch 62 when the last package has been dispensed from channel 16. For these purposes, the sensing arm 60 is pivotably mounted on the stationary pin 64 on plate 11 and has an extension 60A thereof hooked to one end of coil tension spring 66, the other end of spring 66 being anchored on pin 68 on plate 11 so that such spring 66 tends to cause the switch 62 to be actuated; however, the same remains unactuated as long as there is a package in channel 16, the package bearing on feeler arm 60 to prevent actuation of switch 62. It is noted also that this spring-biased arm 60 presses the lowermost package against the rod 13 which serves as a pivoting fulcrum as described in more detail later.

An illustrative electrical circuit is diagrammed in FIGURE 12. The motor 70 driving the sprocket wheel 72 (FIGURE 1) is connected to the energizing source 74 through either the coin and momentary operated switch 76 and/or the aforementioned bar or motor operated switch 57 only after the switch 76 is first operated. The switch 62 operated by the feeler arm 60 (FIGURE 1) is closed when there is a package in channel 16 and serves to complete an energizing circuit for motor 70 as well as a coin return mechanism 78 of conventional construction. As long as there is a package in channel 16, the coin return mechanism is rendered inoperative to return a coin.

In operation of the machine, the mechanism is normally in the positions illustrated in FIGURES 1 and 10 and all of the channels 16, 17 and 18 are initially fully loaded with packages P. In such case the switch 57 (FIGURES 1 and 7) is allowed to remain open due to the engagement of pawl end 53A (FIGURE 10) with the chain roller 40 which causes the bar end 52B to be maintained out of engagement with the switch actuating member 57A. Then upon momentary closing of switch 76 as, for example, by a coin, the motor 70 is energized to cause the upper reach of chain 42 to move to the right as indicated by the arrow 80 (FIGURE 1) and to free the previously existing engagement between roller 40 and pawl end 53A whereupon the switch 57 is allowed to close and thus provide continuous energization of motor 70 and movement of the chain roller 40 into engagement with the star wheel 38, as illustrated in full lines in FIGURE 11, producing counterclockwise rotation of the same and rotation of abutment 28 (identical with abutment 26) to thereby allow and assist movement of a package from such abutment as described in more detail later. During such initial rotation of star wheel 38, the spring-biased cam roller 41 is moved to the highest point on the cam disc 37, storing energy in its biasing spring 44. The energy in this spring 44 causes the cam disc 37 and the package supporting abutment, 26, 27 or 28 as the case may be, to rotate until the cam roller 41 is in engagement with

the relatively sharp rising portion **37A** of the cam disc **37** at which time the chain roller **40** is already out of engagement with a tooth of the star wheel **38** and rotation of the abutment ceases. This arrangement involving the cam disc **37** assures complete, fast and accurate rotation of the abutment through 90 degrees. The chain roller **40** continues its movement until it moves into engagement with the next succeeding pawl end **53A** to re-establish the condition illustrated in FIGURE 10, whereupon the bar **52** is moved to the left against the action of spring **55** and the previously closed switch **57** is allowed to open, thus causing the driving motor to be de-energized and the chain **42** to assume a stationary condition illustrated in FIGURE 10. Another cycle may be again initiated by closing switch **76** (FIGURE 12).

It will thus be seen that the lowermost package from each succeeding channel is dispensed, in turn, upon repeated initiation of this cycle of events until channel **16** is emptied, at which time the package feeler arm **60** (FIGURES 1 and 8) is moved by spring **66** to cause switch **62** to open whereupon the mechanism is rendered inoperative to further deposit of coins and such coins are returned.

One important feature is incorporated in this mechanism involving tipping or rocking of a package when and as the same is being dispensed. Other mechanism for accomplishing this particular feature, but in a different type machine, is disclosed and claimed in the copending application of James L. Collins et al., Serial No. 666,177, filed June 17, 1957, now abandoned, and assigned to the present applicant.

This particular feature herein involves the fulcrum rod **13** and its relationship to the rotatable abutment **26** and is particularly useful in breaking any ice film which may have developed between adjacent packages.

In this respect it should be carefully noted that the fulcrum rod **13** and abutment **26** are positioned near diagonally opposite corners of a package and such that after a package has been dispensed from the abutment, the remaining stack of packages falls on the offset abutment **26** with the result that the upper diagonal corner of the lowermost package, aided by impact of the stack falling on abutment **16**, pivots counterclockwise in FIGURE 8 about the abutment into engagement with the fulcrum rod **13** which retains the package. Subsequently, the package is pivoted in the opposite direction when and as the abutment **26** is rotated as described above. During such rotation of abutment **26** in the counterclockwise direction in FIGURE 8, one of its raised edges engages the adjacent corner of the package to pivot the previously mentioned upper diagonal corner of the package (i.e. that corner in engagement with rod **13**) in the opposite or clockwise direction. This means that the lowermost package is always pivoted in opposite directions to assure breaking of any existing ice film between it and the package above it. Also, to a certain extent this movement is imparted to the remaining packages in the stack to create a certain degree of agitation.

Further, it is noted that during the time a package is being dispensed opposite sides of the same are resiliently and gently contacted by the resiliently supported members **25** and **60** which assure this cooperation between the abutment **26** and the fulcrum rod **13**.

Further, while the chain **42** is driven at a relatively slow speed, the spring-operated cam disc **37** assures rapid movement of the abutment **26** to its final position where it is effective to prevent dispensing of more than one package at a time.

Preferably the moving parts of the mechanism, with the exception of that portion of the abutment which engages a package, are shielded from frost, dust, etc. and for that purpose the O-ring sealing arrangement **46** (FIGURES 2 and 5), as well as a removable cover **82**, fastened to wall **11** and a closed sheet metal shield **84** for the motor, is provided.

While the particular embodiments of the present invention have been shown and described, it will be obvious to those skilled in the art that changes and modifications may be made without departing from this invention in its broader aspects and, therefore, the aim in the appended claims is to cover all such changes and modifications as fall within the true spirit and scope of this invention.

I claim:

1. A package dispensing machine, said machine including a plurality of vertical channels each adaped to receive packages therein, one stacked upon another, each of said channels having a side opening therein at its lower end with the vertical length of said opening being less than the height of a package, rotatable abutment means near the bottom of each channel for supporting a corresponding stack of packages in the corresponding channel, a plurality of means each effective to produce rotation of a corresponding abutment, and a common actuating member movable successively past the last mentioned means for operating the same in succession, said abutment means being effective when rotated to engage the bottom portion of the lowermost package and to move the same in a general horizontal direction through said side opening.

2. A package dispensing machine, said machine including a plurality of vertical channels each receiving packages therein, one stacked upon another, each of said channels having a side opening therein at its lower end with the vertical length of said opening being less than the height of a package, a rotatable abutment near the bottom of each channel and normally effective to support a stack of packages in a corresponding channel, means for successively rotating different abutments of different channels, said rotating means comprising an endless chain movable in a path near the bottom of each of said channels, said chain having means thereon for rotating the different abutments when and as the same is moved adjacent thereto, said abutment being effective when rotated to engage the bottom portion of the lowermost package and to move the same in a general horizontal direction through said side opening.

3. A package dispensing machine, said machine including a plurality of vertical channels each receiving packages therein, one stacked upon another, each of said channels having a side opening therein at its lower end with the vertical length of said opening being less than the height of a package, abutment means near the bottom of each column upon which the stack of packages therein normally rests, means associated with each abutment means for producing rotation of the corresponding abutment means, and a member movable past each of said rotation producing means and effective to produce operation of the same successively in its movement past said rotation producing means, said abutment means being effective when rotated to engage the bottom portion of the lowermost package and to move the same in a general horizontal direction through said side opening.

4. A machine as set forth in claim 3 in which said rotation producing means comprises cam means mounted for rotation with the corresponding abutment means, a cam follower cooperating with said cam means and a spring pressing said cam follower into engagement with said cam means.

5. A machine as set forth in claim 4 in which said cam follower is normally maintained in a depressed portion of said cam means, said rotation means comprising a star wheel mounted for rotation with the corresponding abutment means and engageable with said movable member for lifting said cam follower out of said depressed portion of said cam means wherein said cam means is then effective to produce a fast rotation of said abutment means.

6. A package dispensing machine, said machine including a plurality of vertical columns, each receiving pack-

ages therein, one stacked upon another, supporting means near the bottom of each column upon which the stack of packages therein normally rests, means associated with each channel and cooperating with the corresponding supporting means for producing rotation thereof, a motor mounted on said machine, an endless chain driven by said motor, said endless chain carrying a member thereon movable adjacent each one of said rotation producing means for operating the same in succession, switch means on said machine controlling said motor, a switch actuating element associated with said switching means, a plurality of pawls, one for each of said channels, each of said pawls being connected to said actuating element and engageable by said member for operating said actuating element, said rotation producing means comprising an element positioned in the path of movement of said member for producing rotation of the corresponding supporting means.

7. A machine as set forth in claim 6 in which said rotation means comprises also cam means mounted on and rotatable with a corresponding supporting means, a cam follower engaging said cam means, a spring pressing said cam follower into engagement with said cam means, said cam follower being normally in a depressed portion of said cam means and being raised from said depressed portion to a raised portion of said cam means when said member engages and moves said element of said rotation producing means.

8. A machine as set forth in claim 7 in which each of said supporting means comprises a rotatable abutment having a flat portion upon which the lowermost package of a stack normally rests, said abutment also having a raised portion for engaging the lowermost package and for moving the same from said flat portion upon rotation of said abutment, said abutment being positioned off-center with respect to the longitudinal axis of the stack of packages and engaging a lowermost corner edge portion of the lowermost package, each of said channels having a fulcrum rod positioned to engage an upper edge portion of the lowermost package, said upper edge portion being in the vicinity of a corner of the package which is generally diagonally opposite that portion of the package engaged by said abutment means.

9. A package dispensing machine, said machine including a plurality of vertical columns, each adapted to receive packages therein, one stacked upon another, each of said columns having a side opening therein at its lower end with the vertical length of said opening being less than the height of a package, supporting means near the bottom of each column upon which the stack of packages therein normally rests, and automatic means effective, when operated, to successively render said supporting means of different columns effective to allow the lowermost one of the packages in corresponding columns to drop from corresponding supporting means, each of said supporting means near the bottom of different columns comprising a rotatable abutment having a package-engaging portion engaging the bottom of the lowermost package in a corresponding column, and said abutment having a raised portion for engaging and moving a package in a general horizontal direction through said side opening from said supporting portion when said abutment is rotated, said automatic means comprising means for rotating each of said abutments successively.

10. A machine as set forth in claim 9 in which said rotating means comprising an endless carrier movable in a path near the bottom of each column, cam means on said carrier, a cam disc on and rotatable with said abutment, a cam follower pivotally mounted on said machine and engaging said cam disc, spring means pressing said cam follower into engagement with said cam disc, said cam means on said carrier being engageable successively with said abutment of different channels to rotate the corresponding abutment and said cam disc from a depressed portion of said cam disc to a raised portion of said cam disc, said cam disc being so shaped that said spring means acting through said cam follower, when on said raised portion, produces further rotation of said abutment and said cam disc to a position wherein said cam follower enters a depressed portion of said cam disc.

11. A machine as set forth in claim 9 in which said supporting means normally retains the lowermost package in a corresponding stack in tilted relationship with respect to the longitudinal axis of the column with the axis of said package being tilted in a first direction with respect to the longitudinal axis of said channel, and means including said supporting means for imparting a tilting movement of the package in a direction opposite to said first direction when and as said supporting means is operated to dispense the lowermost package.

12. A machine as set forth in claim 11 in which each of said columns is defined by elements which have only a limited contact area that is engageable with a package in the channel.

13. A package dispensing machine, said machine including a plurality of vertical columns, each adapted to receive packages therein, one stacked upon another, supporting means near the bottom of each column upon which the stack of packages therein normally rests, each of said supporting means near the bottom of different columns comprising a rotatable abutment having a package-engaging portion engaging the bottom of the lowermost package in a corresponding channel, said abutment having a raised portion for engaging and moving a package from said supporting portion when said abutment is rotated, means for rotating each of said abutments successively, said rotating means comprising an endless carrier movable in a path near the bottom of each column, cam means on said carrier, a star wheel on and rotatable with said abutment, a cam disc on and rotatable with said abutment, a cam follower pivotally mounted on said machine and engaging said cam disc, spring means pressing said cam follower into engagement with said cam disc, said cam means on said carrier being engageable successively with said star wheel of different columns to rotate the corresponding abutment and said cam disc from a depressed portion of said cam disc to a raised portion of said cam disc, said cam disc being so shaped that said spring means acting through said cam follower, when on said raised portion, produces further rotation of said abutment and said cam disc to a position wherein said cam follower enters a depressed portion of said cam disc, a pawl member near the bottom of each channel pivotally mounted on said machine in the path of movement of said cam means, and means operated upon engagement of said cam means with said pawl member for arresting further movement of said carrier and said cam means thereon.

14. A package dispensing machine, said machine including a plurality of vertical columns, each adapted to receive packages therein, one stacked upon another, each of said columns having a side opening therein at its lower end with the vertical length of said side opening being less than the height of a package, supporting means mounted on said machine near the bottom of each column upon which the stack of packages therein normally rests, and automatic means effective, when operated, to successively render said supporting means of different columns effective to allow the lowermost one of the packages in corresponding columns to drop from corresponding supporting means, each of said columns comprising an element on said machine and within a corresponding column about which the lowermost package in a stack may be pivoted, said supporting means being below and horizontally offset from said element for normally maintaining said lowermost package of a stack tilted against said element in tilted relationship with respect to the longitudinal axis of the channel, and said supporting means being effective, when rotated, to engage and move the lowermost portion of said lowermost package in a generally

horizontal direction through said side opening to tilt said package about said element in an opposite direction with respect to the longitudinal axis of the channel.

15. A machine as set forth in claim 14 in which said supporting means engages a lowermost corner portion of the lowermost package, and said element engages an upper corner portion of the package which is diagonally opposite said lower corner portion.

16. A machine as set forth in claim 15 in which resilient means is mounted on said machine adjacent said side opening with said resilient means extending below said element for engaging a package at a region below said element when and as the same is being fulcrummed about said element when said supporting means is rotated.

References Cited in the file of this patent

UNITED STATES PATENTS

1,072,150	Neher	Sept. 2, 1913
1,633,675	Oliver	June 28, 1927
2,078,490	Fritsche	Apr. 27, 1937
2,248,479	Miller	July 8, 1941
2,546,291	Baumgartner	Mar. 27, 1951
2,726,013	Rice	Dec. 6, 1955
2,903,158	Howard	Sept. 8, 1959