

May 5, 1964

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3,131,830

CONTINUOUS PACKAGE DISPENSING MACHINE

Filed July 31, 1961

4 Sheets-Sheet 1

FIG. 1

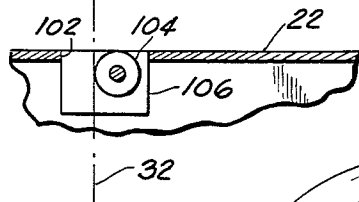
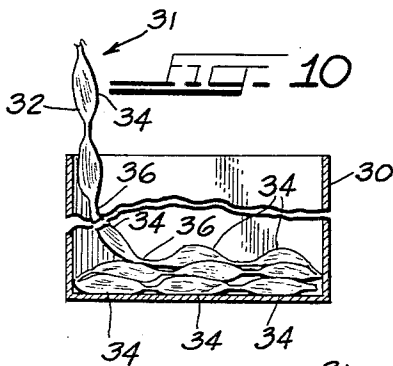
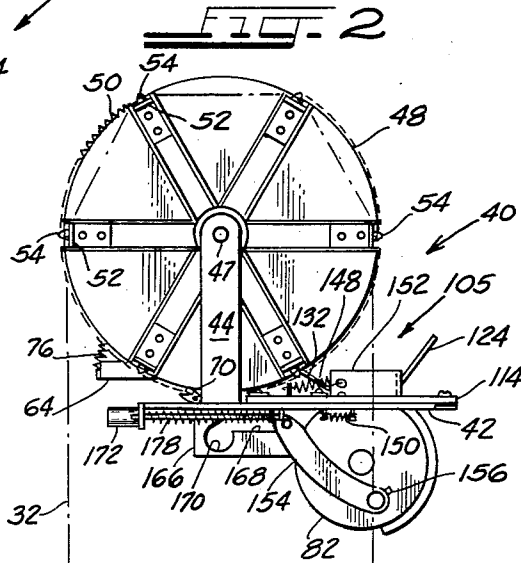
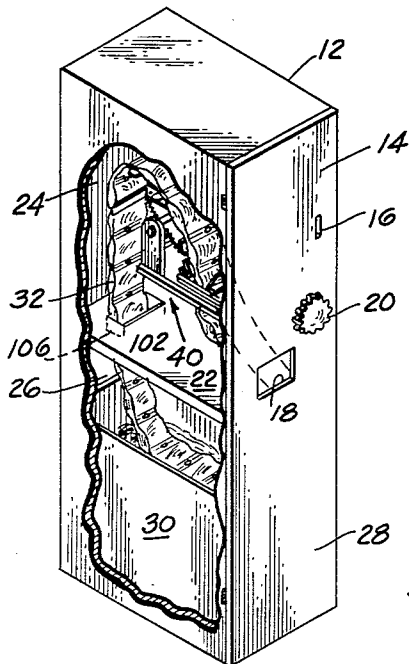
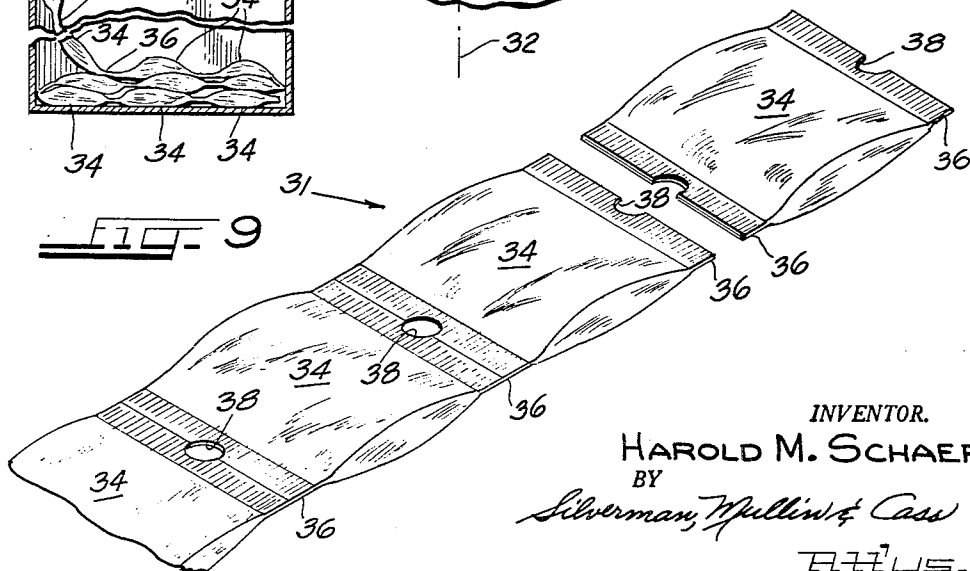


FIG. 9



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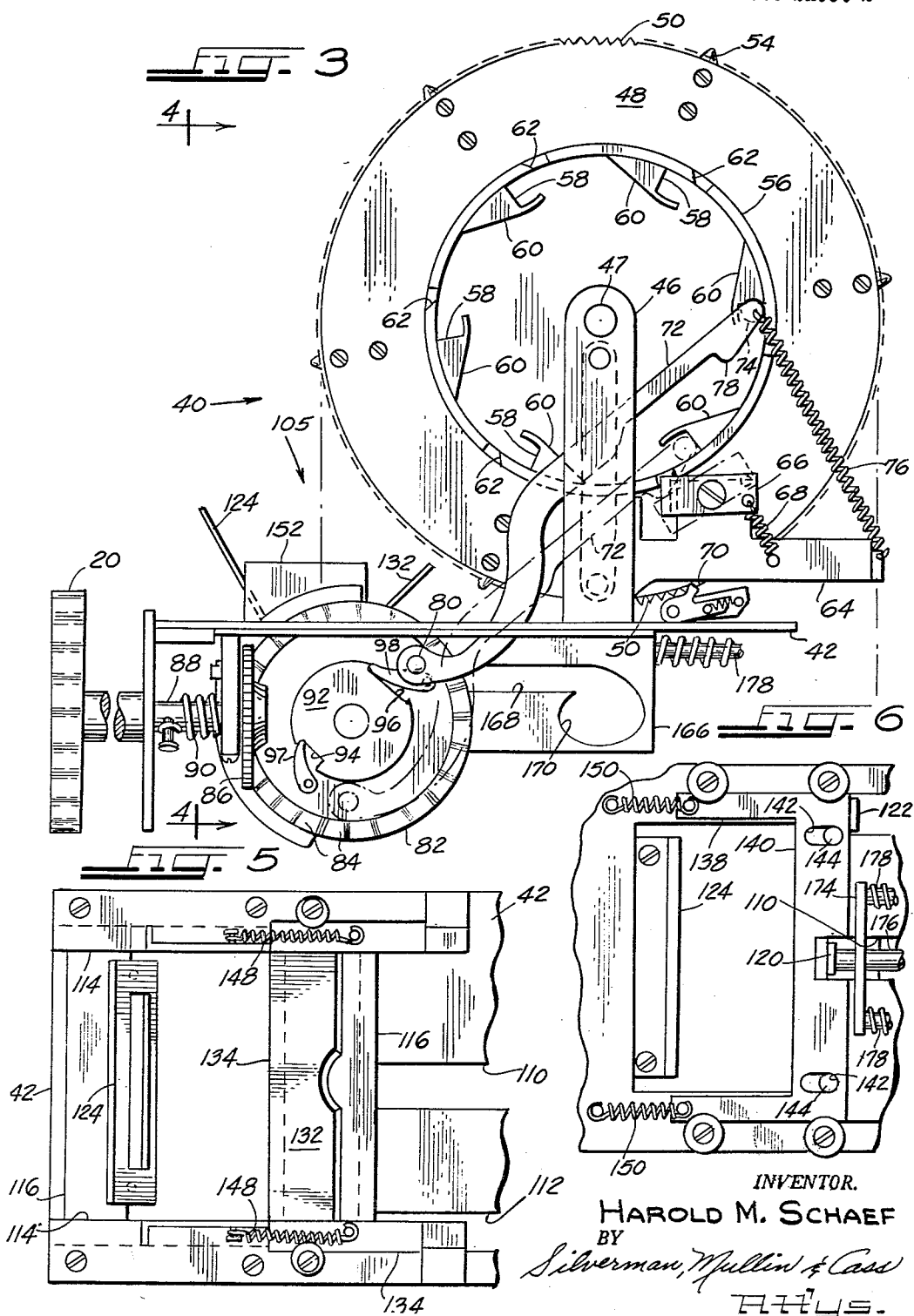
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CONTINUOUS PACKAGE DISPENSING MACHINE

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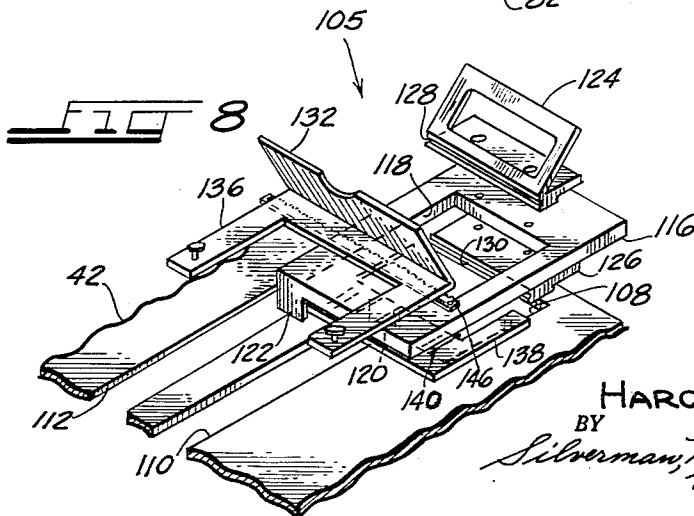
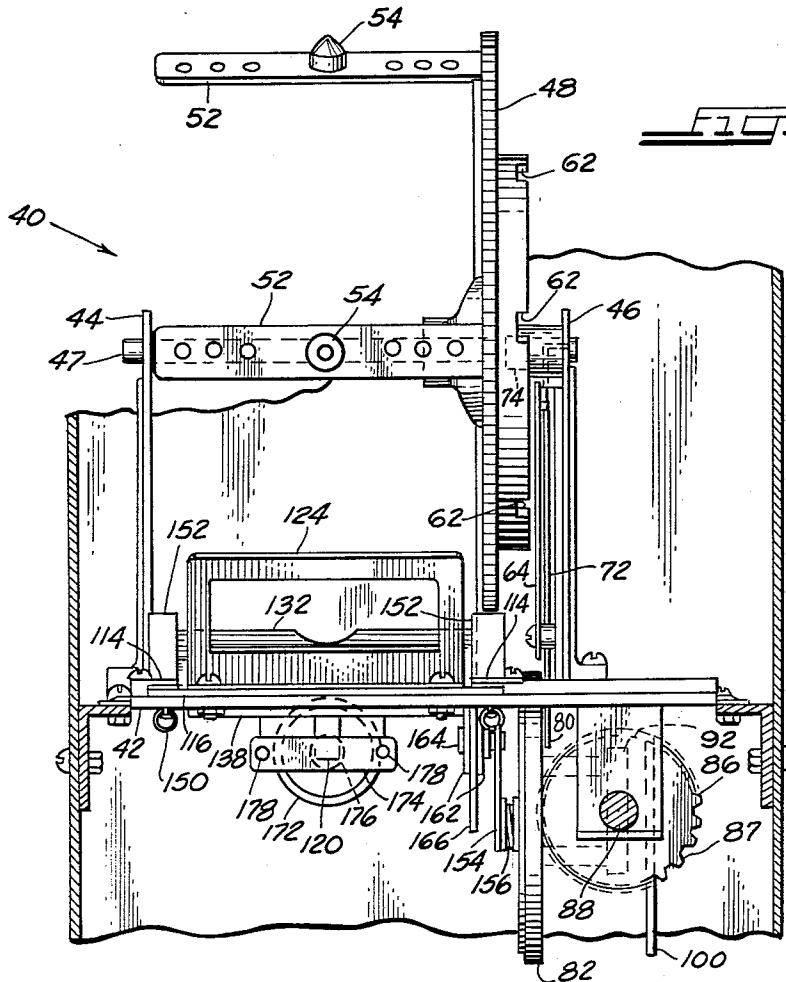
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CONTINUOUS PACKAGE DISPENSING MACHINE

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4 Sheets-Sheet 3



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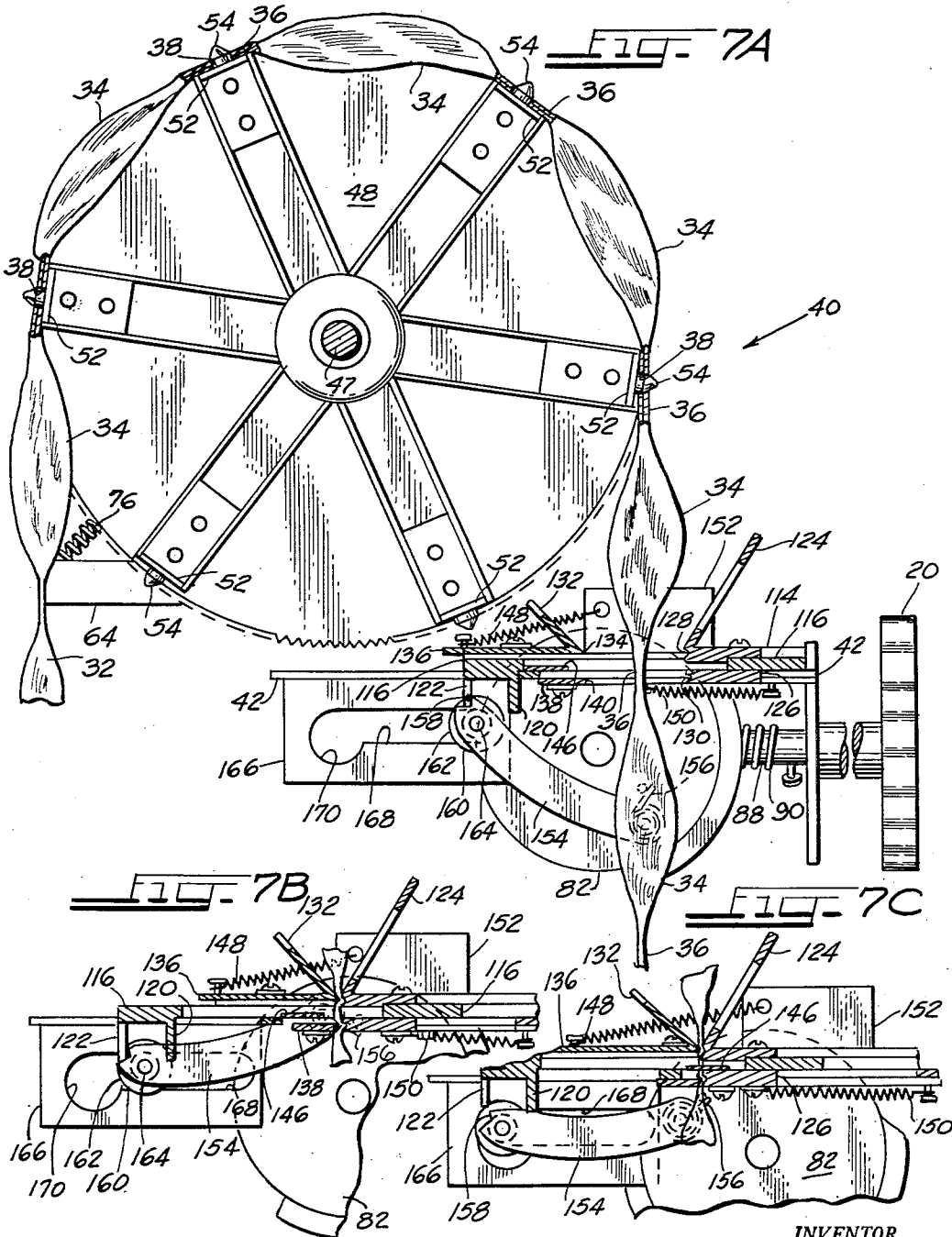
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3,131,830

CONTINUOUS PACKAGE DISPENSING MACHINE

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4 Sheets-Sheet 4



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3,131,830
CONTINUOUS PACKAGE DISPENSING
MACHINE

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13 Claims. (Cl. 221-25)

This invention relates generally to merchandise vending machines and novel packages of merchandise. More particularly, the invention relates to such packages and to vending machines for dispensing such individual packages from a novel continuous length or belt of such merchandise.

Vending machines of various types for use in dispensing both unpackaged or bulk merchandise and merchandise which is individually packaged are, of course, well known. In recent years, the trend has been away from the bulk type vending machines and toward package machines. This is particularly true where the merchandise being dispensed comprises edibles such as nuts and confections wherein sanitation and product freshness are important factors or where the merchandise comprises small inexpensive items such as screws, nuts, bolts, toys and the like where handling costs must be kept to a minimum.

Although the trend, as already indicated, has been toward packaged merchandise and machines for dispensing such packaged merchandise, the vending machines heretofore provided for this purpose have been characterized by numerous disadvantageous features. Chief among the disadvantageous features of these machines has been the extremely limited merchandise capacity thereof and the difficulties and costs entailed in manually servicing or refilling the same on location.

In general, the prior dispensing machines for individually packaged merchandise operated on what may be termed the gravity feed principle. In such machines, the packages of merchandise were usually stacked one above the other in a vertical magazine or column, and the bottommost package of said stack was dispensed with each operation of the machine until the entire column had been exhausted. Quite obviously, the merchandise capacity of these machines was extremely limited because the dimensions of the vertical magazines were limited by practical considerations of physical size and space. This limited merchandise capacity, of course, necessitated frequent and costly servicing and refilling of the machine on location.

A problem of even greater importance, perhaps, was the fact that the actual servicing operation of the prior machines was excessively time consuming and costly because the same could not be performed to any great extent at a centralized plant where automatic or conveyor methods using unskilled labor could be employed. In a typical prior situation, an operator would have a route consisting of a plurality of machines at various locations. Thus, for example, if the machines in question were dispensing bags of nuts, the operator would start out on his route with a large supply of individual bags of nuts. As he came to each machine at its location, he would be required to open up that machine and then manually load the machine's magazine with a stack of bags of nuts from his supply. The amount of time consumed in the described manual loading of the magazine was costly be-

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cause the same obviously limited the number of machines which a single operator could service. Due to the small margin of profit obtainable from any given machine, the very success of the operator's business often depended upon how great a number of machines he was able to service.

It is, therefore, an important object of this invention to provide a dispensing machine which overcomes all of the disadvantages described hereinabove.

Because of the trend away from bulk dispensing and toward packaged merchandising and the absence of suitable package dispensing machines, many products such as, for example, candy confections and nuts have heretofore been sold in retail outlets in packages or bags displayed or hung from wire stands or racks. Such merchandising required not only manual servicing but also the presence of clerks and cashiers. Moreover excessive pilferage characterized such merchandising.

It is, therefore, a further important object to provide a method of merchandising which will replace the above-described old fashioned and inefficient method of merchandising.

Another object is to afford a dispensing machine for packaged merchandise which has a greatly increased merchandise capacity over prior similar machines so that the frequency with which the machine is required to be serviced is greatly reduced. In this regard, the invention eliminates completely the vertical magazines and gravity feed operation of the prior machines.

A further object is to provide a dispensing machine of the character described which dispenses individual packages of merchandise from a continuous length of such packaged merchandise.

Still another object is to afford a novel merchandise package for a dispensing machine of the character described which comprises an indeterminate length or belt from which individual packages of merchandise may be removed for dispensing.

Yet another object is to provide a merchandise package of the character described which may be stored compactly in large quantities in a container as by folding or accordion pleating the same. It will thus be appreciated that the merchandise may be packaged and the containers machine filled automatically at a central plant. The operator need merely insert an entire container of stored merchandise into a machine on location.

Still a further object is to afford a merchandise package of the character described which comprises its own conveyor belt of merchandise so that the dispensing machine itself is not required to have any expensive conveyor systems or the like.

Yet a further object is to provide a merchandise package of the character described in which the individual packages of merchandise are securely and sanitarily sealed in air-tight fashion. Thus, where the merchandise comprises edibles, the freshness and palatability thereof is guaranteed.

Another object is to afford a dispensing machine of the character described which may be used for dispensing merchandise of any type, such as nuts, candies, screws and nails, nuts and bolts and even liquids.

Yet another object is to provide a dispensing machine of the character described whose operation is trouble-free

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and which has relatively few moving parts which are subject to jamming and/or breakdown.

A further object is to afford a dispensing machine of the character described which is relatively inexpensive to manufacture and yet is most efficient and durable for the purposes intended.

With the foregoing and other objects in view which will appear as the description proceeds, the invention consists of certain novel features of construction, arrangement and a combination of parts hereinafter fully described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that various changes in the form, proportion, size and minor details of the structure may be made with out departing from the spirit or sacrificing any of the advantages of the invention.

For the purpose of facilitating an understanding of my invention, I have illustrated in the accompanying drawings a preferred embodiment thereof, from an inspection of which, when considered in connection with the following description, my invention, its mode of construction, assembly and operation, and many of its advantages should be readily understood and appreciated.

Referring to the drawings in which the same characters of reference are employed to indicate corresponding or similar parts throughout the several figures of the drawings:

FIG. 1 is a perspective (isometric) view of a dispensing machine embodying the principles of the invention with portions thereof broken away to show the general arrangement of components and the positioning of the novel continuous package merchandise supply therein;

FIG. 2 is a fragmentary elevational view of the machine's operating mechanism;

FIG. 3 is a similar view but enlarged and as from the opposite side, and including the operating handle;

FIG. 4 is a fragmentary sectional view taken substantially on the plane of line 4—4 in FIG. 3 and viewed in the direction indicated;

FIG. 5 is a fragmentary top plan view of the package cutting and dispensing mechanism;

FIG. 6 is a fragmentary bottom plan view of the same cutting and dispensing mechanism;

FIG. 7A is a vertical sectional view of the operating and cutting mechanisms showing these parts at rest prior to the beginning of a dispensing cycle;

FIG. 7B is a fragmentary sectional view showing the cutting mechanism during an intermediate stage of the dispensing cycle;

FIG. 7C is a similar view showing the cutting mechanism just prior to the completion of a dispensing cycle;

FIG. 8 is an exploded perspective assembly view of the various components of the cutting mechanism;

FIG. 9 is a fragmentary perspective view of a segment of the novel continuous package of the invention with one package severed therefrom; and

FIG. 10 is a shortened sectional view through a container showing a typical arrangement for storing the continuous merchandise package therein.

Referring now to the several figures of the drawings, the reference character 10 indicates generally a continuous package dispensing machine embodying the principles of the invention. The machine 10 may be of any suitable outer physical configuration, but in the embodiment illustrated, the same comprises a relatively tall and generally rectangular cabinet 12 having a front wall 14. Formed in the front wall 14 is a coin slot 16 adapted to cooperate with a coin mechanism (not shown), a dispensing outlet 18 through which the packaged merchandise is dispensed to the customer and an outwardly protruding operating handle such as 20. The interior of the cabinet 12 is divided, as by means of a horizontal panel 22, into an upper operating chamber 24 and a lower merchandise storage chamber 26. For purposes of gaining access to the interior of the cabinet 10, the

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front wall 14 may comprise or include a hinged door 28.

Removably positioned within the storage chamber 26 is a relatively large container or box such as 30. The container 30 is filled with a supply of dispensable merchandise packaged in a novel manner which will now be described.

Turning to FIGS. 9 and 10 of the drawings, the novel merchandise package of the invention is indicated generally by the reference numeral 31. The package 31 comprises a continuous belt or strip 32 made up of a plurality of interconnected individual packages 34. The individual packages 34 are filled with the particular product which is being dispensed, and the same may be made of any suitable material (preferably transparent) such as cellophane, polyethylene, etc. It is important to note that each adjacent pair of individual packages 34 is interconnected by a flat or corrugated sealed segment 36, said sealed segment being formed with a central hole 38 therethrough. When one of the packages 34 is dispensed, in a manner which will be subsequently described, that package is separated from the belt 32 to afford a separate package of merchandise having a sealed segment 36 at each end thereof (see FIG. 9). The customer thus receives an individual package of merchandise which is tightly sealed to protect the product contained therein. In practice, the package 31 may be made from a tube of material and each individual package 34 is formed from the tube by heat sealing to form the flat segments 36 after the tube has been filled with merchandise.

The efficacy of the continuous package 31 in overcoming the previously described servicing problems may now be appreciated. Thus, for example, the container 30 may be automatically filled by machine or assembly-line filled by unskilled labor at a central plant with a single belt 32, to provide an extremely large supply of merchandise. The belt 32 may be placed in the container 30 in any suitable manner, such as by folding or accordion overlapping to produced stacked layers of packages 34, as indicated in FIG. 10 of the drawings. Of course, the belt 32 may be folded within container 30 to afford a plurality of stacks of bags 34 positioned side by side adjacent each other up to the full capacity thereof. Similarly, the belt 32 may be simply fed into the container 30 at random until the same is filled to capacity. In any event, it is necessary only that the free end of the belt 32 be accessible at the top of the container. In order to service the machine 10 on location, it is simply necessary to open the door 28, insert the entire container 30 into the storage chamber 26, and then connect the belt 32 to the machine's operating mechanism in a manner which will become apparent as the description proceeds.

Turning now to FIGS. 2, 3, 4 and 7A, it will be seen that the numeral 40 indicates generally an operating mechanism which is suitably mounted within the cabinet operating chamber 24. The operating mechanism 40 may comprise a base plate 42 having a pair of spaced upright standards 44 and 46 secured thereto. Rotatably mounted on a shaft 47 journaled in the standards 44 and 46 is a circular conveyor wheel 48 having gear teeth such as 50 formed in the peripheral edge thereof. A plurality of circumferentially spaced arms 52 is secured to one side of the wheel 48 adjacent the periphery thereof, said arms 52 projecting in a plane perpendicular to the plane of said wheel. It is important to note that each of the arms 52 is provided with a central lug 54 for purposes which will become apparent as the description proceeds.

Secured to the opposite side of the wheel 48 may be an annular drum 56. A plurality of inwardly projecting jaw members 58 is secured to the inner surface of the annular drum 56, each of said jaw members being in alignment with one of said arms 52 (see FIGS. 3 and 4). It will be noted that each of the jaw members 58 is provided with a smooth rearwardly tapering surface such as 60. A plurality of notches 62 is likewise formed in the

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drum 56, one in association with each of said jaw members.

A mounting plate 64 may be secured to the standard 46 in spaced relationship therewith to thereby afford a guideway therebetween (see FIG. 4). The mounting plate 64 extends rearwardly, as indicated in FIG. 3 and a detent 66 is pivotally mounted thereon. A tension spring 68 may be attached to an end of the detent 66 and adapted to normally urge the opposite end thereof into one of the drum notches 62 to thereby lock or prevent the rotation of the wheel 48. Similarly, a spring urged pawl 70 may be mounted on the base plate 42, said pawl cooperating with the teeth 50 of the wheel 48 to permit rotation thereof in only one direction (counterclockwise as viewed in FIG. 3).

Cooperating with the drum 56 and jaw members 53 is a pusher arm 72 which is positioned through the guideway formed by the mounting plate 64 and the standard 46. A cylindrical drum follower 74 is rotatably connected to the free end of the pusher arm 72, and said end is connected to the mounting plate 64 by means of a tension spring 76. A depending shoulder 78 is formed in the pusher arm 72 adjacent said free end thereof, for purposes which will be subsequently described.

The opposite end of the pusher arm 72 is pivotally connected as at 80 to one side of an upright activator wheel 82 positioned below the base plate 42. For this purpose, the base plate 42 is provided with an elongated opening (not shown) for accommodating the pusher arm and a portion of the activator wheel therethrough. It will thus be appreciated that any motion of the free end of the pusher arm 72 is directly responsive to rotation of the activator wheel 82.

Formed in the activator wheel 82 is a plurality of gear teeth 84 which project perpendicularly from the side of said wheel to which the pusher arm 72 is attached. A circular gear wheel 86 is mounted on the end of a handle shaft 88, and the teeth 87 of said gear wheel mesh with the gear teeth 84 of the activator wheel 82. The gear wheel 86 and activator wheel thus provide, in effect, a form of spur and crown gear. A bias spring 90 is mounted on the handle shaft 88 and is adapted to return the handle 20 (and associated members) to its normal position after each dispensing cycle. A central hub 92 is secured to the same side of the activator wheel 82, said hub being provided with a pair of opposed notches such as 94 and 96. Cooperating with the notches 94 and 96 is a pair of spring-urged pawls such as 97 and 98 respectively, which pawls may be mounted on an adjoining plate such as 100 (see FIG. 4).

The manner in which the merchandise belt 32 is associated with the operating mechanism 40 will now become apparent by referring to FIGS. 1, 2 and 7A of the drawings. As seen in FIG. 2, the panel 22 is formed with a feeder opening 102 adjacent the back edge thereof. A guide roller 104 may be positioned across the feeder opening 102 by rotatably mounting the same on a pair of flanges such as 106 depending from the panel 22. When the container 30, filled with a belt 32 of packaged merchandise, is positioned in the storage chamber 26, the free end of the belt 32 is simply drawn through the feeder opening 102 and then around and over the conveyor wheel arms 52. The belt is positioned on said arms so that each of the operationally positioned lugs 54 is positioned through a hole 38 in the belt's sealed segments 36 (see FIG. 7A). In this regard, it will be noted that the lugs 54 are provided with pyramidal tapering tops as illustrated and that the diameter of the lugs is only slightly less than the diameter of the holes 38. It will thus be appreciated that any rotation of the conveyor wheel 48 (in the clockwise direction as viewed in FIGS. 2 and 7A) will cause a corresponding movement of the belt 32. Thus, for each package 34 which is dispensed, an equivalent length of the merchandise-filled belt 32 is drawn out of the container 30 and fed into the machine.

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The actual operation of the portions of the machine thus far described may be noted as follows: Insertion of a suitable coin (nickel, dime, etc.) into the coin slot 16 and coin mechanism (not shown) causes the pawl 98 to be retracted so that the activator wheel 82 and all members linked thereto are now free to move. Referring particularly to FIG. 3, turning of the operating handle 20 against the action of the spring 90 rotates the gear 86 which in turn causes the activator wheel 82 to rotate in a clockwise direction through an arc of approximately 180°, or until the pawl 98 catches on the notch 94. The described rotation of the activator wheel 82 causes the pusher arm 72 and particularly the free end thereof, to move in the same clockwise direction. Due to the normal urging of the tension spring 76, the drum follower 74 is caused to roll along and follow the inner surface of the drum 56. The drum follower rolls over the smooth tapering surface 60 of the next adjacent jaw member 58 and then falls off of said surface back onto the surface of the drum.

At this point the machine's cutting mechanism, which will be subsequently described, has dispensed a package 34, and the pusher arm 72 has reached the approximate position indicated in broken line outline. When the handle 20 is now released, the bias spring 90 causes the handle to return to the normal position so that all of the previously described motions are reversed. It is important to note, however that as the activator wheel 82 rotates in the counterclockwise direction, it must carry the pusher arm 72 with it. Since the drum follower 74 is now positioned in a jaw member 58, the counterclockwise motion of the pusher arm results in a similar motion of the conveyor wheel 48. In this regard, it will be noted that the depending shoulder 78 of the pusher arm 72 pushes the protruding edge of the detent 66 out of the particular notch 62, thereby permitting the conveyor wheel to rotate. Return of the pusher arm 72 to the original starting position of course results in a movement of the merchandise belt 32. Since the angular distance between each pair of arms 52 is substantially equal to the length of a package 34 the next of said packages has been fed for the next dispensing cycle into the cutting mechanism indicated generally by the numeral 105 and which will now be described.

Turning to FIGS. 4 through 8, it will be seen that the base plate 42 is provided with a forwardly positioned dispensing opening 108, a rearwardly extending slot 110, and a similar second slot 112. A pair of elongated angle members 114 is secured to the base plate 42 on either side of the dispensing opening 108 to afford a pair of gibways (see FIG. 4). Slidably mounted within the gibways on the base plate 42 is a cutter plate 116 having an opening 118 in substantial registry with the dispensing opening 108. Depending from the cutter plate 116 is an arm 120 adapted to be accommodated in the slot 110 and an arm 122 adapted to be accommodated in the second slot 112. The cutter plate 116 thus is free to slide on the base plate 42 with its depending arms 120 and 122 moving in their respective slots 110 and 112.

Mounted on the top surface of the cutter plate 116 is an angular member 124 which overlaps a portion of the dispensing opening 108. A cooperating member 126 is connected in aligned relationship to the bottom surface of the cutter plate 116. It is important to note that the angular member 124 and the member 126 are formed with transverse grooves 128 and 130 respectively, for reasons which will soon become apparent.

A second angular member 132 having a sharp transverse edge 134 (see FIG. 7A) and a channel-shaped base 136 is slidably mounted on the angle members 114, 114 so that said edge 134 likewise projects over a portion of the dispensing opening 108. Slidably secured to the bottom surface of the base plate 42 is a channel-shaped member 138 having a forward edge 140 in aligned relationship with the edge 134 of the angular member 132. The

channel-shaped member 138 is formed with a pair of ovate apertures 142, 142 which accommodate therein a pair of pins 144, 144 depending from the base plate 42. The path of motion of the member 138 is thus limited by the length of the apertures 142. The slidable mounting of the angular member 132 and the channel-shaped member 138 may be achieved in any suitable manner, such as by the use of additional sets of gibways, or simply by the use of the screws and enlarged washers illustrated in FIGS. 5 and 6. A thin cutter blade 146 is secured to the base plate 42, and the same may have any form of suitable cutting edge, although I prefer to employ the serrated edge shown (see FIG. 8). Bias springs such as 148, 148 and 150, 150 are provided for urging the angular member 132 and the channel-shaped member 138 respectively into the normal inoperative position of FIG. 7A, wherein the cutting blade 146 is sheathed thereby.

It should, of course, be apparent that the angular members 124 and 132 define the upper entrance into the dispensing opening 108 at the front and rear edges thereof. Similarly, the angle members 114 include upright plates 152, 152 which adjoin the side edges of the opening 108. These four members thus afford a form of funnel which insures that the merchandise belt 32 will feed properly into the dispensing opening 108 without any snagging or jamming thereof.

Returning now to the activator wheel 82, it will be seen that an activator arm 154 is pivotally secured to the opposite side thereof in alignment with the depending arm 122 of the cutter plate 116. A spring 156 is provided to normally urge the free end of the activator arm 154 upwardly as indicated in FIGS. 2 and 7A of the drawings. The free end of the activator arm is formed with a vertical shoulder 158 adapted to engage the depending arm 122. Rotatably mounted on the free end of the activator arm 154 is a slot follower 160 which comprises a pair of enlarged discs 162, 162 separated by a short shank 164.

Cooperating with the activator arm 154 is a vertical slot plate 166 depending from and secured to the base plate 42. The slot plate 166 is formed with an elongated slot 168, and it is important to note that said slot terminates at its rearward extremity in an enlarged, substantially circular depending opening 170. The slot follower 160 is slidably positioned in the slot 168 with the enlarged discs 162 on either side of the plate 166. It should be noted, however, that the slot follower shank 164 is of a smaller diameter than the width of the slot 168, so that the free end of the activator arm 154 is capable of limited vertical movement within said slot.

The operation of the cutting mechanism 105 may now be described with particular reference being had to FIGS. 7A, 7B and 7C of the drawings. When the operating handle 20 is rotated, as previously described in relation to the operation of the conveyor wheel 48, the activator wheel 82 is caused to rotate in the counterclockwise direction as viewed in FIG. 7A. The rotation of the activator wheel 82 results in a similar movement of the activator arm 154, and since the vertical shoulder 158 thereof is engaged with the depending arm 122 of the cutter plate 116, said cutter plate is caused to move toward the left as indicated in FIG. 7B. It will be noted, of course, that as the cutter plate 116 moves as described, the angular member 124 and the member 126 move along with it. When these latter two members come into contact with the sealed segment 36 of the package 34 suspended through the dispensing opening 108, that portion of the belt 32 is likewise moved toward the left. As the described motion continues, the transverse notches 128 and 130 mate with the edge 134 of the second angular member 132 and the edge 140 of the channel shaped member 138 respectively, to firmly grip the sealed segment 36 therebetween. Further movement of the activator arm 154 now causes the second angular member 132 and its cooperating member 138 to likewise move

toward the left until the sealed segment 36 is forced against the now unsheathed cutting blade 146 (see FIG. 7B). The segment 36 has now been cleanly severed so that the separated package 34 can drop through a dispensing chute (not shown) to the dispensing outlet 18.

It is important to note that when the activator arm 154 reaches the position shown in FIG. 7B, the slot follower 160 which must follow the contour of the slot 168 is forced downwardly into the depending opening 170. The downward motion of the free end of the activator arm 154 disengages the shoulder 158 from the depending arm 122, so that the cutter plate 116 and all of its associated elements are free to return to the normal starting position for the next dispensing cycle. When the operating handle 20 is now released, the reverse rotation of the activator wheel 82 brings the activator arm 154 back toward the normal starting position. Simultaneously, the conveyor wheel 48 rotates as described to advance the merchandise belt 32 and thereby insure that the next package 34 is properly positioned through the dispensing opening 108 with the next sealed segment 36 in cutting position. As indicated in FIG. 7A, the relationship of the conveyor wheel 48 and the cutting mechanism 105 is such that the blade 146 can never cut through a package 34 and its contents, but cuts only through the sealed segment 36.

Due to the previously described vertical movement capability of the slot follower 160 within the slot 168, the free end of the activator arm 154 is forced to slide under the depending arm 122 whereupon the spring 156 once again causes the shoulder 158 to engage said arm for the next dispensing cycle. The second angular member 132 and its associated member 140 are, of course, returned to the normal starting position by the bias springs 148 and 150.

For purposes of efficiently and quickly returning the cutter plate 116 to the starting position, I prefer to employ a pneumatic or air cylinder 172 having a yoke 174 connected to a piston 176 and a pair of spring loaded rods 178, 178. During the described motion of the cutting mechanism, the yoke 174 (and associated piston 176 and rods 178) is forced rearwardly by the depending arm 120 of the cutter plate 116. Immediately upon the disengagement of the shoulder 158 from the depending arm 122, the return force of the air piston 172 is sufficient to quickly return the cutter plate 116 to the starting position. Of course, other return means, such as sufficiently strong spring means, may likewise be employed in place of the air cylinder illustrated.

From the foregoing description and drawings, it should be apparent that I have provided a novel continuous package method of merchandising packaged products and a novel machine for dispensing the same. The continuous package is in the form of a single belt, so that all of the described problems relating to the servicing of the dispensing machines on location are eliminated. The continuous package permits greatly enlarged merchandise capacities and the same is suitable for packaging virtually any type of merchandise. The dispensing machine utilizes the continuous belt form of the package and operates most efficiently on the new cutting and conveying principles described. In addition, the number and spacing of the conveyor arms 52 and jaw members 58, and the corresponding length of the pusher arm 72, may be changed to adapt the machine for use with packages of varying sizes. The novel cutting and conveying principle of operation is thus adaptable for dispensing packages of virtually any size or shape.

It is believed that my invention, its mode of construction and assembly, and many of its advantages should be readily understood from the foregoing without further description, and it should also be manifest that while a preferred embodiment of the invention has been shown and described for illustrative purposes, the structural details are nevertheless capable of wide variation within the

purview of my invention as defined in the appended claims.

What I claim and desire to secure by Letters Patent of the United States is:

1. A vending machine for dispensing individual packages from a continuous belt of packaged merchandise consisting of a plurality of individual packages interconnected by flat sealed segments, said vending machine comprising a base plate having a dispensing opening formed therein, upright conveyor means rotatably mounted on said base plate for supporting said belt so that the leading one of said individual packages is freely suspended through said dispensing opening, cutting means slidably mounted on said base plate adjacent said dispensing opening, said cutting means including a cutter blade and a pair of belt-gripping members for forcing said belt over said cutter blade to sever said leading individual package therefrom, and activator means for simultaneously operating said cutting means and conveyor means with each dispensing cycle.

2. The vending machine of claim 1 in which piston means is provided for quickly returning said cutting means to the normal starting position at the end of each dispensing cycle.

3. A dispensing machine for dispensing individual merchandise-filled bags from a continuous belt composed of such bags comprising cutting means for severing said individual bags from said belt, an upright conveyor wheel rotatably mounted on a base plate, said base plate having a dispensing opening formed therein, a plurality of circumferentially spaced arms projecting from the periphery of said wheel in a plane parallel to the axis of rotation of the same, means on said arms for releasably engaging said belt, said arms defining a drum-like configuration and being spaced so that an engaged bag is suspended between an adjacent pair of said arms in otherwise substantially unsupported relationship, said last-mentioned means automatically engaging and releasing said belt upon rotation of said wheel whereby the leading one of said individual bags is freely suspended from said arms and fed into said dispensing opening with each dispensing cycle, and activator means for simultaneously operating said cutting means and conveyor wheel with each dispensing cycle.

4. The dispensing machine of claim 3 in which an annular drum is positioned on one side of said conveyor wheel, a plurality of circumferentially spaced jaw members secured to the inner surface of said drum, each of said jaw members having a smooth surface tapering from the jaw to the inner surface of said drum, and means cooperating with said drum and jaw members for rotating said conveyor wheel during each dispensing cycle.

5. The dispensing machine of claim 4 in which said last-mentioned means comprises a pusher arm, a drum follower rotatably mounted on the free end of said pusher arm and adapted to be engaged by said jaw members, and spring means normally urging said drum follower against the inner surface of said drum.

6. The dispensing machine of claim 5 in which said activator means comprises a rotatable activator wheel having a spring-urged operating handle connected thereto, the opposite end of said pusher arm being pivotally connected to one side of said activator wheel whereby the rotation of said activator wheel in one direction to initiate a dispensing cycle disengages said drum follower from one of said jaw members and rolls the same over said smooth surface of the next adjacent jaw member and back to the inner surface of said drum, and the counter-rotation of said activator wheel at the end of a dispensing cycle engages said drum follower in the jaw of said next adjacent jaw member to return said pusher arm to its starting position and rotate said conveyor wheel.

7. The dispensing machine of claim 6 in which a plurality of notches is formed in said drum, one in association with each of said jaw members, a spring-urged detent

cooperating with said notches to lock said conveyor wheel against inadvertent rotation, and a shoulder formed on the free end of said pusher arm, said shoulder adapted to release said detent for each dispensing cycle.

8. The dispensing machine of claim 6 in which said cutting means comprises a cutter plate slidably mounted on said base plate, said cutter plate having a plate opening normally in substantial registry with said dispensing opening, first and second arms depending from a back portion of said cutter plate and reciprocally positioned in a pair of elongated slots formed in said base plate, a cutter blade mounted on said cutter plate and projecting over the back edge of said dispensing opening, a pair of spring-urged sheath members reciprocally positioned one above and one below said cutter blade to normally sheath the same, a pair of belt-gripping members secured to the top and bottom surfaces of said cutter plate and normally projecting over the front edge of said dispensing opening, and means for sliding said cutter plate rearwardly whereby said gripping members force said belt over said cutter blade to sever said leading individual bag therefrom.

9. The dispensing machine of claim 8 in which said last-mentioned means comprises an activator arm pivotally connected to the opposite side of said activator wheel, a shoulder formed in the free end of said activator arm and adapted to engage said first depending arm and spring means normally urging said shoulder into engagement with said first depending arm, whereby the rotation of said activator wheel in said one direction slides said cutter plate rearwardly, and said counter-rotation returns said activator arm to its normal starting position.

10. The dispensing machine of claim 9 in which slot means is provided for disengaging said shoulder from said first depending arm after each cutting cycle, said slot means comprising a vertical plate dependently secured to said base plate, said vertical plate being formed with a rearwardly extending slot having an enlarged depending opening at the rear terminus thereof, and a slot follower rotatably mounted on the free end of said activator arm, said slot follower being reciprocally positioned in said rearwardly extending slot and capable of limited vertical movement therein, said slot follower and enlarged depending opening cooperating to disengage said shoulder from said first depending arm.

11. The dispensing machine of claim 10 in which return means is provided for returning said cutter plate to its normal starting position upon the disengagement of said shoulder from said first depending arm, said return means comprising a pneumatic cylinder having a piston reciprocally positioned therein and a spring-urged yoke connected to said piston, said yoke bearing against said second depending arm and normally urging said cutter plate to its normal starting position.

12. The dispensing machine of claim 8 in which said belt-gripping members are formed with a transverse groove in the projecting edges thereof, said transverse grooves adapted to engage said sheath members and grip said belt therebetween during each cutting cycle and slide said sheath members rearwardly to force said belt over said cutter blade.

13. A vending machine for dispensing individual packages from a continuous belt of packaged merchandise consisting of a plurality of individual packages interconnected by flat sealed segments having a central hole therein, said dispensing machine comprising a cabinet adapted to store a large supply of said packaged merchandise in the bottom thereof, a horizontal base plate having a dispensing opening positioned in said cabinet adjacent the top thereof, a vertical conveyor wheel rotatably mounted on said base plate, a plurality of circumferentially spaced arms secured to said conveyor wheel and projecting perpendicularly therefrom, a central lug mounted on each of said arms and adapted to be accommodated through said sealed segment holes for engaging said belt on said conveyor wheel so that the leading one of said individual

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packages is freely suspended through said dispensing opening, an annular drum secured to the opposite side of said conveyor wheel, a plurality of circumferentially spaced jaw members secured to the inner surface of said drum, a pusher arm having a drum follower rotatably mounted on the free end thereof cooperating with said jaw members for rotating said conveyor wheel during each dispensing cycle, an upright activator wheel connected to said base plate, the opposite end of said pusher arm being pivotally connected to one side of said activator wheel, a spring-urged operating handle geared to said activator wheel, cutting means slidably mounted on said base plate adjacent said dispensing opening, said cutting means including a cutter blade and a pair of belt-gripping members for forcing said belt over said cutter blade to sever said leading individual package therefrom, an activator arm pivotally connected to the opposite side of said acti-

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vator wheel for operating said cutting means simultaneously with said conveyor wheel, and means for quickly returning said cutting means to the normal starting position at the end of each dispensing cycle.

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