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R. E. MATTESON
CARTON DISPENSER

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2 Sheets-Sheet 1

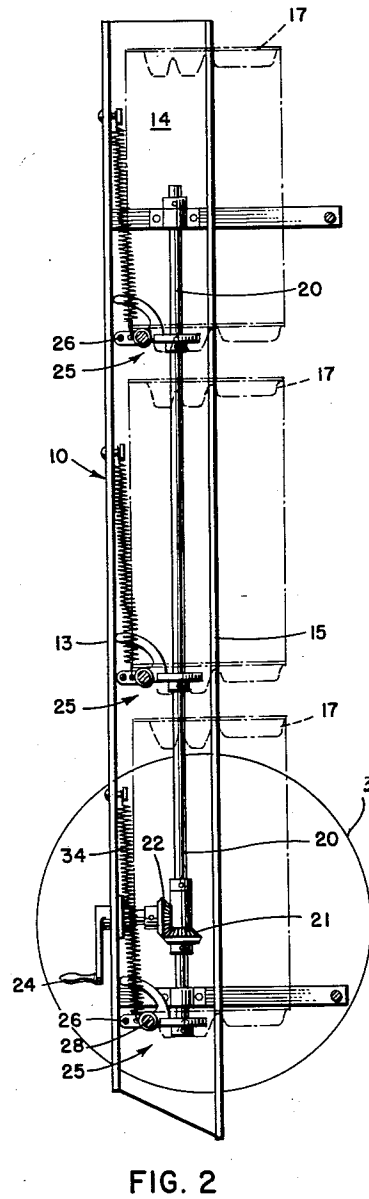
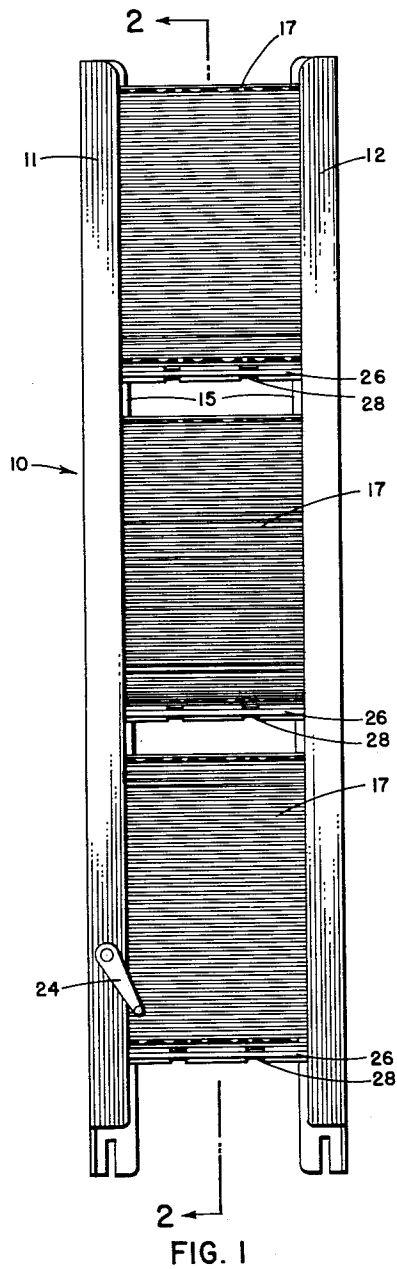


FIG. 2
INVENTOR
Russell E. Matteson

BY
KARL W. FLOCKS
ATTORNEY

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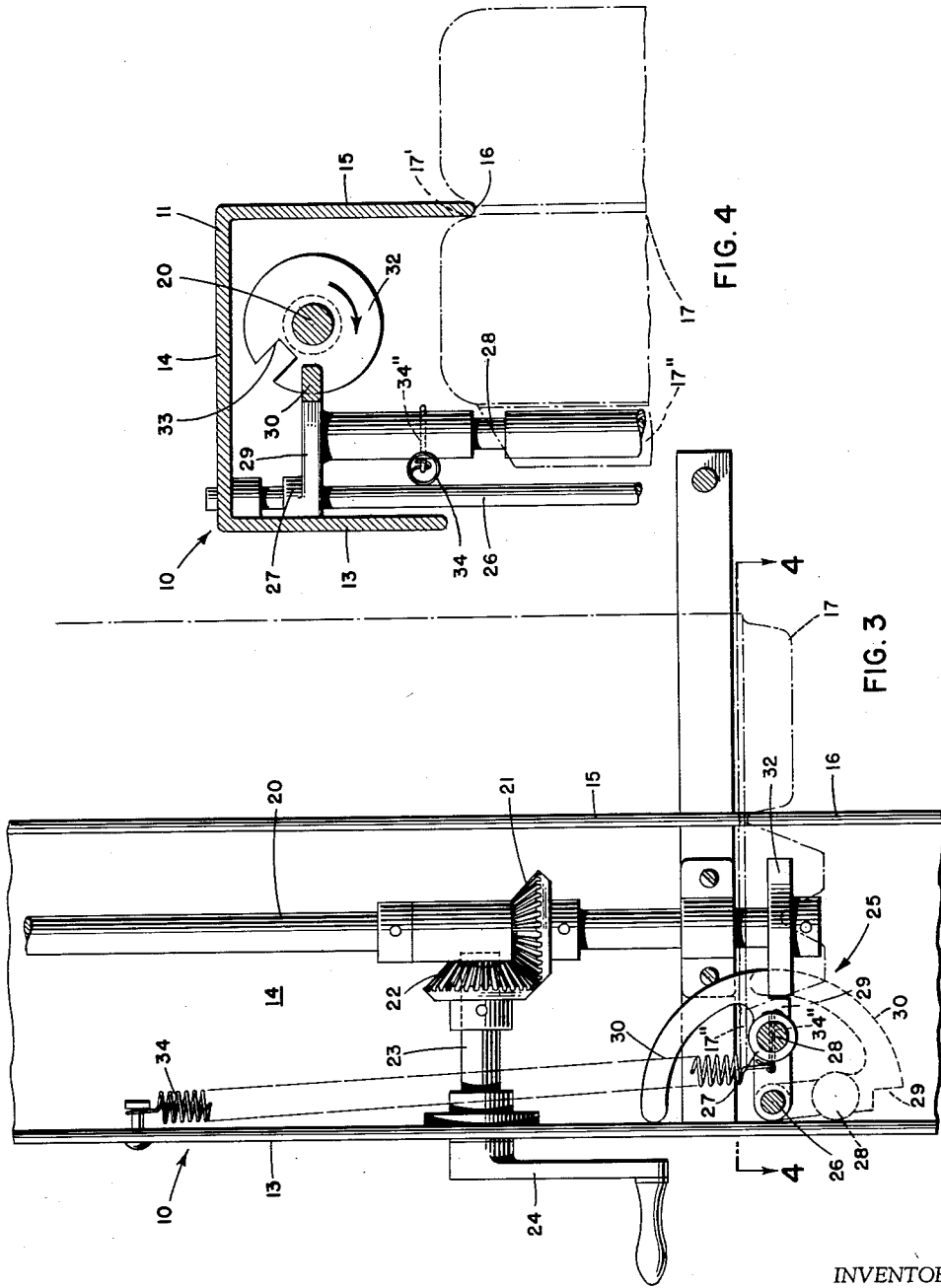


FIG. 4

FIG. 3

INVENTOR
Russell E. Matteson

BY KARL W. FLOCKS
ATTORNEY

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CARTON DISPENSER

Russell E. Matteson, Morris, Ill., assignor to Diamond National Corporation, a corporation of Delaware
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8 Claims. (Cl. 221-75)

The present invention relates to a carton dispenser, and more particularly to such a dispenser that is combined with a chute that is capable of holding a large number of cartons and that dispenses the cartons in successive groups by gravity.

In the packaging of eggs, it is the present practice to establish an egg room in which a large number of workers are employed to handle and grade eggs that are received in bulk from egg producers. The egg candlers pick up three or four eggs in each hand from a bulk supply of eggs, candle them swiftly and place them in appropriate egg cartons, each carton conventionally holding one dozen eggs and each carton receiving eggs of a particular size and grade. As the egg candlers work very swiftly, it is necessary that they be able to have the necessary one dozen size egg cartons quickly available to them, and it has been found that the best manner of thus servicing the egg candlers is to provide them with dispensers for the egg cartons, these dispensers holding a quantity of the cartons and dispensing them when operated by the egg candlers.

An object of the present invention is to provide a dispenser for cartons or the like that can be readily made in any one of various sizes in order to hold various size cartons or other articles.

Another object of the present invention is the provision of a dispenser requiring a minimum of space, and particularly a minimum of space in the horizontal plane.

A further object of the present invention is to provide a dispenser capable of holding a large supply of cartons.

Yet another object of the present invention is the provision of a dispenser which can be loaded from the top and which dispenses the articles or cartons from the bottom, thus permitting the filling of the dispenser by a person other than the dispenser operator or egg candler.

A still further object of the present invention is to provide a dispenser that is extremely simple in construction and economical to manufacture and that has a very small number of readily fabricated parts.

Other objects and the nature and advantages of the instant invention will be apparent from the following description taken in conjunction with the accompanying drawings, wherein:

FIG. 1 is a front elevational view of a dispenser in accordance with the present invention.

FIG. 2 is a vertical section taken on the line 2-2 of FIG. 1.

FIG. 3 is an enlarged fragmentary view of the parts shown in the circle 3 of FIG. 2.

FIG. 4 is a section taken on the line 4-4 of FIG. 3.

Referring now to the drawings, wherein like reference characters are used to designate like or corresponding parts throughout the several views, there is shown in FIG. 1 a dispenser 10 comprising a chute including a pair of inwardly facing spaced channels 11 and 12. Channel 11 is shown in FIG. 4 in cross-section, and it will be understood that channel 12 is generally similar thereto. Channel 11 may be seen to have a front wall 13, a side wall 14 and a rear wall 15, the latter having a free edge 16 that forms a guide for articles to be dispensed. In the embodiment of the invention illustrated, the article to be dispensed comprises an egg

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carton generally designated 17, egg carton 17 having an indentation 17' in the side thereof that cooperates with the rear free guiding edge 16 of the channel 11. It will be understood that the channel 12 has a similar rear free guiding edge for cooperation with a similar indentation on the other side of the carton 17.

A vertically extending shaft 20 (see FIGS. 2 and 4) is rotatably supported in the channel 11 and has a bevel gear 21 secured thereto, gear 21 meshing with a similar bevel gear 22 that is secured to a horizontal handle shaft 23, handle shaft 23 extending through the front wall 13 of channel 11 and having a handle 24 on the outer end thereof.

A plurality of dispenser mechanisms 25 are operated by the shaft 20, and it will be understood that the dispenser mechanisms 25 are preferably identical and that there may be any number of them associated with the dispenser 10. In the embodiment of the invention illustrated, and as may be seen from FIG. 2, there are three such dispenser mechanisms 25 in the dispenser 10.

Each dispenser mechanism 25, see FIGS. 3 and 4, may be seen to comprise a carrier shaft 26 extending horizontally across the front of the dispenser 10 and within the front walls of the channels thereof. The carrier shaft 26 has its ends journaled in the side walls of the channels 11 and 12 and has a bracket 27 secured inwardly of and adjacent the opposite ends of the shaft 26 (only one being shown). As may be seen from FIG. 4, bracket 27 is secured to carrier shaft 26 adjacent the end thereof and extends towards the rear of channel 11. A horizontally disposed retaining bar 28 is supported at one end by the bracket 27, and it will be understood that the other end of retaining bar 28 (not shown, see FIG. 1) that lies within the channel 12 is supported by a similar bracket that is secured adjacent the end of carrier shaft 26 that is suitably journaled in the side wall of channel 12 in any suitable manner.

An arm extends rearwardly from the bracket 27 and carries an upwardly extending arcuate stop member or portion 30, stop member 30 being part of a circle circumscribed about the axis of carrier shaft 26 as a center. In the full line position shown in FIG. 3, the free end of arcuate stop member 30 is in contact with the inner side of front wall 13 of channel 11.

Fixed to the vertically extending shaft 20 is a collar 32 having a radial slot 33 therein. A spring 34 is connected at one end to the retaining bar 28 and at the other end to an upper part of the front wall 13 of channel 11, and thus continually exerts an upward pull on the retaining bar 28.

In operation, the dispenser 10 is loaded from the top by placing a group of the cartons 17 in the top with the indentations 17' being guided by the rear free edges of the channels 11 and 12. The first group of cartons will have the flap portions 17'', see FIGS. 3 and 4, rest on the topmost retaining bar 28. The handle 24 will be turned to rotate the shaft 20 through the bevel gears 21 and 22 and this will cause the rotation of a collar 32 fixed on the lower end of shaft 20 in substantial horizontal alignment with the shaft 28 until a radial slot 33 thereof underlies the arm 29. When this happens, the weight of the group of cartons on the retaining bar 28 will cause the retaining bar 28 to pivot against the action of a vertically extending tension spring 34 suitably anchored at its lower end by a cotter pin 34'' extending diametrically through the shaft 28, see FIGS. 3 and 4, to the position shown in dotted lines in FIG. 3. This function will occur inasmuch as the retaining bar 28 is offset relative to the pivot axis of rod 26, see FIGS. 3 and 4. Thus, retaining bar 28 will be moved out of the path of the group of cartons 17 and will no longer support the group of cartons 17 and thus they will be

permitted to descend by gravity. Once the first group of cartons 17 has passed the uppermost retaining bar 28, the spring 34 will cause the retaining bar 28, arm 29 and arcuate stop 30 to rotate counter-clockwise about the axis of carrier shaft 26 and to thus draw arcuate stop member 30 through the slot 33. Thereafter, the handle 24 will be further rotated to cause misalignment of slot 33 and arm 29.

The first group of cartons will be brought to rest by the retaining bar 28 of the second dispenser mechanism 25, and a second group of cartons 17 may be loaded into the top of the dispenser 10 as before, and the handle again rotated to now advance the two groups of cartons 17 to the next or lower dispenser mechanism 25. Thus, all three groups of cartons 17 can be loaded quickly with a great many cartons.

To remove a group of cartons 17 from the bottom of the dispenser, the handle 24 is turned in the manner above described to cause alignment of slot 33 with the arm 29 as above described, and there will then be dispensed one of the groups of cartons 17.

It will be understood that the radial slots 33 in the three collars 32 are not in vertical alignment, but instead are in staggered relationship so that the bottom dispenser mechanism 25 is the first one to have the slots 33 and the arm 29 come into alignment. Thereafter, the other two dispensers mechanisms 25 are permitted to operate in upward sequence due to the staggered relation of the slots 33.

There has been provided a simple and economical dispenser having relatively few parts and requiring very little room. The dispenser of the present invention can hold articles of various shapes and sizes and can hold a sufficiently large number of articles so that frequent replenishment of the dispenser will not be necessary.

It will be obvious to those skilled in the art that various changes may be made without departing from the spirit of the invention and therefore the invention is not limited to what is shown in the drawings and described in the specification but only as indicated in the appended claims.

What is claimed is:

1. A dispenser comprising a vertically extending chute including a pair of opposed spaced channels including free edge portions for forming guides for articles to be dispensed in a vertical path of travel, a vertically extending shaft rotatably supported in one of said channels, a horizontal handle shaft extending through a portion of said one channel and towards said vertically extending shaft, said handle shaft having a handle at one end thereof, said shafts having meshing bevel gears to afford a driving relationship therebetween, and a plurality of vertically spaced dispenser mechanisms on said chute, each of said dispenser mechanisms comprising a carrier shaft extending horizontally across said chute and having opposite ends journaled on said channels, a bracket on the carrier shaft adjacent the ends thereof and extending radially into said chute toward the path of travel of said article, a retaining bar carried by said brackets and extending parallel to and offset from said carrier shaft, one of said brackets including an arm extending radially therefrom and including an upwardly extending arcuate stop member having a terminal end portion abuttingly engageable on said chute for positioning said retaining bar in a substantially horizontal article-supporting position, a horizontally disposed collar on said vertically extending shaft rotatable beneath said stop member and having a radial slot opening into one edge thereof and alignable with said stop member to permit said stop member to move downwardly therethrough in response to the weight of articles resting on said retaining bar, preventing rotation of said collar and vertical shaft and permitting said articles to move in said path of travel, and a spring on said chute connected to said retaining bar to urge the same and said stop member upwardly after a group of articles have passed thereby whereby

the terminal end of said stop member abuttingly engages said chute and disposes the retaining bar in a horizontal position, said slots in the collars of the dispenser mechanisms being in out-of-phase, angularly offset relationship permitting the dispenser mechanisms to serially advance groups of articles successively through said chute.

2. A dispenser for a vertical stack of articles comprising a vertically extending chute including a pair of opposed spaced channels defining a vertical path of travel for the articles to be dispensed, a vertically extending shaft journaled on said chute adjacent one of said channels, a horizontal handle shaft extending through said one channel and towards said vertically extending shaft, said handle shaft including a handle at one end, said shafts including meshing gears thereon to effect a driving relationship therebetween, and a plurality of vertically spaced dispenser mechanisms on said chute, each of said dispenser mechanisms comprising a carrier shaft extending horizontally across said chute out of the path of travel of said articles and having opposite ends journaled on said channels, a bracket on said carrier shaft adjacent each end thereof and extending into the chute toward the path of travel of said articles, a retaining bar on said brackets and extending parallel to and offset from said carrier shaft, one of said brackets including an arm extending radially towards said path of travel and including a vertically extending stop member including a terminal end portion abuttingly engageable with said chute for positioning said retaining bar in a substantially horizontal position, a horizontally disposed collar on said vertically extending shaft rotatable beneath said stop member and including a radial slot opening into one side thereof for receiving said stop member therein to prevent rotation of said collar and permit said retaining bar to move downwardly under the weight of articles to be dispensed when said stop member is aligned with said slot, and a spring on said chute connected to said retaining bar and normally urging the same upwardly to return said bar to a substantially horizontal article-retaining position determined by the terminal end portion of said stop member.

3. A dispenser for vertically stacked articles comprising a vertically extending chute defining a vertical path of travel for the articles to be dispensed, a vertically extending shaft rotatably supported on said chute, a horizontal handle shaft extending through said chute and towards said vertically extending shaft, said handle shaft having a handle at one end thereof, said shafts having gears thereon to effect a driving relationship therebetween, and a plurality of vertically spaced dispenser mechanisms on said chute, each of said dispenser mechanisms comprising a carrier shaft extending horizontally across said chute and journaled thereon, a bracket on said carrier shaft adjacent opposite ends thereof and extending into the chute toward said path of travel of the articles, a retaining bar on said brackets and extending parallel to and spaced from said carrier shaft, one of said brackets including an arm extending toward said vertically extending shaft and including an arcuate stop member having an abutment portion engageable with said chute to position said retaining bar in an article-retaining position in the path of travel of said articles, a horizontally disposed collar on said vertically extending shaft rotatable beneath said stop member and including a radial slot portion opening into one edge thereof for receiving said stop member therein to prevent rotation of said collar and permit said retaining bar when subjected to the weight of articles thereon to move downwardly out of the path of travel of said articles, and a spring on said chute connected to said retaining bar and normally urging said retaining bar upwardly whereby the abutment portion of said stop member will engage said chute and dispose said retaining bar to an article retaining position, the radial slots in the collars of the respective dispenser mechanisms being in out-of phase, angular relationship

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to permit serial dispensing of the articles through said vertically spaced dispensing mechanisms.

4. A dispenser for vertically stacked articles comprising a vertically extending chute defining a vertical path of travel for the articles to be dispensed, a vertically extending shaft journaled in said chute, means on said chute to rotate said vertically extending shaft about its longitudinal axis and a plurality of vertically spaced dispenser mechanisms on said chute, each of said dispenser mechanisms comprising a carrier shaft extending horizontally across said chute and journaled thereon, brackets on said carrier shaft extending into said chute toward the path of travel of said articles, a retaining bar on said brackets and extending parallel to and in spaced relationship from said carrier shaft, one of said brackets including an arm extending toward said vertically extending shaft and including an arcuate stop member having an abutment portion engageable with said chute for positioning said retaining bar in a substantially horizontal article supporting position, a collar on said vertically extending shaft adjacent to and rotatable beneath said stop member and having a radial slot therein alignable with said stop member for receiving said stop member therein to prevent rotation of said collar and permit said retaining bar when subject to the weight of the articles thereon to move out of the path of travel of said articles to permit said articles to be dispensed, and a spring on said chute connected to said retaining bar and normally urging the same upwardly to return said retaining bar to an article retaining position determined by the stop member abutment portion.

5. A dispenser for vertically stacked articles comprising a vertically extending chute defining a vertical path of travel for articles to be dispensed, a vertically extending shaft journaled in said chute, means on said chute to rotate said shaft about its longitudinal axis, and a plurality of vertically spaced dispenser mechanisms on said chute, each of said dispenser mechanisms comprising a horizontally disposed carrier shaft journaled on said chute, bracket means on said carrier shaft, a retaining bar on said bracket means extending parallel to and spaced from and disposed in said chute beneath the path of travel of the articles to be dispensed for supporting articles thereon, said bracket means including an arm extending into said chute toward said vertically extending shaft and including an upwardly extending stop member having an abutment portion engageable with said chute for positioning said retaining bar in a substantially horizontal article retaining position, collar means on said vertically extending shaft rotatably beneath said stop member and having a horizontally disposed slot portion therein alignable with said stop member to permit the same to move therein for preventing rotation of said collar means and to permit said retaining bar subject to the weight of articles thereon to move out of the path of travel of said articles and to permit the articles to be dispensed, and spring means on said chute connected to said retaining bar to urge it to a normally horizontal position and move the same through the slot portion of said collar whereby the abutment portion of said stop member positions the retaining bar to its article retaining position, the slots in the collars of the respective dispenser mechanisms being in out-of-phase angular relationship to permit articles dispensed by the dispenser mechanisms to be serially advanced downwardly through the path of travel through the successive dispensing mechanisms.

6. A dispenser for vertically stacked articles comprising a vertically extending chute defining a vertical path of travel for articles to be dispensed, a vertically extending shaft journaled in said chute, means engaged with said shaft for rotating the shaft about its longitudinal axis, and a plurality of vertically spaced dispenser mechanisms on said chute, each of said dispenser mechanisms comprising a horizontally disposed carrier shaft journaled on said chute, bracket means on said carrier shaft extending into

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the chute toward the vertical path of travel of the articles to be dispensed, a retaining bar on said bracket means and extending parallel to and in spaced relation from said carrier shaft and positionable beneath the path of travel of the articles to be dispensed, said bracket means including a portion extending toward said vertically extending shaft and including a stop portion engageable with said chute for positioning said retaining bar in an article retaining position in the vertical path of travel of said articles, said vertically extending shaft including means adjacent to and rotatable beneath said stop portion and including a portion selectively engageable with said means to prevent rotation thereof and for permitting the stop portion to have relative vertical movement thereto for permitting said retaining bar to move out of the vertical path of travel of said articles when subject to the weight thereof to permit articles to be dispensed, and spring means on said chute and connected to said retaining bar normally urging said retaining bar to an article-supporting position in the path of travel of said articles whereby the stop portion of said bracket means engages said chute.

7. A dispenser for vertically stacked articles comprising a vertically extending chute defining a vertical path of travel for the articles to be dispensed, a vertically extending shaft journaled in said chute, means engageable with said shaft to rotate the shaft about its longitudinal axis, and a plurality of vertically spaced dispenser mechanisms in said chute, each of said dispenser mechanisms comprising carrier shaft means extending horizontally relative to the path of travel defined by said chute, said carrier shaft means including a retaining bar means spaced therefrom and positionable in the path of travel defined by said chute, said carrier shaft means including a means projecting toward the path of travel defined by said chute, said means including a stop portion engageable with said chute for positioning said retaining bar means in an article retaining position in said chute, said vertically extending shaft including means rotatable beneath said stop portion and a portion alignable with said stop portion to prevent rotation of said last mentioned means and permit the retaining bar means when subject to weight of articles supported thereon to move downwardly out of the path of travel defined by said chute to permit the articles to be dispensed, and spring means on said chute connected to said retaining bar means and normally urging the same into the path of travel defined by said chute to retain articles thereon.

8. In a dispenser for vertically stacked articles comprising vertically extending chute means defining a vertical path of travel for articles to be dispensed, vertically disposed shaft means journaled in said chute out of the path of travel defined thereby, means engageable with said shaft means for rotating it about its longitudinal axis, and at least one dispenser mechanism on said chute means, said dispenser mechanism including carrier shaft means journaled in said chute means out of the path of travel defined thereby, said carrier shaft means including retaining bar means extending radially from the axis of rotation of said carrier shaft means and positionable in the path of travel defined by said chute means, said carrier shaft means including means thereon comprising a stop portion rotatable therewith and engageable with said chute means for positioning said retaining bar means in an article retaining position within the path of travel defined by said chute means, and spring means on said chute means in engagement with said retaining bar means and normally urging the same to an article retaining position against the weight of articles supported thereon, said vertically extending shaft means including means rotatable therewith beneath said stop portion and including a portion selectively engageable with said stop portion during rotation of said vertical shaft means and preventing rotation of said last mentioned means and shaft means and permitting downward movement of said stop portion with respect to the portion on said last mentioned means to per-

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mit said retaining bar means to move out of the path of travel defined by said chute means to permit articles to be dispensed whereby after the articles are dispensed said spring means urges said retaining bar means into the path of travel defined by said chute means and said retaining bar means is positioned in said chute means by said stop portion.

1,044,682
1,649,365
1,753,248
1,855,767
1,972,185
2,359,398
2,386,123

5

References Cited in the file of this patent

UNITED STATES PATENTS

916,345 Martin ----- Mar. 23, 1909

10

8

Melchert ----- Nov. 19, 1912
Poling et al. ----- Nov. 15, 1927
Nutt ----- Apr. 8, 1930
Neuman ----- Apr. 26, 1932
Coats ----- Sept. 4, 1934
Thompson et al. ----- Oct. 3, 1944
Lamendola ----- Oct. 2, 1945