Aug. 15, 1961 E. B. GARMAN 2,996,344

DISPENSING CARTON

Filed Feb. 5, 1958 2 Sheets-Sheet 1

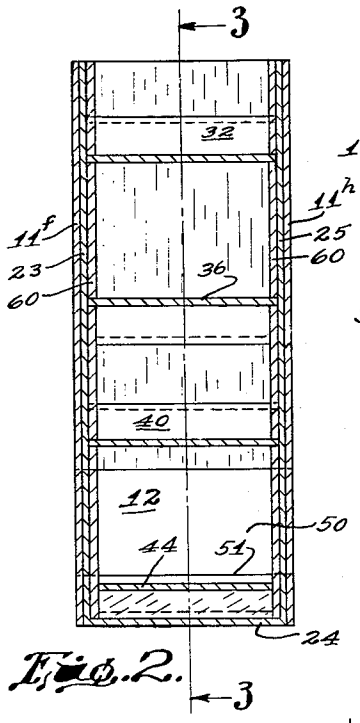


Fig. 2.

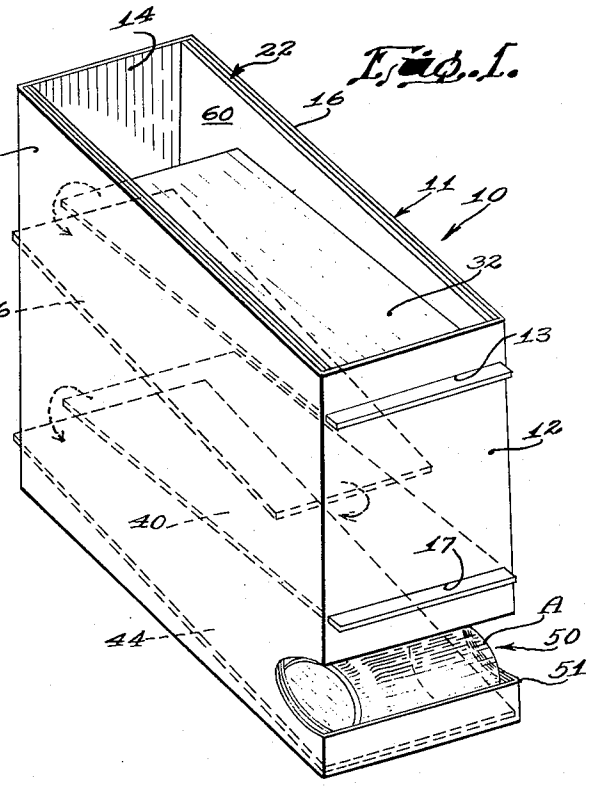


Fig. 1.

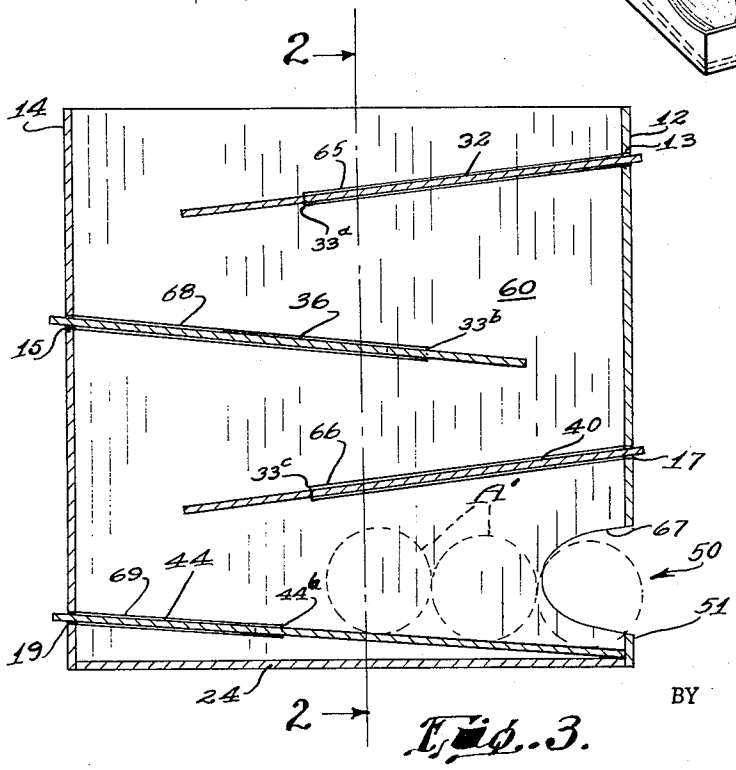


Fig. 3.

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DISPENSING CARTON

Filed Feb. 5, 1958 2 Sheets-Sheet 2

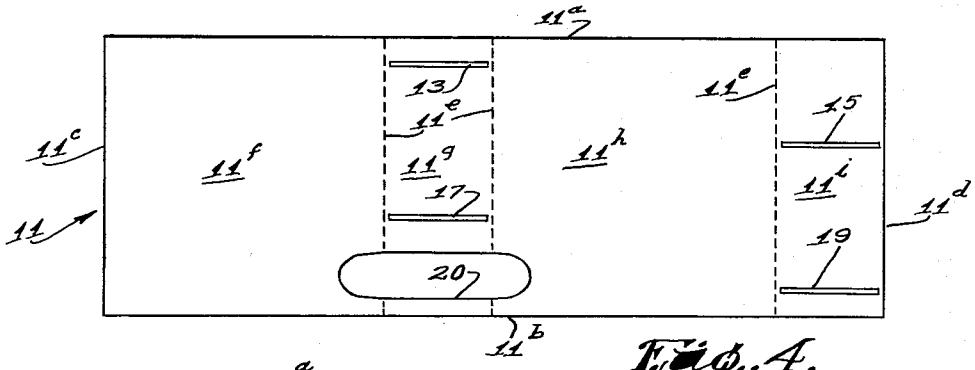


FIG. 4.

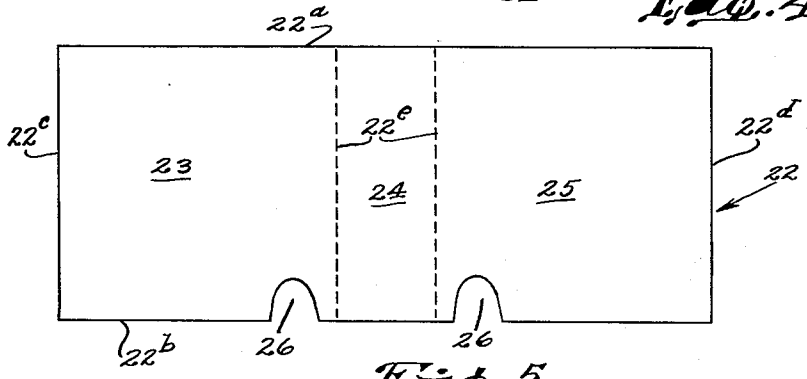


FIG. 5.

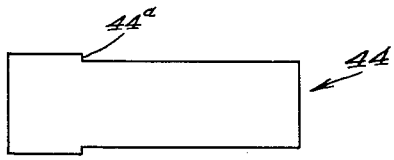


FIG. 7.

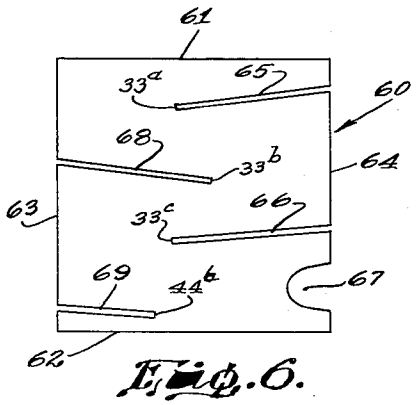


FIG. 6.

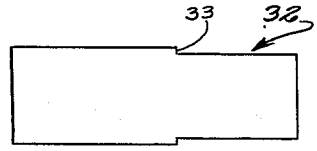


FIG. 8.

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2,996,344

DISPENSING CARTON

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3 Claims. (Cl. 312—45)

The present invention relates to a carton. More particularly, the present invention relates to a novel carton employing a construction which adapts it to contain a plurality of cylindrical articles, and also to continuously and advantageously dispense same.

The marketing of cylindrical items, among which may be mentioned canned goods, jars of baby food, spices, jellies, and the like presents a problem of space economy to the retailer, e.g., grocery, super market, etc., and particularly so where the items are quite small. Thus, it can be seen that a large number of such items arranged on shelves occupies a considerable area. Stacking such items several rows high, while permitting some achievement of space economy, involves considerable risk of toppling and consequent breakage.

Accordingly, it is an object of the present invention to provide a carton which permits a plurality of cylindrical articles to be safely arranged therein in vertical array, and also permits easy removal of a single article from a dispensing opening.

It is a further object of this invention to provide such a carton which features a gravity reservoir for cylindrical articles, thereby automatically delivering articles in succession to the dispensing opening.

It is also an object of this invention to provide such a carton which may be produced from relatively inexpensive materials of construction, and is of relatively simple design, both of which contribute to the economy of manufacture.

The foregoing and other objects of this invention will become apparent to those skilled in the art from the following detailed description taken in conjunction with the attached sheets of drawings, on which there is presented for purposes of illustration only, a preferred embodiment of the invention.

In the drawings:

FIG. 1 is a three-quarter perspective view of the completely assembled carton of this invention.

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

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

FIG. 4 is a plan view of a knock-down blank used in forming the outer shell of the receptacle.

FIG. 5 is a plan view of a knock-down blank for forming the bottom of the receptacle and reinforcing side walls of the receptacle.

FIG. 6 is a plan view of the partition or shelf supports, of which there are two.

FIG. 7 is a plan view of a knock-down blank constituting a partition or shelf.

FIG. 8 is a plan view of a knock-down blank of another partition or shelf.

Basically, the carton of this invention comprises a tall receptacle, generally rectangular in horizontal section, a plurality of inclined partitions or shelves arranged therein for defining a continuous tortuous path for cylindrical articles, and including a dispensing opening in the receptacle, near the bottom thereof, of such contour as to permit easy removal of said cylindrical articles in sequence. The invention further contemplates a novel scheme for positioning said inclined partitions or shelves whereby they are firmly supported in the desired manner to insure continuous trouble-free functioning.

Referring now more specifically to the drawings, there

is shown in FIG. 1 the complete carton **10** of the present invention. It is composed of a front wall **12**, a rear wall **14**, and side walls **16** and **18**. Within the receptacle or compartment defined by these walls are positioned a plurality of downwardly inclined partitions or shelves **32**, **36**, **40**, and **44**. The receptacle includes a dispensing opening, generally designated **50**, near the base of the receptacle and lying primarily in the front wall **12**. A cylindrical jar A lies adjacent the dispensing opening for easy removal. The partitioning member or shelf **32** extends from the front wall **12** through a slot **13** and spans a major proportion of the distance between the front wall **12** and the rear wall **14**. The rearmost end of the partition **32** leaves a distance between it and the rear wall which is sufficient to allow the cylindrical article to pass vertically to the next lower partition **36**. The partition **36** entering the rear wall **14** through slot **15** is inclined downwardly in reverse fashion with respect to the partition or shelf **32**. Similarly, the partition **40** which enters the front wall **12** through the slit **17** is inclined downwardly in reverse fashion with respect to the partition **36**. In like manner, the lowermost partition **44** enters the rear wall **14** through slot **19** and is inclined downwardly in reverse fashion with respect to the partition **40**. The partitions **36** and **40**, like the partition **32**, do not extend all the way from the wall of origin to the opposed wall, thereby leaving a space permitting vertical travel of the cylindrical article from partition to partition. The lowermost partition **44** may desirably extend almost completely from the rear wall **14** to the front wall **12** so as to deliver the cylindrical articles to the dispensing opening **50**.

A blank for forming a portion of the receptacle component of the carton of this invention is shown in FIG. 4, identified by the numeral **11**. The generally rectangular blank **11** is bounded by an upper edge **11***a*, a lower edge **11***b*, and vertical side edges **11***c* and **11***d*. Vertical score lines **11***e*, parallel to the side edges **11***c* and **11***d* divide the blank into panel sections **11***f*, **11***g*, **11***h*, **11***i*. The panel **11***g* is provided with a horizontal slit **13** spaced just downwardly from the upper edge **11***a*, and a slit **17** spaced therefrom toward the bottom edge **11***b*. The panel **11***g* contains a cut-out **20** which extends beyond the score lines **11***e* into the adjoining panels **11***f* and **11***h*, as shown. The cut-out forms the dispensing opening **50** (FIGS. 1 and 3). The panel **11***i* is provided with a horizontal slit **15** which lies about intermediate the slits **13** and **17** in the panel **11***g*. The panel **11***i* further is provided with a horizontal slit **19** which lies generally in the horizontal plane of the cut-out **20**.

In FIG. 5, there is shown in plan a blank **22** which will be used to provide a bottom wall and reinforcing side walls for the receptacle. It is generally rectangular and bounded by a horizontal upper edge **22***a*, a horizontal lower edge **22***b*, and spaced vertical side edges **22***c* and **22***d*. Vertical score lines **22***e* divide the carton into panels **23**, **24**, and **25**. The panels **23** and **25** each contain a hemispherical notch **26** in the lower edge **22***b* adjacent the score lines **22***e*. The wing panels **23** and **25** are generally the size of panels **11***f* and **11***h* in the outer shell component.

In FIG. 6, there is shown a rectangular blank **60** which forms one of the guide panels, as described more fully hereinafter. It is bounded by an upper edge **61**, a lower edge **62** parallel thereto, and vertical side edges **63** and **64**. The side edge **64** contains a pair of slots **65** and **66** which are generally parallel, spaced apart, and inclined downwardly in the direction of the lower edge **62**. This edge is also provided with a hemispherical notch **67** spaced just above the lower edge **62**. Vertical edge **63** is provided with a pair of parallel, spaced-apart slits **68** and **69** which are inclined downwardly in the direction of the lower edge **62**. As illustrated, the slits in opposite

edges are in what may be best described as staggered relationship.

In FIG. 7, there is shown in a knock-down plan view, the bottom partition or shelf 44. It is essentially rectangular, although one end is narrower than the other in part to facilitate the insertion thereof in the slots in the partially erected carton. In addition, the cut-back or corner 44*a* serves as a stop contact with the inner extremity of the slits in the guide panel.

In FIG. 8, there is shown in knock-down blank form, a partition or shelf which may be used to form the upper shelves 32, 36, or 40. It is likewise narrow at one end for reasons explained, and is shorter than the partition 44 so as to leave a space between the inner end and the opposite wall, as discussed hereinbefore. This partition includes a cut-back corner 33 to serve as a stop in a similar manner as discussed in the preceding paragraph.

To erect the dispensing carton of this invention, the blank 11 is first folded on the score lines 11*e* so that the edges 11*d* and 11*c* come together, after which they are taped or otherwise secured together, as, for example, by provision of a glue flap (not shown) or the like. The member 11 thus becomes the outer shell of the receptacle, and, as erected, is placed on its bottom edge 11*b*. Next, the blank 22 is folded about score lines 22*e* to bring the panels 23 and 25 into upstanding, parallel, spaced-apart relationship, and perpendicular to the panel 24. It is then inserted down into the rectangular opening defined by the edge 11*a* of the outer shell 11. The panels 23 and 25 are arranged in flush abutting contact, respectively, with the panels 11*f* and 11*h*, and with the notches 26 is registry with the cut-out 20. At this stage, the panel 24 will constitute the bottom of the carton of this invention, and the side walls will be composed of thicknesses 11*h* and 25, and 11*f* and 23. If desired, the double-thickness walls may be secured to each other by a quick-setting adhesive or by the use of staples, although such is not necessary, as the parts are self-held when completely assembled. Next, two fo the guide panels or partition support members 60 are inserted into the carton to lie flush against the panels 23 and 25, and with the hemispherical notch 67 in registry with the notches 26 and the cut-out 20. Finally, the partitions or shelves are inserted through the slits 13, 15, 17, and 19 in the panels 11*g* (the front wall 12 of FIG. 1), and 11*i* (the rear wall 14 of FIG. 1). The side edges of the wide portion of the partitions or shelves will ride in the staggered grooves or slots 65, 66, 68, and 69 in the guide panel 60. The corner or cut-back 33 of the partition 32 will contact the inner terminus 33*a* of the slit 65. Likewise, identical corners of partitions 36 and 40 will contact the inner terminus of slits 68 and 66, respectively. The corner or cut-back 44*a* of the lowermost partition 44 will contact the inner terminus 44*b* of slit 69. The dimensions of the slits and the location of the corners or cut-backs are chosen to insure that the partitions or shelves do not extend too far toward the opposite wall. In this fashion, a space is provided which will be sufficient to allow the cylindrical articles to fall easily from the higher partition to the next lowermost partition or shelf. It will be appreciated that the partitions or shelves are thus firmly held in the desired downwardly inclined relationship, and there will be produced a carton essentially as shown in FIGS. 1, 2, and 3. A portion of the partitions or shelves will extend outwardly beyond the confines of the receptacle and, by contact with the edges of the slits in the outer shell, will actually help to hold the bottom wall, due to frictional contact through the guide panel 60 and the wing panels 23 and 25, the latter being integrally attached to the panel 24 forming the bottom wall. It will be appreciated that the width of the partitions or shelves may be chosen to function as described. Of course, the bottom wall does not bear a great deal of weight in any event, as the shelves or partitions themselves support the cylindrical articles.

A plurality of cylindrical articles of the type mentioned may be placed on the uppermost partition 32, from whence they will pass downwardly to drop onto partition 36, then reversely toward the front wall of the carton, thence downwardly to the partition or shelf 40 to roll rearwardly, thence to the lowermost partition 44, and thence forwardly to a point adjacent the opening 50. (Note arrows in FIG. 1.) The opening 50, as defined by the cut-out 20 and the notches 26 and 67, is spaced above the base of the carton so as to leave a restraining vertical lip 51 which will prevent the cylindrical articles from rolling freely therefrom. The size of the dispensing opening is selected in accordance with the size of the cylindrical articles to be contained and dispensed thereby, and, in particular, the notches 26 and 67 and the portion of the cut-out in the panels 11*f* and 11*h* are chosen such that the ends of the cylindrical articles will be sufficiently exposed that they can be manually gripped by the consumer or purchaser, lifted up over the restraining lip 51, and removed. The carton illustrated is readily adapted to contain a plurality of cylindrical articles arranged on their sides on the shelves or partitions. As the article near the dispensing opening is removed, gravity will cause all the articles to roll laterally and downwardly one position closer to the dispensing opening. (See jars A'.)

As can be seen, the carton construction of this invention is of essentially simple design and can be economically produced with a variety of relatively cheap materials of construction. It has been found that corrugated board is well adapted for this purpose, as it is sufficiently stiff, yet is slightly deformable, so that the dimensions need not be too accurately maintained, yet allowing the carton to be erected satisfactorily. Other materials of construction may, of course, be used; thus, fairly heavy chip board is satisfactory. Also, materials such as cloth-plastic laminates, molded plastics, and the like may be used. The vertical stacking provided by the carton construction of this invention readily accomplishes space economy at the retail level, and does so safely. The proprietor need only replenish the supply of cylindrical articles in the receptacle as it becomes empty.

If desired, certain of the upstanding walls of the carton may be provided with a see-through opening so that the proprietor may determine the number of articles in the receptacle and anticipate refilling.

It will appear obvious to those skilled in the art that modifications may be incorporated into the carton construction disclosed herein, and it is not intended to be limited to the exact construction shown and discussed herein, except as necessitated by the scope of the appended claims.

I claim:

1. A dispensing carton for cylindrical articles comprising an outer receptacle having pairs of opposed end and side walls, said end walls being provided with substantially full width, vertically spaced, horizontal slots in staggered relationship, an inner channel member comprising a central panel forming a bottom wall for said carton, upstanding wing panels foldably secured to said central panel and in flush engagement with the side walls of said receptacle, a plurality of partition members extending alternately from said end walls, and a pair of generally rectangular inner guide panels resting on said central panel and each held flush against one of said wing panels, each of said guide panels having a plurality of downwardly inclined slits extending laterally in staggered relationship from opposed vertical edges, said slits and said slots in said end walls cooperating to define supports for said partitioning members, the lower free edges of said partitions leaving a space therebetween and the end walls for passage of articles from the higher partition to the next lower partition, one of said walls being provided with a dispensing opening spaced just upwardly from the bottom wall and of sufficient size to permit manual gripping of successive articles and removal thereof.

2. A dispensing carton for cylindrical articles, comprising an outer receptacle having pairs of opposed end and

side walls, said end walls being provided with substantially full width, vertically spaced, horizontal slots in staggered relationship, a pair of guide panels respectively disposed parallel to said side walls, each of said panels having a plurality of downwardly inclined slits extending generally laterally in staggered relationship alternately from the two vertical edges of a panel, said slits having upper ends adjacent said slots, a plurality of transverse partitions disposed between said guide panels, said partitions having upper free ends supported by said slots and marginal side edges supported by said slits, each of said partitions, except the lowermost, also having a lower free end defining a space, said free end and the adjacent end wall for the passage of articles from a higher partition to the next lower partition, said lowermost partition substantially spanning the space between the end walls, and the end wall adjacent the lower end of said lowermost partition being provided with a dispensing opening of a size to permit removal therethrough of said articles in single sequence.

3. A dispensing carton for cylindrical articles, comprising an outer receptacle having pairs of opposed end and side walls, said end walls being provided with substantially full width, vertically spaced, horizontal slots in staggered relationship, a pair of guide panels respectively disposed parallel to said side walls, each of said panels having a plurality of downwardly inclined slits extending generally laterally in staggered relationship alternately from the two vertical edges of a panel, said slits having upper

ends adjacent said slots and lower ends terminating inwardly from said vertical edges, a plurality of transverse partitions disposed between said guide panels, said partitions having upper free ends supported by said slots and marginal side edges supported by said slits, said partitions also having a portion abutting against the lower end of said slits, thereby restraining said partitions against downward movement, and each of said partitions, except the lowermost, having a lower free end defining a space between said free end and the adjacent end wall for the passage of articles from a higher partition to the next lower partition, said lowermost partition substantially spanning the space between end walls, and the end wall adjacent the lower end of said lowermost partition being provided with a dispensing opening of a size to permit removal therethrough of said articles in single sequence.

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