

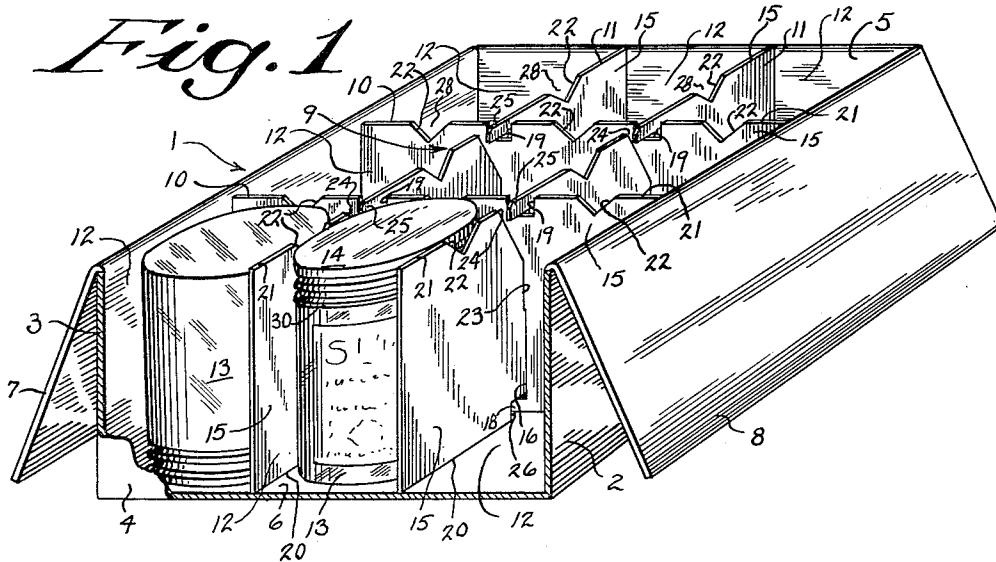
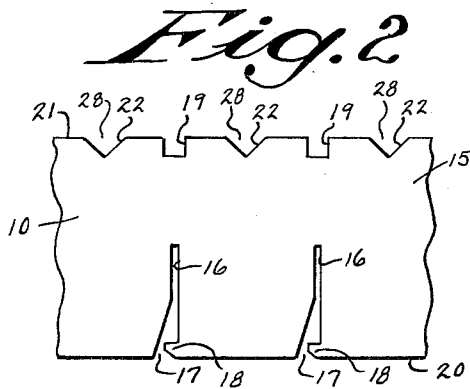
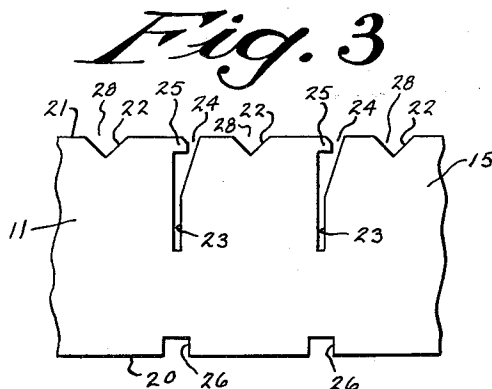
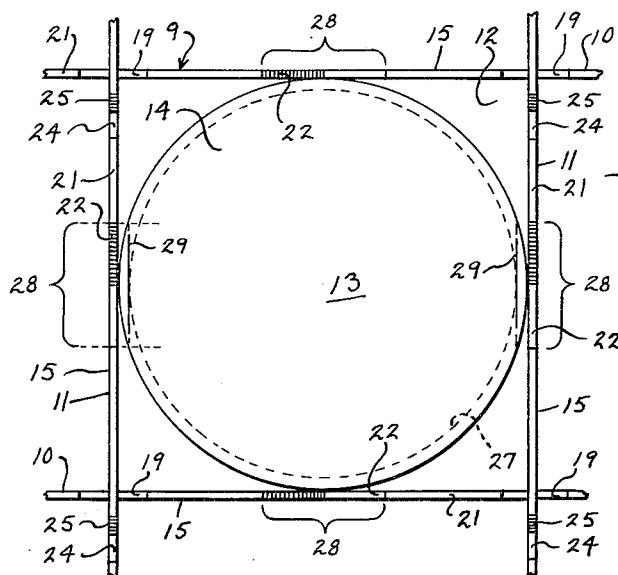
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PARTITION MEMBER

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1

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1 Claim. (Cl. 229—15)

The present invention relates to partitions for cartons used in packaging jars wherein each partition is comprised of a plurality of contiguous partition cell walls, each of which has a straight bottom edge and a top edge and a top edge with an upward opening wedge-shaped notch centered therein, said wedge-shaped notch having a maximum width approximately equal to the length of a chord of an outer circumference of a cap on said jars, which chord is tangent to an external surface of said jar.

Partitions are commonly assembled in an orthogonal system in cartons to provide a plurality of individual cells to receive and protect jars of foodstuffs or other products. Frequently, such cartons with partitions are sold to glass jar manufacturers, who fill the cartons with empty jars and sell them to producers of retail products to be merchandised in the jars. The producers, upon receipt of the cartons of jars, will mechanically remove the jars from the cartons, fill the jars, cap the jars, and automatically repack the filled and capped jars in the cartons and seal the cartons. The cartons are then shipped to retailers, wholesalers or other distributors as the case may be.

Particular problems arise in the use of such partitions with wide mouthed jars which have caps extending beyond the widest diameter of the jar. To achieve economy of space as well as optimum protection for the jars it is important that each of the rectangular partition cells be as small as possible while enclosing the entire jar. However, when the empty jars are mechanically removed from their close-fitting cells, they tend to become slightly askew, bind against their partition cell walls and drag the partitions out of the carton. Also, when the filled and capped jars are automatically packed in the partition cells, overhanging portions of the caps on jars that are not perfectly centered tend to catch on the top edges of the partition cells, preventing the jar from seating in the bottom of its cell. Hence, to close the cartons it was frequently necessary to repack the off-centered jars manually at great expense and loss of time. In the past, the top edges of the partitions have been cut away below the level of the protruding cap, to prevent the jars from catching on the partition before they were seated in the bottoms of the cells, but this deprived the carton of needed support and the jars of adequate protection with resulting breakage in handling. Even greater breakage was encountered in the shipping of empty jars, which lacked even the caps to insulate one jar from another so that the destructive collision of glass against glass could cause great damage.

The present invention solves the problem by providing a small, upward opening wedge-shaped notch in the center of the top edge of each partition cell wall. The width of the mouth of such a notch is approximately equivalent to the length of a chord of the outermost circumference of the jar's cap, which chord is tangent to the lateral surface of the jar. Hence, the jar cap cannot catch on a horizontal top edge of a cell wall, but may engage the sloping walls of the notch, which will tend to guide the jar to the bottom of the cell. The bottom edge of the partitions is maintained straight to provide an uninterrupted partition wall. Hence, when the jars are empty they may be inserted into the partition cells upside down so that the mouth of the jar, which is its weakest part, will have the maximum protection of a solid partition cell

2

wall and the bases of the jars, since they are usually smaller and stronger than the mouths, are not likely to suffer damage from collision, one against another.

Accordingly, it is an object of the present invention to provide a partition for packing cartons for jars such as will prevent caps on the jars from catching on the top edges of the partitions.

It is another object of the present invention to provide a partition for use in packing cartons for jars which partition member will prevent capped jars from catching on the partitions and at the same time provide maximum strength of the carton and protection for the jars.

It is another object of the present invention to provide partitions for packing cartons containing wide mouthed jars which may be easily packed and unpacked.

It is another object of the present invention to provide a partition member for a carton for jars such that empty jars may be readily removed and provided maximum protection against breakage.

The foregoing and other objects will appear in the description to follow. In the description, reference is made to the accompanying drawing which forms a part hereof and in which there is shown by way illustration a specific embodiment in which this invention may be practiced. These embodiments will be described in sufficient detail to enable those skilled in the art to practice this invention, but it is to be understood that other embodiments of the invention may be used and that structural changes may be made in the embodiment described without departing from the scope of the invention. Consequently, the following detailed description is not to be taken in a limiting sense; instead, the scope of the present invention is best defined by the appended claim.

In the drawings:

FIG. 1 is a view perspective of a carton containing partitions embodying the present invention, one carton end wall being broken away,

FIG. 2 is a side elevation of a portion of a partition embodying the present invention,

FIG. 3 is a side elevation of a portion of a partition embodying the present invention and designed to be assembled with the partition shown in FIG. 2 to form intersecting sides of partition cells, and

FIG. 4 is a top plan view of portions of four partition members embodying the present invention assembled to form a partition cell containing a jar.

Referring now specifically to the drawings, in FIG. 1 a carton 1 is shown having side walls 2 and 3, end walls 4 and 5, a bottom 6 and top flaps 7 and 8. The carton 1 contains a partition assembly 9 made up of row partitions 10 and column partitions 11 assembled in an orthogonal system to create partition cells 12. In one partition cell 12 is an empty jar 13, seated upside down. A filled jar 13 with a screw cap 14 on it is seated in the adjacent partition cell 12.

In FIGS. 2 and 3, respectively, portions of a row partition 10 and a portion of a column partition 11 are shown. The use of the terms "row" and "column" is purely arbitrary and intended for no other purpose than to permit convenient description of the complementary configuration of the partitions which allow them to be assembled in the orthogonal system shown. Each row partition 10 may be considered a series of contiguous cell walls 15 separated by a downward opening slot 16. About half way down from the top of the downward opening slot 16 one side of the slot diverges from the center to provide an access way 17 to the slot 16. A locking member 18 extends from the opposite side of the slot 14 part way across the access way 17 of the slot 16. Centered directly above the downward opening slot 16 is an upward opening rectangular notch 19. While a bottom edge 20

3

of each cell wall 15 is straight and designed to set flat against the bottom 6 of the carton 1, a top edge 21 of each cell wall 15 is interrupted at its center by an upward opening wedge-shaped notch 22.

The column partition 11 differs from the row partition 10 in that the column partition 11 has its series of cell walls 15 divided by an upward opening slot 23. About half way up from the bottom of the upward opening slot 23, one side diverges from the vertical to form an access way 24 and a locking member 25 from the opposite side of the upward opening slot 23 extends part way across the access way 24 of the slot 23. Centered beneath each upward opening slot 23 is a downward opening rectangular notch 26. As in the row partition 10, each cell wall 15 in the column partition 11 has a straight bottom edge 20, but its top edge 21 is interrupted at its center by a wedge-shaped notch 22 opening upward.

To assemble the row partitions 10 and the column partitions 11, the access way 17 of the downward opening slot 16 in the row partition 10 is placed over the access way 24 of the upward opening slot 23 in the column partition 11, and the two partitions 10 and 11 are pressed together until the top of the downward opening slot 16 in the row partition 10 engages the bottom of the upward opening slot 23 in the column partition 11. The locking members 18 at the access way 17 of the downward opening slot 16 are now in the downward opening rectangular notches 26 in the row partition, and the locking members 25 in the column partition 11 are in the upward opening rectangular notches 19 of the row partition member 10.

When two row partition members 10 and two column partition members 11 are so assembled, as is shown in FIG. 1, they will form, with the carton 1, nine partition cells 12, the center one of which is shown in the top view in FIG. 4. The top of a screw cap 12 is shown in the partition cell 12 in FIG. 4 wherein the broken line concentric circle represents a lateral wall surface 27 of the jar 13. It may be seen in FIG. 4 that the width of a mouth 28 of each upward opening wedge-shaped notch 22 is equal to the length of a chord 29 which intersects the edge 30 of the screw cap 12 and which is tangent to the lateral wall surface 27 of the jar 13 at a point in the center of the upward opening wedge-shaped notch 22.

Cartons such as the carton 1 shown in FIG. 1 are usually made of corrugated board or a similar material having the requisite structural strength and cushioning properties. The partitions 10 and 11 may also be made of corrugated board, but usually they are constructed of a solid fiberboard known in the trade as chipboard. The chipboard of the partitions 10 and 11 is quite rigid and stiff, so as to be capable of lending substantial structural strength to the carton 1. When the carton 1 is closed, both partitions 10 and 11 will extend from the bottom 4 of the carton 1 to the top flaps 7 and 8. The row partitions 10 extend from the side wall 2 to the side walls 3, and the column partitions 11 extend from end wall 4 to end wall 5. The partitions 10 and 11 usually have a vertical dimension approximately equal to the height of the jar 13 with which they are to be used. The size of each cell wall 15 is usually roughly equivalent to the largest diameter of the screw cap 12. Thus, the jars 13 are permitted a minimum amount of movement in their respective partition cells 12 and they are isolated from contact with each other.

4

When the partitions 10 and 11 are assembled together, the locking members 18 and 25 in the rectangular notches 19 and 26 prevent the partitions 10 and 11 from sliding apart, so that the partition assembly 9 may be handled as a unit. When a carton 1 containing a partition assembly 9 of the present invention is filled with empty jars 13 loaded upside down, it may be conveniently emptied by tipping the carton 1 upside down and permitting the jars 13 to slide out of the partition cells 12. In that case, the upward opening wedge-shaped notches 22 permit the jars 13 to slide freely out of their partition cells 12 and preclude their binding together and pulling the partition assembly 9 along with them. Once the jars 13 have been filled and the screw caps 14 screwed tightly in place, the jars 13 may be automatically inserted by a machine into the partition cells 12 having the edges 30 of the caps 12 catch on the partitions 10 and 11. It is the upward opening wedge-shaped notches 22 which prevent the edges 30 of the screw caps 14 from catching on the top edges 21 of the cell walls 15, since due to the close fit of the jars 13 in the cells 12 the only place where the edge 30 of the screw cap 14 can engage the cell walls 15 is at the edges of the wedge-shaped slots 22 which, instead of holding up the jars 13, will tend to center them in the partition cells 12 so that they will slide freely to the bottom 4 of the carton 1. Moreover, those advantages in handling have been achieved without sacrificing the strength of the partition and the protection afforded the contents of the carton because only a minimum amount of the partitions need be removed to practice the present invention.

I claim:

A package for jars with caps having edges projecting laterally beyond the lateral side surface of the jars, comprising;

a carton;

a partition assembly within said carton having row partitions and column partitions, each of said row and column partitions including a plurality of partition cell walls with tops edges, said row and column partitions being assembled in orthogonal interlocking relationship to define cells bounded by said cell walls and containing said jars protectively separated from one another by said partition cell walls, said partition cell walls being approximately as high as said jars and having an upward opening wedge-shaped notch centered in the top edge of each said cell wall; said notch having a mouth width approximately equal to the length of a cord drawn to said projecting edges of said cap and tangent to said lateral side surface of a jar to be separated, whereby said notches will guide capped jars into said partition cells without interference with the caps.

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44,858 1/39 Netherlands.

GEORGE O. RALSTON, *Primary Examiner.*

UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 3,203,612

August 31, 1965

Edwin C. Schaefer

It is hereby certified that error appears in the above numbered patent requiring correction and that the said Letters Patent should read as corrected below.

Column 1, line 12, strike out "and a top edge"; column 2, line 35, after "view" insert -- in --; line 65, for "spot" read -- slot --; line 68, for "slot 14" read -- slot 16 --; column 3, line 16, for "stop" read -- top --; lines 36, 42 and 63, for "cap 12", each occurrence, read -- cap 14 --; same column 3, line 55, for "bottom 4" read -- bottom 6 --; column 4, line 17, for "caps 12" read -- caps 14 --; line 23, for "slots" read -- notches --; line 26, for "bottom 4" read -- bottom 6 --; line 41, for "tops" read -- top --; same column 4, line 42, for "orthagonal" read -- orthogonal --.

EAL)

Signed and sealed this 17th day of May 1966.

test:

NEST W. SWIDER
esting Officer

EDWARD J. BRENNER
Commissioner of Patents