Oct. 11, 1960 A. E. FOOTE 2,955,707

CONTAINER FOR LOOSE OR PACKAGED BOTTLES

Filed Aug. 11, 1959

Fig. 1

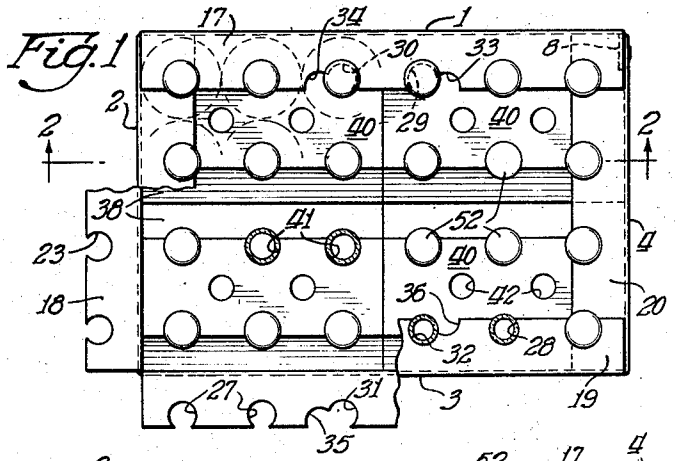



Fig. 2

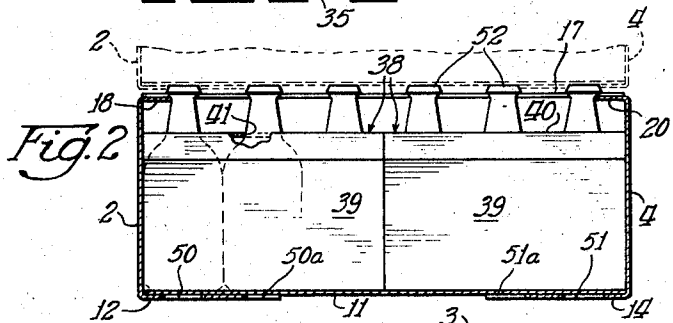



Fig. 3

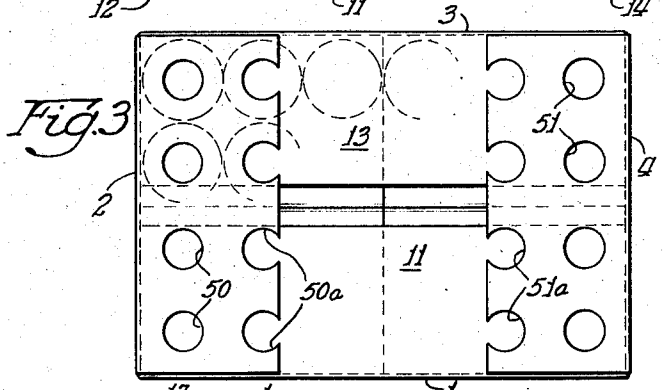



Fig. 4

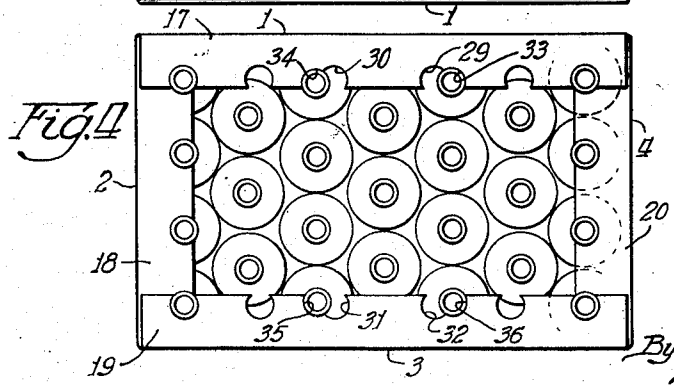
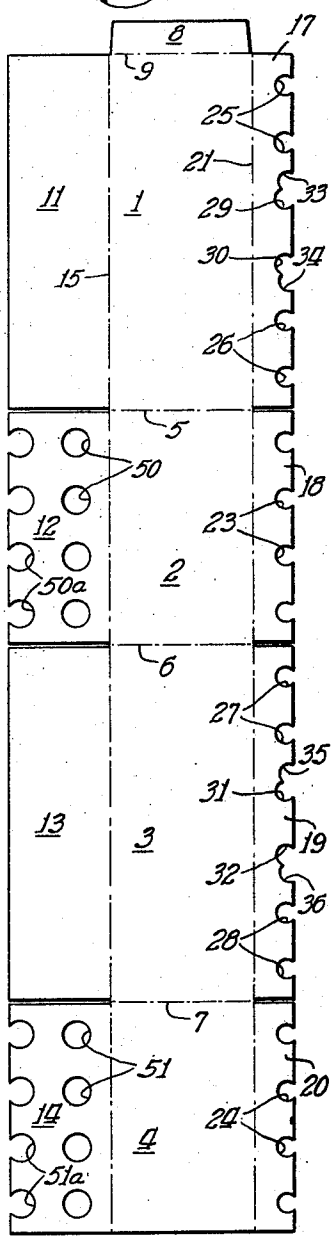



Fig. 5




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United States Patent Office 2,955,707 Patented Oct. 11, 1960



2,955,707

# CONTAINER FOR LOOSE OR PACKAGED BOTTLES

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Filed Aug. 11, 1959, Ser. No. 833,089

7 Claims. (Cl. 206—65)

The present invention relates to shipping containers for bottles and more particularly to a form of shipping container designed to carry unpackaged or loose bottles as well as bottles that have been packaged in carryout cartons.

An important object of the present invention is to provide a shipping container of simple, economical form that may be employed to transport bottles in loose or unpackaged condition from the glass manufacturer to the plant of the bottler where the bottles after being filled may be packaged in groups, such as six bottles in a carton, and the container may then be employed by the bottler to transport the filled bottles to retail outlets.

Another object of the invention is to provide a shipping container with top flaps to form a partial closure for the container and to so form these flaps as to be engageable with the neck portions of bottles in the container, causing the flaps to be held in down-folded or closed position.

A further object of the invention is to provide a shipping container with top flaps so formed as to be engageable with the neck portions of bottles arranged in regular packaged groups, such as six bottles in a carton, or alternately engageable with the neck portions of bottles in a more closely packed arrangement in which alternate rows of bottles are offset one-half the bottle diameter from the other rows.

A further object of the invention is to provide a shipping container of rectangular form with narrow top flaps on each wall of the container, such flaps being engageable with the necks of bottles placed within the case to retain the flaps in downfolded position and to lend rigidity to the container, whereby a form of container of adequate strength may be obtained with relatively light paperboard and thus make it economically feasible to utilize the container only for single trips.

A still further object of the invention is to provide a shipping container for bottles, in which the container has a top closure construction permitting the upper ends of the bottle necks or the caps of the bottles to project slightly above the level of the upper edges of the container walls, and combining with this feature a bottom construction having a plurality of recesses to engage the projecting portions of the bottles when one filled case is placed upon another and thus retain the overlying case from shifting with respect to the underlying case.

Additional objects and advantages of the present invention will become apparent as the description proceeds.

In the drawings:

Fig. 1 is a top plan view of a container made in accordance with the invention showing four packages of six bottles each placed within the container;

Fig. 2 is a vertical sectional view taken along line 2—2 of Fig. 1, and additionally showing the lower portion only of an overlying container placed upon a filled container to illustrate how the bottom of the overlying container engages the bottle tops in the underlying container;

Fig. 3 is a view in plan of the bottom of the container shown in Figs. 1 and 2;

Fig. 4 is a plan view of the container as it appears filled with loose bottles, with alternate rows staggered or offset, to enable twenty-five bottles to be placed in the container; and

Fig. 5 is a plan view of a preferred form of blank from which the container may be constructed.



The present invention as herein disclosed provides a container for bottles or articles of similar shape such for example, as crown top cans. The container is preferably of elongated rectangular shape with its internal height slightly less than the bottle height. Each wall of the container preferably has a flap on its upper edge which may be folded over to partially close the container, and these flaps have openings to accommodate the upper portions of the necks of the bottles, permitting them to project somewhat above the closure flaps when the latter are in down-folded position. Certain of the bottom panels of the container are preferably formed to provide recesses into which there may be received the projecting portions of the bottle necks of a similar underlying, filled container. By such construction an overlying container tends to remain in fixed position upon the one below.

Referring more particularly to the drawings, the container may be formed conveniently from a one-piece blank of corrugated or solid fibre paperboard as indicated in Fig. 5. The blank is suitably cut and scored to provide four interconnected side walls **1**, **2**, **3** and **4**, defined from each other by score lines **5**, **6** and **7**. An attaching flap **8** hinged to the wall **1** along score line **9** may be employed to join the walls **1** and **4** so that the container may be made in collapsed tubular form and so shipped to the user.

The bottom of the container, as herein shown, comprises two pairs of overlapping flaps indicated at **11**, **12**, **13** and **14**, hinged respectively to the lower edges of the walls **1**, **2**, **3** and **4** along a common score line **15**. In utilizing the container for single trip, to be discarded when its contents have been removed either at the retailers or the home, it is desirable to save as much stock as possible and still have a serviceable container. For this purpose it is to be noted that the longer side wall flaps **11** and **13** may be made of a width less than one-half the length of the shorter walls **2** and **4**. Thus, as illustrated, the edges of flaps **11** and **13** are spaced apart a short distance. See Fig. 3. It is convenient therefore to make both the longer and shorter flaps the same width measured outward from their hinge lines.

On the upper edges of the side walls there are preferably provided narrow flaps **17**, **18**, **19** and **20**, hinged respectively to the walls **1**, **2**, **3** and **4** along a common score line **21**. These flaps are formed with openings which engage around the necks of the bottles which are intended to be packed within the container. The openings, if desired, may be spaced inward from the edges of the flaps, but as herein shown the flaps are sufficiently narrow so that the openings extend to the flap edges. The spacing of the openings from the hinge line of the flaps is such that the center of an opening substantially registers with the center of a bottle when it is in proximity with the side wall which carries the flap. In the flaps **18** and **20** there are, in the present instance, four openings indicated at **23**, **23** and **24**, **24**. In the flaps **17** and **19** a pair of spaced openings is shown at each end of the flap. In flap **17** the pairs of openings are indicated at **25**, **25** and **26**, **26**. In flap **19** the pairs of openings are indicated at **27**, **27** and **28**, **28**. Two additional openings are formed centrally of each of the flaps **17** and **19**. Each opening is cut along two intersecting arcs the center points of which are spaced longitudinally of the flap. Each composite opening in effect functions as two bottle neck engaging portions. The portions of the openings constituted by the arcs **29** and **30** in flap **17** and arcs **31** and **32** in flap **19** conform with the pairs of openings

at the end portions of the flaps, while the portions of the openings constituted by arcs 33 and 34 in flap 17 and arcs 35 and 36 in flap 19 are adapted to engage necks of bottles in proximity with the side walls when the bottles are arranged in the pattern illustrated in Fig. 4.

In the arrangement of the bottles illustrated in Figs. 1, 2 and 3, the bottles are in four packages, each having two rows of three bottles. Each group of six bottles is indicated as packaged in a tubular paperboard carton 38 having side walls 39, 39 and a top wall 40. This top wall has six openings for the bottle necks, the openings being indicated at 41, 41, and additionally the top wall has finger openings 42, 42. The container is made to have an interior dimension along walls 2 and 4 to accommodate a row four bottles long when such bottles are packaged within the paperboard cartons. Thus the internal width of the containers is made in practice slightly in excess of four bottle diameters plus four thicknesses of paperboard from which the tubular cartons are made.

In the arrangement of bottles illustrated in Fig. 4, the bottles are not packaged but are placed in loose form in diagonal rows. Transversely the bottle rows alternate between rows of four bottles and rows of three bottles. The bottles in adjacent rows have their centers offset one-half a bottle diameter, resulting in a compact internal arrangement with voids approximately of the size of a half segment of a bottle at the ends of each row of three. In all, there are seven transverse rows—four rows of four bottles each and three rows of three bottles each—making a total of twenty-five bottles.

The arc portions 33, 34 and 35, 36 of the central composite openings in the flaps 17 and 19 are designed to engage the necks of the end bottles in the two centrally located rows of four bottles each. It is to be noted that the centers of these arcs are closer to the edges of the flaps. Thus, when the flaps are folded to extend inwardly of the container the centers of the bottle necks engaged by arc portions 33, 34, 35 and 36 will be offset inwardly of the centers of bottle necks engaged by the outermost openings 25, 26, 27 and 28. As illustrated in Fig. 5 the end rows of four bottles each disposed along the walls 2 and 4 will have their necks engaged by the openings in the flaps 18 and 20 and the end bottles in each of these rows will also have their necks engaged by the outermost openings in the flaps 17 and 19. By locating the centers of the bottles at the ends of the two central rows of four slightly inside the position of the packaged bottles the absence of the two layers of paperboard along the longitudinal center of the container is compensated for, and the four bottles in each of the central rows of four are held in relatively snug contact.

By arranging the bottles in diagonal rows as shown in Fig. 4, resulting in transverse staggered rows of alternately four and three bottles extending transversely of the container, seven staggered transverse rows may be placed in the container instead of six transverse rows, as shown in Figs. 1, 2 and 3. The staggered arrangement locates the lines of the centers of the bottles approximately one-sixth of a bottle diameter closer together, thus seven staggered rows may fit longitudinally in approximately the same space as six rows which are arranged as shown in Figs. 1, 2 and 3. As an example, for bottles 2 15/16 inches in diameter the overall length of seven staggered rows is approximately 3/8 inch greater than six regularly positioned rows.

Means are preferably provided for interlocking the filled containers when placed one above the other in a vertical stack. For this purpose the bottom of the container is so formed as to provide shallow recesses which may receive the projecting tops of the necks of bottles in a subjacent container in a stack. In the present instance the recesses are provided by forming openings 50 and 50*a* in bottom flap 12 and similar openings 51 and 51*a* in bottom flap 14. By first folding the longer flaps 11 and 13 to their bottom forming position and next folding the flaps 12 and 14 against the longer flaps and securing them in place, the openings in the flaps 12 and 14 will form recesses for the tops of the bottle necks.

The relationship of the flaps at the bottom of the container is best shown in Fig. 2 in which a fragment of the lower part of a container is shown resting upon a filled container. The openings 50, 50*a*, 51 and 51*a* are preferably larger than the openings in the narrow top flaps so as to accommodate caps, indicated at 52, 52, closing the bottle neck openings.

The container of the present invention is well suited both for the transportation of unfilled bottles and filled bottles. The container in collapsed tubular form may be delivered to the bottle manufacturing plant and there set up with the bottom flaps secured and filled with twenty-five loose or unpackaged, empty bottles. The bottles are placed in the container in the arrangement shown in Fig. 4, after which the end flaps are preferably folded down so that their openings will be engaged with the bottle necks. By reason of the narrow width of the flaps and the fact that the openings in the flaps extend to their edges, the mouths of the flap openings, first engage the vertical portions of the bottle necks as the flaps are swung down and the material of the flaps at the mouths of the openings may be somewhat deflected as the flap openings move into place to surround the bottle neck. Thus the bottles engaged by the openings in flaps 18 and 20 may be held firmly, and as a consequence the container end construction, even though made of relatively light and inexpensive paperboard, tends to resist deflection away from a square condition.

The longer flaps 17 and 19 are next folded down to engage the four bottles along each of the walls 1 and 3 as shown in Fig. 4. The necks of bottles in the corners of the container will be engaged by openings in the long flaps 17 and 19 as well as by openings in the shorter flaps 18 and 20. The two intermediate bottles on each side of the container in proximity with the walls 1 and 3 will be engaged by the portions 33 and 34 of the composite openings in flap 17 and by the portions 35 and 36 of the composite openings in flap 19. The procedure in engaging the flap openings around the bottle necks is similar to that for the flaps 18 and 20. The mouths of the openings are swung against the bottle necks and the openings are brought into full engagement after some degree of deflection of the flap material at the mouths of the openings. After the flap has been moved to its final, substantially horizontal, position the bottles will be held relatively firmly.

The openings 33, 34, 35 and 36, being somewhat offset from the end openings in the flaps, will tend to crowd inwardly the two centrally disposed rows of four bottles each as shown in Fig. 4. This will tend to reduce vibration of the bottles in transit, not only in the two rows of four bottles but also in the central row of three bottles.

By having the corner bottles engaged in openings in both the shorter and longer flaps, the rigidity of the corners of the container is still further increased, and the container will tend very effectively to resist distortion in handling.

When the containers of empty bottles reach the bottling plant it is a simple matter to raise the narrow flaps and remove the bottles. The container, in practice, will remain in set-up condition and promptly filled with four packages of six bottles each, arranged as illustrated in Figs. 1, 2 and 3. The narrow flaps 18 and 20 will be swung down to engage the rows of four bottles each that are in proximity with the respective walls 2 and 4. The narrow flaps 17 and 19 will then be swung down to engage the row of six bottles disposed is proximity to the respective walls 1 and 3. The flaps 17 and 19 will now each engage six bottles as shown in Fig. 1. The two central bottles in each row of six will be engaged by the portions 29 and 30 of the composite openings in flap 17 and the portions 31 and 32 of the composite openings

in flap 19. Four bottles in each six-bottle package will then be engaged by downfolded top flaps and, as in the previously described arrangement, the four corner bottles in the container will be engaged by two flaps, making a relatively rigid top construction.

While the present description sets forth a preferred embodiment of the invention, various changes may be made in the construction without departing from the spirit of the invention, and it is therefore desired that the present embodiment be considered in all respects as illustrative and not restrictive, reference being had to the appended claims rather than to the foregoing description to indicate the scope of the invention.

I claim:

1. A shipping container package including a plurality of bottles of uniform diameter and height, the container comprising a bottom and four side walls formed of foldable paperboard, elongated flaps hinged along their longitudinal edges on opposite side walls adapted to be folded inward at right angles to said walls to form at least partial closure elements, the interior vertical dimensions of the walls being somewhat less than the height of the bottles disposed in upright position within the container, said flaps being formed with substantially uniformly spaced openings into which the individual necks of a row of bottles placed along each wall and in substantially side by side contact may be received when the flaps are folded down, said flaps being formed with additional openings in the mid portions of the flaps to receive the necks of bottles disposed along each of said walls and spaced apart somewhat less than the bottle diameters, whereby the containers are adaptable either for bottles placed in uniform, longitudinally disposed rows or for bottles placed in parallel rows disposed diagonally of the container with the bottles in alternate rows offset one-half a bottle diameter to utilize the space within the container to better advantage.

2. A shipping container package including a plurality of bottles of uniform height and diameter, the container comprising a bottom and four side walls formed of foldable paperboard, elongated flaps hinged along their longitudinal edges at the top edges of opposite side walls adapted to be folded inward to form at least partial closure elements, the interior vertical dimensions of the walls being somewhat less than the height of the bottles disposed in upright position within the container, said flaps being formed with six substantially uniformly spaced openings into which the individual necks of a row of bottles placed along each wall in substantially side by side contact may be received when the flaps are folded down, said flaps being formed with two additional openings each offset outwardly from the individual pair of centrally located openings to receive the necks of bottles disposed along each of said walls and spaced apart a distance somewhat less than the bottle diameters, whereby the containers are adaptable either for a plurality of uniform, longitudinally disposed rows of six bottles each or for a plurality of parallel rows disposed diagonally of the container with the bottles in alternate rows offset one-half a bottle diameter to utilize the space within the container to better advantage.

3. A shipping container formed of foldable paperboard designed to carry a plurality of rows of bottles in upright position, said container having a bottom and four interconnected side walls, narrow flaps hinged on the upper edge of each side wall, said flaps being inwardly foldable and being formed with a plurality of openings to receive the necks of rows of bottles disposed along the side walls, at least one pair of adjacent flaps disposed at right angles to each other having bottle neck receiving openings adjacent the corner of the container, such openings being in substantial registration and adapted jointly to receive the neck of a bottle placed in such corner of the container.

4. A paperboard shipping container of rectangular shape having a rectangular bottom and four side walls, the bottom being constructed to interlock with the projecting tops of bottles disposed in upright position within a subjacent container of similar contour, said bottom having a panel portion adapted to rest flat upon the tops of the bottles in a subjacent container, the bottom including at least one additional panel portion underlying the first mentioned panel portion and formed with openings to reecive certain of the bottle tops in such subjacent container, whereby to resist slippage of the container with respect to such subjacent container.

5. A container construction designed for interlocked stacking, comprising a bottom and four interconnected side walls, the container being adapted to contain bottles in upright position and of a height somewhat greater than the interior vertical dimensions of the side walls, whereby the upper ends of bottles placed upright within the container will project slightly above the side walls, the bottom of the container being formed with a plurality of recesses into which the projecting portions of the bottle necks of a subjacent container in a stack of containers may project to resist slippage of the overlying container with respect to its subjacent container.

6. A shipping container formed of foldable paperboard, having a bottom and four side walls, said container being combined with a subjacent container having four side walls, a plurality of bottles disposed in upright position in one or more rows in the subjacent container, the height of the walls being such that the necks of the bottles project somewhat above the upper edges of the walls, the bottom of the first mentioned container being formed by two pairs of elongated, overlapping flaps carried by the side walls, the underlying pair of flaps carried by two opposite walls being of a length less than half the dimension of the container measured at right angles to the longitudinal extent of the flaps, whereby a central bottom area is provided which is offset upwardly of the bottom a distance equal to the thickness of the underlying flaps, said underlying flaps being formed with a plurality of die-cut openings adapted to receive therein the upper ends of the necks of bottles in the subjacent container, whereby the overlying container will be restrained from slippage when stacked upon the subjacent container.

7. A single trip container formed from foldable paperboard, a plurality of bottles disposed in upright position in one or more rows within the container, such container being combined with a similar container arranged in subjacent, supporting relation to the first mentioned container, a plurality of bottles disposed in upright position in one or more rows in such subjacent container, such subjacent container including four side walls of a height somewhat less than the height of the bottles therein, flaps hinged on at least two opposite side walls, each flap being inwardly foldable and each having a row of openings formed therein adapted to engage around the necks of a row of bottles within such container, the bottom of the overlying container being formed by inwardly foldable flaps hinged to the bottom edges of the walls, the flaps on two opposite walls being adapted to form a supporting surface and the flaps on the remaining opposite walls having a row of openings formed therein to receive the projecting necks of a row of bottles in the subjacent container to restrain the overlying container from shifting with respect to the subjacent container.

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