LATERALLY INTERLOCKED CONTAINERS

Lyla E. Brown, Jr., 146 Beecher Ave, Cheltenham, Pa.

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The present invention relates to containers or bottles and more specifically to containers which can be interlocked laterally.

A purpose of the invention is to interlock two or more containers laterally into a single pack or nest.

A further purpose is to interlock a plurality of containers laterally by longitudinally extending tongues and grooves integral with the sides of the containers.

A further purpose is to provide an arrangement whereby any individual container may be selected from a pack or nest of containers without disturbing any other container than that which is desired.

A further purpose is to provide containers which interlock and which are flexible and have nozzles so that the containers can be flexed to eject fluids through the nozzles.

A further purpose is to use a flared tenon or dovetail and a mortise to interlock two containers together.

A further purpose is to use a mortise on one face of a rectangular cross-sectioned container and a tenon on the opposite face of another rectangular cross-sectioned container so that identical containers may be used for interlocking.

Further purposes appear in the specification and in the claims.

In the drawings I have chosen to illustrate a few only of the numerous embodiments in which my invention may appear, selecting the forms shown from the standpoint of convenience in illustration, satisfactory operation and clear demonstration of the principles involved.

FIGURE 1 is a perspective view of a plurality of containers of the invention in a pack or nested condition with one of the containers shown partially inserted into the pack.

FIGURE 2 is a top plan view of one of the containers seen in FIGURE 1.

FIGURE 3 is a top plan view of an alternative embodiment of the invention with the cap removed.

FIGURE 4 is a top plan view of an alternative embodiment of the invention with the cap removed.

FIGURE 5 is a top plan view of an alternative embodiment of the invention with the cap removed.

FIGURE 6 is an exploded perspective view of a container of FIGURE 1 showing the use of a stopper and stem in a container of the invention.

FIGURE 7 is a vertical section of the container taken on line 7—7 of FIGURE 2 showing the container compressed to eject liquid out of the nozzle.

Describing in illustration but not in limitation and referring to the drawings:

In the prior art, a plurality of similar types of containers or bottles were assembled into one location or package, it was conventional to use a separate rack or compartment to hold the containers independently erect and in a fixed position relative to one another.

For instance, in a doctor's bag, pill containers were slid into compartments or stalls fabricated of fabric whereby the pill containers were held erect and in a stable and identifiable position. In most instances such auxiliary support arrangements were bulky and bothersome, or not adequate for the number of containers sometimes required.

In the present invention, the container itself is designed to act with a similar container to interlock and form a unitary and compact arrangement or pack of containers which remain erect and in order. The individual containers are readily available for extraction from the interlocked pack regardless of their position in the pack.

Considering now the drawings in detail, I illustrate a container 20 having a top 21 comprising a flat shoulder 22 and a neck 23. The neck has suitable threads 24 which engage threads on cap 25 having a circular wall 26 and a flat top 27. Container 20 has a bottom 28 which is desirably flat and parallel to shoulder 22.

Container 20 has longitudinally extending sides 31 and 33 parallel to each other and longitudinally extending sides 30 and 32 parallel to each other and extending normal to sides 31 and 33. In cross section, sides 30 to 33 inclusive form a rectangle.

Side 31 has formed integral thereon flaring tenon or dovetail 34 of any suitable flare. The side 33 opposite to side 31 has integral therein mortise 35 where side 31 and side 33 cross-section is similar in shape to dovetail 34 and slightly larger in size in order to receive 34 of an adjacent container as will be later explained. Side 32 has integral thereon dovetail 35 which is similar to dovetail 34 and extends longitudinally from shoulder 22 to bottom 28. A mortise 37 similar in cross section to mortise 35 extends longitudinally throughout side 30. Dovetails 34 and 35 and mortices 36 and 37 are suitably positioned symmetrically to the longitudinal center line of the respective sides in the preferred embodiment, but the dovetails and mortises may be offset with respect to the center line where desired.

The container 20 is preferably of a molded composition which can be readily molded on any container or bottle molding press or extrusion device and produced in mass quantities. The material may be any suitable container material such as plastic, glass or metal and in some instances, the material is desirably flexible.

A plurality of containers 20 are assembled into a pack or nest as shown in FIGURE 1. A side 30 of a given container 38 is brought into engagement with a side 31 of a container 39. This is accomplished by engaging dovetail 34 of container 39 at the shoulder 22 with mortise 35 of container 38 at bottom 28 and sliding the containers 38 and 39 longitudinally with respect to each other until a flush position is reached by the shoulders 22 as seen in FIGURE 1. Similarly, container 39 is engaged with container 38. In FIGURE 1, container 39 is shown being engaged with container 38 wherein dovetail 35 of container 39 is engaging mortise 37 of container 38.

The containers are removed from the pack in a reverse manner from that by which they were inserted.

The containers do not necessarily have to be removed from the pack in the same order in which they were inserted. For instance, the interior container 38 can be removed by pulling the container longitudinally of the three remaining containers 39, 39, and 39 without disturbing any of the remaining containers. Of course, although only four containers are shown for purposes of illustration, any number of containers can be interlocked to form any size pack.

In FIGURE 3, there is shown an alternative arrangement of container employing the principle of the invention wherein dowels 40 and 41 are inserted on faces 31 and 32 respectively and extend longitudinally thereof and circular grooves 42 and 43 are placed on opposite faces 30 and 33. Again, the dowels and grooves are centered on the center line of the sides in the embodiment shown but as seen in the embodiment of FIGURE 4 these dowels and grooves may be offset. As seen in FIGURE 4, these grooves are symmetrically placed with respect to the longitudinal center line of faces 30 and 33 respectively and corresponding dowels slightly smaller than the grooves 42 and 43 extend integrally along sides 30 and 32 in engagement of the containers of FIGURE 3 or FIGURE 4.
into a pack of the type shown in FIGURE 1. The containers are slid longitudinally with respect to one another to form a pack as described above. In FIGURE 5, there is shown a container having tongues of T cross section 44 and 45 and corresponding grooves 46 and 47. Tongue 44 of a given container engages groove 46 of the adjacent container and tongue 45 of a given container engages groove 47 of an adjacent container.

The containers may be of the type shown in FIGURE 6 where a tube 50 having holes 51 and a stopper 52 thereon with a nozzle at 53 is inserted into the container as shown in FIGURE 7. A liquid 54 may be propelled from the container by compression of opposed sides, for instance, 51 and 53 by gripping and compressing with the fingers as shown so that the liquid is forced through the holes 51 out through the tube 50 whereby it is sprayed from the nozzle at 53. In the embodiment of FIGURES 6 and 7, the container is of a flexible material such as rubber or polyethylene so that the permissible flexing can occur.

Where it is desirable to further fix the position of the tops and bottoms of the containers flush with respect to each other, projections and depressions acting as detents may be used. Referring to FIGURES 2, 6 and 7, there is shown a depression in the form of a concave hemisphere 55 on dovetail 34 which receives a projection in the form of a convex hemisphere 56 on mortise 35. It should be understood that concave hemisphere 55 or the like on one container will mate with convex hemisphere 56 or the like from an adjacent container.

In view of my invention and disclosure, variations and modifications to meet individual whim or particular need will doubtless become evident to others skilled in the art to obtain all or part of the benefits of my invention, without copying the structure shown, and I, therefore, claim all such insofar as they fall within the reasonable spirit and scope of my claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In closed containers adapted to interlock in abutting relationship with one another, a container having four longitudinally extending sides, a top with an opening therein and a bottom thereon forming a container having a rectangular cross section, an outwardly extending longitudinal projection along the entire length of two sides of the container, said projections being wider in cross section at their outer edges, a longitudinally extending indentation along the entire length of the remaining two sides of the container, said indentations extending inwardly from the outer surface of the sides of the container, open at either end and adapted to slidably mate from either direction with the extending projection of any other container.

2. In containers of claim 1, small hemispherical projections and depressions on the sides of the containers adapted to mate with corresponding projections and depressions on adjacent containers so as to keep flush the top and bottom of the containers.

References Cited by the Examiner

UNITED STATES PATENTS
2,571,504 10/51 Vullemenot 222—211 X
2,980,342 4/61 Armour 222—211 X

FOREIGN PATENTS
828,405 2/52 Germany.
846,602 1/59 Great Britain.
902,465 5/60 Great Britain.

LOUIS J. DEMBO, Primary Examiner.