Aug. 3, 1965 C. E. BIGLIERI 3,198,143

DISPLAY AND SUPPORT RACK FOR RE-USABLE CONTAINERS

Filed Feb. 10, 1964

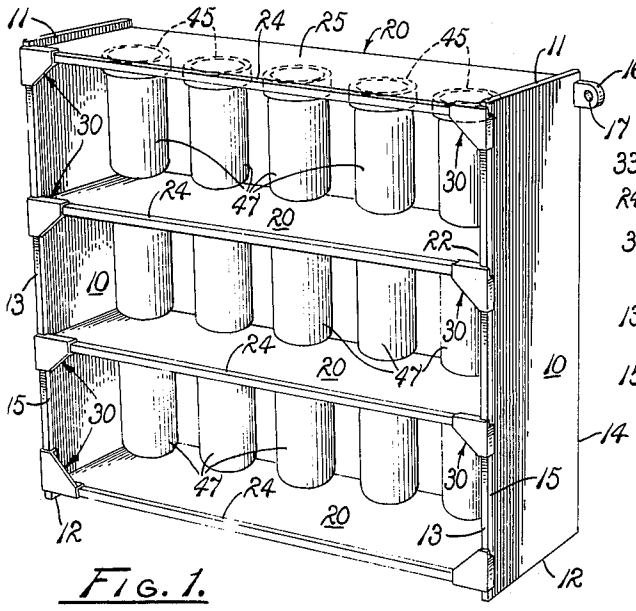


FIG. 1.

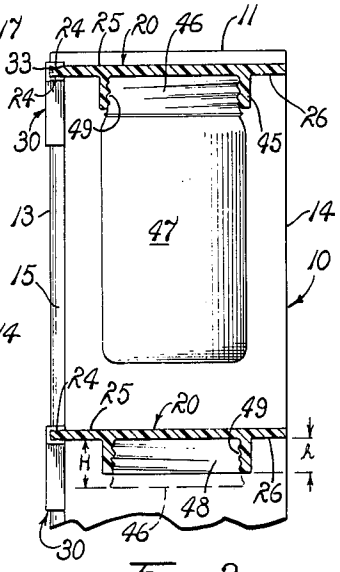


FIG. 2.

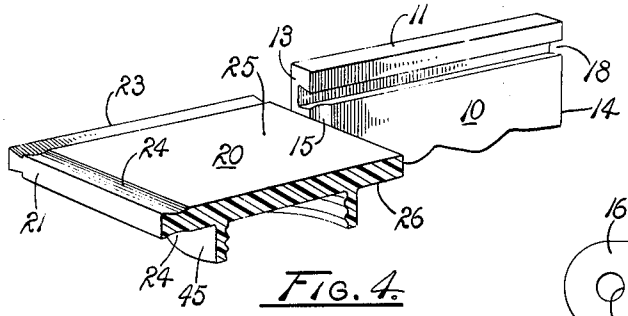


FIG. 4.

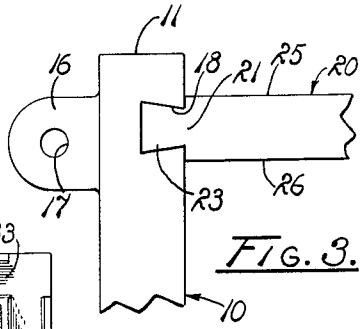


FIG. 3.

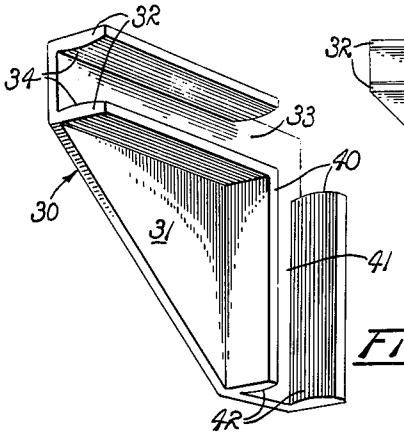


FIG. 6.

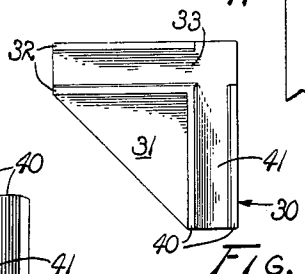


FIG. 5.

CLYDE E. BIGLIERI
INVENTOR

Huebner & Worrel
ATTORNEYS

United States Patent Office 3,198,143 Patented Aug. 3, 1965

3,198,143

DISPLAY AND SUPPORT RACK FOR RE-USABLE CONTAINERS

Clyde E. Biglieri, 2250 Tybo Ave., Reno, Nev.

Filed Feb. 10, 1964, Ser. No. 343,703
8 Claims. (Cl. 108—28)

This invention relates to a display and support rack for re-usable containers, particularly containers which are provided with a removable cover, such as a lid or other closure which can also serve as a means to support the container from the rack in depending relationship.

Many items of commerce, particularly food stuffs, are now merchandised in transparent, rigid containers fabricated of a material such as glass, plastic or the like. Each of such containers is provided with an open mouth through which the contents are admitted and removed and which is closed by a lid, or a cover, detachably secured to the container. Typical of such containers and covers are glass jars provided with rigid caps, preferably fabricated of light-gauge metal, screw-threadably detachably secured to the jar in closing, sealing relationship with the mouth thereof. Such glass containers are frequently employed in packaging and distributing food stuffs, such as coffee, tea, canned fruits and vegetables, pre-cooked baby foods, and the like.

It has been observed by distributors and vendors of articles merchandised in such containers that the purchasers thereof subsequently employ such containers, when empty, for the storage of small items, such as tacks, nails, screws, nuts, bolts, and assorted hardware articles.

Since such transparent containers, either of glass or rigid plastic, are frangible, various methods of storing a quantity of such re-usable containers have been employed to minimize breakage and yet fully utilize their transparency to afford ready identification and location of articles stored therein. In the case of glass jars having metal lids screw-threadably secured thereto, many, purchasers of such containers nail, or screw, the metal lids to the underside of a supporting surface. While this is effective in retaining the lid to the shelf and supporting the container while attached to the lid, it is impossible to remove the complete container, including the closing lid, if it is desired to transport the container in a closed condition to a new location.

In addition, it has been observed that such glass containers experience a rather high mortality rate due to inadvertent dropping and breakage. In such event, a new glass jar must be sought for the lid which has been attached to the underside of a shelf in a semi-permanent manner. Therefore, a need has been recognized for a means of attaching such transparent reusable containers to the underside of one or more shelves of a support rack in manner permitting removal of the entire container complete with closing lid. In addition, the marketing of food stuffs in such transparent re-usable containers indicates the desirability of a rack which could serve both as a display means and a subsequent support for the empty containers following purchase and consumption of the contents. A very desirable characteristic of such a display and support rack is to permit ready disassembly and assembly, while providing adequate storage facilities for a number of such re-usable containers, whether containing their original contents or other items subsequently stored therein following use of such original contents.

Accordingly, it is an object of the present invention to provide a display and support rack for re-usable containers which will dependably maintain such containers in a position convenient for inspection and individual removal.

Another object is to provide such a display and support rack for such containers which can be readily assembled and disassembled.

Another object is to provide a display and support rack which is capable of supporting a plurality of re-usable containers in depending relationship from the rack, including the individual respective covers, or lids, of such containers.

A further object is to provide a readily disassembled and assembled display and support rack for a plurality of storage containers, the rack being fabricated of a minimum of individual parts which are designed and fabricated to permit maximum of interchangeability.

A still further object is to provide a display and support rack with novel interchangeable reinforcing elements to enhance the rigidity of the rack, while permitting ease of assembly and disassembly.

These, together with other objects, will become more fully apparent upon reference to the following description and accompanying drawings.

In the drawings:

FIG. 1 is a perspective view of a display and support rack embodying the principles of the present invention supporting a plurality of re-usable containers therein.

FIG. 2 is a fragmentary, enlarged view in vertical transverse section taken on line 2—2 of FIG. 1.

FIG. 3 is a fragmentary, enlarged view in front elevation of the display rack showing one of the means employed to form a separable joint between cooperating structural elements.

FIG. 4 is a fragmentary perspective view showing the elements of FIG. 3 in a separated, disassembled condition.

FIG. 5 is a top plan view of one of the gusset plates employed to maintain the component elements in an assembled relation.

FIG. 6 is an enlarged perspective view of the gusset plate of FIG. 5.

Referring in greater particularity to FIG. 1, a display and support rack, as a specific embodiment of the present invention, is illustrated including a pair of transversely spaced frame members **10** oriented in respective approximately vertical planes. Since most display stands utilized in food markets and the like are constructed with vertically oriented walls, the present display and support rack is preferably formed with the frame members **10** in a substantially vertical orientation. Each of the frame members is provided with arbitrarily designated upper and lower ends **11** and **12**, the lower ends being adapted to serve as a support base, if the rack is to be placed on a floor or other supporting surface. The frame members **10** also provide front and rear marginal edges **13** and **14**. Preferably, the frame members are provided with longitudinally extended shallow grooves **15** on opposite side faces thereof adjacent to at least one of said marginal edges **13** and **14**. The purpose of such shallow grooves will be described more fully in connection with the means employed to maintain the frame members **10** and associated components in an assembled relationship.

The frame members **10** are individually provided with projecting lugs **16** affording respective apertures **17**, thereby facilitating hanging of the rack on a supporting wall surface. The frame members are also provided with a plurality of vertically spaced, transversely extended mortise grooves **18**, which are shown more clearly in FIGS. 3 and 4 as being of conventional dove-tail cross-section.

A plurality of vertically spaced shelves **20** are extended between the frame members **10** and disposed in respective substantially parallel horizontal planes. Each of the shelves is provided with respective left and right ends **21** and **22**, as viewed in FIG. 1. Each end is formed with a tenon **23** of a dove-tail configuration and dimensioned so as to be received in snugly fitting relationship in a respective mortise groove **18** of the frame members. As aforesaid, the display and support rack is preferably formed

with the frame members and the shelves in right-angular relationship so as to conform to conventional display stands employed in food markets and other stores.

Each of the shelves **20** is provided with longitudinally extended shallow grooves **24** of a configuration substantially identical to the grooves **15** and adjacent to a marginal edge thereof. Each of the shelves also provide an upwardly presented surface **25** and a downwardly presented surface **26**. Preferably the shallow grooves **24** are provided on both of such surfaces.

As can be seen more clearly in FIGS. 1, 5 and 6, a plurality of gusset plates **30** are provided dependably to maintain the shelves in right-angularly assembled relation to the frame members **10**. Each of the gusset plates includes a flat support element **31** of approximately triangular configuration and formed with a first set of opposed walls **32** of predetermined length and transverse spacing in upstanding relationship to the element **31**. The walls **32** define therebetween a channel **33** adapted to receive anyone of the marginal edges of either the frame members **10** or the shelves **20**. The opposed inner faces of the walls **32** are each provided with respective inwardly convexly cambered surfaces **34**, which are shown in a somewhat exaggerated form in FIG. 6 for purposes of clarity. The walls **32** outwardly converge and define a channel **33** therebetween. The grooves **15** are formed with a transverse profile substantially complementary to the convexly cambered surfaces **34** so that the marginal edges may be dependably retained between the walls **32**.

The support element **31** of each of the gusset plates **30** is also provided with a second set of spaced opposed walls **40**, upstanding from the element **31** and preferably disposed in right-angular relationship to the first set of walls **32** to insure the assembly and maintenance of the frame members **10** and shelves **20** in the desired right-angular relationship. If an angular relationship other than 90° is desired, the relationship of the walls **40** to the walls **32** must be selected to accommodate such a relationship. The walls **40** also outwardly converge and define a channel **41** by reason of their being provided with respectively inwardly convexly cambered surfaces **42**, substantially identical to the surfaces **34** and complementary to the shallow grooves **15** and **24**.

As illustrated in FIGS. 1, 2 and 4, a plurality of container support means **45** are individually secured to the respective downwardly presented surfaces **26** of the shelves **20**. In the form of the invention illustrated, the container support means **45** are fabricated as annular elements of a size and configuration to accommodate the covers **46** of containers such as the glass jars illustrated at **47**. It is to be noted that the covers **46** are of a predetermined height "H" as illustrated in dashed lines in the lower portion of FIG. 2. The annular container support means **45** each define a socket **48** having a height "h," which is less than the predetermined height "H" of the covers **46**.

The annular support means **45** are also provided with internal threads **49** of a pitch conforming to that of the covers **46**. It is a conventional practice to form such covers **46** of a light-gauge metal, or similar rigid material, such as any suitable thermoplastic substance. Consequently, the covers may be formed with an internal screw-thread adapting it for detachable connection to the similarly threaded container **47**, as well as providing a corresponding screw-thread on the outer surface of the covers **46**. Accordingly, such screw-thread on the outer surface of the covers permits their releasable retention in the sockets **48** of the container support means **45**.

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

1. A display and support rack for a plurality of reusable containers which are provided with respective removable covers of a predetermined vertical height, the rack comprising a pair of transversely spaced, approximately vertically oriented frame members; a plurality of elongated shelves extended between and secured to said frame members in superposed, vertically spaced, substantially parallel relationship and affording respective downwardly presented surfaces extended between opposite ends of said shelves; and a plurality of individual container support means integral with the shelves and extended from said downwardly presented surfaces at predetermined intervals of transverse spacing between said frame members to accommodate said containers and affording respective downwardly opening sockets of a depth less than said predetermined height and of a transverse dimension to accommodate said covers to support the same in depending relationship with a portion of the covers extended outwardly from the support means.

2. A display and support rack for a plurality of reusable containers which are provided with respective removable covers of a predetermined vertical height, the rack comprising a pair of transversely spaced approximately vertically oriented frame members; a plurality of elongated shelves extended between said frame members in superposed, vertically spaced, substantially parallel relationship and affording respective downwardly presented surfaces extended between opposite ends of said shelves; means detachably securing said shelves to said frame members at respective outwardly disposed accessible positions adjacent said opposite ends; and a plurality of individual container support means integral with the shelves and extended from said downwardly presented surfaces at predetermined intervals of transverse spacing between said frame members to accommodate said containers and affording respective downwardly opening sockets of a depth less than said predetermined height and of a transverse dimension to accommodate said covers and support the same in depending relationship with a portion of the covers extended outwardly from the support means.

3. A display and support rack for a plurality of reusable containers which are provided with respective removable covers of a predetermined vertical height, the rack comprising a pair of transversely spaced approximately vertically oriented frame members; a plurality of elongated shelves extended between said frame members in superposed, vertically spaced, substantially parallel relationship and affording respective downwardly presented surfaces extended between opposite ends of said shelves; means detachably securing said shelves to said frame members at respective positions adjacent said opposite ends; and a plurality of individual container support means secured to at least the superior of said downwardly presented surfaces at predetermined intervals of transverse spacing between said frame members to accommodate said containers and affording respective downwardly opening sockets of a depth less than said predetermined height and of a transverse dimension to accommodate said covers and support the same in depending relationship, said frame members and said shelves being provided with respective forwardly and rearwardly disposed marginal edges, said securing means being adapted to engage the respective marginal edges of said frame members and said shelves at respective positions adjacent said opposite ends with said opposite ends being disposed in juxtaposition to said frame members.

4. The display and support rack of claim **3** wherein said securing means is in the form of a plurality of individual gusset plates providing a substantially plane support element and means carried by said element and defining a pair of angularly intersecting receiving channels adapted to receive a respective one of said marginal edges and maintain the shelves in a predetermined angular relationship to said frame members.

5. The display and support rack of claim **4** wherein said channels are defined by spaced opposed wall means upstanding from said gusset plates and having opposed inwardly facing surfaces each respectively inwardly convexly cambered to provide an outwardly converging channel to receive said respective marginal edges.

6. The display and support rack of claim **5** wherein

said marginal edges are provided with depressions longitudinally extended therealong and of a configuration complementary to the convex camber of said inner surfaces.

7. A display and support rack for a plurality of reusable containers individually providing movable covers of a predetermined vertical height, comprising a pair of transversely spaced approximately vertically oriented frame members having forwardly and rearwardly disposed marginal edges; a plurality of elongated shelves having forwardly and rearwardly disposed marginal edges extended between said frame members in superposed, vertically spaced, substantially parallel relation and affording respective downwardly presented surfaces extended between opposite ends of said shelves with said opposite ends being respectively disposed in juxtaposition to said frame members; means adapted to engage the respective marginal edges of said frame members and said shelves detachably securing said shelves to the frame members at respective positions adjacent to said opposite ends of the shelves; and a plurality of individual container support means extended from said downwardly presented surfaces at predetermined intervals of transverse spacing between said frame members to accommodate said containers and affording respective downwardly opening sockets of a depth less than said predetermined height and of a transverse dimension to accommodate said covers and support the same in depending relation.

8. A display and support rack for a plurality of reusable containers individually provided with removable

covers of a predetermined thickness, comprising a pair of spaced frame members having marginal edges; a plurality of elongated shelves having marginal edges extended between said frame members in spaced substantially parallel relation providing opposite ends disposed in juxtaposition to said frame members; means adapted to engage the respective marginal edges of said frame members and said shelves outwardly of the rack detachably to secure said shelves to the frame members at respective positions adjacent to said opposite ends of the shelves; and a plurality of individual container support members integral with the shelves and extended therefrom at predetermined intervals of spacing between said frame members and providing sockets of a depth less than said predetermined thickness of said covers and of a transverse dimension to accommodate said covers in supporting relation with a portion of the covers extended outwardly from said support means.

References Cited by the Examiner

UNITED STATES PATENTS

2,230,975	2/41	Gratz	211—75 X
2,557,801	6/51	Shapiro	211—75
2,620,691	12/52	Gould	211—74 X
2,711,830	6/55	Howell	211—75
2,895,620	7/59	Thompson	211—148
3,131,011	4/64	Rittenberry	312—266

FRANK B. SHERRY, *Primary Examiner.*