Aug. 29, 1967 K. BECKER ETAL 3,338,402

RECEPTACLE FOR BOTTLES OR THE LIKE

Filed Jan. 22, 1965

FIG. 1

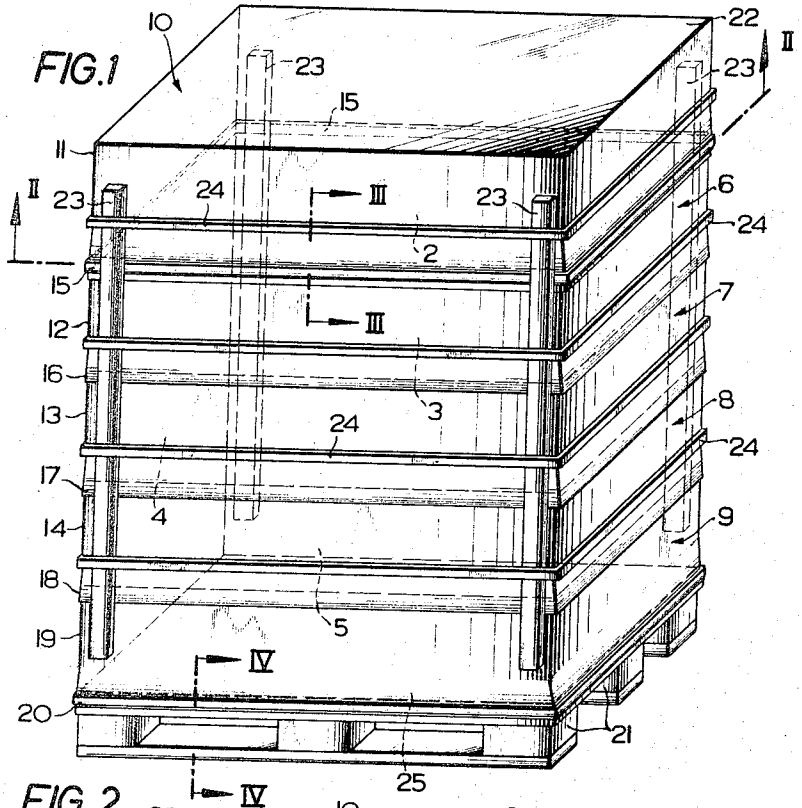


FIG. 2

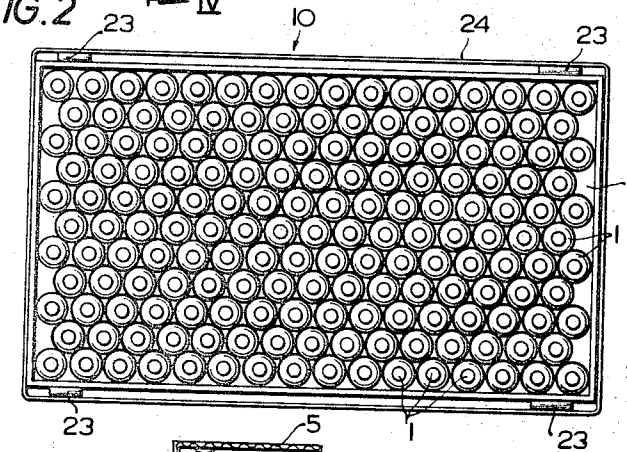


FIG. 3

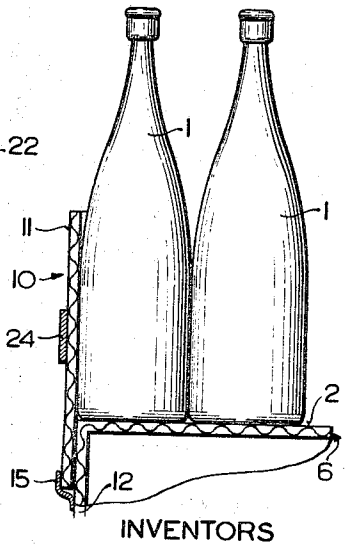
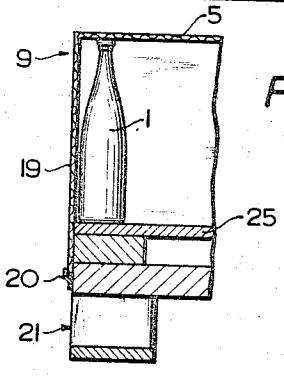


FIG. 4



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RECEPTACLE FOR BOTTLES OR THE LIKE

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11 Claims. (Cl. 206—65)

The present invention relates to receptacles in general, and more particularly to an improved composite receptacle for superimposed layers of arrayed upright bottles, cans, jars or similar objects. Still more particularly, the invention relates to a receptacle wherein a stack of superimposed layers consisting of bottles or the like is completely surrounded and concealed from view.

In heretofore known receptacles of this general character, the stack of superimposed layers is normally surrounded by a single group of side walls which extend upwardly from a stack-supporting bottom wall and all the way to the top layer of the stack. The side walls must be held against deformation and, if detached from the base, they immediately expose the entire stack so that removal of a single bottle from a lower stack may bring about collapse of all superimposed layers with resultant breakage, spillage of contents and other drawbacks.

Accordingly, it is an important object of the present invention to provide a receptacle which is constructed and assembled in such a way that the stack of superimposed layers may be exposed in stepwise fashion, one after the other, to make sure that accidental overturning of one or more bottles in a single layer cannot influence the position of bottles in the remaining layers.

Another object of the invention is to provide a receptacle of the just outlined characteristics which may be assembled of interchangeable parts, which may be built up to any desired height so as to conceal and to protect one, two, five or more layers of breakable vitreous or other objects, which can be assembled and dismantled by unskilled persons, which can be readily manipulated by restoring to conventional fork lift trucks or other types of transporting devices, and which can be manufactured in any desired size or shape so as to accommodate superimposed layers of circular, oval, polygonal or other regular or irregular outline.

A further object of our invention is to provide a receptacle for layers of upright bottles or the like which may be assembled of comparatively weak and inexpensive material and which may be reinforced in a very simple way to withstand rough treatment during transportation, assembling or dismantling, and which may be readily sealed to prevent penetration of dust or moisture to its contents.

Still another object of the invention is to provide a receptacle wherein each layer of a stack is fully separated from the adjoining layer or layers to make sure that breakage of a single container will not result in contamination of containers in the remaining layers.

A concomitant object of the instant invention is to provide a receptacle whose component parts may be mass produced in simple machines of conventional design, whose components may be reused as often as desired, and wherein such components may be used interchangeably.

Briefly stated, one feature of our invention resides in the provision of a composite receptacle for superimposed layers of upright bottles or similar objects which may be arrayed in predetermined formation and together form bodies of preferably rectangular outline. The receptacle comprises a mobile base or platform whose upper side can support the lowermost layer of a stack and whose underside is preferably provided with legs to facilitate transportation by a fork lift truck or a similar vehicle, a first cover including a top panel which overlies the lowermost stack and depending side walls which surround at least a portion of the base so that the lowermost layer is concealed by the first cover, and one or more additional covers each of which has a top panel overlying the layer therebelow and depending side walls surrounding the side walls of the next-lower cover.

The receptacle may be reinforced by elongated stiffening members in the form of substantially upright wooden strips or the like which extend along the outer sides of the side walls and are secured to some or all of the covers by circumferentially extending bands or the like. The overlapping side walls may be sealingly secured to the overlapped side walls by a length of adhesive tape or in another suitable way so that the entire receptacle forms a fluidtight package.

The novel features which are considered as characteristic of the invention are set forth in particular in the appended claims. The improved receptacle itself, however, both as to its construction and the mode of assembling the same, together with additional features and advantages thereof, will be best understood upon perusal of the following detailed description of a specific embodiment with reference to the accompanying drawing, in which:

FIG. 1 is a perspective view of a composite receptacle which is assembled in accordance with our invention and which is constructed to accommodate a stack consisting of five superimposed layers of upright bottles;

FIG. 2 is a horizontal section substantially as seen in the direction of arrows from the line II—II of FIG. 1;

FIG. 3 is an enlarged fragmentary vertical section as seen in the direction of arrows from the line III—III of FIG. 1; and

FIG. 4 is an enlarged fragmentary vertical section substantially as seen in the direction of arrows from the line IV—IV of FIG. 1.

Referring to the drawings, FIG. 1 shows a composite receptacle which is constructed and assembled to accommodate a stack consisting of five superimposed layers of upright glass bottles **1**, cans, vials or other types of breakable or unbreakable objects. As shown in FIG. 2, the bottles **1** may be arranged in predetermined formation and each layer forms a flat body of rectangular outline. The lowermost layer of bottles **1** is placed onto the upper side of a mobile platform or base **25** which may consist of wood and whose underside is provided with legs **21** so that the receptacle may be manipulated by a fork lift truck. The prongs of the lifting fork may be introduced into the spaces between the legs **21**, see particularly FIG. 1. It is clear that the platform may be manipulated with equal ease by platform trucks or by other types of vehicles.

The sides of the base **25** are partially surrounded by depending side walls **19** of a lowermost cover **9** which includes a rectangular top panel **5** (see FIG. 4) overlying the lowermost layer of bottles **1**. Thus, the side walls **19** and the top panel **5** define with the base **25** a chamber or compartment which accommodates the lowermost layer, and this layer is fully concealed from view.

The next higher layer of bottles **1** is placed onto the top panel **5** of the lowermost cover **9** and is concealed by a second cover **8** which includes a top panel **4** overlying the second layer and depending side walls **14** which surround portions of the side walls **19**. The third layer is concealed by a third cover **7** which includes a top panel **3** and depending side walls **13**, the fourth layer is concealed by a fourth cover **6** which includes a top panel **2** and depending side walls **12**, and the uppermost layer is concealed by a fifth cover **10** including a top panel **22** and depending side walls **11**.

The corner portions of the resulting receptacle are reinforced by upright or substantially upright stiffening members in the form of wooden or metallic strips **23** which are secured to each cover by annular straps or bands **24** consisting of sheet metal or the like. The stiffening members may but need not extend all the way from the base **21** to the uppermost panel **22**. An additional purpose of the members **23** is to achieve substantial savings in wrapping material and to facilitate rapid dismantling of the receptacle in stepwise fashion.

The overlapping side walls **11, 12, 13, 14, 19** are secured to the overlapped side walls and to the outer sides of the base **25** by sealing strips **15, 16, 17, 18, 20** which may consist of adhesive-coated tape or the like and serve to insure that the interior of the receptacle is fully sealed from the atmosphere. This prevents leakage of liquid contents in the event that one or more bottles **1** break in response to rough handling, accidental dropping or other inept manipulation of the receptacle. Also, the receptacle may serve for storage of objects or fluids which are likely to spoil on contact with atmospheric air or which should be stored and transported in an absolutely dustproof space. It is clear that the sealing strips add, at least slightly, to the rigidity of the receptacle. The covers may be made of strong cardboard.

The improved receptacle may be used in glass works, dairies, breweries and similar establishments. Upon removal of covers **10, 6, 7, 8, 9** in such order, the bottles **1** of the stepwise exposed layers may be removed by hand or by automatic gripping or pushing devices to be transferred onto rollers, belts or other types of conveying means which deliver bottles to rinsing, sterilizing, filling, sealing or other stations.

All of the covers may be of the same dimensions. When such identical covers are assembled into a receptacle, the side walls of each upper cover are deformed sufficiently to fit around the side walls of the cover therebelow.

Without further analysis, the foregoing will so fully reveal the gist of the present invention that others can, by applying current knowledge, readily adapt it for various applications without omitting features which fairly constitute essential characteristics of the generic and specific aspects of this invention and, therefore, such adaptations should and are intended to be comprehended within the meaning and range of equivalence of the following claims.

What is claimed as new and desired to be secured by Letters Patent is:

1. A receptacle for layers of bottles or similar objects, comprising a rimless base having an upper side for supporting a first layer; a first cover consisting of a rimless top panel provided with an upper side for supporting a second layer and side walls depending from said rimless top panel along the edges thereof and surrounding said rimless base so that the first layer is concealed by said first cover; and a second cover consisting of a rimless top panel spaced from the upper side of said first named panel and side walls depending from said rimless top panel of said second cover and surrounding the depending side walls of said first cover so that the second layer is concealed by said second cover.

2. A composite receptacle for superimposed layers of upright bottles or similar objects, comprising a plurality of superimposed covers each including a rimless top panel and side walls depending from the respective rimless top panel along the edges thereof and surrounding the corresponding depending side walls of the cover therebelow, each of said rimless top panels being arranged to overlie a separate layer of objects whereby such layers are surrounded by the depending side walls of the respective covers; and a rimless base surrounded by the depending side walls of the lowermost cover and having a flat upper side for supporting the lowermost layer.

3. A composite receptacle for superimposed layers of upright bottles or similar objects, comprising a plurality of superimposed covers each including a polygonal rimless top panel and side walls depending from the respective rimless top panel along the edges thereof and surrounding the corresponding depending side walls of the cover therebelow, each of said rimless panels being arranged to overlie a separate layer of objects; and a polygonal rimless base surrounded by the depending side walls of the lowermost cover and having a flat upper side for supporting the lowermost layer.

4. A composite receptacle for superimposed layers of upright bottles or similar objects, comprising a plurality of superimposed covers each including a rimless top panel and side walls depending from the respective rimless panel along the edges thereof and surrounding the corresponding depending side walls of the cover therebelow, each of said rimless top panels being arranged to overlie a separate layer of objects whereby such layers are surrounded by the depending side walls of the respective covers; a rimless base surrounded by the depending side walls of the lowermost cover and having a flat upper side for supporting the lowermost layer; a plurality of elongated substantially upright stiffening members extending along the outer sides of said depending side walls; and means for securing said stiffening members to the depending side walls of said covers.

5. A composite receptacle for superimposed layers of upright bottles or similar objects, comprising a plurality of superimposed covers each including a polygonal rimless top panel and side walls depending from the respective rimless panel along the edges thereof and surrounding the corresponding depending side walls of the cover therebelow, each of said rimless panels being arranged to overlie a separate layer of objects; a polygonal rimless base surrounded by the depending side walls of the lowermost cover and having a flat upper side for supporting the lowermost layer; a plurality of substantially upright stiffening strips extending along the corners of said rimless top panels and adjacent to the outer sides of said depending side walls; and bands surrounding said depending side walls for securing said strips to the covers.

6. A composite receptacle for superimposed layers of upright bottles or similar objects, comprising a plurality of superimposed covers each including a rimless top panel and side walls depending from the respective rimless top panel along the edges thereof and surrounding the corresponding depending side walls of the cover therebelow, each of said rimless top panels being arranged to overlie a separate layer of objects whereby such layers are surrounded by the depending side walls of the respective covers; a rimless base partially surrounded by the depending side walls of the lowermost cover and having a flat upper side for supporting the lowermost layer; sealing means securing the depending side walls of each superimposed cover to the depending side walls of the cover therebelow; and sealing means securing the depending side walls of said lowermost cover to said rimless base.

7. A receptacle for layers of bottles or similar objects, comprising a rimless base having a flat upper side for supporting a first layer and an underside provided with legs to facilitate transportation of the base by a fork lift truck or a similar conveyance; a first cover including a rimless top panel having an upper side for supporting a second layer and side walls depending from said rimless top panel along the edges thereof and surrounding said rimless base so that the first layer is concealed by said first cover; and a second cover including a rimless top panel spaced from the upper side of said first named rimless panel and side walls depending from said rimless top panel of said second cover along the edges thereof and surrounding the depending side walls of said first cover so that the second layer is concealed by said second cover.

8. A receptacle for layers of bottles or similar objects, comprising a mobile rimless platform having a flat upper side for supporting a first layer; a first cover including a rimless top panel having an upper side for supporting a

second layer and side walls depending from said rimless top panel along the edges thereof and surrounding said platform so that the first layer is concealed by said first cover; and a second cover including a rimless top panel spaced from the upper side of said first named rimless panel and side walls depending from said rimless top panel of said second cover along the edges thereof and surrounding the depending side walls of said first cover so that the second layer is concealed by said second cover.

9. A composite receptacle for stacked layers of upright bottles or the like, comprising a rigid mobile rimless platform having a flat upper side for supporting the lowermost layer; a first cover including a rimless top panel overlying the lowermost layer and having an upper side for supporting the next higher layer, and side walls depending from said rimless top panel along the edges thereof and surrounding said platform so that said cover conceals the first layer; and a second cover including a rimless top panel overlying the next higher layer and side walls depending from said rimless top panel of said second cover along the edges thereof and surrounding the

depending side walls of said first cover so that said second cover conceals the next higher layer.

10. A composite receptacle as set forth in claim **9**, wherein said covers consist of cardboard and further comprising stiffening means for reinforcing said covers.

11. A composite receptacle as set forth in claim **9**, wherein the bottles of each layer are arrayed in predetermined formation and wherein said rimless base and said rimless top panels are of rectangular outline.

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