June 20, 1950 O. B. DENNY 2,512,522

FOLDING BREAD CRATE

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FIG. 1

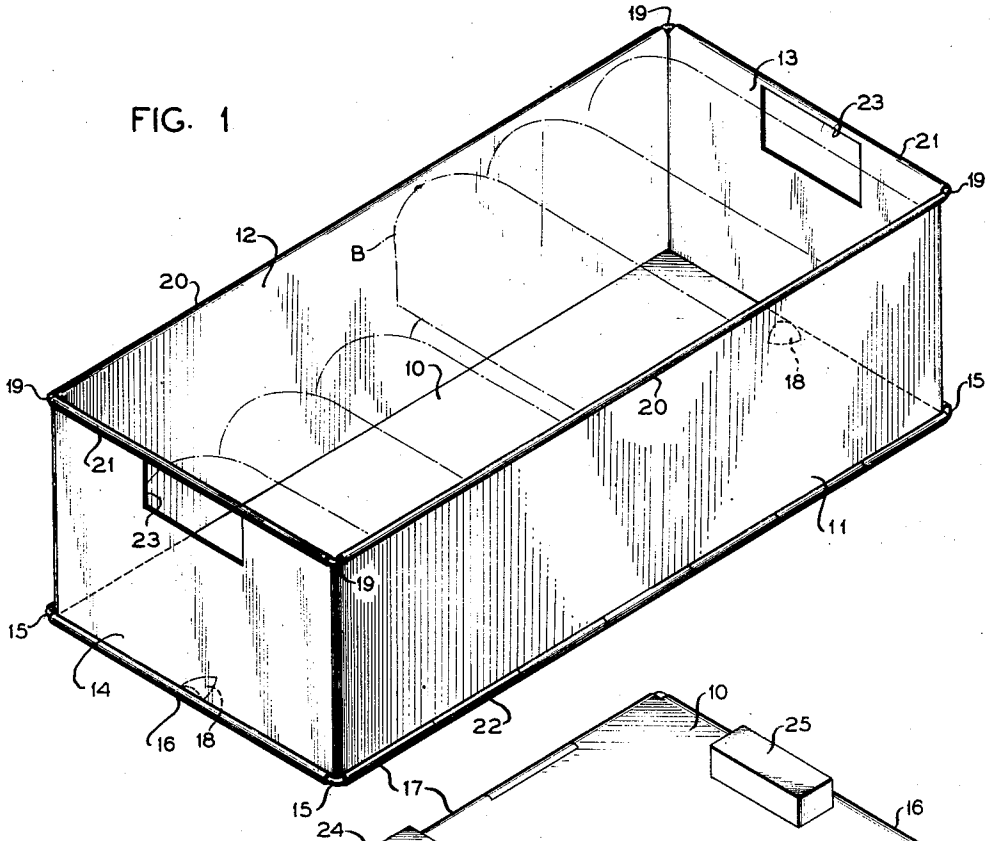
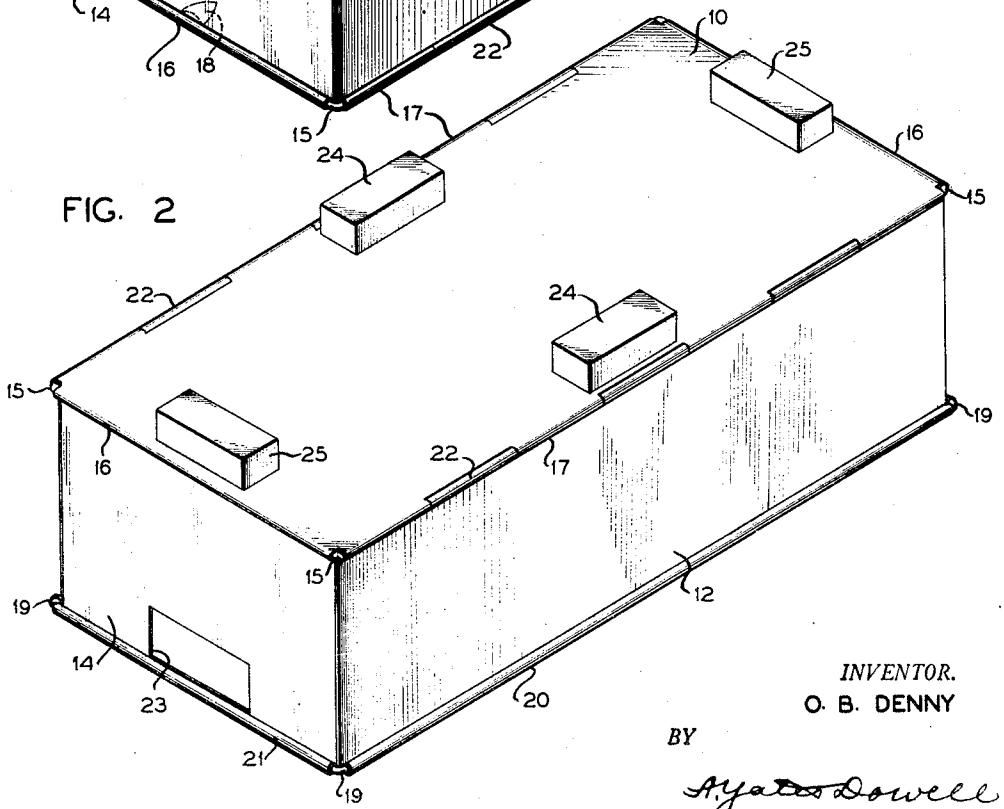


FIG. 2



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FIG. 3

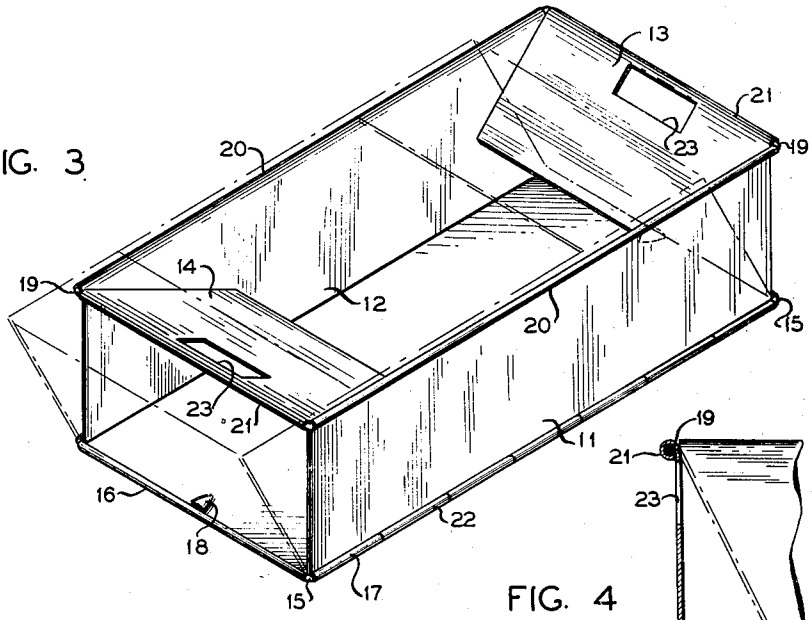
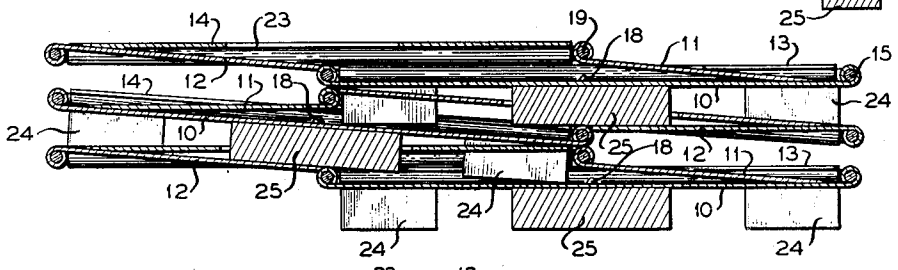


FIG. 4

FIG. 5



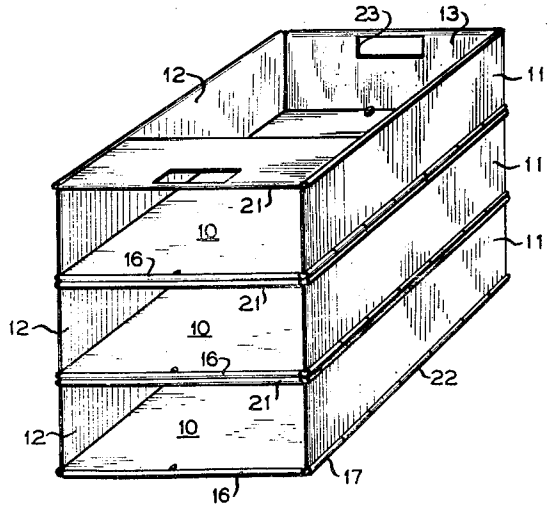


FIG. 6

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FOLDING BREAD CRATE

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Application October 22, 1948, Serial No. 56,037

2 Claims. (Cl. 220—6)

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This invention is a novel collapsible receptacle and is especially designed for use in connection with the delivery of merchandise as, for example, from wholesaler to retailer.

More particularly the invention provides a receptacle or container manufactured from relatively thin and light-weight sheet material, the ends and sides of which may be conveniently collapsed or folded into positions substantially flat against the bottom so that a particularly compact collapsed association of elements may be attained whereby, if desired, a plurality of collapsed containers may be stacked, without requirement for large storage space.

One of the major problems of modern bakeries, where literally thousands of fairly large receptacles or containers must be provided for the reception of loaves of bread to be delivered to retail stores, restaurants, and the like, has been the amount of space required to house such containers during the hours of baking. These receptacles must be readily at hand and convenient to the manufactured product, so that they may rapidly be filled and conveyed to a loading zone where delivery trucks await.

The provision of the storage space thus required has long been a troublesome factor as has been the weight of such containers, heretofore generally manufactured from wood or fiber and of a size to accommodate twelve loaves of bread of average length and weight.

This industry has made efforts to overcome these problems through the use of a collapsible paper or cardboard carton, however, the life of such carton has proven particularly short and the use thereof has been extremely costly.

It is accordingly a major object of the present invention to provide a collapsible receptacle of the class set forth especially adaptable for use in the baking industry, manufactured from suitable metal or other sheet material which will be extremely light in weight, durable in construction, and economical of manufacture.

It is a further object of the invention to provide a receptacle of the class set forth which may be collapsed into a substantially completely flat state and which may then be stacked and stored in a minimum of space.

It is a further object of the present invention to provide a collapsible receptacle the associated elements of which are securely assembled so that constant use with repeated collapsing and opening will not result in disassembly of parts or appreciable wear and tear.

It is still a further object of the present invention to provide a novel receptacle of the class set forth with pivotal end walls so that merchandise may be inserted or removed from stacked receptacles without any necessity for disturbing the stacked arangement thereof.

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Further objects and advantages of the invention will be apparent from the following description, taken in connection with the accompanying drawings, wherein:

Fig. 1 is a perspective view illustrating a receptacle constructed in accordance with the present invention;

Fig. 2 is a perspective view illustrating the receptacle in upside-down position to more clearly disclose the bottom structure thereof;

Fig. 3 is a perspective view of the receptacle illustrating the end walls in partially collapsed position;

Fig. 4 is a vertical sectional view through out end of the receptacle, illustrating in detail the assembly of the end wall thereof;

Fig. 5 is a sectional view illustrating a plurality of receptacles stacked or nested in collapsed condition; and

Fig. 6 is a perspective view illustrating a plurality of set-up receptacles stacked vertically, with one end wall of each opened to permit insertion or removal of merchandise.

As shown in the drawing the improved receptacle comprises a bottom wall 10, longitudinal side walls 11 and 12, and end walls 13 and 14. A continuous reinforcing rod 15, of circular cross sectional contour, is attached to the periphery of the bottom wall 10 in any desired manner, a preferred form of assembly comprising turning the edges of the bottom wall inwardly to form beads surrounding said rod. As illustrated more particularly in Fig. 2 of the drawing, the ends of the bottom wall 10 form continuous beads 16 while the longitudinal edges of the bottom wall are provided with a plurality of cut-away portions thus forming comparative short, spaced beads 17. The bottom wall 10 is further provided with a centrally located upstruck spur 18 adjacent each bead 16 for a purpose to be hereinafter more fully described.

An upper securing member or rod is provided, indicated at 19, of circular cross sectional contour and bent to form a continuous rectangular frame substantially identical to the reinforcing rod 15 in size and shape, and the side and end walls of the receptacle are pivotally attached to this frame 19 in any desired manner. Preferably the upper edges of the side walls 11 and 12 are turned outwardly to form continuous beads 20

surrounding the longitudinal portions of this frame; in like manner the upper edges of end walls 12 and 13 are also turned outwardly to form continuous beads 21 surrounding the transverse portions of the member 19.

The lower or bottom edges of the side walls 11 and 12 are provided with spaced, cut-away portions leaving integral ears for pivotal attachment to the longitudinal portions of the reinforcing rod 15. These ears are turned outwardly to form beads 22 adapted to surround the rod 15 in staggered relationship to the beads 17 of the bottom wall 10. There is thus provided a hinged connection between the side walls of the receptacle, which are pivotally mounted upon the supporting frame 19, and the bottom wall 10.

The lower or bottom edges of the end walls 13 and 14 are adapted to frictionally engage the upper surface of the bottom wall when the receptacle is in set up condition and suitable means such as the upstruck spurs 18 are provided for locking the end walls in position. As indicated more particularly in Fig. 4 of the drawing the lower edge of each bottom wall is adapted to ride over one of the spurs 18 and abut the end bead 16, being securely retained thereagainst.

When it is desired to collapse the receptacle the walls 13 and 14 are grasped manually and swung inwardly, riding over the top of the spurs 18. The sheet material from which the receptacle is formed, being relatively light and thin, has an inherent resiliency, and very little effort is required to swing or pivot the end walls to substantially the horizontal position illustrated in Fig. 3. The side walls 11 and 12 are then inclined slightly as indicated by the dotted lines in this figure of the drawings, and the receptacle will then fall into completely collapsed position, the side wall 11 resting upon the bottom wall 10 while the side wall 12 extends therebeyond.

The end walls 13 and 14 are formed with apertures 23 centrally located adjacent to the beads 21 to provide handholds to permit of ready handling of the receptacle when set up and filled with merchandise as loaves of bread, indicated at B.

Preferably the bottom wall 10 is provided, on the underside thereof, with longitudinal runners 24 and transverse runners 25 adapted to protect the receptacle when in use, and to assist in nesting the containers in stacked collapsed condition. The runners are slightly smaller in size than the hand-hold apertures and are so positioned, as will be apparent from an examination of Fig. 5, that when the collapsed receptacles are stacked in staggered and alternate relationship, the runners will be received within adjacent apertures 23.

There has been illustrated in Fig. 6 of the drawing a plurality of receptacles stacked in setup condition with one end wall of each receptacle in horizontal, open position. The opposite end wall of each receptacle, being locked in position between the bottom and side walls, insures against inadvertent collapse of the container. With this arrangement it is possible to remove desired items from any receptacle without disturbing the stacked arrangement.

The present invention, which provides for inward pivotal movement of opposed end walls mounted upon a rigid frame to which the side walls are pivotally attached, the lower extremities of the side walls being securely hinged to a bottom wall, permits of a particularly rapid opening or collapsing of the receptacle with but little effort and with no possibility of disassociation of parts.

While the invention has been described as especially adapted for use as a bread box, it will be apparent to those skilled in this art that there are in fact no limitations as to the commodities in connection with which the receptacle may be employed.

It will be obvious to those skilled in the art that various changes may be made in the invention without departing from the spirit and scope thereof and therefore the invention is not limited by that which is shown in the drawings and described in the specification but only as indicated in the appended claims.

What is claimed is:

1. A collapsible receptacle comprising a bottom wall having a peripheral bead, a reinforcing rod in said bead, longitudinal and transverse supporting runners on the under surface of said bottom wall, a rectangular supporting frame, side and end walls pivotally mounted at their top edges upon said supporting frame, the bottom edges of the side walls being pivotally secured to the reinforcing rod in the peripheral bead of the bottom wall, the lower edges of the end walls being free to permit said end walls to swing upwardly into a horizontal position and in the vertical position adapted to abut the end portions of said peripheral bead, each of said end walls being further provided with a hand-hold aperture, and an upstruck spur on the bottom wall adjacent each end thereof for locking the end walls in upright position, one of said runners being located adjacent each of the end and side edges of said bottom wall and spaced therefrom, and said hand-hold apertures being spaced from the top edges of said end walls substantially the same distance as the spacing of said transverse runners and made similar in shape and slightly larger than said transverse runners, whereby said receptacles may be stacked with one end wall of each in horizontal open position to form a shelved rack with the longitudinal runners of certain receptacles engaging the side walls of the next lower receptacles and one of the transverse runners of certain receptacles extending through the hand-hold apertures in the next lower receptacles to prevent lateral shifting of the receptacles relative to each other.

2. A collapsible receptacle comprising a bottom wall having a peripheral bead, a reinforcing rod in said bead, longitudinal and transverse supporting runners on the under surface of said bottom wall, a rectangular supporting frame, side and end walls pivotally mounted at their top edges upon said supporting frame, the bottom edges of the side walls being pivotally secured to the reinforcing rod in the peripheral bead of the bottom wall, the lower edges of the end walls being free to permit said end walls to swing upwardly into a horizontal position and in the vertical positinon adapted to abut the end portions of said peripheral bead, each of said end walls being further provided with a hand-hold aperture, and an upstruck spur on the bottom wall adjacent each end thereof for locking the end walls in upright position, one of said runners being located adjacent each of the end and side edges of said bottom wall and spaced therefrom, and said hand-hold apertures being spaced from the top edges of said end walls substantially the same distance as the spacing of said transverse runners and made similar in shape and slightly larger than said transverse runners whereby said

receptacle may be collapsed and stacked with other similar receptacles in alternate staggered relation with the transverse runners of one receptacle nested in the adjacent hand-hold aperture of the next lower receptacle.

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