Aug. 6, 1957 R. H. BISHOP ET AL 2,801,766

TRAYS

Filed Aug. 9, 1954 2 Sheets-Sheet 1

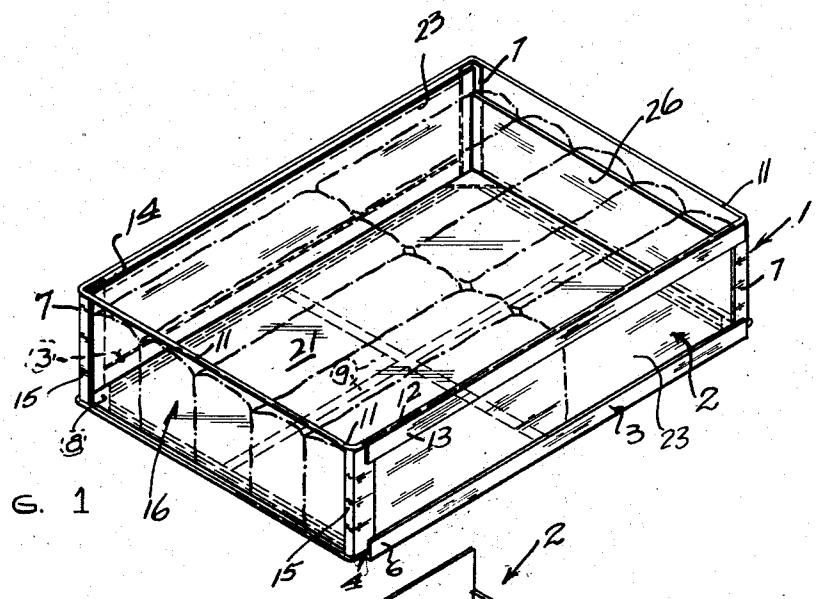


FIG. 1

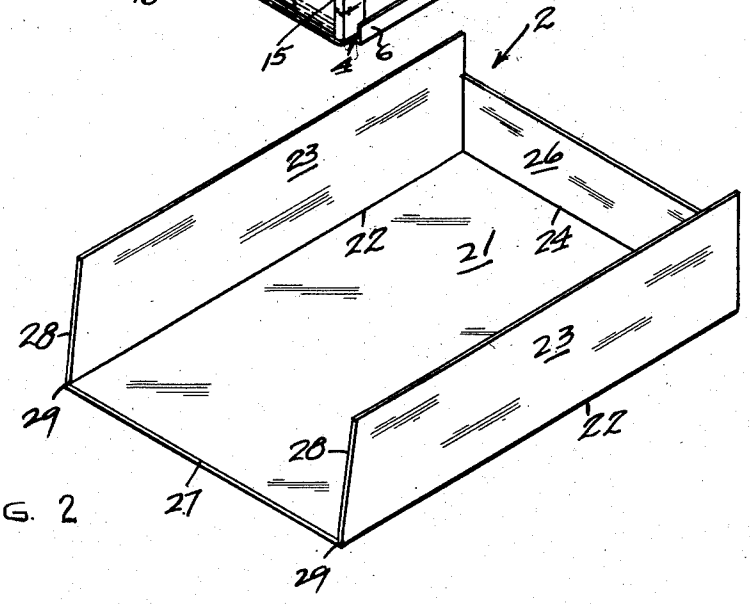


FIG. 2

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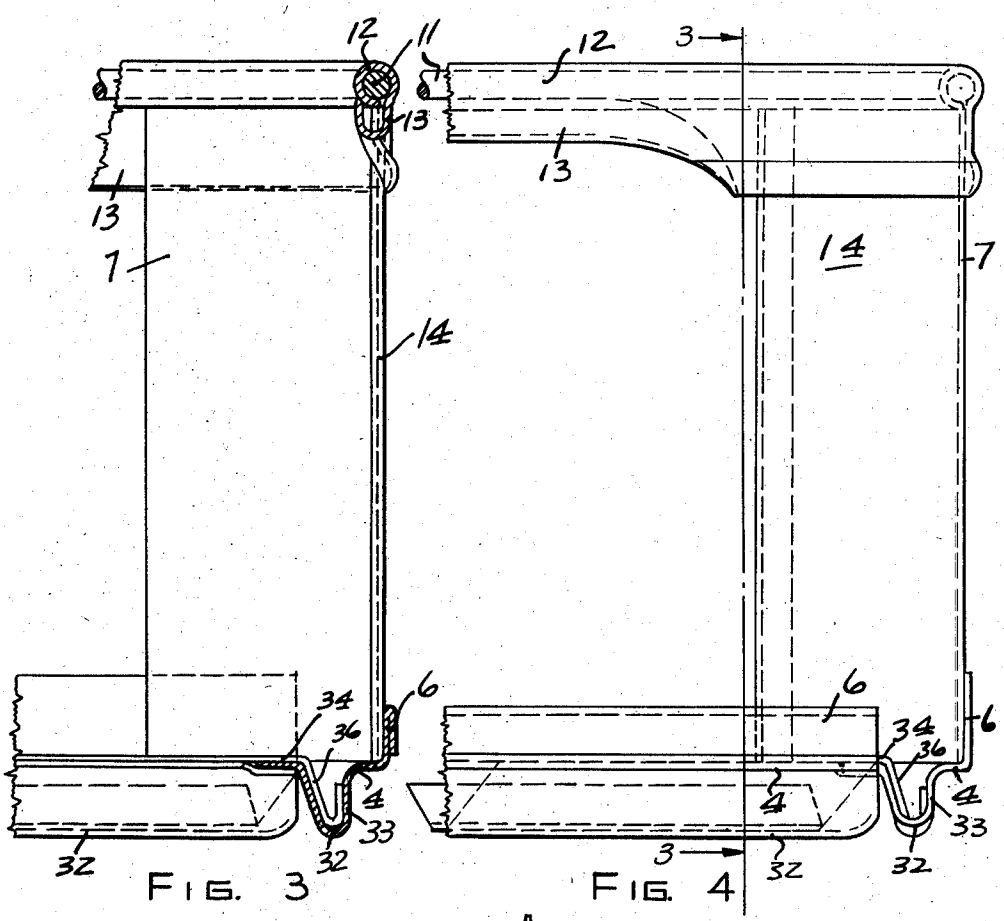


FIG. 3

FIG. 4

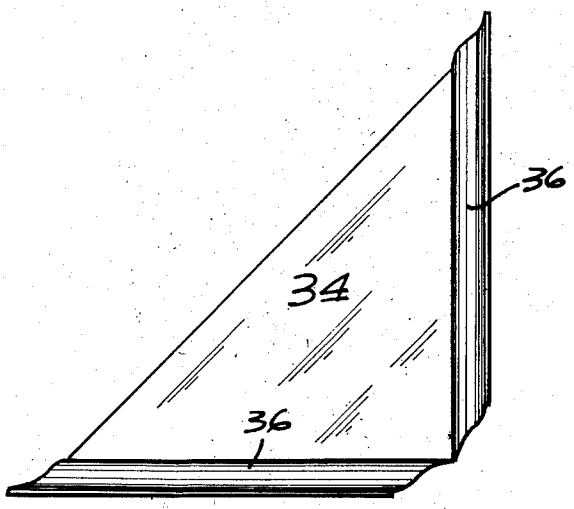


FIG. 5

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TRAYS

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Application August 9, 1954, Serial No. 448,544

4 Claims. (Cl. 220—84)

This invention relates to trays.

The primary object of this invention is to provide a tray for the handling of merchandise particularly in bakeries for the delivery of bread and bakery products, which tray is light but very strong so as to facilitate the stacking of the same, and which trays are highly durable and are provided with a replaceable lining in a skeleton frame; and in which tray the skeleton frame and the foldable lining is so proportioned and constructed that an end of the tray is left open to permit the end-wise filling or replacement of the contents of the tray.

This application is a continuation in part of copending application, Serial No. 149,354, filed March 13, 1950, for Trays and Boxes, now Patent No. 2,688,420.

We are aware that some changes may be made in the general arrangements and combinations of the several devices and parts, as well as in the details of the construction thereof without departing from the scope of the present invention as set forth in the following specification, and as defined in the following claims; hence, we do not limit our invention to the exact arrangements and combinations of the said device and parts as described in the said specification, nor do we confine ourselves to the exact details of the construction of the said parts as illustrated in the accompanying drawings.

With the foregoing and other objects in view, which will be made manifest in the following detailed description, reference is had to the accompanying drawings for the illustrative embodiment of the invention, wherein:

Fig. 1 is a perspective view of a tray and liner in an operative position, and

Fig. 2 is a perspective view of the replaceable liner.

Fig. 3 is a fragmental sectional view showing the construction of a modified form of the tray, the section being taken on lines 3—3 of Fig. 4.

Fig. 4 is a fragmental view of a corner of the tray construction, shown in Fig. 3, and

Fig. 5 is a detail view of a corner gusset.

In carrying out our invention, we make use of a skeleton frame 1 into which can be folded a liner 2.

The skeleton frame 1 is particularly adapted for use as bread box in this illustration, and it includes horizontal bottom pieces 3. Each bottom piece 3 is of substantially angle construction so as to provide a bottom flange 4 and an upright flange 6. These bottom pieces are suitably secured, preferably by spot welding, to the lower ends of vertical corner bars 7.

Each of these corner bars 7 is preferably of angle cross section. At each corner of the rectangular area defined by the bottom pieces 3 are provided suitable gusset plates 8 to reinforce the bottom structure. Suitable cross-bars 9 extend between opposite bottom pieces 3 for stiffening the bottom structure and for limiting the bending of the bottom of the insert 2 under the weight of the bread or the load carried in or on the tray.

The top section of the skeleton frame 1 includes a strip of suitable sheet metal which is wrapped around the wire or rod 11 as shown in the detail structural views in Figs. 3 and 4. The wire or rod 11 is formed into a rectangular

shape parallel with the rectangular shape defined by the bottom pieces 3. The strip or sheet metal forms a tubular wrapping 12 around said wire 11 and it also forms a skirt 13 which extends downwardly from said tubular wrapping 12 and is preferably spot welded to the top portions of the vertical corner bars 7. The rim thus formed by the tubular wrapping 12 and the wire 11 is so arranged relatively to the bottom of the tray to form a ledge 14 and projects over and above the bottom flanges 4.

In the herein form in order to permit the removal of the bread or other item from the trays by sliding it out through an open end without touching it by human hand if necessary, the vertical strips 7 at one end are formed with narrower front flanges 15 so as to leave practically the entire side open or unobstructed. These vertical corners or strips 15 may be of suitable width. In the form shown in Fig. 1 the upward flanges 6 of the bottom piece 3 are eliminated as well as the skirt 13 at the top so that the wire 11 and the bottom flange 4 of the adjacent strip 3 define the opening 16 between the vertical front strips 15.

The insert 2 is preferably made of fiber board. It includes a bottom 21. At the longitudinal edges 22 of the bottom are side flaps 23 which are foldable into position shown in Fig. 1 and Fig. 2. At one end edge 24 of the insert bottom 21 is an end flap 26 which is extensible up into the upright position between the adjacent side flaps 23. This end flap 26 is cut away at its top edge to allow and provide for a space for gripping the cross bar as a handle.

The insert 2 is collapsible to become flat for shipping or storing. Namely, the end flap 26 is folded over the bottom 21 and then the side flaps 23 are folded inwardly. These folded flaps are placed into the tray so that the insert 21 rests upon the bottom flanges 4 of the bottom pieces 3. Then the side flaps 23 and end flap 26 are unfolded and the side flaps 23 are snapped under the top rim ledge 14 of the tray. The height of the side flaps 23 is such that they fit tightly and snugly between the bottom flange 4 and the adjacent ledge 14. The end flap 26 fits frictionally between the side flaps 23 to be held thereby in upright position. Thus the ledge 14 effectively holds the insert 2 in place when an empty tray is turned upside down, or when in handling a full tray and upward pressure is applied to the bottom 21.

The insert herein has no flap on its front edge 27 of the bottom 21. The end edges or vertical edges 28 of the side flaps 23 adjacent this open end or edge 27 are not perpendicular or vertical but are cut back at a slant from the open flap corner 29, outwardly and away from said end 27 so as to facilitate the insertion of the insert.

In the modified forms shown in Figs. 3 and 4 the structure is further strengthened. In this form the tubular strip or sleeve 12 is extended over the portion of the wire 11 above the open end of the tray about the same way as on the other sides but the height of the skirt 13 is reduced so as to leave a larger opening. The skirt's height is reduced by folding back the skirt thereby forming a very firm grip strip along the open end. In this manner also the continuity of the strip around the entire circumference or top edges of the tray is preserved.

In this modified form also each bottom flange 4 is bent longitudinally and downwardly so as to form a longitudinal rib 32 the outer wall 33 of which is in substantial vertical alignment with the inner periphery of the sleeve 12. Thus when the trays are stacked, the ribs 32 are easily slipped into the adjacent tubular sleeve 12 and are securely set in position. Each gusset plate 34 in this form is also formed with ribs 36 fitting into the hollow of the adjacent bottom flange ribs 32 to reinforce the same. Thus the right angle edges of the gusset plate 34 are formed into the reinforcing ribs 36. The gusset plate 34 is suitably welded to the bottom flanges 4.

In the herein trays both the loading and unloading of the trays is greatly facilitated. The tray can be tilted and the bread slipped into or out of it. Trays can be stacked with the open ends exposed so that the contents can be easily inspected. The height of the opening at the open end is higher than the height of loaves of bread therein so that the bread may be removed endwise even while the trays are stacked.

The device is eminently adapted for its use. It is firm in structure, it resists efforts of bending and securely holds merchandise and greatly facilitates the removal and insertion of the same, and the stacking of the trays.

We claim:

1. A tray comprising a skeleton frame with vertical corner members, bars of angle cross-section secured to said corner members to define the circumference of the tray bottom, the bottom flanges of said bars projecting inwardly of the tray to form lining supporting ledges, a strip of sheet material secured to the tops of said corner members and defining the top circumference of the tray, a stiffener on the top of said strip, a rounded retaining rim formed on said stiffener opposite to and spaced from said bottom flanges, said strip being cut away beneath said stiffener at one side of the tray, and the vertical flange of the bottom bar being also cut away at said side for forming an open side for sliding bakery products therethrough into and out of said tray, and a foldable lining having a bottom fitting over the said bottom flanges of said tray, vertical longitudinal side flaps adapted to be extended and firmly held between said bottom flanges and said retaining rims, a third flap at one side of said bottom being foldable outwardly and being frictionally held between the other side flaps, the edges of said first side flaps at said open side being formed at a slant away from said opening.

2. A skeleton frame for a tray comprising vertical corner members, bars of substantially angle cross-section secured to the corner members extending around the circumference of the tray bottom, the bottom flanges of said bars projecting inwardly of the tray forming a lining support, a stiffener bar surrounding the circumference of said tray at the top, and a skirt formed by a strip of sheet material folded around said stiffener and extended downwardly around three sides of said tray so as to leave the fourth side open.

3. A skeleton frame for a tray comprising vertical corner members, bars of substantially angle cross-section secured to the corner members extending around the circumference of the tray bottom, the bottom flanges of said bars projecting inwardly of the tray forming a lining support, a stiffener bar surrounding the circumference of said tray at the top, and a skirt formed by a strip of sheet material folded around said stiffener and extended downwardly, a line retaining rim formed around said stiffener bar, a longitudinal hollow rib extended downwardly along each bottom flange generally in registry with the inner periphery of said retaining rim, triangular gusset plate in each corner secured to the said bottom flanges, and downwardly extended ribs along the right angle edges of said plate fitting into the respective hollow ribs of the bottom flanges for reinforcing the latter.

4. A skeleton frame for a tray comprising vertical corner members, bars of substantially angle cross-section secured to the corner members extending around the circumference of the tray bottom, the bottom flanges of said bars projecting inwardly of the tray forming a lining support, a stiffener bar surrounding the circumference of said tray at the top, and a skirt formed by a strip of sheet material folded around said stiffener and extended downwardly around three sides of said tray so as to leave the fourth side open, the said skirt being folded upwardly along said fourth side and into contact with said reinforcing strip to leave said end open and to form a reinforced top handle strip thereat.

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