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R. D. WHITE

1,908,389

PACKING TRAY FOR BOTTLES

Filed Aug. 8, 1928

2 Sheets-Sheet 1

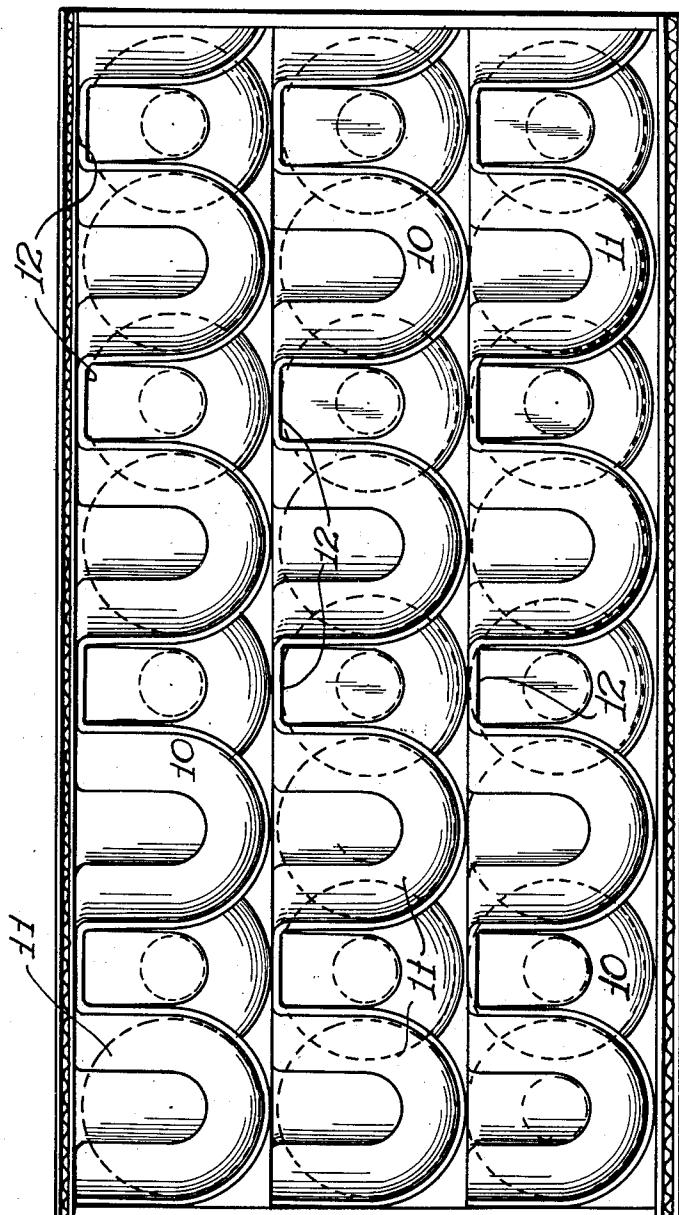


FIG. 1

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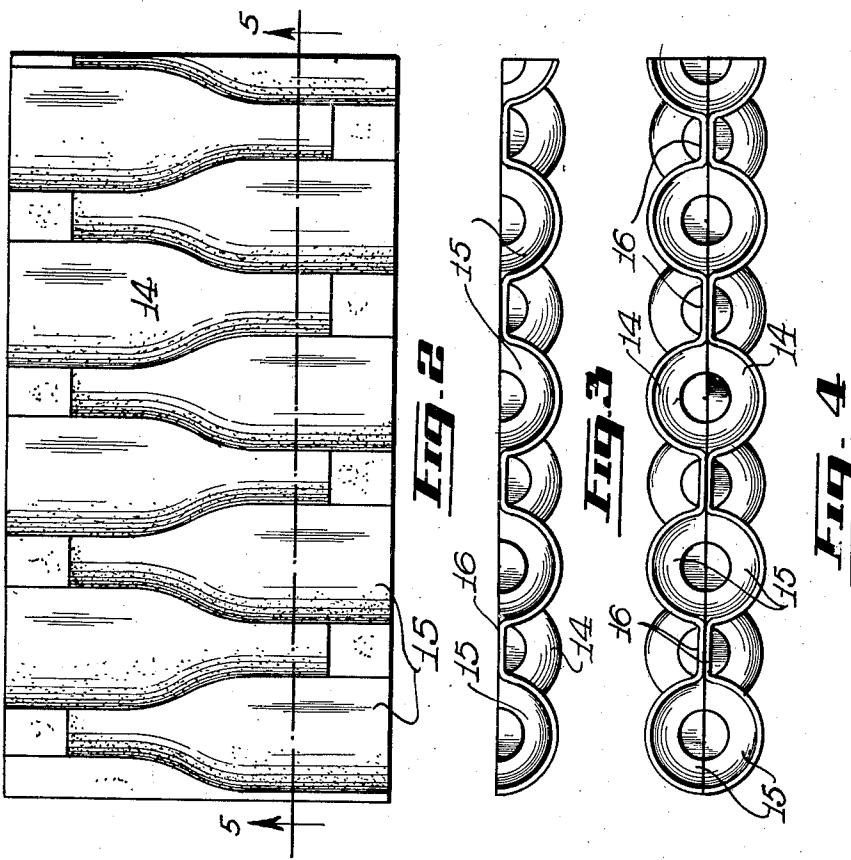
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2 Sheets-Sheet 2



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PACKING TRAY FOR BOTTLES

Application filed August 8, 1928, Serial No. 298,152, and in Canada May 7, 1928.

My present invention relates to improvements in a packing tray for bottles and appertains particularly to a moulded packing element for protecting bottles and other fragile articles in shipment.

The principal object is to provide a packing element that can be moulded to the shape of the article to be received and designed to accommodate such articles in the closest possible arrangement accomplishing thereby economy in packing space and snugness to prevent jarring.

A further object of the invention is to provide a moulded packing tray for bottles designed to receive the bottles alternately end for end and that will permit of packing the bottles closely, tightly and more rapidly than can be done at present, a single tray being sufficient for a whole layer of bottles.

A still further object of the invention is the provision of a moulded packing tray as described that is characterized by structural simplicity, exceptional efficiency and low cost of production, being thereby rendered commercially desirable.

To the accomplishment of these and related objects, as shall become apparent as the description proceeds, my invention resides in the construction, combination and arrangement of parts as shall be hereinafter more fully described, illustrated in the accompanying drawings and pointed out in the claims hereunto appended.

The invention will be best understood and can be more clearly described, when reference is had to the drawings forming a part of this disclosure wherein like characters indicate like parts throughout the several views.

In the drawings:—

Figure 1 is a side elevation of a tier of three eight-bottle trays as they would appear stacked in a conventional two dozen box or carton;

Figure 2 is a plan of a slightly modified tray;

Figure 3 is an end elevation of one of the modified trays;

Figure 4 is a similar end elevation of an

assembled pair of these modified trays; and Figure 5 is an enlarged detail section.

In packing fragile articles the first necessity is to prevent jarring and as waste space is also eliminated by tight or snug packing this proves a valuable feature and again but equally important to a shipper is the rapidity with which the articles can be safely packed. This improved packing tray is the solution of these two pressing problems.

The tray itself is preferably moulded instead of pressed, being substantially more rigid on that account and susceptible of being worked into more varied and useful forms.

In Figure 1 the form of tray 10 there shown is designed to receive eight bottles lying side by side in a horizontal plane and facing alternately in opposite directions. This packing tray is made from a pulp and moulded into the desired shape having the eight alternated bottle receiving depressions 11 deep enough to nest the whole bottle. The tray is wider than the height of the bottle so that the shoulders thereof when turned end for end conform and the neck portion of the bottle extends part way up between the large ends of the oppositely turned bottles on each side. Consequently there remains an unoccupied part of the tray between the top of the bottle and the edge of the tray and between the lower sides of the pair of spaced bottles. The strengthening piece designated 12 is rigid and horizontal, joining the tops of the spaced pair of bottle receiving depressions 11, and

serves to rigidify the whole structure and prevent the collapse of the tray which would otherwise compress longitudinally much easier. As it is, the central part of the tray is substantially more flexible readily accommodating the alternated bottles that can be thereby pressed into their nests with greater ease, the opposed shoulders slipping into juxtaposed position to hold the bottles tight and compact.

In Figures 2, 3, 4 and 5 the tray is shown as of similar design, no apparent change being observed in the plan view but on closer reference to Figures 3, 4 and 5 it will be noted that the trays 14, instead of being moulded with the depressions 15 equal in depth to the

diameter of the bottles are really much shallower and are intended to be used, as shown in the latter two views, as complementary halves, one to underlie a row of bottles and the second to be reversed and placed over the top of the row. In this way the hard rigid ends 16 between the large ends of spaced bottles and above the head of the intermediate and reversed bottle, lying in the horizontal plane with the top of the tray, is in line with the vertical centre of the row of bottles, in contradistinction to the row of rigid ends 12 in the previous embodiment of tray 10 that lies horizontal with or slightly above the top of the row of nested bottles and so serves to support the superposing tray.

While I have described my invention as particularly designed for packing bottles and similar fragile articles in horizontal layers, I desire to point out that when found advisable the trays, particularly the complementary halves may be arranged vertically.

In use, the tray 10 is placed in the bottom of the carton to be packed, with or without an underlying layer of corrugated paper or its equivalent and the depressions 11 filled; a second tray is placed right on top of the packed tray and filled and so on—no intermediate packing elements being required. If desired, a layer or sheet of corrugated paper may be located at both ends and sides and across the top of the tier of trays within the carton or package but this packing a tier or series of superposing trays of eight or twelve bottles without needing extraneous fittings will obviously permit of faster work in a shipping room while giving the bottles a full measure of protection the rigid ends preventing longitudinal collapse while the ridges forming the sides of the depressions render transverse creasing improbable. Opposite ends of the trays are shown with alternative selective ends.

From the foregoing description taken in connection with the accompanying drawings, it will be manifest that a packing tray for bottles is provided that will fulfill all the necessary requirements of such a device, but it is apparent that many minor changes could be made in the details of construction, combination and arrangement of the co-operating elements, within the scope of what is claimed, without departing from the spirit of the invention.

I have filed a divisional application on July 5th, 1932, and bearing Serial Number 620,766 for the particular form of the invention illustrated in Fig. 1.

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

1. A moulded pulp tray having a series of parallel bottle-receiving depressions each of a length substantially equal to the length of the bottle, each depression consisting of a

relatively large portion and a reduced shallower portion which terminates short of the adjacent edge of the tray, said depressions being disposed such that the bottles will be alternately reversed, each depression being in staggered relation with adjacent depressions but overlapping the same for a major portion of the length thereof, and a web-like portion at the outer end of the reduced portion of each depression extending therefrom to the adjacent edge of the tray and which joins the wall of the large portion of an adjacent depression for a substantial distance in the length thereof, whereby the tray is stiffened and the large portions of the depressions are prevented from collapsing or elongating laterally.

2. A moulded pulp tray having a series of parallel bottle-receiving depressions of a length substantially equal to the length of the bottle to be placed therein, each depression consisting of a relatively large portion and a reduced shallower portion which terminates short of the adjacent edge of the tray, said depressions being disposed such that the bottles will be alternately reversed, each depression being in staggered relation with adjacent depressions but overlapping the same for a major portion of the length thereof, each depression being substantially as deep as the diameter of the bottle, and a web-like portion at the outer end of the reduced portion of each depression extending therefrom to the adjacent edge of the tray and which joins the wall of the large portion of an adjacent depression for a substantial distance in the length thereof, whereby the tray is stiffened and the large portions of the depressions are prevented from collapsing or elongating laterally.

3. A moulded pulp tray having a series of parallel bottle-receiving depressions of a length substantially equal to the length of the bottle to be placed therein, each depression consisting of a relatively large portion and a reduced shallower portion which terminates short of the adjacent edge of the tray, said depressions being disposed such that the bottles will be alternately reversed, each depression being in staggered relation with adjacent depressions but overlapping the same for a major portion of the length thereof, said depressions being substantially as deep as one-half the diameter of the bottle, and a web-like portion at the outer end of the reduced portion of each depression which extends therefrom to an adjacent edge of the tray and which joins the wall of the large portion of an adjacent depression for a substantial distance in the length thereof, whereby the tray is stiffened and the large portion of the depression is prevented from collapsing or elongating laterally.

4. A moulded pulp tray having a series of parallel bottle-receiving depressions of a

length substantially equal to the length of the bottle to be placed therein, each depression consisting of a relatively large portion and a reduced shallower portion which terminates
5 short of the adjacent edge of the tray, said depressions being disposed such that the bottles will be alternately reversed, each depression being in staggered relation with adjacent depressions but overlapping the same for a major portion of the length thereof, said depressions being substantially as deep as one-half the diameter of the bottle, and a rectangular web-like portion at the outer end of the reduced portion of each depression extending
10 therefrom to the adjacent edge of the tray and which joins the wall of the large portion of an adjacent depression for a substantial distance in the length thereof, whereby the tray is stiffened and the large portion of the
15 depression is prevented from collapsing or elongating laterally, said web-like portions forming flat faces whereby a series of relatively large bearing surfaces are provided which will coat with similarly formed surfaces on mating trays.

5. A moulded pulp tray having a series of parallel bottle-receiving depressions each of a length substantially equal to the length of the bottle, each depression consisting of a relatively large portion which extends completely to an edge of the tray so as to be open at that end and a reduced shallower portion which terminates short of the opposite edge of the tray a distance greater than the width of
30 said reduced shallower portion, said depressions being disposed such that the bottles will be alternately reversed, each depression being in staggered relation with adjacent depressions but overlapping the same for a major portion of the length thereof, and a web-like portion at the outer end of the reduced portion of each depression which extends therefrom to the edge of the tray so that it will join the wall of the large portion of an adjacent depression for a substantial distance in the length thereof, whereby the tray is stiffened and the large portions of the depressions are prevented from collapsing or elongating laterally.

40 6. A packing tray having alternated and staggered reversely directed bottle-receiving depressions each having a relatively large portion to receive the body of a bottle and a reduced portion to receive the neck of a bottle, and a rectangular horizontal raised strengthening piece projecting outwardly of the reduced portion only of each depression and joining the wall of the relatively large portion of an adjacent depression.

45 60 In testimony whereof I hereunto affix my signature.

RONALD D. WHITE. [l.s.]