Dec. 10, 1957 B. E. CASWELL 2,815,856

PACKING CASE FOR PILSENER GLASSES

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Fig. 1

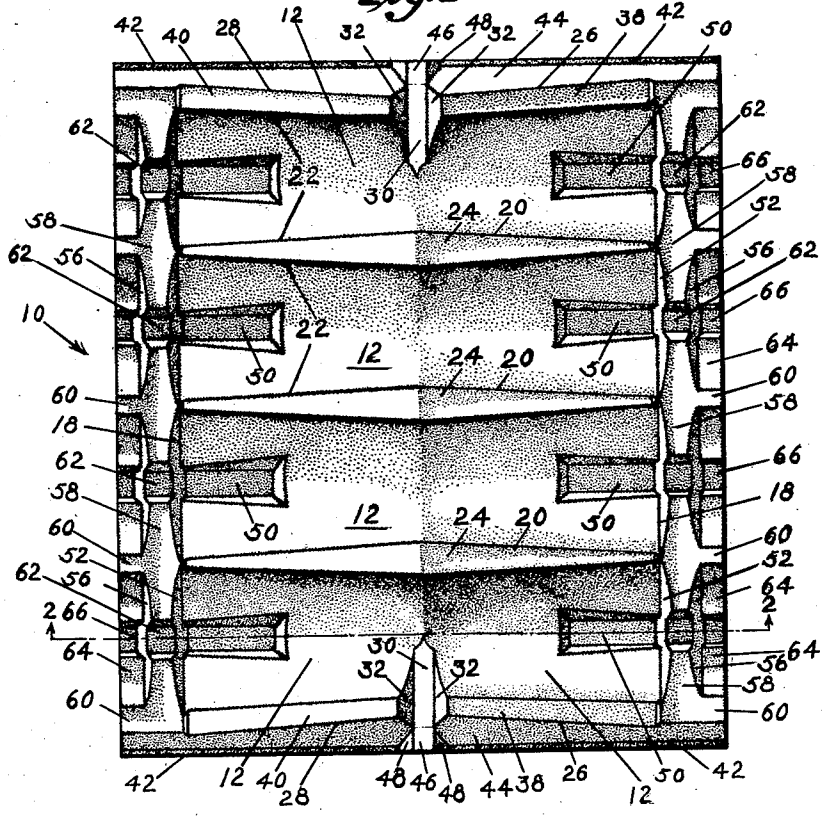
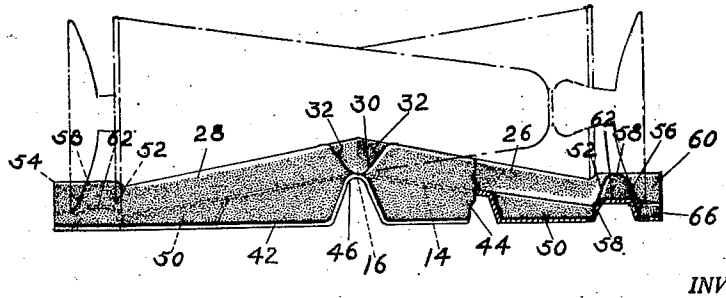


Fig. 2



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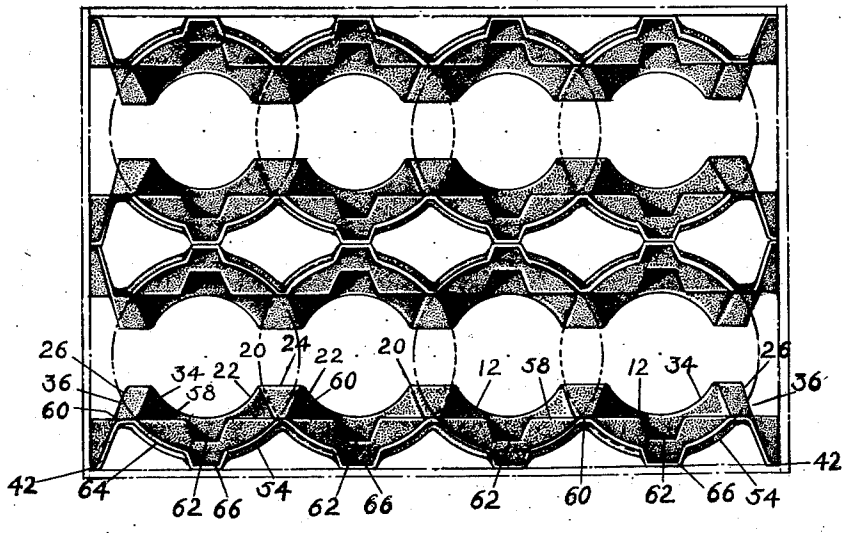
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Fig. 3



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PACKING CASE FOR PILSENER GLASSES

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4 Claims. (Cl. 206—65)

This invention relates to the packing of glasses for shipping and storing and particularly relates to the packing of glasses of the so-called "Pilsener" type which comprises an elongated, conical portion, a short stem and a wide, round base.

The peculiar shape of the "Pilsener" glasses, as noted above, does not lend itself to the regular type of packing means used for the ordinary tumbler type of glasses. The "Pilsener" glasses being of irregular shape require a particular type of support adapted to this shape in order to provide a proper cushioning support for each part of the glass. The peculiar shape of the "Pilsener" glasses has also, heretofore, necessitated the use of packing wherein a large portion of the space between the glasses has been wasted.

It is a primary object of the present invention to provide for the stacking of "Pilsener" glasses in layers within a container or packing crate in such a manner that the glasses are held in compact, cushioned relationship with each other within the container.

Another object of the present invention is to provide for a compact stacking of the "Pilsener" glasses in such a manner that they are retained against axial and lateral relative movement.

Another object of the present invention is to provide for the packing of the "Pilsener" glasses in a most convenient and economical manner.

Other objects and many of the attendant advantages of this invention will be readily appreciated as the same becomes better understood by reference to the following detailed description when considered in connection with the accompanying drawings wherein:

Fig. 1 is a top plan view of a packing tray embodying the invention,

Fig. 2 is a side elevational view, partly broken away to show a sectional view taken on line 2—2 of Fig. 1, and

Fig. 3 is an end view of the tray of Fig. 1, and, further showing, in addition, the relationship of this tray with similar trays in stacked condition in a container.

Referring now in greater detail to the drawing wherein similar reference characters refer to similar parts, there is shown a tray generally designated 10, this tray being constructed of resilient material such as molded pulp fibre. The tray 10 is provided with a series of laterally arranged pockets 12, each pocket 12 having a bottom wall 14 which, in the longitudinal direction, tapers downwardly from a high point 16 at the center line of the tray in opposite directions toward oppositely disposed lines of demarcation shown at 18 in Fig. 1. In cross-section, the pockets 12 are generally semi-circular, as best seen in Fig. 3. In plan view, as in Fig. 1, the pockets taper outwardly from the center line 16 toward lines of demarcation 18. The pockets 12 are separated from each other by ribs 20, each of these ribs comprising a pair of concave side walls 22, which are continuations of the curved side walls of the pockets, and a top wall 24. As best seen in Fig. 1, the top walls 24 of the ribs are tapered

from a relatively wide center portion toward narrow end portions at either line of demarcation 18, this taper being complementary to the taper of the adjacent pockets.

Bounding each of the end pockets 12 are a pair of end-to-end aligned ribs 26 and 28, each of which is inclined upwardly from their corresponding demarcation lines 18 toward the center line of the tray. Each pair of ribs 26 and 28 are separated by a groove 30 having curved side walls 32 and which extends toward the longitudinal axes of the adjacent pocket. Each of the ribs 26 and 28 comprises a curved inner side wall, as at 34 in Fig. 3, and a relatively flat, outwardly inclined outer side wall, as at 36 in Fig. 3. The respective top portions 38 and 40 of the ribs 26 and 28 taper outwardly slightly from their inner to their outer ends, as best seen in Fig. 1.

A radially outwardly extending flange 42 is provided at opposite sides of the tray, these flanges being at a substantially lower level than the bottom of their adjacent ribs 26 and 28. Extending between each flange 42 and its adjacent ribs 26 and 28 is an inclined wall 44. A rib 46, having inclined walls 48, is provided at the central portion of each flange 42, this rib coinciding with the groove 30 so as to form a uniplanar portion at the center of each marginal portion of the tray.

At the opposite end portions of each pocket 12 is provided a generally rectangular groove 50, each of these grooves 50 terminating at the demarcation lines 18.

At the opposite side of each of the demarcation lines 18 is provided an inclined wall 52. These walls 52 extend upwardly from a position slightly below the adjacent bottom portions of the pockets, whereby a downwardly extending indentation 54 is provided at the demarcation lines.

The walls 52 cooperate with similar walls 56 to define a rib 58 adjacent each end of the tray. The ribs 58 have perpendicular portions 60 which extend to the end of the tray and are also provided with spaced recesses 62 which are aligned with recesses 50 in the pockets. Inclined slightly concave walls 64 extend downwardly from each rib portion 60 toward a recess 66, each of these recesses 66 being aligned with its corresponding recess 62.

In use, the trays 10 are placed in a shipping carton or other container in layers with the glasses between the layers. When stacking the glasses, a tray 10 is placed at the bottom of the carton in the position shown at the bottom of Fig. 3. In this position, the recesses 66 form bottom ribs which, together with flanges 42, resiliently space this bottom tray from the bottom of the carton. A layer of glasses are then placed in the pockets of this lowermost tray, with each glass in reversed position relative to the glasses adjacent thereto, as indicated in dotted outline in Fig. 2. It should be noted in Fig. 2 that the base portions of the glasses are held against axial movement by being in contact with the ribs 58 while lateral movement is prevented by the ribs 20.

The reverse inclination of the bottom walls of each pocket permits the glasses to be placed therein in either of the two opposite positions shown while the slight indentations 54 at either demarcation line 18 acts to maintain the lips of the glasses spaced from the bottom of the tray. The groove 30 and rib 46, by providing a uniplanar portion at the center of the marginal portions of the tray, act to strengthen these portions.

The indentations 50 provide bottom ribs in line with the ribs formed by recesses 66 for resiliently spacing the glass retaining portions of the tray from the bottom of the carton. The provision of the recesses 62 in the ribs 58 permit the corresponding recesses 50 and 66 to be spaced from each other by a land portion which is not too high. If this land portion were permitted to be of the same height as the remaining portion of the rib 58,

it would tend to buckle and tear under the weight of the glass because of the lack of support at either side thereof. By reducing the height of the rib **58** in these areas, however, the relative height between the rib and the tray at either side thereof remains substantially constant.

After the glasses are stacked in the bottom tray, a second tray is placed over the glasses, this tray being in reversed position from the first, as shown in Fig. 3. A third tray is then placed over the second and glasses are stacked therein similarly to the bottom tray. These glasses are resiliently supported above the bottom layer of glasses by the coaction of the oppositely disposed ribs formed by the recesses **50** and **66** and by the flanges **42**.

Obviously many modifications and variations of the present invention are possible in the light of the above teachings. It is, therefore, to be understood that within the scope of the appended claims the invention may be practiced otherwise than as specifically described.

What is claimed in this invention is:

1. A tray for supporting fragile articles comprising a sheet having a plurality of laterally spaced, similar pockets, the ends of said pockets being spaced from the adjacent edges of said sheet by ribs, the bottom wall of each of said pockets comprising two oppositely disposed sections, the sections being inclined upwardly at equal and opposite angles to each other from their corresponding ribs and meeting, in end-to-end relationship, at an apex, said apex being formed by a groove on the underside of said tray, said groove extending longitudinally along a median plane of said tray.

2. The tray of claim 1 wherein a downwardly projecting recess extends upwardly from each of the opposite ends of each pocket for a distance substantially less than the distance between the corresponding end of the pocket and the center section thereof.

3. The tray of claim 1 wherein each of said pockets has wide end portions in a plane substantially perpendicular to the inclined plane of said bottom walls, and is provided with side walls inclining upwardly from each of said side end portions toward said mid-section.

4. A package comprising a container, a plurality of layers of generally conical drinking glasses within said container, each layer comprising a tray for supporting fragile articles comprising a sheet having a plurality of laterally spaced, similar pockets, the ends of said pockets being spaced from the adjacent edges of said sheet by ribs, the bottom wall of each of said pockets comprising two oppositely disposed sections, the sections being inclined upwardly at equal and opposite angles to each other from their corresponding ribs and meeting, in end-to-end relationship, at an apex, said apex being formed by a groove on the underside of said tray, said groove extending longitudinally along a median plane of said tray, and a glass having a base, resting on one section of the bottom wall of each pocket, with the base of said glass being laterally supported by a corresponding rib, the glass in each pocket being reversed relative to the glasses in the adjacent pockets.

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