

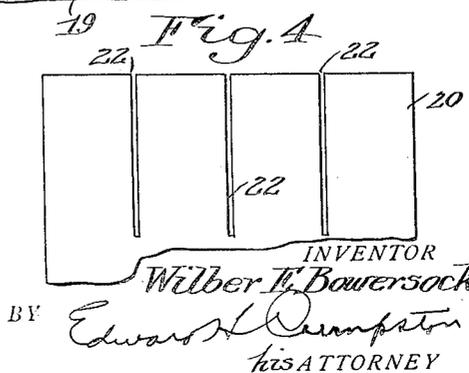
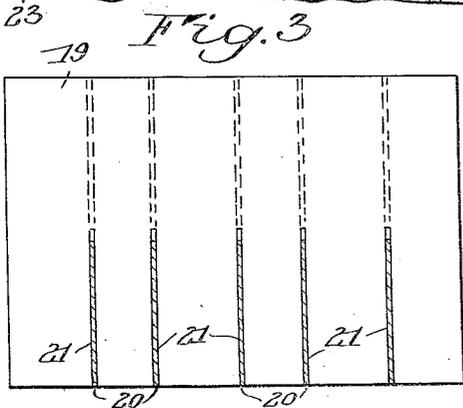
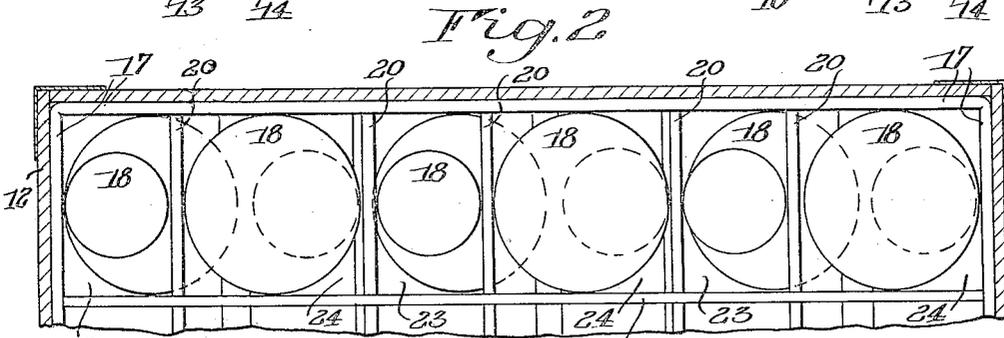
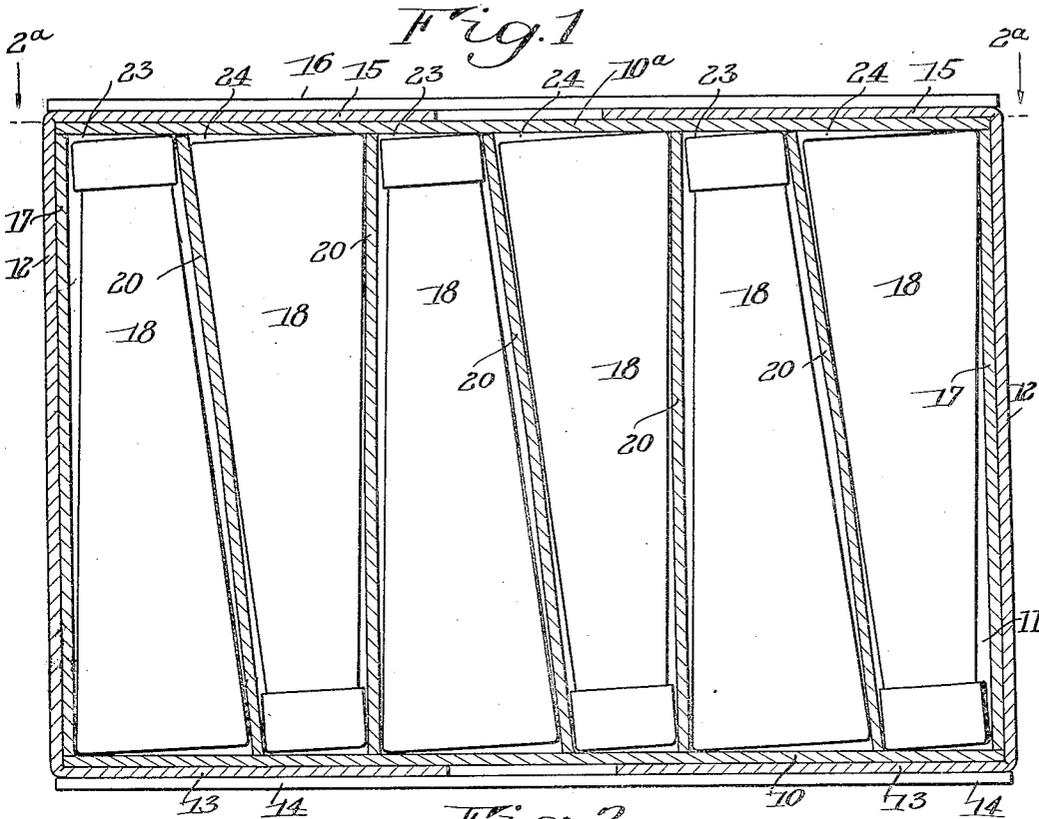
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CONTAINER

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# UNITED STATES PATENT OFFICE

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## CONTAINER

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The present invention relates to containers and more particularly to the class of containers employed for packing and shipping various articles, one object being to provide a container of this type which can be economically constructed and in which the articles can be conveniently packed and held in a manner to prevent displacement thereof and to afford protection thereto when handling the containers from time to time.

A further object of the invention is to provide an improved container of this class so constructed in a manner as to afford economy in the amount of material used in its construction whereby to reduce the cost of manufacturing containers of this type.

A further object of the invention is to provide a unitary packing case or container for bottles or other articles which are of larger proportions at one end than the other, the construction being such as to afford a series of individual pockets for the articles formed in part of flexible material capable of being flexed or displaced by the articles to conform generally to the contour thereof.

To these and other ends the invention resides in certain improvements and combinations of parts, all as will be hereinafter more fully described, the novel features being pointed out in the claims at the end of the specification.

In the drawing:

Fig. 1 is a sectional elevation showing the manner of constructing the container and arranging the bottles therein;

Fig. 2 is a fragmentary sectional plan view taken on line 2a—2a of Fig. 1;

Fig. 3 is a view in elevation showing the manner of constructing and arranging the pocket forming wall members which are inserted within the container to afford pockets varying alternately in width; and

Fig. 4 is a detailed view of one of the wall members shown in section in Fig. 3.

Similar reference numerals throughout the several views indicate the same parts.

The present invention embodies improvements in containers or casings designed particularly for use in packing tapered articles, such for example as bottles and the like where

due to the converging side walls of the bottles their opposite ends vary in size according to the length of the bottles and degree to which they are tapered. Heretofore in constructing containers of this class partition walls have been employed within the container to afford pockets of uniform cross sectional area, so that in placing therein the tapered articles to be packed and shipped only their larger ends will be engaged by the surrounding walls, leaving considerable space surrounding the remaining portions of the articles. This method of packing has the disadvantage not only of requiring a container of maximum proportions for a given number of articles to be packed but one in which the articles are more or less free to shift, due to being out of contact with the surrounding walls for the greater portion of their length.

In the present invention I have overcome these disadvantages by constructing the container in a manner not only to reduce the size thereof for a given number of articles of the kind in question, but in a manner to better support and protect the articles when packed for shipment within the container.

Referring to the drawing, the container shown in Fig. 1 preferably comprises one of cardboard construction having bottom, side and end walls, 10, 11, and 12 respectively. The end and side walls are provided with extensions 13 and 14 respectively which are folded under the bottom 10 to strengthen the latter. The end and side walls are also provided with extensions 15 and 16 which are folded down on a cover 10<sup>a</sup> as shown in Fig. 1 which forms closing means for the opening in the top of the container. The container is preferably provided with an inner reinforcing wall 17 constructed of one or more sections of any suitable material such as heavy cardboard or the like. It will be understood, however, that the container may be formed of any desired material such for example as metal, wood, or any other suitable material.

The container is divided into one or more rows of pockets or compartments for individually receiving the articles to be packed,

such for example as the tapered bottles 18 shown in Figs. 1 and 2. These compartments are preferably formed of plates or sheets of relatively heavy cardboard constituting partition walls, one set of which extends lengthwise of the container and the other transversely or crosswise thereof, one of the lengthwise partitions being indicated by the reference character 19 and the transverse partitions by the reference character 20.

In order that the article receiving pockets in any given row may be varied alternately in width for a purpose which will herein after appear, the sheets 19 are slotted at 21 for a portion of their height, the spacing of the slots varying alternately a predetermined amount in order that the article receiving pockets will likewise vary alternately in width a corresponding amount which will be an amount substantially equal to the difference in size of the opposite ends of the articles to be packed in the container. It will be understood that the transversely extending partitions 20 have the slots 22 therein for receiving the plates 19 spaced substantially equal distances apart as shown in Fig. 4, this spacing being approximately equal to the diameters of the bottles at their largest ends as will be seen from viewing the arrangement shown in Fig. 2. This spacing preferably remains constant while the spacing between the plates 20 which are normally in parallel relation when the container is empty will be varied to a certain degree by displacement of the flexible sheets 20 upon positioning the bottles within the relatively narrow pockets as shown in Fig. 1.

It will be observed from viewing Fig. 1 that the pockets 24 are of a width substantially equal to the diameters of the base portions of the bottles therein and that the pockets 23 are approximately of a width equal to the diameters of the neck portions of the bottles therein. In other words, the relatively wide and narrow pockets alternate in each row in the manner shown in Fig. 3, it being seen that the partition walls 20 which are deflected by the bottles in Fig. 1 are in parallel relation before positioning the bottles within the pockets. By positioning the bottles within the larger pockets 23 with their base portions at the bottom of the container and then inserting the remaining bottles within the pockets 24 in inverted position as shown, the opposite sides of the inverted bottles will flex or displace the partition walls 20 so that they will accommodate themselves substantially to the taper of the bottles, not only to that of the inverted bottles but substantially to that of the bottles within the intervening pockets 23 as well. It will be observed therefore that the wedging action of the inverted bottles in the pockets 24 will force the flexible walls 20 into

position to engage the upper portions of the bottles within the pockets 23 to steady and firmly hold them within said pockets. By thus causing the partition walls 20 to conform substantially to the taper of the bottles within the compartments 23 and to grip the same therein these bottles are held against outward movement and are also prevented from shifting laterally within the pockets. With this arrangement the bottles are in a sense locked within the container each being gripped by the flexible walls at two sides thereof. With this improved construction, embodying relatively wide and narrow pockets, a box of considerable less length or width as the case may be, is required than where the pockets are of uniform size, each corresponding in width to the diameter of the base or larger portion of the bottle therein.

It will be noted that the portions of the plate 20 upstanding between the slots 22 therein are unsupported at their sides and said portions are therefore free to bend or flex each at a point adjacent its base under the wedging action of the inverted bottles upon insertion of the same within the pockets 24. As stated above the plates 20 are preferably made of flexible material such for example as cardboard and therefore the bottom portions of the plates lying below the slots 22 will be slightly displaced by the lower ends of the bottles within either set of pockets if the normal width of the pocket is made slightly less than the size of that end of the bottle to be placed therein. Thus the walls 20 are made to converge for the entire distance between the top and bottom walls of the container and the bottles are gripped and held firmly at each end by the walls 20, the latter being shown deflected in Fig. 1 from their normal perpendicular position. The displacement of the walls 20 by the wedging action of the inverted bottles when the latter are positioned with the pockets provided therefor will cause the bottles to assume approximately the position indicated in Fig. 1, in which they are shown slightly tilted. The tilting action, as will be understood, takes place where the distance between the end walls 17 is reduced to a minimum, taking into consideration the number of pockets between said walls, the thickness of the intervening walls 20 and the diameters of the bottles at their relatively large and small ends when arranged in the manner shown. The partition walls 19, only one of which is shown, are spaced a distance apart equal approximately to the diameter of the bottle at its largest end, these walls being preferably constructed of flexible sheets such as heavy cardboard or the like.

I claim:

1. A casing for holding articles, the opposite ends of which differ in size, a set of spaced upstanding plates within the casing

each having vertically disposed slots alternately spaced unequal distances apart and a second set of slotted plates upstanding within the casing formed of flexible material and  
5 having portions extending transversely through the slots of the first mentioned plates the latter having portions occupying the slots of the second mentioned plates, the plates of said sets forming pockets varying  
10 alternately in width whereby when the articles are reversely arranged within the pockets the larger ends of those within the narrower pockets will displace portions of said flexible plates causing them to move in the  
15 direction of the smaller ends of the articles in the larger pockets.

2. A casing for holding tapered bottles and the like provided with an opening at one side, walls arranged within the casing to  
20 afford a row of rectangular pockets normally varying alternately in width when unoccupied by the bottles an amount corresponding approximately to the difference in size of the ends of the bottles, the walls forming  
25 two opposing sides of a plurality of the smaller pockets having flexible portions adjacent the outer ends of the pockets, said bottles when positioned in the last named pockets with their larger extremities in said ends  
30 causing said flexible portions to be displaced laterally thereby reducing the size of the outer ends of the larger pockets to hold the bottles against outward displacement therein.

35 3. A casing for holding tapered bottles and the like, flexible walls arranged within the casing to afford one or more rows of rectangular shaped pockets normally varying alternately in width a predetermined amount  
40 when unoccupied by the bottles, the walls forming two opposing sides of the narrower pockets being displaceable by the wedging action of the bottles positioned within the last mentioned pockets, the displacement of  
45 said walls causing the bottles within the several pockets of each row to assume a tilted position therein.

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