

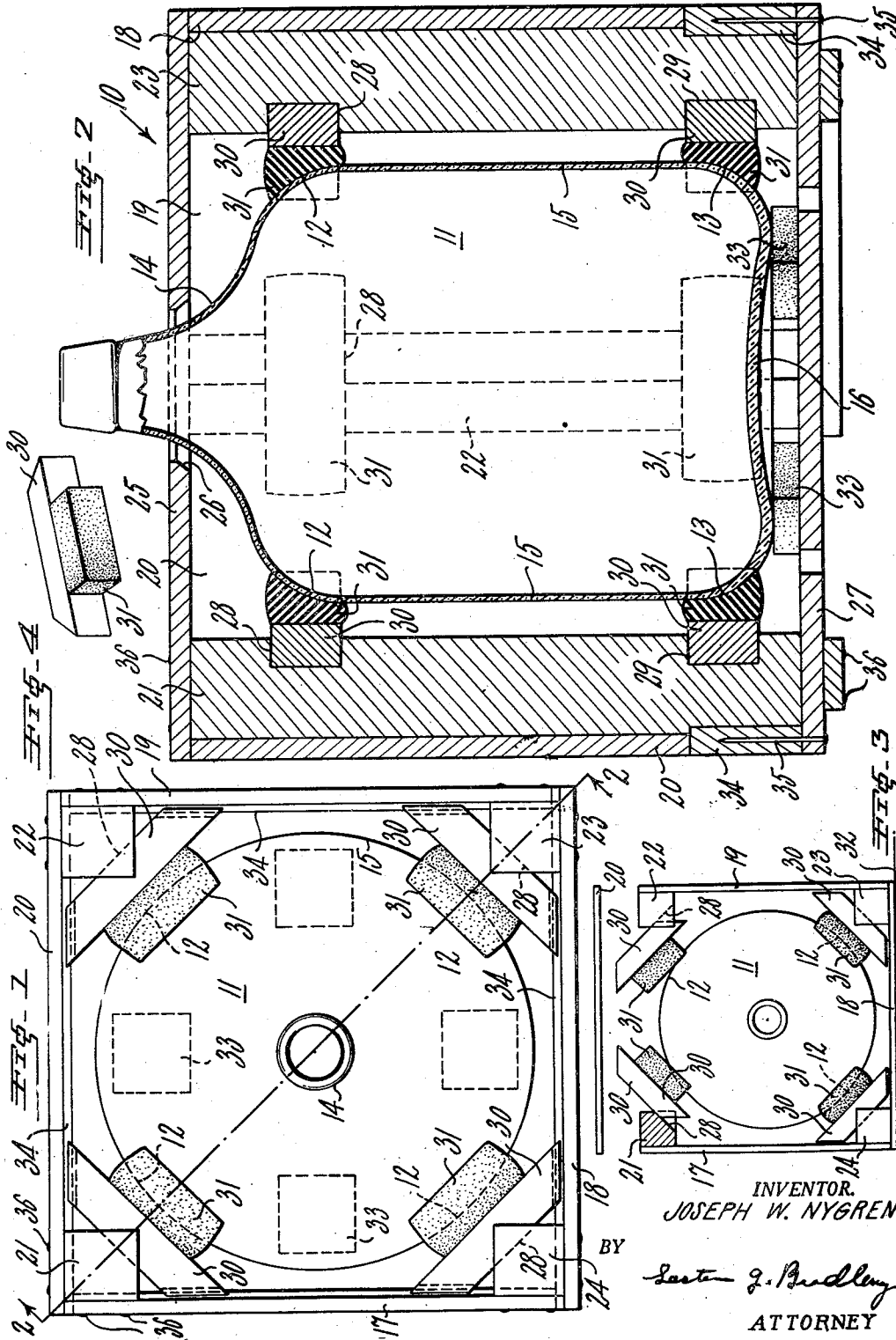
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J. W. NYGREN

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CARBOY AND METHOD OF ASSEMBLING

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CARBOY AND METHOD OF ASSEMBLING

Joseph W. Nygren, Naugatuck, Conn., assignor to
United States Rubber Company, New York,
N. Y., a corporation New Jersey

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This invention relates to carboys, and more particularly to improved means for cushioning a carboy bottle within a surrounding box structure. The invention is also concerned with a novel method of installing the bottle in the box, whereby important advantages are obtained with respect to relieving the floor boards or bottom of the box from the weight of the bottle and its contents.

In the manufacture of carboy constructions, heretofore it has been the practice to make a rigid box construction, consisting of the four sides and the bottom of the box, and four inside corner posts to which the other members were nailed. Then the bottle was inserted in the box and resiliently cushioned on supports therein to protect it against breakage. Substantially all of the weight of the bottle and its contents were supported by the bottom of the box on cushioning blocks placed between the bottom of the bottle and the bottom of the box. The sides of the bottle were cushioned against lateral shock by cushioning blocks, which were inserted between the sides of the bottle and the corner posts, after the bottle had been placed in the rigid box construction. In such prior carboy constructions, the bottom of the box was secured to the lower ends of the sides and the corner posts by nails driven axially of the bottle through the bottom and into the bottom edges of the sides and the bottom ends of the corner posts. The bottom being nailed on in this manner, the holding power of the nails was relatively small. Since the weight of the bottle and its contents were supported by the bottom of the box, considerable strain was placed upon the nails, and they were liable to loosen up and be pulled out. The holding power of the nails, and their strength were further weakened by the liquid contents of the bottle, sometimes acid, being spilled into the bottom of the box and corroding the nails by seeping between the bottom and sides of the box and into contact with the nails. The corrosive action has often times so weakened the nails that the bottom of the box has fallen off under the load of the bottle.

It is desirable, however, to nail the bottom of the box on in the manner above mentioned, because it is the first of the box members to deteriorate and it is usually replaced before the end of the life of the carboy box, and this can be done more readily when it is nailed on in such manner. It is, therefore, desirable to retain this method of nailing the bottom to the box, but is very desirable to provide means for preventing the bottle from falling out of the box should the bottom fall off. It is also very desirable to re-

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lieve the bottom of the box from the load of the bottle and its contents when the box is lifted, so that the bottoms will remain on for a longer period of time, and should it fall off, the bottle will remain supported in its box.

In accordance with this present invention, when the carboy is at rest whether supported on its bottom resting on the floor, or whether supported off the floor by its sides in an upright carrying position, the securing nails for the bottom of the box are relieved of the weight of the bottle and its contents, and such weight, or load is carried by the corner posts of the box, the bottle being normally and entirely supported vertically and laterally on cushioning blocks which are supported by the corner posts, and transmit the load thereto. In the construction embodying this invention even though the bottom of the box may fall off when the filled carboy is lifted by the sides of the box, in such event, the bottle would be held in the box by means of the cushioning blocks carried by the corner posts. Additional cushioning blocks are placed between the bottom of the box and the bottom of the bottle to act as auxiliary cushioning means and as a safety precaution to absorb the shock that may result from dropping the carboy on the floor, or from setting it down too hard. Normally, however, the additional bottom cushioning blocks carry very little, if any, of the static load of the bottle.

Unlike prior constructions in which all four sides, the corner posts, and the bottom of the box were secured together in a rigid assembly before fitting the bottle and the cushioning members therein, I assemble the box with its cushioning and supporting members around the bottle in such a manner that the cushioning members are laterally compressed between the corner posts and the upper and lower shoulders of the bottle which connect the side walls of the bottle to its neck and bottom portions. The lateral compression causes the resilient cushions to conform to the shape of the shoulders and extend around them to the extent that the blocks for the upper shoulder overhang and extend above the upper shoulder and the blocks for the lower shoulder overhang and extend underneath the lower shoulder. The cushions being supported on the posts, the bottle is supported thereon against both vertical and lateral movements. In accordance with my method of assembly the four corner posts of the box are secured in pairs to each of two sides of the box, and these two sides are then joined by securing to them the third side of the box. The three-sided assembly is then placed on the third

or intermediate side with the two other sides extending upwardly. Two cushioning blocks are placed on each of the lower corner posts adjacent their ends so that they are held against endwise movement in respect to the corner post and in position to contact with the upper and lower shoulders of the bottle when it is placed on its side between the two upwardly projecting sides of the box. After so positioning the bottle, two other cushioning blocks are placed on each of the upper and lower shoulders of the bottle adjacent the ends of each of the upper corner posts, and are secured by the corner posts against endwise movement in respect thereto. The upwardly extending sides of the box are then drawn together in position to receive the fourth side of the box which is secured to the upwardly positioned corner posts.

The space occupied by the cushioning blocks between the corner posts and the shoulders of the bottle is less than the normal dimension of the blocks, and when the sides and the bottle are pressed into position to receive the fourth side of the box which is then secured in place, the cushioning blocks are compressed laterally around the upper and lower shoulders of the bottle and are caused to extend above and below the shoulders to such an extent that the bottle is supported against vertical movement, that is in the endwise direction of the corner posts, as well as laterally thereof. The carboy construction is then completed by inserting auxiliary bottom cushioning blocks between the bottom of the box and the bottom of the bottle, and securing the bottom and top of the box to the box assembly. By this novel method of the installation of the bottle in the box, the cushioning members are substantially extended beneath the bottom shoulder of the bottle and above the top shoulder of the bottle, thereby relieving the securing nails for the bottom of the box from the vertical load of the bottle and its contents, as well as retaining the bottle in a cushioned position both vertically and laterally in respect to the corner posts.

The construction, the method of assembly, and the objects and advantages of this invention are further described with reference to the following drawing.

In the accompanying drawing:

Fig. 1 is a plan view of the box of the present invention with the bottle installed and the top cover removed;

Fig. 2 is a transverse section on the line 2—2 of Fig. 1, but showing the top cover in place;

Fig. 3 is an end view of a box assemblage on a reduced scale, illustrating the method of installing the bottle; and

Fig. 4 is a perspective view of a cushioning element.

In the drawing the reference character 10 indicates in general a carboy box structure for encasing a bottle 11 having the upper and lower curved shoulders 12 and 13 respectively, a neck portion 14, sides 15 and a bottom 16. The box 10 comprises sides 17, 18, 19 and 20; four corner posts 21, 22, 23 and 24; a top cover 25 having an opening 26 for the neck 14 of the bottle; and a bottom 27. Each of the corner posts is provided with an upper notch 28 and a lower notch 29 located opposite the respective shoulders 12 and 13 of the bottle 11, and are adapted to receive diagonally disposed blocks 30 to which resilient cushioning and supporting elements, such as soft rubber cushions 31 are attached by cement or

other suitable fastening means. These soft rubber cushions 31 are held under compression between the corner posts 21 to 24 and the upper and lower shoulders of the bottle 11 and are thereby caused to conform to the contour of and extend above and below the upper and lower shoulders 12 and 13, respectively, of the bottle. Since the cushions are supported on the corner posts they yieldingly support the bottle between them and on the corner posts above the bottom 27 of the box in both vertical and lateral directions. Thus the weight of the bottle is borne by the four corner posts 21 to 24 instead of the bottom of the box as was the case in prior constructions.

Now the procedure for assembling the box 10 to encase the bottle 11 will be described. The corner posts 21 and 24 are secured to the side 17, and the corner posts 22 and 23 are secured to the side 19 and these two sides are secured to the third side 18 to form the U-shaped assemblage illustrated in Fig. 3, the side 18 being placed lowermost on a support 32 so that the sides 17 and 19 project upward. The cushion supporting blocks 30 are placed in the notches 28 and 29 of corner posts 23 and 24 at the bottom of the assemblage as viewed in Fig. 3, and the bottle 11 is inserted endwise on its side between the upstanding panels 17 and 19 to locate the shoulders 12 and 13 of the bottle opposite to the cushions 31. The other set of blocks 30 carrying the cushions for the shoulders of the opposite side of the bottle are slipped into the notches 28 and 29 in the corner posts 21 and 22, and forced into final position between the corner posts and the shoulders of the bottle. The fourth side 20 is then fastened to the edges of the upstanding sides 17 and 19, as by nailing. This operation presses the upper and lower cushions 31 laterally of the vertical axis of the bottle into the cross section substantially as shown in Fig. 2 wherein the rubber body of each cushion is deformed under pressure around the curved shoulders 12 and 13 of the bottle so that the top cushions overhang or jet over the top shoulder and overhang or fit underneath the bottom shoulder and thereby support the bottle vertically and laterally on the four corner posts without imposing the weight of the bottle on the bottom 27 of the box, excepting through the corner posts. As a precautionary measure against excessive vertical thrusts, a set of cushioning elements 33 may be provided between the bottom 16 of the bottle and the bottom 27 of the box, but such cushions preferably are normally inactive so that under ordinary conditions of use the weight of the bottle is entirely supported on the corner posts without exerting any tension on the securing nails 35 for the bottom 27.

The lower portions of the four sides 17, 18, 19 and 20 may include thickened portions 34 constituting peripheral nailing strips for nails 35 extending upwardly through the bottom 27, giving added strength to the connection of the bottom to the box structure. The several parts of the box are secured together in any suitable way as by nails 35 or other fastening means.

The notches 28 and 29 preferably provide a free fit for the cushion-carrying blocks 30 so that they may be easily adjusted to position during assembly of the parts, and to afford substantial self-adjusting supports for the cushions. The notches thus provide simple and substantial holding means for the cushions without recourse to the holding power of nails.

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The invention is not confined to the precise details of construction herein described, but may be embodied in variations and modifications within the scope of the appended claims.

Having thus described my invention, what I claim and desire to protect by Letters Patent is:

1. A carboy construction, comprising a box, a bottle in said box, said bottle having a lower shoulder uniting the side wall to the bottom of the bottle, said box having corner posts, sides secured to said corner posts, a bottom secured on the box, said corner posts having transversely extending notches formed therein adjacent to the shoulder on said bottle, cushioning blocks secured to transversely extending members, said members being set into and supported against movement lengthwise of said posts by said notches, said cushioning blocks being compressed around and under the shoulder of said bottle, and adapted to support the entire weight of said bottle and its contents when said bottle is in an upright position.

2. A carboy construction, comprising a box, a bottle in said box, said bottle having upper and lower shoulders uniting the side wall to the bottom and neck portions of the bottle, said box having corner posts, sides secured to said corner posts, a bottom for said box, metal fasteners for securing said bottom in place, said corner posts having transversely extending notches formed therein adjacent to the shoulders on said bottle, cushioning blocks secured to transversely extending members, said members being set into and supported against movement lengthwise of said posts, by said notches, and said cushioning blocks being laterally compressed around the shoulders of said bottle, said upper cushioning blocks extending over said upper shoulder, said lower cushioning blocks extending underneath said lower shoulder, and adapted to support the entire weight of said bottle and its contents when said bottle is in an upright position.

3. In a carboy construction, the combination of a bottle having upper and lower shoulders, a box structure encasing the bottle and including corner posts, said corner posts having transverse

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notches opposite to the upper and lower shoulders of the bottle, and resilient cushions affixed to carrying members set into said notches, the cushions overhanging and being in tight resilient engagement with the bottle around the shoulders thereof, whereby the bottle is supported on the corner posts when it is in an upright position.

4. In a carboy construction, the combination of a bottle having upper and lower shoulders, a box structure encasing the bottle and including corner posts extending axially of said bottle, said corner posts having transverse notches opposite the upper and lower shoulders of the bottle, cushions affixed to carrying blocks slidably extending into said notches diagonally of the corners of the box and substantially at right angles to the radius of the bottle, the cushions being resilient and deformed under pressure to fit around the upper and lower shoulders of the bottle, said cushions overhanging said shoulders whereby the bottle is yieldingly supported on the corner posts against vertical and lateral displacement.

5. The method of installing a bottle having upper and lower shoulders in a carboy box, which comprises assembling three sides and four corner posts of the box structure, the corner posts being provided with spaced notches located opposite the upper and lower shoulders of the bottle, inserting a member having cushioning elements anchored thereon in the upper and lower notches of the corner posts adjacent to the closed side of the box, locating the bottle in the structure to bring the shoulders opposite the cushions, inserting a member having resilient cushioning elements anchored thereon in each of the notches adjacent to the free ends of the sides by lengthwise movement of said member, and securing the fourth side to the box structure to apply pressure to the cushions laterally of the vertical axis of the bottle, whereby the cushions are deformed under pressure around the upper and lower shoulders of the bottle.

JOSEPH W. NYGREN.