Sept. 3, 1957 R. J. CROSS ET AL 2,804,985

CRATES FOR BOTTLES AND LIKE CONTAINERS

Filed Aug. 17, 1953 3 Sheets-Sheet 1

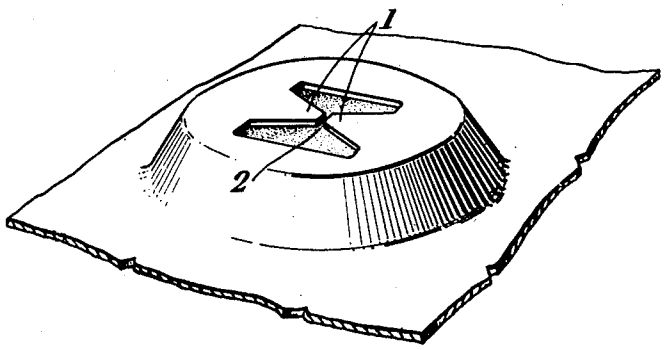

Fig. 1.

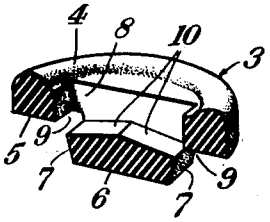

Fig. 2.

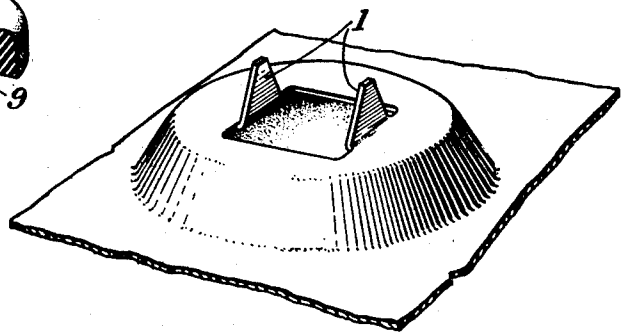

Fig. 3.

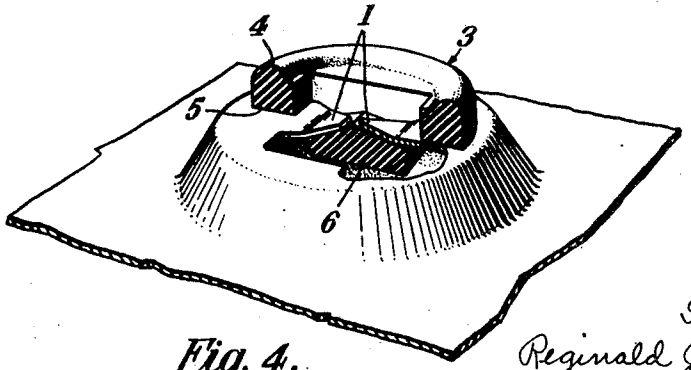

Fig. 4.

Inventors
Reginald Jack Cross
Frederick Glyn Hughes
By Cushman, Darby & Cushman
Attorneys

Sept. 3, 1957 R. J. CROSS ET AL 2,804,985

CRATES FOR BOTTLES AND LIKE CONTAINERS

Filed Aug. 17, 1953 3 Sheets-Sheet 2

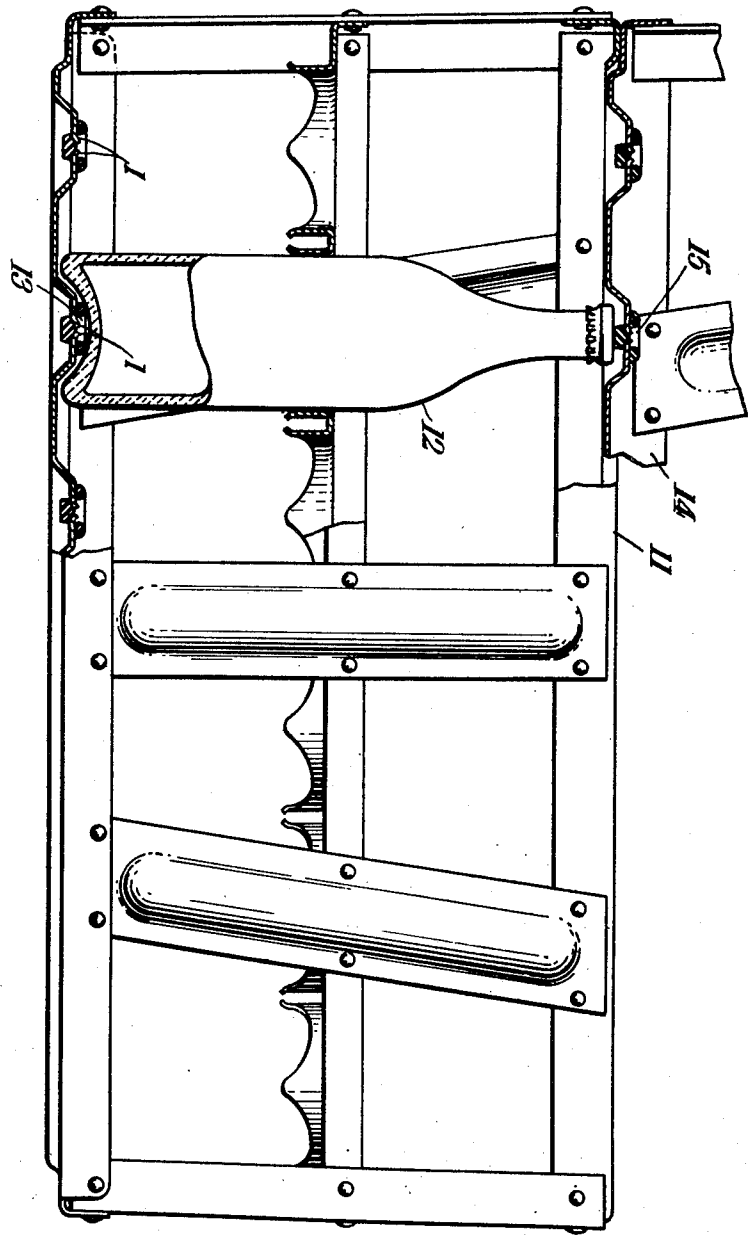

Fig. 5.

Inventors
Reginald Jack Cross
Frederick Glyn Hughes
By Cushman, Darby & Cushman
Attorneys

Sept. 3, 1957 R. J. CROSS ET AL 2,804,985

CRATES FOR BOTTLES AND LIKE CONTAINERS

Filed Aug. 17, 1953 3 Sheets-Sheet 3

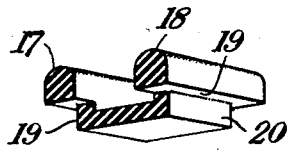

Fig. 6.

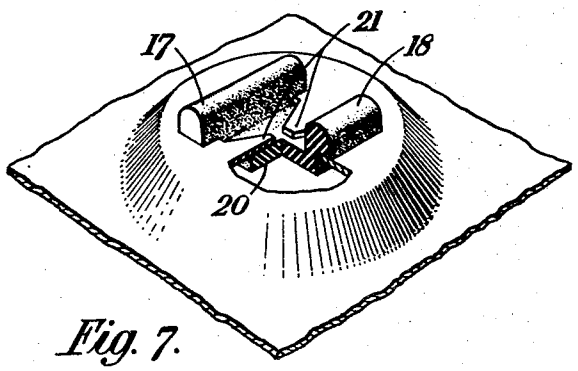

Fig. 7.

Inventors
Reginald Jack Cross
Frederick Glyn Hughes
By Cushman, Darby & Cushman
Attorneys

United States Patent Office

2,804,985

Patented Sept. 3, 1957

2,804,985

CRATES FOR BOTTLES AND LIKE CONTAINERS

Reginald Jack Cross, Meopham, and Frederick Glyn Hughes, Gravesend, England; said Hughes assignor to Essex Aero Limited, Gravesend, England, a British company

Application August 17, 1953, Serial No. 374,494

Claims priority, application Great Britain August 25, 1952

3 Claims. (Cl. 220—21)

The invention relates to crates for bottles and like containers, and to a method used in the construction thereof. In bottle crates, provision may be made for preventing the bottles from rattling on the floor of the crate, and in United States specification Serial No. 2,588,-805 there is described a crate having a rubber grommet which is secured in a perforation in the floor of the crate to constitute a resilient buffer or seat upon which a bottle may rest. Whilst the aforesaid grommets provide a satisfactory seat, it is usual to insert a bush or similar device into each grommet in order to retain them in the crate against intentional or accidental removal. The insertion of a retaining device into each grommet means a further operation in the assembly of the crate, and it is the object of the present invention to provide a crate having a silencing buffer which can be more rapidly inserted and fixed in the crate.

According to the invention, a crate for bottles and like containers, has a floor plate provided at the centre of each bottle receiving-compartment, with a silencing buffer upon which a bottle may rest, the said buffer being secured in a perforation in the floor plate by means of one or more ears projecting from the edge of said perforation and extending into a recess formed in the upper side of the buffer.

In order that the invention may be more readily understood reference will be made to the accompanying drawings, which illustrate by way of example a preferred embodiment thereof.

In the drawings:

Fig. 1 is a view of a section of the floor plate of the crate showing a perforation formed therein.

Fig. 2 is a sectional perspective view through a silencing buffer.

Fig. 3 is a similar view to Fig. 1, but showing the ears formed on the edge of the perforation bent upwardly.

Fig. 4 is a part sectional, broken away, view showing the silencing buffer assembled in the floor plate.

Fig. 5 is a part sectional view of a crate fitted with silencing buffers and showing a fragment of a further crate in stacked relationship thereto.

Fig. 6 is a perspective view of a modified form of buffer.

Fig. 7 shows the buffer in Fig. 6 assembled in a floor plate.

Referring to Fig. 1, the floor plate of the crate is pierced at the centre of each bottle-receiving compartment with a hole shaped as shown. The hole is basically of square shape with two tapered ears 1 extending inwardly from two opposite sides with their apices meeting but separated by a small gap 2. Subsequently to or during the piercing operation, the ears 1 are bent upwardly into the position shown in Fig. 3, in readiness for a resilient buffer such as shown in Fig. 2, to be inserted in the perforation. In order to facilitate the operation hereinafter described, of bending down the ears, the ears 1 may be bent upwardly into a position where they are inclined inwardly towards each other, the gap between the apices of the ears being just sufficient to enable the buffer to be inserted in the perforation.

In the embodiment illustrated the buffer comprises a circular block 3 of rubber or other resilient material, having a rounded rim 4 presenting a flat base 5. The buffer is provided on its underside with a square projection 6, of a size that will enter the square perforation in the floor plate of the crate. The sides 7 of the projection 6 are slightly tapered towards each other to ensure a tight fit when the buffer is seated, whilst the two remaining sides are both perpendicular to the base 5.

The upper side of the buffer is recessed at its centre with a rectangular recess 8, and is formed with two slots 9 arranged to receive the upturned ears 1. The recess 8 extends slightly below the base 5 and its bottom is provided with the two inclined surfaces 10.

The buffer is assembled in the floor of the crate by inserting the projection 6 into the square perforation formed by turning up the ears 1, the base 5 resting on the floor plate. The ears 1 are then bent downwardly as shown in Fig. 4 to retain the buffer in position. The inclined surfaces 10 serve to prevent movement of the buffer in a transverse direction as viewed in Fig. 4.

Fig. 5 shows a crate 11 the floor plate of which is fitted with resilient buffers in the manner already described. In the drawing part of the crate is broken away to disclose a bottle 12 nested therein, the bottle being seated on a buffer 13. Also shown in Fig. 5 is the fragment of another crate 14 stacked on top of the crate 11. It will be seen that, owing to the slight interlocking fit between the top of the crate 11 and the base of the crate 14, that the lower projecting part of the buffer 15 which corresponds with the buffer 13 in the crate 11, contacts the top of the bottle 12 in the lower crate. Thus when two or more crates are stacked one upon another, the bottles in all but the top crate, are held in place between corresponding buffers in the respective crates and prevented from jumping about.

The buffer may be of any desired shape, and the perforation in the floor plate may also have a basic shape other than square. In the alternative arrangement shown in Figs. 6 and 7, the buffer is cut from a length of extruded material of channel section. In this modification the buffer is provided with two rounded flanges 17 and 18 presenting a flat base 19 to the upper surface of the floor plate. The ends of the buffer are reduced on their underside to provide a rectangular projection 20, of a size that will enter the perforation in the floor plate. The channel shaped recess extends slightly below the base 19 so that when assembled in the floor plate the two ears 21 projecting from the edge of the perforation therein, extend into opposite ends of the said recess and retain the buffer in position.

Whilst the ears in the perforation have been shown pointed, which is a convenient shape for enabling the perforation to be initially pierced and any flash in the slots of the moulded buffer to be perforated, they need not necessarily be of the shape shown. Moreover whilst the buffer is preferably made of rubber, other material having the necessary characteristics of flexibility may be used.

What we claim as our invention and desire to secure by Letters Patent is:

1. A crate provided with compartments for receiving bottles and like containers, said crate having a floor plate with a perforation and two ears projecting from opposite sides of the edge of said perforation and a silencing buffer upon which a bottle may rest provided at the center of each bottle receiving compartment, the said buffer being secured in said perforation in the floor plate by means of said two ears projecting from opposite sides of the edge of said perforation, said buffer

having on its underside a projection of cross-sectional shape similar to the shape of said perforation and having on its upper side a recess open at the top and extending through at least a portion of the wall of said buffer to receive said ears.

2. A crate as defined in claim 1 wherein said recess is centrally located and a portion of the bottom within the recess is sloped upwardly toward a ridge at its center and said bottom has a pair of slots through which the said ears extend into said recess.

3. A crate as defined in claim 1 wherein said buffer has on its upper side a pair of spaced generally rectangular-shaped elements extending at each end beyond said underside projection thus forming recesses into which said ears project.

References Cited in the file of this patent

UNITED STATES PATENTS

1,243,859	Neider	Oct. 23, 1917
2,150,028	Dobson	Mar. 7, 1939
2,588,805	Cross	Mar. 11, 1952
2,675,202	Kaemmerling	Apr. 13, 1954