

May 30, 1939.

C. A. WOOLSEY

2,160,631

CRATE

Filed May 18, 1936

2 Sheets-Sheet 1

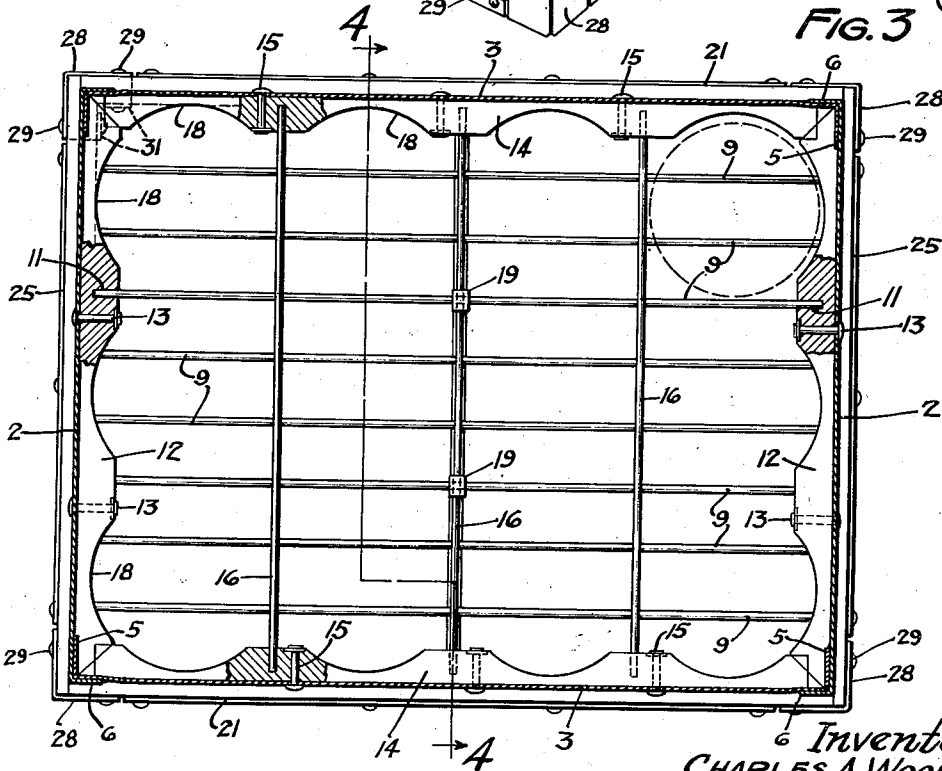
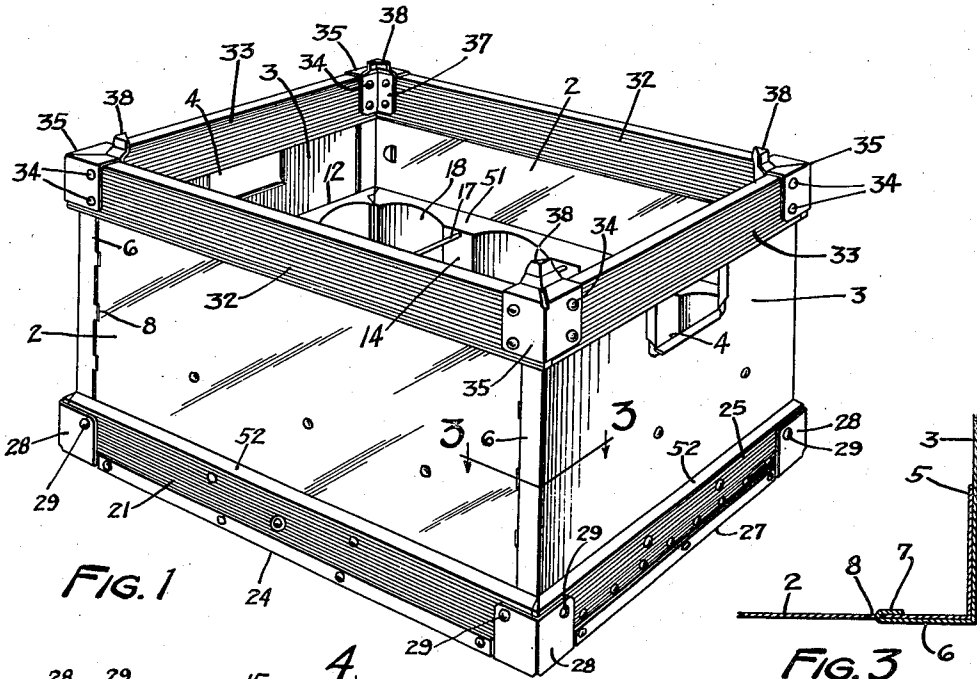


FIG. 2

Inventor
CHARLES A. WOOLSEY

By Paul Paul Moore

ATTORNEYS

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2 Sheets-Sheet 2

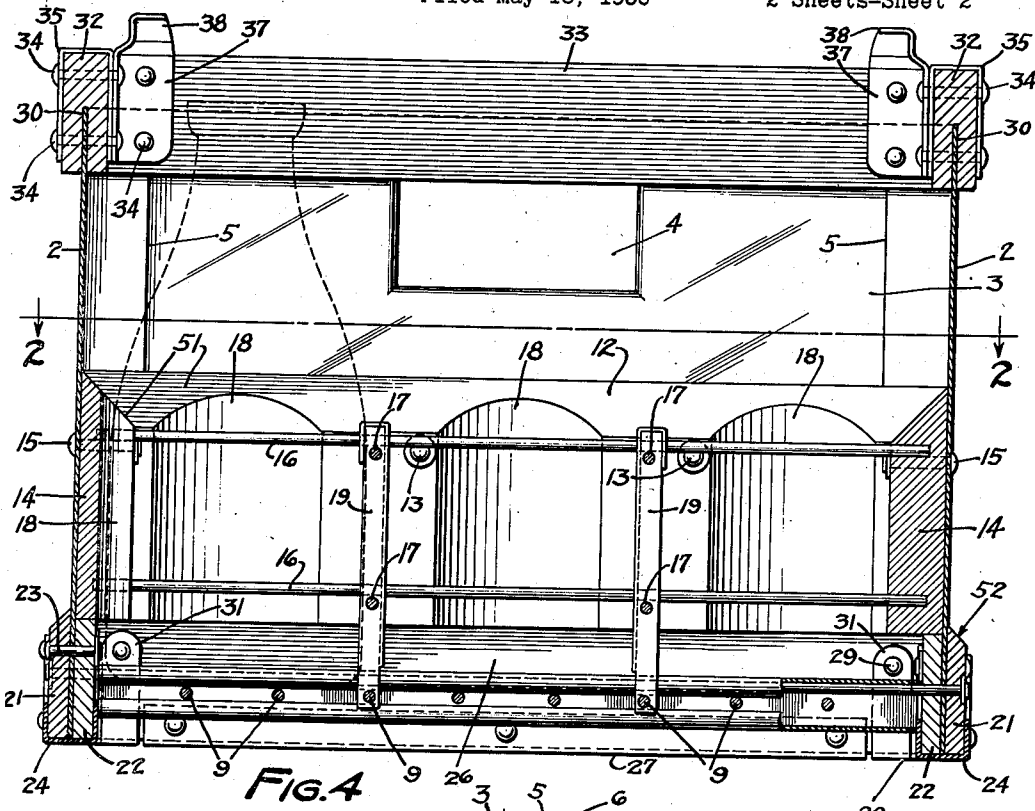


FIG. 4

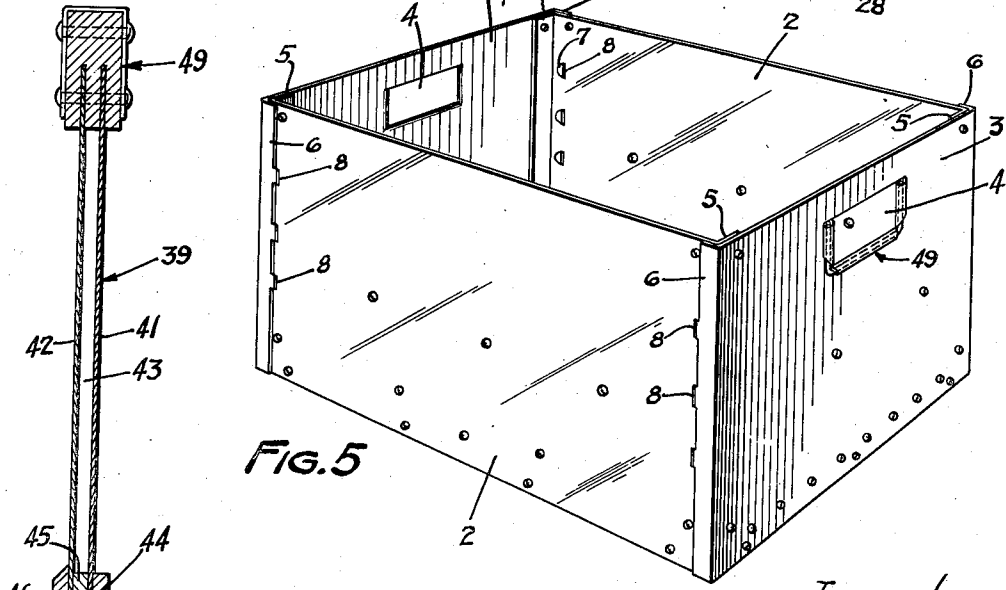


FIG. 5

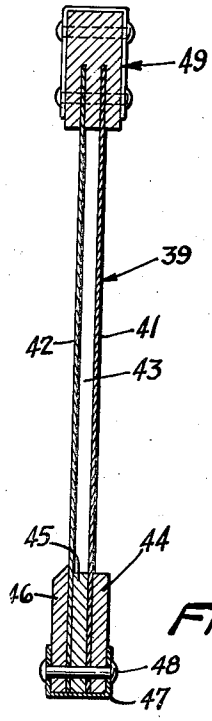


FIG. 6

Inventor
CHARLES A. WOOLSEY
By Paul, Paul Moore
ATTORNEYS

UNITED STATES PATENT OFFICE

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CRATE

Charles A. Woolsey, Minneapolis, Minn.

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2 Claims. (Cl. 220—73)

This invention relates to new and useful improvements in bottle crates, and more particularly to crates which are frequently subjected to rough handling and usage, such as milk bottle crates.

5 An object of the invention is to provide a crate of the character disclosed, comprising a supporting structure formed from suitable moisture-proof material as, for example, sheet metal, which provides the body of the crate, and upon which
10 the usual grid or bottle spacing means is directly supported.

A further object is to provide a bottle crate comprising a plurality of walls of sheet metal, forming the body of the crate, and which walls are suitably interlocked at the corners of the
15 crate and have suitable slats secured to the inner and outer surfaces thereof adjacent the bottom of the crate to stiffen and strengthen the same, and suitable channel members being fitted over
20 the bottom edges of said slats to provide runners for the crate, and a suitable grid being supported in the lower portion of the crate and comprising members secured to the walls of the crate body and having suitable recesses therein for the
25 bottles, and the upper edges of said walls having suitable reinforcing and stiffening members fitted thereover and suitably secured thereto, and to which the usual corner irons of the crate are secured.

30 Other objects of the invention reside in the unitary construction of the walls of the crate, whereby said walls cooperate to provide a unitary structure for supporting the usual grid or bottle spacing means, and to the upper portions of
35 which the usual corner irons may be secured, which function to strengthen the crate and provide means for stacking the crates, one upon another; in the particular construction and arrangement of the reinforcing slats provided at the
40 upper and lower edges of the walls of the crate, whereby when the crates are stacked, one upon another, the metallic walls thereof will be substantially vertically aligned and will carry the
45 loads contained in the crates; and in the provision of plate-like members secured to the crate walls at their lower region to reinforce and strengthen them, whereby they will resist blows and abnormal forces applied thereto as, for example, when the crates are kicked or pushed
50 about by careless operators, or when bumped by other crates.

The primary object of the invention, therefore, is to provide an improved milk bottle crate which is extremely strong and durable; is light in weight;
55 and which is free from objectionable ledges or shoulders upon which foreign matter may accumulate, and whereby the crate may readily be maintained clean and sanitary, which is of utmost importance in devices of this character.

60 Other objects of the invention will appear from

the following description and accompanying drawings and will be pointed out in the annexed claims.

In the accompanying drawings, there has been disclosed a structure designed to carry out the
5 various objects of the invention, but it is to be understood that the invention is not confined to the exact features shown as various changes may be made within the scope of the claims which follow.
10

In the drawings:

Figure 1 is a perspective view showing my improved crate;

Figure 2 is a sectional plan view substantially on the line 2—2 of Figure 4;

15 Figure 3 is a detail sectional view on the line 3—3 of Figure 1, on an enlarged scale, showing the preferred construction of the crate at the corners thereof;

20 Figure 4 is a cross-sectional view on the line 4—4 of Figure 2, showing the preferred manner of supporting the grid in the lower portion of the crate;

25 Figure 5 is a perspective view of the body of the crate, showing only the unitary wall construction; and

30 Figure 6 is a detail sectional view showing a crate wall of modified construction, wherein a dead air space is provided in each wall to minimize the conduction of heat and cold there-through.

The novel crate herein disclosed is shown comprising a unitary supporting structure constructed of sheet material, preferably metal, which provides the body of the crate. This supporting structure
35 or body is best illustrated in Figure 5, and comprises side walls 2—2 and end walls 3—3, the latter being shown provided with suitable hand holes 4—4 to facilitate handling the crate. To stiffen the crate at the corners thereof, the side walls are preferably provided with suitable interturned
40 flanges 5 at their ends, and the end walls are provided with similarly shaped flanges 6. The latter are shown provided with tongues 7 adapted to be received in slits 8 provided in the side walls 2, as clearly illustrated in Figures 3 and 5. The
45 tongues 7 are bent over against the inner surfaces of the side walls, as shown in Figure 3, and whereby said walls are interlocked at the corners of the crate to provide a very rigid structure.

50 Means is provided in the lower portion of the crate for spacing apart the bottles supported therein, and such means will hereinafter be referred to as the grid. The grid is shown comprising a plurality of longitudinally extending
55 rods 9 having their ends received in sockets 11 provided in reinforcing members 12 secured to the end walls of the crate by suitable rivets 13, as clearly illustrated in Figure 2. Similar reinforcing members 14 are secured to the side walls
60

of the crate by similar rivets 15. The members 14 support a plurality of transversely disposed rods 16, arranged at right angles to the rods 9, and which are spaced upwardly therefrom, as best shown in Figure 4. Other rods 17 extend lengthwise of the crates and have their terminals suitably supported in the end members 12 in a manner similar to the lower rods 9. The rods 16 and 17 are arranged in crossed relation, and at two different elevations, so as to provide means for spacing the bottles apart, as will be clearly understood by reference to Figure 4. The reinforcing members 12 and 14 have vertical recesses 18 which cooperate with the rods 16 and 17 to retain the bottles in spaced relation. The members 12 and 14 also prevent the bottles from contacting the side and end walls 2 and 3 of the crate, as clearly illustrated in Figure 2.

Suitable hangers 19 operatively connect together the spaced rods 16 and 17 to retain them in proper relation. The hangers 19 are also operatively engaged with certain of the rods 9 at the bottom of the crate, as best shown in Figure 4.

To protect the lower edges of the walls 2 and 3 of the crate from damage, suitable slats 21 and 22 are disposed at opposite sides thereof, and suitably secured to the walls by rivets 23. Channel shaped rails 24 are fitted over the lower edges of the slats 21 and 22, as best shown in Figure 4, to protect the lower edges of the slats and walls. The rails 24 also function as runners for the bottom of the crate, as will readily be understood by reference to Figure 1. Similar slats 25 and 26 are provided at the ends of the crate and have their lower ends received in suitable channel members 27, in a manner similar to the slats 21 and 22 provided at the sides of the crate.

Suitable corner irons 28 connect together the ends of the slats provided at the sides and ends of the crate, as best shown in Figure 1. These corner irons are secured to the crate walls by suitable rivets 29 which pass through aligned apertures provided in the slats 21-22, and 25-26 and, through the ears 31 provided on the corner irons 28, and which are disposed as best shown in Figures 2 and 4.

The above described structure provides a very rigid and substantial crate construction at relatively low cost.

The upper edges of the side and end walls of the crate are shown protected by suitable strips 32 and 33, respectively, preferably having longitudinally extending slots or recesses 30 therein, adapted to receive the upper edges of the walls, as best shown in Figure 4. The strips 32 and 33 are secured in position upon the upper edges of the walls by suitable rivets 34, which pass through aligned apertures provided in corner irons 35, strips 32 and 33, and nesting or stacking irons 37, provided at the upper inner corners of the crate. The lower rivets 34 also traverse apertures in the walls of the crate, as shown in dotted lines in Figure 4, whereby all of the above mentioned parts are securely fastened together. The nesting irons 37, as is customary in devices of this kind, have upstanding portions 38 adapted to fit into the lower inner corners of the crate in the usual manner, thereby to retain the crates in position, one upon another, without danger of the upper crates becoming relatively displaced upon the lower crates.

In Figure 6, I have shown a modified construction wherein the crate walls, generally indicated by the numeral 39, are composed of inner and

outer wall members 41 and 42, respectively, which are spaced apart, as shown, to provide dead air spaces 43. The lower edges of the walls 41 and 42 are shown clamped between suitable slats 44, 45, and 46, whose lower edges are protected by a channel-shaped runner or rail 47, rigidly secured to the bottom edges of the crate walls by suitable rivets 48. The upper edges of the wall members 41 and 42 are reinforced by suitable strips 49 having slots cut in the lower edges thereof for receiving the upper edges of the wall members, as shown.

The novel crate herein disclosed has been found very practical and efficient in operation. Because of its sheet metal supporting structure, it is comparatively light in weight, and is practically indestructible. The members 12 and 14 are shown seated directly upon the upper edges of the inner slats 22 and 26, and cooperate to greatly strengthen and reinforce the lower portions of the side and end walls of the crate, so that the crate may be bodily kicked or otherwise abused without danger of the walls thereof collapsing. The hand holes 4 are formed by cutting away portions of the metal and bending or folding the edges thereof around a wire element, in the manner shown at 49 in Figure 5, thereby to materially stiffen and strengthen the edges of said openings. It is also to be noted that the end strips 33 have their lower edges aligned with the upper edges of the hand holes 4, whereby they are grasped by the hands when an operator inserts his fingers in the hand holes 4 to lift or transport the crate.

The crate, because of its unique structure, is very simple and inexpensive in construction, and presents the utmost in sanitation. The upper edges of the reinforcing members 12 and 14 at the ends and sides of the crate are beveled, as shown at 51 in Figure 4, and the outer slats 21 and 25 of the crate walls have their upper edges similarly beveled, as shown at 52, whereby milk, water, and other matter is not likely to lodge thereon. The open construction of the grid also presents very little surface for the accumulation of foreign matter and makes it possible to quickly clean the crate by spraying hot water or steam therethrough, as will readily be understood by reference to Figures 2 and 4.

I claim as my invention:

1. In a crate of the class described, a plurality of sheet metal walls having inwardly turned flanges at their ends, whereby said walls may be secured together to provide a unitary structure, slats secured to the inner and outer faces of the lower edge portions of said walls, slats having grooves therein for receiving the upper edges of said walls to conceal and reinforce the same, and means for securing said grooved slats to the walls.

2. In a crate of the class described, a pair of oppositely disposed sheet metal walls having inwardly turned flanges at their ends, a second pair of walls seated against said flanges, tongues on said flanges received in slots in the walls seated thereagainst, and whereby all of said walls are secured together to provide the body of the crate, slats secured to the inner and outer faces of the lower edge portions of said walls, slats having grooves therein for receiving the upper edges of said walls to conceal and reinforce the same, and means for securing said upper grooved slats to said walls.

CHARLES A. WOOLSEY.