

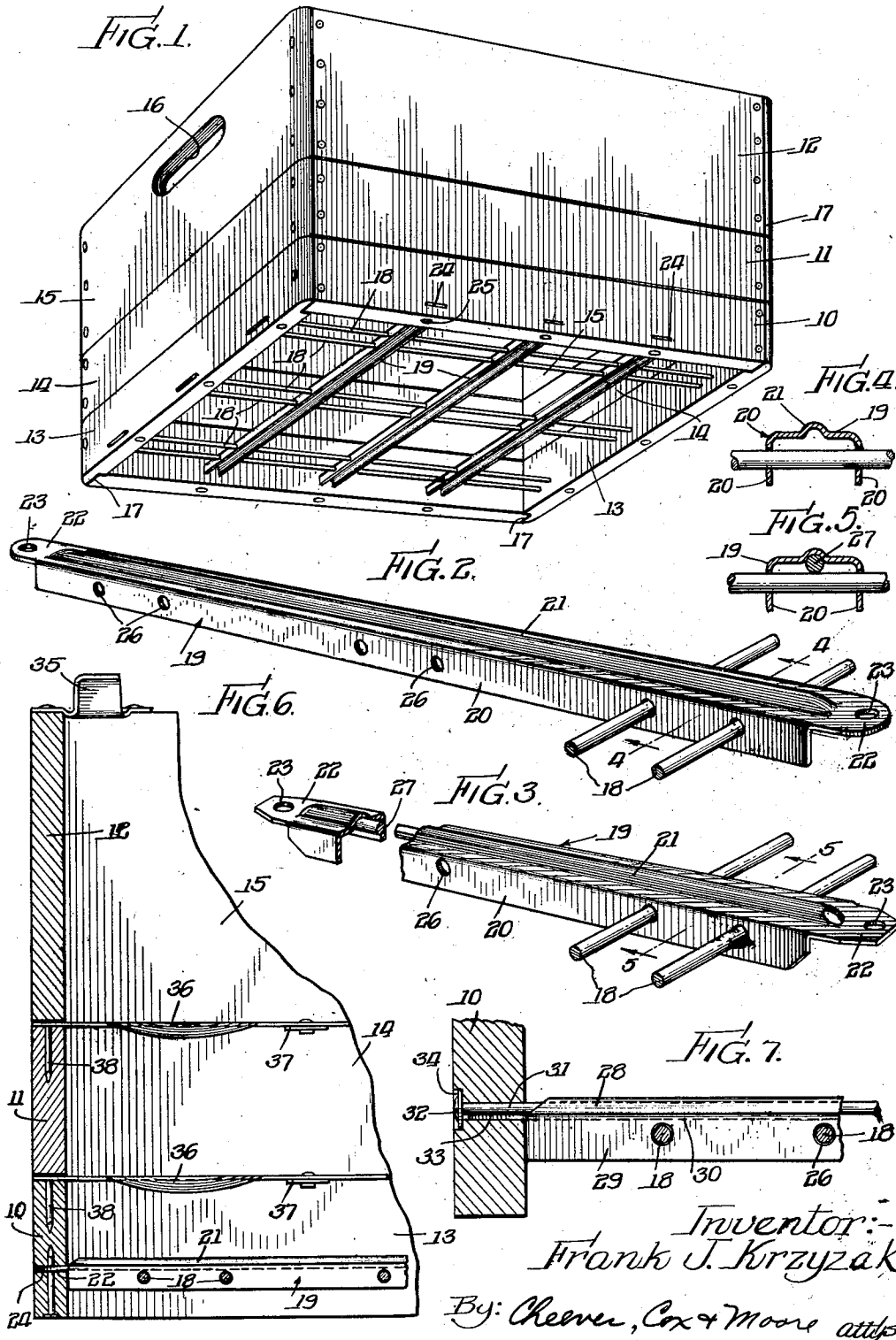
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BOX CONSTRUCTION

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BOX CONSTRUCTION

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2 Claims. (Cl. 217-19)

The present invention relates to the manufacture of boxes or crates and has to do particularly with the bottom construction of the crate.

One object of this invention is to provide a reticulated bottom for a crate which is composed of a plurality of members extending transversely to each other and secured to opposite sides of the crate, the members being of a particular reenforced construction which adds a great amount of life to the box and enhances its value.

Another object of this invention resides in the provision of a transverse reenforcing member of channel section which may be reenforced still further by means of a rod or the like.

Other objects of this invention will appear hereinafter as the description thereof proceeds, the novel features, combinations, and arrangements being clearly set forth in the appended claims.

In the drawing:

Fig. 1 is an isometric view looking at the bottom of a crate constructed according to this invention;

Fig. 2 is an isometric view of the channel bracing member;

Fig. 3 shows a modified form of channel bracing member;

Fig. 4 is a cross-section taken on the line 4-4 of Fig. 2;

Fig. 5 is a section taken on the line 5-5 of Fig. 3;

Fig. 6 is a vertical cross-section through one end of the box; and

Fig. 7 shows a still further modification of the bottom bracing strip shown in Fig. 3.

In Fig. 1, the box is shown as comprising the bottom side boards 10, center side boards 11, top side boards 12, bottom end boards 13, center end boards 14, and top end boards 15, the latter being provided with hand holes 16 used in lifting the crate. The corners of the crate are nailed together and preferably an angle piece 17 is arranged between the meeting edges of the side boards and end boards so as to provide a rigid construction for the outer frame of the box.

Reference numeral 18 indicates a series of three U-shaped rods which extend through openings in the opposite bottom end boards 13, the connecting portion of the U-shaped rods preventing movement longitudinally in one direction and in order to prevent movement of the rods in the opposite direction, the free ends of the legs are upset outside of the bottom end boards. These U-shaped rods 18 may be otherwise secured than in the manner shown in the drawing, and in a

separate application I have applied for Letters Patent on the means of fastening the rods shown in this application as well as other forms of the invention more particularly set forth in said other application. These rods are braced intermediate the end boards by means of transverse bottom braces 19.

The bottom braces 19, as is clearly illustrated in Figs. 2 and 4, have depending flanges 20 forming a channel section and a raised rib portion 21 which reenforces the central web of the channel section. This forms a very strong section for a bottom bracing member. The opposite ends of the central web portion are provided with extending lugs or ears 22 perforated at 23 to receive a fastening means such as a nail. The bottom side members 10 are rabbeted at 24 to receive the ears 22 and after the ears are in place, nails 25 are driven through from the bottom of the bottom side boards through the perforations 23 to prevent relative movement between the bottom braces and the bottom side members. These nails also help to hold the bottom side members in place. Due to the fact that the boards are rabbeted instead of being formed in two pieces with the ears arranged there-between, applicant is able to secure a more permanent structure and one that will withstand long and hard usage as well as counteract the effect of warping and shrinking.

The flanges 20 of the channel section are provided with perforations 26 which are in alignment with each other and spaced to receive the legs of the U-shaped rods 18. The rods are thereby braced between bottom braces 19.

If desired, the bottom braces 19 may be reenforced by the rods 27 which are arranged in the rib 21 and are in contact preferably with the upper sides of the legs of the U-shaped rods 18. This adds rigidity to the channel section and to the rods 18 which support the milk bottles.

If desired, the rib 21 shown in Figs. 2 and 4 may be modified to provide openings at the ends thereof through which the rod 27 may extend as shown by the modified construction in Fig. 7. In this construction, the rib 28 on the channel section 29 is perforated at the opposite ends thereof and is raised sufficiently above the plane of the connecting flange 30 of the channel section to permit the rod 31 to extend beyond both ends of the rib 28 (only one end is shown in Fig. 7, the other being constructed in the same manner). In this form of the invention, the rods extend through the bottom side pieces 10 and have their ends upset as at 32 to prevent endwise

movement thereof and to hold the channel sections in place between the bottom side members. With this construction, it is not necessary to use nails passing through the ears 33, but nails can
5 be provided if desired, the perforations in the ears being arranged so that the nail will extend up along one side of the rod 31, or as an alternative, the rods 31 need only extend part way through the bottom side members and the nails can be
10 driven through the ears 33 in the same manner as illustrated in Fig. 6. A washer 34 is arranged between the upset end 32 of the rod 31 and between the bottom, the bottom side member being recessed slightly to receive the upset end of the
15 rod and the washer 34 below the plane of the outer surface thereof.

In Fig. 6, I have shown a stacking iron 35 arranged on the upper corner of the box, and it is understood that there are four of these one on
20 each of the upper corners of the box for assisting in stacking one crate upon another while preventing lateral play therebetween. Partition strips 36 and 37 cross each other at right angles and form pockets for milk bottles or the like which
25 are to be carried in the crate or box. These are nailed in place by nails 38 which extend through the ends thereof into the center side boards and bottom side boards of the crate as is more clearly
30 set forth in a co-pending application covering the detail construction of the box and the method of assembly thereof.

Obviously other modifications will occur to those skilled in the art to which this invention

pertains without departing from the spirit of this invention, and therefore I do not wish to be limited except as hereinafter set forth in the appended claims.

1. In a crate, the combination with a frame member, rods extending longitudinally of said
5 frame member, bracing members extending transversely to said rods and having openings therein through which said rods extend, said
10 bracing members being of substantially channel section with the flanges of said channel section extending vertically and said openings being in
15 said flanges, and a reenforcing rod arranged between the connecting web of said channel section and said first mentioned rods for reenforcing
15 said channel section and forming an additional support for said rods.

2. In a crate, the combination with a frame member, rods extending longitudinally of said
20 frame member, bracing members extending transversely to said rods and having openings therein through which said rods extend, said
25 bracing members being of substantially channel section with the flanges of said channel section extending vertically and said openings being in
25 said flanges, and a reenforcing rod arranged between the connecting web of said channel section and said first mentioned rods for reenforcing
30 said channel section and forming an additional support for said rods, said rods extending
30 into the sides of said box and being supported thereby.

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