Feb. 19, 1935. C. H. ROLLASON 1,991,868

BOX OR CRATE

Filed Nov. 6, 1931 2 Sheets-Sheet 1

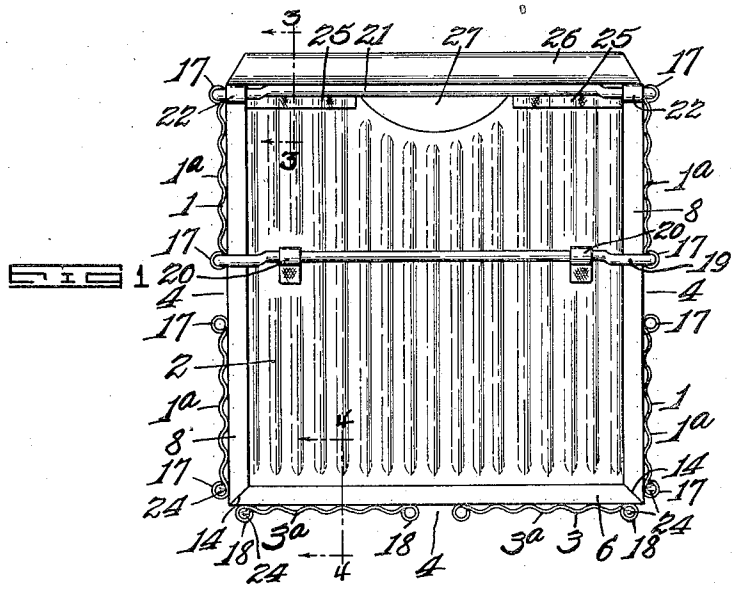


FIG 1

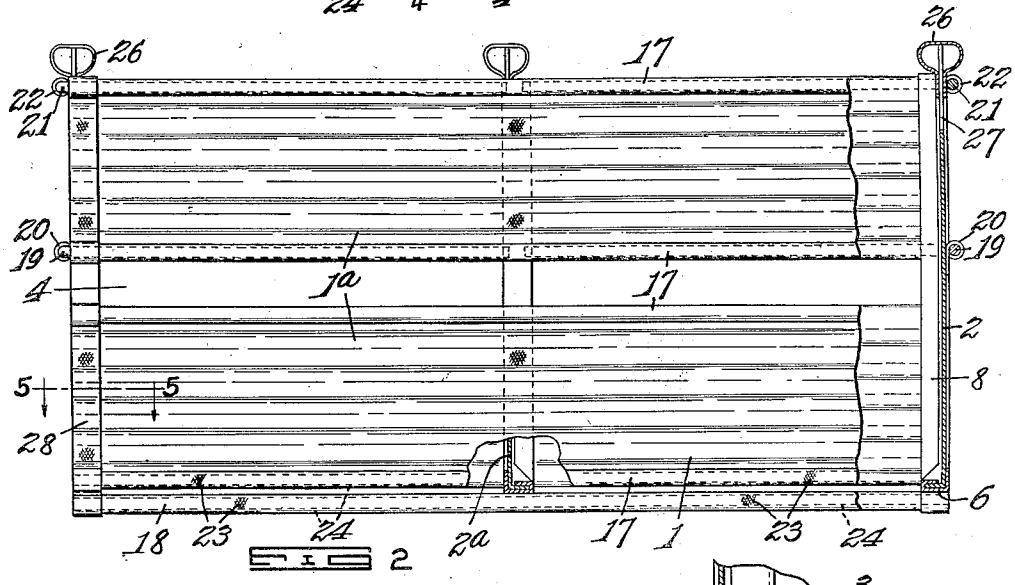


FIG 2

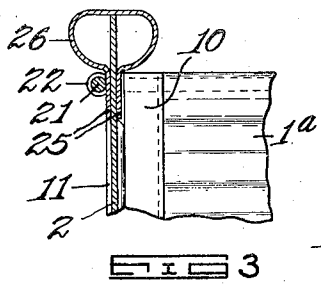


FIG 3

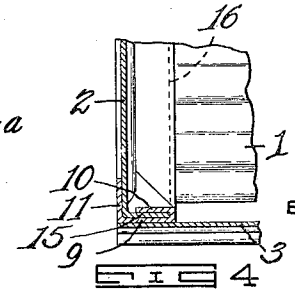


FIG 4

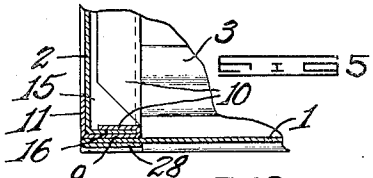


FIG 5

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BOX OR CRATE

Filed Nov. 6, 1931 2 Sheets-Sheet 2

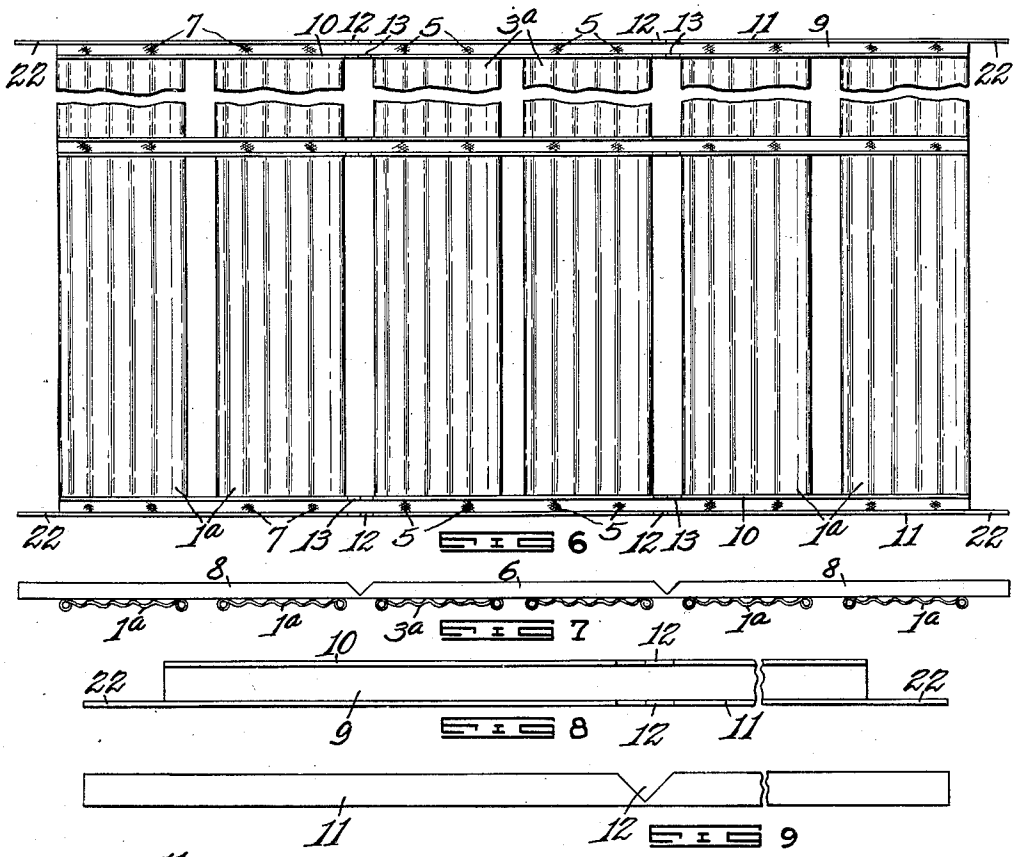


FIG 6

FIG 7

FIG 8

FIG 9

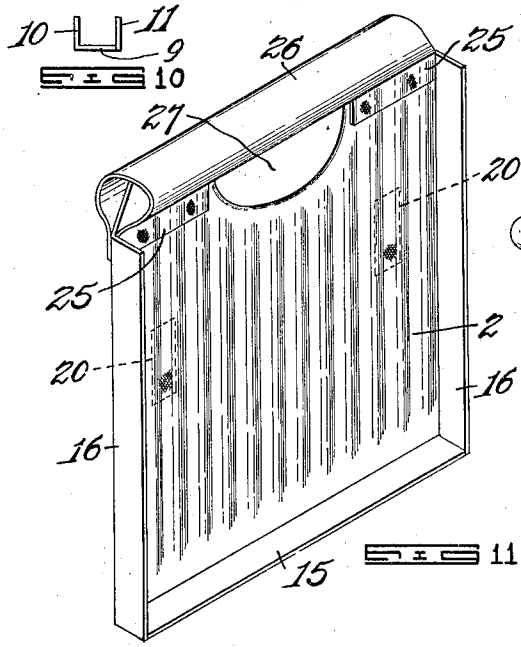


FIG 10

FIG 11

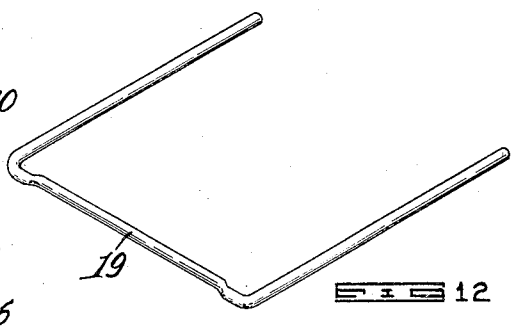


FIG 12

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UNITED STATES PATENT OFFICE

1,991,868

BOX OR CRATE

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Application November 6, 1931, Serial No. 573,326

13 Claims. (Cl. 220—6)

This invention relates broadly to metallic containers, and more specifically to a sheet metal box, case, or crate.

The primary object of the invention is to provide a simple and practical construction of sheet metal box or crate designed particularly for use in orange groves or orchards as a fruit picking crate, but which is also adapted for various other uses.

A further object is to provide a crate of the character mentioned which is adapted to be supplied by the manufacturer in knocked-down form and to be conveniently set up by the user.

In describing the invention in detail, reference is herein had to the accompanying drawings, in which—

Figure 1 is an end elevation of the invention;

Figure 2 is a view partly in side elevation and partly in section;

Figures 3 and 4 are enlarged fragmentary detail sections taken, respectively, on lines 3—3 and 4—4, Fig. 1;

Figure 5 is a similar section on line 5—5, Fig. 2;

Figure 6 is a plan view of the body portion of the crate in its blank, or knock-down, form;

Figure 7 is a lateral edge view of the same;

Figure 8 is an enlarged plan view of one of the metallic frame members;

Figure 9 is a side view of the same;

Figure 10 is an end elevation of the same;

Figure 11 is a perspective view of one of the end sections of the crate; and—

Figure 12 is a perspective view of one of the rods by means of which the parts of the crate body are secured in assembled relation.

Referring to said drawings, 1 designates the opposite parallel side walls, 2 the end walls, and 3 the bottom of the substantially rectangular orange picking box or crate embodying my invention. Each side wall 1, as also the bottom 3, as herein shown, comprises a plurality of longitudinally extending plates or panels, designated 1^a and 3^a, respectively, preferably of longitudinally corrugated form, arranged in parallel relation to a common plane and relatively positioned to provide intermediate relatively narrow slot-like spaces 4 through which air may course freely.

The ends of the bottom panels 3^a are rigidly attached, as by spot-welds 5, to the under sides of transverse base portions 6, and the ends of the side panels 1^a are similarly attached, as at 7, to the upright portions 8, of oppositely disposed end frames.

Initially, or prior to setting up the crate, each of said end frames consist of a single length or strip of sheet metal which has channel form and which includes a bottom member 9 and inner and outer parallel walls 10 and 11, respectively, as is shown in Figs. 6 to 9, inclusive. Each of said strips, or channels, has the outer wall thereof provided at two appropriately located points with a notch, or cut-out portion, 12 of V-shape, and has provided in the inner wall 10 similar notches 13 matched as to shape and location with said notches 12. So notched, not only is the channel rendered readily bendable at said points for properly positioning the frame portions 8 relative to the portion 6 when preparing to set up the crate, but also provision is made for the formation of miter joints at the angles between said members, as shown at 14 in Fig. 1.

Each of the end walls 2 consists, preferably, of a single sheet-metal panel which is vertically corrugated, as shown. Said wall has its lower edge and each of its opposite lateral edges bent inwardly, forming right-angle flanges 15 and 16, respectively. In assembling the parts of the crate, said flanges 15 and 16 are introduced to seated positions within the channels of the thereto-adjacent frame portions 6 and 8, respectively, following which the inner walls 10 of said portions are bent outwardly into overlying seated relation to said flanges for retaining said end walls and the side walls 1 in fixed relation.

As shown herein, although such is not essential to the invention, a partition wall 2^a is disposed substantially midway between the end walls 2. Said partition wall possesses a structure and is mounted in a manner substantially similar in all respects to the end walls 2, as shown in Fig. 2.

Each of the longitudinal edges of the various side-wall panels 1^a is bent or curled outwardly, forming longitudinally extending reinforcing ribs 17 of hollow roll shape, and similar ribs, or rolls, 18 are formed on the opposite lateral edges of the bottom panels 3^a. For further securing the side walls 1 and the end walls 2 in assembled relation, pairs of rods of substantially U-shape are mounted thereon, the parallel members of said rods having lengths somewhat less than one-half that of the rolls 17 and being inserted longitudinally within the embrace of certain of said rolls from opposite ends of the latter, as shown.

The intermediate, or transverse, member of each of said rods occupies horizontal seated relation to the outer surface of the adjacent end wall 2, as shown in Figs. 1 and 2. One such rod, designated 19, embraces each end of the crate walls approximately midway between the top and

bottom edges of the latter and is retained in position by means of one or more short metal straps 20 carried on the outer side of said end wall, each of said straps having an end thereof rigidly mounted, as by spot welding, upon said wall and having its other end bent into embracing retaining relation to said transverse member of the rod. Another such rod 21 similarly embraces each end of the crate walls and is located at the top edge of said walls, being retained in place by means of tongues 22 constituted by end extensions of the walls 11 of the adjacent channel, said tongues being bent into embracing relation to the transverse member of the rod.

For further reinforcing the crate each of those rib-like rolls 17 and 18 located adjacent to the angles between the side walls 1 and the bottom 3 has inserted therein and rigidly held, as by spot-welds 23, straight rods or lengths of heavy wire 24, as shown.

When the container is employed as a fruit picking crate, handles are provided on the end walls 2 whereby the crate may be lifted and carried. Each of said handles consists of a single piece of sheet metal shaped to form substantially parallel marginal portions 25 and an intermediate longitudinally extending hand-grip 26, the latter having approximately tubular or roll shape. Said handle has its said marginal portions 25 rigidly attached, as by spot welds, to the upper edge portion and on opposite sides of the end wall 2, and has the hand-grip forming roll 26 located above the plane of the upper edges of the side walls 1, as is best shown in Figs. 2, 3 and 11. An intermediate portion of the upper edge of each end wall and marginal portions 25 may be cut away, as shown at 27, to permit of passage beneath said roll of a portion of the hand of the user.

To obviate the exposure of sharp or raw edges at the ends of the panels 1^a and 3^a of the side and bottom walls, respectively, said panels may, and preferably do, have their said ends turned outwardly and back upon themselves, as shown at 28 in Figs. 2 and 5.

From the foregoing description it will be understood that the crate may be furnished either in its built up or knocked down form; that its construction is such that, furnished in knock down form, it may readily be set up by any ordinary workman without the exercise of special skill, and that, so set up, it possesses marked stability and durability.

What is claimed is—

1. In a container of the character described, sheet metal side and end walls and a bottom, end frames to which said side walls and bottom are attached, each of said frames consisting of a continuously extended flanged sheet metal strip of angular cross section shaped to form opposite side members, corner members and a transverse connecting member, each of said end walls having flanges engaging the flanges of the adjacent strip.

2. In a container of the character described, sheet metal side and end walls and a bottom, end frames to which said side walls and bottom are attached, each of said frames consisting of a sheet metal strip shaped to form opposite side members, corner members and a transverse connecting member, said side walls and said bottom having their opposite ends mounted on the outer surfaces of the frame members, and each of said end walls having flanges interengaged with said frame members.

3. In a container of the character described, sheet metal side and end walls and a bottom, end frames to which said side walls and bottom are attached, each of said frames consisting of a sheet metal strip of channel form shaped to form opposite side members and a transverse connecting member, said side walls and said bottom having their opposite ends mounted on the outer surfaces of the base portions of the channel-like frame members, and each of said end walls having flanges confined interiorly of the channels of said frame members, rods of substantially U-shape embracing the end walls and the adjacent ends of the side walls and means for retaining said rods in place.

4. In a container of the character described, sheet metal side and end walls and a bottom, each of said side walls consisting of a plurality of relatively spaced sheet metal panels having outwardly turned rolls formed on the longitudinal edges thereof, end frames upon which said side walls and bottom are mounted, each of said frames including a sheet metal channel shaped to form opposite upright side members and a transverse base member, each of said end walls having flanges confined interiorly of the adjacent channel, a rod of substantially U-shape disposed in embracing relation to each end wall and the adjacent ends of the side walls, said rod having the parallel members thereof received interiorly of an edge roll of at least one of said side wall panels.

5. In a container of the character described, sheet metal side and end walls and a bottom, each of said side walls consisting of a plurality of relatively spaced sheet metal panels having outwardly turned rolls formed on the longitudinal edges thereof, end frames upon which said side walls and bottom are mounted, each of said frames including a sheet metal channel shaped to form opposite upright side members and a transverse base member, each of said end walls having flanges confined interiorly of the adjacent channel, a rod of substantially U-shape disposed in embracing relation to each end wall and the adjacent ends of the side walls, said rod having the parallel members thereof received interiorly of at least one of said side wall panels, and means retaining said rod against withdrawal.

6. A knock-down container of the character described, comprising sheet metal side walls and a bottom, each of said walls comprising sheet metal panels having longitudinal edge-reinforcing ribs of roll form, end frames to which the ends of said panels are rigidly attached, each of said frames having channel form and being bendable to provide parallel upright members and an intermediate base member, end walls having lateral and bottom flanges receivable within the channels of said upright and base members, respectively, and adapted to be secured in place by turning of portions of said members into overlying relation to said flanges, and means for embracing portions of each of said end walls and adjacent end portions of said side walls.

7. A knock-down container of the character described, comprising sheet metal side walls and a bottom, each of said walls comprising sheet metal panels having longitudinal edge-reinforcing ribs of roll form, end frames to which the ends of said panels are rigidly attached, each of said frames having channel form and being bendable to provide parallel upright members and an intermediate base member, end walls having lateral and bottom flanges adapted to be rigidly mounted within the channels of said upright and

base members, and a rod for embracing said end walls and adjacent end portions of said side walls, said rod having its ends mounted interiorly of certain of said rib rolls.

8. A knock-down container of the character described, comprising sheet metal side walls and a bottom, each of said walls comprising sheet metal panels having longitudinal edge-reinforcing ribs of roll form, end frames to which the ends of said panels are rigidly attached, each of said frames having channel form and being bendable to provide parallel upright members and an intermediate base member, end walls having lateral and bottom flanges adapted to be rigidly mounted within the channels of said upright and base members, and a rod for embracing said end walls and adjacent end portions of said side walls, said rod having its ends mounted interiorly of certain of said rib rolls, and tubular handles fixed on upper edge portions of said end walls.

9. In a container, wall members, certain of said wall members having means to removably receive the ends of bracing yokes, and bracing yokes of generally U shape each extending across one wall member with the yoke ends in removable engagement with the wall members shaped to receive them.

10. In a container, wall members including side and end walls, said side walls having longitudinally extending yoke arm receiving pockets, and yokes shaped to extend transversely of the end walls and having arms within said pockets.

11. In a container, wall members including side and end walls, said side walls having longitudinally extending yoke arm receiving pockets, and yokes shaped to extend transversely of the end walls and having arms within said pockets, said yokes extending transversely of the end walls adjacent the intermediate portion thereof and being secured thereto.

12. In a container, side walls of sheet metal having rolled edge portions providing yoke arm receiving pockets, end walls intermediate said side walls, and bracing yokes extending transversely of the end walls and engaged within said rolled portions.

13. In a container, end frames, panel sides extending lengthwise of the container and secured to said end frames, and bottom panels extending longitudinally of the container and secured to said end frames, said bottom panels having downwardly projecting beads along the edges thereof.

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