Sept. 10, 1929. V. WILLOUGHBY 1,727,685

CONTAINER

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Fig. 1.

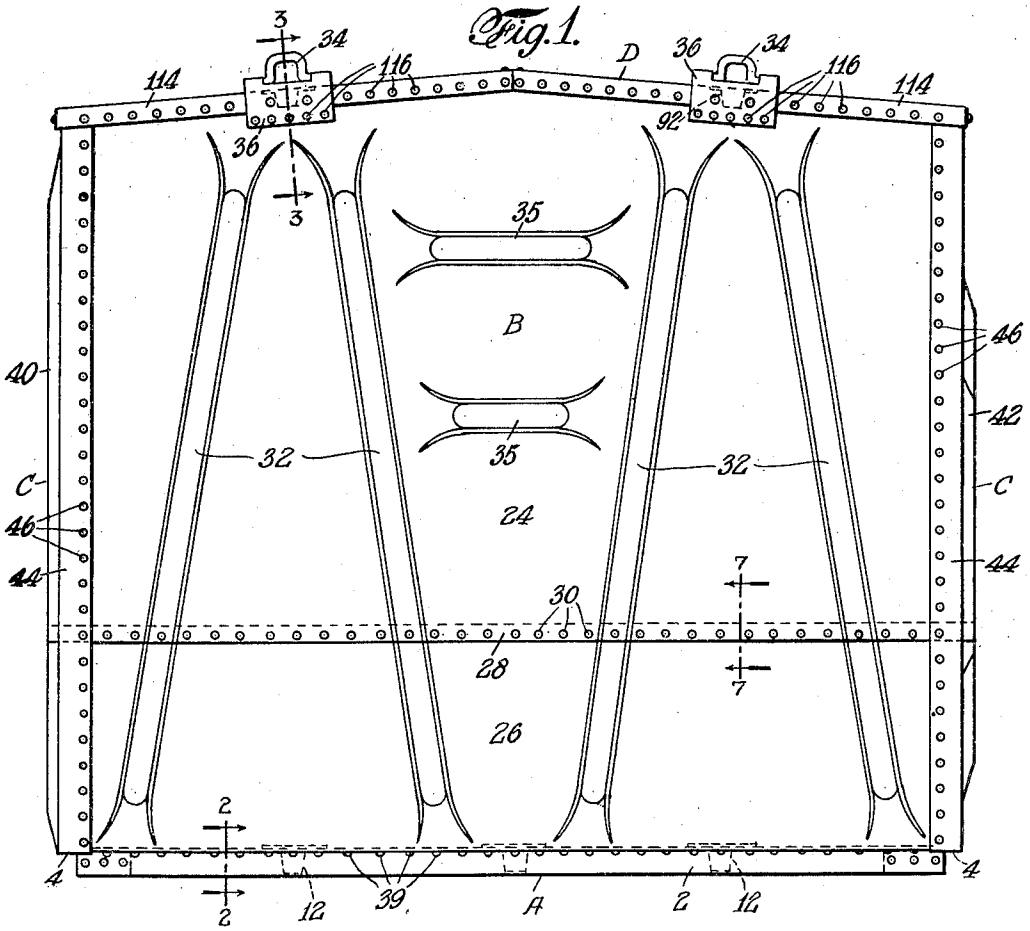


Fig. 2.

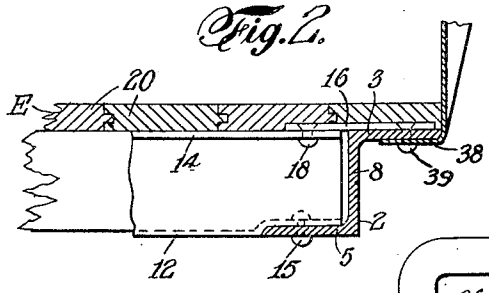


Fig. 3.

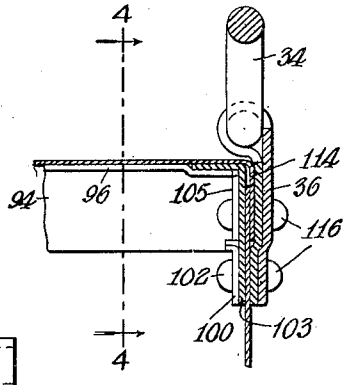
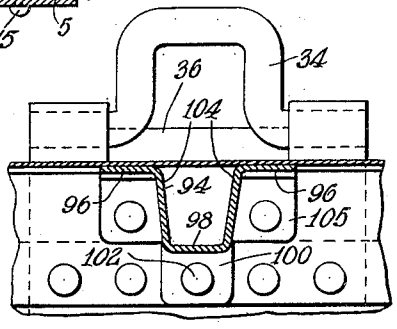


Fig. 4.



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Fig. 5.

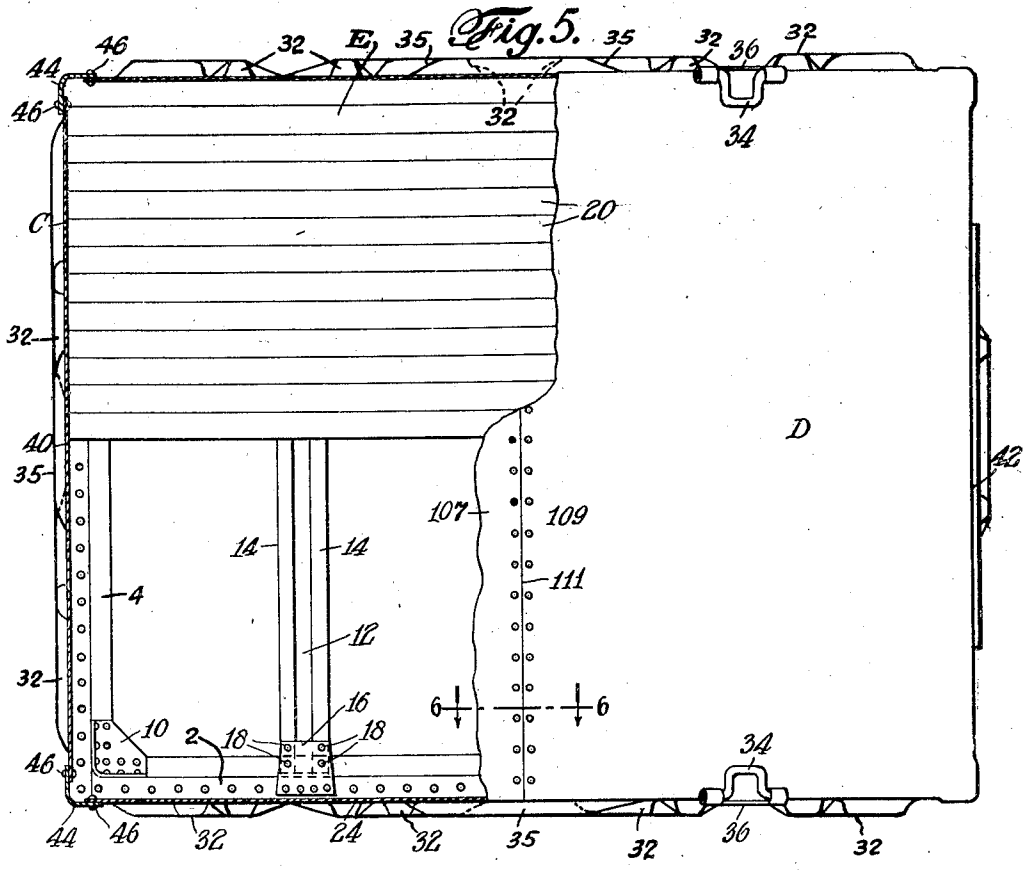


Fig. 6.

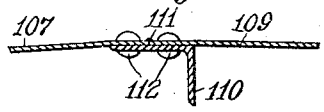
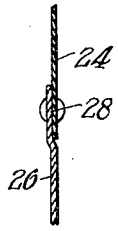


Fig. 7.



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Fig. 8.

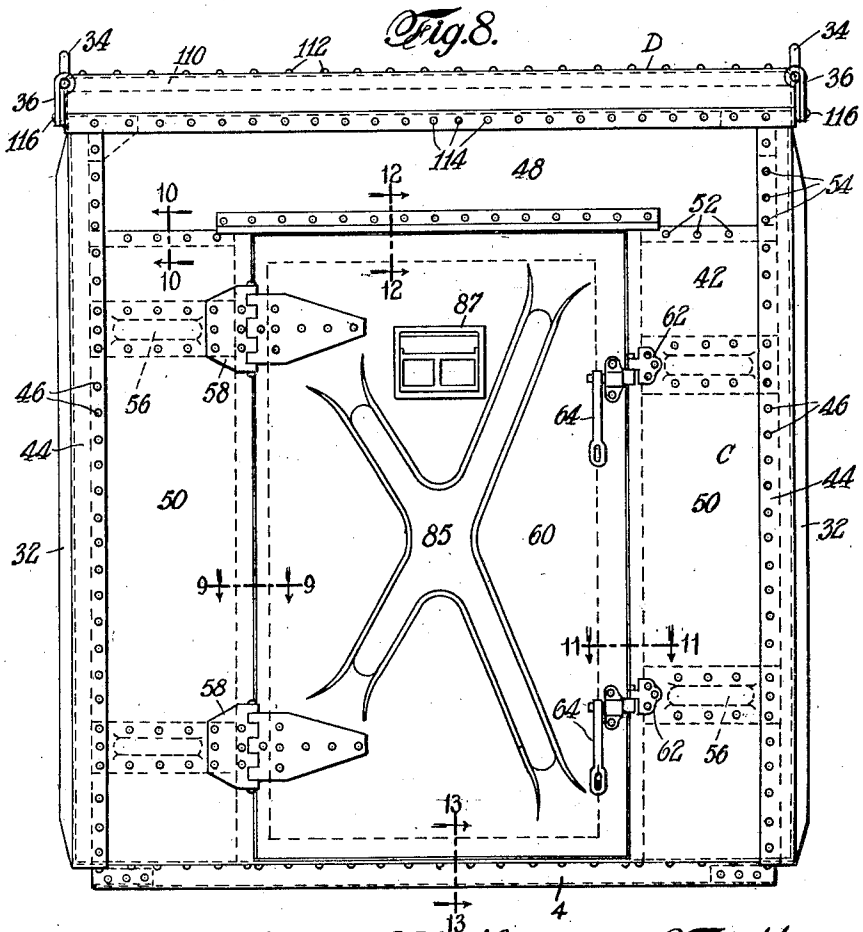


Fig. 9.

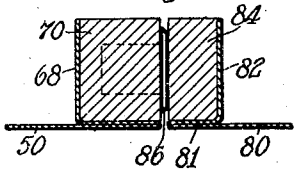


Fig. 10.



Fig. 11.

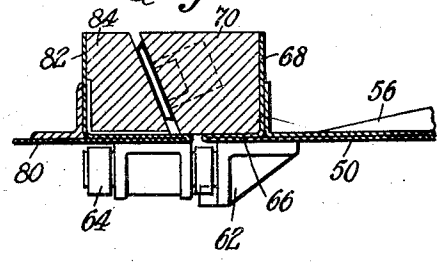


Fig. 12.

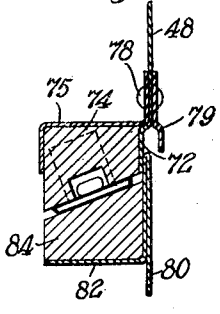
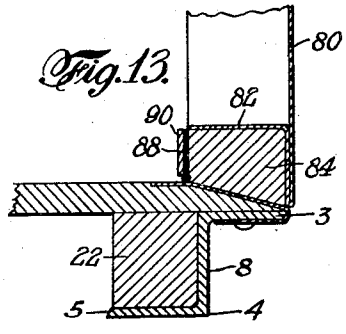


Fig. 13.



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UNITED STATES PATENT OFFICE.

VICTOR WILLOUGHBY, OF RIDGEWOOD, NEW JERSEY, ASSIGNOR TO AMERICAN CAR AND FOUNDRY COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

CONTAINER.

Application filed August 29, 1928. Serial No. 302,877.

This invention relates to containers and has particular reference to containers known at the present day as less than carload lot containers for use in transporting goods of substantially every description from one place to another; for example, from a warehouse or other place of loading onto a truck and then into or on a railway car, such as a gondola or a flat car.

Transportation of goods by placing them in a container such as those known as less than carload lot containers has proven a highly satisfactory and commercially successful method of handing inasmuch as the goods may be locked in the container and remain therein until the container or the car on which it is mounted has reached its destination, thus minimizing the danger of pilferage.

Containers for this purpose must be exceptionally strong and durable due to the handling incident to transporting the same, and one object of this invention is to provide a container which possesses requisite strength to resist distortion.

A further object of the invention is the provision of a container of the character specified, the walls of which are reinforced by ribs or corrugations.

Another object of the invention is the provision of a container formed of suitable metal, the parts of which are rigidly connected together and which parts are so formed that the container possesses exceptional strength.

Another object of the invention is the provision of a container which is comparatively easy and inexpensive to manufacture.

Other objects and advantages of this invention will be apparent from the following description taken in conjunction with the accompanying drawings, in which:

Figure 1 is a side elevation of the container;

Fig. 2 is a sectional view on the line 2—2 of Fig. 1;

Fig. 3 is a sectional view on the line 3—3 of Fig. 1;

Fig. 4 is a sectional view on the line 4—4 of Fig. 3;

Fig. 5 is a top plan view of the container, certain parts being broken away to disclose details of construction;

Fig. 6 is a sectional view on the line 6—6 of Fig. 5;

Fig. 7 is a sectional view on the line 7—7 of Fig. 1;

Fig. 8 is an end elevation of the container;

Fig. 9 is a sectional view on the line 9—9 of Fig. 8;

Fig. 10 is a sectional view on the line 10—10 of Fig. 8;

Fig. 11 is a sectional view on the line 11—11 of Fig. 8;

Fig. 12 is a sectional view on the line 12—12 of Fig. 8; and

Fig. 13 is a sectional view on the line 13—13 of Fig. 8.

Referring now more particularly to the drawings in which similar characters of reference designate similar parts in the several views, the container comprises generally a structure having a base or bottom portion A, side walls B, end walls C, a roof D and a floor E.

The base of the container is formed preferably of four Z-bars constituting side and end sills 2 and 4 respectively, one of the side sills being shown clearly in Fig. 2, and including the upper and lower chords 3 and 5 respectively, and the web 8, and as shown in Fig. 5, the side and end sills 2 and 4 are connected together by corner gussets 10.

The opposite side sills are connected together by spaced channels 12 having flanges 14; the channels being preferably riveted to the lower chord 5 of the side sills, as shown at 15, and to connecting plates 16 supported by the upper chords of said sills, as shown at 18 in Figs. 2 and 5. These channels 12 serve as supporting means for the flooring 20, portions of which are recessed to seat over the connecting plate 16 to permit the floor to be level throughout. The end sills, as shown in Fig. 13, are provided with filler strips 22 formed of wood or other suitable material, and from the description given just above, it will be apparent that a base portion for the container has been provided which possess the necessary strength.

Fig. 1 discloses clearly the side walls of the container, and it can be seen that they are each formed of upper and lower transversely arranged panels 24 and 26 respectively which overlap each other on a horizontal line as at 28; the panel 26 being of greater thickness than the upper panel as shown in Fig. 7 to provide additional strength, and said panels are preferably riveted together, as shown at 30.

The side walls B are each provided with spaced pairs of reinforcing ribs, one pair on each side of the vertical center through the walls. In the instance shown, these ribs are corrugations 32 which converge upwardly from adjacent the base of the container to points adjacent the upper edges of the side walls and preferably adjacent lifting loops 34 hereinafter mentioned. Inasmuch as the side walls are formed of two panels, each panel is corrugated, and the corrugations are so arranged as to line whereby to provide continuous reinforcing elements which extend from the base of the container to points adjacent the roof. In addition to the ribs 32, the side wall panels 24 are further provided with transversely arranged corrugations or reinforcing ribs 35 arranged one above the other substantially midway between the side edges of the panel. The lower panels 26 are inwardly flanged at their lower edges, as shown at 38 in Fig. 2, to underlie the upper chords 3 of the side sills, and they are secured thereto by the rivets 39; the flanges 38 serving as positive lifting elements, as will be apparent.

The end walls are indicated at 40 and 42 respectively, and they are connected to the side walls by continuous corner angles 44 riveted as shown at 46 or otherwise secured to the side edges of the respective walls (see Fig. 5).

The end wall 40 is substantially identical with the side walls heretofore mentioned, and the description above with reference to the side walls applies equally to this end wall 40, so no further description of said end wall seems to be necessary. The end wall 42, however, differs from the other walls of the container and includes a relatively narrow top panel 48 (see Fig. 8) and oppositely arranged vertical panels 50 overlapped at their upper edges by the top panel and secured thereto by rivets 52; said panels 50 being spaced from each other to define a door opening and having their outer side edges riveted to the corner angles 44 as shown at 54. The lower edges of the panels 50 are inwardly flanged in a manner similar to that shown in Fig. 2, to underlie the top chord of the end sill and are secured to the latter. To strengthen the panels 50 corrugated stiffeners 56 are riveted to the inner surface thereof, as clearly shown in Fig. 8, the said stiffeners being preferably arranged in line with the hinges 58 which support a door 60, and with the keepers 62 for the door locks 64 at the free edge of the door. The inner edges of the panels 50 and the lower edge of panel 48 intermediate the panels 50, define a frame for the door 60, and to stiffen the door frame edges, the inner edge of each panel 50 is reversely bent as at 66 and then inwardly flanged as at 68 to define an angular recess which is continuous from the lower edge of panel 48 to the base of the container, and in which recess a filler strip 70 of wood or the like is secured. At the upper edge of the door frame, the lower edge of panel 48 is inwardly offset as at 72, and the door frame at this point is reinforced by a filler strip 74 secured within a channel defined by the lower edge of the panel 48 and the web and one chord of a Z-shaped stiffener 75 which is riveted to the panel 48 at 78. A water shed 79 is attached to the panel 48 by the rivets 78.

The door 60 is formed of a metal sheet 80 of suitable character and is hingedly connected to one panel 50 at 58 as heretofore mentioned, and the edges of said sheet 80 are reversely bent as at 81 and then inwardly flanged as at 82 to provide an internal recess continuous about the edges of the door and in which filler strips 84 are secured; said strips having their exposed faces complemental with the exposed faces of the door frame filler strips, and to effect a sealing of the container, the exposed faces of the door frame filler strips are preferably provided with sealing pads 86. As clearly seen in Fig. 13, the floor of the container at the door opening is beveled, and the filler strip 84 at this point is correspondingly beveled for an obvious purpose. The filler strip 84 at the lower edge of the door is provided with a sealing pad 88 retained by an attaching strip 90 secured to the strip 84.

In order to stiffen the door 60, the metal sheet 80 is provided with an X-shaped reinforcement 85 in the form of corrugations which radiate from substantially the center of the door toward the four corners thereof. The door 60 is further provided with a placard retainer 87 for retaining a destination sign.

The upper edges of the side walls B taper downwardly from approximately the center of the upper edge of the panels 24, and the side walls are connected by carlines 92, the same comprising channels 94 having attaching flanges 96 formed with the chords thereof. To secure the channels, the webs 98 at each end are bent downwardly as at 100 and are riveted to the side walls as shown at 102, the rivets 102 passing through the flanges 100 and a reinforcing angle 103 arranged adjacent the upper edges of the side and end

walls as clearly shown in Fig. 3. The sides 104 of the channels are laterally flanged at their ends as shown at 105 and are also riveted to the upper edges of the side walls and the angle 103.

The container roof D is formed of two sheets of metal, 107 and 109, of suitable character which are connected together by welding as shown clearly in Fig. 6, at 111. The inner edges of the sheets 107 and 109 are positioned over one leg of an angle 110 and are riveted to said leg as shown at 112. While in effect a continuous roof sheet has been provided, it has been found that by forming the roof of two separate sheets 107 and 109, and connecting them as indicated above, a stronger construction has been provided. The connected sheets 107 and 109 define a roof for the container and the edges of the roof are downwardly flanged as shown clearly in Fig. 1 at 114 to overlie the upper edges of the side and end walls of the container, and said flanges are riveted or otherwise secured to the side and end walls, as shown at 116.

The container is provided with means for lifting the same by means of a crane or the like, whereby the container may be transported from place to place, said means including the lifting loops 34 heretofore mentioned, which are retained by straps 36 which lie adjacent the flange 114 of the roof D and are secured to the container by means of the aforesaid rivets 116.

From the above description, it is believed that the construction of the container of the present invention will be fully apparent to those skilled in the art but it is to be understood that the drawings herewith are merely by way of example as obviously various changes in the form and proportions of the device may be made within the scope of the appended claims without departing from the spirit of the invention.

What is claimed is:

1. In a container of the kind described, side and end sills formed of Z-bars, channels connecting said side sills, and connected side and end walls for the container having their lower edges underlying and secured to the upper chords of the Z-bar sills.

2. In a container of the kind described, side and end sills formed of Z-bars the upper chords of which extend outwardly, spaced reinforcing elements connecting said side sills and supported on the lower chords of the side sills, a flooring supported by the reinforcing elements, and connected side and end walls for the container having their lower edges inwardly flanged to underlie the upper chords of the sills and secured thereto.

3. In a less than carload lot container, a base portion including connected Z-bars defining side and end sills, the upper chords of which extend outwardly, channels connecting said side sills and supported by the lower chords of the side sills, a flooring supported by said channels, side and end walls for the container the lower edges of which are inwardly bent to define attaching flanges underlying and secured to the upper chords of the sills, continuous corner angles connecting said side and end walls, and a roof for the container the edges of which are flanged to overlap the upper edges of the side and end walls.

4. A wall for a container of the kind described formed of metal and having upwardly converging pairs of corrugations on each side of the vertical center through said wall.

5. A wall for a container of the kind described formed of metal and having upwardly converging pairs of corrugations on each side of the vertical center through said wall, and horizontally arranged corrugations intermediate the before-mentioned pairs of corrugations.

6. A wall for a container of the kind described formed of metal and having upwardly converging pairs of corrugations on each side of the vertical center through said wall, and horizontally arranged corrugations intermediate the before-mentioned pairs of corrugations, said horizontally arranged corrugations extending across the vertical center through the wall.

7. A base structure for less than carload lot containers comprising Z-bars defining side and end sills and having their lower chords extending inwardly, gussets connecting adjacent ends of the said side and end sills, spaced channels extending between and supported by the lower chords of the side sills, the walls of said channels being flanged, connecting plates secured to the upper chords of the side sills and to the channel flanges to connect the channels to said sills, and flooring secured to the channels and supported thereby.

8. In a less than carload lot container, Z-bars at the base thereof defining side and end sills the upper chords of said Z-bars extending outwardly, side and end walls having their lower edges inwardly flanged and secured to the upper chords of the sills, carlines connecting the side walls, a reinforcing angle secured by one leg thereof to the upper edges of the side and end walls and having its other leg inwardly extended to overlie the carlines, and a marginally flanged roof plate for the container, the flanges thereof overlapping the side and end walls.

9. A wall structure for containers comprising a plurality of metallic plates secured together along horizontal lines, each plate provided with spaced pairs of vertical corrugations, the corrugations of each pair converging upwardly and the pairs of cor-

rugations on each plate being so positioned as to aline whereby continuous reinforcements are provided for the wall structure.

10. An end wall for containers comprising a transverse upper metallic plate, spaced vertical metallic plates secured thereto and defining with the upper plate a door opening, a door hinged adjacent one edge of the opening and transversely arranged stiffening members secured to the vertical plates, said door having corrugations radiating from a common point at substantially the center of the door toward the corners thereof.

11. In a container, a base portion, connected side and end walls secured to the base portion, channel carlines arranged between the side walls adjacent the upper edges thereof, the web and sides of the carlines being severed at their junctures and bent at substantially right angles to define attaching flanges, an angle secured to the upper edges of the side and end walls one leg thereof overlapping the carlines, and a roof for the container provided with a marginal attaching flange overlapping the side and end walls and secured thereto.

12. In a container of the kind described, flanged sills, a flooring supported thereby, and connected side and end walls for the container having their lower edges inturned to underlie a flange of each of the sills and secured thereto.

13. In a container of the kind described, flanged sills, a flooring supported by one each of the flanges of oppositely arranged sills, and connected side and end walls for the container having their lower edges inturned to underlie a flange of each of the sills and secured thereto.

14. In a container of the kind described, a base, connected side and end walls attached to the base, and a roof for the container comprising sheets arranged edge to edge and welded together, and an internal reinforcing strip extending across the meeting edges of the sheets and riveted thereto.

15. In a container of the kind described, side and end walls, and a roof for the container comprising sheets connected together in abutting relation with their remaining edges flanged and secured to the side and end walls, and an angle secured to the roof sheets across the meeting edges thereof.

In witness whereof I have hereunto set my hand.

VICTOR WILLOUGHBY.