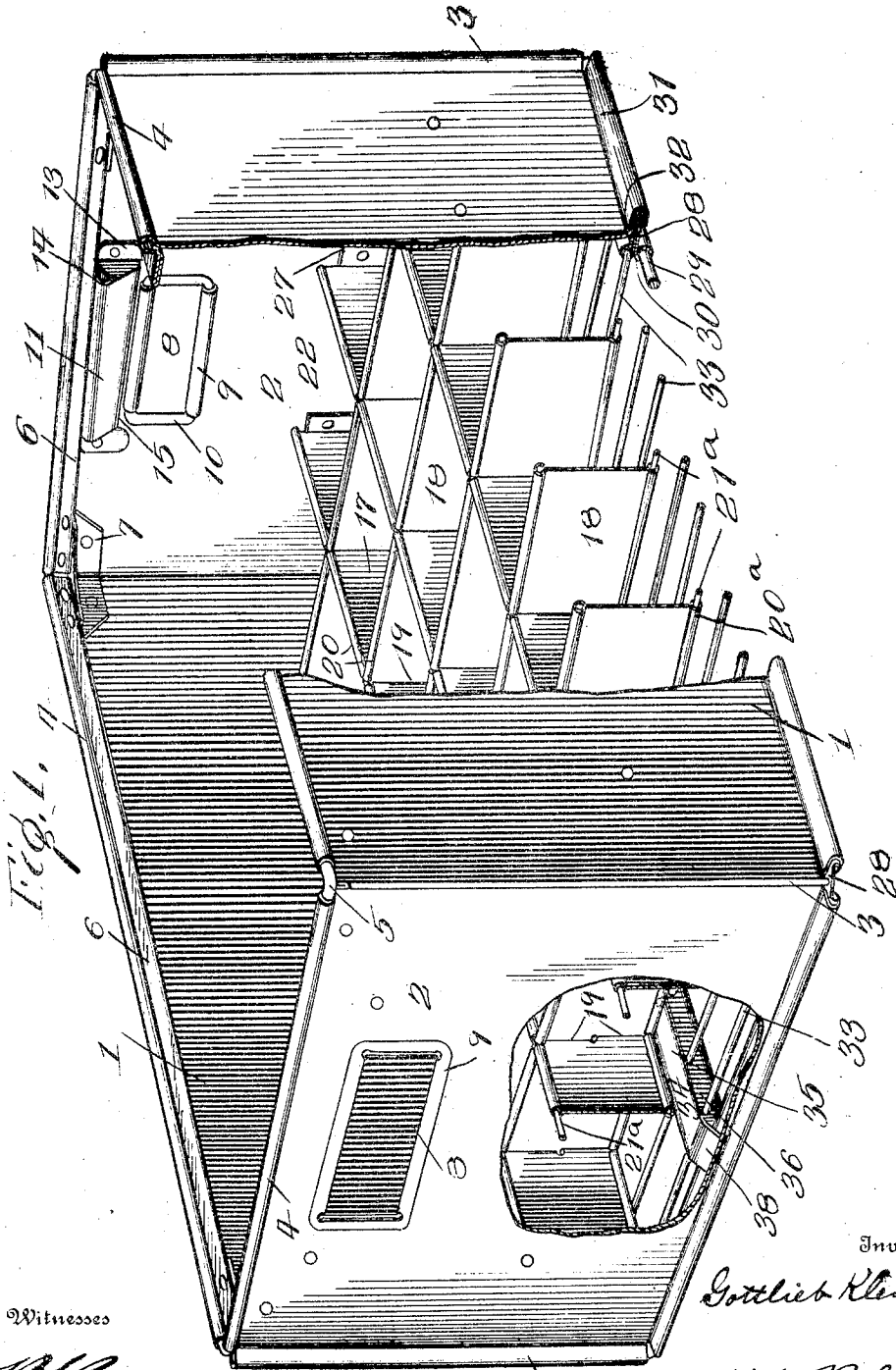


G. KLENK.
PACKING CASE.
APPLICATION FILED DEC. 21, 1908.

1,081,674.

Patented Dec. 16, 1913.

3 SHEETS-SHEET 1.



Witnesses

W. H. H. H.
George R. Bliss

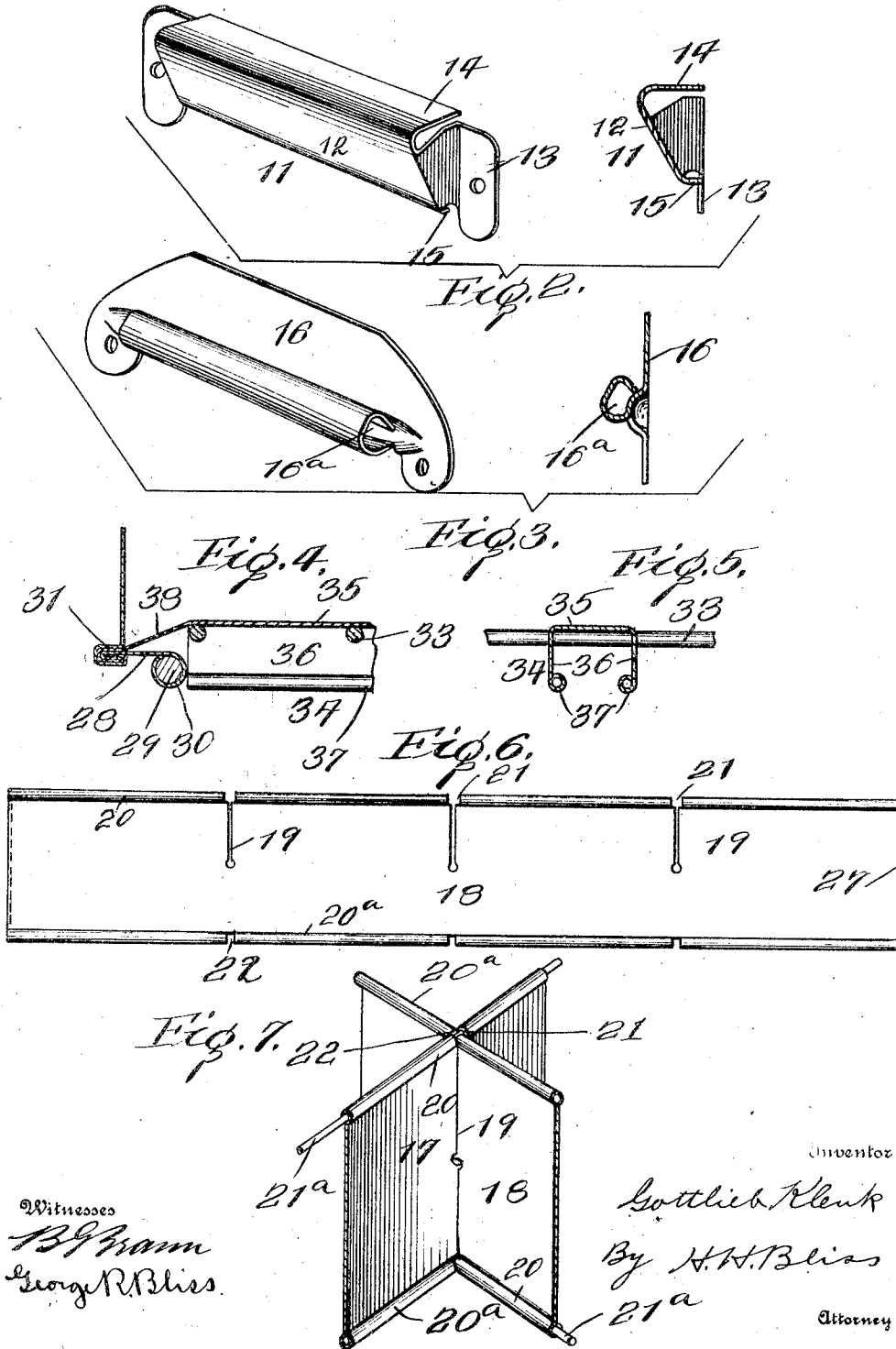
Inventor

Gottlieb Klenk

By *H. W. Bliss*
Attorney

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3 SHEETS-SHEET 3.

Fig. 8.

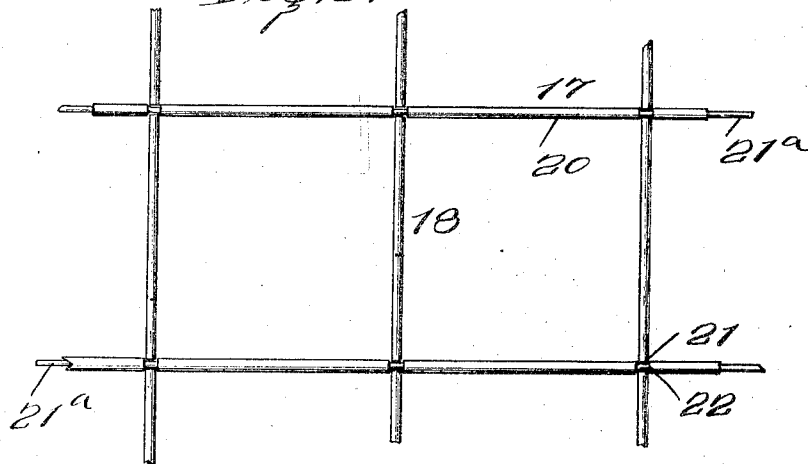


Fig. 10.

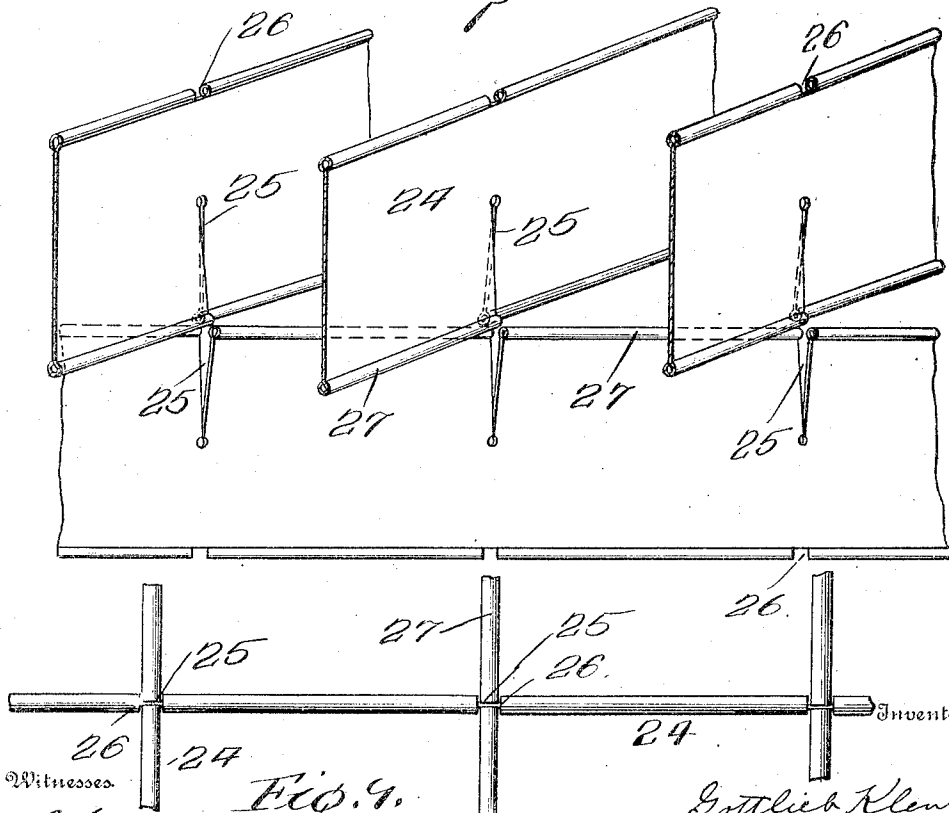


Fig. 9.

Witnesses.
W. Bram
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By

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Attorney

UNITED STATES PATENT OFFICE.

GOTTLIEB KLENK, OF DEFIANCE, OHIO, ASSIGNOR TO THE DEFIANCE PRESSED STEEL COMPANY, A CORPORATION OF OHIO.

PACKING-CASE.

1,081,674.

Specification of Letters Patent.

Patented Dec. 16, 1913.

Application filed December 21, 1908. Serial No. 468,579.

To all whom it may concern:

Be it known that I, GOTTLIEB KLENK, a citizen of the United States, residing at Defiance, in the county of Defiance and State of Ohio, have invented certain new and useful Improvements in Packing-Cases, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to storage and shipping receptacles and has for its object to provide an improved cellular structure to hold laterally apart from each other bottles or similar articles, to provide improved means for supporting the bottles, and to provide improved means for manually handling the receptacles.

In the drawings, Figure 1 is a perspective of the box as a whole, parts of the side being broken away to show the construction of the interior. Fig. 2 is a detailed view of one of the grips. Fig. 3 is a view of a modified form of the grip. Fig. 4 is a fragmentary perspective view illustrating the manner in which the cross supporting bar is secured to the box. Fig. 5 is a cross sectional view of the cross bar. Fig. 6 is a view of one of the sheet metal strips used in forming the cellular structure of the box. Fig. 7 shows the manner in which the cell forming sheets are assembled. Fig. 8 is a fragmentary plan view of the cellular structure. Fig. 9 is a plan view of a modified form of cellular structure. Fig. 10 shows the manner in which the metal plates are assembled in the case of the modified form of the cellular structure.

The vertical side walls 1 of the box are joined to the end walls 2 of the box in any suitable manner, as by the outwardly extending interlocking seams 3. The upper edges of the end and side walls are bent to form the beads 4 about the inclosed wires 5, and are provided with the inwardly extending flanges 6 preferably formed as integral parts of the side and end walls and disposed in a horizontal plane below the bead 4. These inwardly extending flanges are mitered at their corners and joined rigidly to one another by means of corner angle plates 7.

The ends of the box are provided with the hand holes 8—8 which are located a short distance below the upper edges of the box. These hand holes are rectangular in shape

and are preferably reinforced about their edges by beading tongues 9 formed from the metal of the end walls about a rectangular wire frame 10.

The grips 11 are riveted in position between the hand holes 8 and the depressed inwardly extending horizontal flange 6. Each of these grips has an inclined wall 12 which lies in the plane common to the upper edge of the hand hole and the inner edge of the flange 6, or approximately in such plane, and the vertical laterally extending tongues 13 by means of which the grip is secured to the end wall, and the top and bottom lips 14 and 15, respectively, adapted to lie next to the under side of the flange 6 and the upper side of the bead at the top of the hand hole. This grip provides a smooth surface to be engaged by the hand of any one lifting the box and does away with the sharp edge of the flange 6, which would otherwise be felt by the thumb as the hand is placed in position to lift the box. The sheet metal at the upper and lower edges of the inclined wall 12 is rounded so that there may be no sharp edges to come into contact with the hand.

In Fig. 3 I have shown another form of grip consisting of the vertical base wall 16 which is riveted to the end wall of the box and the hollow bead 16^a adapted to lie just within and in the same horizontal plane with the bead at the upper edge of the handle. In this way, an extended horizontal area is provided for engagement with the fingers of the hand at the point where the weight of the box is sustained by the fingers.

The cells of the box are formed by rectangular sheets of metal 17 and 18, slotted vertically at a series of points 19—19 from one horizontal edge approximately half way to the other horizontal edge of the sheet. The upper and lower horizontal edges of each sheet are bent to form beads 20, 20^a, approximately circular in cross section. These beads form guides for wires which will be hereinafter more specifically referred to. The bead 20 formed upon the horizontal edge in which the slots 19—19 are cut is recessed at points 21—21, corresponding to the slots 19, and the bead formed upon the other edge is similarly recessed at points 22—22 in the transverse vertical plane of the slots 19, the width of these recesses be-

ing somewhat less than that of the recesses 22, for a reason to be presently described.

The cell forming sheets of metal 17 which run lengthwise of the box, and the transverse sheets 18 are exactly similar to each other in respect to the slots 19, beads 20, 20^a, and recesses 21, 22; but when the sheets are assembled the slots 19 will, in the case of the transverse strips 18, be in the lower half of the sheet and in the case of the longitudinal strips, in the upper half of the sheet, or vice versa. The cellular structure is assembled by bringing the transverse and longitudinal strips together with their slotted sides toward each other, the slotted portions engaging each other in the manner indicated in the drawings. When the sheets are thus secured, it will be observed that each of the larger recesses 22 in one strip receives bead 20 of the mating strip, and that recess 21 is of a width less than the diameter of the bead 20^a so that the tops of the bead 20 upon each side of the recesses 21 are held laterally firm by means of the annular end faces of the bead 20^a upon either side of the recess 22.

Where rods 21^a are passed through beads 20^a and recesses 21, these wires are held against lateral displacement by means of the recesses 21 of the beads 20, and in this manner the beads 20^a, which inclose the wires, are held in longitudinal alinement and against lateral displacement. It is also to be noted that the metal upon each side of any one of the slots 19 is prevented from being bent out of position laterally. The beads 20^a act as guides for the rods 21^a. I have shown in the drawings and prefer to provide complete beads for holding and guiding the wires or rods 21^a, but it will be understood that guides other than complete beads may be used if desired.

In Figs. 9 and 10 I have shown fragmentary views of a modified cellular structure. Each of the sheets 24 is slotted at a number of points vertically from one of its horizontal edges to a point approximately midway between its upper and lower edges, is beaded at each edge and is recessed along the edge opposite the slots 25 at points 26 in the same vertical transverse planes with these slots 25. It will be observed that the recesses 26 are of a width just sufficient to receive one of the beads 27 and that the bead at the opposite edge of the sheet is not recessed except as that part of the slot 25 which passes through the bead may be considered a recess. The slots 25 are just wide enough to receive sheet metal of the thickness used for the cellular structure. To assemble these sheets, it is necessary to place the strips in the position shown in Fig. 10, to slightly displace laterally upon opposite sides of the plane of the sheets the portions of the beads upon either side of the slots 25,

to pass the bead of one strip over the bead of its mating strips, to adjust the strips to positions at right angles to each other, and to move the outer strips downward until the upper edges of both transverse and vertical strips are in the same position. When thus assembled the bead upon the two sides of each one of the slots 25 is held against lateral displacement and in longitudinal alinement from end to end by means of the abutting ends of the beading at the sides of the recess 26. It is unnecessary to use any wire in the beading on either edge of the strips in this construction.

The cell forming strips are flanged at their ends, these flanges 27 being riveted to the side and end walls of the box.

The side and end walls of the box are crimped in outwardly extending flanges 31 with the horizontal strips 28, which are beaded at their inner edges about a rectangular wire frame 29 to form a downwardly projecting flange 30. There is also crimped in the outwardly extending flange 31 with the side walls 1 and the strips 28 other strips 32, which are beaded at their inner edges about the end portions of elongated rectangular wire frames 33, these strips 32 being disposed above the strips 28. These wires 33 which are located under the cells formed by the slots above described are adapted to support the bottles which the box is designed to carry. These wires are medially supported by means of the cross supporting bar 34, channel shaped in cross section and having the upper horizontal part 35 and the vertical sides 36 depending therefrom curled at their lower edges to form beads 37, the lower faces of which are flush with the lower floor engaging face of the bead 30. The side walls of this cross supporting bar are perforated to receive and uphold the bottle supporting bars.

The vertical walls of the cross supporting bar are cut away at each of its ends and the extended tongues 38 rest upon the upper surface of the end horizontal strips 28 and are crimped with these strips and the end walls 2 in the horizontal outward extending end flange. The ends of the side walls of the cross supporting bar about the downwardly projecting flange 30.

I do not herein claim broadly a supplemental supporting flange or skid, such as that at 34, in combination with the stacking flange having its side parts parallel to it and its end parts at right angles to it. This subject-matter is presented and claimed in my co-pending application for metal boxes, Serial No. 383,642, filed July 13, 1907.

What I claim is,

1. A cellular structure for a packing case, comprising vertical intersecting transverse and longitudinal sets of partition plates

having intersecting edges, each plate of one set having at each line of intersection a slot extending vertically from its intersecting edge and receiving a part of the body of the intersecting plate, and each plate of the other set having at each line of intersection a notch in its intersecting edge and a slot extending vertically from the other edge and receiving a part of the body of the intersecting plate, and means on the plates of the first set arranged to lie within the notches of the plates of the second set whereby the edges of the plates of the first set are supported.

2. A cellular structure for a packing case, comprising vertical intersecting transverse and longitudinal sets of partition plates having intersecting edges, each plate of one set being provided at its said intersecting edge with a bead and having at each line of intersection a slot extending vertically through the bead and receiving a part of the body of the intersecting plate, and each plate of the other set having at each line of intersection a notch in its intersecting edge and a slot extending vertically from the other edge of the plate receiving a part of the body of the intersecting plate, and wires in the said beads, each wire engaging the edges of the notches in the intersecting plates.

3. A cellular structure for a packing case, comprising vertical intersecting transverse and longitudinal sets of partition plates having intersecting beaded edges, each plate of one set having at each line of intersection a notch in its bead and a vertical slot extending from the said notch and receiving a part of the body of the intersecting plate, and each plate of the other set having at each line of intersection a notch in its bead and a vertical slot extending from the other edge of the plate and receiving a part of the body of the intersecting plate, the notches in the beads of the plates of one set being larger than those in the beads of the plates of the other set and adapted to receive the said beads.

4. A cellular structure for a packing case, comprising vertical intersecting transverse and longitudinal sets of partition plates having intersecting beaded edges, each plate of one set having at each line of intersection a notch in its bead and a vertical slot extending from the said notch and receiving a part of the body of the intersecting plate, and each plate of the other set having at each line of intersection a notch in its bead and a vertical slot extending from the other edge of the plate and receiving a part of the body of the intersecting plate, the notches in the beads of the plates of one set being larger than those in the beads of the plates of the other set, and wires in the beads having the larger notches, each

wire engaging the edges of the smaller notches in the other beads.

5. A cellular structure for packing cases, comprising vertical intersecting transverse and longitudinal sets of partition plates having intersecting beaded edges, each plate of one set having at each line of intersection a notch in its bead receiving the intersecting bead, and a vertical slot extending from the said notch and receiving a part of the body of the intersecting plate, and each plate of the other set having at each line of intersection a notch in its bead narrower than the notch in the intersecting bead and a vertical slot extending from the other edge of the plate and receiving a part of the body of the intersecting plate, and wires in the beads of the plates of the first set, each wire engaging the edges of the notches in the beads of the other set.

6. A cellular structure for a packing case, comprising vertical intersecting transverse and longitudinal sets of partition plates having two sets of intersecting beaded edges, each plate of one set having at each line of intersection a notch in its top bead, a vertical slot extending from the notch and receiving a part of the body of the intersecting plate and a second notch in the bottom bead, and each plate of the other set having at each line of intersection a notch in the bottom bead, a vertical slot extending from the notch and receiving a part of the body of the intersecting plate and a second notch in the top bead, wires in the top beads of the plates of one set, each wire engaging the edges of the notches in the intersecting beads, and wires in the bottom beads of the plates and the other set, each wire engaging the edges of the notches in the intersecting beads.

7. A cellular structure for a packing case, comprising vertical intersecting transverse and longitudinal sets of partition plates having two sets of intersecting beaded edges, each plate of one set having at each line of intersection a notch in its top bead receiving the intersecting bead, a vertical slot extending from the notch and receiving a part of the body of the intersecting plate and a second smaller notch in the bottom bead, and each plate of the other set having at each line of intersection a notch in the bottom bead receiving the intersecting bead, a vertical slot extending from the notch and receiving a part of the body of the intersecting plate and a second smaller notch in the top bead, wires in top beads of the plates of the first set, each wire engaging the edges of the smaller notches in the intersecting beads, and wires in the bottom beads of the plates of the second set, each wire engaging the edges of the smaller notches in the intersecting beads.

8. In a sheet metal packing box, lateral

walls suitably secured each to each, an inward extending horizontal flange about the upper edges of the lateral walls of the box, hand holes being formed in the lateral walls of the box near the upper edges thereof and below the said flanges and each provided with a rounded upper edge, and grip pieces, supplemental to the rounded edge, secured to the interior of the box and disposed between the inward extending flange and the hand holes and adapted to provide relatively extended finger rests above and within said rounded upper edges.

9. A packing case, comprising lateral walls suitably secured together and in which are formed hand holes each provided with a rounded upper edge, and rounded grip pieces secured to the walls immediately above the upper edges of the said hand holes and adapted to provide relatively extended finger rests above and within said rounded upper edges.

10. In a sheet metal packing case, the combination of lateral walls suitably secured together at their vertical edges and provided with hand holes, an inward extending horizontal flange about the upper edges of the box and above the said hand holes, and grip pieces, each adjacent a hand hole and provided with an upward and inward inclined plane surface lying in the plane approximately of the upper edge of the corresponding hand hole and the inner edge of the said flange.

11: In a sheet metal box, the combination

of lateral walls, bottle-supporting bars carried thereby, and a channel shaped cross bar at right angles to the said bottle-supporting bars, the central plate of the cross bar being horizontally disposed in a plane above the supporting bars, the side walls of the bar being below the central plate and perforated to receive the bottle-supporting bars and thereby furnish two supports for each bar at separated points, and the lower edges of the side walls being curled to form beads flush with the floor-contacting surfaces of the box.

12. In a sheet metal box, the combination of lateral walls, bottle-supporting bars carried thereby, a downward extending floor-engaging rectangular beaded flange about the lower edge of the lateral walls, and a channel shaped cross bar at right angles to the said bottle-supporting bars and adapted to medially support the bottle-supporting bars, the central plate of the cross bar being horizontally disposed, the side walls of the bar being below the central plate, and the lower edges of the side walls being curled to form beads flush with the floor-contacting surfaces of the box, the vertical ends of the side walls and beads abutting the sides of the said rectangular beaded flange.

In testimony whereof I affix my signature, in presence of two witnesses.

GOTTLIEB KLENK.

Witnesses:

C. C. HOFFMAN,
HENRY NEWBIGIN.