

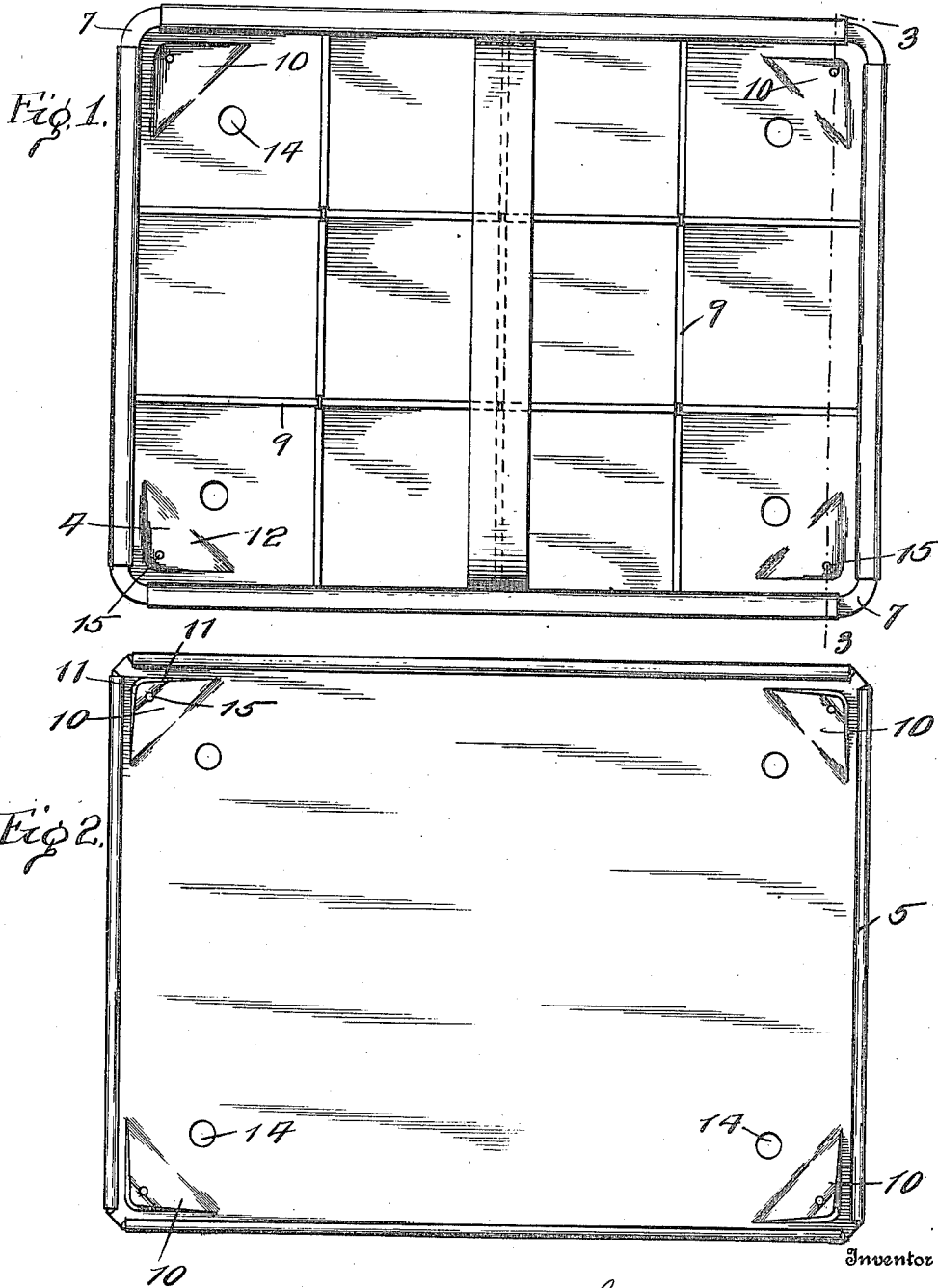
G. KLENK.
PACKING CASE.

APPLICATION FILED JUNE 9, 1909. RENEWED AUG. 21, 1915.

1,177,115.

Patented Mar. 28, 1916.

2 SHEETS—SHEET 1.



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Witnesses

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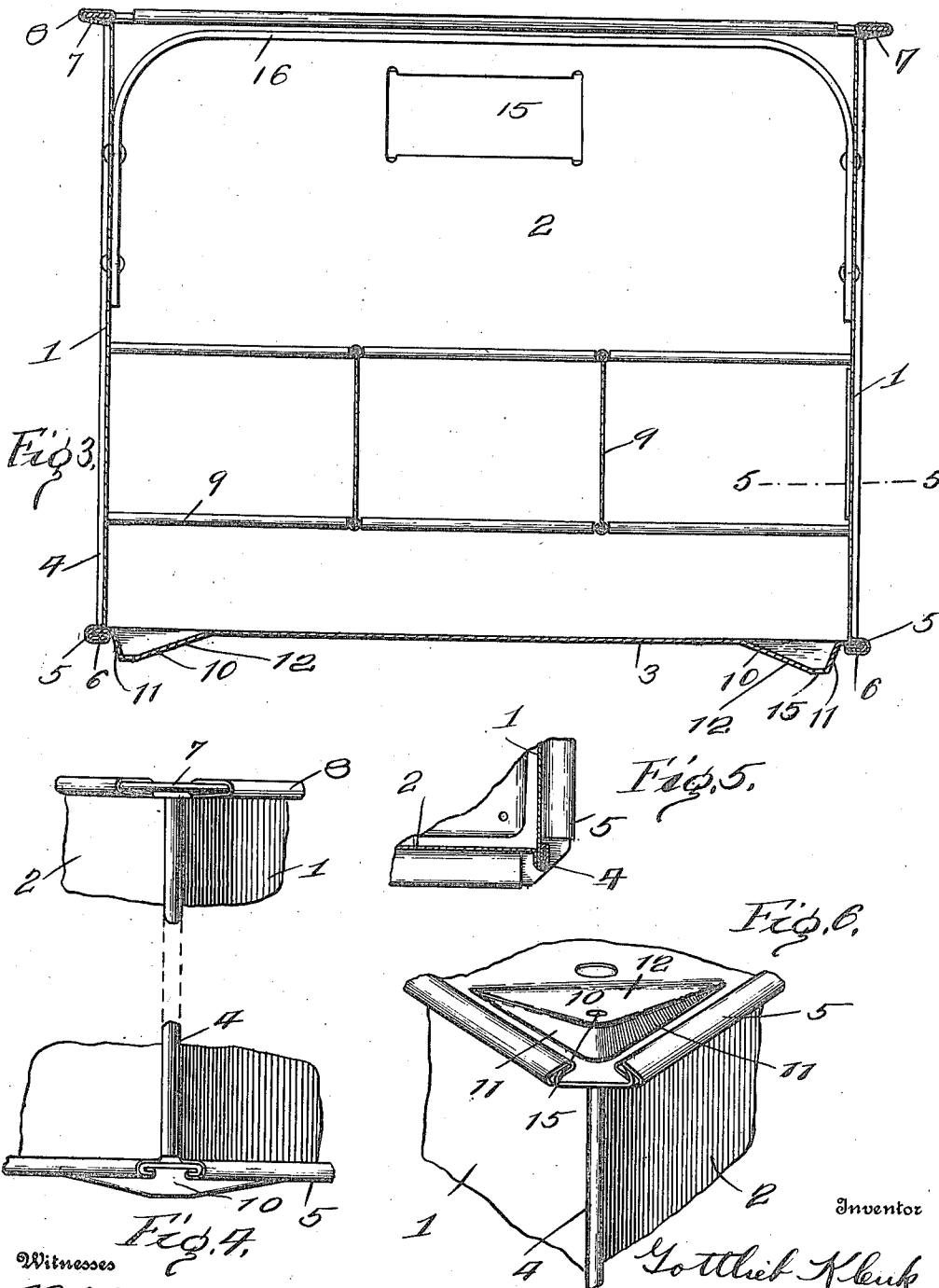
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UNITED STATES PATENT OFFICE.

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

PACKING-CASE.

1,177,115.

Specification of Letters Patent.

Patented Mar. 28, 1916.

Application filed June 9, 1909, Serial No. 501,164. Renewed August 21, 1915. Serial No. 46,673.

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 bottle shipping crates and has as its object to provide a crate of such a character that it can be stacked with others like it and can be readily handled, both manually and by means of freight handling trucks and will, at the same time, be readily and cheaply constructed and possessed of great strength and durability.

In the drawings, Figure 1 is a top plan view of the box constructed with the improvements which are the subject matter of my invention. Fig. 2 is a bottom plan view of the box. Fig. 3 is a vertical cross section taken along the line 3—3 of Fig. 1. Fig. 4 is a fragmentary view in elevation of one of the vertical edges of the box. Fig. 5 is a fragmentary horizontal section along the line 5—5 of Fig. 3. Fig. 6 is a perspective view of one of the bottom corners of the box in an inverted position.

Referring to the drawings, 1 and 2, indicate the side and end walls respectively of the box and 3 the bottom wall, each of which is preferably made of a single sheet of metal. The side and end walls are united by vertically arranged outstanding seams. The four lateral walls are interfolded along their lower edges with the edge parts of the rectangular sheet metal plate 3, which constitutes the bottom of the box. This fold or crimp 5 is formed so as to project horizontally outward from the lateral walls and to present a horizontal under face 6, which is somewhat below the plane of the bottom plate 3.

The upper horizontal edges of the four lateral walls of the box are bent around a flat metal bar 7, which is rectangular in general configuration. The sheet metal of the lateral walls is wrapped about this flat metal bar 7 by being bent first outward from the vertical plane of the lateral walls then up around the outer edge of the bar 7 and then along the top of the bar and down along its inner edge. The extreme edge of the metal of the lateral walls is bent again

outward and held tightly between the bar and the lower fold of the metal. The bar 7 is disposed just outside of the vertical planes of the lateral walls and in the same vertical planes with the bottom crimp or fold 5. When the boxes are piled one upon the other the under side 6 of the crimp 5 will rest upon the upper face of the top flange 8 formed by wrapping the metal of the lateral walls about the reinforcing bar 7, as above described. The vertical thrust which must be taken by a lower box when other boxes are piled upon it in this manner is transmitted by means of the lateral walls 1 and 2 and the vertical seams 4. It will be noticed that the crimp 5, seam 4 and flange 8 provide a reinforced frame work adapted to resist stresses applied either laterally, by accidental blows, or vertically, by the weight of superimposed boxes or other bodies.

While my invention can be applied to boxes used for other purposes, it has been shown in the drawings as applied to a box adapted to hold bottles, and particularly bottles which are of a size and shape such as to adapt them for use in shipping milk in large quantities from outlying districts into large cities. In order to hold the bottles apart from one another while in the boxes, a cell providing structure 9 is secured within the box in any suitable manner.

These boxes are stacked in vertical piles in freight cars and it is desirable and necessary to provide means for preventing them from being displaced horizontally with respect to each other, so that they may be maintained in neat solid vertical rows, which will fit closely together horizontally and occupy the minimum space. To accomplish this purpose I provide four downward projecting lugs 10, 10 upon the bottom of the box and at each corner of the bottom. I prefer to form these lugs by depressing the sheet metal plate which forms the bottom of the box at the four points where the lugs are to be provided. Each of the lugs or downward projections is formed with two approximately vertical walls 11, 11 which face the adjacent bottom edges of the box and the rear wall 12, which is inclined slightly to the horizontal and which connects the lower edges of the vertical walls 11 with the main horizontal part of the bottom plate 3. Each of these projections is perforated at its low-

ermost part so that any water or other liquid which may collect will be readily drained therefrom. These perforations are designated by the numeral 15. Other and larger apertures 14 are preferably provided adjacent the lugs 10, which also serve to keep the bottom parts of the box drained and ventilated. When one box is placed vertically above another the walls 11 of these projections 10 engage laterally with the inner edge of the flange 8 of the box below, and the box is locked against horizontal movement in any direction. But by elevating one end of the box sufficiently to raise the bottom of the lug above the top of the flange 8 of the box below and then pulling the box two or three inches in a horizontal direction, the boxes are unlocked and an upper box can be removed from the top of the box upon which it rests, with the flange 5 on the upper box and the flange 8 on the lower box flatly engaging each other and serving as runners or bearings. As the box is about to be entirely removed from a lower box, the inclined wall 12 at the far end of the box will slide upon and over the near flange 8 of the box below without attention from the operator. Similarly, when one box is being moved horizontally into position over a lower box, the sloping walls 12 of the near lugs will slide easily over the near flange 8 of the lower box, and the upper box will drop into locked position without attention from the operator.

The hand holds 15 are formed in the ends of the box to facilitate the handling of the box and to provide means by which either end can be elevated in order to unlock the stacking projections. I provide another means for handling the box in the handle 16, which is formed and applied to the box in the shape and position of an inverted U. The vertical legs of the U are riveted to the side walls 1, 1 and the horizontal part is disposed as near as may be practicable to the plane of the flange 8. The handle shown in the drawings is formed of flat bent iron and is shown slightly below the plane of this flange 8, so that any upward bending of the handle resulting from use may not cause it to protrude above the top horizontal plane of the box and interfere with the stacking of the boxes, one upon another.

The handle is attached with one of its flat sides turned upward and with an elongated horizontal part extending from a point as near as possible to one side wall of the box to a similar point near the other side of the box. Thus, the handle serves, in conjunction with the adjacent parts of the flange 8, as a foot rest for the operator engaged in loading or unloading a freight car. In practice, it has been found most convenient to load a car with one horizontal tier of the boxes completely covering the bottom of the car and then to commence a second horizon-

tal tier at the inner end of the car, the operator walking upon top of the boxes of the first tier. These flat metal, horizontal, centrally-arranged handles are admirably adapted to support the operators as they thus walk upon the boxes. These handles also make it possible for an operator to carry two of the boxes at one time, one in each hand, and in combination with the end hand holds 15 furnish means for manipulating the boxes under every condition of use.

The projections 10 extend downward below the plane of the flanges 5 and therefore elevate the entire box bottom above the ground. Since these projections are confined to the corners, it is possible to insert under the flange 5 the forward end of one of the two-wheeled hand operated freight trucks which are commonly used in handling freight and to load the box in this manner upon the truck.

Wherever any form of the word "stack" is used in the foregoing description and in the claims, it is to be understood to refer to that engagement of two or more similar containers, in which one container is vertically above and supported by another container immediately below it and is prevented from lateral movement in a horizontal plane in any direction with respect to the box upon which it rests.

What I claim is—

1. In a storage and shipping receptacle, the combination of lateral walls, a bottom structure adapted to engage with and rest upon the top edges of the walls of a similar receptacle beneath, parts projecting downward from the bottom structure and positioned to engage with the top parts of the walls of a similar receptacle beneath to prevent lateral displacement, and a handle attached to opposite lateral walls and spanning the receptacle centrally, the handle being at all points below and out of contact with the bottom parts of a similar receptacle positioned above with its bottom engaging with and resting upon the top edges of the lateral walls.

2. In a storage and shipping receptacle, the combination of lateral walls, a bottom structure adapted to engage with and rest upon the top edges of the walls of a similar receptacle beneath, parts projecting downward from the bottom structure between the vertical planes of the walls and positioned to engage with the inner sides of the walls of a similar receptacle beneath to prevent lateral displacement, and a handle attached to opposite lateral walls and spanning the receptacle centrally, the handle being at all points below and out of contact with the bottom parts of a similar receptacle when the said similar receptacle is positioned directly above with its bottom engaging with and resting upon the top edges of the lateral

walls and when the said similar receptacle is being moved horizontally along the upper edges of the said opposite lateral walls to which the handle is attached.

5 3. In a storage and shipping receptacle, the combination of lateral walls, a bottom structure adapted to engage with and rest upon the top edges of the walls of a similar receptacle beneath, parts projecting downward from the bottom structure and positioned to engage with the inner sides of the walls of a similar receptacle beneath to prevent lateral displacement, and a handle attached to opposite lateral walls and spanning the receptacle centrally, the end parts of the handle being below the lowest plane of the downward projecting parts of a similar receptacle positioned above with its bottom engaging with and resting upon the top edges of the lateral walls and the central part of the handle being in a plane above the lowest plane of the downward projections and below the plane of the bottom of the said similar receptacle.

25 4. In a metal box having lateral walls and capable of being stacked on a similar box immediately below it, the combination of lateral walls and a bottom wall, the latter being formed of a single sheet of metal and being depressed at the four corners of the box to form four downward projections, each having substantially vertical walls facing the adjacent lower marginal edges of the box and adapted to interlock with the top edges of the similar box immediately below and inclined walls facing away from the said adjacent marginal edges.

40 5. A metal box having lateral walls and capable of being stacked on a similar box immediately below it and having four stacking lugs projecting from the bottom plane of the box, one near each lower corner of the box and in vertical planes just inside of the lower edges of the lateral walls, each lug

having walls relatively perpendicular to the bottom plane of the box and parallel to and facing the adjacent lateral lower edges of the box and also having its other walls which face away from the said edges inclined at a slight angle to and merging in the bottom plane of the box.

6. A rectangular metal box having lateral walls, the upper and lower edges of each of which are reinforced in the same vertical plane, and having stacking projections on the bottom of the box adapted to fit just within the reinforced upper edges of a similar box placed below it, each of said projections extending partway only from the corners of the box along the edges toward the next adjacent corner and gradually decreasing in depth as it extends inward until it merges in the bottom plane of the box.

7. A rectangular metal box having lateral walls provided at their upper edges with reinforcements all in horizontal alinement, and at their lower edges with reinforcements all in horizontal alinement, a bottom structure adapted to support articles within the box, and four stacking lugs projecting downward from the bottom near the corners thereof, each having outer walls adapted to engage the upper reinforcement of a similar box below, to prevent relative horizontal movement of the upper box away from vertical stacking alinement with the lower box, and each having an inclined inner wall adapted to engage the upper reinforcement of a similar box below in a manner to permit relative movement of the upper box into vertical stacking alinement with the lower box.

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

GOTTLIEB KLENK.

Witnesses:

C. C. HOFFMAN,
HENRY NEWBEGIN.