J. P. VOELKER.

LIFTING FRAME FOR STORAGE VESSELS.

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1,024,956.

Patented Apr. 30, 1912.

Fig. 1.

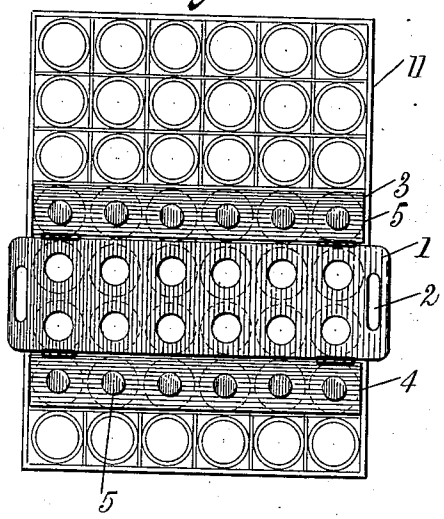


Fig. 3.

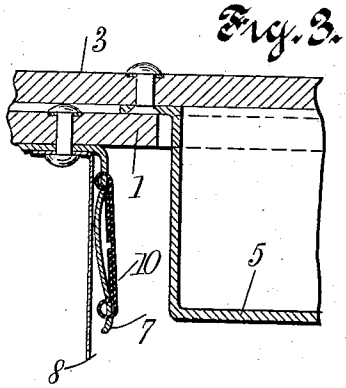


Fig. 4.

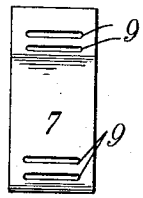


Fig. 5.

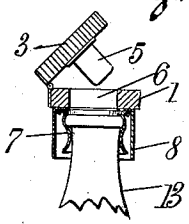
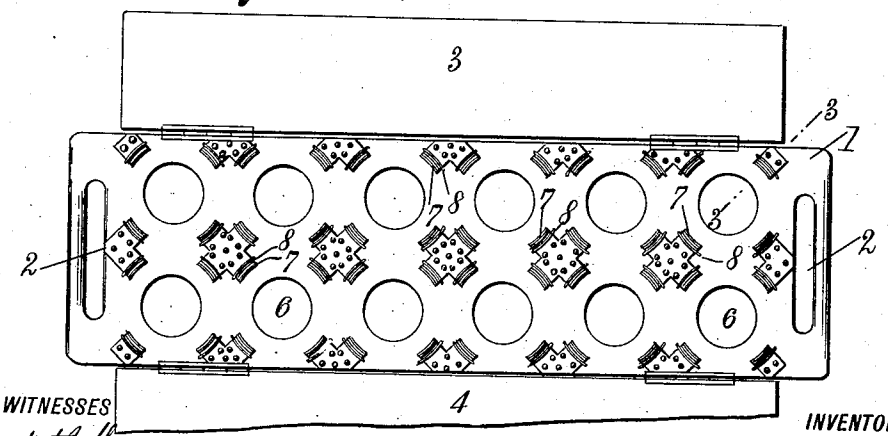


Fig. 2.



WITNESSES

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LIFTING-FRAME FOR STORAGE VESSELS.

1,024,956. Specification of Letters Patent. Patented Apr. 30, 1912.

Application filed July 17, 1911. Serial No. 638,910.

To all whom it may concern:

Be it known that I, JOHN P. VOELKER, a citizen of the United States, and a resident of the city of New York, borough of Manhattan, in the county and State of New York, have invented a new and Improved Lifting-Frame for Storage Vessels, of which the following is a full, clear, and exact description.

My invention is a lifting frame for storage vessels of the type that are commonly packed and shipped in boxes and similar receptacles; and the object thereof is to produce a device by means of which a number of such vessels can be lifted out of the box when the top thereof has been taken off, so as to enable the contents of the box to be removed in the shortest possible space of time.

Reference is to be had to the accompanying drawings forming a part of this specification, in which the same characters of reference indicate the same parts in all the views.

Figure 1 is a top plan of a box having the top removed and showing my improved lifting frame in position for use; Fig. 2 is a bottom plan of the lifting frame; Fig. 3 is a vertical section on the line 3—3 of Fig. 2; Fig. 4 is a front elevation of one of the clamping fingers of my lifting frame; and Fig. 5 is a transverse sectional view of a modification.

Referring particularly to the drawings, the numeral 1 indicates a base or body in the shape of a board or the like having a slot-shaped opening 2 at each end to afford a hold to the hand of the user. To the lateral edges of this board 1 are secured hinged leaves 3 and 4, each of these leaves having knobs or projections 5 secured in rows to one face thereof in position to enter a number of openings 6 arranged in rows through the board 1. When the leaves 3 and 4 are folded down upon the upper face of the board 1, each of the knobs or projections 5 will pass through one of the openings 6 in the board 1, and project a sufficient distance below the board 1, for a purpose which will appear later.

Fastened to the lower side of the board 1 are suitable clamping fingers 7, a number of these clamping fingers, four for example, surrounding each of the holes 6, to engage the sides of the storage vessels near their tops, in order to enable the frame to lift the storage vessels out of the box in which they are packed. Each of the spring clamping fingers 7 is protected by a shield 8, which is fastened to the bottom of the board 1, and extends beyond the outer end of the finger 7, to prevent this spring finger from being broken or bent, or otherwise injured.

Each of the spring fingers 7 has four transverse openings therethrough, two being arranged near the outer end and two near the base thereof. These openings give passage to the ends of a strip of leather or rubber, one end of this strip passing through the two slots 9 near the base of the finger, and the other end passing through the other two slots and extending to a point adjacent the other end of the strip, as shown in Fig. 3. The strip 10 will thus be held fast enough to the clamp 7 for all ordinary purposes, and the face of this strip will be pressed by the finger 7 against the side of the storage vessel with sufficient force to enable each of the storage vessels to be lifted by the frame and out of the box in which it is contained. Such a box is shown at 11, this box having its top removed, and being filled with a number of cans such as are employed to preserve meats or fruits. The spring clamping fingers 7 will be of such a size and spaced apart by such a distance as to permit four of them to enter the space surrounded by any four of the cans, so that the frame 1 will thus frictionally engage with the tops of as many cans as there are holes 6 through the board 1. By taking hold of the board 1 at its ends and pressing down thereon, the fingers 7 are forced into firm engagement with the tops of the cans around their sides, and then it is only necessary to raise the frame in order to lift a number of cans out. After a number of the cans is lifted in this way and removed from the box, the leaves 3 and 4 are folded down upon the board 1, and pressed to force their lower surfaces into contact with the top surface of the board 1. The knobs 5 passing through the holes 6 will press upon the tops of the cans and gradually force them out of the grip of the fingers 7, so as to release them. The frame can now be used to remove another batch of cans, until the whole box has been emptied.

In the form shown in Figs. 1 to 4 inclusive, I can make each set of fingers 7 in one piece, forming them integral with a common base. The same plan can also be followed for the shields or protectors 8, the common base of the shields 8 being superposed upon

the base of the fingers 7, and firmly fastened to the board 1 by means of screws or bolts, so that, when in position, the shields 8 will extend beyond the outer ends of the fingers 7 the required distance and guard the same against injury.

The form shown in Fig. 5 is designed to lift bottles instead of cans, and it can also be employed to remove any kind of storage vessel having a top somewhat more narrow than its top. With a number of bottles having comparatively narrow tops stored in a box or the like, the open space between the tops will be considerably greater than the open space between the tops of cans. The spring clamping fingers 7 can therefore be placed closer together, and instead of using a separate shield or protector for each of the spring fingers 7, I prefer to surround the spring fingers 7 for operating each of the openings 6, with a continuous ring 8′. The bottles 13 are lifted by these spring clamping fingers and disengaged by the knobs or projections 5, the same as the cans in the first instance.

It will be apparent from the above construction that I have devised a simple and efficient lifting frame which is adapted for unpacking storage vessels of any kind; and by its use the largest boxes can be quickly and readily emptied of their contents.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. A lifting frame for storage vessels, comprising a body having a number of perforations therethrough, spring clamping fingers surrounding each of said perforations, to grip the tops of storage vessels to be lifted, means adjacent said spring fingers to prevent the same from being bent or broken, a leaf movable with respect to said base, and a plurality of knobs or projections carried by said leaf in position to pass through said openings after the storage vessels have been lifted, to engage the tops thereof and release the same from said spring fingers.

2. A lifting frame for storage vessels, comprising a base having a number of perforations therethrough, spring fingers surrounding each of said perforations, to engage the tops of vessels to be lifted, a protecting ring surrounding the clamping fingers adjacent each of said openings, a leaf movable with respect to the base, and knobs or projections carried by said leaf in position to pass through said openings and press down upon the tops of the storage vessels after the same have been lifted, to release the same.

3. A lifting frame for storage vessels, comprising a base having a number of perforations therethrough, spring clamping fingers surrounding each of said perforations, each of said fingers supporting a strip of anti-friction material, the ends of said material passing through slots in said fingers, means adjacent said fingers to protect the same from injury, a leaf movable with respect to said base, and knobs or projections carried by said leaf in position to pass through the openings and press upon the tops of the storage vessels after the same have been lifted, to release the same.

4. A lifting frame for storage vessels, comprising a body, spring means carried by said body in position to grip the sides of storage vessels to be lifted adjacent one end thereof, means adjacent said spring means to protect the same and prevent the first-named means from being bent or broken, and means movable with respect to said base to engage the said storage vessels after they have been lifted, to release the same.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN P. VOELKER.

Witnesses:

WILLIAM F. NICKEL,

JOHN P. DAVIS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."