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F. F. TUGEL ET AL

2,264,418

PACKING RECEPTACLE

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Fig. 1.

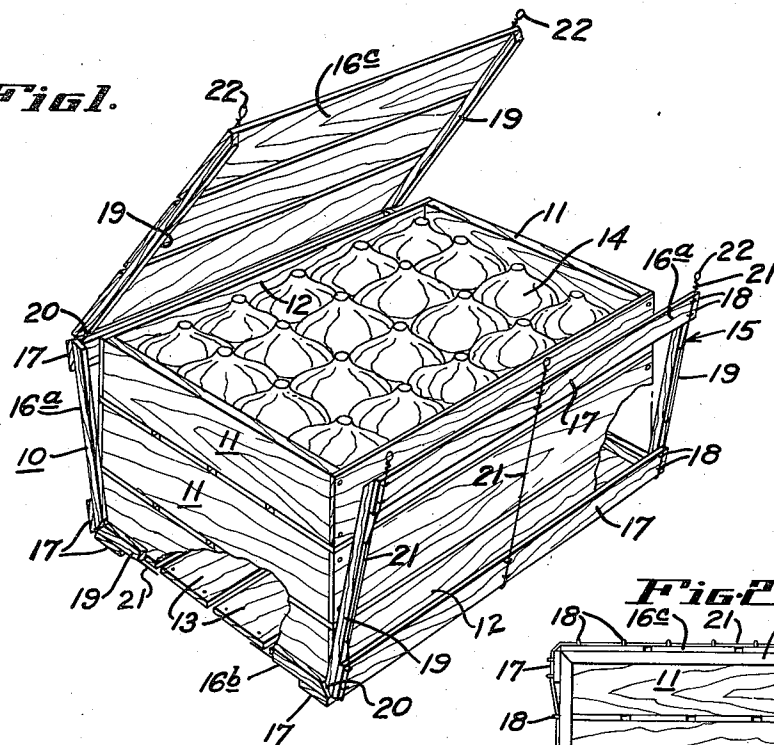


Fig. 2.

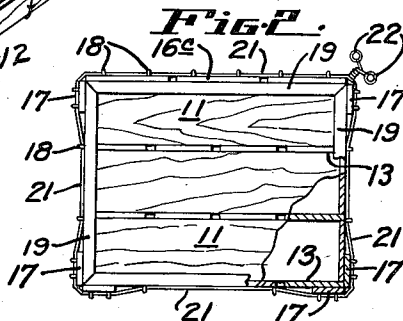
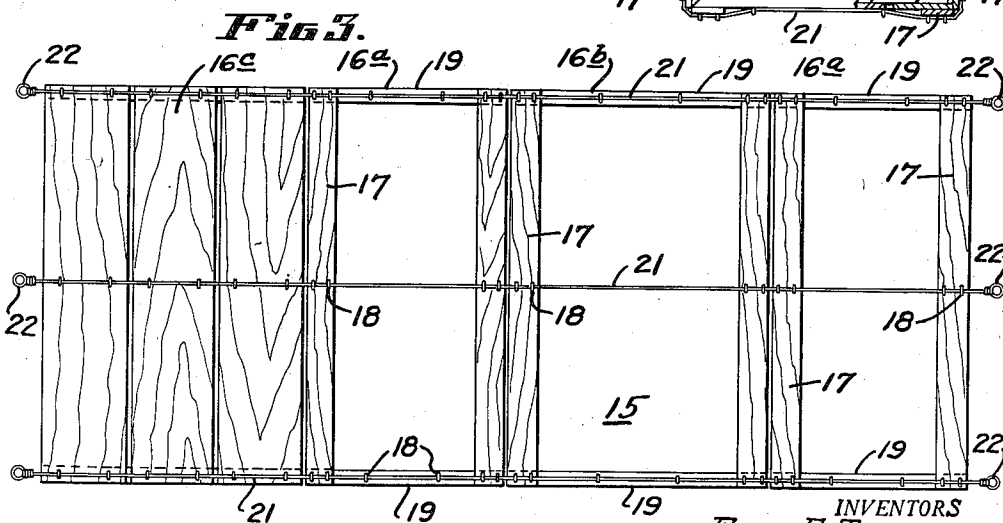


Fig. 3.



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PACKING RECEPTACLE

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4 Claims. (Cl. 217—43)

This invention relates to packing receptacles, and more particularly to a skeleton type of packing crate in which the products are packed in a plurality of separate superposed containers commonly referred to as lug boxes.

Heretofore it has been the practice to provide a crate in which the plane of the walls, bottom and top have been made of slats more or less completely covering the plane thereof. The size of this crate has been very generally standardized at approximately 24 inches long, 18 inches wide and 14 inches high. This type of construction provided a crate having only one compartment from top to bottom and required packing of the products in the crate one upon another. Handling in shipment is sometimes rough, and the lower products in the crate would be injured in transit due to the superimposed weight of the upper products. In order to secure a firmly packed crate from top to bottom, it has been necessary to overfill the crate and run it through a press to depress products therein into a firm, well-filled pack. This practice not only bruises and distorts the shape of the products, but makes a crown at top and bottom of the crate, detrimental to stacking and causing wasted space and instability of the stacks in shipment. These shortcomings are particularly present in respect of products which are easily damaged in packing and shipment, such as lettuce, fruits, tomatoes and the like. If the commodity requires packing in ice, this adds an additional weight within the crate. It is also disadvantageous in large-scale and long-distance shipping of perishable products, such as lettuce, peaches, berries, and the like, to have a crate or receptacle providing a single compartment from top to bottom, for the reasons, firstly, that in the packing thereof the packer must bend over and carefully place the lower products in the bottom of the compartment of restricted size, which consumes time and effort of the packer and adds up additional expense; secondly, in the case of perishable products, a dealer oftentimes does not desire to take too large a stock of the goods which may perish on his hands and yet he desires to display a small stock of the goods which can be quickly sold. However, for shipping purposes, it is highly desirable to pack and handle a crate of goods of the usual size of the present single-unit crate, because it has been demonstrated from experience that this size of crate is the most economical to handle in packing the products, handling charges, storage freight rates, etc. For this reason, the breaking down of the single compartment

crate into a plurality of smaller individually handled boxes, though eliminating the crushing of the products, and providing smaller units for handling at destination, and greater ease in packing, has not been economical because it multiplies the cost of manual handling of a greater number of separate boxes of smaller size. Then, too, each of the smaller boxes must have a separate cover which is expensive in both material and in labor for affixing it and removing it, and each box must be made of sufficient strength and rigidity as a separate unit to stand rough handling in transportation from the producer's packing house to its ultimate destination and use.

Therefore, among the objects of this invention are to provide a receptacle having all the advantages of separate small lug boxes combined with the advantages of a single standard-size crate; another object is to provide a receptacle for enclosing a plurality of individual lug boxes in a manner requiring a minimum of material and labor in both the crate and the individual boxes. Another object is to provide a skeleton crate for superposed individual boxes wherein a single cover serves for all of the superposed boxes, and the side walls and ends of the combined superposed individual boxes form the side walls of a crate and the bottom of the lowermost of the superposed boxes forms the bottom of the crate. It is a further object to provide such a frame and crate in which the sides of the frame may be readily removed from the boxes so that individual boxes may be taken out of the frame.

With the foregoing and other objects in view, all of which will be more apparent as this description proceeds, the invention is exemplified in one form in the novel construction and combination of parts hereinafter described, illustrated in the accompanying drawing, and pointed out in the claims hereto appended, it being understood that various changes in the form, proportion, size and details of construction of the apparatus may be resorted to within the scope of the appended claims without departing from the spirit or sacrificing any of the advantages of the invention.

To more clearly comprehend the invention, reference is directed to the accompanying drawing wherein:

Fig. 1 is a perspective view of an assembly of the invention, having a portion broken away to show structure.

Fig. 2 is an end view of the device of Fig. 1, but with top closed, and having a portion broken away to show structure.

Fig. 3 is a plan view of a mat of connected frames for forming a skeleton crate.

Referring to the drawing, wherein like characters of reference indicate corresponding parts in the several views, 10 indicates generally superposed packing boxes of the type sometimes referred to as lug or tray boxes. These tray boxes are separate containers and each is provided with ends 11, sides 12, and bottom slats 13, the bottom slats 13 preferably being the full length of the box and providing spacing members between the superposed boxes for purposes of ventilation of the packed products 14. An enveloping skeleton crate 15 is provided to enclose the superposed boxes. The crate 15 comprises a plurality of frame members at sides 16^a, bottom 16^b, and top 16^c. These frame members are formed of parallelly disposed slats 17 which are fixedly connected as by staples 18 to cleat members 19 which are perpendicular to the plane of the frames so that when the frames are cooperatively formed into a crate structure, these cleats 19 extend inwardly from frames 16 and overlie a marginal portion of the ends 11 of the superposed boxes 10, as best indicated in Fig. 2. It is preferred that the slat members 17 of the side frames 16^a and bottom frame 16^b be relatively spaced at the respective ends of cleats 19 of those members, and that the intervening area between the slats of the respective members be left open, both for purposes of ventilation and for the saving of material and labor in the manufacture of the skeleton enveloping crate. The top member 16^c of the crate differs from the sides and bottom members thereof in that slats 17 are of sufficient width and number to provide an effective closure covering for the uppermost of the superposed boxes. The crate formed by the frames 16 is of such size that it snugly fits around the sides, top and bottom of the unit formed by the superposed boxes, the ends of the crate being open except for the marginal inwardly extending cleats 19, which are elongated strips beveled at their opposite ends at an angle of substantially 45°, as at 20. The opposing side frames 16^a are hingedly connected to the opposite edges of the bottom frame 16^b and the top frame 16^c is likewise hingedly connected to the upper edge of one of the side frames, the bevel-cut 20 at each end of the cleats permitting the beveled faces to come into contact at an angle of substantially 45° and thus form a supporting rigid brace against each other at the corners of the end of the crate. The hinge member for connecting the above-mentioned members preferably comprises a flexible binding strap or wire 21 which extends completely around the outside of the crate along the outer or rear face of the cleats. Each end 22 of the binding strap or wire has a free portion preferably twisted into a loop so that these ends may be interengaged to lock the frames into crate-forming relation around the superposed boxes. It will be noted that there is a binding wire or strap 21 at each end of the crate, and additional straps also may be provided intermediate thereof if desired.

From the foregoing description it will be observed that when the crate is tightly secured with a snug fit around the superposed boxes, the respective co-planar end walls and sides of the superposed boxes serve to close the open portions of the skeleton crate, and likewise the bottom of the lowermost box provides a bottom for the crate, and the top frame 16^c provides a cover for the uppermost of the superposed boxes, and

therefore serves as a top closure for all of them as a unit.

In making the crate 15, it is preferred that it be made in the form of an elongated mat as best shown in Fig. 3. This permits it to be made in one continuous strip with the cleats at the opposite ends being arranged in longitudinal alignment and the slats being rectangular thereto, and relatively parallel to each other with their ends resting on the longer or rear edge of the beveled cleats. The frame members being thus disposed may be passed through a stapling machine and the binding wire or strap 21 may be stapled to the slats simultaneously with and by the same staples which fixedly secure the slats to the rear face of the cleats.

From the foregoing description, it is noted that individual top members have been eliminated from the separate superposed boxes; that end, side and bottom closure panels have been eliminated from the frames forming the crate; that the disadvantage of crushing the packed products in a single compartment crate have been eliminated; that the advantage of separate individual boxes has been preserved, and the size and shape of the standardized crate has been maintained. It will be further observed that with the bracing of the ends of the crate by beveling the respective ends of the cleats and providing superposed boxes snugly fitting within the crate, the entire structure is made rigid and strong and therefore the material forming the superposed boxes within the crate and also the material of the slats may be very much reduced in thickness as compared with receptacles of present use, since the boxes within the crate reinforce the frames, and the binding strap or wire 21 securely positions the skeleton enveloping crate in close contact with the walls of the enclosed superposed boxes.

It is obvious that in order to open the crate at its destination, it is not necessary to use tools or implements to remove nails and tops of boxes, it being necessary only to clip the binding strap 21 or disengage the ends 22 thereof, and thereby make each packed layer of the product ready and easy to inspect, and providing ready packed trays or boxes which may be disposed of as separate units. It is also to be observed as an incidental advantage, that certain difficulties in labeling have been overcome. Labeling of the individual tray boxes 10 may be done on either the ends or sides thereof after the packing and crating has been completed, thus preventing mutilation of labels in going through the packing process, and since the labels are slightly inset from the plane of the crate they are saved from defacement in transit; also it permits a consignee to place his own brand or proprietary label on the individual tray boxes at destination without uncrating.

We claim:

1. In a packing receptacle, the combination of a plurality of separate superposed open top lug boxes for holding the products to be packed, each box having side and end walls and a bottom, and a skeleton enveloping crate adapted for folding from a flat mat to crate-forming relation around said superposed boxes, said crate including a pair of relatively opposed side frames, a bottom frame and a top frame, each of which has parallelly disposed slats at opposite edges thereof, the top frame having a sufficient number of side-by-side slat members to provide an effective closure for the top of the uppermost box, the slats of said respective frames having their op-

posite ends fixedly secured to relatively disconnected cleats which have relatively adjacent ends beveled and which are perpendicular to the plane of the slat members to which they are secured, said cleats extending inwardly and overlying a marginal portion of the plane of a composite wall formed by the co-planar respective walls of the superposed boxes, and hinge means connecting the side edges of the bottom frame to the lower edges of the respective side frames and connecting the upper edge of one side frame to one edge of the top frame, the height, width and length of the outer dimensions of the superposed boxes as a unit substantially equaling the corresponding inner dimensions of the enveloping crate, the superposed boxes fitting snugly within the crate as a brace against collapsing thereof and whereby the sides and ends of all the boxes and the bottom of the lowermost box provide panels for corresponding abutting frames of the crate.

2. In a packing receptacle, the combination of a plurality of separate superposed open top lug boxes for holding the products to be packed, each box having side and end walls and a bottom, and a skeleton enveloping crate adapted for folding from a flat mat to crate-forming relation around said superposed boxes, said crate including a pair of relatively opposed side frames, a bottom frame and a top frame, each of which has parallelly disposed slats at opposite edges thereof, the top frame having a sufficient number of side-by-side slat members to provide an effective closure for the top of the uppermost box, the slats of said respective frames having their opposite ends fixedly secured to cleats which are perpendicular to the plane of the slat members to which they are secured, said cleats extending inwardly and overlying a marginal portion of the plane of a composite wall formed by the co-planar respective walls of the superposed boxes, and hinge means connecting the side edges of the bottom frame to the lower edges of the respective side frames and connecting the upper edge of one side frame to one edge of the top frame, said hinge means comprising flexible binding straps passing circumferentially around the outside of the skeleton frame overlying the cleats and being secured to the frame by the same means by which the cleats are secured thereto, the height, width and length of the outer dimensions of the superposed boxes as a unit substantially equaling the corresponding inner dimensions of the enveloping crate, the superposed boxes fitting snugly within the crate as a brace against collapsing thereof and whereby the sides and ends of all the boxes and the bottom of the lowermost box provide panels for corresponding abutting frames of the crate.

3. In a packing receptacle, the combination of a plurality of separate superposed open top lug boxes for holding the products to be packed, each box having side and end walls and a bottom, and a skeleton enveloping crate adapted for folding from a flat mat to crate-forming relation around said superposed boxes, said crate including a pair of relatively opposed side frames, a bottom frame and a top frame, each of which has parallelly disposed slats at opposite edges thereof, the side frames and the bottom frame

being free of slats intermediate the said edge slats and the top frame having a sufficient number of side-by-side slat members to provide an effective closure for the top of the uppermost box, the slats of said respective frames having their opposite ends fixedly secured to relatively disconnected cleats having relatively abutting beveled ends and which are perpendicular to the plane of the slat members to which they are secured, said cleats extending inwardly and overlying a marginal portion of the plane of a composite wall formed by the co-planar respective walls of the superposed boxes, and hinge means connecting the side edges of the bottom frame to the lower edges of the respective side frames and connecting the upper edge of one side frame to one edge of the top frame, the height, width and length of the outer dimensions of the superposed boxes as a unit substantially equaling the corresponding inner dimensions of the enveloping crate, the superposed boxes fitting snugly within the crate as a brace against collapsing thereof and whereby the sides and ends of all the boxes and the bottom of the lowermost box provide panels for corresponding abutting frames of the crate.

4. In a packing receptacle, the combination of a plurality of separate superposed open top lug boxes for holding the products to be packed, each box having side and end walls and a bottom, and a skeleton enveloping crate adapted for folding from a flat mat to crate-forming relation around said superposed boxes, said crate including a pair of relatively opposed side frames, a bottom frame and a top frame, each of which has parallelly disposed slats at opposite edges thereof, the side frames and the bottom frame being free of slats intermediate the said edge slats and the top frame having a sufficient number of side-by-side slat members to provide an effective closure for the top of the uppermost box, the slats of said respective frames having their opposite ends fixedly secured to cleats having beveled ends and which are perpendicular to the plane of the slat members to which they are secured, said cleats extending inwardly and overlying a marginal portion of the plane of a composite wall formed by the co-planar respective walls of the superposed boxes and hinge means connecting the side edges of the bottom frame to the lower edges of the respective side frames and connecting the upper edge of one side frame to one edge of the top frame, said hinge means comprising flexible binding straps passing circumferentially around the outside of the skeleton frame overlying the cleats and being secured to the frame by the same means by which the cleats are secured thereto and said binding straps having inter-engageable end portions, the height, width and length of the outer dimensions of the superposed boxes as a unit substantially equaling the corresponding inner dimensions of the enveloping crate, the superposed boxes fitting snugly within the crate as a brace against collapsing thereof and whereby the sides and ends of all the boxes and the bottom of the lowermost box provide panels for corresponding abutting frames of the crate.

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