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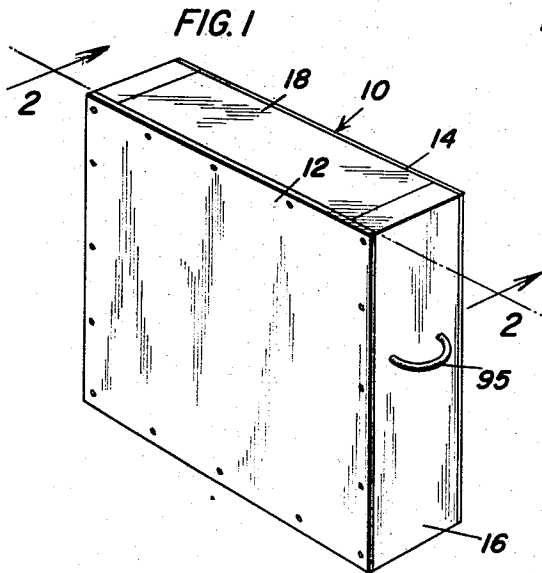
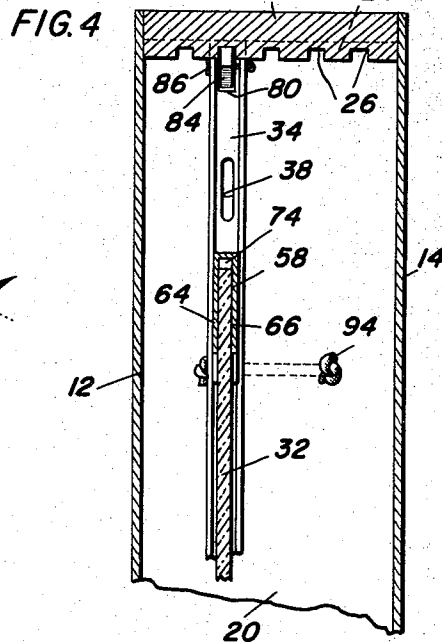
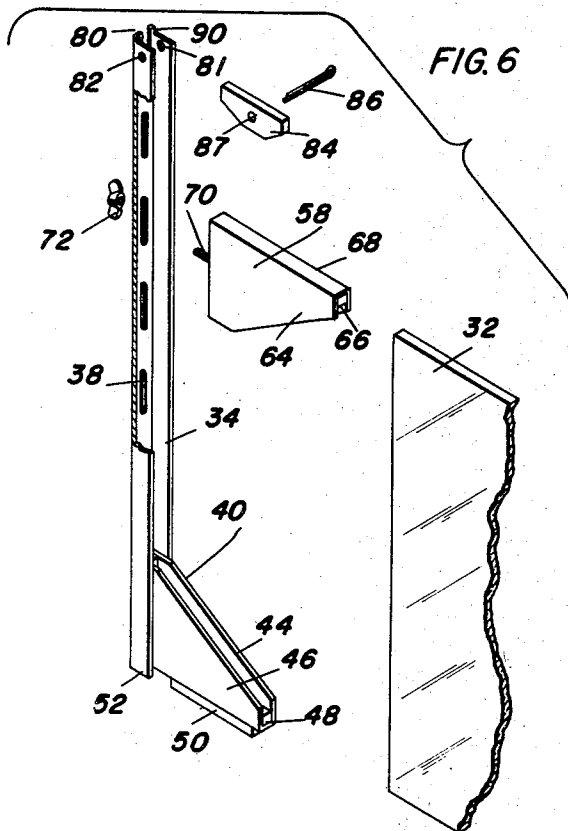
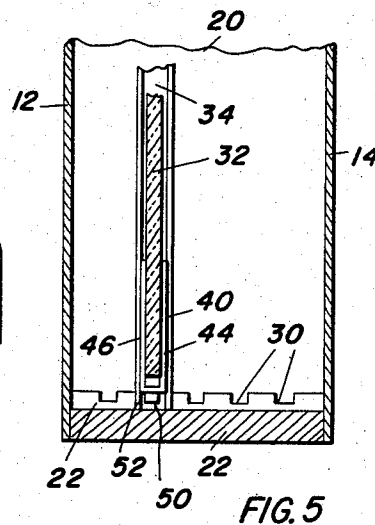
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CRATE FOR SHIPPING GLASS

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2 Sheets-Sheet 1



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CRATE FOR SHIPPING GLASS

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6 Claims. (Cl. 206—1)

This invention relates to a crate for the safe, economical and practical packing and shipment of glass panels.

An object of the present invention is to provide means by which to safely ship glass without the necessity of fibrous filler, excelsior, etc., the shipping crate being of the returnable type and having an adjustable clamp insert to support glass panels which vary through a very wide range of sizes.

A more specific object of the present invention is to provide a returnable glass shipping crate which involves a container that is specially fitted with groups of slots in which to accommodate my new insert within the container. The insert is adjustable to accommodate various sizes of glass and is constructed of two rails, to the lower ends of which there are permanently attached lower corner clamps and to the upper ends of which there are adjustable corner clamps; the adjustably attached clamps being capable of being moved through a wide range of elevations in their rails. All of the clamps are made with inwardly opening pockets with soft material therein to provide for a yielding, flexible bearing surface against which the glass panel abuts. In view of the various slots, the rails are capable of being adjusted inward and outward with respect to each other to accommodate various glass dimensions.

Although it is conceivable that a shipping crate in accordance with my invention may be a disposable item, it is the present intention to have the shipping crate function as a returnable device, and therefore it may be constructed strongly and with good materials. Additionally high quality adjustment means are used with the clamps and the same holds true for the means to separably support the pair of rails in the container.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

Figure 1 is a perspective view of a shipping crate constructed in accordance with the invention, the crate being shown in readymen for transportation;

Figure 2 is an enlarged, sectional view taken on the line 2—2 of Figure 1;

Figure 3 is an irregular sectional view taken approximately on the line 3—3 of Figure 2;

Figure 4 is an enlarged, fragmentary, sectional view taken on the line 4—4 of Figure 2;

Figure 5 is an enlarged, sectional view taken approximately on the line 5—5 of Figure 3; and

Figure 6 is an exploded, perspective view of one of the rails, the two clamps that are supported by the rails, the means for attaching the rail in place within the opposite walls of the container, together with fragment of a glass panel that is adapted to be fitted between the two spaced clamps on the rail.

In the accompanying drawings there is a shipping crate 10 which is constructed in accordance with the invention.

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This shipping crate has front and back panels 12 and 14 respectively and four side walls 16, 18, 20 and 22 respectively. Wall 18 has a plurality of parallel, downwardly opening, transverse slots 24 extending therethrough and opening through the front and rear faces thereof. In addition, there is a group of longitudinal slots 26 which intersect slots 24 and which open downwardly toward wall 22. The intersecting slots 24 and 26 are duplicated in the wall 22. There is a group of slots 28 which are parallel to and which correspond with slots 24, together with a plurality of longitudinal slots 30 which intersect slots 28 and which oppose slots 26 in wall 18.

The glass panel 32 is rigidly supported within container 10 in such manner that it is protected from shocks and jars. Panel 32 is but one example of a very large variety of sizes of glass panels which are capable of being accommodated in container 10. To accomplish this, there is a pair of rails 34 and 36 respectively, each rail being of channel section and having a plurality of slots 38 in the inner wall of each. Clamps 40 and 42 are rigidly attached to rails 34 and 36 near the lower extremities thereof. The clamps have inwardly opening pockets inasmuch as they are each formed of a pair of parallel walls as at 44 and 46, together with a bottom connecting wall 48. The clamps in cross section are generally U-shaped and have the edges angulated. The lower surface of clamp 40 has a tongue 50 which depends therefrom. The lower end of rail 34 has a shoe 52 formed thereon by attaching the clamp to the rail a slight distance from the extreme end thereof. The projecting portion of the rail constitutes a shoe and is of a dimension to fit snugly within a selected one of the slots 28. A flexible liner 54 is disposed within the pockets of the clamps and forms a yielding surface on which to support the edges of glass panel 32. Tongue 50 is of such a dimension that it fits snugly and neatly within a selected one of the longitudinal slots 30, these being shallower than transverse slots 28.

The upper, adjustable clamps 58 and 60 on rails 34 and 36 are shaped quite similar to the lower clamps 40 and 42. For example, clamp 58 is made of a pair of parallel side walls 64 and 66 that are connected by wall 68 to form a downwardly opening glass corner accommodating pocket. Walls 66 and 64 are identical to walls 44 and 46 of clamp 40. However, clamp 58 has a threaded stud 70 protruding from the side edge thereof and a wing nut 72 is adapted to be threaded thereon. Stud 70 is passed through a selected slot 38, thereby roughly positioning clamp 58. Fine adjustment is made by sliding the clamp 58 vertically to the desired position before tightening wing nut 72 securely. The padding or cushion 74 within the pocket of clamp 58 assures that the glass panel 32 will not crack when the clamp is brought very firmly into place thereon.

The means for anchoring the upper end of rail 34 to the wall 18 of the container are dissimilar to the corresponding means for the lower end of rail 34. There is an upwardly opening notch 80 in the back wall of rail 34 and a pair of holes 81 and 82 in the side walls of the rail. Keeper 84 in the form of a centrally apertured plate is adapted to be seated in notch 80, with the outer edge thereof fitted within a selected one of the longitudinal slots 26. Cotter key 86 or the like is passed through the aligned holes 81 and 82 in rail 34 and hole 87 in keeper 84. The holes 81 and 82 are so spaced from the upper end of rail 34 and the hole 87 is so located in keeper 84 that the upper edge of the keeper 84 is located below the upper extremity 90 of rail 34. Accordingly, the upper extremity 90 of the rail functions as a shoe, inasmuch as it fits within a selected one of the transverse slots 24 and may be slid to the selected, adjusted position therein.

In assembly, the tongues are placed in the desired

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selected longitudinal slot while having the whole assembly tilted at an angle so that the upper part of the assembly is on the outside of the crate. The keeper 84 would be removed from the rails 34 and 36 until tongues 50 are in horizontal groove 30 and the upper ends of the rails are properly positioned in the transverse slots 24. The top is left off the crate (Figure 2) and after assembling all the different size of glass and their rails in the bottom 22 and placing the keepers in notches 80 after the rails are in the transverse grooves, the top 18 is fastened on the crate. It is understood that the illustrated crate is capable of holding five glass panels, but that the shipping crate may be made larger or smaller without departing from the invention. Moreover, various alterations may be made herein without departing from the following claims. For example, handles 94 and 95 made of rope or of any other material and configuration may be attached to opposing side walls of the container 10. Such modifications as using lock washers or reversing parts or making simple substitutions may be resorted to.

What is claimed as new is as follows:

1. A shipping crate for one or more various dimension glass panels, said crate adapted to be packed and shipped to a destination at which it is unpacked and returned, said crate comprising a container which has side walls, two opposing side walls each constructed with a plurality of transverse slots and a plurality of longitudinal slots which intersect said transverse slots, a pair of rails, said transverse slots being deeper than said longitudinal slots and capable of receiving the ends of said rails sliding into the open ends of said transverse slots, lower corner clamps secured to said rails in which to accommodate the lower corners of a glass panel, upper corner clamps, means adjustably securing said upper corner clamps to said rails, and keepers secured to said rails and engageable with the slots in one of said walls.

2. A returnable shipping crate for one or more glass panels of various dimensions, said crate comprising a container which has side walls, two opposing side walls each constructed with a plurality of transverse slots and a plurality of longitudinal slots which intersect said transverse slots, the transverse slots being deeper than said longitudinal slots, a pair of rails disposed in selected transverse slots capable of receiving the ends of said rails sliding into the open ends of said transverse slots, lower corner clamps secured to said rails in which to accommodate the lower corners of each glass panel, upper corner clamps, means adjustably securing said upper corner clamps to said rails to accommodate glass panels of any

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size, and each of said clamps having cushions therein and being composed of a pair of spaced parallel walls with connecting walls.

3. A shipping crate for a glass panel, said crate comprising a container which has side walls, two opposing side walls each constructed with a plurality of transverse slots and a plurality of longitudinal slots which intersect said transverse slots, the transverse slots being deeper than said longitudinal slots, a pair of rails disposed in selected transverse slots and capable of sliding into the open ends of said transverse slots, lower corner clamps secured to said rails in which to accommodate the lower corners of a glass panel, upper corner clamps, means adjustably securing said upper corner clamps to said rails, tongues depending from said lower clamps and fitted within one of said longitudinal slots of one wall, each rail having an upwardly opening notch therein, and means including a keeper passed through said notches and fitted in the longitudinal slots of the opposite container wall to aid in holding said rails in the selected, adjusted position.

4. The crate of claim 3 wherein each rail is of channel shaped section, with said adjustable clamps being fitted at least in part between the sides thereof, the inner wall of each rail having a plurality of apertures, said upper corner clamps securing means including threaded members passed through said apertures in said rails.

5. In a shipping crate which has side walls, structural means by which to clamp onto a glass panel, the improvement comprising; a group of transverse slots in a first of said walls, a group of transverse slots aligned with the first mentioned transverse slots and in an opposite wall, all of said slots opening through opposed faces of said walls to provide entrances in which said means are fitted, longitudinal slots in said first and opposed walls and intersecting said transverse slots, and additional means engaged with said structural means retaining said structural means by fitting within said longitudinal slots.

6. The shipping crate of claim 5 wherein certain of said slots are deeper than other of said slots.

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