Oct. 31, 1939. C. R. WEILLER 2,178,213

SHIPPING CONTAINER

Filed Sept. 1, 1937

Fig. 1

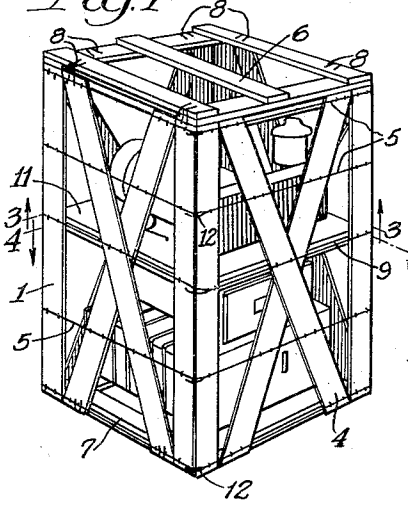


Fig. 2

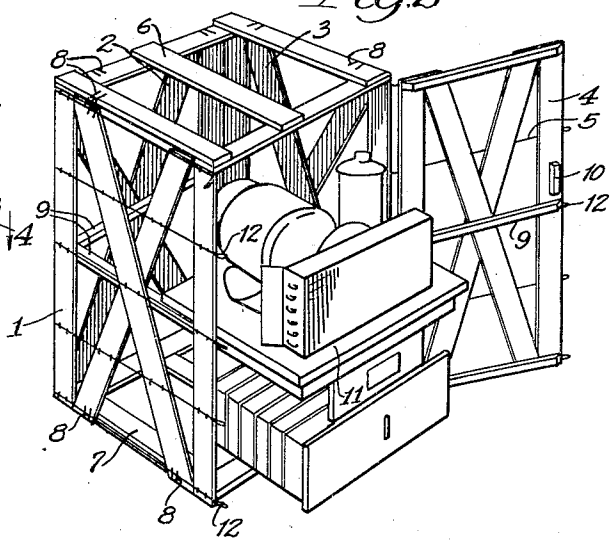


Fig. 3

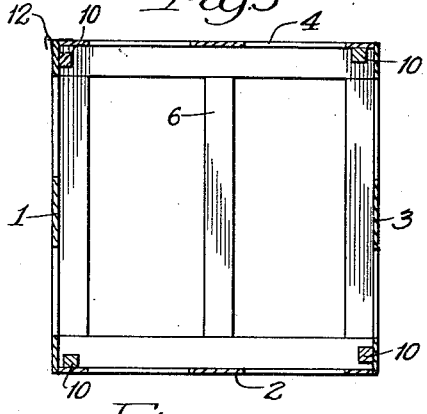


Fig. 4

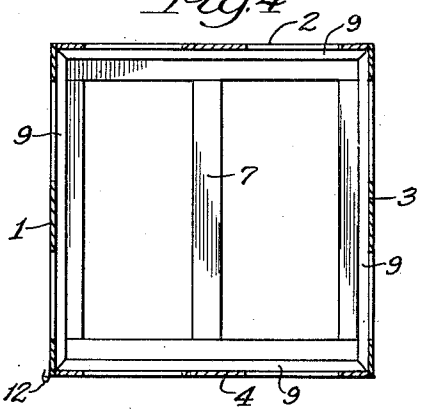
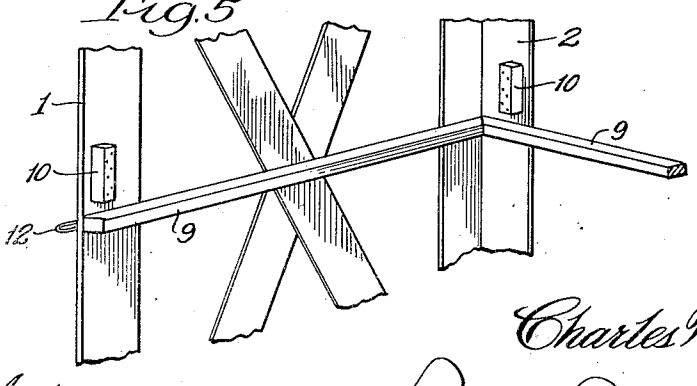


Fig. 5



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SHIPPING CONTAINER

Charles Robert Weiller, Evanston, Ill.

Application September 1, 1937, Serial No. 161,992

3 Claims. (Cl. 217—36)

This invention relates to improvements in shipping containers for devices or constructions embodying an integral mounting platform, and particularly to improvements in folding wire bound shipping containers arranged to be assembled by folding from completely prefabricated sections or elements at the time they are to be packed with the article to be shipped.

The main objects of this invention are to provide an improved prefabricated foldable shipping container for devices which include a mounting platform in their assembly; to provide an improved shipping container for devices having laterally projecting mounting means and arranged so that the devices to be shipped may be slidably inserted and removed from the shipping container like a drawer; to provide an improved wire bound shipping container for mechanisms such as refrigerator units and the like which embody a mounting platform as an integral part of their construction; and to provide an improved foldable wire bound shipping container arranged to slidably receive an assembled mechanical construction and to rigidly support the same against displacement in every direction without the use of independent separately placed and secured blocking means.

A specific embodiment of this invention is shown in the accompanying drawing in which:

Fig. 1 is a perspective view of the improved shipping container packed and ready for shipping.

Fig. 2 is a perspective view of the same with one side unfastened and the article to be shipped partially inserted to illustrate the manner of packing and unpacking the same.

Fig. 3 is a sectional view as taken on line 3—3 of Fig. 1, showing an arrangement of clamping or holding elements for preventing displacement of the article packed in the shipping container.

Fig. 4 is a sectional view on line 4—4 of Fig. 1 showing an arrangement of internal intermediate reinforcing cleats upon which the article packed is supported, and,

Fig. 5 is a fragmentary perspective inside view of one side and one corner of the improved container showing the manner in which integral holding blocks may be positioned for coaction with intermediate reinforcing cleats to rigidly support an article to be shipped.

In the form shown in the drawing my improved shipping container comprises a crate having four vertical side walls 1, 2, 3, and 4 foldably connected together in series by means of external wire bindings 5; and top and bottom sections 6 and 7 removably secured and held in place by means of disconnectible wire fastening elements 8.

As shown, the shipping container is provided, in the usual manner, with a series of internal reinforcing or belly-band cleats 9 extending transversely around the container side walls intermediate the top and bottom ends thereof, the said reinforcing cleats being separately secured to the respective side wall panels 1, 2, 3, and 4 during fabrication of the same and arranged to lie in a common plane when the side walls are folded to box form.

A plurality of individual spaced clamping blocks or members 10 are fixedly secured on certain of the side walls adjacent the shipping container corners, and these clamping blocks or members 10 are spaced a predetermined distance above the reinforcing cleats 9 whereby a channel or groove is provided between the clamping blocks 10 and the reinforcing cleats 9 at spaced intervals around the internal periphery of the container.

This shipping container is particularly designed and arranged for use in shipping mechanical constructions or devices such as refrigerator cooling units, wherein the mechanism is assembled on an integral mounting platform which comprises a component part of the complete assembly; and the container is designed to provide a simple ready-made construction in which the mounting platform, of the unit or device to be shipped, is utilized to rigidly support the unit to be shipped in the shipping container without the necessity of employing separately handled blocking and supporting members which ordinarily must be separately placed into the container at the time the article to be shipped is packed.

For illustrative purposes a refrigeration unit is shown in the drawing, which unit comprises a compressor and radiator assembly mounted on the top surface of a mounting platform or panel 11 and a cooling unit suspended from the bottom face of the mounting platform 11. The mounting platform as shown is a rectangular member providing laterally projecting portions by means of which the assembled compressor and cooling unit may be supported.

The improved shipping container is designed to provide an internal horizontal cross sectional area into which the platform 11 may be received and exactly fit, and the intermediate or belly-band cleats 9 are so located between the top and bottom ends of the container that when the mounting platform 11 is slidably inserted into

the shipping container with the margins of the platform 11 resting upon the upper face of the intermediate reinforcing cleats 9, the mechanical constructions mounted on the platform 11 will be supported and suspended free and clear of the side walls and end sections of the shipping container. The assembled unit and mounting platform is slidably inserted into the shipping container, after the same is assembled with one side panel in open position, in the same manner that one would insert a drawer into a chest of drawers.

Thus, when the open side panel is swung around to closed position and locked by means of the looped ends 12 of the external wire bindings 5, the platform 11 will be supported on all four of its sides by the intermediate reinforcing cleats 9.

The clamping or hold-down blocks 10 which are fixedly mounted on the side walls of the container are spaced above the intermediate reinforcing cleats 9 a distance equivalent to the thickness of the laterally projecting marginal portions of the platform 11. Thus, as the platform 11 is slidably positioned in the shipping container by sliding the same along the intermediate reinforcing cleats 9, the margins will pass through the grooves or channels formed between the clamping blocks 10 and the intermediate reinforcing cleats 9 and the clamping blocks 10 will act against the upper surface of the marginal portions of the platform 11 to prevent vertical displacement of the same. In this manner when the side wall panel 4 which comprises the door of the improved shipping container, is closed, the mounting platform 11 will be securely clamped between the clamping blocks 10 and the intermediate reinforcing cleats 9 and held against vertical displacement so that regardless of whether the shipping container is tipped or inverted during shipment the assembled unit container therein will be rigidly held in the interior of the shipping container and free and clear of the side or end walls of the same.

The shipping container herein described is intended to be a completely prefabricated unit, the side walls being arranged in a flat-folding mat comprising a series of connected panels or wall sections, each of which is provided with the intermediate reinforcing cleats 9 in the usual manner during the fabrication process, the clamping blocks or members 10 being stitched or otherwise secured to the respective side wall panels and in the proper location with respect to the intermediate cleats 9 at the time the folding wall series or mat is constructed.

The end panels, or top and bottom sections 6 and 7, as shown, are separate members and are set in place during the assembly of the shipping container after the side walls have been folded to box form, the end panels or top and bottom sections 6 and 7 being fixed in their proper position by means of the looped wire fasteners 8, and together with the wire fasteners 8 serving to hold the side walls rigidly in box formation.

After the shipping container has been assembled by folding the side walls and securing the end panels in place the container is then ready to receive the unit to be shipped, through the opening provided by swinging backwardly the wall panel 4. After the unit to be shipped has been slidably positioned in the shipping container with the margins of the mounting platform engaged by the clamping blocks 10 and the reinforcing cleats 9, the door panel 4 is then closed and fastened shut by means of the looped ends 12 of the wire bindings 5, and the device is then ready for shipment.

To unpack the article shipped it is only necessary to unloosen the looped ends 12 of the wire bindings, swing the door panel 4 backwardly to open position, and slide the shipping unit out of the container in the same manner as one would pull out a drawer. Thus, the unpacking operation may be quickly and readily accomplished without the necessity of using tools and the empty shipping container may, if desired, be disassembled by unloosening the wire fasteners 8, holding the top and bottom sections in place, removing the top and bottom sections, and then folding up the side walls into a flat mat which permits easy storage or disposal.

The main advantages of this invention reside in the simplicity of the shipping container construction, and the ease with which it may be utilized for shipping preassembled mechanical units, there being no individual or separate blocking elements required to adequately support the unit to be shipped in the container, the container itself providing all of the supporting or block members that may be necessary.

Other advantages lie in the ease and rapidity with which the article to be shipped can be packed and unpacked, thus greatly reducing the cost of packing the devices for shipment, and the labor of unpacking the devices after they have reached their destination. Other advantages are found in the ease with which the container may be disassembled, particularly when the matter of storage or disposal of the emptied container is considered.

Although but one specific embodiment of this invention is herein shown and described, it will be understood that details of the construction shown may be altered or omitted without departing from the spirit of this invention as defined by the following claims.

I claim:

1. The combination with a container having a series of internal reinforcing cleats extending transversely around its side walls intermediate its top and bottom ends, and a plurality of fixed clamping blocks mounted on the inner side of said side walls adjacent the corners thereof and spaced a predetermined distance above said intermediate cleats, of an article arranged to be housed and suspendedly supported in said container and having integrally component laterally projecting portions adapted to rest upon said intermediate cleats and be engaged by said clamping blocks, whereby said article will be held against vertical displacement when so housed through engagement of said blocks and said laterally projecting portions.

2. The combination with an article to be shipped having a medially disposed laterally projecting platform integrally component with said article and on which a portion of said article is permanently supported and from which a portion of said article is permanently suspended, of a shipping container comprising vertical side walls having a series of internal reinforcing belly-band cleats extending transversely around the container intermediate its top and bottom, and a plurality of separate corner clamping blocks mounted on certain of said side walls adjacent the vertical corners of said container and spaced a predetermined distance above said reinforcing cleats, all arranged whereby the margins of said platform may be slidably rested upon and said article suspended from said reinforcing cleats and held against vertical displacement by engagement of

said clamping blocks with the upper surface of said platform.

3. The combination with a refrigerator unit having as a permanently component part thereof a medially disposed laterally projecting platform on which a portion of said unit is permanently supported and from which a portion of said unit is permanently suspended, of a shipping container comprising vertical side walls arranged to fit against the margins of said platform and having a series of internal reinforcing belly-band cleats extending transversely around the container intermediate its top and bottom, and a plurality of separate corner clamping blocks mounted on certain of said side walls adjacent the vertical corners of said container and spaced a predetermined distance above said reinforcing cleats, all arranged whereby the margins of said platform may be slidably rested upon and said refrigerator unit suspended from said reinforcing cleats and held against vertical displacement by engagement of said clamping blocks with the upper surface of said platform.

CHARLES ROBERT WEILLER.