April 28, 1959 J. G. CADILLAC ET AL 2,884,125

SHIPPING BOX STRUCTURE WITH INTERNAL SECURING MEANS FOR THE BOX CONTENTS

Filed Sept. 28, 1956

2 Sheets-Sheet 1

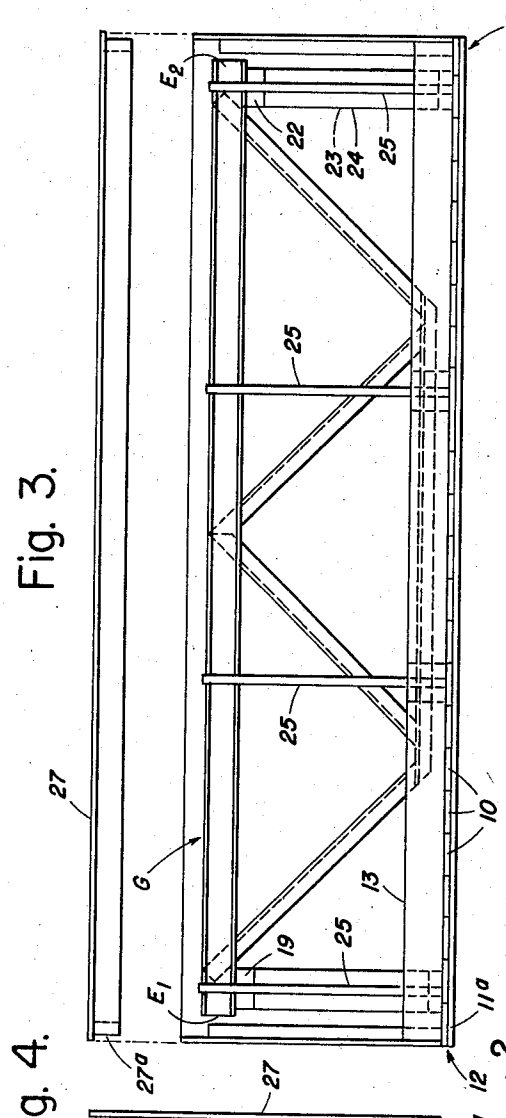


Fig. 3.

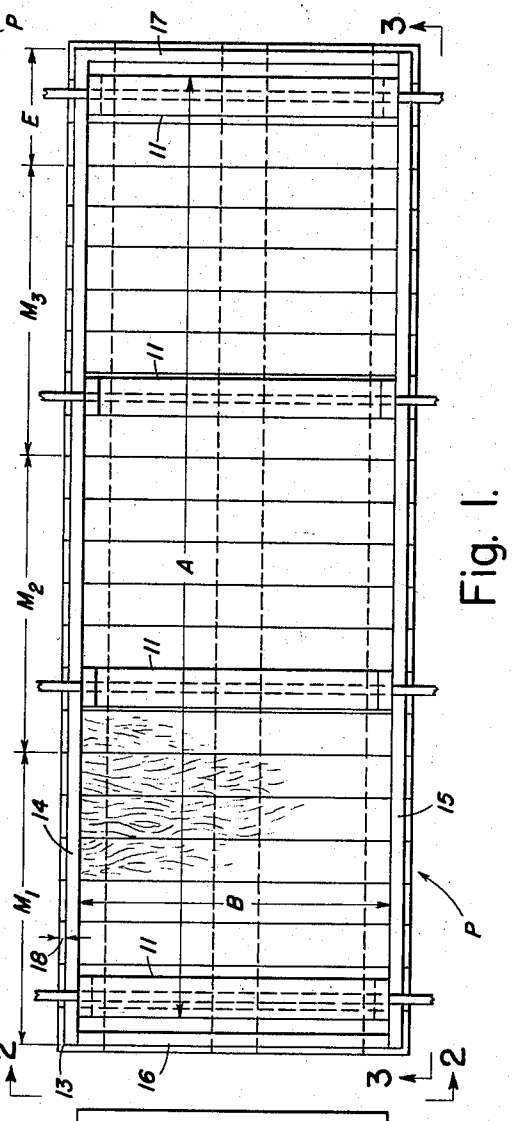


Fig. 1.

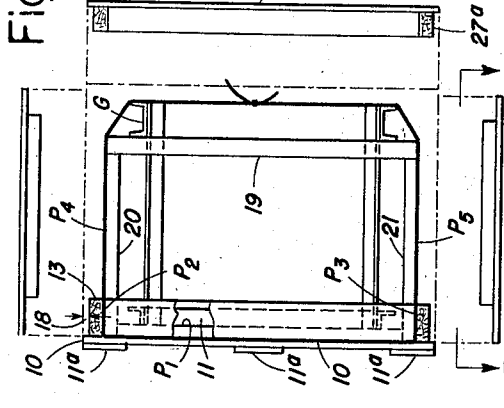


Fig. 4.

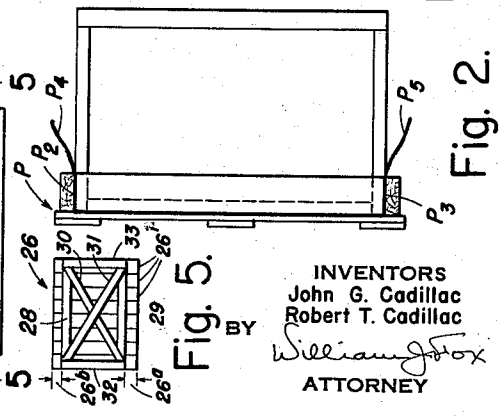


Fig. 2.



Fig. 5.

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Fig. 6.

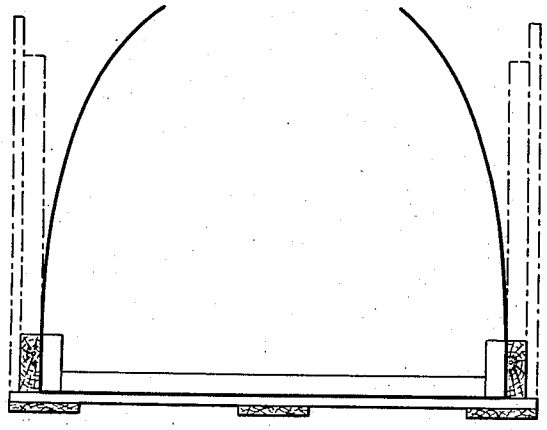
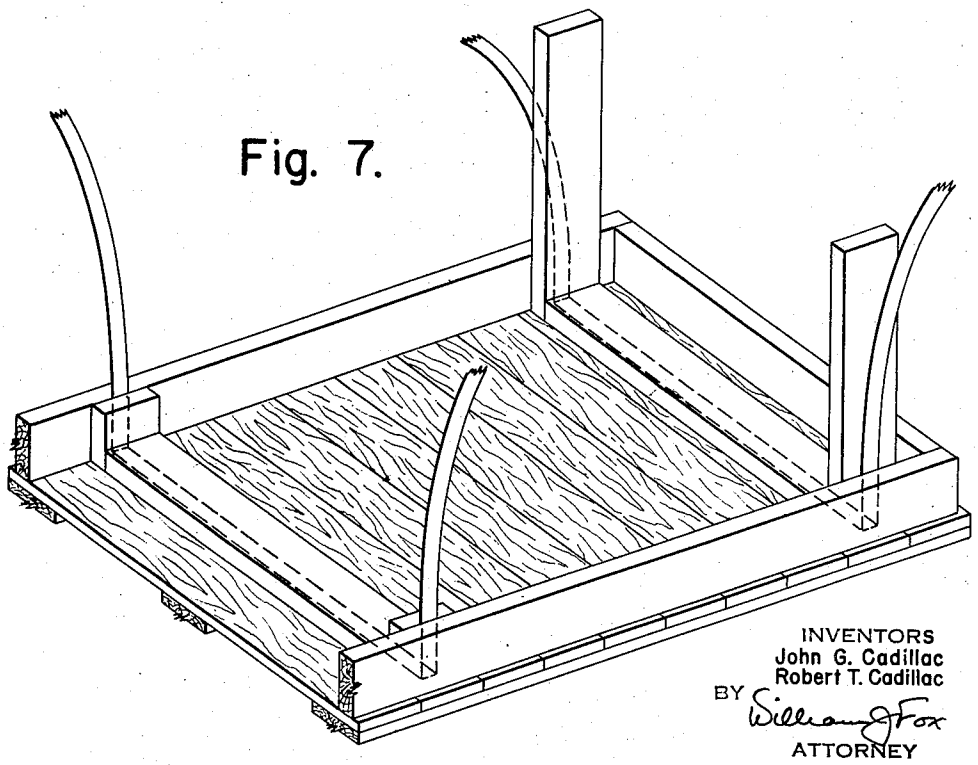


Fig. 7.



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SHIPPING BOX STRUCTURE WITH INTERNAL SECURING MEANS FOR THE BOX CONTENTS

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Application September 28, 1956, Serial No. 612,825

1 Claim. (Cl. 206—46)

This invention relates to packaging and crating of the kind in which the solid object to be crated must be firmly fastened to the bottom structure of the crate.

It is among the objects to provide such fastening means uniting with the bottom structure of the crate, which fastening means are to be ready for immediate use, conveniently and expeditiously to manipulate, inexpensive to construct and to embody into the bottom structure without changes of the basic construction thereof. yet extremely safe, highly compact, and readily adaptable to any shape or contour of the object to be crated.

The invention contemplates employing a procedure of crating whereby the object is placed or seated upon a platform represented by the bottom structure of the crate, and providing upon this bottom structure fastening means in the form of metal packing strips that can be closed, tightened, and secured around the object in such a manner that the same is held firmly seated, prior to erecting the walls and applying the top member of the crate.

The foregoing objects are attained, according to this invention, by providing a bottom structure which comprises a floor composed of longitudinally running floor boards with a series of cross-tie members holding them together at the top. Also fastened upon this floor is a rim portion surrounding the cross-ties and paralleling the rectangular outline of the floor. This rim portion comprises boards placed on edge and fastened edgewise to the floor although spaced a small distance inwardly from the edge of the floor so as to provide thereby a narrow shelf surrounding the rim at the foot thereof.

According to the invention, the fastening means comprise a metal packing strip having an intermediate portion extending the length of a cross-tie member along the bottom thereof, that is confined as an inter-layer between the cross-tie member and the floor, a pair of continuing portions extending up and confined between the respective ends of the cross-tie member and the respective adjoining boards or members of the surrounding rim portion of the bottom structure, and finally a pair of free end portions extending from the preceding pair of continuing portions of the metal packing strip. The free end portions have means for securing them together, tightened over the object being crated.

An understanding of both the details and the principles of this invention may best be had by an immediate reference to the drawings which illustrate the preferred mode of application of the principles of this invention and to the following detailed description of this mode of application of this invention.

Figure 1 is a plan view showing the platform or bottom structure ready for having the object placed thereon.

Figure 2 is a side view taken on line 1—1 of the bottom structure, with the object added and secured in place thereon.

Figure 3 is an end view taken on line 3—3 of Figure 2, with wall panels and top member of the crate added for completeness.

Figure 4 is a detail view taken on line 4—4 of a wall panel of the crate.

Figure 5 is a vertical elevation of the side panels used to complete the box.

Figure 6 is a sectional view of the platform illustrating the packing strips anchored in place.

Figure 7 is an isometric view of a portion of the platform and supported structure.

A platform structure to receive the object to be crated is here collectively designated by the character P, comprising a plurality of longitudinal floor boards 10 and a series of cross-tie members 11 connecting them together to constitute a floor structure or floor 12. This platform P constituting the bottom structure of the crate, further comprises a rim portion 13 fastened to the top side of the floor and surrounding the cross-tie members 11. This rim portion 13 in turn comprises a pair of longitudinal boards or side members 14 and 15, and a pair of transverse boards or end members 16 and 17, all fastened edgewise to the floor structure 12. This rim portion 13 parallels the rectangular outline of the floor structure 12, although spaced a small distance inwardly from the edges thereof, so as to provide a narrow shelf 18 surrounding the rim portion at the foot thereof.

The object being crated is here shown, by way of example, in the form of a girder G, having each end thereof supported upon the platform P. That is to say, the end portion E_1 of the girder rests upon a transverse beam member 19 which in turn is fixedly spaced from the floor 12 by means of a pair of supporting studs 20 and 21 to which the beam member 19 is fixed. Similarly, the opposite end E_2 of the girder G rests upon a transverse beam member 22, which in turn is fixedly spaced from the floor 12 by a pair of supporting studs 23 and 24 to which the beam member is fixed.

It will be noted that the load supporting transverse members 19 and 22 are disposed within the clear area defined by the rim portion 13, the area being indicated by its length "A" and its width "B."

Means for securing the girder G_1 thus seated upon the platform P, comprise a plurality of metal packing strips 25 which are embodied and anchored in the platform structure P by way of being combined and associated in a special manner with the cross-tie member 11. That is to say, such a securing strip 25 comprises an intermediate portion P_1, extending along the underside of a cross-tie member 11 and thus confined as an inter-layer between the cross-tie member 11 and the floor boards underneath.

The securing strip further comprises a pair of continuing portions P_2 and P_3, extending up from each respective end of the intermediate portion P_1, the portions P_2 and P_3 being confined between the ends of the cross-tie and the adjoining side members of the rim portion 13 of platform P. From each continuing portion P_2 and P_3 there extends a non-confined end portion P_4 and P_5 respectively, which end portions are connected or locked together in a suitable manner well known per se in packaging, whereby the securing strip 25 is closed and tightened across the girder G.

Again, it will be noted that the fastening means are disposed within the inside, A and B, defined by the rim portion 13. Consequently, with the girder G in place and secured by the fastening means, the crating can be readily completed by erecting wall panels 26 by placing them upon and securing them to the peripheral shelf 18 of platform P.

A top portion 27, having a rim 27*a* may then be placed and secured or nailed in place in the manner indicated.

The panel 26 comprising vertical boards 26_1 presents a smooth outer face, but has cross-ties 28 and 29 and diagonal bracing 30 and 31 at the inner face, as well as vertical joints 32 and 33, so disposed as to leave unencumbered a bottom end portion 26*a* and a top end portion 26*b*, to accommodate the respective rim portions 13 and 27*a* when they are assembled to complete the crating as is indicated by the dot-and dash line portion of the parts in Figure 3. The arrangement of a row of panels 26 to constitute a side wall is further indicated in the plan view of Figure 1 where such panels are alternatively designated as modules M_1, M_2, and M_3, with an odd portion E left depending upon variations occurring in the length of the crate or box as needed.

We claim:

In a package which comprises a crate and a crated object, the combination of a platform structure constituting the bottom structure of the crate comprising a floor substantially rectangular in form, a series of cross-tie members on top of said platform structure, a rim portion surrounding the cross-tie members and paralleling the rectangular outline of the floor and extending upwardly from said floor, said rim portion being spaced a small distance inwardly from the edge of the floor to provide a narrow shelf surrounding the rim portion at the foot thereof, said rim portion including a pair of longitudinal members and a pair of transverse end members, said cross-tie members adjacent each of said transverse end members having the end portions thereof spaced from the adjacent longitudinal sill members, an upstanding supporting stud disposed between and in contact with the end of each of said last-mentioned cross-tie members and the adjacent longitudinal sill member, said supporting studs extending upwardly a substantial distance above said longitudinal sill members, a transverse beam member supported between and in spanning engagement with the upper ends of each pair of stud members associated with one of said cross-tie members, at least one cross-tie member disposed intermediate said last-mentioned cross-tie members and including opposite end portions extending upwardly throughout the extent of and in engagement with the adjacent longitudinal sill members, an object supported upon said transverse beam members, a plurality of packing strips each having an intermediate portion extending the length of said cross-tie members as an interlayer between said cross-tie members and the floor, said packing strips being anchored to said cross-tie members, strip portions continuing from the respective ends of said intermediate portions of at least one of said strips and extending up and confined between the respective end portions of a cross-tie member and the respective adjoining parts of said surrounding rim portions, strip portions continuing from the respective ends of said intermediate portions of the packing strips associated with the cross-tie members adjacent said transverse end sill members and extending up and confined between the supporting stud members and the respective adjoining parts of said surrounding end portions, each of said strips having free end portions extending from the respective continuing portions, the free end portions of each of said strips being connected with one another for securing each of said strips tightly about said object, said strips being disposed within the area surrounded by said rim portions such that said rim portion is unencumbered by said strips, wall panels erected upon said shelf and fastened to the bottom structure and a top structure having a rim portion spaced inwardly from the outer edges thereof, said top structure being fastened to the top edge portions of said wall panels, said wall panels having bracing means at the inner face thereof and disposed to extend into and lodge within the vertical space between the rim of said bottom structure and the rim of said top structure.

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