April 19, 1938. T. R. WINCHELL 2,114,643

PACKING BOX AND THE LIKE

Filed June 20, 1936

Fig. 1.

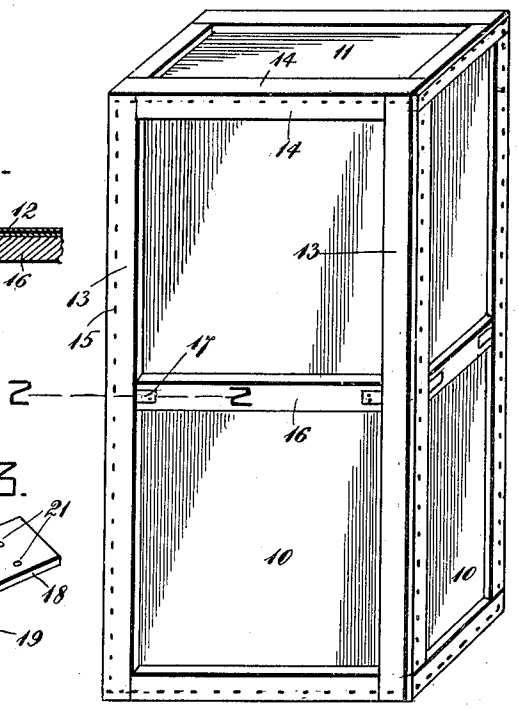


Fig. 2.

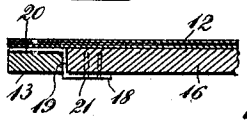


Fig. 4.

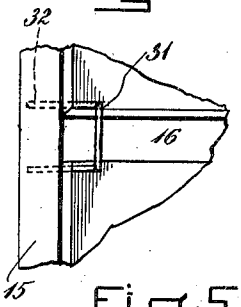


Fig. 5.

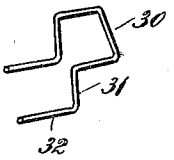


Fig. 3.

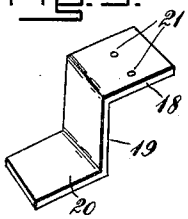


Fig. 6.

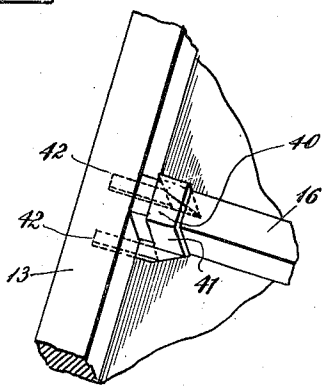
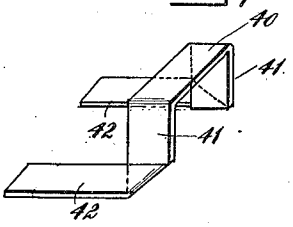


Fig. 7.



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PACKING BOX AND THE LIKE

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Application June 20, 1936, Serial No. 86,387

4 Claims. (Cl. 217—69)

This invention relates to packing box and crate construction and has more especial reference to such containers having their ends and sides formed of plywood, fibreboard, corrugated paper, and the like, although it is applicable also to box construction of the usual type.

It has been found in practice that packing boxes and the like, especially those made of plywood or other relatively thin material, such as fibreboard and corrugated paper, for example, bulge outwardly at the midportions of their sides in transit especially when they are heavily loaded. To prevent such outward bulging, reinforcing cleats are disposed transversely of the sides of the box substantially midway between the ends thereof and are sometimes secured at their ends by long nails or other hold-fast means to the abutting side cleats. This arrangement, however, does not eliminate the difficulty heretofore experienced for the reason that the outward force exerted on said reinforcing cleats is frequently sufficient to loosen the connection between the reinforcing cleats and the side cleats. Sometimes said reinforcing cleats are secured directly to the sides of a plywood box by nails driven through said sides into the cleats, but said nails often become loosened in transit and work out of the wood and into the box, injuring the contents thereof.

The object of my invention, therefore, is to provide a simple means for overcoming the difficulty above mentioned whereby the reinforcing cleats aforesaid may be held securely in position without the use of nails, screws, or the like, for attaching the reinforcing cleats to the side-securing cleats.

The preferred form of my invention comprises a Z-shaped metallic member which may be formed of sheet iron or any other suitable material disposed at the respective ends of the reinforcing cleats and each having one portion overlying a reinforcing cleat and another portion underlying the side-securing cleat abutting such reinforcing cleat, the intermediate portion of said metallic member being disposed between the end of the reinforcing cleat and the inner edge of the side-securing cleat. The metallic member aforesaid need not necessarily be Z-shaped and may be formed of wire bent in such form as to have a portion thereof disposed across the outer surface of a reinforcing cleat near one end thereof, side portions embracing said cleat and end portions underlying a side-securing cleat. Another alternative comprises a sheet iron band bent into such form as to embrace three sides of a reinforcing cleat and terminating in parallel end portions underlying the adjacent side-securing cleat.

One embodiment of my invention is shown in the drawing that accompanies and forms a part of this specification in which

Figure 1 is a perspective view of box construction embodying my invention.

Fig. 2 is a fragmentary section taken on the line 2—2 of Fig. 1.

Fig. 3 is a perspective view of one form of metallic reinforcing-cleat securing-member formed from a metallic strip.

Fig. 4 is a perspective view of a portion of box construction provided with another form of metallic member for securing the reinforcing cleat to the side-securing cleats.

Fig. 5 is a perspective view of the metallic member shown in Fig. 4.

Fig. 6 is a perspective view of a portion of box construction showing another form of metallic-securing member, and

Fig. 7 is a perspective view of the securing-member shown in Fig. 6.

In the particular drawing selected for more fully disclosing the principle of my invention, 10 represents the sides and 11 one end of a box formed of plywood or other relatively thin material, such as fibreboard, corrugated paper, and the like, although heavier material may be employed. In the present instance, the sides and ends are shown as formed of plywood 12 to the edge portions of which are attached side-securing cleats 13 and end-securing cleats 14, each juxtaposed pair of which are held together by nails, indicated at 15, or other suitable holdfast means. Reinforcing cleats 16 are disposed transversely of each of the box sides substantially midway between the ends thereof and each said reinforcing cleat abuts the edges of a pair of side-securing cleats.

In Fig. 1 the metallic members above mentioned are indicated at 17 and each consists of a Z-shaped strip having its top portion 18 overlying the outer surface of a reinforcing strip, its intermediate portion 19 disposed between an end of a reinforcing strip and the inner edge of a side-securing strip and another portion 20 underlying said side-securing cleat. If desired, the portion of the metallic member overlying the reinforcing cleat may be held in position with respect to the latter by nails or other holdfast means 21.

It has been found as the result of extensive practical use that the metallic reinforcing-cleat securing-member above described is effective in

preventing the breaking away of a reinforcing cleat from its abutting side-securing cleats, even although the box or cleat is loaded to its full capacity and is subjected to rough treatment in transit.

Two alternative forms of my invention are shown in Figs. 5 and 6. In Fig. 5 a wire is bent to afford a transverse portion **30** overlying a reinforcing cleat and having side portions **31** that embrace said cleat, which side portions terminate, respectively, in the ends **32** that underlie the side-securing cleat.

In Fig. 5 a metallic strip is bent in such manner that the portion **40** thereof and the side members **41** embrace a reinforcing strip and the two parallel end portions **42** underlie a side-securing strip.

It will be obvious to those skilled in the art that the metallic member aforesaid may be given a variety of forms different from those specifically described herein.

I claim:

1. A box comprising sides and ends of relatively thin material, securing cleats attached to the edge portions of said sides and ends, holdfast means securing each juxtaposed pair of securing cleats together, reinforcing cleats disposed transversely of each of said sides substantially midway between the ends thereof, each said reinforcing cleat abutting the securing cleats attached to the edge portions of one of said sides, and metallic members, each having one portion overlying a reinforcing cleat, the overlying portion being provided with means for securing said reinforcing cleat against relative movement and another portion underlying the securing cleat abutting such reinforcing cleat, and being inserted between such securing cleat and the thin material.

2. In a box construction comprising sides and ends of relatively thin material, side-securing cleats and abutting reinforcing cleats, a Z-shaped metallic reinforcing-cleat securing-member overlying a reinforcing cleat and underlying a side-securing cleat, the overlying portion of said Z-shaped member being provided with means for securing said reinforcing cleat against relative movement and the underlying portion thereof being disposed between the securing cleat and the thin material.

3. In a box construction comprising sides and ends of relatively thin material, side securing cleats and abutting reinforcing cleats, a wire reinforcing securing member having a portion overlying a reinforcing cleat, portions embracing the sides of said reinforcing cleat and end portions underlying a side securing cleat and being disposed between the cleat and the thin material.

4. In a box construction comprising sides and ends of relatively thin material, side securing cleats and abutting reinforcing cleats, a metallic strip having a portion overlying a reinforcing cleat, portions embracing the sides of said reinforcing cleat and end portions underlying a side securing cleat and being disposed between the cleat and the thin material.

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