May 28, 1940. J. H. WEBB 2,202,545

CLEAT FASTENING DEVICE FOR BOXES

Filed Jan. 16, 1939

Fig. 1

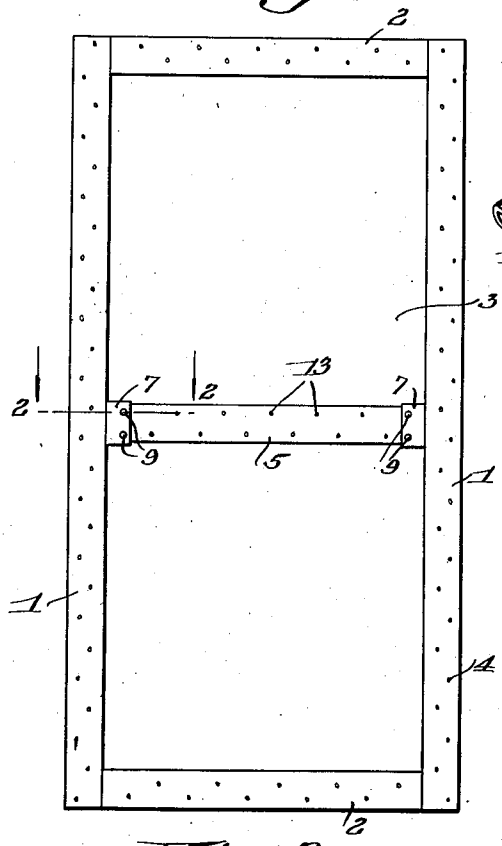


Fig. 2

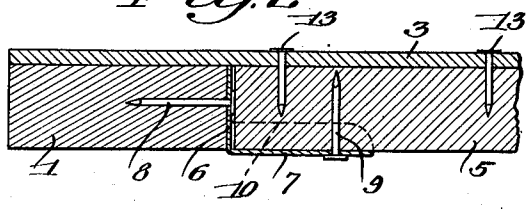


Fig. 3

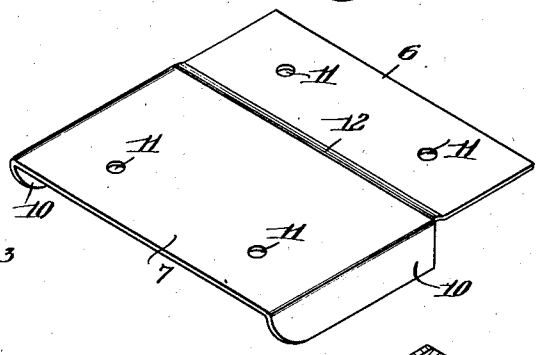


Fig. 4

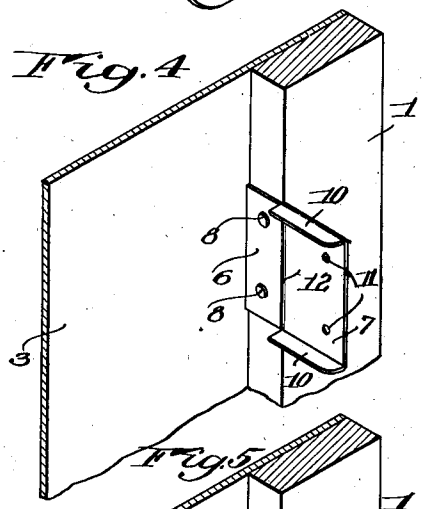
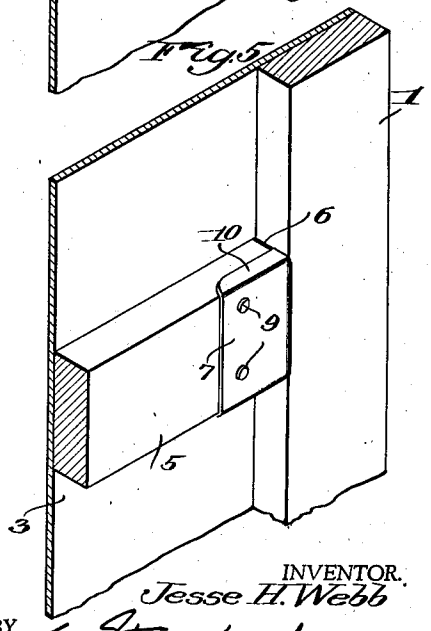


Fig. 5



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CLEAT FASTENING DEVICE FOR BOXES

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1 Claim. (Cl. 217—70)

This invention relates to a cleat fastening device for boxes and method of applying the same, with more particular reference to the type of box construction that includes walls made from fibreboard, plyboard, or the like, held together by means of side and end cleats, with reinforcing cleats extending between the side cleats at points intermediate the end cleats, and it has for its object to provide a simple, practical, and inexpensive device for fastening the reinforcing cleats rigidly and permanently in relation to the side cleats.

While various types of construction have been heretofore proposed for this purpose, it is a more particular object of the invention to afford a device of the character mentioned that can be easily and quickly applied, and which when in place locks or retains the reinforcing cleats more securely attached to the side cleats than heretofore, and in such a manner as effectively to prevent bulging or loosening of the reinforcing cleats.

Another purpose of the invention is to provide a construction such that one cleat engages and holds in place the securing means that attach the fastening device to the other cleat.

A further object of the invention is to afford a construction that is generally applicable in the manufacture of boxes, wherever there is need for attaching the end of one cleat to the edge of another cleat in such manner as to hold the parts securely in the desired relationship.

To these and other ends, the invention consists in the construction and arrangement of parts that will appear clearly from the following description when read in conjunction with the accompanying drawing, the novel features being pointed out in the claim following the specification.

In the drawing:

Fig. 1 is a view in side elevation of a box constructed in accordance with one embodiment of the invention;

Fig. 2 is a sectional view on the line 2—2 of Fig. 1;

Fig. 3 is a perspective view of the fastening device, showing its form or shape before being applied to a box;

Fig. 4 is a perspective view partially broken away, showing a wall and side cleat of a box, and illustrating the manner in which the fastening device is initially applied to a side cleat, and

Fig. 5 is a similar perspective view of a portion of a box showing a reinforcing cleat positioned with one end against the side cleat, and the fastening device bent over the reinforcing cleat and attached thereto.

While the invention may be applied in various ways to secure together abutting cleats or other equivalent elements of a box, it is here shown as applied to a conventional type of box that includes side cleats 1 and end cleats 2 which are attached to a wall 3 of plyboard, fibreboard, or the like, by nails or other suitable fastening devices 4. It will be understood that the remaining sides and ends of the box are similarly constructed of plyboard or fibreboard walls secured to side and end cleats which are suitably nailed to the side and end cleats shown in Fig. 1, as usual in this class of construction.

5 designates a reinforcing cleat located between the side cleats 1, parallel to and preferably intermediate the end cleats 2, for the purpose of strengthening the wall 3 and preventing its outward bulging when the box is filled with merchandise. It is important and especially desirable to secure the reinforcing cleat 5 to the side cleats 1 so as to hold these parts permanently in the position shown and prevent their separation or loosening, and consequent bulging of the reinforcing cleat 5.

To accomplish this, I employ a fastening device preferably formed of sheet metal and comprising the two right-angle portions 6 and 7. The portion 6 lies between the edge of the side cleat 1 and the end of the reinforcing cleat 5 and is attached to the adjacent surface of the side cleat 1 by nails or securing means 8 while the right-angle portion 7 overlies the outer surface of the reinforcing cleat 5 and is attached thereto by the nails or securing means 9. The portion 7 may also be provided with angular flanges 10 which extend over and embrace the edges of the reinforcing cleat 5, as shown in Fig. 5.

The fastening device is preferably formed as shown in Fig. 3, with openings 11 to receive the nails or securing means, although the securing means may be formed integral with the fastening device if desired. The fastening device is preferably creased as at 12 to facilitate bending the portions 6 and 7 from the flatwise relation shown in Fig. 3 to the final right angular relation shown in Fig. 2. The portion 6 is preferably of a width corresponding to that of the side cleat 1, and the device is initially applied by locating the portion 6 against the edge of the side cleat 1 with the innermost edge of the portion 6 abutting the plyboard or fibreboard wall 3, as shown in Fig. 4. The portion 6 is secured in this position by driving nails 8 through the openings provided for this purpose in the portion 6.

It will be understood that similar fastening

devices are applied to opposite side cleats, in position to receive both ends of a reinforcing cleat, and after the devices are applied and attached as shown in Fig. 4, the reinforcing cleat 5 is positioned with its ends abutting the portions 6 of the fastening devices. Following this, the portions 7 are bent over in the manner shown in Fig. 5, and attached to the reinforcing cleat 5 by means of the securing devices or nails 9. The wall 3 may be further secured to the reinforcing cleat 5 by nails or attaching devices 13 driven from the inside of the box or inside surface of the wall therethrough and into the reinforcing cleat 5, as shown in Fig. 2.

It will be seen that when the reinforcing cleat is positioned and secured in the manner described, its ends lie against the nails 8 or other securing devices and effectively prevent their loosening or being removed from the side cleats 4, so that a permanent and rigid attachment between the fastening devices and the side cleats is definitely assured. At the same time, any loosening or relative movement of the reinforcing cleat 5 is effectively prevented by the bent-over portion 7 and the securing devices 9, so that once the fastening device is secured in place in the manner described, there is little likelihood of any loosening of the reinforcing cleat 5 or bulging of the attached wall 3 of the box in the course of its ordinary use.

While the invention has been described with reference to a certain detailed embodiment, it is not confined to the particular construction shown, and this application is in tended to cover such other modifications or departures as may come within the purposes of the improvement or the scope of the following claim.

I claim:

In a box structure comprising walls of thin material, the combination with side cleats extending endwise and secured to said walls, and a reinforcing cleat also secured to said walls and extending crosswise between two side cleats, of fastening devices at both ends of the reinforcing cleat securing it between the two side cleats, each of said fastening devices including two right-angle portions, one of which right-angle portions is located against one edge of a side cleat, said last mentioned right-angle portion extending entirely across said edge of the side cleat and having a length equal to the width of the reinforcing cleat, securing means attaching said right-angle portion to said edge of the side cleat, the ends of the reinforcing cleat abutting the right-angle portions of the fastening devices adjacent thereto and being coextensive with said right-angle portions, the other of said right-angle portions overlying the outer face of the reinforcing cleat and extending entirely thereacross, securing means attaching the last mentioned right-angle portion to the outer face of the reinforcing cleat, and flanges extending inwardly from the ends of said last mentioned right-angle portion and embracing the opposite edges of the reinforcing cleat, said flanges extending entirely across the ends of said right-angle portion and the inner ends of said flanges abutting the adjacent edges of said first mentioned right-angle portions.

JESSE H. WEBB.