United States Patent

Hunt

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[54] EDGE CLIP FOR PACKAGES

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[52] U.S. Cl. ..... **206/60,** 206/65 B, 217/69

[51] **Int. Cl.** **B65d 71/04**

[58] **Field of Search** ..... 206/60, 65 B; 217/66, 68, 69; 24/16, 19; 100/1

[56] **References Cited**

UNITED STATES PATENTS

749,834	1/1904	Beisel	217/66
2,331,585	10/1943	Walker	206/60
2,266,181	12/1941	Epps	217/69 X

FOREIGN PATENTS OR APPLICATIONS

739,298	7/1966	Canada	217/66

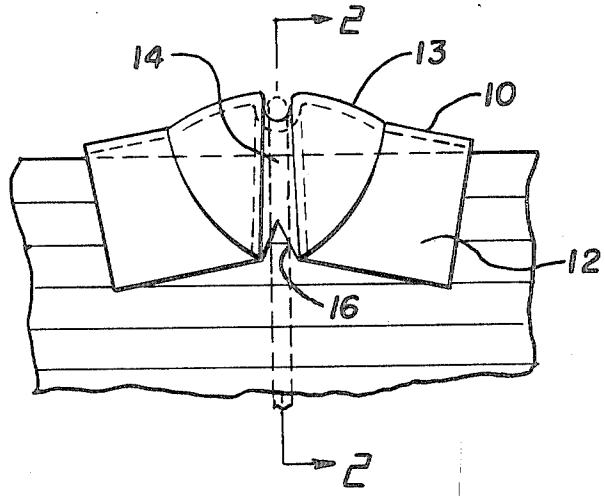
Primary Examiner—Leonard Summer

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[57] **ABSTRACT**

A clip for a package to prevent the binding element from damaging the edge of the package, said clip comprising an L-shaped clip for fitting over the edge and a groove formed in a raised portion of the clip to receive the binding element so that as that element is tensioned the clip is deformed to draw the upper edges of the groove together to secure the clip to the element.

4 Claims, 4 Drawing Figures



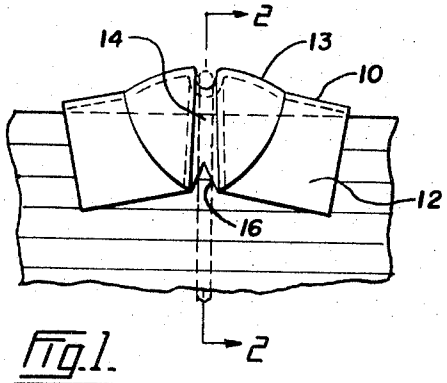


Fig. 1.

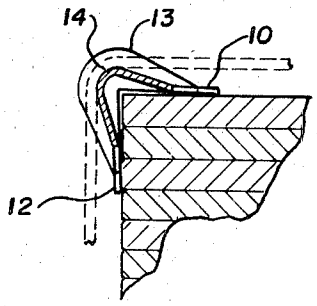


Fig. 2.

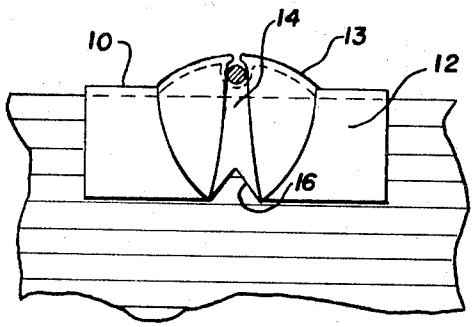


Fig. 3.

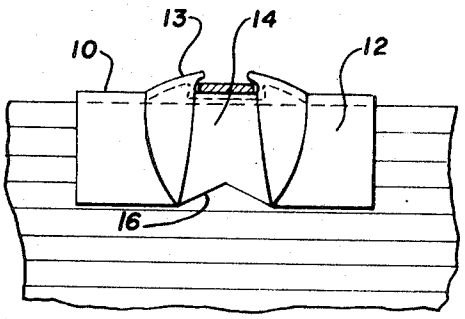


Fig. 4.

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EDGE CLIP FOR PACKAGES

BACKGROUND OF THE INVENTION

This invention is concerned with a clip for protecting the edges of packages from damage which might otherwise be caused by the binding elements used for binding the contents of the package together. It is to be appreciated that the expression "packages" is used herein generically and includes bundles, bales and the like which are bound by such binding elements as, for example, stripping or wire.

It is a common practice to provide clips at the edges of packages over which a binding element is passed so that when the binding element is tensioned to secure the packages it is not drawn into the contents of the package to cause damage. A typical example of such a clip is disclosed in U.S. Pat. No. 2,331,585 (R. A. Walker).

These clips are disposable after one use and a problem has arisen that as the binding is cut to open the package the clips fall away and they are not always collected to be put out of harm's way and cause damage to footwear and, more expensively, to the tires of vehicles moving in the unloading area.

It has been proposed that to avoid this difficulty the clip should be secured onto the binding element so that as the strapping or wire binding the package is broken, the clips remain on the strapping or wire and can be discorded with the binding element. One proposal for effecting this is to have a pair of tabs pressed from the material of the clip and these are located over the strapping on the clip and are hammered down to secure the binding element to the clip. The problem with this is that the clamps are not always hammered down properly or often in the hammering process are snapped thus freeing the binding element. If the clamps are not hammered down the present a sharp projection which of course is dangerous.

SUMMARY OF THE INVENTION

According to this invention there is provided an edge clip having two surfaces inclined to each other and adapted to be located over an edge of a package and a domed section raised from said surfaces and extending over the intersection of those surfaces and a groove formed in the dome for receiving a binding element, the arrangement being such that tension applied to a binding element located in that groove causes the upper edges of the groove to be pulled over the element to secure the clip to the element and yet the base of the groove is not drawn down so far as to cause damage to the edges of the package and to the contents of the package.

It is preferred that the groove be so dimensioned that the binding element will be movable longitudinally through the groove i.e., the clip will be slidable along the binding element after deformationing the clip. To effect this the groove is made deeper and wider than the binding element.

It is also preferred that the edges defining the groove should diverge from the corner edge of the clip so that during the tightening operation the binding element does not bind on those edges.

BRIEF DESCRIPTION OF THE DRAWINGS

Two embodiments of this invention are illustrated in the accompanying drawings in which,

FIG. 1 is an elevation of an edge clip according to this invention located at an edge of a package,

FIG. 2 is a section on the line 2—2 of FIG. 1,

FIG. 3 is an elevation similar to the elevation in FIG. 1 but showing a wire binding element located within the groove after the binding element has been tensioned, and

FIG. 4 is an elevation similar to the elevation in FIG. 1 but of an embodiment for use with strapping.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

In the embodiment of FIG. 1, 2 and 3 there is a first plate or surface 10 adapted to overlie one of two adjacent surfaces of the package and a similar plate or surface 12 adapted to overlie the other of the two adjacent surfaces of the package. The angle included between the two surfaces for a right-angled edge of a package is somewhat less than 90°, say about 85° so that before the clip is deformed in the binding operation it has only line contact with the edges of the package. This avoids the difficulty which might otherwise arise, that the surface would lift from the package as the clip is deformed during tensioning of the binding element.

There is a central domed or raised portion 13 which extends over the edge which is to be protected and is raised from the plane of the surfaces 10 and 12, and extending over and formed in the dome is a groove indicated at 14 which converges from the outer edges of the two surfaces 10 and 12 towards the ridge between those two surfaces. The groove is made deeper and wider than the binding element which is to be accommodated within it for a purpose to be described hereinafter. The surfaces or plates 10 and 12 are inclined upwardly from outer ends thereof towards the central domed portion 13, as clearly shown in FIG. 1.

The outer edges of the surfaces 10 and 12 of the clip have V-shaped cuts 16 opposite to the ends of the groove 14 and these serve a purpose to be described hereinafter.

It will be appreciated that the clip is located on an edge of the package to be bound in the manner indicated in the drawings and then the wire binding element is located in the groove. As the tension is increased on the wire the groove is pulled downwardly and the clip opens out until the two surfaces 10 and 12 are in face-to-face contact with the respective ones of the adjacent faces of the package. Further tensioning will cause the upper edges of the groove 14 to be drawn inwardly towards each other and prevent the extraction of the binding element from the groove. This condition is illustrated more clearly in FIG. 3.

The groove is so dimensioned that when it is drawn into the position shown in FIG. 3 the wire has a free running passage through the groove.

The dome is raised above the plane of the surfaces 10 and 12 to such an extent that when the wire is fully tensioned as illustrated in FIG. 2 the base of the groove is not drawn down so far as to damage the edge of the package.

To facilitate the bending over of the upper edges of the groove to secure the wire, the notch 16 is formed in the surfaces 10 and 12 and this prevents the wire from drawing the metal of the edges of the groove and bursting through the base of the groove to damage the edge of the package.

The embodiment illustrated in FIG. 4 of the drawings, functions in much the same fashion as that in FIGS. 1 to 3 but of course the groove is made appropriately wider and shallower to accommodate a strapping rather than a wire binding element.

It is to be appreciated that other minor modifications of the clips illustrated in the drawings can be made which would not deviate from the scope of the invention, for example it is desirable for some applications to press spikes from the material of the clip which dig into the surfaces of the package to either side of the corner edge and such an application is in lumber where the relatively small hole of the spike can be tolerated but the damage to the edges caused by the binding could not.

Further, in some instances it might be required to strengthen the clip and this can be done readily by pressing reinforcing ribs into the surfaces 10 and 12.

What is claimed is:

1. An edge clip for a package, comprising two connected plates angularly arranged relative to each other to overlie adjacent surfaces of a bundle at a corner thereof, a domed section raised from both of said plates centrally thereof, said plates being inclined upwardly from opposite ends thereof

towards the domed section, and a groove formed in the domed section and extending transversely of the plates towards outer edges thereof for receiving a binding element, said groove being deeper and wider than said binding element, the side walls of the groove normally being substantially parallel to each other and when tension is applied to the binding element said plates being drawn towards the bundle and causing said side walls to be drawn inwardly towards each other over the binding element in the groove so that the clip remains on the binding element when the tension is released.

2. A clip as claimed in claim 1 in which said two plates include an angle therebetween of slightly less than 90°.

3. A clip as claimed in claim 1 including notches in said plates and extending inwardly from side edges thereof and in line with ends of said groove.

4. A clip as claimed in claim 3 in which each of said notches is substantially V-shaped.

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