

March 17, 1953

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2,631,723

CORNER CUSHIONING PACKAGING DEVICE

Filed Dec. 8, 1949

2 SHEETS—SHEET 1

Fig. 1.

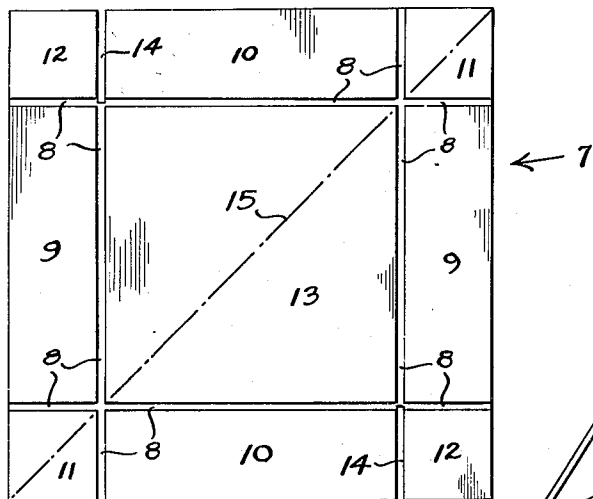


Fig. 2.

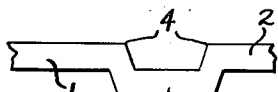
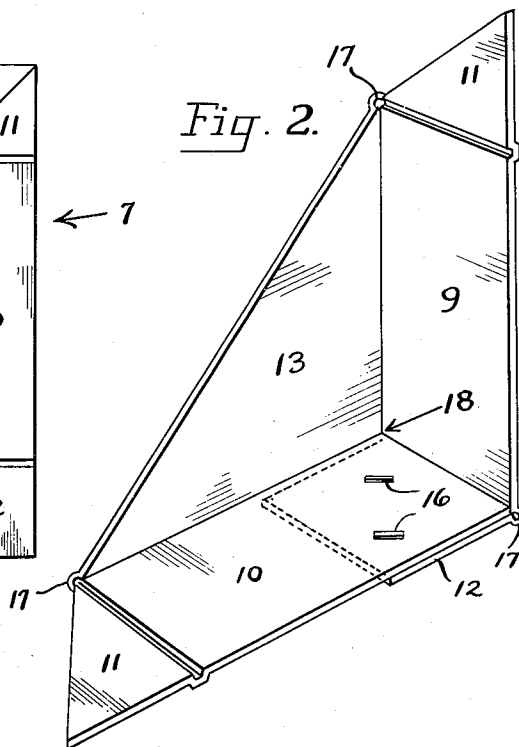


Fig. 3.

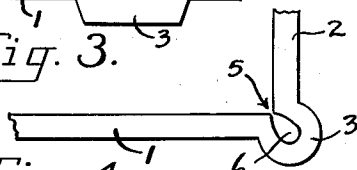


Fig. 4.

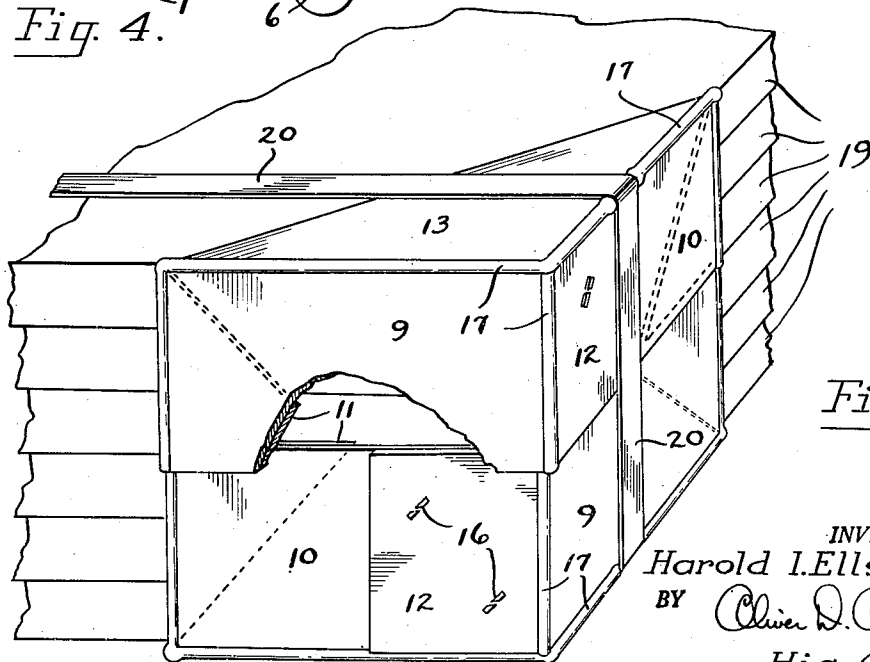


Fig. 5.

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2 SHEETS—SHEET 2

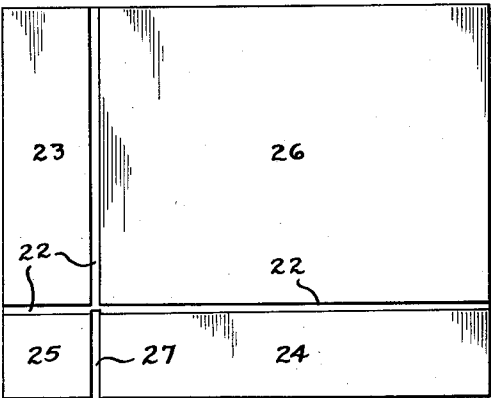


Fig. 6.

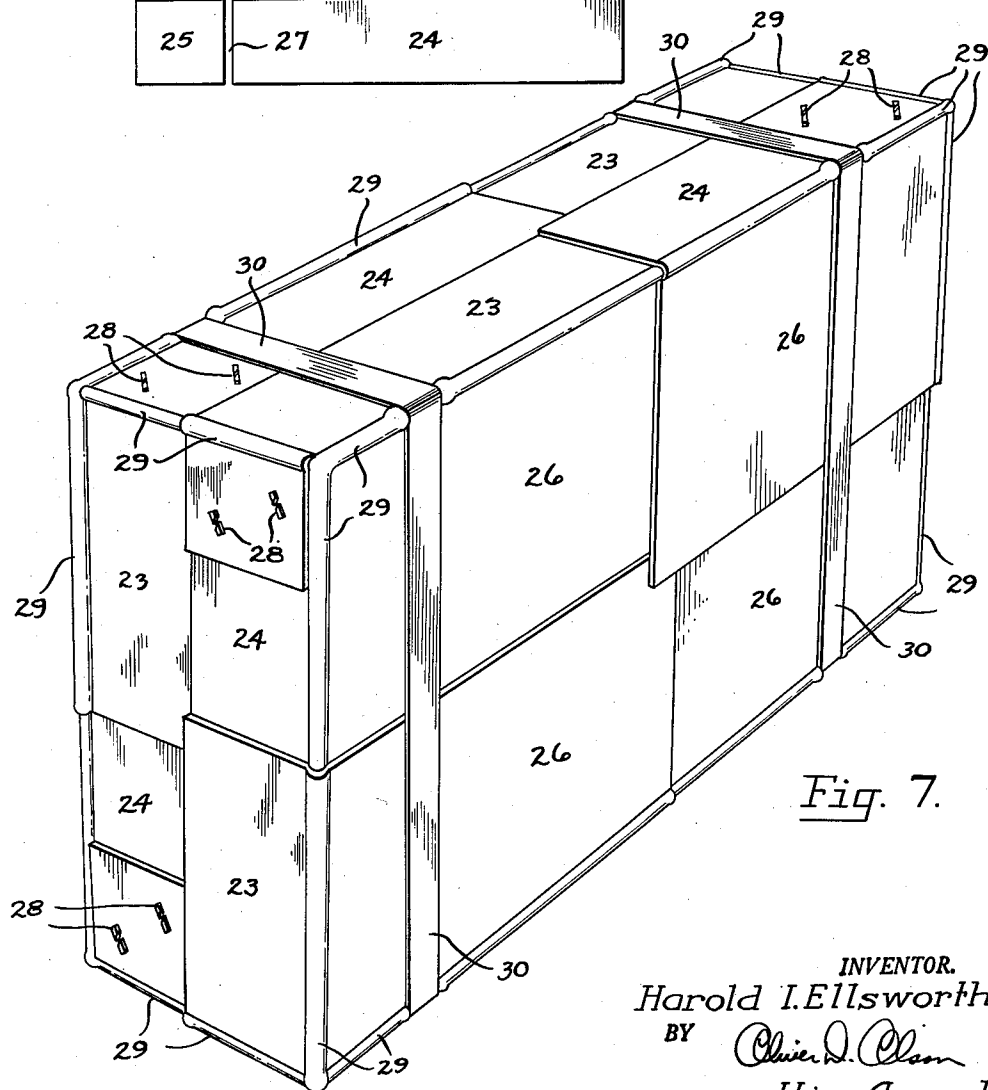


Fig. 7.

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CORNER CUSHIONING PACKAGING DEVICE

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3 Claims. (Cl. 206-60)

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This invention pertains to package protectors, and relates particularly to a package protector constructed in such novel manner as to provide a cushion along the edges and at the corners of the package to prevent damage of said edges and corners during transport.

It is a principal object of the present invention to provide a novel method of making cartons and other types of packaging devices whereby to form protective cushions along the bending lines of said devices.

Another important object of this invention is the provision of a packaging device constructed from sheet material in such manner that, when arranged in protecting position, the edges and corners of said device form projecting cushions.

A further object of the present invention is the provision of a package protector constructed in such manner as to accommodate application to packages of various sizes and shapes.

A further object of this invention is to provide a packaging device for use with conventional strapping and by which use the edges of said package are protected from damage by the strapping as the latter is drawn tightly around the package.

A further object of this invention is the provision of a novel corner protector of simplified construction which permits application to the corners of packages of various thicknesses and which provides a substantial protective cushion along the edges adjacent said corners.

These and other objects and advantages of the present invention will appear from the following detailed description taken in connection with the accompanying drawings, in which:

Figure 1 is a plan view of a blank from which a pair of corner protectors embodying the features of the present invention are constructed, the broken line indicating the manner in which the blank is severed to form said pair;

Figure 2 is a perspective view showing one of the corner protectors formed from the blank illustrated in Figure 1 in erected position;

Figure 3 is an enlarged fragmentary end view of a blank showing details of construction of the deep scoring provided in accordance with the practice of the present invention;

Figure 4 is a fragmentary end view illustrating the edge construction produced when the blank shown in Figure 3 is bent at right angles along the deep scoring strip;

Figure 5 is a fragmentary perspective view of a stack of flat panels and illustrating the manner in which a pair of the corner protectors

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shown in Figure 2 are applied thereto to prevent damage during transport, parts thereof being broken away to disclose details of construction and assembly;

5 Figure 6 is a plan view of a blank from which a modified form of package protector embodying the features of the present invention is constructed; and

10 Figure 7 is a perspective view showing the manner in which a plurality of the protectors formed from the blank shown in Figure 6 are arranged and secured to form an enclosing package.

15 Stated broadly, the present invention comprises a package protector having rounded projecting cushioning edges and corners, and the novel method by which cartons and other protectors of conventional construction may be provided with said cushions.

20 In the construction of conventional cartons and other forms of packaging devices of the collapsible or folding type made from blanks of sheet material such as cardboard, scoring lines are provided at appropriate positions on said blank to establish the lines upon which the blank is to be folded to form the desired structure. These scoring lines of conventional use are usually very narrow since they function merely to weaken the blank structurally along desired bending lines. In cardboard or corrugated board these scoring lines do not extend beyond the side opposite which the impression is made.

30 Referring particularly to Figures 3 and 4 of the drawings, the scorings of the present invention are deep and wide. Said scorings are provided along the intended bending lines of the blank whereby to define and facilitate the bending of adjacent sections 1 and 2 as in conventional practice. The scorings of the present invention, however, are formed as strips 3 offset from the plane of the blank. Said strips are produced by offsetting the blank along the desired bending lines opposite the intended direction of bending, in the manner best illustrated in Figure 3. Although the scoring strip shown in Figure 3 is offset sharply from the plane of the blank, it is to be understood that said strip may be formed as a smoothly curved offset section.

45 The width of the strip and depth of its offset may be varied within practical limits proportionately with the thickness of the blank being used. It is important, however, that the scoring be of sufficient width and depth that, when the adjacent portions 1 and 2 of the blank are ar-

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ranged at right angles one to the other, the inner lateral edges 4 of the offset strip abut to form a sharp inner corner 5. The main body of the strip 3 curves smoothly to form a blunt outer edge projecting from the planes of said adjacent sections, as clearly shown in Figure 4. The rounded edge thus formed by the curved strip 3 provides a substantial protective cushion for the edge of an article abutting against the sharp inner corner 5. The hollow center 6 formed within the rounded edge provides the latter with a degree of resilience and flexibility.

The above described scoring construction may be utilized to advantage in package protectors of diverse types. Cardboard or corrugated board cartons and other types of protectors of conventional design and construction may utilize the scoring of the present invention to form cushions along the edges exposed to possible damage during shipment. The scorings are conveniently substituted for the conventional scoring lines without changing conventional methods of production. The cushions thus formed also enhance the strength and rigidity of the erected structure, as will be apparent to those skilled in the art.

Figures 1, 2 and 5 of the drawings illustrate a specific type of protector for use in protecting the corners of articles against damage during transport. Referring particularly to Figure 1, the square blank 7 of cardboard, corrugated board, or other suitable sheet material is impressed along lines spaced inwardly from and parallel to the sides thereof to form the scoring strips 8. Said strips are formed in the manner shown in Figure 3. The scoring strips 8 thus divide the blank into side sections 9 and 10, corner tabs 11 and 12, and a central section 13. The scoring strips separating the side sections 10 and the corner tabs 12 are cut away, forming slots 14. The blank is then severed along the diagonal broken line 15 to form a pair of identical triangular corner protectors.

Referring now to Figure 2, each of the above prepared pair of protectors is assembled as follows: Side section 10 is bent along the scoring line 8 to a position perpendicular to the center section 13. Side section 9 is then similarly bent normal to the center section and corner tab 12 is bent to overlap a complementary portion of the adjacent side section 10. The tab 12 and side section 10 are then secured together by means of staples 16 or other conventional securing device. The triangular corner protector thus formed is provided with rounded cushions 17 extending along the right angle edges from the common corner 18.

The corner protector just described is particularly adaptable for use in protecting the corners of a stack of veneer panels 19 which are bundled together, as shown in Figure 5, in preparation for shipment. A pair of said protectors are placed at each corner of the package with the free edges overlapping, as shown. Although the triangular tabs 11 are shown folded under the sides 9 and 10, it is apparent that they may be removed completely or permitted to extend outwardly as shown in Figure 2. In the event that fewer panels 19 are to be packaged, the sides of the corner protectors overlap to a greater extent. Conversely, if a package of greater thickness is to be protected, the corner protectors may be constructed in such manner as to provide wider sides 9 and 10. In many cases, however, it is not necessary that the sides of the protectors over-

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lap to completely cover the corner being protected.

When the pairs of corner protectors have been placed in proper position, a strapping band 20 is drawn about the bundle and secured in overlying engagement with said protectors. It is to be noted that, as the band is drawn tight, the underlying edges 17 of the cushions collapse into the hollow center. The thickness of protecting material underlying the strapping band is thus substantially greater than is provided by the conventional scoring lines. Therefore, the band 20 may be drawn sufficiently tight to form a compact package without seriously damaging the underlying sharp edges of the veneer. It is to be noted further that the cushions 17 extend outwardly beyond the surface of the band 20. Thus, the package may be slid along a floor or other surface upon said cushions, with the band disposed out of contact with said sliding surface. This feature tends to obviate the frequent breakage and snagging of the band which is experienced with packages of conventional construction.

The modified package protector illustrated in Figures 6 and 7 of the drawings is particularly suitable for use in protecting the entire surface of articles during transport or storage. Among such articles may be included hardwood veneer panels, doors and many others having expensive or easily damaged surfaces. The package protector is constructed from a rectangular blank 21. Scoring strips 22 of the type described hereinbefore are impressed in the blank in spaced parallel relation to two of the adjacent sides thereof, as shown in Figure 6. Said scoring strips thus divide the blank into side sections 23 and 24, corner tab 25 and front section 26. The scoring strip separating the corner tab 25 and side section 24 is cut away to form slot 27.

In assembling the package protector from the blank 21, the side section 24 is first bent along the scoring strip to a position perpendicular to the front section 26. Side section 23 is then similarly bent with respect to the front section and corner tab 25 is secured in overlapping relation to side section 24 with staples 28. Rounded cushioning edges 29 are thereby formed in a manner similar to those described hereinbefore.

Referring now to Figure 7 of the drawings, four of the protectors made from the blank 21, as previously described, are arranged in overlapping relation upon each side of the package to be enclosed. In this manner one size of blank functions effectively in enclosing articles of various dimensions. The eight package protectors are then secured in place by means of the strapping bands 30 in the manner described hereinbefore.

It will be apparent to those skilled in the art that various modifications may be made in the protectors described hereinbefore without departing from the scope and spirit of the present invention. For example, the blank shown in Figure 6 may be extended in length and scored and slotted adjacent both ends to provide side sections and corner tabs similar to the side section 23 and corner tab 25. This type of protector is useful in packaging articles of a standard length and variable width. A protector for articles of standard length and width may be constructed from a blank similar to the type shown in Figure 1. In this case the dimensions of the central portion 13 are chosen to complement the area of the article to be protected, and slots 14 are provided on each corner in order that each corner

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tab may be folded and secured to an adjacent side section.

Having thus described my invention and the manner in which the same may be used, what I claim as new and desire to be secured by Letters Patent is:

1. In a packaging device for protecting exposed edges and constructed of a single thickness of sheet material, a scoring strip formed in the sheet material along an intended bending line, said scoring strip comprising a portion of the sheet material offset from the plane of the latter opposite the intended direction of bending, the sections of the sheet material on opposite sides of the scoring strip being bent along the scoring strip to substantially right angles, the opposite inner ends of the offset portion abutting to form a closed edge for engaging the exposed edge to be protected and the offset portion projecting outwardly from the planes of the sections of sheet material separated thereby to form a cushioning edge having a hollow center.

2. A corner protector packaging device constructed from a blank of sheet material having a substantially right angle corner, scoring strips formed in said blank along intended bending lines spaced inwardly from and extending substantially parallel to the edges forming said right angle corner, each of said scoring strips comprising a portion of the sheet material offset from the plane of the latter opposite the intended direction of bending, the sections of the sheet material on opposite sides of each scoring strip being bent along the scoring strip to substantially right angles, the opposite inner ends of the offset portion abutting to form a closed edge for engaging the exposed edge to be protected and the offset portion projecting outwardly from the planes of the sections of sheet material separated thereby to form a cushioning edge having a hollow center, the blank being slotted inwardly from one of said perpendicular edges on one of the bending lines and terminating at the intersection of said scoring strips to form a corner securing tab, and means securing said tab to the adjacent section to form an assembled unit having three hollow cushioning edges extending from a common corner.

3. A corner protector packaging device constructed from a substantially right triangular blank of sheet material, scoring strips formed in said blank along intended bending lines spaced inwardly from and extending substantially parallel to the edges forming the right angle corner

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of said blank, each of said scoring strips comprising a portion of the sheet material offset from the plane of the latter opposite the intended direction of bending, the sections of the sheet material on opposite sides of each scoring strip being bent along the scoring strip to substantially right angles, the opposite inner ends of the offset portion abutting to form a closed edge for engaging the exposed edge to be protected and the offset portion projecting outwardly from the planes of the sections of sheet material separated thereby to form a cushioning edge having a hollow center, the blank being slotted inwardly from one of said perpendicular edges on one of the bending lines and terminating at the intersection of said scoring strips to form a corner securing tab, means securing said tab to the adjacent section to form an assembled unit having three cushioning edges extending from a common corner, and second similar scoring strips formed in the blank adjacent the remaining corners, said second scoring strips extending substantially parallel with the first named scoring strips between the adjacent edges of the blank to define triangular end tabs, the said end tabs being folded inwardly along the scoring strips onto the respective adjacent blank sections, whereby the scoring strips form cushioning edges at the ends of the corner protector device.

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