

Aug. 20, 1963

L. D. VAN ANTWERPEN
COLLAPSIBLE PACKAGING STRIP

3,101,166

Filed Aug. 22, 1962

2 Sheets-Sheet 1

Fig. 1

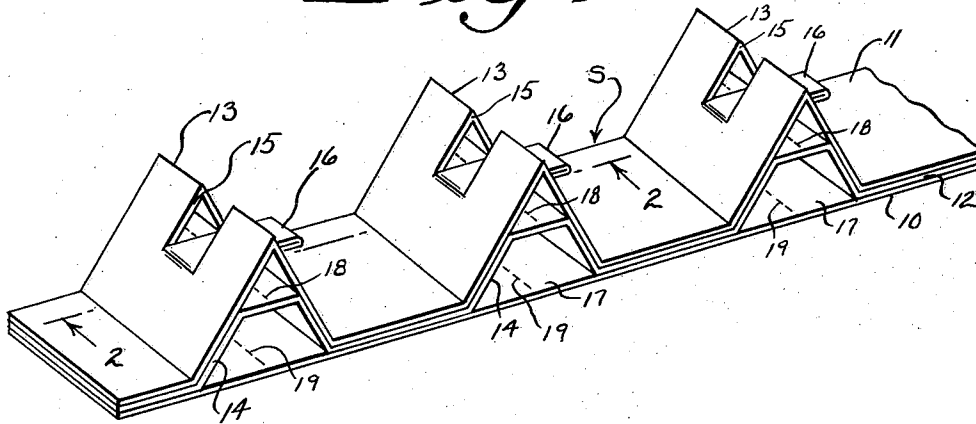


Fig. 2

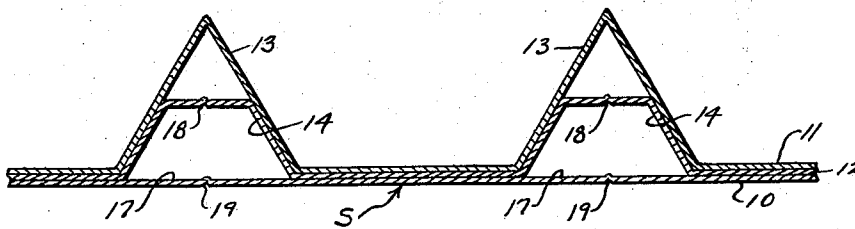
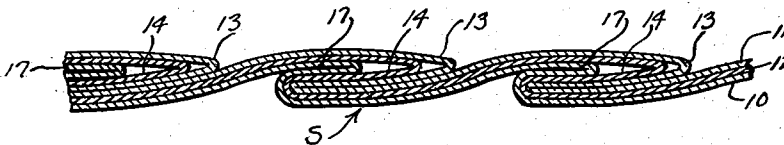


Fig. 3



INVENTOR
LLOYD D. VAN ANTWERPEN

BY *Wright Wright*

ATTORNEYS

Aug. 20, 1963

L. D. VAN ANTWERPEN

3,101,166

COLLAPSIBLE PACKAGING STRIP

Filed Aug. 22, 1962

2 Sheets-Sheet 2

Fig. 4

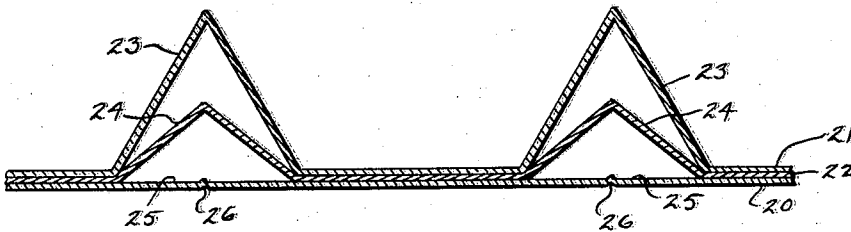


Fig. 5

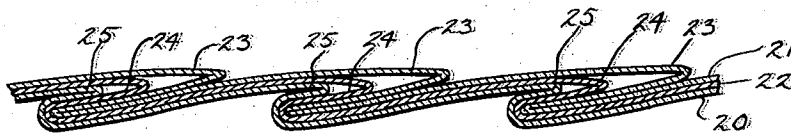
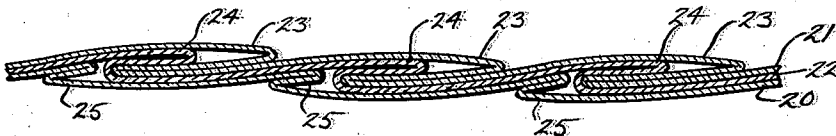


Fig. 6



INVENTOR
LLOYD D. VAN ANTWERPEN

BY *Wright Wright*
ATTORNEYS

1

3,101,166
COLLAPSIBLE PACKAGING STRIP
Lloyd D. Van Antwerpen, Milwaukee, Wis., assignor to
Vanant Company, Inc., Milwaukee, Wis., a corporation
of Wisconsin
Filed Aug. 22, 1962, Ser. No. 218,623
4 Claims. (Cl. 229—14)

This invention appertains to cushioning and packaging strips of the type utilized around the peripheral edge of fragile articles, such as glass, during the shipping and storing thereof to prevent injury thereto. Examples of the strip are shown in prior Van Antwerpen Patents No. 2,504,473 issued April 18, 1950 (FIGURES 28 to 31), and No. 2,603,349 issued July 15, 1952 and others.

Such strips are of an elongated character and include an outer base ply, an inner ply and an intermediate ply. The inner and intermediate plies are provided with a series of equidistantly spaced transversely extending nested cushioning peaks with the peaks of the inner ply slotted and treated for receiving the edge of the glass for holding the glass against shifting and to permit the edge of the glass to rest on the cushioning peaks of the intermediate ply.

Due to the fact that the peaks extend a considerable distance beyond the base ply, difficulty has been experienced in the economical shipping of the strip from the manufacturing plant to the user, in that, valuable space is occupied by the peaks and hence a large bundle is formed for a given length of strip.

It is, therefore, one of the primary objects of my present invention to provide means whereby the strip and more particularly the peaks can be collapsed and folded down so that all plies and peaks will lie in substantial parallelism to permit the economical bundling of the strip in a small compass to save space during shipping to the consumer.

Another salient object of the invention is to provide a collapsible, peaked cushioning and packaging strip which can be quickly set up with the peaks projecting out from the base ply when the strip is ready for use around the article to be protected.

A further object of the invention is to provide novel means for scoring the strip at predetermined points during the manufacture thereof, so that the collapsing of the strip for bundling and shipping can be quickly accomplished.

A still further object of the invention is to provide means for scoring the strip so that the same can be readily collapsed but at the same time will readily permit the normal repositioning of the peaks without damage thereto for receiving and protecting the glass.

With these and other objects in view, the invention consists in the novel construction, arrangement and formation of parts as will be hereinafter more specifically described and claimed and illustrated in the accompanying drawings, in which drawings,

FIGURE 1 is a fragmentary perspective view of a cushioning and packaging strip constructed in accordance with the present invention;

FIGURE 2 is a fragmentary longitudinal sectional view through the strip taken on the line 2—2 of FIGURE 1, looking in the direction of the arrows, FIGS. 1 and 2 showing the strip in its set up position ready for use with an article to be protected and prior to being collapsed for shipping;

FIGURE 3 is a fragmentary longitudinal sectional view through the strip showing the same in its collapsed condition ready for bundling and shipping to a consumer;

FIGURE 4 is a fragmentary longitudinal sectional view through a slightly different form of packaging and

2

cushioning strip, the peaks of this strip being of a V-shape;

FIGURE 5 is a longitudinal sectional view through that form of strip shown in FIGURE 4 and showing the strip in its collapsed condition, and

FIGURE 6 is a fragmentary longitudinal sectional view through a strip in its collapsed condition and showing a slightly modified form of folding.

Referring to the drawings in detail, wherein similar reference characters designate corresponding parts throughout the several views, the letter S generally indicates one preferred form of the strip constructed in accordance with the invention to permit the ready collapsing thereof into a small compass.

The strip S includes an outer base ply 10, an inner ply 11 and an intermediate ply 12. The plies 10, 11 and 12 can be made from card or chip board or from corrugated board, or from combinations of these materials.

It can be seen that the strip S is of an elongated form and is made in one continuous sheet. The sheet itself is severed into a desired long length for shipping and is then folded or rolled into a bundle. The inner and intermediate plies 11 and 12 are provided with equidistantly spaced transversely extending nested peaks 13 and 14. In the form shown in FIGURES 1 to 3, inclusive, the peaks 13 of the inner ply are of a triangular shape in side elevation while the peaks 14 of the intermediate ply are of a frusto-pyramidal shape in side elevation. The peaks 13 are slotted, as at 15, and the material defined by the slots 15 is folded down to provide cushioning tongues 16. In actual practice, the strip is folded around the article to be protected, such as a sheet or sheets of glass and the edge of the glass fits within the slots 15. Hence, the walls of these slots prevent the lateral shifting of the glass. The glass rests on the tongue 16 and flat faces of the inner peaks.

With the peaks 13 and 14 projecting outwardly from one face of the strip, it can be seen that a considerable area will be occupied thereby, and that when the strip is folded into a bundle or package that the size of the package will be quite material.

The outer base ply 10 acts as a tie for connecting and holding the peaks in their set up spaced relation and all of the plies are secured together between the peaks by the use of a suitable adhesive or metal stitches. Thus, the stretches 17 of the base strip 10 lying between the peaks act as a further tie for holding the peaks in proper form.

In accordance with the invention and in order to permit the collapsing of the peaks to a folded down position, as shown in FIGURE 3, the inner peaks 14 are provided with central score lines 18, and these score lines are in substantial vertical alignment with the tips of the outer peaks 13. The stretches 17 of the outer base ply 10 are also weakened centrally by score lines 19 and these score lines are in vertical alignment with the score lines 18. With the strip so scored, the peaks can now be easily folded down to form the desired compact structure. With the folding of the peaks, the inner peaks 14 fold on the score lines 18 within the outer peaks and the stretches 17 of the base strip 10 fold on the score lines 18 and within the inner peaks. Thus, all of the peaks and strips lie in substantial parallelism with one another when the strip is in its folded condition. This permits the strip to be readily wound in a circular form or back and forth on itself to bring about a solid compact bundle.

If desired and to further facilitate the folding of the strip, the stretches 17 of the base strip can be further weakened by transverse score lines adjacent to the sides of the peaks 14.

In FIGURES 4 and 5 I have shown a slightly modified form of the packaging and cushioning strip and in this

3

form, the strip also includes the outer base ply 20, the inner ply 21 and the intermediate ply 22. The plies 21 and 22 are provided respectively with the nested peaks 23 and 24. The peaks in this form are both of an inverted V-shape and hence, the only difference between the strips shown in FIGURES 4 and 5 and strips shown in FIGURES 1, 2 and 3 is that the inner peaks 24 are of an inverted V-shape and not of an inverted U-shape, as illustrated in FIGURES 1, 2 and 3.

In this form of the invention the stretches 25 of the base strip lie between the peaks and are scored centrally, as at 26, to provide a weakened portion which permits the folding of these stretches within the peaks as illustrated in FIGURE 5.

In each of the forms just described, the stretches of the base strip lying within the peaks fold within the peaks. As illustrated in FIGURE 6, the stretches 25 can be folded back externally of the peaks and flat against adjacent portions of the outer base strip. Again, the stretches 25 can also be weakened transversely by score lines adjacent to the inner sides of the peaks to facilitate the folding and bending thereof.

In each form of the invention the strip can be readily set up into operative position for use by merely pulling on the strip longitudinally. Actually, the strip has a tendency to return to its normal position with the peaks extending outwardly from the base ply.

Various changes in details may be made without departing from the spirit or the scope of this invention, but what is claimed as new is:

1. A collapsible wrap-around packaging strip comprising an outer base ply, an inner ply and an intermediate ply, means securing the plies together, said intermediate and inner plies being provided with equidistantly spaced transversely extending nested peaks with the peaks normally extending outwardly from the base strip and said

4

base strip being normally flat, and said base strip including stretches between the peaks with the stretches weakened transversely to permit the folding thereof upon itself to bring about the collapsing of the peaks with the peaks and plies lying in substantial parallelism.

2. A collapsible wrap-around packaging strip as defined in claim 1, and said folded stretches being disposed within the peaks.

3. A collapsible wrap-around packaging strip comprising a normally flat base ply, an inner ply and an intermediate ply, means securing the plies together, said inner and intermediate plies being provided at spaced points with transversely extending outwardly projecting nested peaks, the peaks of the inner ply being slotted to receive an article, the peaks of the intermediate ply being of a substantially U-shape defining flat top walls against which an article is adapted to rest, said flat walls and base ply being weakened transversely and in vertical alignment, said base ply being foldable on itself at said weakened lines and said flat walls of the peaks of the intermediate ply being foldable on themselves at said weakened lines to bring about the collapsing of the peaks with the walls of the peaks and plies all lying substantially in parallelism.

4. A collapsible wrap-around packaging strip as defined in claim 3, and said peaks being movable back to their normal outwardly projecting position by the folding of the base ply longitudinally.

References Cited in the file of this patent

UNITED STATES PATENTS

2,741,362	Cartright	Apr. 10, 1956
2,776,745	Van Antwerpen	Jan. 8, 1957
2,836,293	Giles	May 27, 1958
3,026,078	Simkins	Mar. 20, 1962