Dec. 11, 1956 W. STELZER 2,773,635

PACKAGE CARRIERS AND METHOD FOR MAKING THE SAME

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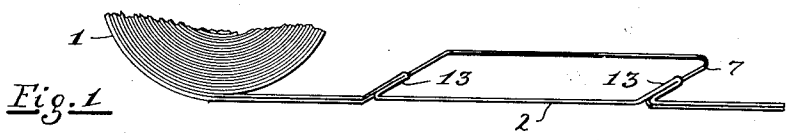


Fig. 1

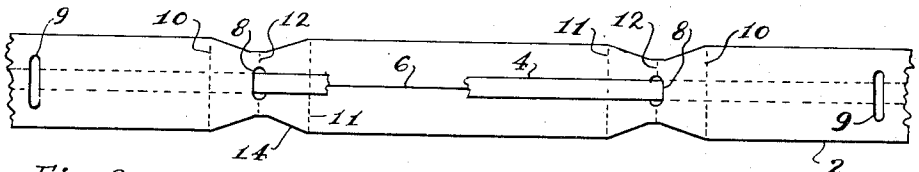


Fig. 2

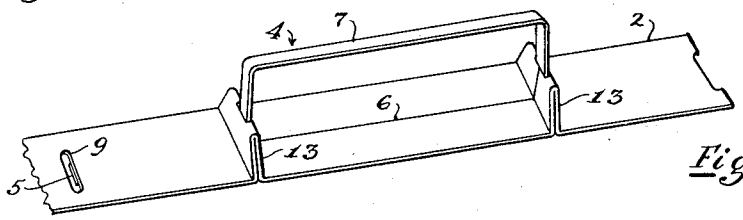


Fig. 3

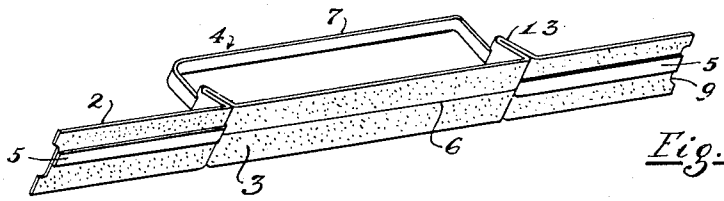


Fig. 4

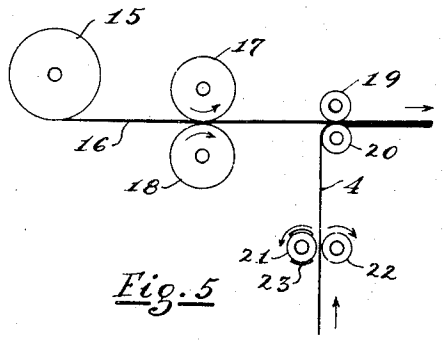


Fig. 5

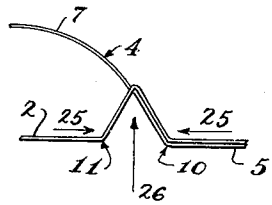


Fig. 6

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PACKAGE CARRIERS AND METHOD FOR MAKING THE SAME

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7 Claims. (Cl. 229—52)

The invention relates to package carriers and method for making the same and more particularly to a package tying and carrying device comprising a gummed tape and a longitudinal looped band or cord forming a package carrying handle, the device of this general type being applicable to the wrappings of packages to seal the loose ends thereof and to provide a handle for easier carrying of the package.

The object of the invention is to provide a novel construction and to improve the means of securing the band to the adhesive or gummed tape. In present devices of this kind the junctures where the ends of the handle connect with the gummed tape invariably form weak points caused by local stresses where the gummed tape may become torn even if the weight of the parcel is not excessive relative to the tensile strength of the tape and band. In some known devices the trouble has been countered by providing lateral reinforcing strips to strengthen the gummed tape at the critical point. However, these reinforcing strips are expensive and complicate the manufacture of the tape; furthermore, they do not relieve the local shearing stresses completely.

One aim of my invention is to prevent any local stresses in the gummed tape by distributing the load equally over its entire cross-sectional area by folding the gummed tape together a short distance where the carrying band attaches to the tape, to form a strap or lug, thereby eliminating the necessity for separate reinforcing strips.

The advantages gained by the novel construction are a greatly increased strength of the carrier, since all stresses are reduced to a tensile load carried evenly by the entire cross-sectional area of the tape. An important new advantage sought and hereby gained is that the direction in which the carrying band joins the tape does not in any way affect the load carrying capacity of the carrier, since the folded portions of the tape always yield to be entirely in tension.

Another object is to use a novel method of making package carriers that lend themselves readily for continuous and rapid mass production by making the band and tape of equal length, and by eliminating separate reinforcing strips.

These and other objects and advantages of this invention will be apparent from the following description considered in connection with the accompanying drawing submitted for the purpose of illustration and not to define the scope of the invention, reference being had for that purpose to the subjoined claims. In the drawing, wherein similar reference characters refer to similar parts throughout the several views:

Fig. 1 is a side view of the improved carrier as it is dispensed from a roll;

Fig. 2, a plan view of a fagmentary piece of the gummed tape to which the carrying band has been affixed before portions of the tape are folded together, thus showing an intermediate shape during the process of manufacture;

Fig. 3, a perspective view of the package carrier as seen from above;

Fig. 4, a perspective view of the package carrier showing the underside of the tape;

Fig. 5, a diagram illustrating the method of attaching the ribbon to the gummed tape; and

Fig. 6, a side view of a strap portion of the carrier diagrammatically showing the method of forming a strap.

Before explaining the present invention in detail, it is to be understood that the invention is not limited in its application to the details of construction and arrangement of elements illustrated in the accompanying drawing, since the invention is capable of other embodiments and of being practiced or carried out in different ways. Also it is to be understood that the phraseology or terminology employed herein is for the purpose of description and not limitation.

Customarily, package carriers are manufactured to form a continuous strip rolled up into a roll, as indicated by numeral 1 of Fig. 1. The package carrier ready for use, best illustrated by Figs. 3 and 4, comprises a relatively wide web or tape 2 of cheap flexible material such as paper having a coating of preferably water soluble adhesive on the underside thereof, indicated by numeral 3 in Fig. 4. The ungummed upper side may be printed to serve as an advertising medium. A relatively narrow tensile member such as a string or band of fabric ribbon shown in its entirety by numeral 4 is adhesively secured to the underside of tape 2 at its ends 5, and the central portion is projected through a slit 6 in tape 2 to form a loop or bail member or handle 7. The manner in which ribbon 4 is assembled to tape 2 is illustrated in Fig. 2. Band 4 extends through holes 8, whereby slit 6 merely serves to permit the passage of handle portion 7 to become situated above the ungummed side of tape 2. The end portions 5 are bonded or attached to tape 2 by means of the adhesive coating 3 where they are in contact with the latter, i. e., between holes or openings 8 and perforations 9 at the ends, the latter serving to facilitate severance of a carrier unit from the roll or strip as the tough flexible band 4 is completely cut through at these points. Band 4 and tape 2 as viewed in Fig. 2 are of equal or approximately equal developed length and may be considered flat against each other. Now to form the carrier from this intermediate form, tape 2 is folded on transverse lines 10, 11 and 12, the latter moving upwardly while the carrier becomes shorter by the distances between fold lines 10 and 11. When the gummed and moistened areas between such lines are completely brought together, they become bonded by virtue of adhesive 3 to form straps 13, and it will be observed that band 4 sandwiched between the tape forming the strap is bonded on both sides to provide maximum strength. The pull of band 4 may thus be transmitted to the entire width of tape 2 even if strap 13 is very short. To provide the best appearance the ends of straps 13 may be narrower, for which purpose tape 2 may be notched out as at 14, without affecting the load carrying capacity. When the finished carriers consisting of a continuous strip are wound up to form a roll, straps 13 and handles 7 should be bent down flat in the direction indicated in Fig. 1. After unrolling for use, straps 13 and handle 7 erect themselves partially due to the inherent resiliency of the material.

In the method of making the novel package carriers described a considerable advantage is obtained by making tape 2 and band 4 of substantially the same length to be linearly coextensive in the first stages of the manufacturing proces, as illustrated in Fig. 5. In the diagram numeral 15 designates a roll of paper tape gummed on the underside 16. The tape itself in the package carrier becomes tape 2. It passes first through perforating and slitting rollers 17 and 18 revolving in the direction shown by the arrows to provide holes 8, slit 6, and notches 14. Subsequently the tape passes between pressure rollers 19

and 20 to become laminated with ribbon 4 linearly coextensive therewith. Ribbon 4 previously passes between a moistening or wet adhesive applying roller 21 and pressure roller 22, roller 21 having pads 23 to apply wet adhesive to that part of ribbon 4 which comes to lie against the tape 2 between holes 8 and 9. The application of wet adhesive provides a much stronger adhesive bond between ribbon 4 and the tape than would be obtained by merely moistening the adhesive on tape 2. After tape 2 and ribbon 4 have been joined between the pressure rollers 19 and 20 the portion of ribbon 4 intermediate holes 8 is pushed through slit 6 to become situated on the ungummed upper side of tape 2. Subsequently the gummed area between fold lines 11 and 10 is moistened. The tape at these fold lines as well as fold line 12 may be prebent prior to the last moistening operation so that after moistening, the straps can be formed as indicated in Fig. 6. Fold lines 10 and 11 are moved relatively toward each other as indicated by arrows 25, while fold line 12 is moved upwardly as indicated by arrows 26. After the moistened surfaces between fold line 12 and fold lines 10 and 11 respectively are brought together, they adhere to each other with ribbon 4 adhesively held between.

While it is most convenient to furnish the finished package carriers in rolls as indicated by numeral 1 in Fig. 1, to be used in a customary dispensing device where the tape is wetted and torn off from the strip at perforation 9, it is apparent that the carriers could be cut off from the strip of finished carriers made as already described, and furnished singly or stacked to form a pile.

I claim:

1. A package carrier comprising a tape having a coating of adhesive on one side thereof, the other side having no coating of adhesive, a longitudinal central slit provided in the middle portion of said tape, openings in said tape at the terminations of said slit, and a ribbon-like member linearly coextensive with said tape and positioned centrally relative to the lateral edges of said tape, said ribbon-like member at its end portions being positioned on the adhesive coated side of said tape and passing through said openings so that the intermediate portion of said ribbon-like member for the length of said slit is positioned on the side of said tape that is not coated with adhesive, said end portions in contact with said adhesive side of said tape being bonded thereto, said tape having transverse fold lines at said openings and at equal distances from said openings, the adjacent equal portions being folded on transverse lines and bonded together where coated sides are against each other to form a pair of straps of two layer thickness spaced apart longitudinally of the tape, with said openings at the ends of said straps and said ribbon-like member extending from one end of said carrier on said coated side through the first of said straps between the two layers thereof, emerging therefrom to form a loop serving as a handle reaching to the tip of the second of said straps, extending through the latter between the two layers thereof and to the other end of said device on the adhesive coated side of said tape said straps being movable relatively to the remainder of the tape, whereby the tension of said loop is transmitted through said straps to the remainder of the carrier.

2. A package carrier according to claim 1 where said straps are of less width at their tips than at their other ends.

3. The construction as claimed in claim 2, and perforations in said tape and said ribbon-like member to facilitate severance of a carrier from said strip, said ribbon-like member being perforated completely and said tape partly.

4. A package tying and carrying device comprising a tape having a coating of adhesive on one side thereof, portions of said tape being folded together on transverse lines to form a strap of two layer thickness free to extend outwardly from the adjacent portions of the tape or to lie flat against the same, and a handle band bonded to said strap between the two layers thereof and extending outwardly therefrom longitudinally of the tape.

5. A package tying and carrying device comprising a tape having a coating of adhesive on one side thereof, portions of said tape being folded together on transverse lines to form a pair of straps of two layer thickness spaced apart longitudinally of the tape and free to extend outwardly from the adjacent portions of the tape or to lie flat against the same, and a flexible carrying member extending longitudinally of the tape and bonded to said straps between the layers thereof, said carrying member having a looped portion between said straps free of attachment to said tape; whereby the carrying load on said looped portion is transmitted in tension through said straps.

6. The method of making package carriers from a relatively wide paper web gummed on one side and a linearly coextensive tensile member, comprising slitting said web to produce a central longitudinal slit, adhesively affixing said tensile member to the gummed side of said web except throughout the extent of said slit, pushing the portion of said tensile member adjacent said slit through said slit to be situated on the ungummed side of said web, then forming a strap of two layer thickness at each end of said slit by folding portions of said web together on transverse lines so that the gummed side is inside to produce an adhesive bond with the tensile member arranged between the two layers of the straps, the areas to be thus bonded together being previously moistened, and the outer sides of the folded portions being ungummed so as to form straps movable relatively to the remainder of the tape and adapted to project outwardly from the remainder of the web or to lie flat against the same.

7. The method of making package carriers according to claim 6 in which the tensile member is moistened with a wet adhesive for bonding the same to the paper web.

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