

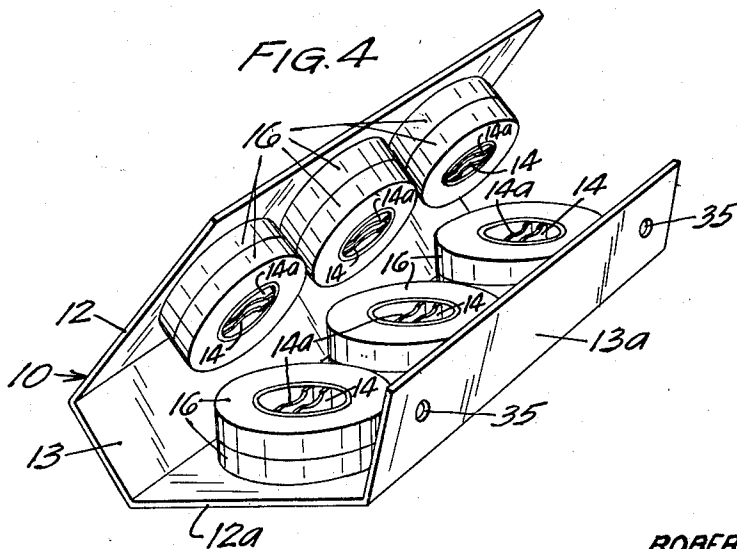
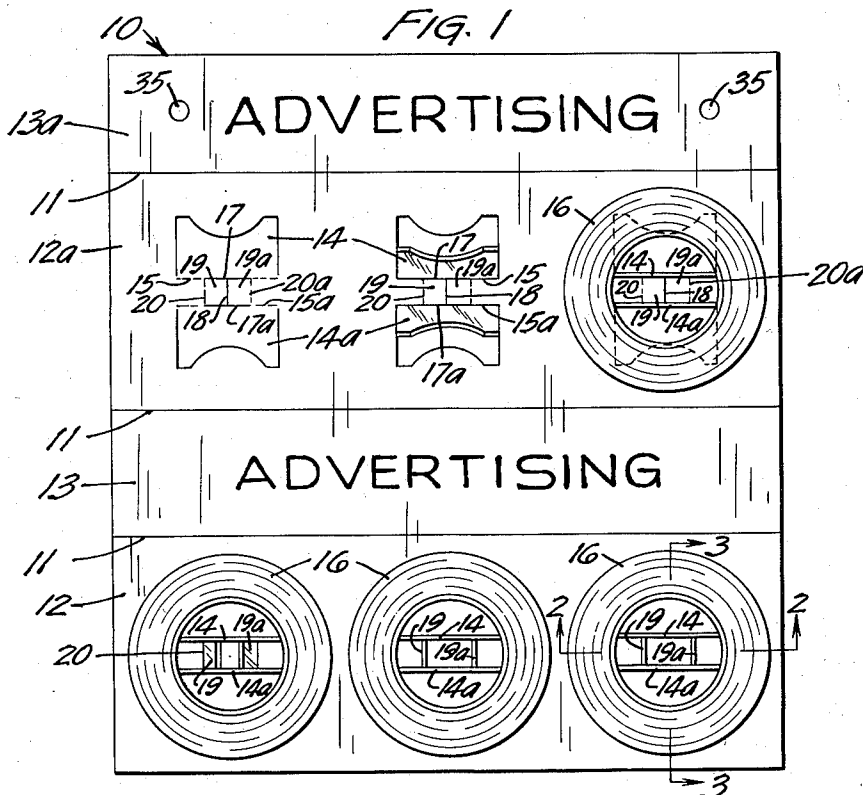
Feb. 10, 1959

R. D. ROLLIE
PACKAGING DEVICE

2,873,025

Filed Jan. 23, 1956

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

FIG. 2

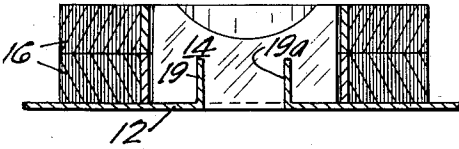


FIG. 3

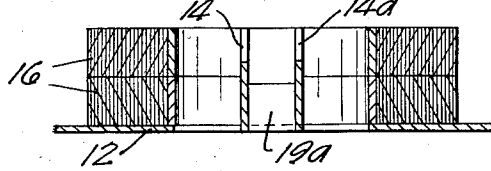


FIG. 5

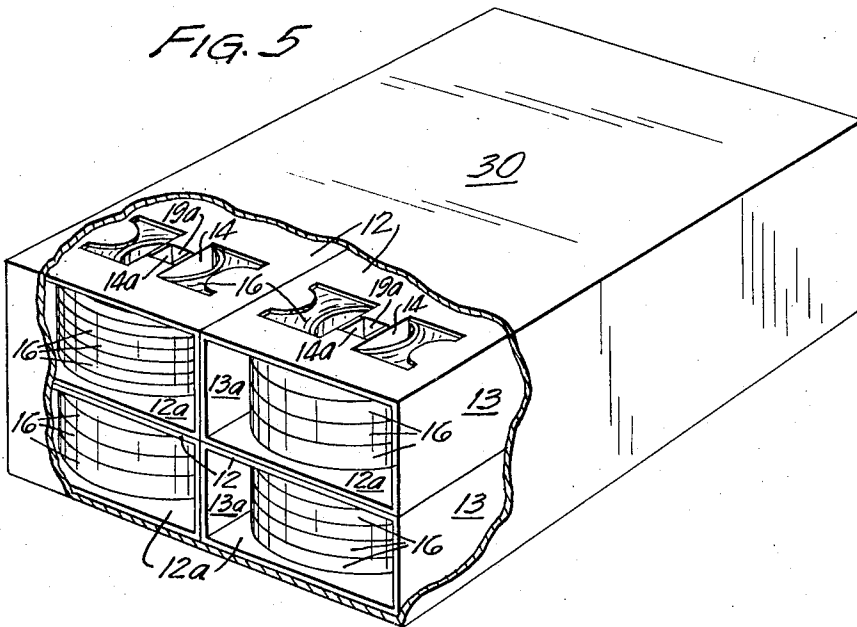
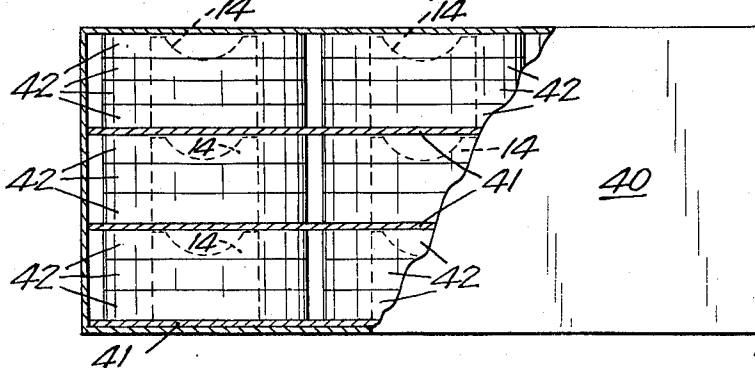


FIG. 6



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2,873,025

PACKAGING DEVICE

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8 Claims. (Cl. 206—65)

The present invention relates to the packaging of articles having recessed or open center portions such, for example, as convolutely wound rolls of pressure-sensitive adhesive tape. It has particular application to the packaging of these articles in "bulk," i. e., the packaging of large quantities of articles in single receptacles. More specifically, the present invention relates to novel packaging devices by which such articles are releasably affixed to bulk package supporting pads.

The present invention has for an object the provision of a simply operated device, formed entirely from a single small area of a supporting pad or panel, by which articles having a central recess or opening are firmly yet releasably affixed to a pad in such manner that the pad, with the articles affixed thereto, may be handled, inverted, etc., without danger of the articles becoming detached from the pad. A further object of the present invention is to provide a retaining device formed from supporting pads consisting of cheap, readily available packaging materials. It is still another object of the invention to provide novel packaging panels for retention of rolls of pressure-sensitive adhesive tape. Another object of the invention is to provide packaging panels which, by reason of the novel retaining devices thereof, are also suited for use as attractive display panels for the display of articles affixed thereto. An additional objective of the present invention is to provide novel article retaining packaging pads which are suited for handling in conventional-type continuous and automatic packaging operations.

In attaining the above objects, as well as other objects and advantages which will become apparent upon reading the following disclosure, I provide a panel having pairs of opposed wings formed out of and hingedly attached to the panel at their adjacent edges. Said wings fold away from the panel to form a mounting post for articles to be packaged. Locking means, also provided by and hingedly affixed to the panel, firmly urge the wings apart and against opposite surfaces of the central openings or recesses of said articles, when in locking position, thereby causing the articles to be firmly retained on the panel. When desired the articles are released for removal by simply moving the locking means from the locking position.

My invention will now be illustrated in detail with the aid of the accompanying drawings, wherein like reference characters refer to corresponding parts in the several views, and in which:

Figure 1 is a plan view of a packaging pad of the present invention containing several of my novel retaining devices, the components of the latter being, for illustration, depicted in the various positions assumed thereby during the several stages of operations in which rolls of pressure-sensitive adhesive tape are releasably attached to the pad;

Figure 2 is a sectional view taken along the lines 2—2 of Figure 1;

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Figure 3 is a view of a section taken along the lines 3—3 of Figure 1;

Figure 4 is a view in perspective showing the packaging pad of Figure 1, containing a capacity quantity of tape rolls, partially folded in the form of an incompletely closed subcarton;

Figure 5 is a perspective view, partially cut away, showing a bulk carton containing several of the closed subcartons; and

Figure 6 is an elevation view, partially cut away, of a bulk carton of tape rolls wherein the rolls are affixed to intermediate planar suspension pads by means of retaining devices of the present invention.

Referring now to Figures 1—4, a particular tape roll retaining pad 10 of the present invention formed of corrugated cardboard or similar suitable material is shown. The pad 10 is scored transversely of its length to provide fold lines 11 dividing the pad into two pair of panels 12 and 12a and 13 and 13a, the wider pair 12 and 12a being separated by the panel 13 of the narrower pair. Upon being folded along the fold lines 11 the panel forms a rectangular carton suitable for containing rolls of tape as will be hereinafter shown.

Panels 12 and 12a are identically stamped or die-cut to provide cuts therein defining several pairs of opposed wings 14 and 14a which are hingedly attached to the pad along fold lines 15 and 15a at their adjacent base edges. The wings thus fold away outwardly from the panel 10 toward each other. When folded to a position approximately perpendicular with respect to the panel 10, each pair of wings 14 and 14a forms a mounting post over which rolls 16 of pressure-sensitive adhesive tape are positioned.

The initial positioning of the rolls is facilitated by folding each of the wings somewhat beyond the perpendicular to a converging position and there retaining them while one or more rolls are dropped over the wings. The wings 14 and 14a, upon release thereof, then diverge to an approximately parallel position with the perpendicular side edges bearing lightly against the inner surfaces of the cores of the tape rolls 16 due to the tendency of the wings to return to their original unfolded position.

Panels 12 and 12a are further provided with a pair of parallel cuts 17 and 17a and, which extend adjacent a portion of the length of fold lines 13 and 13a, and a cut 18 which perpendicularly bisects the aforesaid parallel cuts 17 and 17a. Said cuts define locking tabs 19 and 19a which fold away from the panel between the wings 14 and 14a along fold lines 20 and 20a, respectively. The tabs 19 and 19a are slightly greater in width than the distance between the wings 14 and 14a when the latter extend from the panel perpendicularly with respect thereto. Thus, in being folded away from the panel, the locking tabs 19 and 19a are wedged between the wings, urging them apart from the parallel and causing them to bear firmly at their side edges against the inner peripheral surface of the tape roll cores.

In this manner the tape rolls are firmly affixed to the panel. The pad may be handled, inverted, folded along the fold lines 11, etc., without detachment of the rolls. Yet, by simply depressing the locking tabs 19 and 19a, thereby folding them back to their initial flat unextended positions, the rolls are easily lifted from the freed wings.

The mounting posts in the two panels 12 and 12a are preferably positioned such that when the pad 10 is folded along fold lines 11 into a subcarton, as shown in Figure 4, each post in panel 12 is positioned opposite the corresponding post in panel 12a. The wings 14 and 14a, of which the mounting posts are formed, extend from the panels for a distance approximately equal to but not exceeding one-half the distance between panels

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12 and 12a when the pad 10 is folded into a rectangular subcarton. When tape rolls have been positioned over the mounting posts upon each to a depth of one-half the said distance between panels 12 and 12a and locked into position, the tape rolls are all firmly retained in place; and in the resulting folded subcarton the stacks of tape rolls mounted on opposed posts contact and bear against one another. A strong firm structure results.

The folded subcarton may then, as shown in Figure 5, be packed with similar subcartons in a bulk container 30 for shipment in commerce. Instead, if desired, the subcarton may be sealed along its open edge where the two ends of the panels come together with, for example, a strip of pressure-sensitive adhesive tape and subsequently shipped by itself. Moreover, even the subcartons may be further subdivided or broken down without need of repacking by simply sawing or cutting the subcarton between the several stacks of rolls.

When the packaging pads arrive in the hands of the retailer or user, unpacking and removal of the rolls from the pads is unnecessary. The individual rolls are simply detached right from pad as they are used. Or where the pad is to be reused several times, rolls are removed by first partially or entirely depressing the tabs back to the unfolded position so as to correspondingly partially or entirely free the wings in order to save wear on the locking tabs.

When printed with decoration and/or advertising my pads serve the additional function of providing highly attractive counter or wall displays for the articles retained thereon. Inconvenience of removing the rolls and setting up separate displays is avoided, the displayed articles, as they are sold, being dispensed from the pad in the fashion above noted. Sections 13 and 13a of the pad (Figure 1) provide areas particularly suited for decoration or printing. When so used, the pads may be folded along the fold lines 11 in combinations of forward and reverse folds to provide any of several appealing and useful configurations.

Where the packaging pad is to be used as a wall display, apertures 35, as shown in Figure 1, are easily provided in the pad for hanging.

A further advantage of the subcarton will be apparent to packers and shippers of rolls of pressure-sensitive adhesive tape. In that industry it is customary to treat with a wax-like compound surfaces of cartons and packaging pads which are contacted by lateral surfaces of the rolls. This is particularly true in the case of bulk shipments of the type of pressure-sensitive adhesive tape known as masking tape. Heretofore employed internal tape roll segregating suspension pads have had to be treated on both surfaces. My novel subcarton pad need be treated on only one surface. The bulk carton itself need not be treated at all. Hence, the present invention materially reduces amounts and costs of such treatment. Moreover, further economies are provided in the rather simple procedure by which the pad blanks are formed. At the same time the blank is cut to size, it is merely stamped or die-cut so as to provide the desired cuts and score lines which define the wings and tabs. Additional operations are unnecessary.

Economical, too, is the manner in which the articles may be positioned and locked into place on the pad. My invention lends itself well to conventional-type continuous automatic packaging operations. A simple two stage automatic jig is all that is necessary to complete the packaging sequence. In the first stage the sets of wings are caused to be folded outwardly away from the pad along the fold lines to form the mounting posts, at which time tape rolls or other articles to be retained are positioned thereover. The locking tabs are folded into the locking position in the second stage.

My tape roll retaining pads need not be confined to the folding subcarton type above described. Other types

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of mounting pads or panels may be employed, if desired, as well. For example, as shown in Figure 6, planar suspension pads employing the retaining devices hereof are advantageously employed as segregating layers in the bulk packaging of rolls of tape. Within a bulk carton 40 are positioned in superposition several tiers of suspension pads 41 each of which retains several stacks of tape rolls 42. In such a carton the retaining devices, by which the tape rolls are affixed to the pads, permit the several pads 40 to be loaded prior to insertion into the carton. The filling of bulk cartons is thereby materially simplified. In contradistinction is the tedious presently employed mode of individually inserting tape rolls or stacks of tape rolls into bulk cartons.

It is to be emphasized that the retaining assembly of the present invention, from which the above-mentioned advantages are derived, is provided from the pad blanks themselves. An entire retaining device is contained substantially within the relatively small pad area defined by and immediately adjacent a pair of the opposed wings. No additional components outside this area are required.

The edges of the free ends of the outwardly folding wings 14 and 14a of the embodiments shown are seen to have a partial concave-type configuration. Although such configuration is not essential to the proper operation of the retaining device, I find it preferable. The protruding portions on the panel, which correspond to the concave configuration of the said free ends, then extend into the space left by the outwardly folded wings and provide additional panel supporting surface on which the tape rolls rest. Nor is it essential that the side edges of the wings be perpendicular, that is that they extend perpendicularly with respect to the folding lines of the wings. Side edges which are divergently flared, which have laterally extending protrusions or which have any other suitable configuration serving to bear against the inner peripheral surface of the articles to be retained are satisfactory.

It is unnecessary that the wings be in a position exactly perpendicular to the pad when in the locked article retaining position. They may be either in a slightly convergent or divergent position depending upon the inner peripheral size and shape of the articles retained. The proper configuration and width of the locking tabs, in order to properly lock the wings in retaining position, thus will depend in part upon these factors as well as upon the material of which the pad or panel is composed.

For example, in employing the present invention for the packaging of tape rolls, I preferably employ a 1/8 inch thick corrugated board known in the industry as B-flute corrugated board. Due to the thickness and character of the board, the wings are displaced laterally toward each other slightly more than 1/8 inch as they are folded away from the pad along the fold lines. I find, in this instance, that a locking tab of optimum efficiency is obtained which is rectangular in shape and of a width of approximately 1/8 inch less than the distance between the parallel spaced wing fold-lines. Effectively then, when the wings are folded to form the mounting post the tab is slightly greater in width than the distance between wings. Of course, these specifications will vary somewhat where corrugated board of different thicknesses or where other materials are employed.

Although the illustrated embodiments of my retaining assemblies show that a pair of locking tabs are employed with each pair of opposed wings, this number may be varied. A greater number is sometimes preferable, particularly where wide wings are employed due to the size or configuration of the articles packaged. Conversely, where narrow wings are employed a single locking tab is often sufficient. However, the sum total of tab length as defined by the cuts extending generally along the wing fold-lines must necessarily be less than the wing width as defined by the said fold lines. The extent of the difference depends upon the strength of the material em-

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ployed in order to insure that the wings are firmly hingedly attached to the pad.

Herein I have described my invention with the aid of specific preferred embodiments as employed in connection with the packaging of convolutedly wound rolls of pressure-sensitive adhesive tape. However, as is apparent, my invention is equally suitable for use in connection with other articles having open or recessed center portions. Therefore it is not my intention that the present invention be limited to the embodiments shown; rather it is to be limited only in accordance with the scope of appended claims.

I claim:

1. A packaging pad suitable for releasably retaining thereon articles of annular shape, said pad having at least one pair of opposed wings integral with and hingedly affixed to said pad at their adjacent edges along spaced parallel fold lines, each pair of wings forming a mounting post when the wings thereof are folded away from said pad along said fold lines, and locking means for urging said wings into article retaining position, said locking means comprising at least one locking tab positioned between the wings of each pair on a fold line perpendicular to said parallel fold lines, said tab, when moved away from said pad into operative position, having its side edges in engagement with said wings and serving to urge the same apart when said wings have been folded away from said pad to form a mounting post, said tab when moved to said operative position forming an opening through said pad between said wings.

2. A pad suitable for releasably retaining rolls of tape wound convolutedly about annular cores, said pad comprising a panel, at least one pair of opposed wings integral with and hingedly affixed to said panel at their adjacent edges along spaced parallel fold lines, each of said pair forming a mounting post when the wings thereof are folded away from said panel along said fold lines, and at least one locking tab positioned between the wings of each pair integral with and hingedly affixed to said panel on a fold line perpendicular to said parallel fold lines, said tab, when folded away from the panel along its fold line, having its side edges in engagement with said wings and serving to urge the same apart when said wings have been folded away from the panel to form a mounting post.

3. The article of claim 2 wherein said pad consists of corrugated cardboard.

4. A packaging pad for releasably retaining thereon articles of annular shape, said pad having at least one pair of opposed wings integral with and hingedly affixed to said pad at their adjacent edges along spaced parallel fold lines, each pair of wings forming a mounting post when the wings thereof are folded away from said pad along said fold lines, and at least one locking tab disposed between the wings of each pair formed entirely from that portion of said pad lying between said spaced parallel fold lines, said tab being hingedly affixed to said pad on a fold line perpendicular to said parallel fold lines and, when folded away from the pad along its fold line, having its side edges in engagement with said wings and serving to urge the same apart when said wings have

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been folded away from the pad to form a mounting post.

5. A subcarton containing convolutedly wound rolls of tape comprising a folded pad which includes a pair of panels disposed in parallel spaced relation and a side wall connecting said panels, each panel of said pair being provided with at least one mounting post formed of a pair of opposed wings hingedly affixed to the panel and extending approximately perpendicularly therefrom in the direction of the opposite panel for a distance approximately equal to but not exceeding one-half the distance between said panels, corresponding mounting posts in the two panels being oppositely positioned, rolls of tape mounted upon said posts to a depth upon each of one-half the distance between said panels, and at least one locking tab hingedly affixed to said panels wedged between each pair of wings thereby urging the latter firmly against the inner periphery of tape rolls mounted thereover.

6. The article of claim 5 wherein said pad consists of corrugated cardboard.

7. The subcarton of claim 5 wherein the free end edges of the wings have a concave configuration.

8. A subcarton pad suitable for releasably retaining thereon articles of annular shape, said pad comprising: a first rectangular panel, at least one pair of opposed wings integral with and hingedly affixed to said first panel at their adjacent edges along spaced parallel fold lines, each pair of wings forming a mounting post when the wings thereof are folded away from said first panel along said fold lines, and at least one locking tab disposed between the wings of each pair formed entirely from that portion of said first panel lying between said spaced parallel fold lines, said tab being hingedly affixed to said first panel on a fold line perpendicular to said parallel fold lines and, when folded away from said first panel along its fold line, having its side edges in engagement with said wings and serving to urge the same apart when said wings have been folded away from said first panel to form a mounting post; a connecting panel having opposed parallel side edges, with one of said side edges being hingedly connected to an edge of said first panel; a second rectangular panel hingedly connected to the other of said opposed parallel side edges of said connecting panel, at least one pair of opposed wings integral with said second panel, said last-mentioned wings having associated therewith at least one locking tab, the relation said last-mentioned wings and associated locking tab bear to each other and to said second panel being the same as the relation the corresponding components associated with said first panel bear to each other and to said first panel, the number of pairs of wings attached to said first panel and said second panel being equal with corresponding pairs of wings of the two panels being oppositely positioned when the panels are parallelly disposed in superposition, said wings further each having a depth as measured from the free end to the fold line thereof approximately equal to without exceeding one-half the distance between the said parallel side edges of said connecting panel.

References Cited in the file of this patent

UNITED STATES PATENTS

2,615,564

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