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Jerzewski, Jr.

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[54] **ADHESIVE TAPE PACKAGE**

[75] Inventor: **Lawrence Jerzewski, Jr.**, East Millstone, N.J.

[73] Assignee: **Johnson & Johnson**, New Brunswick, N.J.

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[52] **U.S. Cl.** ..... **206/52 R**, 206/65 R

[51] **Int. Cl.**..... **B65d 85/62**, B65d 85/67

[58] **Field of Search**..... 206/52 R, 52 F, 59 R, 206/59 A, 59 B, 59 F, 59 C, 65 R, 65 Y, 58

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Primary Examiner—William T. Dixson, Jr.
Attorney—Jason Lipow et al.

[57] **ABSTRACT**

A container for packaging a plurality of tape rolls and having two ends and walls therebetween is provided with two inserts which form at least one sturdy, adjustable beam for supporting the tape rolls away from the walls of the container. Each insert comprises a planar base for fitting in close contact with an end of the container and a planar elongated projection extending into the container from a central portion of the base and in a plane essentially perpendicular thereto. When the two inserts are fitted against each end of the container, their projections overlie each other and form the supporting beam. Each insert may be inexpensively provided in the form of a set up, one piece, planar blank comprising a base portion and at least one co-planar projection extending longitudinally therefrom, the blank being provided with through cuts and bending scores whereby the projection may be rotated out of the plane of the base to form the insert of this invention.

6 Claims, 11 Drawing Figures

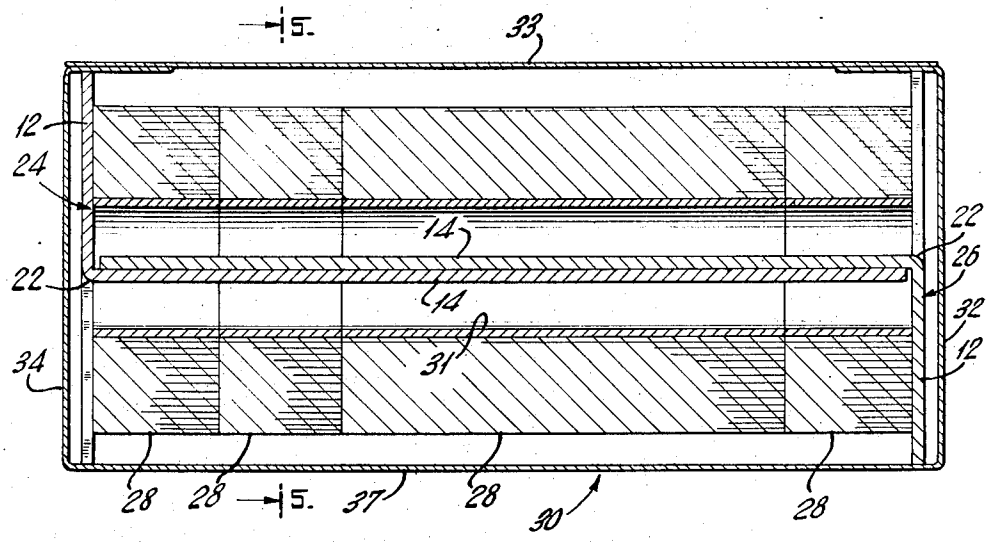


Fig. 1.

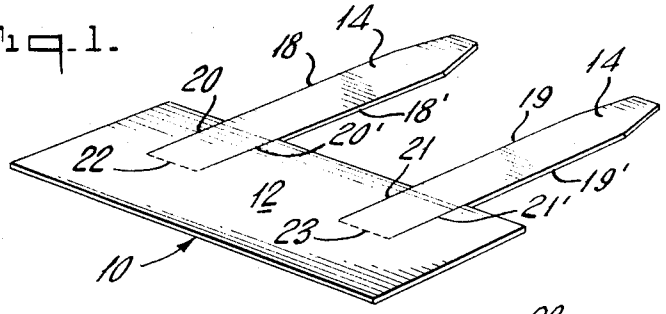


Fig. 2.

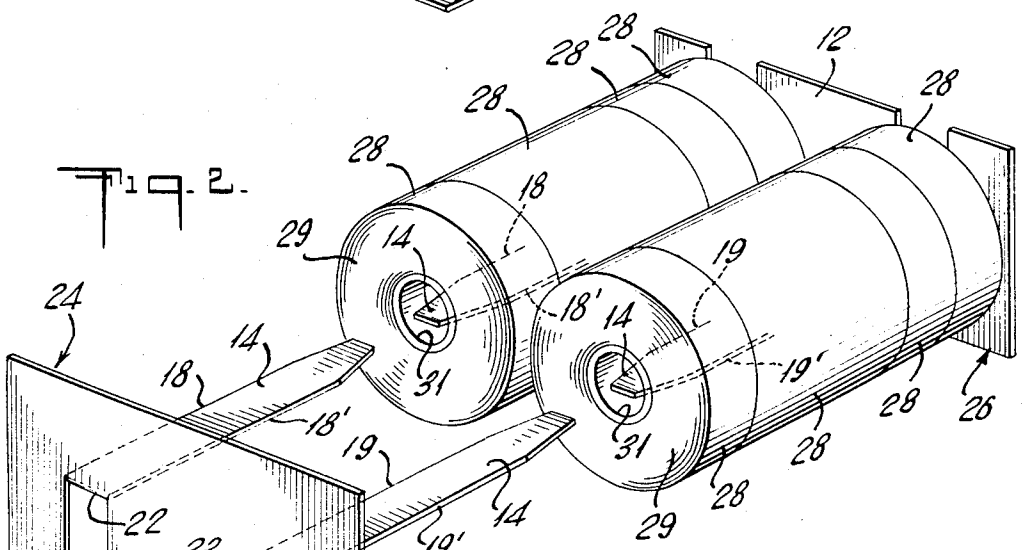
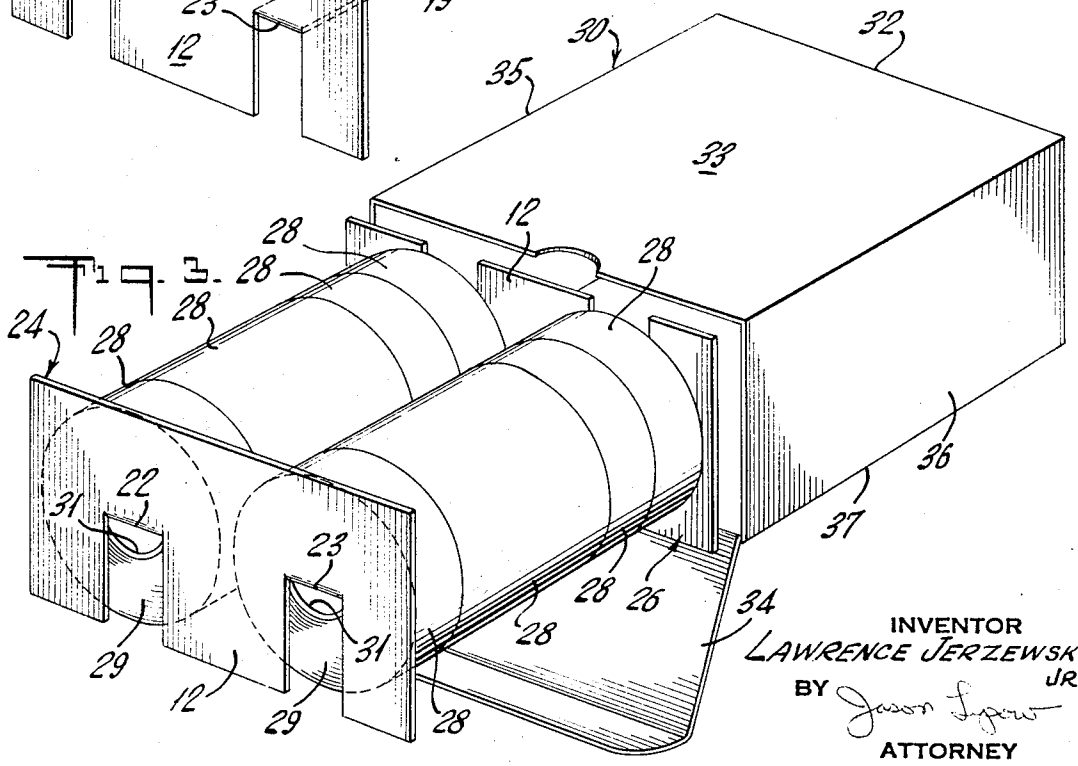


Fig. 3.



INVENTOR
LAWRENCE JERZEWSKI, JR.
BY Jason Lyon
ATTORNEY

FIG. 4.

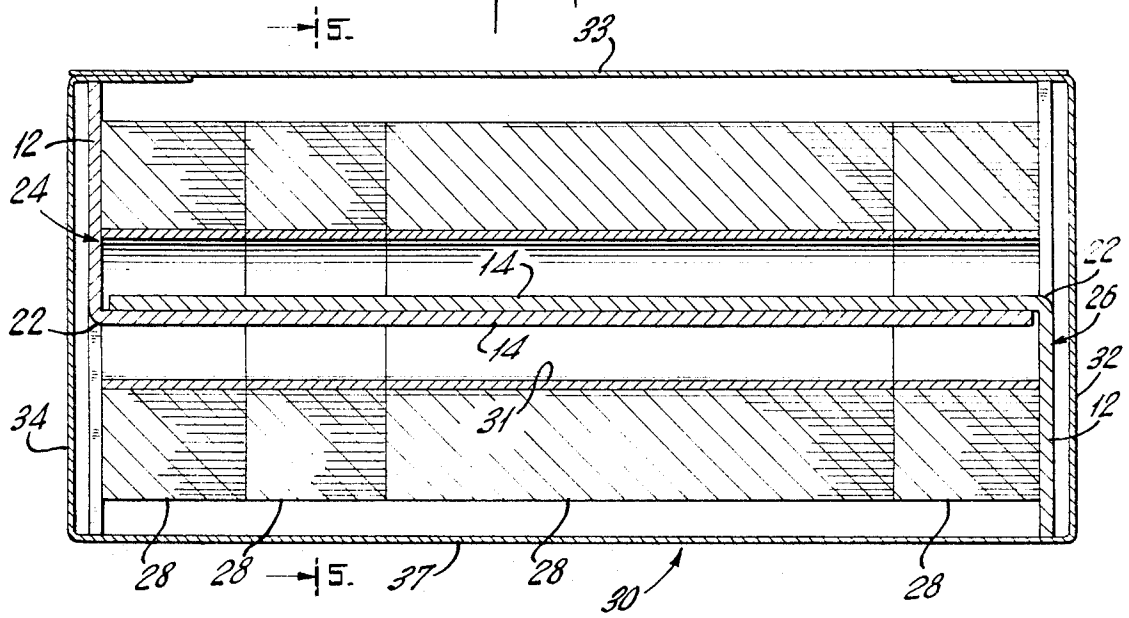
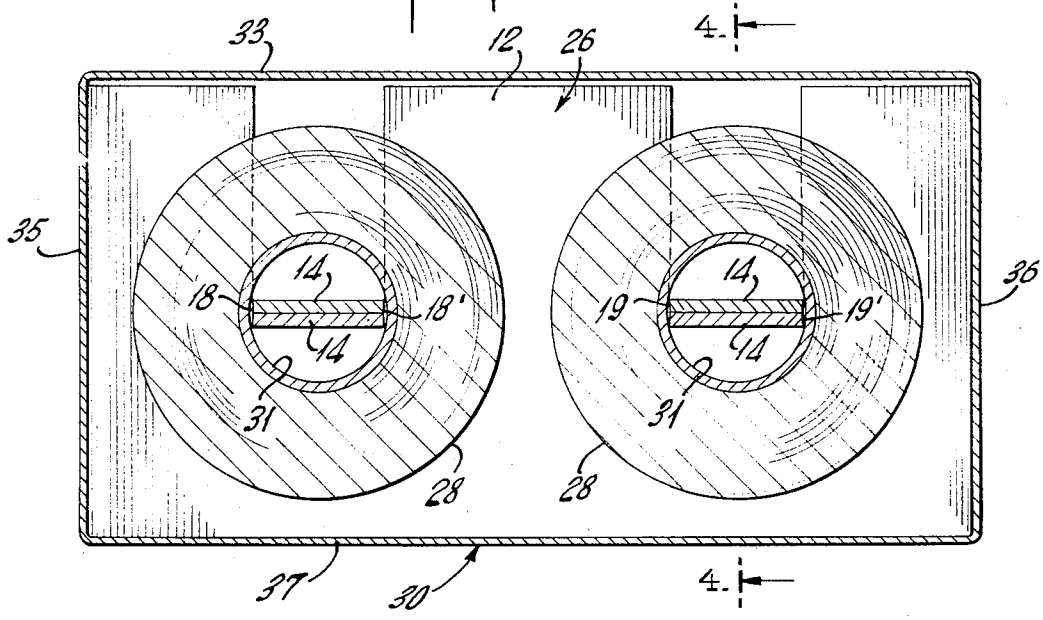


FIG. 5.



INVENTOR
LAWRENCE JERZEWSKI, JR.
BY
ATTORNEY

Fig. 6.

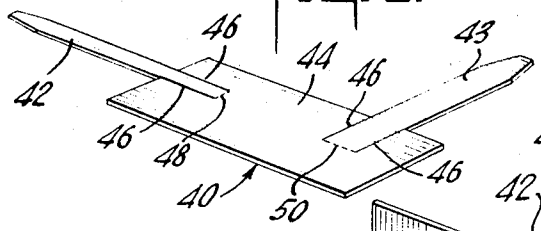


Fig. 7.

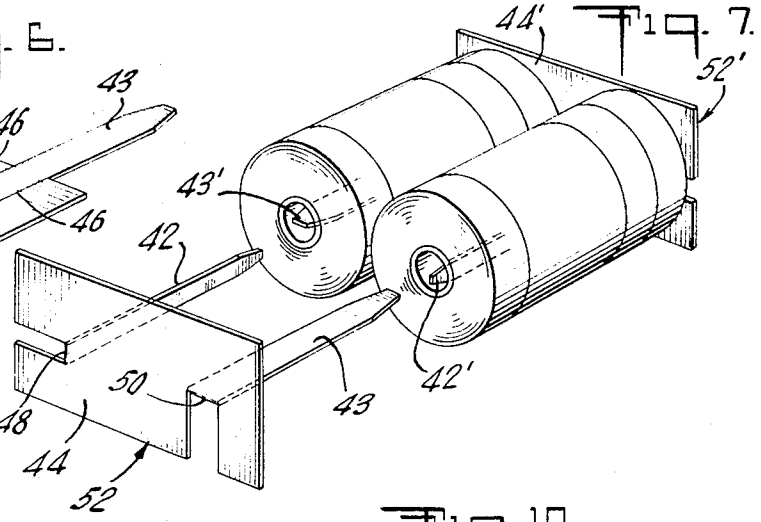


Fig. 10.

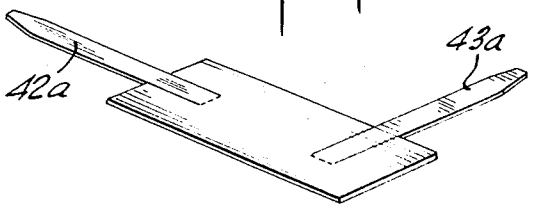


Fig. 8.

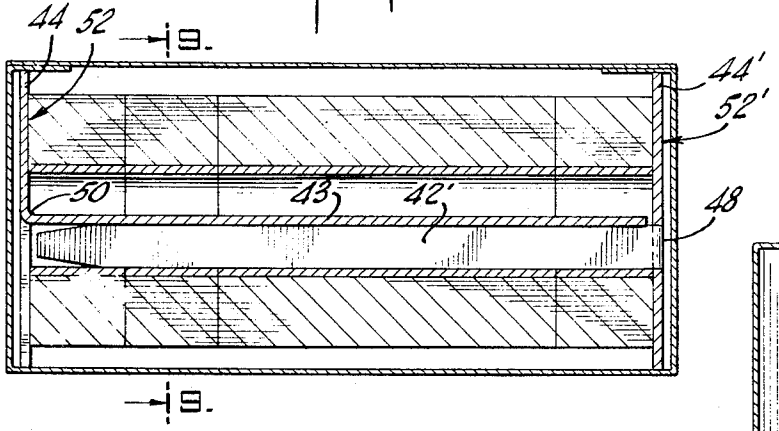


Fig. 11.

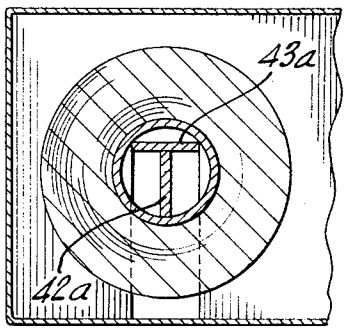
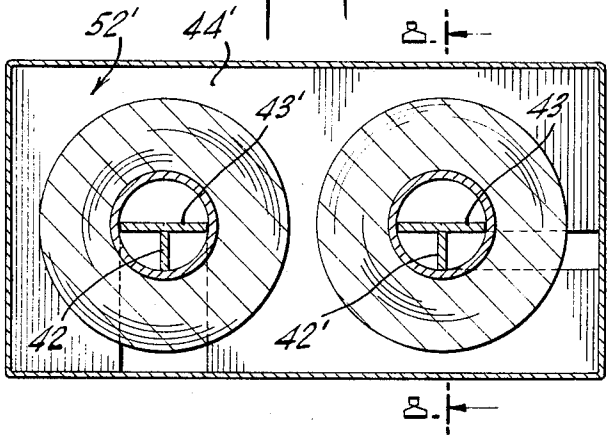


Fig. 9.



INVENTOR
LAWRENCE JERZEWSKI, JR.
BY Jason Lygow
ATTORNEY

ADHESIVE TAPE PACKAGE

BACKGROUND OF THE INVENTION

Various sheet materials are often provided in the form of tapes, rolled into hollow cylinders. This invention concerns the packaging of such cylinders (hereinafter called "tape rolls"). When shipping and storing a plurality of tape rolls, they are generally placed in a container in face-to-face, coaxial alignment to form a column or a series of columns. It has been found that unless the columns are supported away from the walls of the container, in the course of transporting and storing them, the rolls are susceptible to damage, specifically by deformation of the outside walls of the rolls so as to flatten them. Such flattening is particularly disadvantageous in the case of adhesive tapes in that it is difficult to unwind the flattened rolls.

To obviate this problem, containers have already been provided with devices for supporting tape rolls away from the walls, these generally comprising a beam for passing through the hollow core of the rolls and supporting them, the beam being supported in turn by beam engaging projections or slots provided in the ends of the container. While in the main, these prior devices adequately perform the function of protecting and supporting the tape rolls from damage, they suffer from the drawback of being excessively complex in the design and hence, costly. Specifically, the beam must be made of relatively sturdy materials if it is to support a substantial number of tape rolls. Further, because the packager generally wishes to provide containers of various lengths corresponding to a varying number of tape rolls in a column of rolls, it is inconveniently necessary to have available a corresponding variety of beam lengths. Further still, because the beam must be supported at the ends of the container, special end means must be provided and usually this requires a specific container design, useful only for this one specific purpose. Each of these requirements add to the ultimate cost and inconvenience of the packager and hence there is a need for a simple, inexpensive way of supporting tape rolls away from the walls of a container.

SUMMARY OF THE INVENTION

Accordingly, this invention provides inexpensive means for supporting a column, or a plurality of columns, of tape rolls away from the walls of a container. The container is of conventional design, having two end and longitudinally extending walls therebetween. Two inserts are provided, each comprising a base fitting in close contact with each end of the container and each further provided with at least one central elongated planar projection, longitudinally extending, in a plane essentially perpendicular to the plane of the base, into the container for a distance of more than one half of the distance between the ends, whereby the projections overlie each other for at least a portion of their length and thereby form a sturdy, adjustable beam for supporting the tape rolls. As is more completely described herein, the planes of the overlying projections may lie, alternatively, parallel or perpendicular to one another.

In a preferred embodiment, the inserts are each set up from a planer blank cut so as to comprise a base and at least one elongated, planar projection, co-planar with the base and having edges extending longitudinally thereform. The periphery of the base preferably conforms to an end of the container so that is may be force fitted against the inside surface of the end. The blank, in the base portion, is provided with through cuts beginning at the junction of each projection and the base, extending therefrom into the base collinearly with each longitudinally extending edge of the planar projection, and terminating in a central portion of the base. The two terminals of the through cuts collinearly extending from each of the projections are joined by bending score whereby the projections may be rotated out of the plane of the base and extend from a central portion thereof.

In use, the base of a first insert is force fitted into close contact with one end of a conventional container with the projection being hinged along the bending score so as to extend out of the plane of the base and into the container. The tape rolls are threaded onto the extending projection in face-to-face alignment with each other, the projection passing through the hollow core of the rolls. A second insert is set up and its projection is fitted through the hollow core of the threaded column of tape rolls toward the base of the first insert so as to overlie the projection of the first insert and have the base of the second insert overlie the face of the last tape roll. Finally, the second end of the container is closed, thereby making close contact with the base of the second insert. The tape rolls are then supported on the overlying projections of the two inserts and are thereby held away from the walls of the container.

Several alternative embodiments of the above described novel packaging means are within the scope of this invention. For example, the planar projections of the paired inserts may, in use, overlie each other in face-to-face alignment, i. e., the planes of the planar projections lie parallel to one another. Alternatively, by rotating one of the two inserts 90° in the plane of the base, the planar projections will overlie each other in edge-to-face alignment, i.e., the planes of the projection will be perpendicular to one another.

In still another embodiment of the invention, a plurality of projections may be provided on each insert whereby a corresponding plurality of tape roll columns may be supported in a single container.

Many variations and embodiments of the invention will be apparent to those skilled in the art from the following description and drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

A better understanding of the invention will be had from the following description read in conjunction with the drawings, wherein:

FIG. 1 is a perspective view of a blank ready to be set up to form the container insert of this invention;

FIG. 2 is a perspective, partially exploded view of two set up inserts, one of which supports a plurality of tape rolls;

Fig. 3 is a perspective, partially exploded view of two inserts and a container, the inserts supporting a plurality of tape rolls and ready to be inserted in the container shown;

FIG. 4 is a cross-sectional view of the container of this invention holding two columns of tape rolls and taken along line 4—4 of FIG. 5;

FIG. 5 is a cross-sectional view of the container of FIG. 4 taken along line 5—5 of FIG. 4;

FIG. 6 is a perspective view of a blank for setting up to form a container insert in accordance with a second embodiment of this invention;

FIG. 7 is a perspective, partially exploded view of the blank of FIG. 6 set up as inserts, one of which supports a plurality of tape rolls;

FIG. 8 is a cross-sectional view of the container of this invention provided with the inserts of FIG. 7 and holding two columns of tape rolls, as viewed along line 8—8 of FIG. 9;

FIG. 9 is a cross-sectional view of the container of FIG. 8 taken along line 9—9 of that FIGURE;

FIG. 10 is a perspective view of a blank for setting up to form a container insert in accordance with another embodiment of this invention; and

FIG. 11 is a cross-sectional view of the container of this invention provided with two inserts set up from the blank of FIG. 10.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring now to FIG. 1, a one-piece blank 10, preferably made of corrugated fiberboard, is illustrated in a completely flat condition and is ready to be set up as an insert in accordance with this invention. The blank 10 may be die cut from a large piece of corrugated fiberboard and the preferred through cuts and bending scores may be pressed therein all in a single operation. It will be understood that while corrugated fiberboard is generally described herein as the material of construction, many other materials are suitable such as solid paper board, plastics and metals.

The blank is in the shape of a two-legged T. The base 12, corresponding to the planar crossbar of the T, has a periphery conforming to the end of the container in which it is to be used so that it may be force fitted in close contact with the container. Extending from the base 12 are two coplaner, longitudinally elongated projections 14 which form the legs of the T. Collinear with the longitudinal edges 18, 18', 19 and 19' of the projections 14 are two sets of through cuts 29, 20' and 21, 21', cut completely through the thickness of the blank 10, and extending into the central portion of the base 12. At the terminals of the through cuts are bending scores 22 and 23, which join the set of through cuts corresponding to each of the projections 14.

FIG. 2 illustrates two blanks of the configuration shown in FIG. 1, and now set up as inserts 24 and 26 to receive and support a column of tape rolls 28. The projections 14 of both insert 24 and insert 26 have been rotated along their respective bending scores (bending scores 22, 23 are shown) to a position essentially perpendicular to the plane of the base 12. Insert 26 has been threaded with tape rolls 28. In the partially exploded view of FIG. 2, projections 14 of insert 24 are now ready to be fitted into the hollow core 31 of the tape rolls so as to overlie the corresponding projections of insert 26, and thereby form a sturdy beam for supporting these tape rolls. In this specific embodiment, the plane of the overlying projections will be parallel to each other. It should be noted that the degree of overlap of the corresponding projections of the two inserts will determine the length of the beam. This degree of overlap may be varied to accommodate a correspondingly varied length of tape columns.

As illustrated in the partially exploded view of FIG. 3, the set of inserts 24 and 26, now loaded with tape rolls 28, are ready to be inserted into a conventional container 30 having ends 32 and 34, and walls 33, 35, 36 and 37 therebetween. The periphery of the base 12 of the inserts conform closely to the periphery of the container ends so that when the loaded inserts are forced into the container 30, the inserts will be held in close contact with the container ends.

It should be understood that, while a specific set of sequential steps have been described above in connection with FIGS. 1–3, for loading the container of this invention, many other alternative sequences are possible. For example, insert 26 may be first set up and fitted into the container 30 and while in the container, tape rolls 28 may be placed over the projections of the insert 26. Then, the projection of the insert 24 may be fitted into the hollow core 31 of the tape rolls with the base 12 of insert 24 in face-to-face contact with the outermost tape roll surfaces 29 and the projections of insert 24 overlying the corresponding projections of insert 26. Finally, the container 30 may be closed so that the end 34 makes close contact with the base 12 of insert 24.

FIGS. 4 and 5, cross-sectional views of the container 30 provided with the inserts 24 and 26 corresponding to the first embodiment of this invention and containing two parallel columns of tape rolls 28, illustrate the sturdy beam formed by the overlying projections 14. Referring to FIG. 4, the overlying projections form at least a two-point supported beam on which the column of tape rolls rest. It should be noted that even if the container, in contrast to the orientation illustrated in FIG. 5, were turned upside down so that wall 37 would be facing upward and wall 33 would be facing downward, the two-point supported beam configuration would still be maintained.

Illustrated in FIGS. 6–9 is a second embodiment of the present invention. FIG. 6 illustrates a one-piece blank 40 having two elongated planar projections 42 and 43, extending co-planar with a base portion 44 and being essentially perpendicular to one another. Through cuts 46 are provided in the base portion, collinear to the longitudinal edges of each of the projections and terminating at a central portion of the base 44. The terminals of through cuts are joined by bending scores 48 and 50 corresponding to projections 42 and 43 respectively.

In FIG. 7 two blanks having the configuration illustrated in FIG. 6 are set up as inserts 52 and 52' and a column of tape rolls is threaded onto one. As illustrated therein each blank is set up by rotating each of the projections 42, 43, 42' and 43' along their respective bending scores (bending scores 46 and 50 are shown) approximately ninety degrees out of the plane of the base 44 so that they extend outwardly from the identical face of the base and have their planar surfaces essentially perpendicular to one another, e. g., for insert 52, the plane of one projection 42 lies in a vertical plane and the plane of a second projection lies in a horizontal plane.

As set up in the partially exploded view of FIG. 7, a first insert 52' has both its projections loaded with a column of tape rolls 28. A second insert 52, identical in configuration with that of the first insert, is oriented so that its base 44 is parallel to and aligned with the base 44' of the first insert 52' and is rotated, with the plane perpendicular to its base, about 180° so that the projection 42 whose plane lies in a vertical plane is opposed by the projection 43' of the first insert 52' whose

plane lies in a horizontal plane. Similarly, the projection **43** of the second insert **52** whose plane lies in a horizontal plane will be opposite the projection **42'** of the first insert **52'** whose plane lies in a vertical plane.

Having thus oriented the two inserts, the projections of the second insert are fitted into the hollow portion of each of the columns of tape rolls threaded onto each of the opposed projections of the first insert, thus forming a beam of T shaped radial cross section, as best illustrated in FIGS. **8** and **9.**

FIGS. **8** and **9** are cross-sectional views of container **30** provided with the inserts **52** and **52'** of this second embodiment of the invention and containing two parallel columns of tape rolls **28.** Illustrated therein is the beam formed by the overlying insert projections **42, 43, 42'** and **43'.** As in the above described embodiment, at the very least, a two-point supported beam results. It is a particular advantage of this specific embodiment that, irrespective of on which wall the container rests, the tape roll column will be supported by a beam having a thickness which corresponds to the full width of the projections. Accordingly, this second embodiment will provide a sturdier beam than that of the prior described embodiment. It should be noted, however, that the prior described embodiment (FIGS. **1–5**) has the advantage that less specific orientation of one insert with respect to the other is required and there is no need to rotate one insert through a 180° angle before properly aligning them, thereby making the packaging process more convenient.

FIGS. **6** through **9** have illustrated an embodiment of the invention wherein the planar projections forming the beam are of unequal width, one of which being essentially as wide as the inside diameter of the hollow tape core and the second being essentially as wide as the inside radius of the hollow tape core. As illustrated in FIGS. **10** and **11,** a blank may be provided with projections **42***a* and **43***a* which are of equal width, said width being less than the inside diameter of the tape roll and greater than the inside radius thereof. The blank is provided with through cuts and bending scores as described above in connection with FIG. **6.**

It will be apparent from the foregoing description that the present invention provides means for supporting and protecting columns of tape rolls in a simple and inexpensive manner. While the invention has been described in accordance with certain preferred embodiments, many changes and modifications will be obvious to the skilled in the art without departing from the scope and spirit of the inventon.

What is claimed is:

1. In a container for tape rolls, having two ends and walls therebetween: two essentially identical inserts, each comprising a base for fitting in close contact with an end of the container; and each insert further comprising at least one central, elongated, planar projection, longitudinally extending in a plane essentially perpendicular to the plane of the base and into the container for a distance of more than one-half the distance between said ends; said projections overlying each other for at least a portion of their length to form at least one sturdy, adjustable beam for supporting said column of said tape rolls.

2. The container of claim **1,** wherein the planes of the overlying projections are essentially parallel to one another.

3. The container of claim **1,** wherein the planes of the overlying projections are essentially perpendicular to one another.

4. The container of claim **1,** wherein each insert is set up from a one piece planar blank, said blank comprising: the base; at least one elongated planar projection, co-planar with the base and having edges extending longitudinally thereform; through cuts in said base beginning at the junction of each projection and the base, extending therefrom into said base collinearly with each longitudinally extending edge of the projection, and terminating in a central portion of the base; and a bending score joining the two terminals of the through cuts extending from each of the projections whereby the projections may be rotated out of the plane of the base and extend from a central position thereof.

5. The container of claim **4,** wherein each insert is set up from a blank having at least two projections extending from the base oriented parallel to one another.

6. The container of claim **4,** wherein each insert is set up from a blank having at least two projections extending from the base oriented perpendicular to one another.

* * * * *