

April 21, 1970

E. R. VAN DAM ET AL

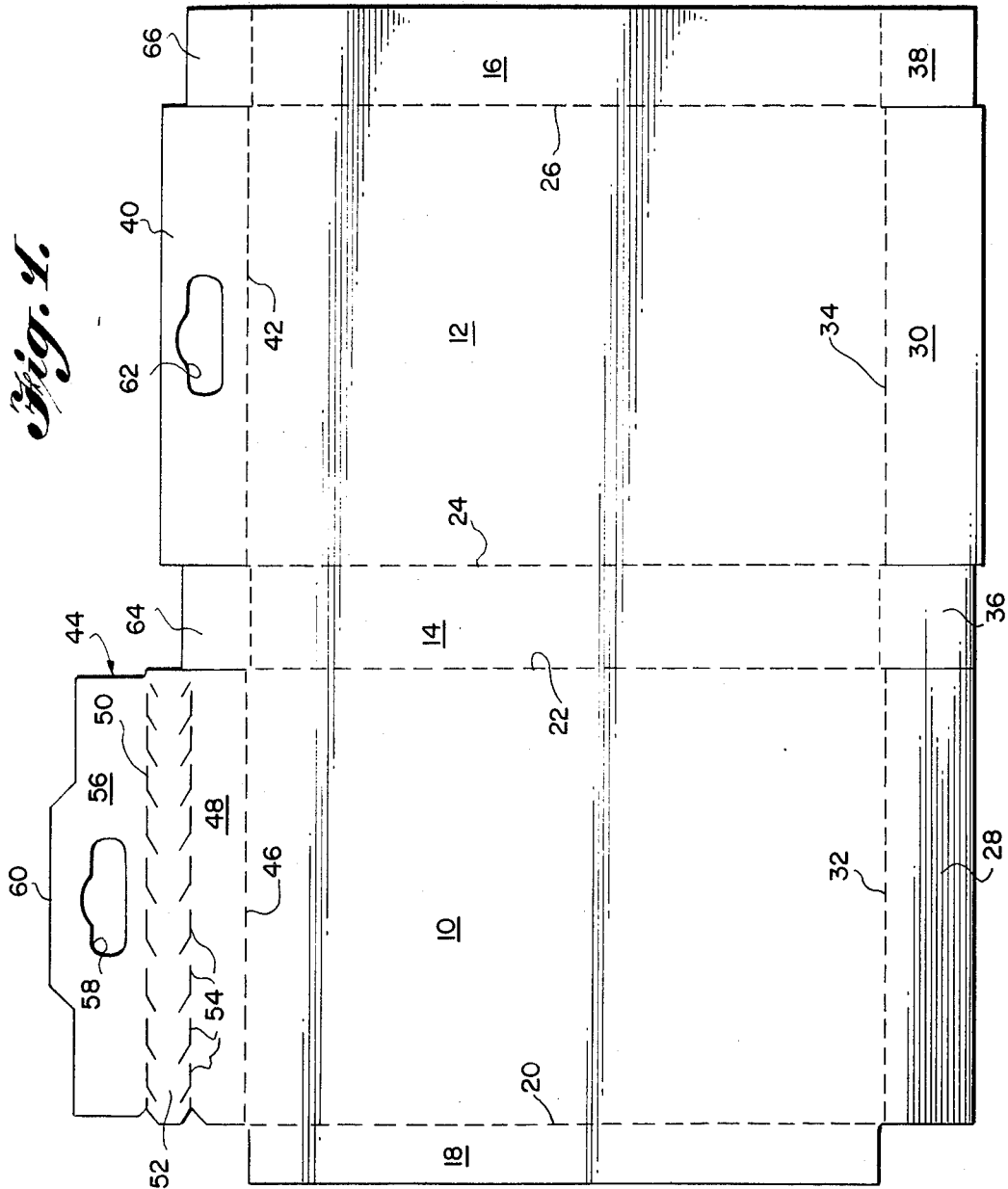
3,507,442

RACKABLE DISPLAY BOX AND METHOD

Filed July 29, 1968

2 Sheets-Sheet 1

Fig. 1.



INVENTORS
EDWARD ROGER VAN DAM
& RALPH B. WILLIS

BY *Brown & Mikulka*
and Robert F. Zieme
ATTORNEYS

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Fig. 2.

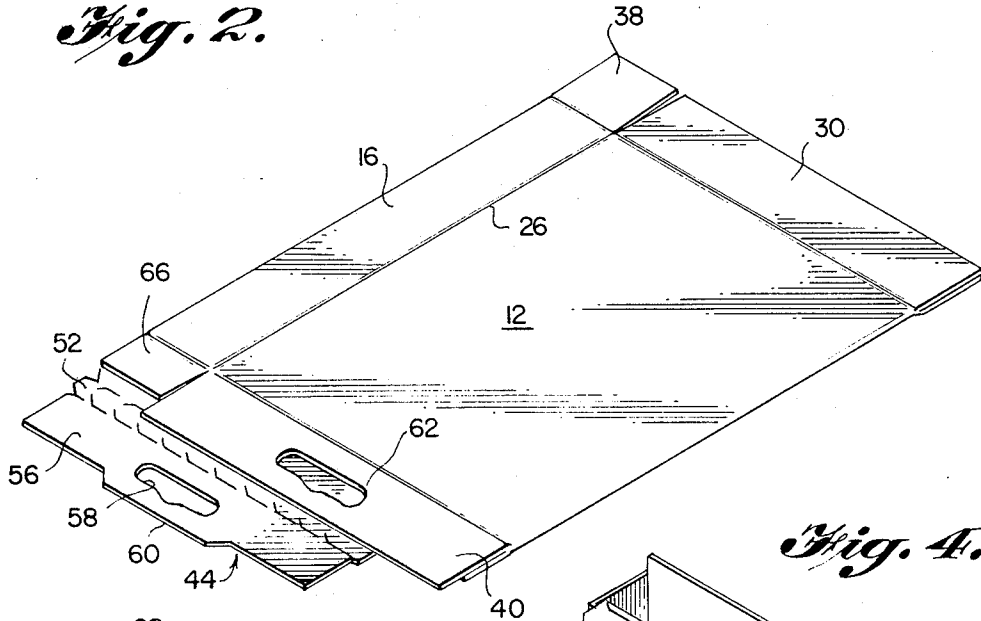


Fig. 3.

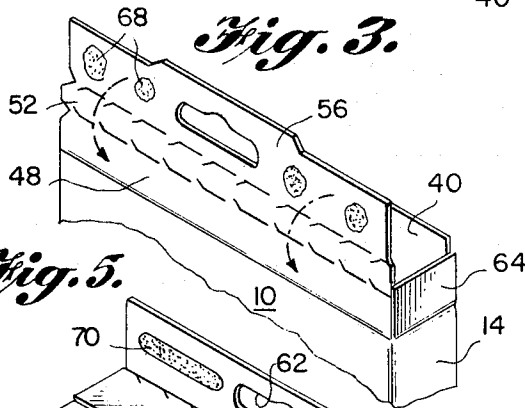


Fig. 5.

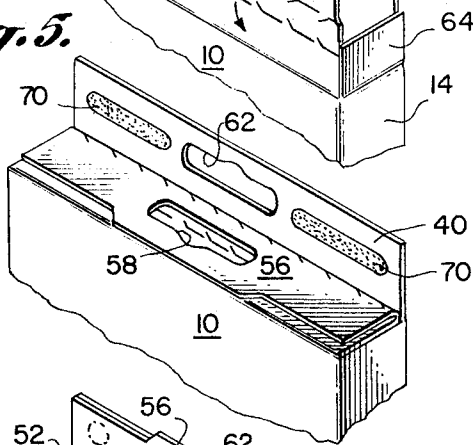


Fig. 4.

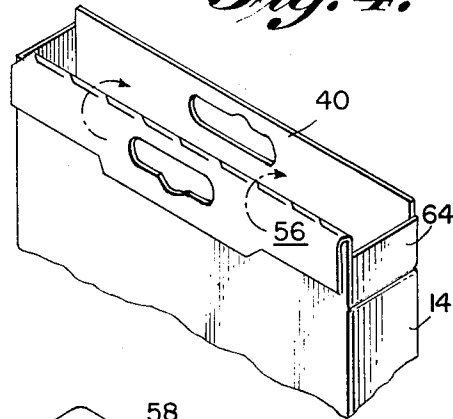


Fig. 6.

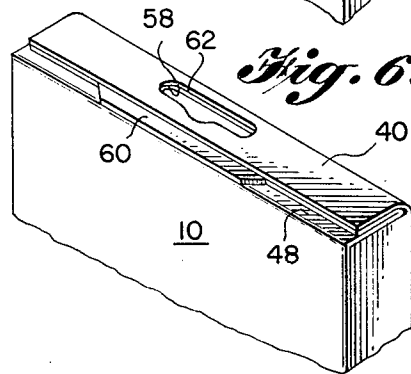
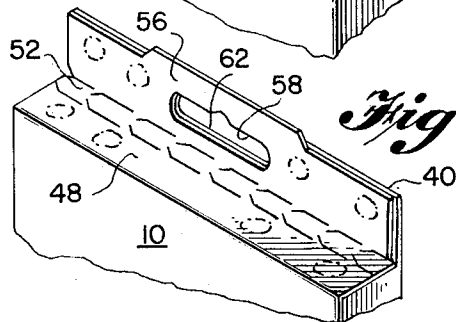


Fig. 7.



INVENTORS
EDWARD ROGER VAN DAM
& RALPH B. WILLIS

BY *Brown & Mikulka*
and Robert F. Ziems
ATTORNEYS

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RACKABLE DISPLAY BOX AND METHOD
Edward Roger VanDam, Marblehead, and Ralph B. Willis, Hudson, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

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U.S. Cl. 229—51

10 Claims

ABSTRACT OF THE DISCLOSURE

A rackable display box and method of assembling a box blank to facilitate the formation of a combined closure and hanging structure at one end of the box with conventional erecting, loading and closing equipment. The box is convertible from a storage and shipping form to a form enabling suspension on a display rack.

BACKGROUND OF THE INVENTION

This invention relates to rackable display boxes and more particularly it concerns a combined closure and hanging structure for an end of a tubular packaging box as well as a unique method for its assembly by which the use of conventional box closing machinery is facilitated.

Although many new and refined packaging techniques have been developed in recent years and have been widely accepted in the merchandising of numerous products, conventional paperboard boxes continue to be used for such reasons as low material costs, ease of loading and closing with available equipment, protection of the product against rough handling, and conservation of transportation and storage space. In connection with this last mentioned attribute, the generally smooth rectangular exterior shape of paperboard boxes greatly facilitates the shipping of unit boxes in cartons or the like and, as well, reduces the amount of space required for shelf storage. On the other hand, current practice in retail outlets involves extensive use of racks upon which products may be hung for display and storage, thus posing a problem to the use of conventional paperboard box designs. While various types of tabs and other projecting means for hanging such boxes may be used, any projections from the generally rectangular exterior shape of the box tends to detract from the desirable space conserving features aforementioned.

Also, in box designs heretofore available, the incorporation of a hanging tab or the like poses a problem in the loading and closing of the box with conventional equipment. Specifically, such equipment effects automatically the erection of a tubular box blank, followed by loading of the product into the box, and then sequential folding of closure tabs on each end of the tube to complete the box package. It will be appreciated, therefore, that the inclusion of irregular hanging tabs or the like on the box poses a problem from the standpoint of using existing equipment without extensive adjustment and/or modification to accommodate a modified box blank.

SUMMARY OF THE INVENTION

In accordance with the present invention, a combined closure flap and hanging tab structure for a tubular box blank is provided which both accommodates the use of conventional loading and closing equipment and also results in a box having a conventional rectangular exterior shape, with provision for conversion to a hangable or rackable display box. Essentially, these features are accomplished by providing one of the closure flaps on a box tube with a hanging tab extension capable of being folded over the flap and tacked in place to provide that

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closure flap with a profile identical to the closure flap on the opposite wall of the tube. In this manner, the closure flaps may be folded across the open end of the box tube in the usual manner and on conventional equipment. The hanging tab is formed with an eyelet or hanging aperture which becomes aligned with a similar aperture formed in the other of the two closure flaps when the latter is folded down and permanently secured against the hanging flap portion. To convert the box for hanging, the latter closure flap and the folded hanging tab are unfolded as a unit to be received on a hanging rack. Also an integral tear strip may be provided to facilitate opening the box.

Among the objects of the present invention are, therefore: the provision of a combined closure and hanging structure for a tubular box blank which results in a box product capable of being converted to a hangable package; the provision of a box of the type aforementioned which is readily loaded and closed on conventional equipment; and the provision of a unique method for closing a box of the type aforementioned.

Other objects and further scope of applicability of the present invention will become apparent from the detailed description given below taken in conjunction with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a plan view of a blank from which the box of the present invention is formed;

FIG. 2 is a perspective view of a collapsed box tube formed from the blank of FIG. 1;

FIG. 3 is a fragmentary perspective view showing the reverse side of the upper portion of the box tube of FIG. 2 after erection but prior to loading;

FIG. 4 is a fragmentary perspective view showing the box tube after it has been loaded;

FIGS. 5 and 6 are fragmentary perspective views illustrating successively the folding of closure flaps of the box; and

FIG. 7 is a fragmentary view of the closed box illustrated in FIG. 6 converted for hanging on a rack.

DETAILED DESCRIPTION OF A PREFERRED EMBODIMENT

The blank from which the box of the present invention is formed is illustrated in FIG. 1 of the drawings. As shown, the blank is stamped or otherwise cut from a sheet of paperboard stock material to provide a front wall panel 10, a rear wall panel 12 and a pair of side wall panels 14 and 16, respectively, on each side of the rear wall panel 12. A glue flap 18 extends from the side of the front wall panel 10 opposite the side wall panel 14. Also, vertical fold lines 20, 22, 24 and 26 establish the side edges of the respective wall panels 10, 12, 14 and 16. To effect a closure at the bottom end of the box, conventional closure flaps 28 and 30 extend downwardly from fold lines 32 and 34 at the bottom edge of the front and rear wall panels, respectively. Also, intuck tabs 36 and 38 are provided at the lower edge of each of the side wall panels 14 and 16, respectively. The blank thus described is conventional and is converted to a tubular box blank by first folding the glue flap 18 rearwardly about the fold line 20 against the backside of the front wall panel 10 and then folding the combined rear wall panel 12 and side wall panel 16 about the fold line 24 so that the backside of the side wall panel 16 is superimposed on the folded glue flap 18 and secured adhesively against the latter. The tubular box blank so formed is illustrated in FIG. 2 of the drawings.

In the illustrated embodiment of the present invention, the upper end of the tubular box blank is provided with a novel combined closure and hanging structure. This

structure is embodied in the blank shown in FIG. 1 as a rear flap 40 extending from a fold line 42 on the upper edge of the rear wall panel 12 and a front flap, generally designated by the reference numeral 44, extending from a fold line 46 along the upper edge of the front wall panel 10. The front flap 44 includes a closure portion 48 extending from the fold line 46 to a second parallel fold line 50 spaced from the fold line 46 by a distance approximating the depth of the box as established by the respective widths of the side panels 14 and 16. Also it is to be noted that the fold line 50 is superimposed on one side of an integral tear strip 52, the other side of which is established by a second line of spaced cuts 54.

Extending from the fold line 50 or from the upper edge of the closure portion 48 is a hanging tab portion 56 having an eyelet or hanging aperture 58 formed therein and a projecting finger tab portion 60 on its upper edge. Also it is to be noted that the rear flap 40 has a similarly shaped eyelet or hanging aperture 62 formed therein. The elements for closing the upper end of the box are completed by intuck tabs 64 and 66, respectively, on the side wall panels 14 and 16.

The manner in which the collapsed box tube illustrated in FIG. 2 is erected, loaded and closed may be understood by reference to FIGS. 3-6 of the drawings. In the tubular blank provided after securing the side wall panel 16 against the glue flap 18, the closure flaps at both ends of the blank extend unfolded (FIG. 2). Collapsed tubular blanks of this general form are conventionally loaded into the feed magazine of automatic machinery (not shown) by which the blank is erected, loaded and closed. The means embodied in such machinery for closing and sealing a four flap seal-end style carton, however, require that the overall profile of the front and rear closure flaps be the same; that is, that they project from each end of the box through substantially the same distance. This condition does not exist in the blank as shown in FIG. 2 since the hanging tab portion 56 on the front wall flap 44 gives the front flap 44 a height approximately double that of the rear wall flap 40. Hence, before the tubular blanks are closed, in accordance with the method of this invention, the hanging tab portion 56 is first folded over the front of the closure portion 48 of the flap 44 and releasably tacked in place.

After the tubular box blank has been erected as shown in FIG. 3 of the drawing and moved to the loading position, the product to be packaged is loaded into the tubular blank. During loading, glue is applied at spots or spaced areas designated by the reference numeral 68 and the tab portion 56 is folded over and tacked to the closure portion 48. The configuration of the upper end of the loaded box tube at this point is shown in FIG. 4. In this form, it will be noted that the profile of the front flap 44 is substantially the same as that of the rear flap 40 and thus the loaded box tube is ready to be closed by conventional automatic equipment of the type mentioned.

Although both ends of the box are closed simultaneously, closure at the bottom end is conventional and need not be described further. Closure at the upper end, however, is effected by first folding the intuck tabs 64 and 66 inwardly over the unopened end of the tube. Then, the front flap is folded on the line 46 over the tabs 64 and 66 to the position shown in FIG. 5 of the drawings. In this position, the rear surface of the hanging tab portion 56 is presented upwardly and the finger tab 60 is substantially aligned with the plane of the front wall panel 10. Then, the rear flap 40, to which glue or other adhesive has been applied on strips or zones 70, is folded over and permanently secured to the hanging tab portion 56 to complete the closure of the tube. In this condition, it will be noted that the hanging eyelet 62 in the rear flap overlies and is in alignment with the hanging eyelet 58 in the hanging tab portion 56 of the front flap 44.

The box shown in FIG. 6 is now ready to be placed in cartons for shipment ultimately to a retail outlet. If

desired, the boxes may be displayed on a shelf without modification from the form shown in FIG. 6. If it is desired to suspend the box from a rack for display purposes, however, conversion for rackability can be accomplished simply by grasping the finger tab 60, breaking the adhesive tack in the areas 68 and unfolding as a unit both the hanging tab portion 56 on the front closure flap and the rear closure flap 40 to expose the aligned hanging eyelets 58 and 62 for receiving a hanging peg or the like.

To open the box after it has been converted to the hanging or racking form shown in FIG. 7, it is necessary only to grasp the end of the tear strip 56 and withdraw it over the length of the top of the box in conventional fashion. Obviously, if the box were to be opened from the form shown in FIG. 6, the upper tab would be first pulled upwardly to expose the tear strip as shown in FIG. 7.

Thus, it will be appreciated that this invention provides a unique packaging box as well as a novel method for its assembly and by which the above mentioned objectives are completely fulfilled. It will also be appreciated that various modifications or changes can be made in the box illustrated without departure from the spirit and scope of the present invention. It is expressly intended, therefore, that the foregoing description is illustrative of a preferred embodiment only and not a limitation on the true scope of the present invention.

What is claimed is:

1. In a tubular box blank having front, rear and side wall panels adapted to be folded relative to one another to establish an open ended tube with opposed, mutually facing spaced walls, a combined closure and hanging structure for an end of said tube comprising: a first flap extending from a first of said panels to form one of said opposed walls, said first flap being located at said end and having a hanging aperture formed therein, and a second flap projecting from a second of said panels to form the other of said opposed walls, said second flap also being located at said end and having a closure portion and a hanging tab portion having another hanging aperture formed therein, said closure portion extending between a first fold line contiguous with said end of said second panel and a second fold line parallel to and spaced from said first fold line, said hanging tab portion extending from said second fold line and being foldable over said closure portion so as to overlie said closure portion when the latter is folded on said first fold line over said open end, the configuration of said second flap being substantially the same as said first flap after said hanging tab portion is folded over said closure portion, adhesive means to releasably secure said hanging tab portion against said closure portion, said first flap being foldable over said second flap to be adhesively secured against said hanging tab portion with both said apertures in alignment, whereby said first flap and said hanging tab portion may be unfolded as a unit from said closure portion to expose said aligned apertures for hanging.

2. The blank recited in claim 1 including a tear strip defined by spaced parallel lines of cuts in said closure portion of said second flap.

3. The blank recited in claim 2 wherein one of said lines of cuts is superimposed on said second fold line.

4. The blank recited in claim 1 including intuck tabs on said end wall panels and adapted to be folded under both said first and second flaps.

5. A tubular box comprising: mutually facing front and rear walls, side walls interconnecting said front and rear walls, and a combined end closure and hanging structure including a front flap having a closure portion folded from said front wall toward said rear wall over an end of the box and a hanging tab portion doubled over and releasably adhesively tacked against said closure portion, said hanging tab portion having an aperture formed therein, and a rear flap folded from said rear wall toward

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said front wall and adhesively secured against said doubled over hanging tab portion, said rear flap having another hanging aperture formed therein and aligned with the hanging aperture in the hanging tab portion of said front flap, said front and rear flaps respectively, including the hanging tab portion on said front flap, extending the length of said front and rear walls between said side walls, the adhesive tack of said hanging portion to said closure portion being releasable so that said rear flap and said hanging tab portion may be unfolded as a unit to provide a hanging element substantially in the plane of said rear wall.

6. The box recited in claim 5 wherein said hanging tab portion is tacked to said closure portion by an adhesive located at spaced intervals on the engaging surfaces of said portions.

7. The box recited in claim 5 including an integral tear strip on said closure portion for opening the box.

8. The box recited in claim 7 wherein said tear strip is established by spaced parallel lines of cuts, one of said lines defining a fold line about which said hanging tab portion is doubled over said closure portion.

9. The method of closing the structure recited in claim 1 comprising the steps of first folding and tacking said hanging tab portion to said closure portion, then folding said second flap over the open end of the tube, and then folding and securing said first flap over said second flap.

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10. The method of providing a combined end closure and hanging tab on a tubular box having front, rear and side walls with front and rear closure flaps projecting from the ends of the front and rear walls, respectively, one of the closure flaps having a hanging tab projecting as an extension from the free end thereof, said method comprising the steps of: folding said hanging tab over the outer face of said one closure flap on a fold line located so that the profile of said one closure flap conforms in size to that of the other closure flap, adhesively tacking said hanging tab in said folded position, folding said one closure flap over the open end of the tube and then folding and adhesively securing said other flap against said hanging tab.

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DAVID M. BOCKENEK, Primary Examiner

U.S. Cl. X.R.

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