United States Patent [19]

Roccaforte

[11] **3,917,064**

[45] **Nov. 4, 1975**

[54] **TUBE DISPLAY CARTON**

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[22] Filed: **Dec. 30, 1974**

[21] Appl. No.: **537,315**

[52] **U.S. Cl.** **206/277;** 206/45.14; 206/45.31; 206/491

[51] **Int. Cl.**[2] **B65D 85/14;** B65D 5/52

[58] **Field of Search** .... 229/16 D; 206/45.14, 45.19, 206/45.31, 277, 429, 491, 434

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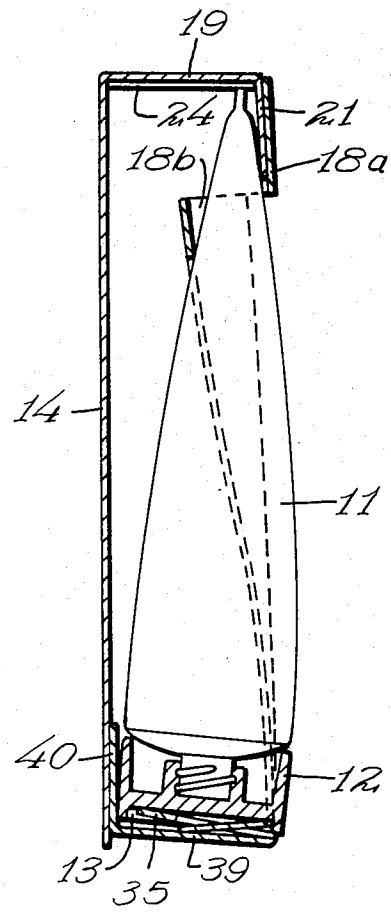
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[57] **ABSTRACT**

An improved carton for storing and displaying squeeze tubes, made from foldable paperboard or other sheet-like material having a transverse cut across the upper end of the front panel with the lower section formed into two shadow panels with an opening in the middle to receive a squeeze tube. The shadow panels are tapered toward the center at the bottom of the carton to retain the squeeze tube in the carton, and a novel support tab is provided which has back-to-back V-shaped cuts therein which facilitate loading the tube into the carton to prevent crimping and breaking of the paperboard during insertion of the tube into the carton.

4 Claims, 8 Drawing Figures



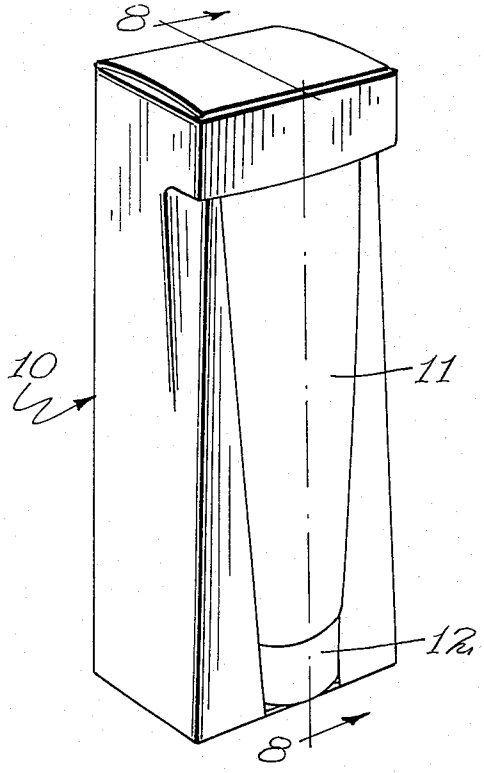


FIG. 1

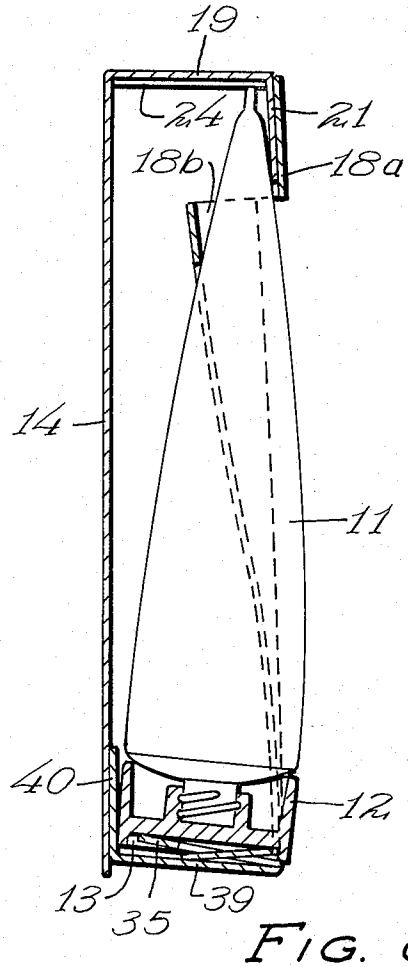


FIG. 8

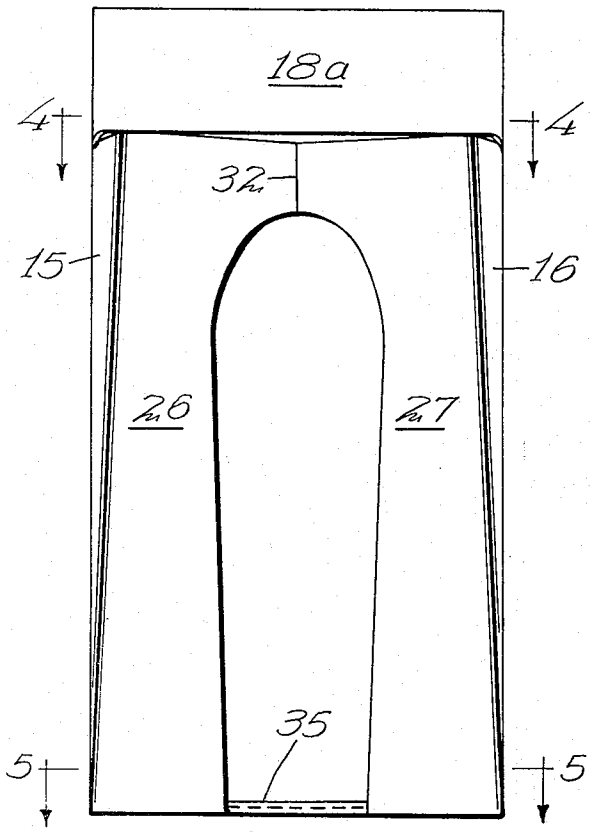


FIG. 3

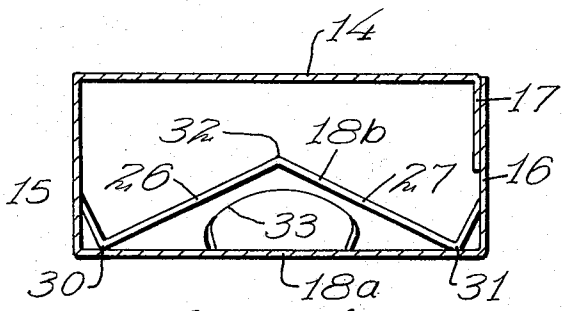


FIG. 4

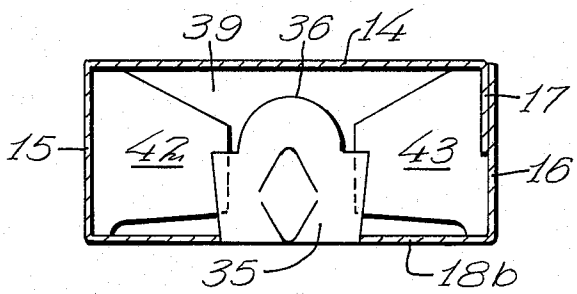


FIG. 5

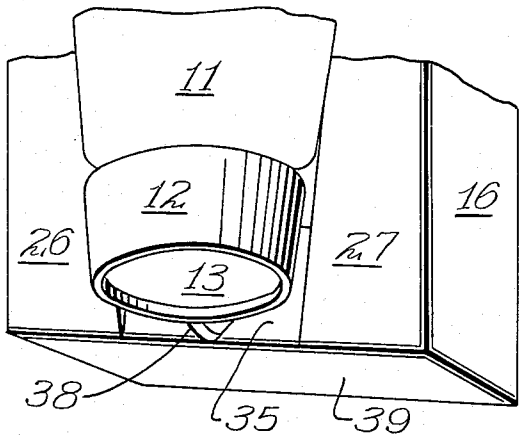


FIG. 6

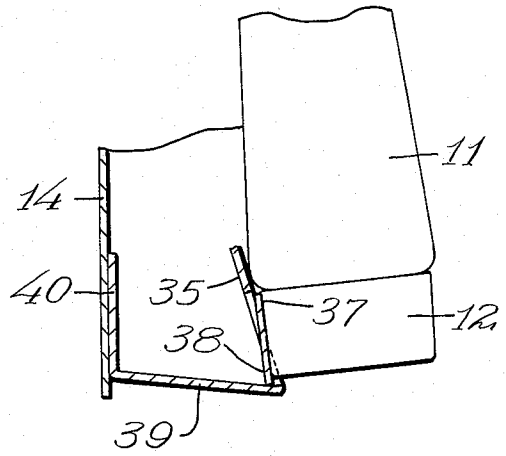


FIG. 7

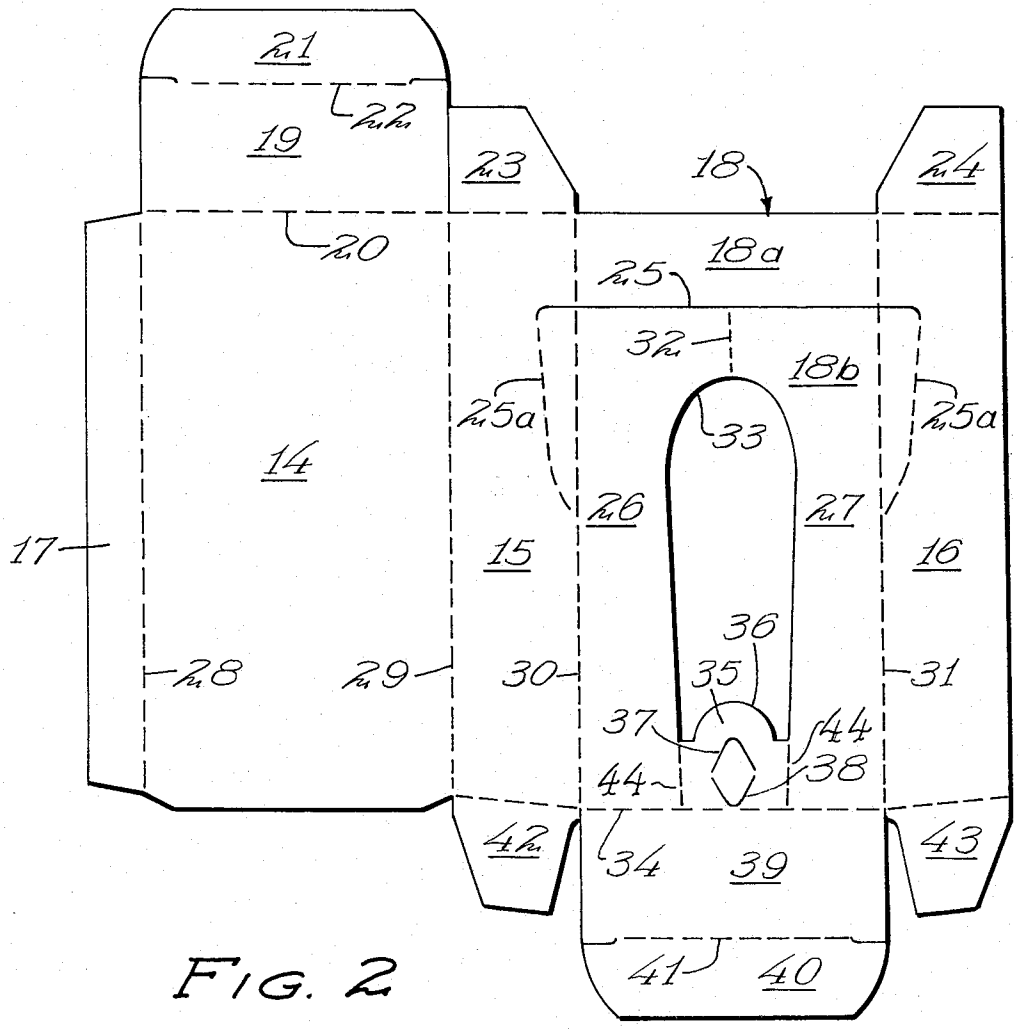


FIG. 2

TUBE DISPLAY CARTON

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to cartons adapted for storing and displaying squeeze tubes and to cartons having means for retaining the squeeze tube in position and a display opening within the carton. Further this carton includes particular means for facilitating the loading of the contents into the carton to prevent damage to the carton.

2. Description of the Prior Art

There are presently a variety of shadow cartons which are used in the shipment and display of deformable plastic tubes on the retail market. One typical design is that in which the shadow panels are tapered together so that when the squeeze tube is loaded into the carton it is pushed beyond the opening created by the shadow panels and when the tube has a diameter greater than this opening the shadow panels serve to retain the tube in position in the carton. In those cartons which have a support flap at the bottom of the shadow area which serves as a support and retaining means for the cap, there is a need for a design improvement which will prevent the adjacent areas of the carton from bending and breaking and therefore having unsightly kink marks when the squeeze tube is pushed into position in the carton from the front. The carton tends to deform during this loading process and if the various parts are formed and designed with too much strength, the surrounding areas give way and create unsightly marks on the carton.

SUMMARY OF THE INVENTION

A shadow carton for use with storing and displaying deformable dispensing tubes wherein the base of the tube is located behind a portion of the front panel and two vertically oriented shadow panels are defined by a transverse opening cut in the front panel to form the upper retaining section, and where the shadow panels taper together at the bottom to provide a retaining means for the cap and tube, an improved cap support tab which is foldable inwardly at the bottom of the opening defined by the shadow panels which has back-to-back V-shaped cuts formed therein which serve to guide the cap during the loading process and insure that the tab will give way and release from its attachments to the shadow panels prior to the time that any significant bending or kinking would occur in the adjacent panel areas.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of a carton embodying the present invention shown containing a squeeze tube;

FIG. 2 is a plan view of a blank adapted to be erected into a carton similar to that shown in FIG. 1;

FIG. 3 is a front elevation view of a carton without a squeeze tube similar to that shown in FIG. 1;

FIG. 4 is a sectional plan view of a portion of the carton shown in FIG. 3 taken along section line 4—4;

FIG. 5 is a sectional plan view of the bottom of the carton shown in FIG. 3 taken along section line 5—5;

FIG. 6 is a perspective view of the lower portion of the carton shown in FIG. 3 illustrating how a squeeze tube is loaded and illustrating the operation of the present invention;

FIG. 7 is a side elevational section view through the middle of the carton shown in FIG. 3 further illustrating the loading of the tube into the carton as in FIG. 6;

FIG. 8 is a side elevation section view illustrating the position of the squeeze tube in the carton shown in FIG. 1 taken along section line 8—8 in FIG. 1.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

As seen in FIG. 1, the package consists of a carton 10 which is particularly adapted to hold a display tube 11 which has fitted on one end thereof a cap 12 as seen best in FIGS. 6 and 8. The cap 12 is formed with a circular recess on the outside thereof 13 whose use will be described later.

The blank shown in FIG. 2 is typical of the blank from which such a carton may be made, and is normally fabricated from foldable paperboard or similar sheet-like material and includes a back panel 14, side panels 15 and 16, and any conventional means for closing the carton such as a manufacturer's glue flap 17. A front panel shown generally as 18 completes the panel array and will be described in more detail later. The top of the carton blank includes conventional closure flaps, and as shown includes a main top flap 19 hingedly connected along the fold line 20 to the back panel 14 and is formed in size substantially equal to the area of the top end of the carton 10. A tuck-in flap 21 is hingedly attached to the top flap 19 by a fold line 22 and additional top closure flaps 23 and 24 are hingedly attached along the fold line 20 to the side panels 15 and 16 respectively, which may be folded together to effect a complete closure. The front panel 18 of the carton 10 is divided into upper and lower sections numbered 18*a* and 18*b* by a transverse line cut 25 which extends horizontally across the front panel 18 and into the side panels 15 and 16 in order to form a pair of inwardly movable shadown panels 26 and 27 on either lateral side of the lower section 18*b*.

It can be seen in FIG. 2 that each of the respective panels of the carton blank are joined by vertical hinge lines 28, 29, 30 and 31 which allow tha blank to be folded into tubular relationship. The vertical fold lines 30 and 31 also provide the inwardly movable shadow panesl 26 and 27 in the front panel 18*b* with the ability to move inwardly since the transverse line cut 25 extends into the side panels 15 and 16, and may be facilitated by a downwardly extending portion 25*a*. The shadow panels 26 and 27 are connected by a short fold line 32 which is positioned above an opening 33 for receiving the squeeze tube which is formed in the front panel 18b in such a manner that it extends downwardly to the bottom edge of the front panel. This opening 33 can be seen to be defined by the inside edges of the shadow panels 26 and 27 and these edges taper inwardly toward the bottom of the front panel 18*b* to assist in holding the squeeze tube 11 in position as will be described later. At the bottom of the opening along the fold line 34 which defines the lower edge of the front panel 18*b* is connected a tube cap support tab 35 which has a semi-circular top edge 36 which corresponds in diameter to the inside of the tube cap recess 13 and also which has formed therein back-to-back V-shaped cuts 37 and 38 which are separated a small amount of material to prevent the area defined thereby from being removed. The sides of the cap support tab 35 are joined to the inner edges of the shadow panels 26 and 27 with

nicks **44** to hold the tab **35** in position during automatic folding of the carton prior to loading of the tube **11.**

Attached to the bottom of the front panel **18*b*** along the hinge line **34** is a first bottom closure flap **39** which substantially covers the bottom end of the carton **10** in its final folded position and which has a tuck-in flap **40** which is attached along the hinge line **41** which, in conjunction with the bottom closure flaps extending from the side panels **15** and **16** which are shown as **42** and **43** provide an effective closure for the carton **10.** It can be seen that the extensions of the bottom fold line **34** into the side panels **15** and **16** are angled slightly upward, and the reason for this is so that when a large tube is to be displayed in a small carton which will cause significant deformation of the side panels **15** and **16** by virtue of the shadow panels **26** and **27** being moved inwardly, that such an angle position will result in a square end in the final assembled package eliminating any distortion which might otherwise occur.

As shown in FIG. **1** the tube **11** is placed in the carton with the flattened crimped end retained behind the top portion of the front panel **18*a*** and with the end of the tube **11** that has the cap **12** further back in the bottom of the carton. In FIG. **3** it can be seen how the shadow panels **26** and **27** bend inwardly about the fold line **32** so that the crimped end of the tube may be inserted behind the top of the front panel **18a** during the loading process. FIG. **4** also illustrates how a portion of the side panels **15** and **16** are moved inwardly because of the crimped or cut downward extensions **25A** of the transverse line cut **25** FIG. **5** illustrates the position of the cap support tab **35** in its downwardly folded position against the bottom panel of the carton **39.**

FIGS. **6, 7** and **8** illustrate the operation of the present invention and illustrate how when the tube **11** is loaded into the carton **10** the forward facing V-shaped cut **38** acts to guide the tube cap **12** and keep it centered while the force exerted by the cap **12** on the cap support tab **35** ruptures the nicks along the sides of the tab **35,** which are shown as **44.** These nicks **44** are necessary to retain the support tab **35** in position parallel to the adjacent shadow panels **26** and **27** while the carton blank is being folded and assembled on automatic equipment. Then when the tube **11** is being loaded by hand these nicks **44** must be broken so that the support tab **35** will assume the position shown in FIG. **8.** These V-shaped cuts **38** and **37** insure that the rapid manual loading procedure does not result in the cap being pressed off-center thereby causing bending and kinking of one of thw two shadow panels **26** and **27** they also insure that the support tab **35** is flexed to put pressure on the nicks sequentially so that they may be broken individually rather than put a stress on the bottom panel of the carton **39** should the cap **12** be pressed against the support tab **35** and sufficient restraining force be exerted to prevent the nicks **44** from rupturing singly thereby producing a kink or crease in the bottom of the carton. The back edge **36** of the cap support tab **35** is functional in holding the cap **13** in position in the carton **10** as seen in FIG. **8** since it tends to move upwardly and engages the inner surface **13** of the cap **12** where the cap is recessed. As previously mentioned a portion of the diameter of the tube **11** lies in back of the shadow panels **26** and **27** so that these panels also hold the tube **11** in place. This support tab design increases the rate at which cartons may be loaded and decreases the liklihood that damage from creasing or bending would occur during the loading process.

In accordance with the Patent Statutes, I have described the principles of construction and operation of my improvement in TUBE DISPLAY CARTON; and while I have endeavored to set forth the best embodiment thereof, I desire to have it understood that obvious changes may be made within the scope of the following claims without departing from the spirit of my invention.

I claim:

1. In a carton adapted for holding and displaying squeeze tubes and the like, said carton made from foldable paperboard or similar sheet-like material and having a rear panel, side panels, top and bottom closure flaps, as well as upper and lower sections in said front panel defined by a horizontal line cut in said front panel;

said lower front panel section including a pair of inwardly movable shadow panels on either lateral side of said lower section;

said shadow panels defining in said lower section a tube-receiving opening extending to the lower edge of said front panel;

said carton adapted to hold a squeeze tube having a recessed cap at the bottom of said carton and the crimped end of said squeeze tube retained in position between said upper and lower sections in said front panel;

an improved cap support tab means for facilitating loading of said tube into said carton and retaining said tube and cap within said carton, comprising:

an inwardly foldable cap support tab made of said paperboard and hingedly attached to a first of said bottom closure flaps, said tab positioned between said shadow panels in the front of said carton and adapted to be folded inwardly upon placing said tube into said carton;

said tab having formed therein a front facing V-shaped cut; and

said tab also having formed in the edge opposite said first bottom closure flap a section of a circle adapted to engage said recess in said cap.

2. The carton in claim **1,** including a second V-shaped cut formed in said tab, said second cut facing rearward and adjacent said front facing cut, and separated therefrom.

3. In a blank made from foldable paperboard or similar sheet-like material and adapted to be folded into a carton for holding and displaying squeeze tubes having a recessed cap or the like, said blank including a substantially rectangular piece of said paperboard having top, bottom and side edges;

four vertically oriented parallel fold lines spaced between the side edges of said blank defining a front panel, a rear panel, side panels, said panels adapted to be folded into rectangular tube-like configuration;

top and bottom closure flaps hingedly connected to said panels along parallel hinge lines arranged perpendicular to said first mentioned vertical hinge lines;

said front panel having formed therein a horizontal line cut defining upper and lower sections in said front panel;

said lower front panel section including a pair of inwardly movable shadow panels on either lateral side of said lower section;

said shadow panels defining in said lower section a tube receiving opening extending to the lower edge of said front panel;

an improved cap support tab means adapted to facilitate loading one of said tubes into a fully erected carton to retain said tube and cap within said carton, comprising:

a hingedly connected cap support tab made of said paperboard and attached along said bottom hinge line to a first of said bottom closure flaps, said tab extending upwardly and positioned between said shadow panels at the lower end of said tube receiving opening in said front panel;

said tab having formed therein a V-shaped cut facing said hinge line; and

said tab also having formed on the top edge thereof a section of a circle adapted to engage said recess in said cap.

4. The blank of claim **3**, including a second V-shaped cut formed in said tab, said second cut facing upwardly and adjacent to said downward facing cut, and separated therefrom.

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