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 CARTON WITH CUSHIONING PLATFORM AND BLANK
 FOR PRODUCING THE SAME
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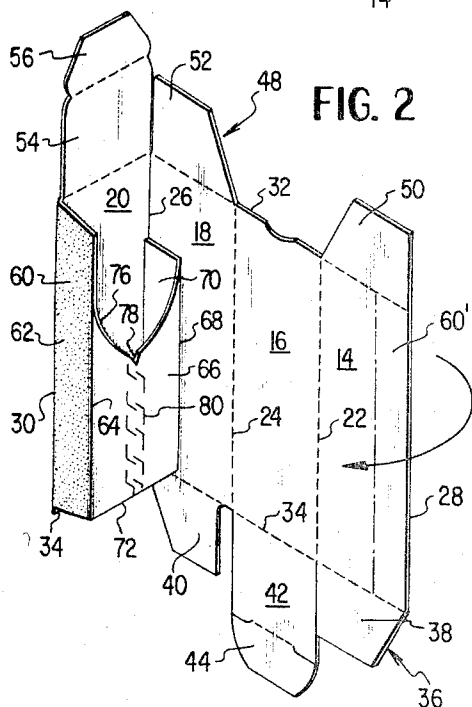
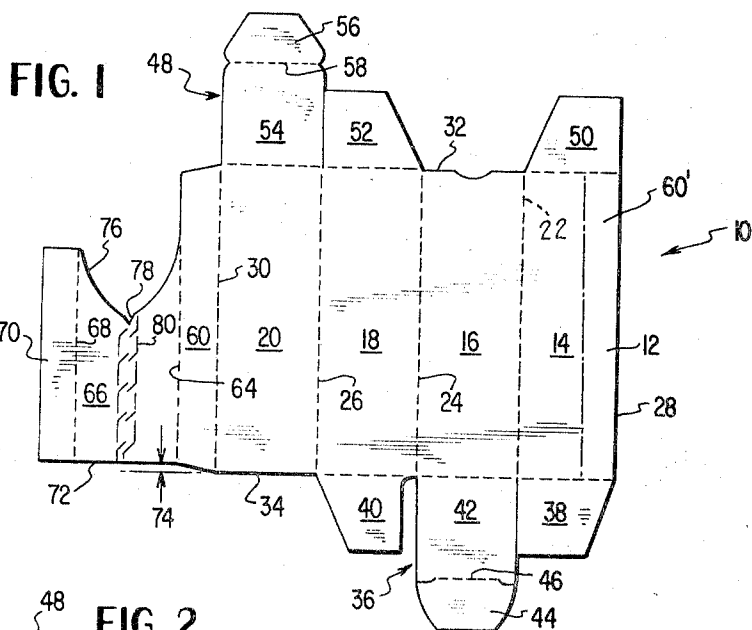


FIG. 3

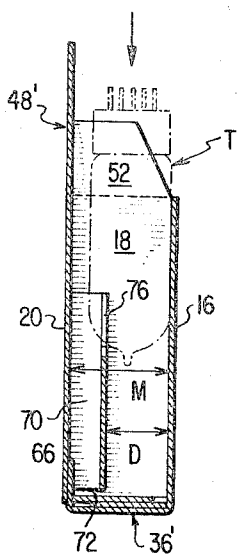


FIG. 4

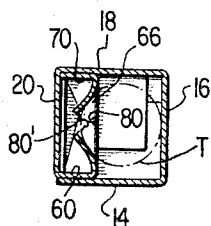
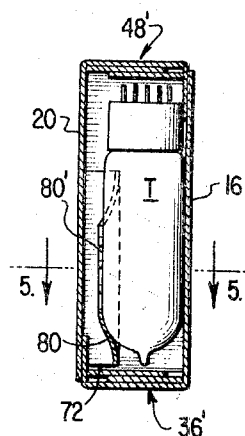


FIG. 5

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CARTON WITH CUSHIONING PLATFORM AND BLANK FOR PRODUCING THE SAME

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ABSTRACT OF THE DISCLOSURE

This disclosure relates to improvements in tubular cartons and blanks for accommodating and protecting different size fragile articles and forming a rupturable support platform inside the carton after the carton has been erected from an assembled blank.

This invention relates to improvements in tubular cartons particularly adapted to protect fragile articles such as radio tubes, electronic components or other similar articles.

Tubular cartons for packaging fragile articles have previously utilized various means for protecting the articles. Packaging cartons of the character involved should be relatively inexpensive, readily produced, assembled and erected, and be versatile to accommodate different size ranges of articles.

Primary objects of the present invention are to provide a novel blank and cartons in which an improved panel and cushioning platform are provided, and in which the cradle panel forms a cushioning platform having an article-rupturable, weakened portion as well as means for guiding the articles into a protective position in the tubular carton.

These, together with other and more specific objects and advantages of the invention will become apparent from a consideration of the following description when taken in conjunction with the drawing forming a part thereof, wherein:

FIG. 1 is a plan view of a blank including the novel improvements and from which the novel carton is produced;

FIG. 2 is a perspective view showing the blank of FIG. 1 in a partially assembled condition;

FIG. 3 is a vertical section of a carton assembled and erected from the blank of FIG. 1 and showing by means of phantom lines a fragile article partially introduced into the erected carton;

FIG. 4 is a vertical section showing the fragile article of FIG. 3 in its protective condition in the closed carton produced from the blank of FIG. 1; and

FIG. 5 is a horizontal section taken substantially on the plane of line 5-5 of FIG. 4.

Referring to the drawing in detail, and first considering FIG. 1, a one-piece, suitably cut and scored blank is indicated generally at 10. This blank can be produced from many suitable materials, paper board, laminated cardboard, etc. The blank 10 comprises a one-piece planar element 12 including four outer walls 14, 16, 18 and 20 and adjacent outer wall panels are connected by common, mutually parallel fold lines 22, 24 and 26, respectively. The outer wall panel 14 includes a free side margin 28 and panel 20 includes a score or fold line, side-margin 30, and the outer wall panels 14-20 include upper and lower margins 32 and 34, respectively.

Conveniently, but not necessarily, the lower margin 34 includes a tuck-flap closure assembly indicated generally at 36 comprising inner flaps 38 and 40 hingedly connected to the bottom edge of wall panels 14 and 18,

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respectively, and an outer closure flap 42 hingedly connected to the lower edge of the wall panel 16, the outer closure flap 42 including a tuck-tab 44 hingedly connected hereto at 46.

Hingedly connected to the upper marginal edge 32 of the blank is a tuck-flap assembly 48 including inner flaps 50 and 52 hingedly connected to the upper edges of the wall panels 14 and 18, respectively. Hingedly connected to the upper edge of the wall panel 20 is an outer closure flap 54 which includes a tuck-tab 56 hingedly connected thereto at 58.

Hingedly connected to the margin 30 of the outer wall panel 20 is an elongated securing panel 60 which will be secured in any suitable manner to the area 60' on the inner surface of the wall panel 14. Securement may be accomplished by means of glue, staples or in any suitable manner. If glue is utilized, the glue will be applied to the surface opposite that shown in FIG. 1, as indicated at 62 in FIG. 2. Hingedly connected to the side margin 64 of the securing flap 60 is a cushioning panel 66 which conveniently is of the same width as the wall panel 20. Hingedly connected at 68 to the other margin of the cushioning panel 66 is a second securing panel 70 which is preferably suitably secured to the inner surface of wall panel 18 as seen in FIG. 2.

The cushioning panel 66 has a lower margin 72 which is spaced slightly above the lower margin 34 of the wall panels 14-20 as indicated, for example, at 74.

The cushioning panel 66 includes an upper margin 76 which is spaced a considerable distance below the upper margin 32 of the wall panels 14-20 and comprises portions converging from the side margins 64 and 68 to a central notch portion 78. Extending from the notch 78 preferably, but not necessarily, to the lower margin 72 of cushioning panel 66 is a rupturable, weakened portion comprising, in the preferred embodiment, a series of L-shaped perforations indicated generally at 80.

Assembly of the tubular carton

As shown, for example in FIG. 2, the securing flap 70 will be secured to the inner surface of the wall panel 18 adjacent the fold line 26, the cushioning panel 66 will then be disposed substantially parallel to the inner surface of the wall panel 20 and the securing flap 62 will be substantially parallel to the securing flap 70 and is at right angles to the wall panel 20. The area 60' of the wall panel 14 will be secured to the surface 62 of the securing flap 60 and the tubular sleeve will be assembled with a cushioning platform comprising cushioning panel 66 disposed in spaced relation from the inner surface of the wall panel 20. Although not shown, a tubular sleeve which has been assembled in the manner mentioned above, comprises a foldable flat or collapsible sleeve. When it is desired to form a package, i.e., with a fragile article in the carton, the walls 14, 18 and 16, 20 will be disposed in mutually parallel relationship in the conventional manner. The tuck flap closure assembly 36 will be closed in the manner shown at 36' in FIG. 3, while the tuck flap assembly 48' will be open.

Considering FIG. 3, a fragile article such as a radio tube or the like is indicated generally at T and will be inserted into the carton; it being noted that the fragile article T has a diameter or transverse dimension greater than the distance D, i.e., between the outer surface cushioning panel 66 and inner surface of wall 16. As fragile article T is inserted into the carton, the upper converging marginal edge 76 will guide the fragile article into position, and the notch 78 will initiate rupture of the weakened portion 80 by the fragile article T. The fragile article T will be pushed down into the carton until the fragile article is completely enclosed, and the cushioning panel or platform formed by the cushioning panel will con-

veniently accommodate different sizes of fragile articles depending upon the dimension M, i.e., the distance between the inner wall panels 16 and 20.

The lower end of the fragile article T will be supported above the inner surface of the closed tuck tab closure assembly 36' and the ruptured cushioning panel having a portion of the perforations ruptured as indicated at 80' will cushion and accommodate the side portion of the article T therein as clearly seen in FIGS. 4 and 5.

It will be obvious to those skilled in the art that various changes may be made without departing from the scope of the invention and the invention is not to be considered limited to what is shown in the drawings and described in the specification.

What is claimed is:

1. A blank for producing a collapsible tubular carton for protecting fragile articles comprising a planar element including a series of four outer wall panels, mutually parallel hinge lines connecting adjacent wall panels, said panels including upper and lower margins, closure flap means connected to the upper and lower margins, one of said outer wall panels including a securing flap hingedly connected to one side edge thereof, a cushioning panel hingedly connected to said securing flap, a second securing flap hingedly connected to said cushioning panel, said cushioning panel including upper and lower margins, said cushioning panel including an article-rupturable, weakened portion extending from the upper margin toward said lower margin, when the blank is assembled and erected the tube formed will include a rupturable cushioning platform accommodating different sized fragile articles.

2. The blank as claimed in claim 1, in which said cushioning panel lower margin is disposed above the lower margin of said outer wall panels.

3. The blank as claimed in claim 1, in which the upper margin of said cushioning panel is disposed substantially below the upper margin of said outer wall panels.

4. The blank as claimed in claim 3, in which said cushioning panel lower margin is disposed above the lower margin of said outer wall panels.

5. The blank as claimed in claim 3, in which said cushioning panel upper margin converges from outer edges downwardly to said rupturable weakened portion.

6. The blank as claimed in claim 3, in which said cushioning panel upper margin is arcuate and includes

an intermediate notch portion at the upper end of said article-rupturable, weakened portion.

7. The blank as claimed in claim 6, in which said article rupturable, weakened portion comprises a series of perforations spaced by unperforated portions extending generally from said notch portion to the lower margin of said cradle panel.

8. In a tubular carton for protecting fragile articles and accommodating different sized articles, said tubular carton including a cushioning panel spaced inwardly from the inner surface thereof, said cushioning panel including an upper and lower margin, and an article-rupturable, weakened portion extending from said upper margin toward said lower margins of said cushioning panel.

9. The structure as claimed in claim 8 in which said cushioning panel upper margin is disposed below the upper end of said tubular carton, the upper margin of said cushioning panel converging toward said rupturable weakened portion.

10. The structure as claimed in claim 9 in which said converging margin includes an intermediate notch disposed at the upper end of said article-rupturable, weakened portion.

11. The structure as claimed in claim 8 in which said rupturable, weakened portion extends between the upper and lower margins of said cushioning panel.

12. The structure of claim 8 in which the lower margin of said cushioning panel is disposed above the lower end of said tubular carton.

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