July 9, 1957 K. T. BUTTERY ET AL 2,798,655

PACKAGING CARTON FOR CANS AND THE LIKE

Filed July 12, 1954 2 Sheets-Sheet 1

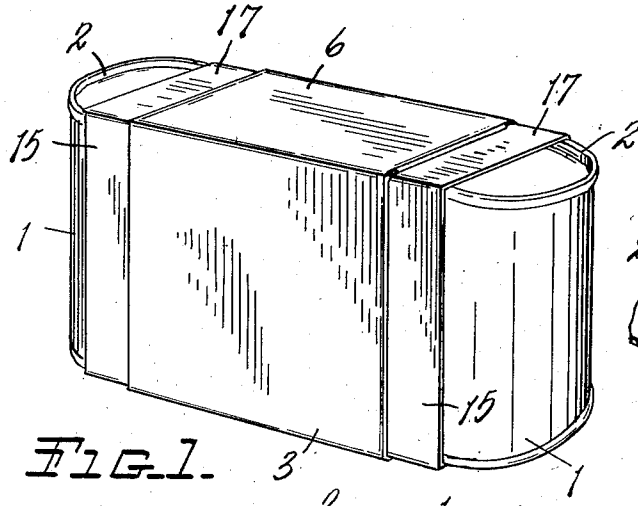


FIG. 1.

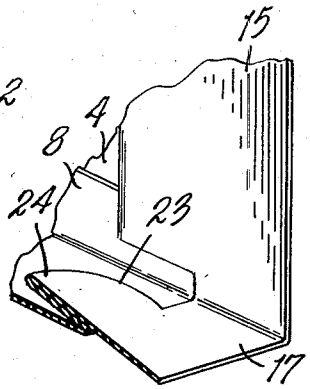


FIG. 4.

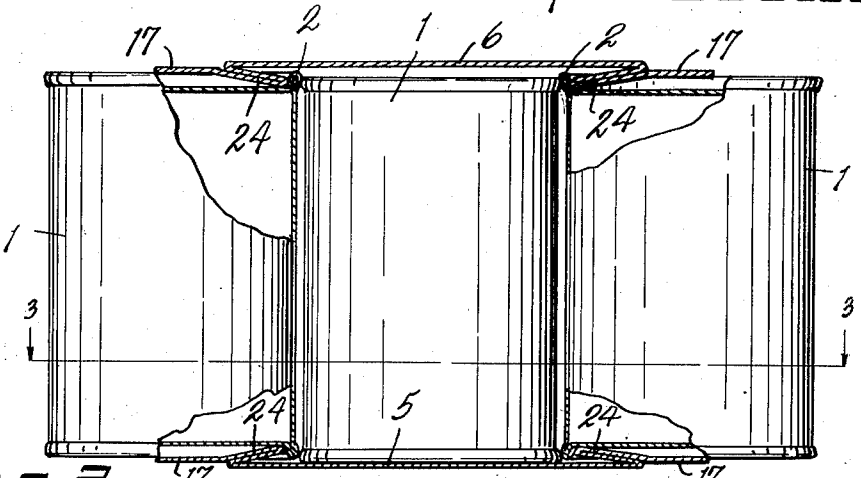


FIG. 2.

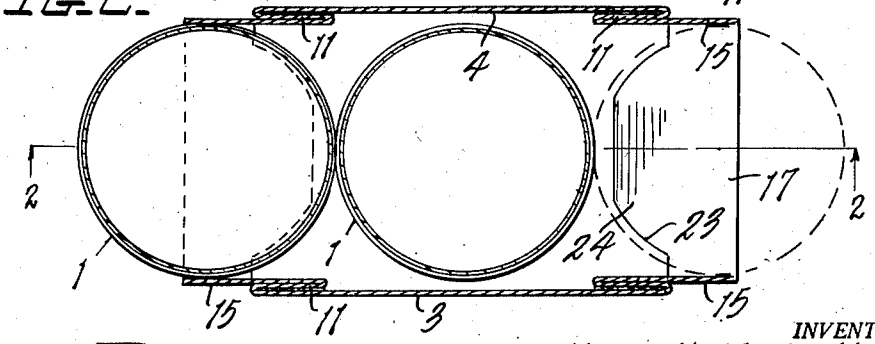


FIG. 3.

INVENTORS.
Kenneth T. Buttery
Thomas Vander Lugt Jr.
By Otto A. Earl
Attorney

July 9, 1957 K. T. BUTTERY ET AL 2,798,655

PACKAGING CARTON FOR CANS AND THE LIKE

Filed July 12, 1954 2 Sheets-Sheet 2

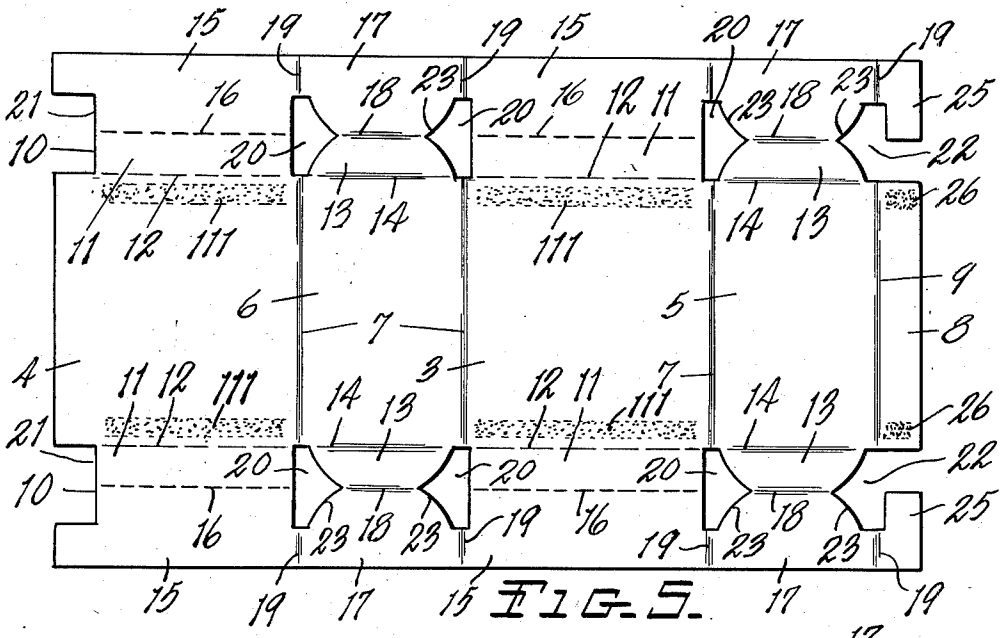


FIG. 5.

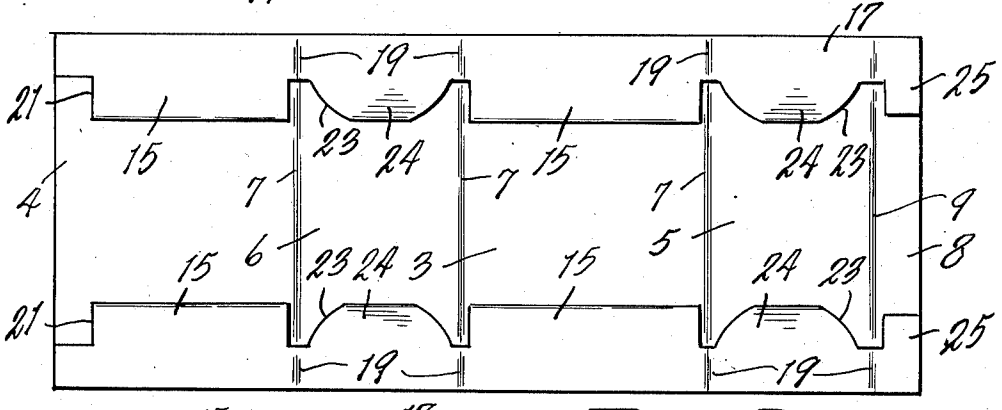


FIG. 6

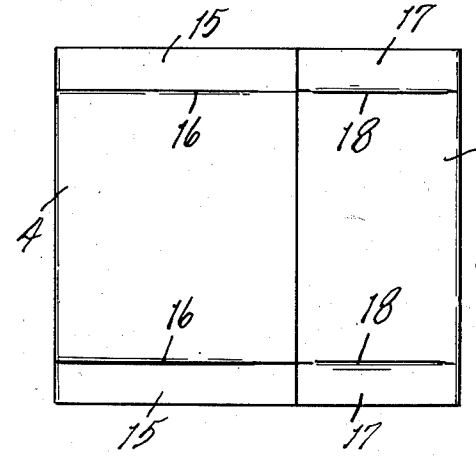


FIG. 7.

INVENTOR.
Kenneth T. Buttery
Thomas Vander Lugt Jr.
By Otto A. Earl
Attorney.

United States Patent Office 2,798,655 Patented July 9, 1957

2,798,655

PACKAGING CARTON FOR CANS AND THE LIKE

Kenneth T. Buttery and Thomas Vander Lugt, Jr., Kalamazoo, Mich., assignors to Sutherland Paper Company, Kalamazoo, Mich.

Application July 12, 1954, Serial No. 442,617

8 Claims. (Cl. 229—40)

This invention relates to a packaging carton for cans and the like and particularly to a tubular carton adapted for packaging a plurality of like containers having projecting rims at the ends thereof:

The main objects of this invention are:

First, to provide a collapsible tubular carton adapted for packaging of containers having annular projecting rims at the ends thereof which very securely holds or retains a plurality of containers arranged therein while permitting rapid assembly thereof.

Second, to provide an open ended tubular carton having inwardly directed article retaining tongues adjacent its ends, the tongues being relatively rigid and springably supported at their outer ends.

Third, to provide a structure of this character in which the tongues are formed of two thicknesses or plies of the material of which the carton is formed and are springably supported for automatic engagement with the rims of cans or containers inserted sidewise into the carton.

Fourth, to provide a carton having these advantages which may be formed of relatively thin paperboard or light stock and is reinforced at its ends for the effective support of containers partially projecting from the ends of the carton.

Fifth, to provide a collapsible carton having these advantages formed of an integral blank and which may be quickly erected to receive the contents to be inserted therein either by machinery or by hand and one in which there are no flaps or other folding parts requiring manipulation.

Objects relating to details and economies of the invention will appear from the description to follow. The invention is defined and pointed out in the claims.

A preferred embodiment of the invention is illustrated in the accompanying drawing, in which:

Fig. 1 is a top perspective view of a filled carton embodying our invention.

Fig. 2 is a fragmentary elevational view partially in vertical longitudinal section on a line corresponding to line 2—2 of Fig. 3.

Fig. 3 is a horizontal section on a line corresponding to line 3—3 of Fig. 2 with two cans illustrated in horizontal section and one can by dotted lines to facilitate the showing of the retaining tongues of the carton.

Fig. 4 is an enlarged inside fragmentary perspective view with parts shown in longitudinal section.

Fig. 5 is a plan view of the blank in which the carton is formed, adhesive being conventionally illustrated prior to the folding in of parts thereof.

Fig. 6 is an inside view with edge parts of the blank reversely folded.

Fig. 7 is a side elevational view of the collapsed carton.

The embodiment of our invention illustrated is designed for holding a plurality of cylindrical cans designated generally by the numeral 1 and having projecting annular rims 2 at the ends thereof as is common practice with certain types of cans.

The embodiment of our carton illustrated is formed

of an integral blank cut and scored to provide a pair of walls 3 and 4 and a second pair of walls 5 and 6, these walls being hingedly connected by the hinging scores 7. The sealing flap 8 is hingedly connected to the wall 5 by the hinging score 9. These walls and sealing flaps are in alignment in the blank and the scores extend from edge to edge of the blank, as is shown in Fig. 5.

The walls have inwardly disposed reverse folded portions at opposite ends thereof designated generally by the numeral 10. The infolds or inner portions 11—11 of the reverse folds of the walls 3 and 4 are connected to the walls 3 and 4 by the weakened lines 12. The inner portions or infolds 13—13 of the reverse folds are connected to the walls 5 and 6 by the scores 14 to provide springable connections. The outer portions 15 of the reverse folds are connected to the inner portions 11 by the weakened fold lines 16.

The outer reversed fold portions 17 are connected to the inner portions 13 by the scores 18. The outer reverse fold portions 15—15 and 17—17 are connected at their adjacent ends and between their adjacent side edges by the score 19. These reverse folds are as stated, folded inwardly and the inner folds 11—11 are adhesively secured on the inner sides of the walls 3 and 4 by adhesive indicated at 111.

Cutouts 20, 21 and 22 are made in the blank. The cut out portions 20 and 22 extend into the reversed fold portions of the walls 5 and 6 and have curved edges 23 which provide curved ends for the double ply tongue 24 resulting from the reverse folding of the wall portions 13 and 17. While the tongues are relatively rigid they are springably supported. The end portions 26 are adhesively secured to the sealing flap 8 by adhesive indicated at 26. This reverse folding and the adhering of the parts at 111 is done before the sealing flap 8 is secured to the opposite end of the blank by means of adhesive not illustrated. The cutouts 21 and 22 open to the end edges of the blank, the purpose of this being to allow the flap 8 to be secured to the wall 4 without piling up or objectionably thickening the walls by overlapping parts.

It will be noted that the outer of the reverse folds project substantially beyond the folding of the reverse fold connections to the walls. Cans or containers 1 are inserted sidewise into the ends of the tubular carton, the carton being proportioned to receive the same end of such length that the end containers or cans are retainingly engaged by the springable tongues, as is illustrated in Fig. 2.

While portions of the ends of the cans, in the embodiment illustrated, project from the carton, if desired the folds may be of such proportion as to entirely embrace the sides of the end cans. However, it is sometimes desired to display portions of the packaged cans or containers and also they are effectively supported in the structure illustrated without being entirely within the carton and this results in the saving of material.

The double ply springable tongues cannot swing to an outwardly directed position, that is, they are always maintained in an inward directed relation and not only is no manipulation required to receive the cans but they cannot be damaged or broken off as they are entirely within the tubular carton and they are also stiff and rigid so as to effectively retain relatively heavy cans.

The connection of the tongues by the outer connected portions of the reverse fold ensures that they are springably supported so that they snappingly engage within the rims when the cans or containers are inserted in the carton through the open ends thereof.

We have illustrated and described our invention in a highly practical embodiment thereof. We have not attempted to describe other embodiments or adaptations as it is believed this disclosure will enable those skilled

in the art to embody or adapt the invention as may be desired.

Having thus described the invention, what is claimed to be new and is desired to be secured by Letters Patent is:

1. A collapsible tubular carton adapted for packaging containers having projecting rims at the ends thereof, formed of an integral cut and scored blank of paperboard or the like, and comprising four walls and a sealing flap disposed in alignment in the blank and connected by hinging scores extending from edge to edge of the blank, the walls having inwardly disposed reverse folds at opposite ends thereof, said reverse folds comprising infolds and outfolds, the infolds being disposed between the outfolds and the walls, the outfolds thereof being substantially wider than the infolds, the outfolds adjacent their outer ends all being hingedly connected to each other along adjacent side edges thereof, and providing extensions to the walls outwardly of the ends thereof in the set-up carton, the reverse folds at their inner ends being disconnected from each other along adjacent side edges thereof, the infolds of one pair of opposed walls being adhesively secured to the inner sides thereof, the infolds of the other pair of walls being springably connected thereto to spring away therefrom and constituting with the outfolds double ply inwardly projecting springable tongues engageable within the rims of containers inserted in the carton.

2. A collapsible tubular carton adapted for packaging containers having projecting rims at the ends thereof, formed of an integral and scored blank of paperboard, and comprising four walls and a sealing flap disposed in alignment in the blank and connected by hinging scores extending from edge to edge of the blank, the walls having inwardly disposed reverse folds at opposite ends thereof, said reverse folds comprising infolds and outfolds, the infolds being disposed between the outfolds and the walls, the outfolds thereof having hingedly connected outer portions, the hinged connections being between adjacent side edges of the outfolds, the inner end of the reverse fold of each wall being disconnected from the inner ends of the reverse folds of adjacent walls, the infolds of one pair of opposed walls being adhesively secured to the inner sides thereof, the infolds of the other pair of walls being springably connected thereto to spring away therefrom and constituting with the outfolds double ply inwardly projecting springable tongues engageable within the rims of containers inserted in the carton.

3. A collapsible tubular carton adapted for packaging containers having projecting rims at the ends thereof, comprising four hingedly connected walls, the walls having inwardly disposed reverse folds at opposite ends thereof, said reverse folds comprising infolds and outfolds, the infolds being disposed between the outfolds and the walls, the outfolds thereof being substantially wider than the infolds, the outfolds adjacent their outer ends all being hingedly connected to each other along adjacent side edges thereof, and providing extensions to the walls outwardly of the ends thereof in the set-up carton, the reverse folds at their inner ends being disconnected from each other along adjacent side edges thereof, the infolds of one pair of opposed walls being secured to the inner sides thereof, the inwardly projecting portions of the folds of the other pair of walls constituting inwardly projecting springable tongues engageable within the rims of containers inserted in the carton.

4. A collapsible tubular carton adapted for packaging containers having projecting rims at the ends thereof, comprising four hingedly connected walls, the walls having inwardly disposed reverse folds at opposite ends thereof, said reverse folds comprising infolds and outfolds, the infolds being disposed between the outfolds and the walls, the outfolds thereof having hingedly connected outer portions, the hinged connections being between adjacent side edges of the outfolds, the inner end of the reverse fold of each wall being disconnected from the inner ends of the reverse folds of adjacent walls, the infolds of one pair of opposed walls being secured to the inner sides thereof, the inwardly projecting portions of the folds of the other pair of walls constituting inwardly projecting springable tongues engageable within the rims of containers inserted in the carton.

5. A tubular carton adapted for packaging containers having projecting rims at the ends thereof comprising four walls, the walls having inwardly disposed reverse folds at opposite ends thereof, said reverse folds comprising infolds and outfolds, the infolds being disposed between the outfolds and the walls, the outfolds being substantially wider than the infolds and having connected wall portions and providing extensions to the walls outwardly of the ends thereof in the set-up carton, the inner end of the reverse fold of each wall being disconnected from the inner ends of the reverse folds of adjacent walls, the infolds of the reverse folds of one pair of opposed walls being secured thereto, the inwardly projecting portions of the reverse folds of the other pair of opposed walls being yieldably connected thereto to spring away therefrom and constituting inwardly projecting springable tongues engageable within the rims of containers inserted in the carton, the end edges of the tongues being curved.

6. A tubular carton adapted for packaging containers having projecting rims at the ends thereof comprising four walls, the walls having inwardly disposed reverse folds at opposite ends thereof, said reverse folds comprising infolds and outfolds, the infolds being disposed between the outfolds and the walls, the outfolds being substantially wider than the infolds and having connected wall portions and providing extensions to the walls outwardly of the ends thereof in the set-up carton, the inner end of the reverse fold of each wall being disconnected from the inner ends of the reverse folds of adjacent walls, the infolds of the reverse folds of one pair of opposed walls being secured thereto, the inwardly projecting portions of the reverse folds of the other pair of opposed walls being yieldably connected thereto to spring away therefrom and constituting inwardly projecting springable tongues engageable within the rims of containers inserted in the carton.

7. A tubular carton formed of an integral cut and scored blank of paperboard or the like and adapted for packaging containers having longitudinally projecting rims at the ends thereof and comprising four walls and a sealing flap disposed in alignment in the blank and connected by hinging scores from edge to edge thereof to provide a tubular structure open at its ends and comprising opposed side walls and opposed top and bottom walls, the four walls having inwardly disposed reverse folds on the end edges thereof, the reverse folds comprising infolds and outfolds, the infolds being disposed between the outfolds and the respetcive walls to which the reverse folds are connected, the infolds of the reverse folds of the side walls being fixedly secured to the inner sides of the side walls, the outfolds of the reverse folds being connected to each other at their end edges, the inwardly projecting portions of the infolds of the top and bottom walls being free of said top and bottom walls and independent of the respective adjacent infolds of the side walls constituting inwardly converging pairs of springable tongues at each end of the carton engageable within the rims of containers inserted between and partially embraced by the four walls of the carton.

8. A tubular carton adapted for packaging containers having longitudinally projecting rims at the ends thereof comprising four walls hingedly connected to provide a tubular structure open at its ends, the four walls comprising opposed side walls and opposed top and bottom walls, the four walls having inwardly disposed reverse folds on the end edges thereof, the reverse folds comprising infolds and outfolds, the infolds being disposed between the outfolds and the respective walls to which the reverse folds are connected, the infolds of the reverse folds of the side walls being fixedly secured to the inner side of the side

walls, the outfolds of the reverse folds being connected to each other at their end edges, the inwardly projecting portions of the infolds of the top and bottom walls being free of said top and bottom walls and independent of the respective adjacent infolds of the side walls constituting an inwardly converging pair of springable tongues at each end of the carton engageable within the rims of containers inserted between and partially embraced by the four walls of the carton.

References Cited in the file of this patent

UNITED STATES PATENTS

1,132,293	Weiss	Mar. 16, 1915
1,158,130	Hawkins	Oct. 26, 1915
1,559,834	Zalkind	Nov. 3, 1925
2,398,404	Brooks	Apr. 16, 1946
2,474,523	Guyer	June 28, 1949
2,554,190	Hennessey	May 22, 1951
2,571,833	Chidsey	Oct. 16, 1951
2,611,521	Hackman et al.	Sept. 23, 1952
2,661,139	Brooks	Dec. 1, 1953