March 18, 1958 D. LEVKOFF 2,827,220

CARTONS

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FIG. 1.

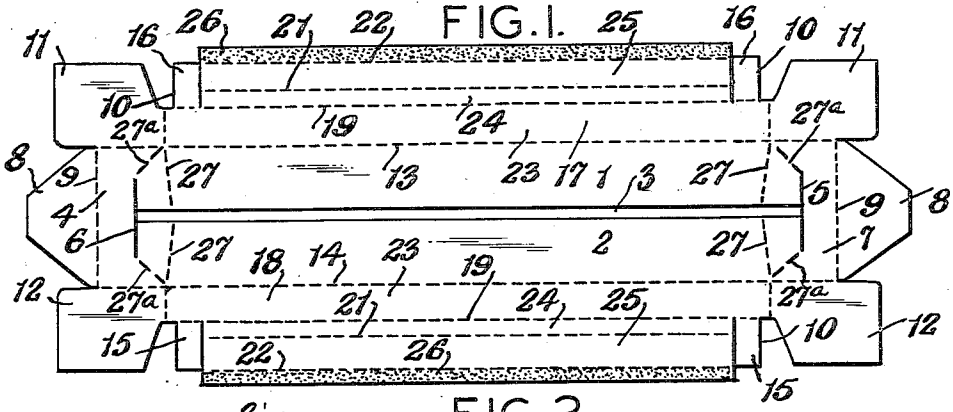


FIG. 2.

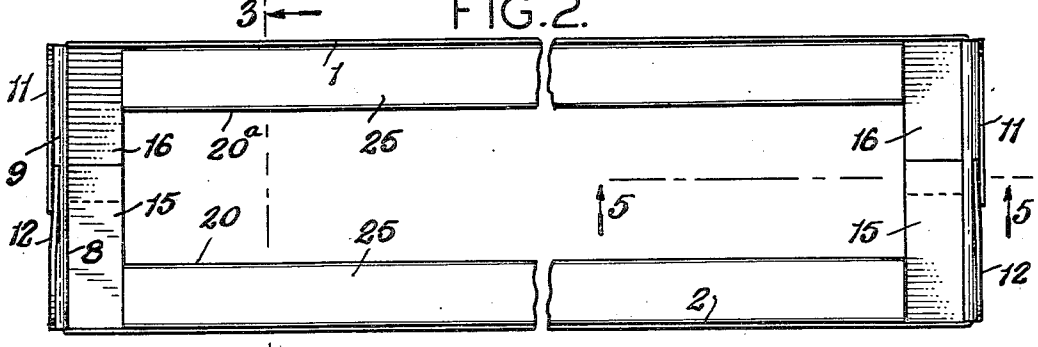


FIG. 3.

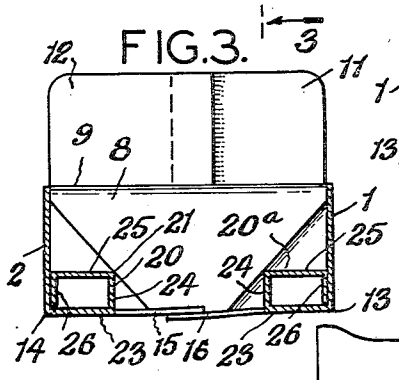


FIG. 4.

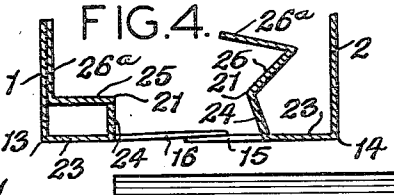


FIG. 5.

FIG. 6.

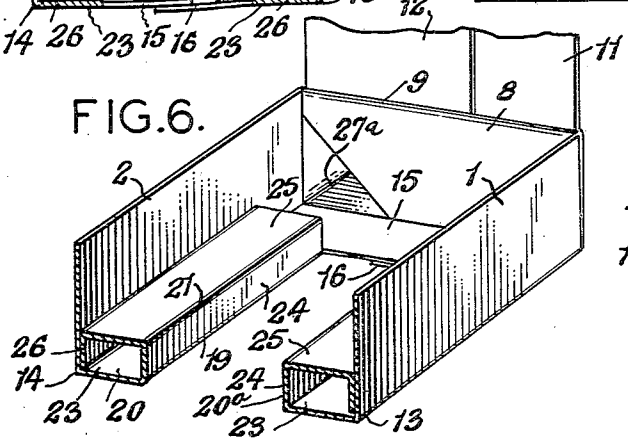
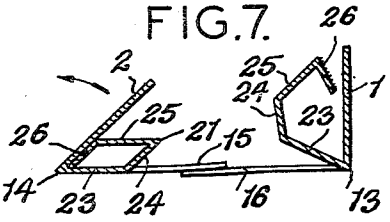


FIG. 7.



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CARTONS

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FIG.8.

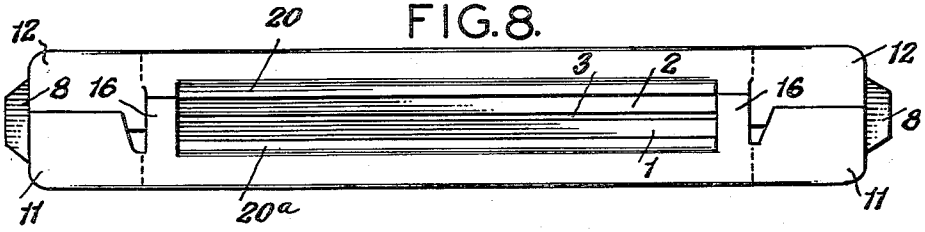


FIG.9.

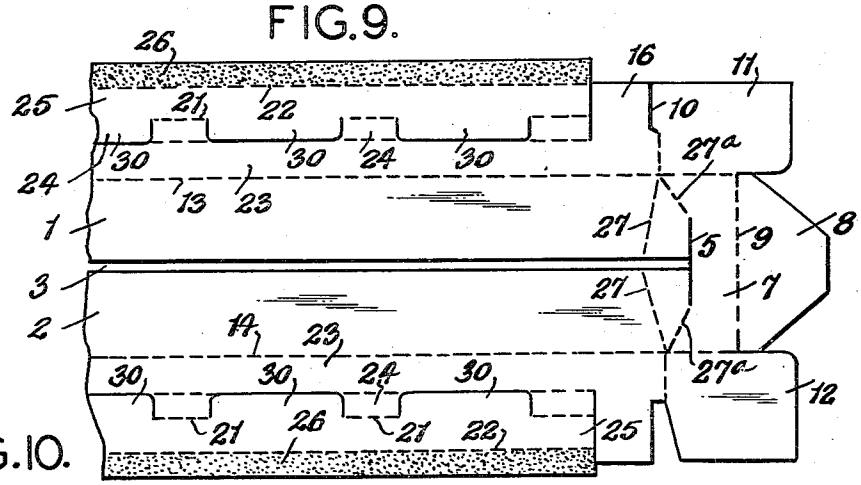


FIG.10.

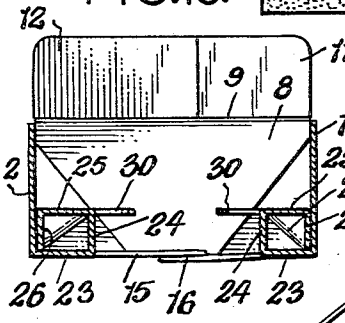


FIG.11.

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CARTONS

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Application July 12, 1955, Serial No. 521,478

3 Claims. (Cl. 229—31)

This invention relates to boxes or cartons, and more particularly to those of shallow, tray-like form presently used for containing such products as tomatoes, fruit, candies, cookies and many other articles. A carton of the character referred to is shown and described in my Patent No. 2,274,714 dated March 3, 1942.

One of the shortcomings of the tray-like type of carton mentioned above is its failure to expose a substantial part of the articles which it contains. While an effort is made to exhibit as much of the goods as possible by the use of a transparent wrapper placed around the carton and its contents, nevertheless, certain portions of the goods are concealed and particularly by parts of the bottom of the carton. In the case of tomatoes, fruits and other goods likely to possess soft spots, bruises, blemishes which would normally render such goods difficult or impossible to sell, the customers purchasing such goods in the cartons and unable to completely inspect the goods because of the concealment of portions thereof by parts of the carton, must either hope that each carton of goods which she purchases will not have concealed defects, or else must refuse to purchase such packaged goods. Therefore, as above pointed out, a deficiency of present-day cartons resides in lack of complete, or nearly-complete exposure of the contained goods.

It is therefore an important object of the present invention to provide a carton having greatly increased visibility for its contained products whereby the purchaser, upon examination of a filled carton, can immediately ascertain that the goods are spotless or of good quality, or are not worthwhile purchasing.

It is an object of the invention to provide a carton of this character which shall be open at the bottom to thereby permit the purchaser to see and examine those parts of the contained goods which are lowermost in the carton.

It is another object of the invention to provide cushioned supports, formed integrally with parts of the carton structure, and which supports shall support and contact with the goods only at spaced points thereby exposing and rendering visible those parts of the goods which are located between their points of support.

It is another object of the invention to provide a pair of hollow, tubular, box-like supporting rails within the carton at the lower end of the side walls thereof, which rails form spaced, supporting and cushioning ledges for the goods and provide an open window or space between them whereby the parts of the goods which bridge the ledges are exposed to view through such window or space.

It is another object of the invention to provide hollow supporting rails as above described, which rails extend along the lower portions of the side walls and are formed as integral extensions thereof and constitute not only supporting ledges for the contents of the carton, but also comprise stiffening members to add rigidity and strength to a substantially bottomless carton.

It is an object of the invention to provide a tray-like, bottom-less carton in which the contents are carried by

spaced, longitudinally-extending hollow supports extending along the lower end portions of certain of the walls of the carton, which supports serve to strengthen and stiffen the carton and also serve as shock-resisting cushions for the carton's contents.

With these and other objects to be hereinafter set forth in view, I have devised the arrangement of parts to be described and more particularly pointed out in the claims appended hereto.

In the accompanying drawings, wherein illustrative embodiments of the invention are disclosed,

Fig. 1 is a face view of a blank from which a carton of the present invention is produced, looking at the outer face of the blank;

Fig. 2 is a top plan view, on an enlarged scale, of a set-up or erected carton produced from the blank of Fig. 1;

Fig. 3 is a sectional view, taken substantially on the line 3—3 of Fig. 2, looking in the direction of the arrows;

Fig. 4 is a transverse sectional view through the carton to illustrate a slightly modified construction;

Fig. 5 is a sectional view, taken substantially on the line 5—5 of Fig. 2, looking in the direction of the arrows;

Fig. 6 is a sectional view, somewhat like Fig. 3, but shown in perspective;

Fig. 7 is a diagrammatic sectional view across the carton, indicating how the erection of the side walls brings one of the hollow-supporting rails to its operative position and also showing how these rails are formed and attached to the side walls;

Fig. 8 is a bottom view of the carton in its flattened or collapsed condition;

Fig. 9 is a face view of a portion of a modified form of blank;

Fig. 10 is a transverse sectional view through a carton made from the blank of Fig. 9, and

Fig. 11 is a sectional view in perspective of a carton made from the blank of Fig. 9.

Referring to the drawings, and more particularly to Fig. 1 thereof, wherein the blank from which the carton is produced is shown, the central longitudinal panel of the blank is formed with the lengthy slit 3 thereby dividing this panel into the two sections indicated respectively at 1 and 2 and which sections constitute the side walls of the carton or tray that is formed from the blank. The slit 3 extends to and ends at the transverse slits shown at 5 and 6, formed in the inner end walls 4 and 7 of the carton. End wall 7 is formed with the extended locking flap 8 that is folded down on the score line 9 to bring said flap 8 down into the carton to have its lower edge engaged with a slit 10 then located at the junction of the end wall and a portion of the nearly-open bottom of the carton or tray. The tabs shown at 11 and 12 are infolded on the longitudinal score lines 13 and 14 and brought to overlapping relation, and these tabs 11 and 13 may be adhesively united in their overlapped position. The tongues shown at 15 and 16 are also overlapped and are adhesively secured together.

Extending laterally from the fold lines 13 and 14 are areas generally designated on the blank at 17 and 18, and which areas are used for the formation of a pair of tubular, hollow, supporting box-like rails 20 and 20*a* upon which goods contained in the carton or tray are supported. Each of the areas 17 and 18 is provided with a plurality of longitudinally-extending parallel score lines indicated respectively at 19, 21 and 22. As will be clearly seen in Figs. 3, 6 and 7 the portion 23 of area 17 that is located between the score lines 13 and 19 forms the lower web of one of the rails 20 or 20*a*. The part shown at 24 and which is located between the score lines 19 and

21, forms the outer vertical wall of the rail. The part 25 that is located between the score lines 21 and 22 forms the top wall of the rail, while the flap portion 26, located beyond the score line 22 and provided with an adhesive, is the securing flap which is adhesively attached to the side wall 1 adjacent to the lower end thereof.

The description of one of the hollow rails 20 or 20*a* applies to the companion rail. In Fig. 8 of the drawings is shown the tray or carton in the flattened form in which it is supplied to the user. The tabs 11 and 12 have been brought to overlapped position and are adhesively attached together. Similarly the tongues 15 and 16 have been overlapped and adhesively united. The flap portions 26 have been adhesively attached to the side walls 1 and 2 adjacent to the lower edges of such walls. To erect the carton, the end walls 4 and 7 are brought to vertical position by folding on the transverse score lines 27. This also causes folding on the diagonal fold lines 27*a* which results in bringing of the side walls 1 and 2 to upstanding position. As these walls 1 and 2 come to erect position, they act to erect the rails 20 and 20*a* as will be apparent from Fig. 7, which shows the wall 2 being partly erected and indicates how it tends to pull its attached rail into its final operative position. In that figure, the second rail is shown unattached to the wall 1 to more clearly disclose the formation of the rail before such attachment. When the side walls are erected as above described, the locking flaps 8 are then folded down into the carton on the fold lines 9 and the same engage with the slits 10 and hold the carton erected.

In Figs. 2, 3, 5 and 6, the carton is shown in its set-up or erected position. It will be therein noted that the merchandise-supporting elements of the carton consist wholly of the supporting rails 20 and 20*a*. The square or rectangular cross-sectional shape of these rails provides exceptional strength and rigidity to the carton. The entire bottom portion of the carton between these rails 20 and 20*a* is open and unobstructed and hence any goods placed in the carton and supported on these rails will have its lowermost parts visible through the space or open window located between the rails. These rails can be made either relatively narrow or made of substantial width, according to the nature of the merchandise to be supported by them or according to the extent of visibility required for the inspection of the contents of the carton. Certain types of goods can be fixedly anchored in the rails if desired, by providing apertures in one or the other of the walls of the rails and engaging portions of the goods in such apertures. For example, apertures provided in the top walls 25 of the rails might receive the bases of lamp bulbs or other small articles.

In herein describing the manner in which the rails are formed, it has been suggested that the fastening flap 26, bearing an adhesive, can be turned down and brought against the face of the lower portion of the side wall of the carton whereby said flap will be located below the top wall 25 of the rail. As an alternative for this, such attaching flap might be turned upwardly and secured to the side wall above the top wall 25 of the rail. This will be understood by reference to Fig. 4, wherein an enlarged version 26*a* of the fastening flap 26 is disclosed and which is adhesively fastened to the side wall 1. In this arrangement, the fastening flap is shown as extending to the top edge of the side wall and this results in the production of a double-thickness side wall from the upper wall 25 of the rail to the top edge of the side wall. This construction has the advantage of materially stiffening the side walls of the carton. The flap 26*a* need not necessarily extend to the upper edge of the side wall if extraordinary stiffness and strength of these walls is not required.

In Figs. 9 to 11 is shown an arrangement wherein extra supporting surface is required of the top wall 25 of the supporting rails. Therein, this supporting surface is increased by the production of spaced tabs 30 which are stamped out of the vertical wall 24 of the rails. These tabs 30 thus provide lateral and horizontal extensions of the top wall 25, thereby increasing the supporting surface at the top of these rails. It will be apparent that these projected supporting areas may be made in various shapes and sizes according to the goods to be supported by them.

From the foregoing, it will be noted that a carton or tray is provided in which the goods are supported on spaced tubular rails which provide an open or windowed bottom for the box through which lower portions of the goods are visible for inspection. The support of the goods in the manner described causes relatively small area of contact between parts of the box and the goods, so that air can freely pass around the goods. The support of the goods on these rails rather than on a flat, closed bottom of the carton results in the goods being supported on parts which are not in direct contact with any surface on which the carton is rested or against which it might forcibly contact. There is thus a shock-absorbing support provided for the goods, affording a maximum protection against bruising, crushing or breakage of the goods.

While I have herein described an embodiment of the invention, it is obvious that the same is not to be restricted thereto, but is broad enough to cover all structures coming within the scope of the annexed claims.

What I claim is:

1. In a carton of the tray-like type, a pair of side walls, end walls, a pair of box-like rails located at the lower ends of the side walls and formed by integral folded extensions of the side walls, each rail having an extended downturned end flap adhesively attached to the side wall adjacent to which it is located, the rails extending for the greater portion of the length of the carton but terminating short of the end walls thereof, overlapping adhesively-united tongue portions extending from the opposite side walls extending horizontally and constituting parts of the bottom of the carton, said tongue portions being located between the ends of the rails and the end walls, the rails and said overlapped tongue portions constituting the bottom of the carton, said bottom of the carton presenting a window opening between the rails extending for a part of the bottom of the carton and through which carton contents supported by the rails is visible.

2. In a carton of the tray type, a pair of side walls, inner and outer end walls, the inner end walls having downturned locking flaps, a bottom consisting of a pair of flaps extending inwardly and integrally from the side walls, each of said flaps being split inwardly from its longitudinal edge adjacent to its opposite ends to provide a rail-forming panel, said panel being longitudinally folded on parallel lines to form it into a rectangular, hollow rail of less length than the side walls, and having a bottom wall, a vertical side wall, horizontally disposed top wall, and a downturned securing flap, said securing flap being adhesively attached to the inner face of one of the side walls, said rails terminating short of the end walls and having portions of the panel of which the rails constitute parts, disposed in flat, overlapped horizontal relation between the ends of the rails and the end walls and co-operating with the rails in forming a bottom for the carton.

3. In a carton of the tray type, a pair of side walls, end walls, a pair of box-like rails located at the lower ends of the side walls and formed by integral extensions of said side walls, each rail having an end adhesively attached to the inner face of one of the side walls, the rails extending for the greater portion of the length of the carton but terminating short of the end walls whereby spacing is provided on the carton bottom between the ends of the rails and the end walls, overlapping adhesively-united tongues extending from the side walls, said tongues being disposed horizontally and being located in the spacing between the ends of the rails and the end walls and co-operating with the rails in forming the bottom of

the carton, said bottom being open between the rails and closed in its end areas by the overlapping tongues.

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