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J. A. HILL

2,818,166

CARTON

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*Fig. 1*

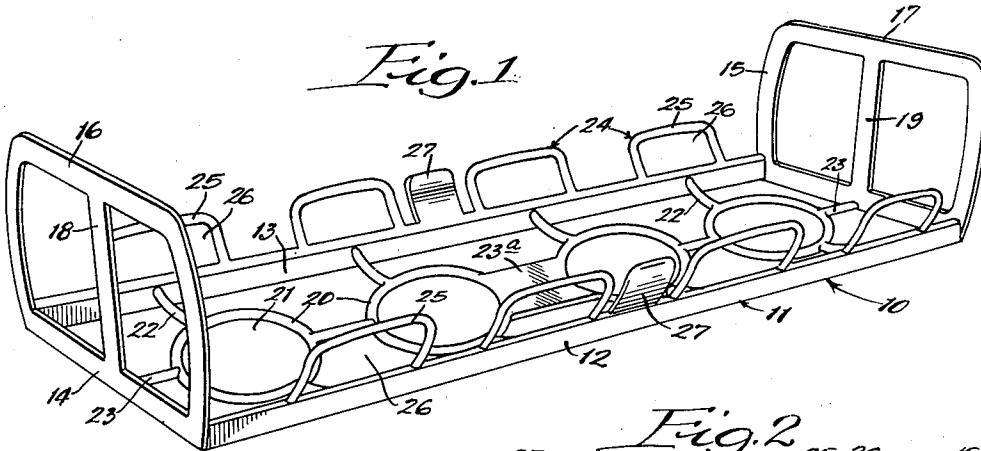


*Fig. 2*

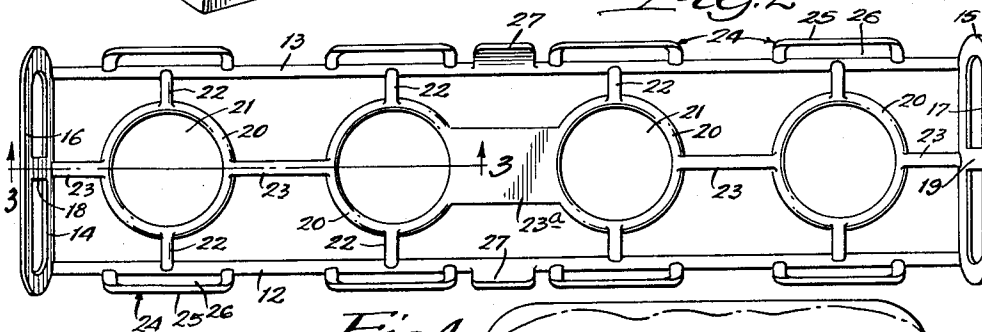


*Fig. 4*

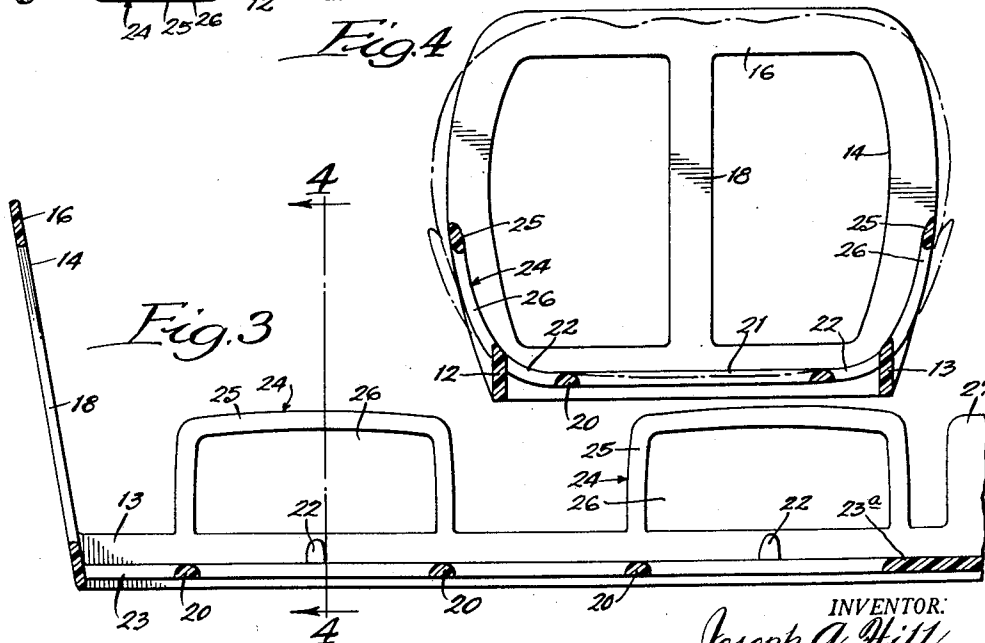
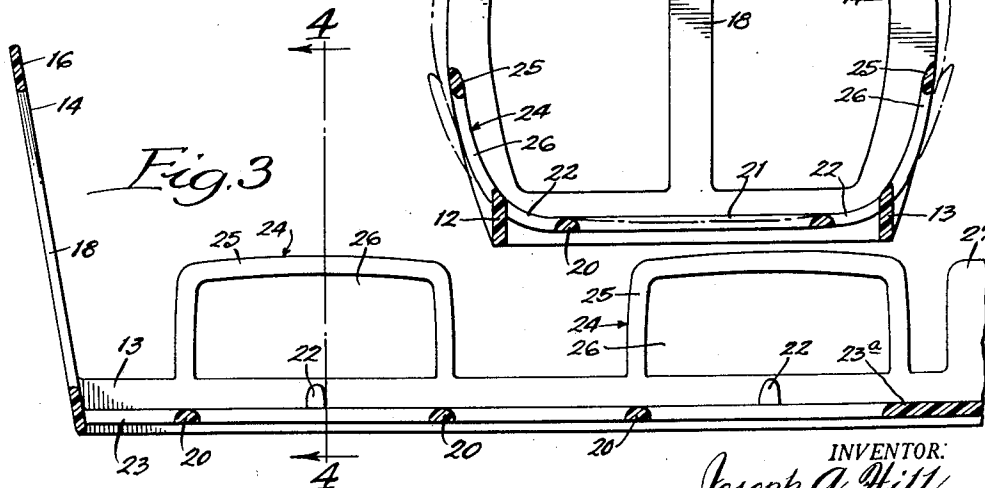


*Fig. 3*



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2,818,166

CARTON

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1 Claim. (Cl. 206—45.33)

This invention relates to a package for fruits and vegetables, and more particularly to a carton or tray useful especially with easily bruised articles such as tomatoes.

In the packaging of fruits and vegetables, such as tomatoes for example, the problem has long existed of providing a light-weight, inexpensive carton which is disposable, yet which is capable of supporting the tomatoes firmly but without damage thereto, and preferably so that the tomatoes can be visibly inspected by the consumer. While there has long been a need for such a carton, that need has not been satisfied heretofore.

An object of this invention is to provide a package or carton having the desirable characteristics described generally hereinabove. Another object of the invention is to provide a carton adapted for use in holding a plurality of tomatoes and the like, and in which each of the tomatoes is individually gripped by resilient members that conform generally to the configuration of the tomato. Still another object is to provide a light-weight and inexpensive carton that is adapted to receive and support tomatoes and similar articles which are easily bruised or damaged, the carton providing a plurality of relatively large tomato-engaging support surfaces which distribute the supporting forces over a wide area and thereby forestall bruising of the articles, and at the same time support the articles so as to prevent rolling or other movement thereof which is a special problem in a continuous packaging line.

A further object of the invention is in providing a carton or tray as described which is equipped with a plurality of spaced-apart, annular support members oriented between spaced pairs of resilient wall members, the wall and support members being generally arcuate to conform to the configuration of the articles supported and firmly gripped thereby. Further objects and advantages will appear as the specification proceeds.

An embodiment of the invention is illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of a tray or carton embodying the invention; Figure 2 is a top plan view of the carton; Figure 3 is a broken longitudinal sectional view taken on the line 3—3 of Figure 2; and Figure 4 is a vertical sectional view taken on the line 4—4 of Figure 3 and showing in phantom a tomato supported within the carton.

The carton or tray is designated generally with the numeral 10 and comprises a peripheral frame 11 having spaced-apart, elongated side rails 12 and 13 which are rigidly secured at their ends to the end walls 14 and 15 which diverge upwardly and outwardly above the rail members. The end walls 14 and 15 each have a perimeteric frame 16 and 17 provided centrally with a post or wall portion 18 and 19 respectively.

Interposed between the rail members 12 and 13, and in axially spaced-apart relation, are a plurality of support platforms 20 which, as shown in the drawings, are preferably annular, narrow ring-shaped members and provide

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centrally the openings 21 therethrough to form such narrow rings. The platforms 20 are secured to the rails 12 and 13 by means of the transverse legs 22 which, as is shown best in Figure 4, are slightly arcuate and curve upwardly from the platform 20 toward the top of the rail members. The support platforms are preferably interconnected, and this may be accomplished by interposing therebetween, and in the case of the last two support platforms between them and the end walls 14 and 15, the axially or medially extending legs 23. If desired, a leg 23a may be interposed between two of the support platforms and may be made relatively wide, and serve to receive advertising indicia or the brand name etc. of the carton or package.

Extending upwardly from the rails 12 and 13 are the side wall members 24 which are arranged in spaced-apart pairs, each pair being in alignment with one of the support platforms 20. By referring to Figure 4, it is seen that the wall members 24 are slightly arcuate so that they will conform generally to the shape of tomatoes and any other substantially round articles that may be packaged in the carton 10, and in effect constitute continuations of the arcuate legs 22. The wall members 24 are not solid pieces, but instead each provides a perimeteric arm 25 that defines an opening or space 26 therein.

The side wall members 24 are resilient or yieldable and are adapted to yield or give slightly so that articles which are slightly larger than the space between a pair of the wall members may be received therebetween. At the same time, the wall members are resilient so that they firmly grip, but without damaging, articles received therebetween. It should be noted that the support platforms 20 and the complementary side wall members 24 are spaced apart so that each pair of wall members may individually conform to and grip a singular article aligned therewith. Thus, tomatoes, for example, that will vary considerably in size and shape may be accommodated individually as their characteristics may demand.

While the carton 10 may be formed from any suitable material, I prefer to employ plastic and to form the carton in a molding operation. Any of the well-known plastics may be employed as, for example, polyethylene, and since the characteristics of plastics are well known in the art, a detailed listing of those that are suitable will not be set forth.

In use of the carton, it will ordinarily be placed on a continuously moving conveyor and selected tomatoes will be placed therein upon the support platforms 20 and between the resilient wall members 24. In the specific embodiment shown in the drawing, four tomatoes may be accommodated. During this operation the danger of the tomatoes rolling within the carton is substantially eliminated for the annular support platform 20 will firmly anchor a tomato thereon while the resilient walls 24 will grip the tomato and cooperate with the support platform 20 in defining its location within the carton 10.

If tomatoes are placed within the carton which are smaller than the distance between the wall members 24 and then are not gripped thereby, the tomato will nevertheless be firmly held in place by the annular support platform 20 since a portion of the tomato will depend into the annular central opening 21. It will be noted by referring to Figure 4 that the support platforms 20 are elevated above the lower edge of the rails 12 and 13 and therefore are spaced above a conveyor or other table upon which the carton may be resting. On the other hand, if tomatoes that are somewhat larger than the space between the walls 24 are inserted therebetween, the walls 24 will yield and move outwardly as is shown by the dotted lines in Figure 4.

The arcuate arms 22 which lie substantially along the arc

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of the arcuate walls 24 cooperate therewith and, in addition to the annular platform 20, provide a relatively large surface that engages and conforms to the configuration of the tomato. Therefore, point contact with the tomatoes is avoided and the supporting forces are distributed over a large surface of the tomato, and bruising thereof is substantially eliminated.

If desired, in a final operation the entire carton 10 with the tomatoes (illustrated by the broken lines in Figure 4) may be wrapped in a transparent wrapper such as cellophane which will enable the consumer to inspect the tomatoes by sight, and at the same time will prevent the direct fingering of the tomatoes.

In some packaging equipment the cartons are advanced through engagement of a pusher member with a central portion of the cartons and for this purpose, the pusher plates 27 may be provided.

While in the foregoing specification an embodiment of the invention has been set out in considerable detail for purposes of illustration, it will be apparent to those skilled in the art that numerous changes may be made without departing from the spirit and principles of the invention.

I claim:

An open frame-like plastic carton adapted for use in packaging generally spherical articles such as tomatoes and the like, comprising a generally rectangular frame having a pair of spaced side rails extending in substantially parallel relation and a pair of substantially parallel end

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rails respectively connecting the corresponding ends of said side rails and being integral therewith, side and end walls extending upwardly and outwardly respectively from said side and end rails and being integral therewith, a plurality of support platforms comprising narrow rings medially positioned between said side rails and being spaced apart longitudinally therealong, the outer diameter of each ring being greater than half the distance between said side rails, and transverse and medial legs integral with said rings and extending radially outwardly therefrom, said transverse legs being integral with said side rails to connect said rings thereto and said medial legs being integral respectively with adjacent rings, and with adjacent rings and end rails to interconnect said rings therewith.

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