Dec. 19, 1933. A. E. BUESCHEL 1,940,292

CARTON

Filed April 16, 1932

Fig. 1

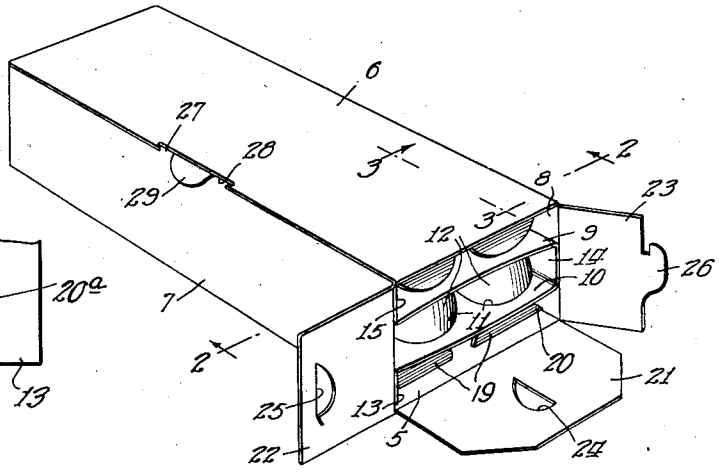


Fig. 5

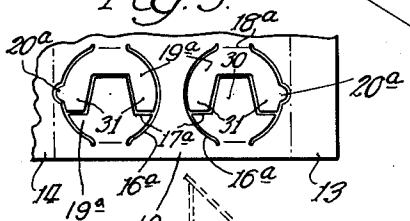


Fig. 2

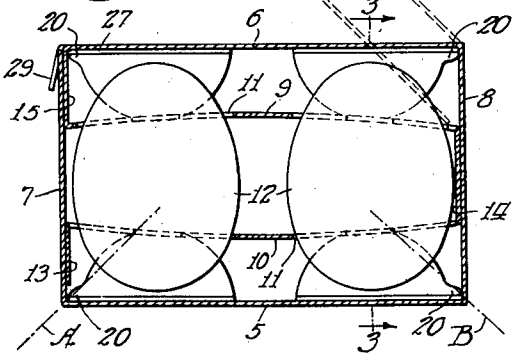


Fig. 3

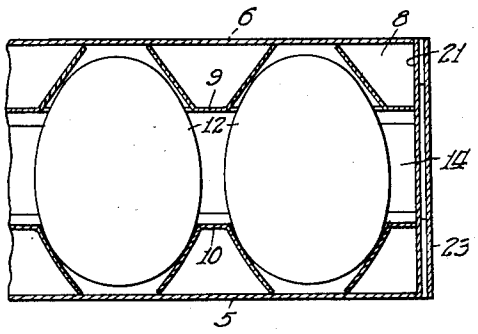
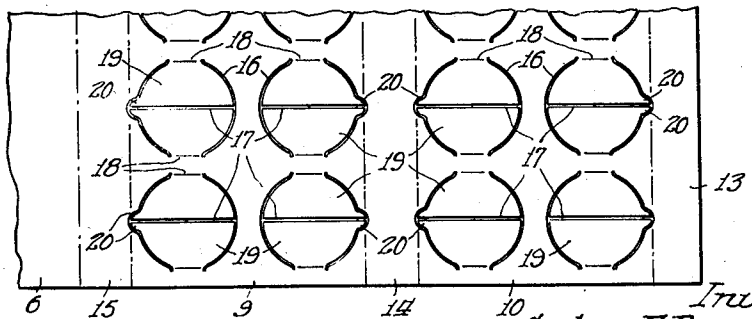


Fig. 4



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CARTON

Andrew E. Bueschel, Chicago, Ill.

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8 Claims. (Cl. 229—29)

This invention relates to cartons or containers and a blank for forming same, the construction and arrangement disclosed being particularly adapted for the formation of cartons intended for the packaging and handling of eggs or other similarly shaped articles.

One object of the present invention is to provide a folding carton having suitably positioned racks for supporting articles therebetween in spaced relationship with respect to the body of the carton, and wherein cushioning means are associated with the racks for protecting the contents from damage due to shocks, or the like.

Another object of the invention is to provide a carton of the character described wherein one of the racks is secured in relatively fixed position with respect to the bottom and side walls of the carton and wherein means are provided for bracing and stiffening the carton structure when the respective portions thereof are in article receiving position.

Another object of the invention is to provide a carton having an article supporting rack therein, the said rack having means associated therewith and cooperable with the bottom of the carton for providing a yieldable cushioning support for the contents of the carton.

A further object of the invention is to provide a carton of the character described wherein one of the racks is hingedly connected to the side walls of the carton, said rack having means associated therewith and operatively related to the side walls for maintaining the walls in substantially perpendicular position with respect to the bottom of the carton, and for stiffening and bracing the carton and rack against a folding action or collapsing of the carton structure.

A still further object of the invention is to improve devices of the character described in sundry details hereinafter referred to and particularly pointed out in the appended claims.

One embodiment of the present invention is shown for illustrative purposes in the accompanying drawing in which

Fig. 1 is a perspective view of a carton embodying features of the present invention;

Fig. 2 is an enlarged transverse sectional elevation taken substantially as indicated by the line 2—2 of Fig. 1;

Fig. 3 is an enlarged fragmentary longitudinal section through one end of the carton illustrated in Figs. 1 and 2 and taken substantially as indicated by the lines 3—3 thereof;

Fig. 4 is a fragmentary view of a portion of a blank formed from an integral sheet of material from which the carton illustrated is formed; and

Fig. 5 is a fragmentary view of a portion of a blank illustrating a modified form of tab construction.

The illustrative embodiment of the present invention comprises a carton formed preferably from a single sheet of resilient flexible material, such as cardboard or the like, and having a bottom portion 5, a top portion 6 and side walls 7 and 8 extending between said bottom and top portions and formed integrally therewith.

Suitably positioned within the carton and spaced from the top and bottom portions thereof are upper and lower racks 9 and 10, respectively, the said racks being suitably spaced from each other and provided with a plurality of apertures 11 formed therein and adapted to receive the end portions of a plurality of articles shown in the present instance as eggs 12 in a manner to support the articles between the racks 9 and 10 and in spaced relationship with respect to the bottom and top portions 5 and 6, respectively.

For securing the lower rack 10 in relatively fixed position with respect to the bottom portion 5 and the side walls 7 and 8 when the carton is in article receiving position, the rack 10 is provided adjacent one of its longitudinal edges with a laterally extending securing portion 13 adapted to be secured by adhesive such as glue, or the like, or by other suitable means to the inner face of the side wall 7, and adjacent the opposite longitudinal edge of the rack 10 is provided a securing portion 14 adapted to be permanently secured, preferably in like manner, to the inner face of the side wall 8, thereby positioning the rack 10 in substantially fixed normally parallel relationship with respect to the bottom portion 5 and in relatively fixed hinged relationship with respect to the side walls 7 and 8.

It will be observed that by reason of the resilient flexible character of the material from which the carton is formed, that hinge connections are provided between the lower rack 10 and the securing portions 13 and 14 adjacent their junctures with the rack, thereby providing a structure which is foldable and which may be collapsed or flattened for conserving shipping space, it being possible to pack many more "knocked down" cartons in a particular space than would be possible if the cartons were set up in article receiving position.

It will also be observed that by reason of the character of the material employed, that a hinge connection is provided between the upper rack 9 and the securing portion 14 adjacent their juncture and that a hinge connection is provided between the top portion 6 and side wall 8 adjacent their juncture, thereby providing a structure wherein the upper rack 9 and top portion 6 are hingedly connected to the side wall 8 in a manner to be moved relatively thereto.

Formed adjacent the free longitudinal edges of the top portion 6 and upper rack 9, and shown in the present instance as formed integrally therewith and hingedly related thereto is a spacing portion 15 having a vertical width substantially

equal to the distance between the hinge connections of the upper rack 9 with the securing portion 14 and the hinge connection of the top portion 6 with the side wall 8, thereby spacing the top portion 6 and upper rack 9 normally in substantially parallel relationship, and owing to the flexibility of the material and the hinged relationship of the spacing member 15 with the top portion 6 and upper rack 9, forming in effect, a parallelogram including the top portion and upper rack.

It will be observed from the foregoing description that the top portion 6 and upper rack 9 are adapted to move together in substantially parallel relationship, and that when the top portion 6 is raised, the upper rack 9 will be moved out of article engaging position, as clearly shown by dotted lines in Fig. 2, thereby providing free access to the articles supported on the lower rack 10 in a manner to permit their being conveniently grasped for removal from the carton.

It will be observed also that by reason of the parallelogram arrangement, the moving of the top portion to carton closing position will serve to return the upper rack 9 to article receiving position, and that by reason of the resilient flexible character of the material employed in the construction of the racks and cartons, the racks 9 and 10 may be bowed in a manner to maintain a degree of tension on the articles, thereby retaining them in relatively fixed position and against accidental displacement from their supporting racks.

For further protecting the contents of the carton, and for providing a resilient cushioning structure adapted to engage the articles when positioned in the apertures 11, the material of racks 9 and 10 is cut through or perforated along the lines 16, and the material inside the lines 16 is cut through transversely along the lines 17, thereby providing, in the present instance, semicircular tabs 19 within the apertures 11, a portion of the rack material being left uncut as indicated at 18 to provide a weakened neck portion by which the tabs 19 are connected to the body of the racks 9 and 10. It will be observed that as eggs or similar articles are positioned on the tabs 19 of the lower rack 10, that the tabs will be forced downwardly out of the plane of the rack thereby providing the apertures for the reception of the eggs, the free edges of the tabs 19 being moved into engagement with the bottom portion 5 of the carton in a manner to assume an inclined position with respect thereto as shown in Fig. 3, thereby providing a resilient support for the eggs and protecting them against sudden or severe shocks from below, while in lowering the upper rack 9 into engagement with the upper ends of the eggs, the tabs 19 of the rack 9 will be forced upwardly by the egg and into engagement with the undersurface of the top portion 6, thereby providing resilient means for protecting the egg from severe or sudden shocks from above.

For maintaining the side walls 7 and 8 in substantially perpendicular position with respect to the bottom portion 5, and for bracing and stiffening the carton structure when in article receiving position, the tabs 19, particularly those associated with the lower rack 10 are provided with laterally projecting extensions 20 projecting outwardly from the tabs 19 to adjacent the point of juncture between the rack 10 and securing portions 13 and 14 so that when the tabs are bent downwardly out of the plane of the rack 10, as shown in Figs. 1, 2 and 3 of the drawing, the ends of the extensions 20 will engage the lower corners of the carton formed at the juncture of the bottom 5 and side walls 7 and 8, thereby providing a structure by which a collapsing movement of the side walls 7 and 8 toward the left as viewed in Fig. 2 is resisted along the line A, while a similar movement of the walls toward the right in Fig. 2 is resisted along the line B. Such a structure is most desirable in open ended cartons having no end flaps with which to brace and retain the side walls in relatively and substantially fixed position with respect to each other.

If desired, the flaps 19 of the upper rack 9 may also be provided with extensions 20 adapted to engage and cooperate with the side wall 8 and spacing portion 15 in much the same manner as the extensions 20 on the lower flaps 19 and cooperate with adjacent portions of the carton, it being understood that if the tabs 19 and extensions 20 associated with the upper rack 9 are not desired, they may be omitted, and the apertures 11 only, provided for receiving the upper ends of the eggs.

Although as above mentioned, the bracing and stiffening effect of the tabs 19 and extensions 20 is most desirable in open ended cartons, it may be found desirable to provide end closure members such as the wall 21 and end flaps 22 and 23 as clearly shown in Fig. 1, the end wall 21 being adapted to fold up against the open end of the carton, and provided with an aperture 24, while the end flap 22 having an aperture 25 formed therein and the flap 23 may be folded over against the end wall 21, and a tongue 26 formed on the flap 23 positioned in the apertures 25 and 26 for securing the end wall 21 and flaps 22 and 23 in end closing position.

For securing the portion 6 of the illustrative embodiment in carton closing position, and the rack 9 in article engaging position, the side wall 7 may be provided with a locking cab 27 adapted to enter a slot 28 formed at the juncture of the spacing portion 15 of the top portion 6 in a manner to cooperate with the spacing portion 15 for resisting upward movement of the top portion until the tab 27 has been removed from the slot 28, which removal may be readily effected by means of a finger tab 29 struck up from the material of the side wall 7, which may be grasped and the locking tab 27 withdrawn from the slot 28.

In Fig. 5 of the drawing is shown a modified structure of a blank from which the carton may also be formed, and wherein the material of the rack 10 is cut through or perforated along the lines 16*a*, and the material inside the line 16*a* is cut through transversely along the irregular lines 17*a*, thereby providing in the structure shown in Fig. 5, tabs 19*a*, one of the tabs being provided with a centrally located projection 30 and the other tab with side projections 31 extending beyond the free edge of the projection 30 to provide an overlapping of the adjacent edges of the respective tabs. A portion of the rack material is left uncut as indicated at 18*a* to provide a weakened neck portion by which the tabs 19*a* are connected to the body of the rack 10. This arrangement provides tabs of a somewhat greater length than those illustrated in Fig. 4 and is especially desirable for yieldingly supporting the smaller or pointed ends of the eggs, or relatively small eggs which might otherwise contact the bottom of the carton before

the egg obtained a support in the aperture of the rack portion.

As illustrated in Fig. 5, one of the respective pairs of tabs 19*a* may be provided with a laterally projecting extension 20*a* for engagement with the side walls 7 and 8 for bracing the carton in much the same manner as above described with reference to the extensions 20 indicated in Figs. 1, 2 and 4.

Obviously, the present invention is not limited to the precise construction and arrangement shown and described, as the same may be variously modified. Moreover, all the features of the invention need not be used conjointly, as the same may be used to advantage in variously different combinations and sub-combinations.

Having thus described the invention, what I claim and desire to secure by Letters Patent is:

1. A container comprising a bottom, side walls hingedly connected thereto, a rack formed of resilient material hingedly connected to said walls and in spaced relation with respect to said bottom, the material of said rack being perforated to form a pair of semi-circular tabs having neck portions for connecting the tabs to said rack, said tabs being bendable out of the plane of said rack to form circular apertures therein and into engagement with said bottom in a manner to underlie articles positioned in said apertures and to provide a plurality of resilient supports for each of the articles positioned in the respective apertures, and laterally projecting extensions formed on said tabs and engageable with said side walls adjacent their hinged connections with said bottom for maintaining the walls in substantially perpendicular position with respect to the bottom.

2. A container comprising a bottom, side walls hingedly connected thereto, a rack formed of resilient material hingedly connected to said walls and in spacd relation with respect to said bottom, the material of said rack being perforated to form a pair of overlapping tabs having neck portions for connecting the tabs to said rack, said tabs being bendable out of the plane of said rack to form circular apertures therein and into engagement with said bottom for providing resilient supports for articles positioned in said apertures, and laterally projecting extensions formed on one of said tabs and engageable with said side walls adjacent their hinge connections with said bottom for maintaining the walls in substantially perpendicular position with respect to the bottom.

3. A container comprising a bottom and side walls, a rack mounted between said walls and in spaced relation with respect to said bottom, the material of said rack being perforated to provide apertures in said rack and to form a pair of overlapping tabs of a length greater than the distance between said rack and bottom, said tabs having neck portions for connecting the tabs to said rack adjacent said apertures, both of the tabs adjacent each aperture being bendable on substantially parallel lines into engagement with said bottom to provide a plurality of supports having their adjacent ends resting on said bottom below each aperture for supporting each of the articles position in the respective apertures.

4. A container comprising bottom and side walls, a rack formed of resilient material mounted between said walls and in spaced relation with respect to said bottom, the material of said rack being perforated to provide substantially circular apertures in said rack and to form a plurality of pairs of substantially semi-circular overlapping tabs of a length greater than the distance between said rack and bottom, said tabs having neck portions adjacent one of their ends connected to said rack, the said pairs of tabs being bendable on substantially parallel lines into engagement with said bottom to provide a plurality of resilient supports having their adjacent ends resting on said bottom below each aperture for supporting articles positioned in the respective apertures.

5. A container comprising a bottom and side walls, a rack mounted between said walls and in spaced relation with respect to said bottom, the material of said rack being perforated to provide apertures in said rack and to form a pair of tabs of a length greater than the distance between said rack and bottom, said tabs having neck portions for connecting the tabs to said rack adjacent said apertures, one of the tabs adjacent each aperture being bifurcated and adapted to overlap an adjacent tab on opposite sides thereof, the said tabs adjacent each aperture being bendable on substantially parallel lines into engagement with said bottom to provide a plurality of supports having their adjacent ends resting on said bottom below each aperture for supporting articles positioned in the respective apertures.

6. A container comprising a bottom and side walls, a rack mounted between said walls in spaced relation with respect to said bottom, the material of said rack being perforated to form a plurality of overlapping tabs, each of said tabs being of a length substantially greater than the distance between said rack and bottom, said tabs being bendable on substantially parallel lines out of the plane of said rack to form apertures therein and into engagement with said bottom beneath said apertures to provide a plurality of supports beneath articles positioned in said apertures.

7. A container comprising a bottom, side walls hingedly connected thereto, a rack formed of resilient material hingedly connected to said walls and in spaced relation with respect to said bottom, the material of said rack being perforated to form pairs of tabs having neck portions for connecting the tabs to said rack, each of said tabs being of a length substantially greater than the distance between said rack and bottom and being bendable out of the plane of said rack to form apertures therein and into engagement with said bottom in a manner to underlie articles positioned in said apertures and to provide a plurality of resilient supports beneath each of the articles positioned in the respective apertures.

8. A carton comprising a bottom portion, top portion and side walls, lower and upper racks positioned in the carton and spaced from said bottom and top portions respectively, the material of said racks being perforated to form pairs of tabs connected to said racks, said tabs of the respective racks being of a length greater than the distance between the respective racks and the adjacent bottom and top portions of the carton and bendable on substantially parallel lines out of the plane of the racks to provide apertures therein, and into engagement respectively with the adjacent bottom and top portions of the carton for providing supporting means above and below each of the articles positioned in said apertures.

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