

[54] **EGG CARTON**

[72] Inventor: **Dennis Douglas Weir**, 1637 South 740
East, Orem, Utah 84057

[22] Filed: **July 11, 1969**

[21] Appl. No.: **840,934**

[52] U.S. Cl. **229/44 R, 229/45, 229/2.5**

[51] Int. Cl. **B65d 85/32**

[58] Field of Search **229/44 R, 45, 2.5, 29 M**

References Cited

UNITED STATES PATENTS

2,591,446 4/1952 Lennon.....229/2.5
3,356,284 12/1967 Lake.....229/45 X

3,388,852 6/1968 Reifers.....229/45 X
3,217,963 11/1965 Alzman.....229/45 X
3,469,764 9/1969 Gaylor.....229/44 R
3,471,078 10/1969 Seest.....229/44 R
3,519,189 7/1970 Bambara.....229/45 X

Primary Examiner—Donald F. Norton

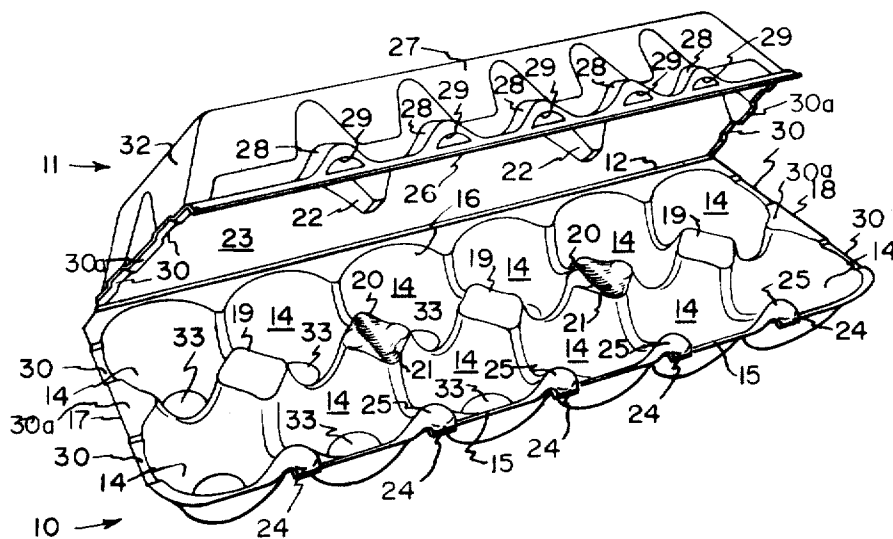
Attorney—B. Deon Criddle

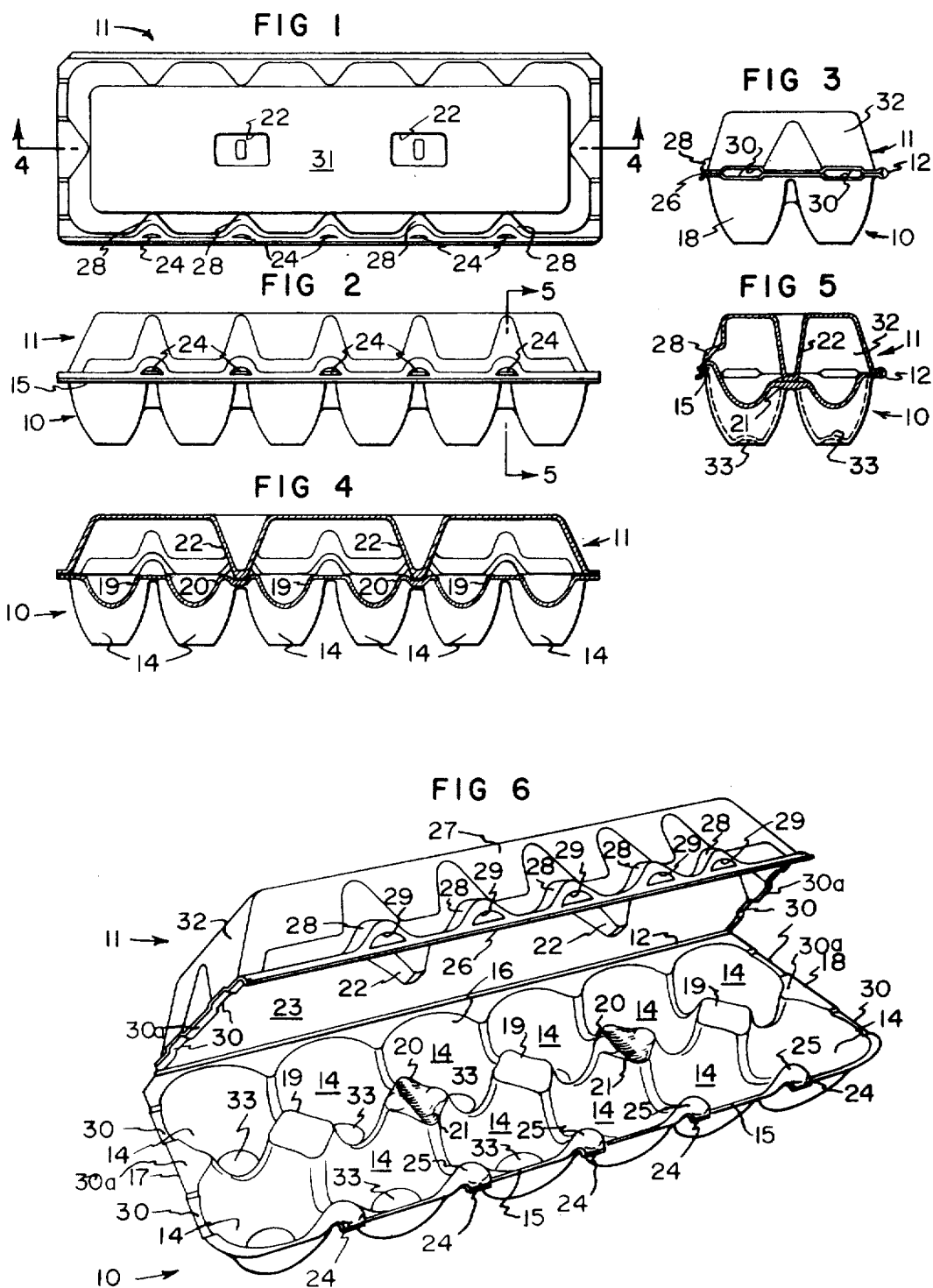
[57]

ABSTRACT

An egg carton fabricated of plastic and shaped to cradle and cushion eggs of varying size. A single motion closing latch is provided, the lid is supported against crushing and is held against wracking and an enlarged flat surface is provided on the lid to insure adequate marking space. Ventilation is provided through matched slots formed in the base and cover.

1 Claim, 6 Drawing Figures





INVENTOR:
DENNIS DOUGLAS WEIR

BY: *B. Dean Willard*

ATTORNEY

1

EGG CARTON

BRIEF DESCRIPTION OF THE INVENTION

1. Field of the Invention

This invention relates to containers and particularly to cartons made of plastic or molded pulp such as are conventionally used in the storing and marketing of eggs.

2. Prior Art

There has long been a need for a carton that will satisfactorily hold eggs as they are stored, transported and marketed. Such cartons ideally provide for adequate ventilation and moisture retention of the eggs while at the same time protecting them against breakage. It has also been desirous that the egg cartons be easily handled by available processing equipment, be capable of being securely locked against undesired opening, yet be readily opened for inspection or to remove eggs and thereafter be easily re-locked.

In the past, various types of molded pulp and plastic carton constructions have been proposed. Some have proposed locking lugs on the base of the carton and others have proposed that they be put on the top. Still others have proposed that locking lugs be put on a hinged flap that is connected to either the base or the top. The hinged flap is then pushed in before the carton is closed and its natural tendency to move out, places the lugs in latching engagement with openings provided therefore. Some have provided reasonably effective latches but have required special machinery to close them and others have not provided the desired easy opening, easily closed carton that will resist undesired opening when the carton is subjected to wracking and compression during handling, storage and marketing.

THE INVENTION

Objects of the present invention are to provide a plastic egg carton construction that will be resistant to moisture absorption, that will provide adequate ventilation to keep the eggs therein fresh for a maximum period of time, that will protectively cushion the eggs and provide maximum protection against egg crushage, that can be easily handled and especially be easily closed with existing egg packaging equipment, that will resist undesired opening as the filled cartons are subjected to twisting or wracking and other forces as the eggs are processed, transported, stored and marketed and that can be readily opened and reclosed by a prospective consumer, without damage to the carton.

Another object is to provide a carton having a maximum available flat printing surface on the top thereof to permit effective use of advertising.

Principal features of the invention include a base that is arranged to cushion eggs placed therein, regardless of the size of the eggs, having slotted pillars in the center thereof to receive matching posts protruding inwardly from a top that is hinged to the base.

The base is also formed with spaced, upstanding shoulders projecting upwardly and inwardly from the forward edge thereof and the shoulders are each curved downwardly from rounded tops and outwardly of the forward edge of the base to terminate in projecting tongues.

The hinged top includes a front edge, a lip adapted to project downwardly therefrom forward of the front edge and the front edge includes inverse, spaced shoulders adapted to mate with and rest on the spaced shoulders of the base. Openings are formed through the top between each inverse shoulder and the lip to receive the projecting tongues and the downwardly inclined upper surfaces of the tongues serve as cams for the lip as the top is closed.

Matching notches are provided on the end edges of the base and top so that the edges will mate for portions of their length and will be spaced for portions thereof, whereby air is readily circulated through the cartons and carton strength is retained.

Additional objects and features of the invention will become apparent from the following detailed description and drawing, disclosing what is presently contemplated as being the best mode of the invention.

2

THE DRAWINGS

FIG. 1 is a top plan view of the egg carton of the invention;

FIG. 2, a front elevation view with the top or lid closed;

FIG. 3, an end elevation view of one end, the other end being a mirror image thereof;

FIG. 4, a vertical section, taken on the line 4—4 of FIG. 1;

FIG. 5, a vertical section, taken on the line 5—5 of FIG. 2;

FIG. 6, a perspective view, looking down into the base and with the top open.

DETAILED DESCRIPTION

Referring now to the drawing:

In the illustrated preferred embodiment, the egg carton of the invention includes a base shown generally at 10 and a top, or lid, shown generally at 11. The top is hingedly connected to the base along one longitudinal edge at 12. Preferably, the base and top are made of a suitable plastic material and are molded integrally, as a single hinged unit.

The base includes rows of pluralities of egg receiving pockets 14 and as shown there are two rows, each containing six such pockets. Obviously, more or fewer rows and/or pockets could be provided, if desired, but the arrangement shown has proven commercially acceptable. The pockets are formed by the front and rear walls 15 and 16, respectively, and/or the end walls 17 and 18, cooperating with upstanding alternating posts 19 and 20. The posts 20 are each formed with slots 21 in their upper ends, extending transversely to the hinge 12 on the top edge of rear wall 16. The slots are adapted to receive depending posts 22 of the top and prevent twisting or wracking of the top with respect to the base.

Hinge 12 connects the top to the base and is formed by scoring the carton material adjacent to the top edge of the rear wall of the base and adjacent to the rear wall 23 of the top 11. The hinge thus formed has an inherent tendency to open the top and, when the top is locked, to more securely engage the top with projecting tongues 24 on the base.

The projecting tongues extend outwardly and downwardly from the rounded top of spaced shoulders 25 that are formed to extend upwardly and inwardly from the top edge of the front wall 15 of the base. The projecting tongues thus extend forwardly beyond the front wall 15 and their upper surfaces provide cam surfaces for a lip 26 formed outwardly of the front wall 27 of top 11.

Lip 26 extends the full length of the edge of front wall 27 and inverted shoulders 28 are formed in the front wall to match the shoulders 25 in the front wall of the bottom. Openings 29 are formed through the front wall 27 of the top, above the lip 26 and beneath the shoulders 28.

Thus, as the top 11 is closed onto the base 10 the lip 26 is guided by the camming surfaces on tongues 24 out over them, with the natural resiliency of the material from which the carton is made allowing the lip to thus spring out over the tongues. When the lip has moved down past the ends of the tongues the tongues move into openings 29 and the natural resiliency of the construction material snaps the lip beneath the tongues to lock the top in its closed position. The tendency of the hinge to open the top further locks the top closed since it springs the lip into tight frictional engagement with the undersides of the tongues.

The edge of the front wall 27 of the top mates with the upper edge of the front wall 15 of the base for their entire lengths. Thus effective distribution of weight loading is provided for the entire forward edge of the carton and maximum resistance to crushing is obtained. In addition, since portions of the front edge of the top are positioned between adjacent shoulders 28, lateral movement and the twisting of the top with respect to the base, i.e. wracking, is prevented. This relationship, together with the engagement of posts 22 in slots 21, helps to prevent undesired opening of the carton.

The end walls of both the top and bottom are cut away at 30, on both sides of the center thereof so that when the carton is closed air will still be able to circulate through the openings 31 formed by the opposed cut-away portions. Carton strength is

preserved however, by maintaining the integrity of the end walls in the center thereof and at each end. Additionally, enlarged bearing surfaces 30a are provided at the center of each end wall of the top and the bottom so that the top bearing surfaces will rest on the corresponding bottom surfaces and the top will not slide past or into the bottom when a load is placed thereon.

The posts, are preferably drawn in from the flat top surface 31 interconnecting front and rear walls 27 and 26, and end walls 32. Since the mating front edges of the top and bottom cooperate to provide strength and to resist wracking and since the end walls also contribute to the strength of the carton, it is only necessary to have two such depending posts 22 and a maximum portion of the flat top surface is maintained for the printing of advertising, information, etc. thereon.

The pockets 14 are each formed to receive the largest grade of egg normally packaged and to support it by the walls of the pockets. If, however, eggs are inserted that are too small to be supported by the side walls, they rest on an upwardly mounded portion 33 of the bottom of the pocket, which portion is resilient and serves as a cushion for the smaller eggs. The ring shaped engagement surface surrounding the mounded portion and formed at the lower most portion of each pocket thus forms a more stable surface for stacking of the cartons.

In use, the carton is filled with eggs in any conventional manner and the top is closed merely by pivoting it about hinge 12 and pushing down on it until lip 26 moves down past the tongues 24. No additional locking flap is required.

To open the carton it is only necessary to place a thumb or fingers under the lip 26 and to pull the lip out away from the front wall 27 of base 10 until it clears tongues 24. Normally the resiliency of the material and the action of the hinge will

then cause the lid to pivot open.

While a preferred embodiment of the invention has been shown, others are contemplated as coming within the scope of the following claims.

I claim:

1. A carton for eggs and the like made of resilient plastic material comprising

a base having interconnected front, rear and end walls;

a top having interconnected front, rear and end walls;

a hinge connected to the rear wall of the base and to the rear wall of the top;

a top edge on the front wall of the base, said top edge having upwardly and inwardly directed curved shoulders spaced therealong;

tongues extending downwardly and outwardly from the shoulders beyond at least a portion of the front wall of the base;

lip means fixed to and extending longitudinally along the front wall of the top, outwardly thereof, whereby closing of the top will first move the lip means against the outwardly extending upper portions of the tongues and will thereafter cam the lip past the tongues; and

tongue engagement means in the front wall of the top, above the lip and in spaced alignment with the tongues, adapted to receive the tongues after the lip has been cammed therepast thereby locking said top to said base, said tongue engagement means including inverse shoulders projecting into the top from the front wall thereof to provide expansive surfaces in engagement with the tops and sides of the tongues whereby the top is supported on the shoulders and wracking of the top with respect to the base is prevented.

* * * * *

35

40

45

50

55

60

65

70

75