

June 11, 1963

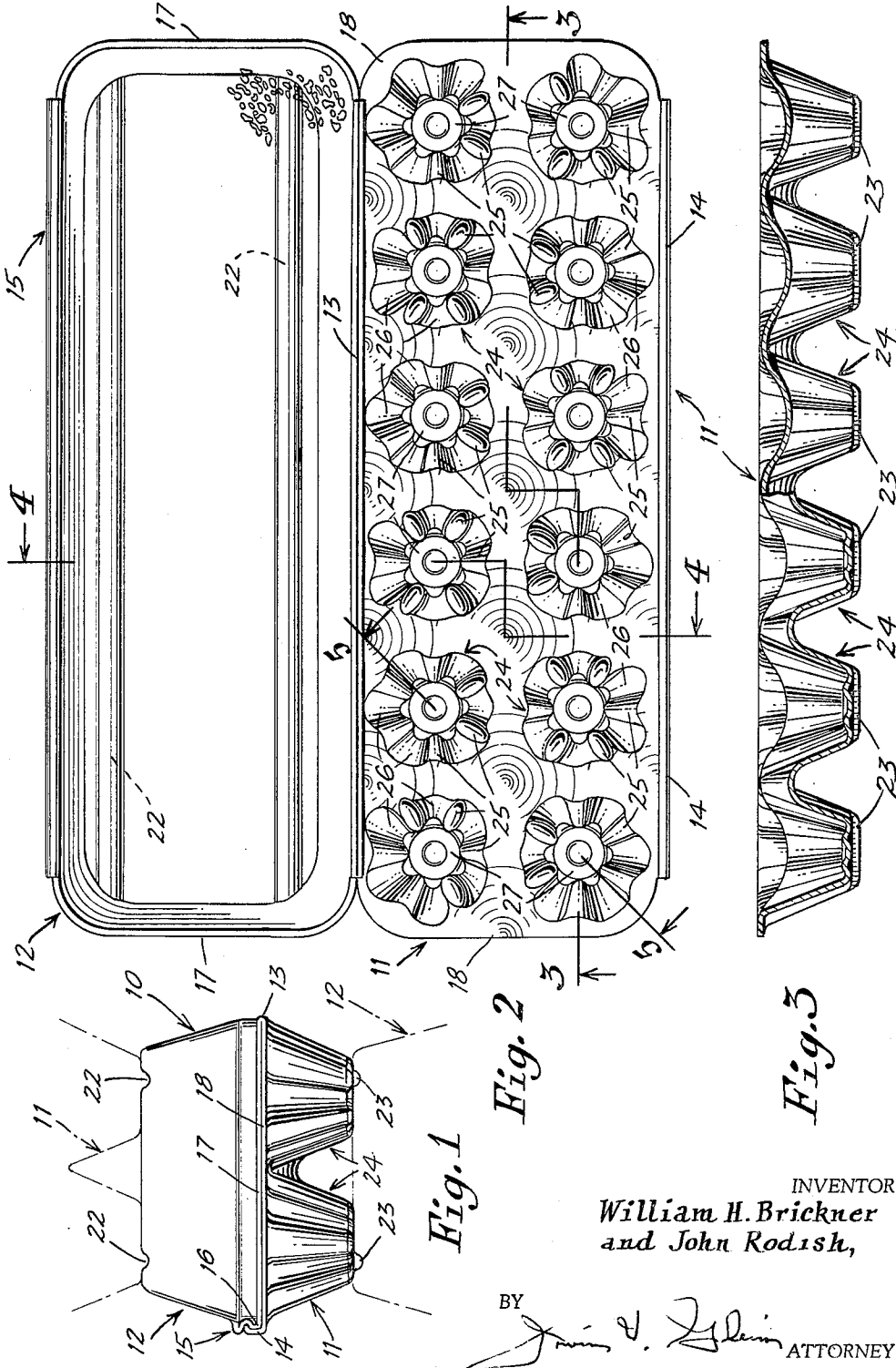
W. H. BRICKNER ETAL

3,093,286

MOLDED FOAMED PLASTIC EGG CARTON

Filed Jan. 24, 1961

2 Sheets-Sheet 1



INVENTORS
William H. Brickner
and John Rodish,

BY

John P. Zelen ATTORNEY

June 11, 1963

W. H. BRICKNER ET AL

3,093,286

MOLDED FOAMED PLASTIC EGG CARTON

Filed Jan. 24, 1961

2 Sheets-Sheet 2

Fig. 6

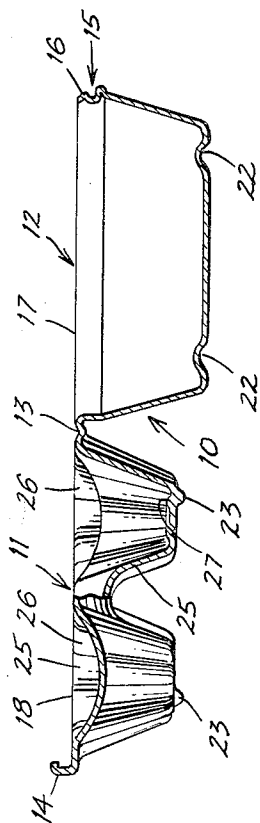
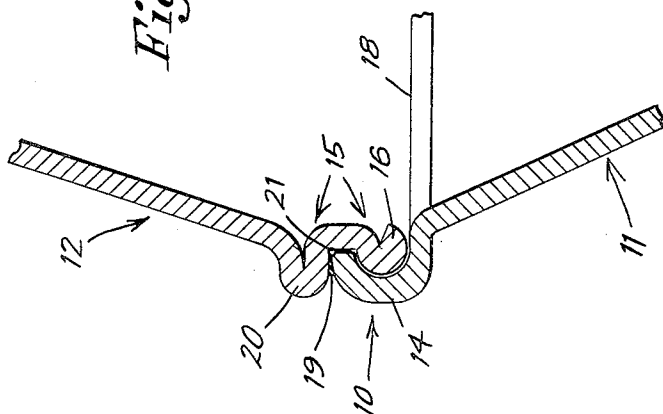


Fig. 4

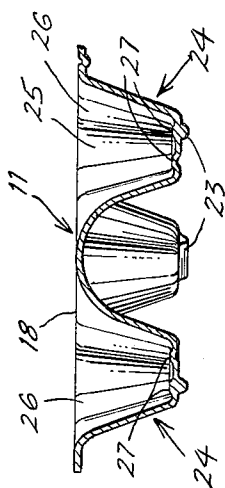


Fig. 5

INVENTORS

William H. Brickner
and John Rodish,

BY *John V. Ziem* ATTORNEY

1

3,093,286

MOLDED FOAMED PLASTIC EGG CARTON

William H. Brickner and John Rodish, Cincinnati, Ohio,
assignors to The Mead Corporation, Dayton, Ohio, a
corporation of Ohio

Filed Jan. 24, 1961, Ser. No. 84,581

4 Claims. (Cl. 229—2.5)

This invention relates to a carton which provides a unitary egg carton molded of foamed plastic material. In general, the carton of this invention comprises an elongated multiple pocket tray portion and a dome-shaped cover connected together along one edge thereof by an integral hinge web. Each pocket is substantially conical in configuration and is lined by a series of downwardly converging shock absorbing rounded ribs. The mating edges of the tray portion and the cover have interlocking ribs and grooves constructed to snap to and from closed interengagement and to receive therein a carton sealing adhesive and a string for breaking the seal when the carton is initially opened. Mating ribs on the bottom of the tray portion and depressions in the top of the cover provide safe and easy stacking of the cartons. In addition, the depressions in the top of the cover may be of such a design as to surround the eggs contained in the carton.

It is accordingly an object of the invention to provide an egg carton formed of shock absorbing material for minimizing breakage.

It is another object to provide such a carton which due to the small quantity of solid material used is both economical to manufacture and to transport.

It is a further object to provide a carton of the character described having novel pocket constructions designed for absorbing high impact shock without egg breakage.

It is still another object to provide a hinged cover for such a carton having positive but easily releasable means for repeatedly latching the cover in closed position.

It is a further object to provide a molded plastic egg carton having easily releasable means for sealing the carton against loss of moisture during shipping and storage.

It is another object to provide a molded foamed plastic egg carton which is of simple construction, economical to manufacture yet highly effective and efficient in use.

Other and further objects of the invention will become apparent from a reading of the following specification taken in conjunction with the drawings, in which:

FIGURE 1 is an end view of a preferred embodiment of the invention showing the stacking feature;

FIGURE 2 is a plan view of the open carton;

FIGURE 3 is a front elevational view of the carton in section, taken on line 3—3 of FIGURE 2;

FIGURE 4 is an end elevational view in section, taken on line 4—4 of FIGURE 2;

FIGURE 5 is an end elevational view of the tray portion only, taken on line 5—5 of FIGURE 2; and,

FIGURE 6 is an enlarged fragmentary end view of the sealed junction between the tray and cover rims, in vertical transverse section.

With reference now to the drawings, the numeral 10 generally designates the carton. Carton 10 is molded of foamed or expanded plastic material such as polystyrene, and is provided with a dome-shaped cover 12 hingedly connected to a tray 11 by an integral web 13. Opposite the hinge 13, the rim of tray 11 is curved upwardly and inwardly to form a latch channel 14, and the cover 12 is formed with a double-beaded rim generally designated 15. The lower bead 16 of rim 15 snaps into the latch channel 14 where it is releasably held by the inherent resilience of the carton parts.

The other engaging portions of tray 11 and cover 12

2

are sufficiently accurately formed that the lower edges 17 of the cover end walls sealingly engage the upper coplanar surfaces 18 of the tray 11 so as to prevent dehydrating circulation of air into and from the carton, to limit the loss of carbon dioxide from the eggs to the interior of the carton and to prevent the penetration of foreign odors into the carton, thereby prolonging the original freshness of the egg. To prevent inadvertent opening of the carton and to improve the initial seal, adhesive material 19 (FIGURE 6) may be introduced into the groove between channel element 14 and the upper bead 20 of rim 15. A seal-breaking string 21 may be located in the groove before the adhesive 19 is inserted. One or both ends of string 21 will extend out of the groove for easy grasping and pulling to break the seal.

The upper surface of cover 12 is provided with trough-shaped channels 22 which both rigidify the cover and also provide sockets to receive ribs 23 molded on the bottoms of pockets 24 of the tray 11. The mating channels 22 and ribs 23 permit easy and secure stacking of the cartons, as best seen in FIGURE 1. If desired, the channels 22 may be constructed with intermittent valleys or depressions to additionally retain and protect the eggs in an upright position.

A feature of the invention resides in the novel construction of egg pockets 24. The end pockets of each row are made somewhat larger than the intermediate pockets of each row since the end pockets have the least room for any expansion that might be required in self-adjusting of the same to accommodate eggs of abnormally large size. It is also desirable that the orientation of the pockets be varied (as shown) to conserve space in the tray. Thus, the second and fourth pockets of the rear row (FIGURE 2) are of the same configuration and orientation, while the third and fifth pockets of the front row are of the same configuration but rotated substantially 180° relative to the rear row pockets. Similarly, the third and fifth pockets of the rear row and the second and fourth of the front row are of the same configuration but with the latter rotated through substantially 180° relative to the former.

Each pocket 24 has molded therein six convex conical flutes 25 substantially equally spaced around the inside of the pocket, and six concave conical flutes 26 occupying the spaces between the tapered ridges formed by convex flutes 26. The large number of the convex flutes 26 and their resilient deformability due to their porous (foamed) texture, provide a shape-conforming deformation of the tapered ridges to form a cushioning seat for the egg, which seat is adapted for being further deformed to serve as a shock absorber upon impact, thus protecting the egg against breakage.

The bottom of each pocket 24 has a cushioning egg-centering concentrically disposed circular ridge 27 molded thereon.

It is to be understood that the material utilized in the construction of the carton of this invention may be any suitable foamed or molded type material which will provide the functional features of this invention. And that such material is not limited to foamed or expanded polystyrene set forth in the above described embodiment.

While the foregoing presents a preferred embodiment of the present invention, it is obvious that other modifications and/or equivalents may be employed without departing from the scope of the invention, which is defined in the appended claims.

What is claimed is:

1. An egg carton comprising: a tray portion and a cover portion, said portions being molded of foamed plastic material and being joined along one edge of each portion by an integral web constituting a hinge, said portions having mating complementary egg pockets molded

3

therein, said egg pockets being constrictingly tapered toward the bottoms thereof and having vertically disposed flutes substantially equally spaced to form gripping and shock absorbing supports for eggs held therein, said portions and pockets having diverging walls whereby when said cover portion is opened substantially 180° the carton can be nested relative to other cartons for mutual protection and for saving of space during shipping and storage, the edges of said tray and cover portions opposite said hinge having interlocking elements formed thereon for releasably holding said carton closed, said interlocking elements being rib means and mating channel means extending along said last-mentioned edges, said rib and channel means defining a narrow outwardly opening channel therebetween when said carton is closed, and adhesive sealing material deposited in said narrow channel whereby dehydrating circulation of air into and from said carton and penetration of foreign odors into said carton are prevented.

2. Structure according to claim 1 additionally comprising a flexible pull element extending along the bot-

4

tom of said narrow channel and having a portion thereof accessible for grasping and pulling to break the seal provided by said adhesive material.

3. Structure according to claim 1, said plastic material being polystyrene.

4. Structure according to claim 1, said cover and tray portions having protuberances and depressions engageable with mating depressions and protuberances formed in and on other cartons to align and hold said cartons safely and effectively in stacked arrangements.

References Cited in the file of this patent

UNITED STATES PATENTS

931,637	Odell	Aug. 17, 1909
2,600,130	Schilling	June 10, 1952
2,885,136	Grant	May 5, 1959
2,942,301	Price	June 28, 1960

FOREIGN PATENTS

63,659	Denmark	June 25, 1945
--------	---------	---------------