

Nov. 20, 1956

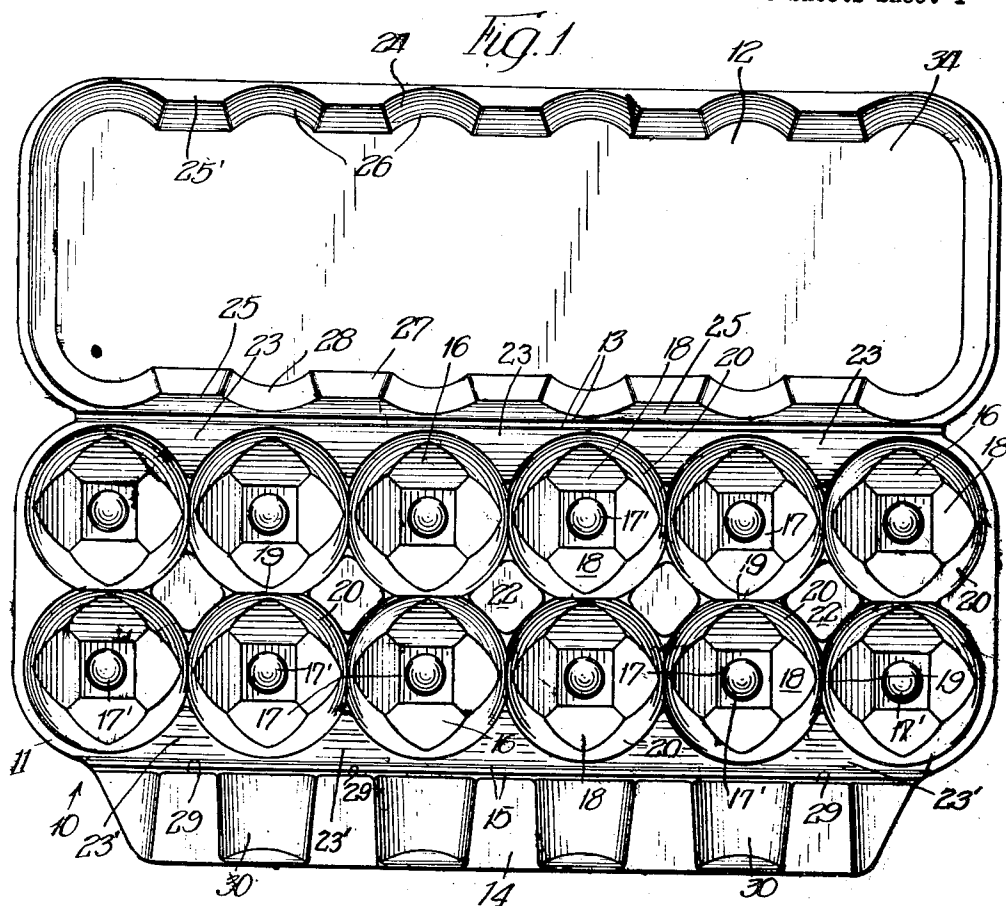
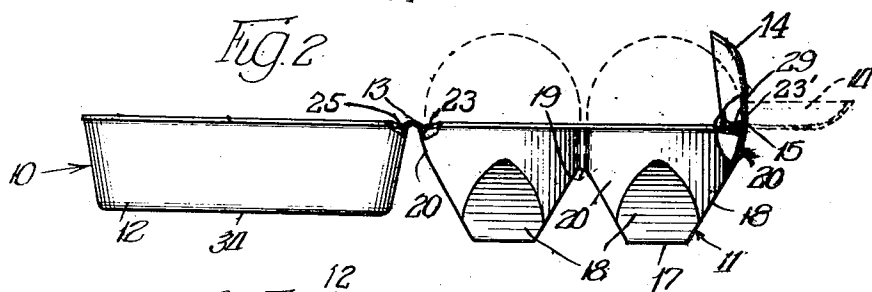
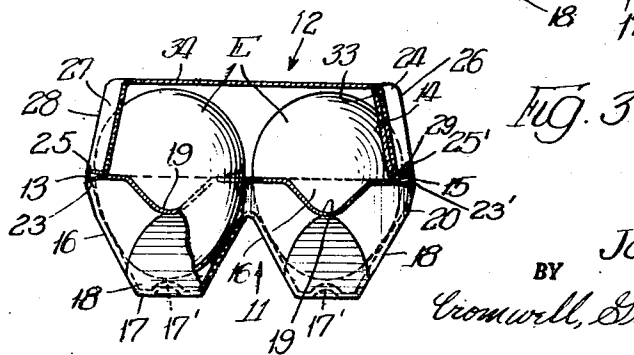
J. W. COX

2,771,233

MOLDED PULP CARTON

Filed June 21, 1950

3 Sheets-Sheet 1



INVENTOR.
John W. Cox,
BY
Cromwell, Christ & Warden
attys

Nov. 20, 1956

J. W. COX
MOLDED PULP CARTON

2,771,233

Filed June 21, 1950

3 Sheets-Sheet 2

Fig. 4

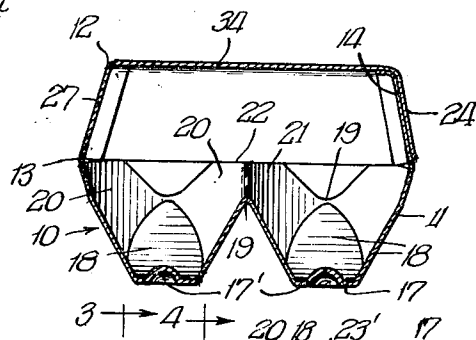


Fig. 5

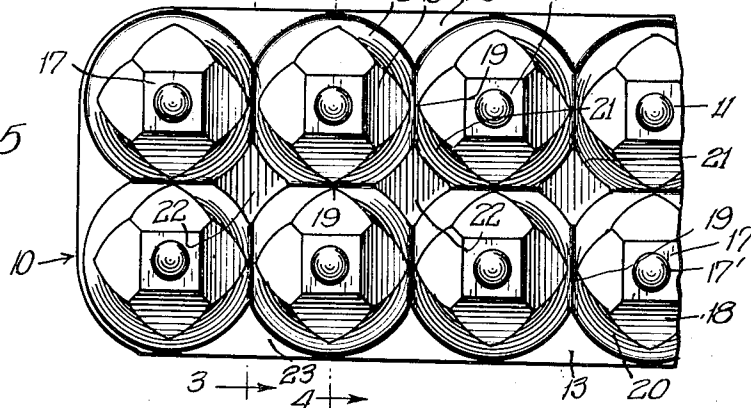
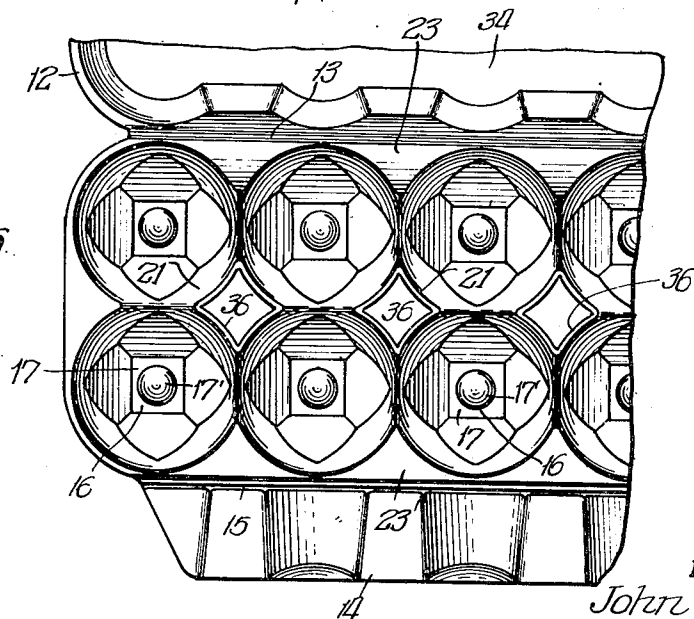


Fig. 6



INVENTOR.
John W. Cox,
BY
Cromwell, Christ & Warden
attys.

Nov. 20, 1956

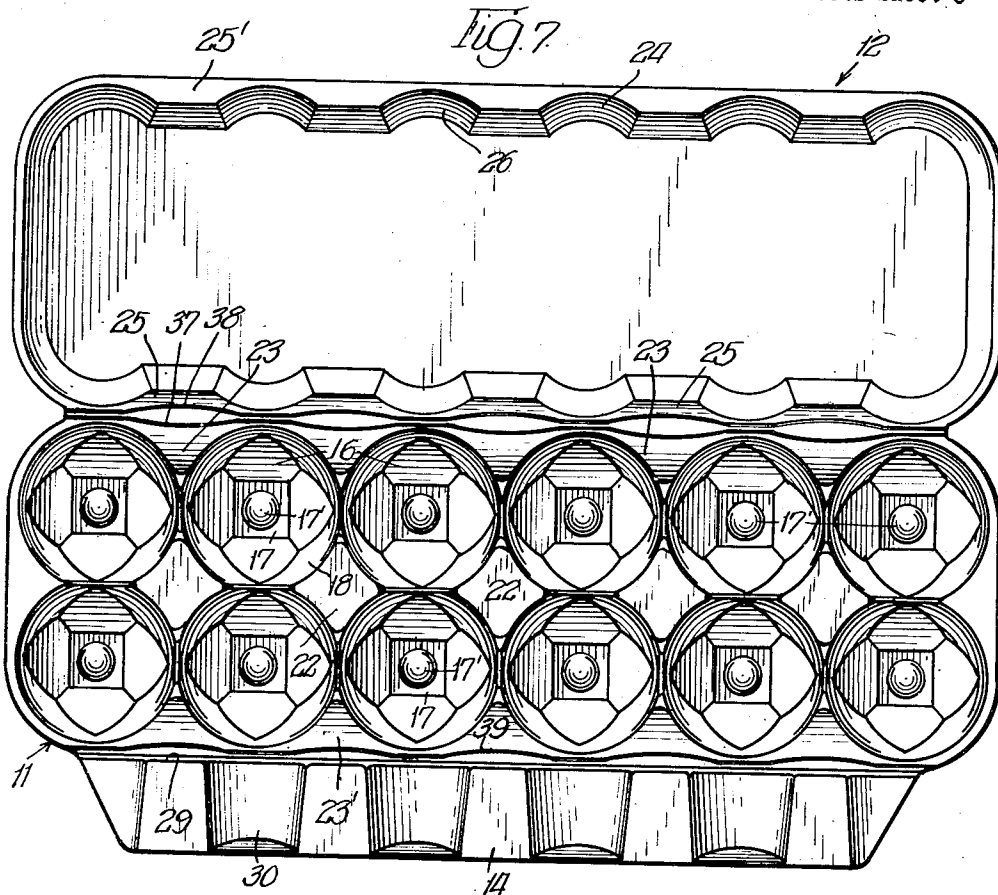
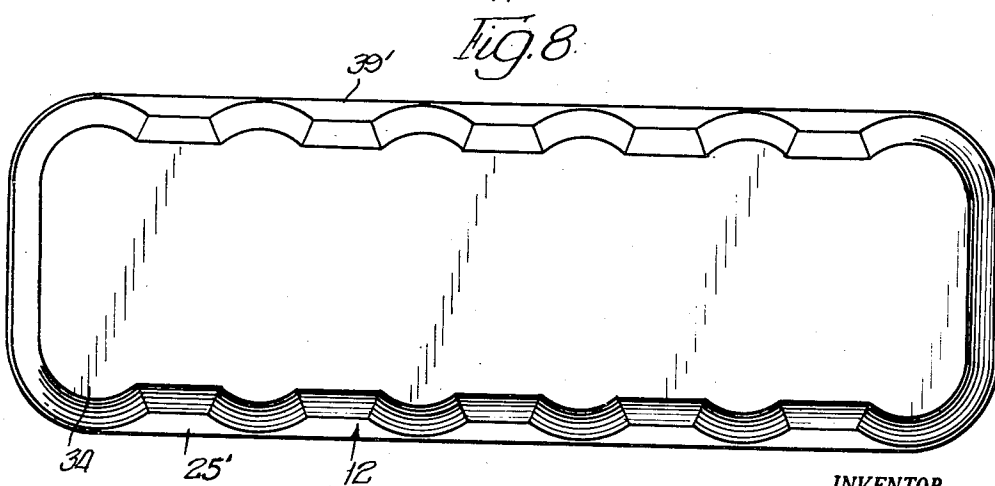
J. W. COX

2,771,233

MOLDED PULP CARTON

Filed June 21, 1950.

3 Sheets-Sheet 3



INVENTOR.

INVENTOR.
John W. Cox,

BY

Cromwell, Grisk & Warden
attys.

attys.

1

2,771,233

MOLDED PULP CARTON

John W. Cox, Chicago, Ill., assignor, by mesne assignments, to The Diamond Match Company, New York, N. Y., a corporation of Delaware

Application June 21, 1950, Serial No. 169,460

20 Claims. (Cl. 229—2.5)

The present invention pertains to molded paper pulp egg cartons. More particularly, it concerns certain structural improvements in a carton of this type whereby large size eggs are effectively cushioned and supported in the lower of two integrally hinged sections of the carton without objectionably increasing the over-all carton size, and whereby the two sections of the carton are effectively braced by one another, in the closed condition thereof.

It is a general object of the invention to provide an egg carton fabricated from molded paper pulp and including non-cellular cover and cellular bottom sections integrally connected to one another by a hinge extending along a margin thereof, in which both sections are provided with abutments adjacent and extending along the hinge, which abutments are specially shaped with relation to the hinge, thereby to insure positive engagement thereof in the closed condition of the carton so as to support the cover against telescoping relative to the bottom section under vertical crushing load.

Another more specific object of the invention is to provide a molded pulp carton characterized by a hinge integrally connecting the carton sections and occupying appreciable vertical space in the closed condition of the sections, in which special, oppositely inclined abutments are provided on the respective sections, extending adjacent and along the hinge, to positively support the cover on the bottom section notwithstanding the special, vertically extending character of the hinge, which would prevent such positive support, unless compensated.

A further specific object is to provide a carton of the above sort in which the abutments on the bottom section are located between successive egg receiving cells thereof adjoining the hinge and coact with similar abutments on the non-cellular cover section.

Yet another specific object of the invention is to provide an improved molded pulp egg carton in which the cells of the bottom carton section feature a polygonal-walled lower portion and a generally conical upper portion merging with the walls of the lower portion at a lesser angle to the vertical than the latter, thereby to insure effective cushioning of large size eggs in the cells while minimizing the size of the cells at the top thereof, and as a result enabling the over-all transverse and longitudinal dimensions of the carton to be kept at a minimum.

Another object of the invention is to provide a molded pulp egg carton of 2 x 6 egg arrangement adapted to be packed, in the manner of 2 x 6 paperboard egg cartons, in a standard 30-dozen capacity egg case or crate, and characterized by a bottom section subdivided into two rows of six egg receiving cells each of which has a polygonal-walled lower portion merging into a generally conical upper portion as described above, to the end that the outside dimensions of the carton are kept within limits which enable packing in a crate of the type referred to, while at the same time affording sufficient egg space in each of the cells to receive large size eggs and to cushion the same most effectively at the polygonal lower portion thereof.

2

A still further object of the invention is to provide a molded paper pulp carton of the type referred to including a cellular bottom section, a non-cellular cover section hinged thereto, and a reinforcing or bracing flange or equivalent member integrally hinged to a margin of the bottom section opposite that along which the cover section is hinged, the respective sections and flange member being provided with special coating, mutually inclined abutment surfaces adjoining the respective hinges thereof which insure positive abutting engagement of the hinged parts in the closed condition of the carton, with the flange disposed internally of the cover section and in supporting engagement therewith.

Another specific object is to provide a carton construction of the type referred to above, wherein the internal flange is specially shaped to provide the abutting engagement with the bottom section, as referred to, and furthermore to provide external abutments which are vertically engaged by the cover section, to the end that the cover section shall be vertically braced and supported positively in at least three zones when in closed position.

It is a general object of the invention to provide a molded paper pulp egg carton referred to in the preceding paragraphs, which carton is of 2 x 6 egg receiving capacity and features a special cell formation of its bottom section in the interest of insuring adequate egg space, optimum bottom cushioning of the eggs, and maintenance of the external carton dimensions within a predetermined minimum, yet which is very strongly braced against relative lateral shifting and vertical telescoping of its hinged sections without recourse to the use of internal abutments on the non-cellular cover section thereof, thereby preserving a planar top surface on the latter which is suited for printing or ornamentation.

The foregoing statements are indicative in a general way of the nature of the invention. Other and more specific objects will be apparent to those skilled in the art upon a full understanding of the construction and operation of the device.

Two embodiments of the invention are presented herein for purpose of illustration, and it will be appreciated that the invention is susceptible of incorporation in other modified forms coming equally within the scope of the appended claims.

In the drawings,

Fig. 1 is a top plan view of the improved molded paper pulp egg carton, showing the same in the open condition thereof as stripped from a drying form;

Fig. 2 is an end view of the carton, with an internal bracing flange thereof shown in dotted lines in its original position and in solid lines in its upwardly swung operative position, the figure being partially broken away and in vertical transverse section to illustrate details of its cover and flange hinge construction;

Fig. 3 is a view in transverse vertical section along a line corresponding to line 3—3 of Fig. 5, further illustrating the improved provisions of the invention for compensating for the height of the respective hinges which connect the cover section internal flange to the bottom section of the carton;

Fig. 4 is a view in vertical cross section along line 4—4 of Fig. 5, illustrating the hinge structure at a different position longitudinally of the carton;

Fig. 5 is a fragmentary bottom plan view of the closed carton;

Fig. 6 is a fragmentary top plan view of an open carton in accordance with a modified embodiment of the invention;

Fig. 7 is a plan view similar to Fig. 1, showing a modified carton having special cover and flange hinging provisions for the purpose of preserving lateral compactness of the closed carton; and

Fig. 8 is a top plan view of the carton of Fig. 7 in its closed position.

Generally considered, this invention affords an improved molded pulp egg carton of 2 x 6 egg capacity, a type which is commercially attractive because of the low cost of production thereof but which has heretofore resisted successful exploitation, at least to the extent received by the better known, 3 x 4 capacity, externally flanged molded carton made in accordance with the patent to Sherman 1,975,129. This is due to an inherent difficulty of providing adequate egg receiving space in the 2 x 6 type without exceeding certain minimum external dimensions which permit the carton to be packed in a standard 30-dozen capacity egg crate or case. Likewise, an adequate support of a non-cellular carton cover over the cellular bottom thereof to resist crushing or telescoping under load is difficult to attain without resorting to the use of molded internal cover abutments. These preclude the printing or ornamentation of the exposed top panel of the cover.

Referring to the drawings, the carton is generally designated by the reference numeral 10. It comprises a cellular bottom section 11, a non-cellular or open, tray-like cover section 12 which is integrally connected to the bottom section by a special, double creased hinge 13 and an internal cover bracing flap or flange 14 which is integrally hinged to the bottom section 11 by a double creased hinge 15 similar to hinge 13. This carton is molded from a paper pulp slurry and is dried and stripped from drying forms in the flat condition illustrated in Figs. 1 and 2, with cover section 12 and flange 14 extending horizontally from the respective hinges 13, 15.

The bottom section 11 is molded to provide a plurality of like egg receiving cells 16 arranged in two parallel rows of six each, the cells of the respective rows being in lateral or sidewise alignment transversely of the carton length. The sectional outline of the individual cells is one of the improved features of the invention, since it provides maximum egg receiving space in a cell of minimum over-all width, coupled with optimum egg cushioning action. By maintaining control of individual cell dimension the over-all dimensions of the entire bottom section 11 are restricted sufficiently to enable the filled and closed carton to be satisfactorily packed in a standard 30-dozen egg case.

Referring to Figs. 1, 4 and 5, the cells 16 have flat square bottoms 17, from the sides of which the lower wall portions 18 incline upwardly and outwardly at a predetermined angle to the vertical, thereby providing a generally polygonal lower egg cushioning portion. Bottoms 17 preferably have an upwardly extending, bubble-like cushion 17' lying just below the level at which the lower ends of all but very thin eggs are received. The lower walls 18 may be concaved, if desired, to improve the cushioning action. The wall portions 18 of adjacent cells merge upwardly with one another along crests 19 which are spaced substantially beneath the tops of the cells, as illustrated in Fig. 4, the tops of which cells coincide with the horizontal meeting line of the closed sections. The polygonal lower wall portions 18 merge upwardly with rounded, generally conical, upper cell portions 20. These are at a lesser angle to the vertical than lower portions 18. They are substantially continuous in the circumferential sense, especially at the outer cell zones adjacent hinges 13, 15, being interrupted only at the crests 19 of the polygonal lower wall portions. Along the longitudinal center line of the carton the conical portions 20 define separator members 21 which are spaced longitudinally along the center line. Generally rectangular top surfaces 22 bridge surfaces 20 in a plane coinciding with the meeting plane of the carton sections.

The cell structure described above provides for the effective cushioning of the lower surface of the egg by the flat internal surfaces of lower cell wall portions 18, as illustrated in Fig. 3. These are inclined outwardly at

a sufficiently great angle to the vertical to receive the egg substantially downwardly in the cell. At the same time, the conical upper portions 20 confine the egg adequately at its zone of greater girth, yet do not occupy undue lateral space in doing this, due to their lesser inclination to the vertical than portions 18. In the modification shown in the drawings, the walls 18 incline outwardly at an angle of around 28° to the vertical and are positioned with respect to corresponding opposite walls so as to provide support high on the egg. At the same time, all but thin, narrow eggs are held above and out of contact with the bottoms 17. As the walls 18 are flexible, this provides a four-sided cushion protecting the bottoms of the eggs from vertical force and holds the egg in its upright position. If the cell walls were continued upwardly and outwardly at the same angle as the flat lower wall portions 18 thereof, the over-all size of the carton would substantially exceed that permitting its packing in a 30-dozen egg case, whereas, due to the lesser conical inclination, the filled carton is perfectly suited for such packing.

Referring particularly to Figs. 1 and 3, the space between successive cells 16 of the two rows and the cover hinge 13 and flange hinge 15, respectively, is occupied by outwardly and oppositely inclined abutment surfaces or ledges 23, 23' which merge inwardly from the hinges with the upper conical extremities of adjacent cells. Hinges 13 and 15 are double-creased to facilitate folding without unduly stressing the hinge, and to insure flush engagement of the cover section 12 across the bottom section 11 in the closed condition of the sections. The inclined abutments 23 are provided for special coaction with this special type hinge, as will appear.

The non-cellular cover section 12 is also shaped throughout its length along hinge 13, to provide a series of integrally connected abutment surfaces or ledges 25 which are laterally aligned with the respective inclined abutments 23 of the bottom section and are adapted to vertically engage the latter in the closed condition of the sections. It will be noted that the areas 23 and 25 are widest between adjacent cells and taper to their minimums at the center of the cells where there is virtually no ledge beyond the score lines. Without this scalloped effect on the cover, the line of bend between the cover and bottom tends to wander when the carton is closed. However, the abutment surfaces or platforms 23 and 25 form an adequate area for a substantial hinge and the restricted area at the center of the cells localizes the line of bend. To get this effect, the area 25 should extend at least the major part of the distance between the centers of adjacent egg cells.

Referring to Figs. 3 and 4, it is seen that the appreciable vertical height of the double-creased hinge 13 in the closed condition of the carton would normally result in a corresponding vertical spacing of the cover sections relative to one another, immediately adjacent the hinge, thus preventing their direct abutting engagement with one another along this line. Vertical load on the closed carton would then be sustained only by the hinge, with inevitable lateral shift of the sections relative to one another and vertical telescoping or collapse.

In order to offset or compensate for such unreliable support at the hinge, the ledges 23, 25 are mutually inclined from the upper and lower portions of hinge 13 in the direction inwardly of the hinge and toward one another, i. e., toward the meeting line of the carton sections 11, 12. They thus take positive abutting engagement with one another over substantial areas located inwardly of the hinge, in the closed condition of the sections illustrated in Figs. 3 and 4. This insures against vertical collapse of the cover section under load and resultant egg breakage, notwithstanding the vertical height of hinge 13.

Ledges 25' similar to ledges 25 are provided on the outer cover section front wall 24 for improved abutting engagement with certain portions of flaps 14, in a manner

5

to be described hereinafter. The wall 24 intermediate the space ledges 25' is outwardly convex at 26, in alignment with egg cells 16, and the opposite or rear wall 27 is provided with similar convexities 28 between ledges 25. These convex portions accommodate the upper, enlarged girth portion of the eggs in the respective cells.

The marginal portion of the cellular bottom section 11 adjoining the double creased flange hinge 15 is shaped to provide outwardly and downwardly inclined abutment ledges 23' identical to the ledges 23 on the opposite side of the section. The flange or flap 14 is similarly shaped to provide internal outwardly and upwardly inclined abutment ledges 29, as illustrated in Fig. 3. Thus the ledges 23' and 25' are mutually inclined from the upper and lower portions of hinge 15 in the direction inwardly of the hinge and toward one another, i. e. toward the meeting line of the carton sections 11, 12 and the ledges 25' are adapted to assume direct and positive engagement with the coacting inclined ledges 23' of the bottom section, in the same manner as the opposite set of abutment ledges 23, 25, when the flange 14 is swung from its original flat condition, shown in dotted lines in Fig. 2, to its operative upright position shown in solid line in that figure. Inward collapse of flange 14 is therefore insured against and it is held firmly in the upright condition in which it internally engages, and both internally and externally braces, the cover section 12. Flange 14 is coextensive in height with front cover wall 24, whereby its free edge 33 may engage the top panel 34 of the cover section in the closed condition of the sections. Flange-bottom section abutments 23', 29 thus compensate for the double height of flange hinge 15 and insure full engagement of the sections 11, 12 in closed condition. The abutments 29 of flange 14 are spaced by outwardly convex sections 30 corresponding in shape and function to the convexities 26, 28 of the cover section.

In use, eggs E are placed in the cells 16, smaller ends down, as illustrated in Fig. 2. The flap 14 is swung inwardly and upwardly for braced engagement of the ledges 29 thereof with the bottom section ledges 23', and cover section 12 is then swung downwardly over the flange 14 to the position illustrated in Figs. 3 and 4. In this position it frictionally engages the flange to resist inadvertent opening and its outwardly extending abutment ledges 25' vertically engage and are sustained by the outwardly and upwardly exposed abutment surfaces which are provided by the recessed ledges 29 of the flange 14.

The closed carton is triple braced at its forward wall, i. e., by the engagement of the flange and bottom section abutment ledges 29, 23', respectively, by the engagement of the free edge 33 of the flange with the top panel 34 of the cover section, and by the external engagement of the cover section abutments 25' with the upper external surface of abutment ledges 29. The opposite rear wall of the carton is also positively braced at coacting abutments 23, 25 and, furthermore, lateral shifting of the cover section tending to result in telescoping collapse is effectively prevented by the restraining action of hinge 13, 15 and the flange 14, the latter frictionally engaged by the forward cover wall. Staples may be applied through the triple thickness of material represented by the abutment portions 25', 29 and 23' between successive cells of the bottom section or adhesive may be employed between portions 29 and 25'.

The modification of the invention illustrated in Fig. 6 differs from that of Figs. 1 through 5 in that the upper surfaces 22 of the longitudinally spaced, medial divider or separator members 21 in the carbon bottom section, as shown in Fig. 1, are eliminated or cut away, leaving the scallop sided, generally rectangular apertures 36. These afford a desired circulation of air within the carton and a great flexibility of the walls of the cells to facilitate their cushioning effect, while at the same time preserving the function of subdividing its interior. While the openings 36 have been shown as extending about the

6

same area as the surfaces 22, they may also be of reduced area centrally positioned in the surfaces 22, and a smaller opening is contemplated within the scope of the invention.

Another slightly modified adaptation of the invention is illustrated in Figs. 7 and 8. This form of carton is, with certain exceptions, identical to that illustrated in Figs. 1 through 5, hence corresponding reference numerals have been employed to designate corresponding parts or features.

Experience has shown that when the straight line type, double-creased hinge 13 of the first embodiment is employed, there is some tendency of the same particularly when extra large size eggs are packaged, to bulge laterally outwardly in the space between successive cells, i. e., between the points at which its bending action is primarily localized. Such an outward bulge at the 180 degree bend may result in an undesirable increase in the over-all width of the closed carton; the invention contemplates compensation of the same by the special type of hinge creasing shown in Figs. 7 and 8. Referring to those figures, it is to be noted that the two creases of the cover-receptacle hinge, designated 37 and 38, are mildly shaped in an oppositely convex, scallop-like or undulatory outline in the zones corresponding to the respective abutment ledges 23, 25. This preserves all of the advantages of positive support and bend localization which are afforded by the location of the hinge creases immediately adjacent the cells and the mutually inwardly inclined abutment surfaces, yet when the carton is closed, as illustrated in Fig. 8, the tendency of the hinge to bulge outwardly intermediate the cells is offset. The portion of the crease construction between its convexities comes to an upright position and the outer surface of the carton extends as a straight line tangent to the outer surface of the cells of the receptacle section. A slight inwardly shaped contour of this line between the cells may even be developed by further exaggerating the curving of the creases 37, 38, which may be varied fairly widely. However, the invention merely contemplates sufficient shaping of one or both of the creases to eliminate outward convexities along the hinge when the sections of the carton are in closed relation.

The same outward bulging effect, if found to exist at the flange-receptacle hinge, may be corrected by a similar undulatory shaping of one or both of the creases which define this hinge, as indicated at 39.

As stated, the embodiment illustrated in Figs. 7 and 8 incorporates all the other features shown in Figs. 1 through 5. It is evident that it may also include ventilating and cushion-improving openings in the upstanding receptacle divider members 21, corresponding to the openings 36 found in the form of Fig. 6.

It may be noted that in all of the above described embodiments abutment of the cover section with the bottom section along the medial longitudinal zone of the separators 21 is rendered unnecessary by the special marginal bracing and abutting provisions described above. Therefore, the cover section is left in an open and tray-like or non-cellular character, permitting decoration or imprinting of the exposed upper surface of panel 34. Although the front wall 24 is shaped in conformity with the flap 14 to secure a frictional engagement with the latter over its entire area, it will be appreciated that the wall may be flat, if desired, for the purpose of affording an additional surface for printing or ornamentation.

I claim:

1. A molded pulp carton comprising a bottom section defined by an upwardly extending wall structure and provided with a plurality of contiguous article receiving cells successively arranged in row formation, said cells having lowermost egg supporting portions defined at least in part by relatively flat walls which flare outwardly and upwardly at a predetermined angle to the vertical and merge at their topmost limit into upper egg restraining portions disposed at a lesser angle to the vertical, successive cells

in a row being merged with one another substantially beneath the top of said wall structure and at the approximate elevation of the merger of said lower and upper cell portions.

2. A molded pulp carton comprising a bottom section defined by an upwardly extending wall structure and provided with a plurality of contiguous article receiving cells successively arranged in row formation, said cells having polygonal-walled lowermost egg supporting portions defined at least in part by relatively flat walls which diverge upwardly at a predetermined angle to the vertical and merge at their topmost limit into generally conical upper egg restraining portions disposed at a lesser angle to the vertical, successive cells in a row being merged with one another substantially beneath the top of said wall structure and at the approximate elevation of the merger of said lower and upper cell portions.

3. A molded pulp carton comprising a bottom section defined by an upwardly extending wall structure and provided with a plurality of contiguous article receiving cells successively arranged in row formation, said cells having lowermost egg supporting portions defined at least in part by relatively flat walls which flare outwardly and upwardly at a predetermined angle to the vertical and merge at their topmost limit into generally conical upper egg restraining portions disposed at a lesser angle to the vertical, successive cells in a row being merged with one another substantially beneath the top of said wall structure and at the approximate elevation of the merger of said lower and upper cell portions.

4. A molded pulp carton comprising coacting top and cellular bottom carton members integrally and bendably connected to one another by an undulatory hinge construction extending along corresponding margins of the members and closely adjacent cells of the bottom member, said hinge construction comprising alternate, differently configured crease sections which are respectively spread laterally and restricted laterally in a generally horizontal plane when the carton is fully open, said restricted and spread sections being in transverse alignment with said bottom member cells and with spaces between said cells, respectively, whereby when said carton is closed the hinge construction is of greater vertical height at the spread sections than at the restricted sections and is linear and undistorted along its length.

5. A molded pulp carton comprising coacting top and cellular bottom carton members integrally and bendably connected to one another by an undulatory hinge construction extending along corresponding margins of the members and closely adjacent cells of the bottom member, said hinge construction comprising alternate, differently configured crease sections which are respectively spread laterally and restricted laterally in a generally horizontal plane when the carton is fully open, said restricted and spread sections being in transverse alignment with said bottom member cells and with spaces between said cells, respectively, whereby when said carton is closed the hinge construction is of greater vertical height at the spread sections than at the restricted sections and is linear and undistorted along its length, said bottom member having inwardly extending, upwardly facing abutments immediately adjoining said spread section of said hinge construction, which abutments partially separate a pair of successive cells.

6. A molded pulp carton comprising coacting top and cellular bottom carton members integrally and bendably connected to one another by an undulatory hinge construction extending along corresponding margins of the members and closely adjacent cells of the bottom member, said hinge construction comprising alternate, differently configured crease sections which are respectively spread laterally and restricted laterally in a generally horizontal plane when the carton is fully open, said restricted and spread sections being in transverse alignment with said bottom member cells and with spaces between said

cells respectively, whereby when said carton is closed the hinge construction is of greater vertical height at the spread sections than at the restricted sections and is linear and undistorted along its length, said bottom member having inwardly extending, upwardly facing abutments immediately adjoining said spread sections of said hinge construction, which abutments partially separate a pair of successive cells, and said successive cells being further separated by tapered dividers merging upwardly into said abutments.

7. A molded pulp egg carton comprising a bottom forming section, a non-cellular cover forming section integrally hinged thereto along a margin thereof, and an internal bracing flap integrally connected to said bottom section by a hinge extending along the opposite margin and forming the top outer edge thereof, said bottom section having a row of cells located adjacent said last named hinge and abutment portions extending between pairs of said cells and projecting inwardly from the outer edge thereof which is formed by said hinge, said flap being shaped to provide an internally projecting abutment portion engaging a bottom section abutment portion in the closed condition of the carton and to provide an inwardly extending upwardly exposed, outer abutment surface above said internal abutment portion in said closed condition, said cover section including a wall externally telescoping said flap in vertically braced engagement therewith, said wall being coextensive in height with said flap and being shaped to provide at the bottom margin an inwardly extending external abutment element with a bottom surface for engaging said outer abutment surface of said flap when in said closed condition, the internally projecting abutment portions of said bottom section and said flap extending inwardly from the connecting hinge and being inclined inwardly therefrom toward the meeting line of said sections whereby inward movement of said flap is limited by the engagement of said abutment surfaces and said flap braces the wall of said cover section against lateral movement and vertical collapse.

8. A molded pulp egg carton comprising a cover section and a cellular bottom section integrally connected by a hinge along one margin thereof, said sections being provided with longitudinally spaced, laterally and vertically aligned abutment ledges adjacent and extending inwardly of said hinge, the ledges of at least one of said sections being inclined toward the meeting line of the sections, a shaped flap integrally connected to said bottom section by a hinge extending along the top margin of the wall thereof which is opposite said first named hinge and forming the top outer edge of said bottom section, said flap and bottom section being provided with longitudinally spaced, laterally aligned abutment portions adjacent and extending inwardly of said last named hinge between pairs of adjacent cells of said bottom section and adapted for abutting engagement with one another over substantial areas located inwardly of the hinge in the closed condition of said carton, certain of said last named abutment portions being inclined inwardly toward the meeting line of the carton cover and bottom sections, said cover section including a shaped wall telescoping said shaped flap in the closed condition of the sections and said wall being provided with external inwardly projecting marginal abutment portions located in lateral and vertical alignment with said flap abutment portions, which external portions vertically abut said flap abutment portions in said closed condition of the sections whereby inward movement of said flap is limited by the interengaging abutment portions and said flap braces and reinforces said cover section against lateral and vertical movement.

9. A molded pulp egg carton comprising a non-cellular cover section and a cellular bottom section integrally connected by a hinge along one margin thereof, said sections being provided with longitudinally spaced, laterally and vertically aligned abutment ledges adjacent and extending inwardly of said hinge, the ledges of at least

one of said sections being inclined toward the meeting line of the sections, a shaped flap integrally connected to said bottom section by a hinge extending along the top margin of the wall thereof which is opposite said first named hinge and forming the top outer edge of said bottom section, said flap and bottom section being provided with longitudinally spaced, laterally aligned abutment portions adjacent and extending inwardly of said last named hinge between pairs of adjacent cells of said bottom section and adapted for abutting engagement with one another over substantial areas located inwardly of the hinge in the closed condition of said carton, certain of said last named abutment portions being inclined inwardly toward the meeting line of the carton cover and bottom sections, said cover section including a shaped wall telescoping said shaped flap in the closed condition of the sections and said wall being provided with external inwardly projecting abutment portions located at the lower margin thereof and in lateral and vertical alignment with said flap abutment portions, which external abutment portions vertically abut said flap abutment portions in said closed condition of the sections, said telescoping wall having spaced frusto-conical sectional surfaces extending upwardly between said abutment portions and aligned laterally with the cells in said bottom section for accommodating the upper portions of the eggs in said cells and the inner face of said flap having corresponding spaced frusto-conical surfaces whereby inward movement of said flap is limited by the interengaging abutment portions and said wall and said flap are in snug engagement with said flap bracing and reinforcing said wall of said cover section against movement laterally and vertically.

10. A molded pulp egg carton according to claim 3 wherein said cells have a lowermost egg supporting portion comprising four relatively flat inclined walls which flare outwardly and upwardly from the four sides of a square horizontal bottom portion at an angle of approximately 28° to the vertical.

11. A molded pulp egg carton according to claim 3 wherein the line of merger between successive cells in a row is generally in the shape of an arc.

12. A molded pulp egg carton according to claim 3 wherein said cells are arranged in two rows of six cells each.

13. A molded pulp egg carton in accordance with claim 3 wherein said carton has a top cover portion integrally joined to said bottom section.

14. A molded pulp egg carton according to claim 11 wherein the line of merger between successive cells in a row is generally in the shape of an arc, and the lowermost curvature of the arc is at approximately the same elevation as the uppermost portion of said flat walls.

15. A molded pulp carton according to claim 4 wherein the crease line of said undulatory hinge construction is disposed along a substantially straight line which is essentially tangential to the outer circumferences of an aligned row of cells when said carton is in closing relationship.

16. A molded pulp carton according to claim 15 wherein the uppermost lateral extremities of a row of the cellular bottom members essentially defines a row of undulating circumferential arcs, the crease line of said undulatory hinge construction being disposed substantially tangentially to said aligned row of arcs when said carton is in closing relationship.

17. A molded pulp carton according to claim 4 wherein the top cover portion of the carton adjacent the crease line of said undulatory hinge construction is shaped so as to contain arcuate sections tangential to the hinge which will be substantially aligned with at least a substantial portion of the arcuate sections of the bottom member when the top and bottom are brought into closing relationship.

18. A molded pulp carton according to claim 4 having a bottom section as described in claim 1.

19. A molded pulp egg carton according to claim 7 wherein said hinges are substantially parallel to each other and each of said hinges is disposed along a line which is essentially tangential to opposing rows of arcs defined by the outer upper extremities of two rows of cells in the bottom section.

20. A molded pulp egg carton according to claim 7 having a bottom section as defined in claim 1.

References Cited in the file of this patent

UNITED STATES PATENTS

1,990,195	Swift	Feb. 5, 1935
2,004,818	Lockett	June 11, 1935
2,050,894	Paige	Aug. 11, 1936
2,093,280	Koppelman	Sept. 14, 1937
2,100,516	Read	Nov. 30, 1937
2,233,044	Beck	Feb. 25, 1941
2,515,113	Chaplin	July 11, 1950
2,668,652	Russell	Feb. 9, 1954