

April 1, 1952

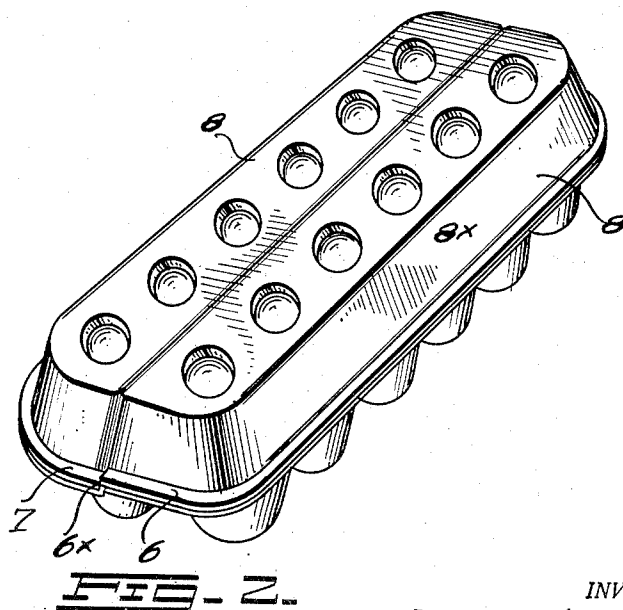
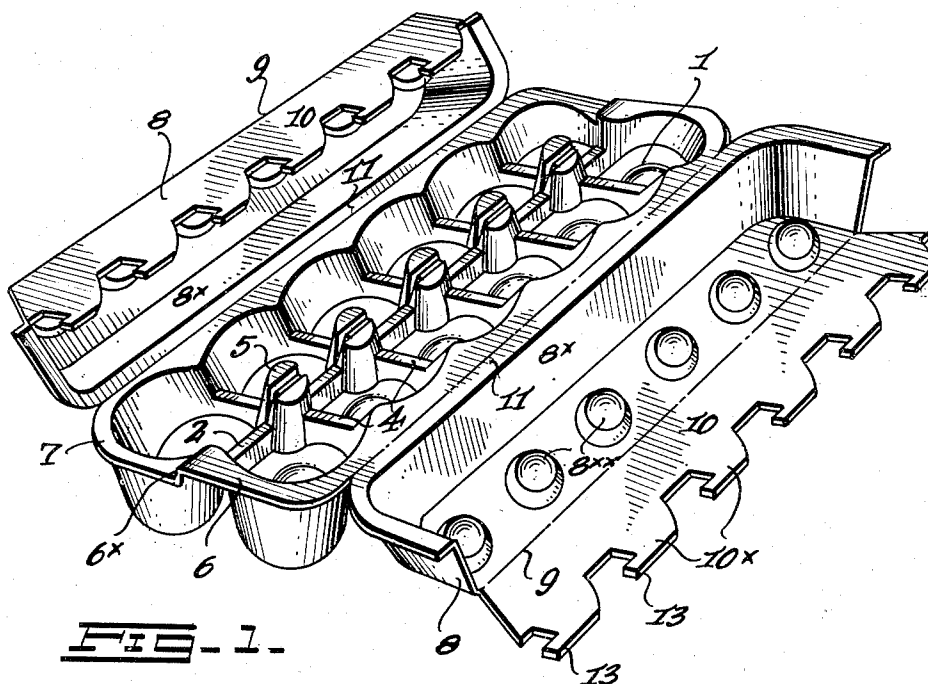
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2,591,471

MOLDED PULP CONTAINER

Filed Sept. 16, 1950

2 SHEETS—SHEET 1



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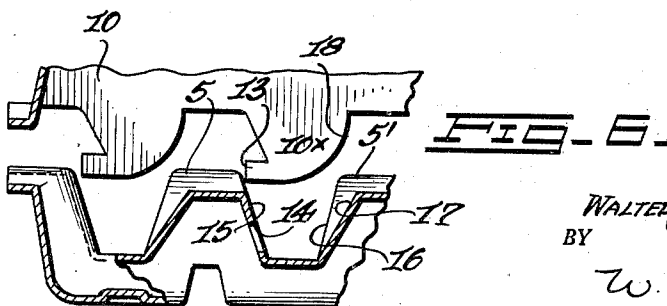
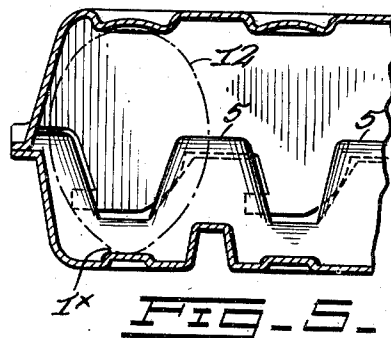
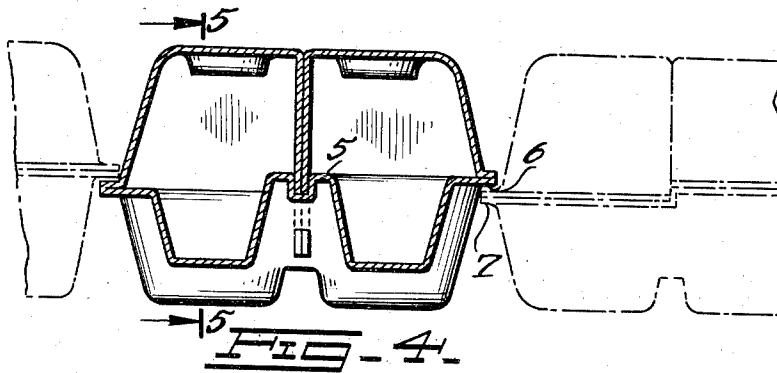
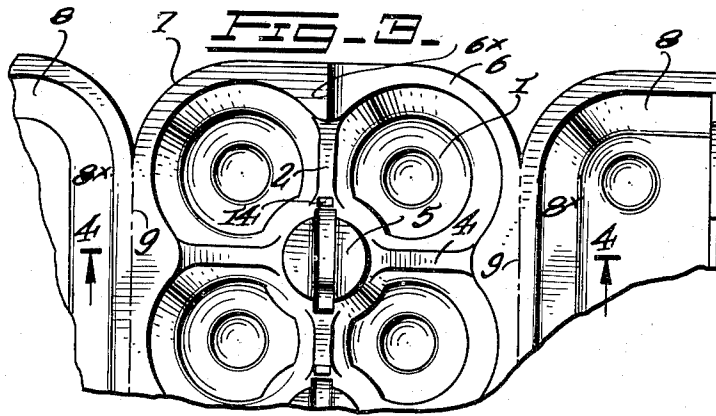
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MOLDED PULP CONTAINER

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2 SHEETS--SHEET 2



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UNITED STATES PATENT OFFICE

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MOLDED PULP CONTAINER

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4 Claims. (Cl. 229—2.5)

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This invention relates to molded pulp containers adapted to protect fragile articles, particularly eggs, both in the shipping thereof, particularly in standard egg cases, and in the retail packaging of such articles.

This application is continuation-in-part of my prior co-pending application entitled "Molded Pulp Articles," Ser. No. 753,713, filed June 10, 1947.

In the shipping or storage of eggs it has been customary to pack them in crates, each crate holding 30 dozen eggs. The case has a vertical division wall and hence has two compartments, each containing 15 dozen eggs, arranged in 5 tiers or layers, 3 dozen in each layer of each compartment. It has heretofore been customary to support each layer by means of a sheet known as an "egg flat," and to separate the 36 eggs in each layer by inter-fitted strips of paper board commercially known as "fillers."

With this method of packing, it has been customary for the retailer to unpack the eggs from a crate and re-pack them in retail cartons, each carton customarily holding one dozen eggs. These retail cartons do not have the strength and crushing resistance to withstand normal handling in shipment, and involve an added cost to the retailer.

It is an important object of the present invention to provide a molded pulp carrier or carton for eggs and other fragile articles, which will be simple in construction, which is adapted as the retail carton itself, and which may be assembled in multiple within the standard crate to hold the usual number of 30 dozen eggs, when eggs are held by the cartons. The carton will give superior protection to the eggs in shipment, and at the same time will serve as the retail container, so that the retailer is saved the cost of the usual retail container, as well as the labor of re-packing.

The invention of the present application is an improvement in the form of pulp container disclosed and claimed in my aforesaid co-pending application No. 753,713. The improvement comprises a novel means whereby the cover members of the container are automatically secured in the closed position. In the particular embodiment of the invention disclosed in the present application, this securing arrangement is obtained by providing detents on the projections of the cover member extensions and suitable locking means in the form of recesses in the sides of the posts. When the cover members are moved to their closed positions, cam surfaces

on the projections co-act with cam grooves provided in the posts so as to move the detents into locking engagement with said recesses.

The invention will be described with reference to the accompanying drawings, in which:

Fig. 1 is a perspective view showing an embodiment of the invention with the left hand cover member raised and folded, ready for final placement, the right hand cover member occupying its normal position, preliminary to the insertion of eggs or other fragile articles;

Fig. 2 is a perspective view showing the container closed;

Fig. 3 is an enlarged fragmentary plan view showing one end of the container;

Fig. 4 is a vertical section on the line 4—4 of Fig. 3, and shows the cover members in closed position and two other containers lying adjacent and in nested relation with respect to the intermediate container, the adjacent containers being indicated by dash-dot lines;

Fig. 5 is a fragmentary vertical section on the line 5—5 of Fig. 4, and

Fig. 6 is an end elevation of the closed container.

Referring to the drawings, it will be contemplated that the complete structure will be unitary and made of paper pulp in accordance with well known practice. It consists of a body member which is formed, in the present embodiment, with two rows of cups, six in number as to each longitudinal row, the cups being indicated at 1. Each row of cups is separated by a hollow longitudinal division wall 2 and the cups of each longitudinally extending row are separated by transverse hollow division walls 4.

Extending longitudinally are five posts 5, the latter rising above the division walls 2 and 4, and each post merges into four of said division walls to form a jointure therefor.

Each cup is preferably rounded except at the areas of the division walls. These walls are preferably tapered from the base upwardly so as to have a minor cross-section at their tops.

Each post is formed with a slot-like depression which extends longitudinally of the container for a purpose hereinafter to be set forth. It also will be noted that the body member is provided with an outwardly projected rim comprising two sections 6 and 7, rim section 6 being at a greater height than rim section 7, so that the two rim sections are joined at the ends of the container by a vertical shoulder indicated at 6x.

Preferably formed integrally with the body member are two cover members 8 of identical

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construction. Each cover member is formed with side walls 8x curved at its ends, and also is formed with a series of frusto-conical members 8xx, one for each of the pockets of a row thereof in the body member, the inner wall of each member 8xx being cupped as indicated more particularly in Figure 5 of the drawings. Each cover member is formed with a fold line at 9 so that the lip or flap extension 10 of each cover member may be folded approximately 90°, as shown at the left hand portion of Figure 1.

The wall 8x of each cover member is joined to the adjacent rim section of the body member through a rim formation of said wall 8x which has a fold line at 11.

It is preferred that at the base of each cup 1, the pulp board be raised to form a cushion member as indicated at 1x of Figure 5. It further will be noted that the lip or flap extension 10 of each cover member is formed with spaced projections 10x which are adapted to lie between the posts, the outer-most portions of the extensions 10 bridging the spaces between the outermost posts 5 and the vertical wall 6x of the body member.

I have shown in dotted lines, Figure 4, the manner in which the stepped rim sections of the body member enable adjacent containers to be so packed in a standard crate that the latter may hold its customary 30 dozen eggs, notwithstanding the fact that the eggs are packed in individual cartons or containers, each holding one dozen eggs, and that the containers are of such nature as to protect the eggs to an extent greater than the customary flats and fillers. It will be seen by reference to said figure that the high rim 6 of the container shown in full lines may lie over the low rim 7 of an adjacent container, which is shown in dotted lines at the right. By dotted lines at 12 in Figure 5 I have shown an egg in position within the closed container.

The above described structure is disclosed in my aforesaid co-pending application No. 753,713 and there will now be described the components comprising the means for securing the cover members in their closed positions.

The projections 10x are provided with detents 13, all of the latter extending in the same direction longitudinally of the container. As best seen in Figure 6, each of the posts 5 is provided with an opening or recess 14 formed in the side wall 15 of the post 5 opposite to and facing the adjacent post 5' of the same longitudinal row. The adjacent side wall 16 of said adjacent post 5' is formed with a downwardly extending cam groove 17. It will further be noted that each of the projections 10x is provided with an arcuate cam edge or surface 18 adapted to cooperate with the respective cam groove 17.

The container is well adapted for the packing of eggs or other fragile articles therein by automatic machinery of a new type by means of which containers, in succession, each with its two cover members outspread (as at the righthand side of Figure 1), will be fed by an endless belt under a "loader." The latter will drop one dozen eggs or other fragile articles simultaneously into pockets of the body member. By a succeeding operation the extensions 10 of the cover members 8 will be folded upwardly approximately 90° and will then be swung inwardly until the areas of the extensions 10 between the projections 10x enter the slots of the posts.

As the cover members 8 are moved downwardly toward the closed position, the cam surface 18

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of each of the projections 10x rides within the respective cam groove 17. This camming co-action results in the projections 10x moving first downwardly into the spaces between the posts 5 and then longitudinally so as to move each of the detents 13 into a respective recess 14 so as to be in locking interengagement therewith, as best shown in Figure 5. In this closed relationship of the cover members 8, the interengagement of the detents 13 and the recesses 14 prevent the cover members 8 from being accidentally opened. However, when it is desired to open the cover members 8, tension is exerted on the latter so as to move them upwardly and longitudinally toward the righthand end of the container as viewed in Figures 5 and 6, thereby removing the detents 13 out of locking engagement with the recesses 14. During this opening operation, the detents 13 may deflect somewhat so as to facilitate their disengagement from the recesses 14.

It will be understood that various modifications may be made in the form and arrangement of the elements illustrated in the drawings without departing from the spirit of the invention.

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

1. A molded pulp device adapted as a container for fragile articles comprising a body member formed with a plurality of rows of cups separated by division walls extending longitudinally and transversely of the body member, a row of spaced posts serving as jointure members for the longitudinal and transverse division walls, said posts each being formed with a recess in one side thereof facing the adjacent post of said row, the adjacent side of each said adjacent post having a cam groove therein, and opposed cover members hinged to opposite sides of the body member and each having a flap extension adapted to extend vertically above said posts when the cover members are closed, the outer edges of said flap extensions being provided with a series of projections adapted to project between the posts when the cover members are closed, each of said projections being provided with a detent adapted to enter a respective recess and engage therewith and a cam surface co-acting with a respective cam groove for moving the projection and detent toward said recess as the projections are moved downwardly between the posts during the closing of the cover members.

2. A molded pulp device adapted as a container for fragile articles comprising a body member formed with a plurality of rows of cups separated by division walls extending longitudinally and transversely of the body member, a row of spaced posts serving as jointure members for both longitudinal and transverse division walls, said posts being formed with recesses, and opposed cover members hinged to opposite sides of the body member and each having a lip extension having spaced projections, said extension being adapted to be folded approximately 90° and with its areas intermediate said projections disposed vertically within said recesses of the posts when the cover members are closed to bring their extensions into abutment, said projections each having a detent, locking means on each of said posts for locking engagement with a respective detent, and cam means on said projections and said posts for moving said projections toward said locking means as the cover members are closed so as to bring said detents into engagement with said locking means.

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3. A molded pulp device adapted as a container for fragile articles comprising a body member formed with a plurality of rows of cups separated by division walls extending longitudinally and transversely of the body member, a row of spaced posts serving as jointure members for the longitudinal and transverse division walls, and opposed cover members hinged to opposite sides of the body member and each having a flap extension adapted to extend vertically above said posts when the cover members are closed, the outer edges of said flap extensions being provided with a series of projections adapted to project between the posts when the cover members are closed, said projections each having a detent, locking means on each of said posts for locking engagement with a respective detent, and cam means on said projections and said posts for moving said projections toward said locking means as the cover members are closed so as to bring said detents into engagement with said locking means.

4. A molded pulp device adapted as a container for fragile articles comprising a body member formed with a plurality of rows of cups separated by division walls extending longitudinally and transversely of the body member, a row of spaced posts serving as jointure members for the longitudinal and transverse division walls, and opposed cover members hinged to opposite sides of the body member and each having a flap extension adapted to extend vertically above said posts when the cover members are closed, securing means on said extensions, securing means on said posts cooperable and interengageable with said extension securing means, and cooperable cam means on said extensions and said posts for mutually interengageably fastening both said securing means in response to closing of the cover members.

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rated by division walls extending longitudinally and transversely of the body member, a row of spaced posts serving as jointure members for the longitudinal and transverse division walls, and opposed cover members hinged to opposite sides of the body member and each having a flap extension adapted to extend vertically above said posts when the cover members are closed, securing means on said extensions, securing means on said posts cooperable and interengageable with said extension securing means, and cooperable cam means on said extensions and said posts for mutually interengageably fastening both said securing means in response to closing of the cover members.

WALTER J. SCHWERTFEGER.

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