Jan. 8, 1935. H. A. INMAN 1,987,108

CONTAINER CONSTRUCTION

Original Filed July 16, 1931

Fig. 1

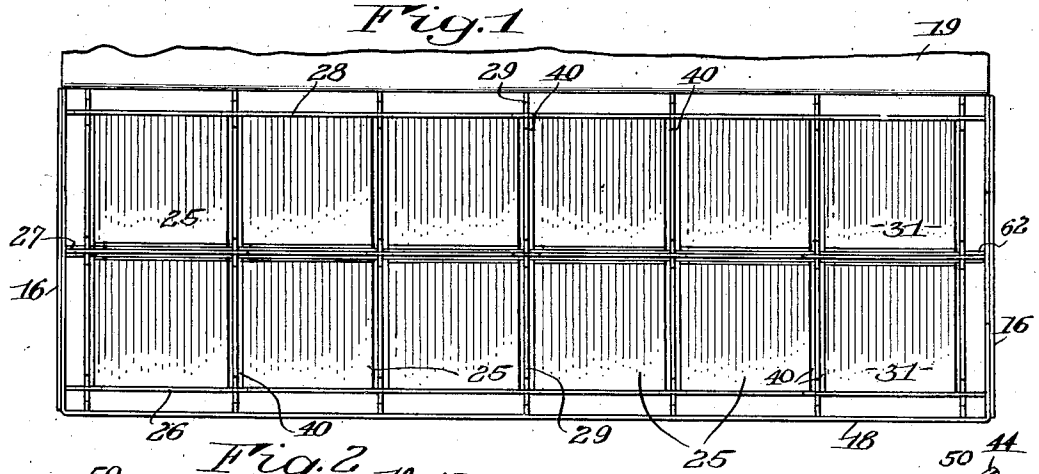


Fig. 2

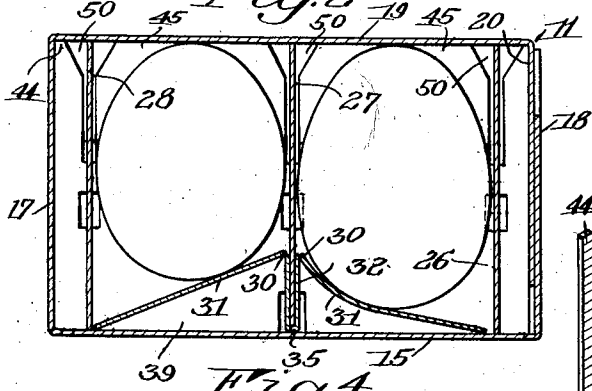


Fig. 3

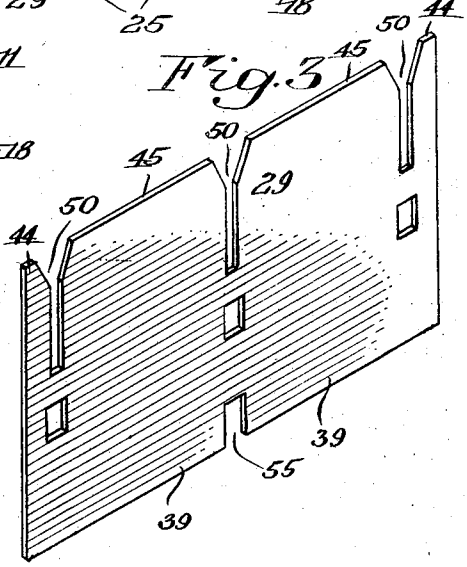


Fig. 4

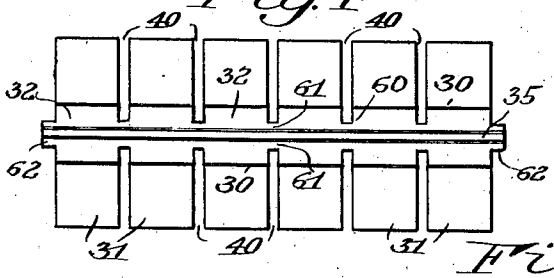
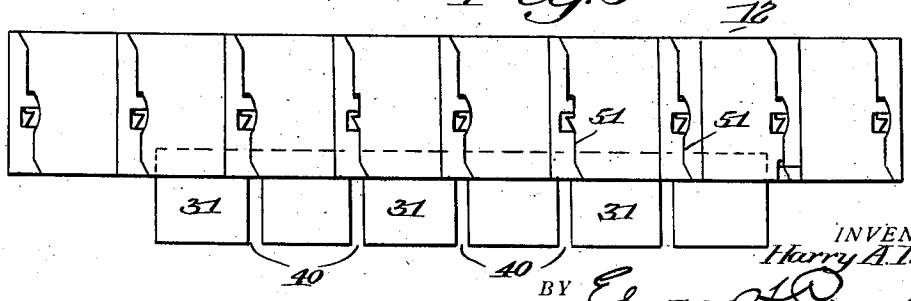


Fig. 5



INVENTOR
Harry A. Inman
BY Edward A. Crumpton
his ATTORNEY

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UNITED STATES PATENT OFFICE

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CONTAINER CONSTRUCTION

Harry A. Inman, Newark, N. Y.

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8 Claims. (Cl. 217—32)

The present invention relates to containers such as are commonly made of cardboard, or the like, for retaining fragile articles, such for example as eggs, and pertains more particularly to means for partitioning the container to provide pockets for the contained articles. One object of the invention is to provide a simple, practical, and strong filler having improved cushioning means for protecting the contained articles.

Another object of the invention is the provision of a filler of the character described comprising a plurality of interengaged partition members of substantial construction in which provision is made for effectively cushioning the contained articles and also for securing said partition members in interengaged relation.

A further object is the provision of such a filler construction for articles, such for example as eggs, in which the cushioning means of each cell operates independently of those of the adjoining cells to compensate for the varying sizes of the contained articles.

To these and other ends the invention resides in certain improvements and combinations of parts, all as will be hereinafter more fully described, the novel features being pointed out in the claims at the end of the specification.

In the drawing:

Fig. 1 is a plan view of a container in open position with the cover partly broken away, showing a filler constructed in accordance with the preferred embodiment of the invention;

Fig. 2 is a vertical sectional view taken transversely of a filled container showing the cover in closed position;

Fig. 3 is a perspective view of the preferred form of transverse member embodied in the present invention;

Fig. 4 is a plan view of the preferred form of cushioning member in flat condition before it is applied to the filler, showing the relation of the various parts thereof, and

Fig. 5 is a side elevation view of the preferred filler and cushioning member in the collapsed or knocked down condition.

Similar reference numerals throughout the several views indicate the same parts.

The present invention is embodied, in the present instance by way of illustration, in an egg carton filler which combines strength in the partition members with a novel flexible cushioning member which provides separate resilient bottoms on which the articles may rest when positioned in the filler, and which is adapted to lock the partition members in interengaging relation.

Referring to the drawing, Figs. 1 and 2 show a suitable container 11, in which is disposed the new and improved filler generally indicated by the numeral 12. The container may be of any well known construction formed to provide a bottom 15, ends 16, back 17, front 18, and a cover 19, having an integral flap 20. When the container is closed, the flap is disposed within the container between the filler and the front 18, as clearly shown in Fig. 2.

This new and improved filler is arranged to provide a plurality of article receiving pockets 25 formed by the longitudinal partition members 26, 27, and 28, and the transverse partition members 29. These members are preferably of the usual cardboard construction adapted to be easily and quickly erected to provide the pockets 25, as shown in Fig. 1, or to be readily collapsed substantially into a plane, as illustrated in Fig. 5. The pockets 25 are each preferably adapted in size to contain a single article, such as an egg.

To reduce the loss from breakage, the present invention provides a suitable cushioning member for resiliently supporting the articles retained in the pockets 25. The cushioning member may be of any desired material which is adapted to flex or bend when pressure is applied thereto. In the present embodiment, for example, this cushioning member comprises a sheet of cardboard scored along the line 30 to provide an inclined member 31 disposed at the bottom of one of the rows of pockets 25 and adapted to resiliently support the articles therein. The member 31 extends transversely of the row, and has one edge thereof engaging the bottom 15 at one side of the row while the opposite edge is held in elevated position along the score line 30 by means of an integral vertical supporting member 32 which rests on the bottom 15 and extends part way up the center longitudinal member 27, as best shown in Fig. 2.

While it is contemplated that the cushioning members on opposite sides of the center longitudinal member 27 may be separate, they are preferably made integral, and are formed from a single piece of cardboard, scored along the line 35 and folded on itself to fit about the lower edge of the longitudinal member 27, as shown in Fig. 2, the cushioning member being preferably secured to the filler so as to form a unit therewith. To this end, the vertical supporting members 32 are permanently affixed to the central longitudinal member 27 in any desired manner, as for example, by any suitable adhesive.

The transverse partition members 29 are pref-

erably provided with portions 39 which project through registering slots 40 in the inclined members 31. While these portions may be of any desired shape, they preferably have straight lower edges, as shown in Fig. 3, and engage the bottom 15 for substantially the full width thereof to provide substantial bearing supports. The slots 40, however, preferably extend transversely of the members 31 for substantially the full width thereof to subdivide the members into a plurality of laterally extending fingers or tabs which provide a separate and independent bottom for each of the pockets 25, the purpose of which construction will be hereinafter more fully described. The slots 40 are also preferably of sufficient width to permit the portions 39 to pass freely therethrough and to prevent binding of the members 31 on the partition members 29 when the former are deflected as hereafter described. The upper edges of these transverse members are provided with leg-like portions 44 and intermediate portions 45, both of which project upwardly to the top of the box to provide a plurality of column-like members which extend the full height of the box to afford a substantial support for the cover 19.

The longitudinal partition members 26, 27, and 28 are also preferably extended to the top of the box so that the top edges thereof lie substantially in the plane of the tops of the transverse members, as clearly shown in Fig. 2. These longitudinal members thus cooperate with and reinforce the transverse members to provide a strong, rigid filler which will not bend or buckle, and which affords a more adequate protection for the eggs.

When containers of the class above described are shipped or stored, the boxes and fillers are usually separately bundled in the knocked-down or collapsed condition, as is well known in the art. It has been found, however, in handling these collapsed fillers that some of the partition members thereof often become completely or partially disengaged from the other members, thus necessitating a reassembling of these disengaged members before the filler is placed in the box. The transverse partition members especially are apt to become thus disengaged.

To overcome this objectionable feature, the present invention provides means which effectively locks these transverse members in proper interengaging relation with the longitudinal members. It has been found that the cushioning member, above described, is admirably adapted to accomplish this locking operation. To this end, the usual inter-engaging slots in the partition members are preferably arranged so that those in the longitudinal members open downwardly, while those in the transverse members open upwardly. The upwardly opening slots in the transverse members are shown at 50, Fig. 3, and one edge of the downwardly opening slots in the longitudinal members is shown at 51, Fig. 5. Referring now to Fig. 2, it is readily seen that with the above mentioned arrangement of slots the transverse members 29 may be detached from the longitudinal members only by a downward movement relative thereto.

In order to prevent such movement of the transverse members, the vertical supporting members 32 are preferably extended along the bottom of the longitudinal member 27 for the full length thereof, and have portions adapted to close the open ends of all the slots therein so as to lock the transverse members in interengaging relation therewith, in a manner to be presently described. The bottom edge 39 of each of the members 29 is preferably notched out, as shown at 55, to permit the members 32 to be readily affixed to the member 27. To prevent excess weakening of these transverse members, the notches 55 are, however, preferably made shallow and terminate short of the tops of the members 32, as clearly illustrated in Fig. 2. Because of the shallowness of the notches 55, the slots 40 are extended downwardly of the portions 32, as shown at 60, Fig. 4, substantially to the tops of the notches, thus providing thin connecting strips 61 between oppositely disposed slots 40, which strips are arranged to close the ends of the slots in the member 27 to lock the transverse members in place. Integral extensions 62 are also provided for closing the end slots in the member 27. While it is contemplated that strips similar to 61 may be secured to the longitudinal members 26 and 28 to lock the transverse member 29 to all of the longitudinal members, it has been found that the single locking means above described effectively retains the transverse members in place. By means of this simple and novel construction, the various partition members are retained in their interengaging relation and thus eliminates the disadvantages present in the usual filler of this class.

When large eggs are placed in the usual type of container, the tops thereof often project above the top of the box. When, however, boxes containing such eggs are stacked during storage or shipping, these projecting portions tend to support the weight of the overlying filled containers. As the members on which such eggs are adapted to rest are usually of an unyielding nature, many of the larger eggs are broken. To reduce the loss of such breakage to a minimum, it is desirable to provide means for resiliently supporting the eggs so that they may be free to move downwardly when subjected to the weight of the overlying filled containers, thus protecting the eggs against breakage. The present invention provides such flexible supports preferably in the form of the inclined members 31, heretofore described.

In addition to resiliently supporting the eggs, it is also desirable to provide a separate support or bottom for each of the various pockets so that each bottom may deflect independently of any other bottom in proportion to the size of the egg resting thereon. These independent bottoms are preferably provided by means of the tabs formed by the slots 40 which extend transversely of the inclined members 31 and which are disposed intermediate the pockets 25, as mentioned above.

Referring now to Fig. 2, it is readily seen that when the cover 19 is pressed downwardly by the weight of the overlying filled containers, the large egg, shown at the right, is moved downwardly until the top thereof is substantially in the plane of the top of the box, the weight of the overlying containers then being supported entirely by the filler. This downward movement of the large egg causes the resilient bottoms 31 to deflect as shown at the right in Fig. 2, the amount of flexing being directly proportional to the size of the egg. The depth of the pockets 25 are, however, of such size that a small egg, when resting on the flexible bottom 31, has the top thereof substantially in the plane of the top of the box so that when the cover is pushed downwardly to engage the top of the filler, the small egg will remain substantially stationary and will thus cause little or no deflection in the flexible bottom 31. By means of this construction, the eggs are resiliently supported within the pockets and are not subjected to the crush-

ing weight of the upper filled containers, thus accordingly reducing the loss of breakage. This equalizing action of the cushioning means also tends to give the eggs a more uniform appearance when the container is opened for display.

The box, as well as the filler with its associated cushioning member, is preferably collapsible so as to facilitate shipping and storing, the box and filler being usually shipped in separate bundles, as mentioned above. When in the collapsed condition the filler and cushioning member are in the position shown in Fig. 5. When, however, the filler is to be used, the filler with its associated cushioning member is opened and placed within the erected box, the cushioning member then assuming the shape shown at Fig. 2 to provide flexible bottoms for the various pockets.

While the present embodiment of the invention has been disclosed in connection with containers for eggs, it is contemplated that the same construction may be used for various other articles. This application is therefore not to be limited to egg containers or to the precise details disclosed, but is intended to cover all variations and modifications falling within the spirit of the invention or the scope of the appended claims.

I claim:

1. A filler for a container comprising, in combination, interengaging longitudinal and transverse partition members arranged to provide a plurality of article receiving pockets, and locking means associated with said filler to lock said members together, said locking means having a plurality of tabs extending laterally therefrom to provide flexible bottoms for said pockets.

2. A filler for a container comprising, in combination, a plurality of interengaging longitudinal and transverse partition members arranged to provide article receiving pockets, one of said longitudinal members having a plurality of open end slots in which said transverse members are arranged to fit, and means including a strip secured to said longitudinal member and arranged to close said slots to lock said transverse members to said longitudinal member.

3. A filler for a container comprising, in combination, a plurality of interengaging longitudinal and transverse partition members arranged to provide article receiving pockets, and a cushioning member comprising a strip secured to one of said members and adapted to lock others of said members thereto, said strip having a plurality of tabs extending laterally therefrom to provide separate resilient bottoms for each of said pockets.

4. A filler for a container comprising, in combination, a plurality of interengaging partition members arranged to provide article receiving pockets, and means including a cushioning member for concomitantly supporting articles in said pockets and for locking the partition members together.

5. A filler for a container comprising, in combination, a plurality of interengaging longitudinal and transverse partition members arranged to provide article receiving pockets, and a cushioning member secured to said filler, said cushioning member having a longitudinally extending portion arranged to lock said partition members in interengaging relation and a plurality of laterally extending tabs which provide flexible bottoms for said pockets.

6. A partition structure for a container comprising a longitudinal partition member having a series of slots extending upwardly from the lower edge of said member, a series of transverse partition members extending through said slots, and a locking member embracing the lower edge of said longitudinal member and extending along said lower edge across said slots to lock said transverse partition members in said slots.

7. A partition structure for a container comprising a longitudinal partition member having a series of slots extending upwardly from the lower edge of said member, a series of transverse partition members extending through said slots, and a combined locking and cushioning member extending along the lower edge of said longitudinal member across said slots to lock said transverse partition members in said slots, and having a laterally extending inclined portion providing cushioning bottoms for spaces between said transverse members.

8. A partition structure for a container comprising a longitudinal partition member having a series of slots extending upwardly from the lower edge of said member, a series of transverse partition members extending through said slots, and a combined locking and cushioning member extending along the lower edge of said longitudinal member across said slots to lock said transverse partition members in said slots, and having a series of lateral tongues extending into spaces between said transverse members to provide cushioning bottoms for said spaces.

HARRY A. INMAN.