Oct. 11, 1932. F. H. SHERMAN 1,882,524

EGG CASE

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Fig. 1.

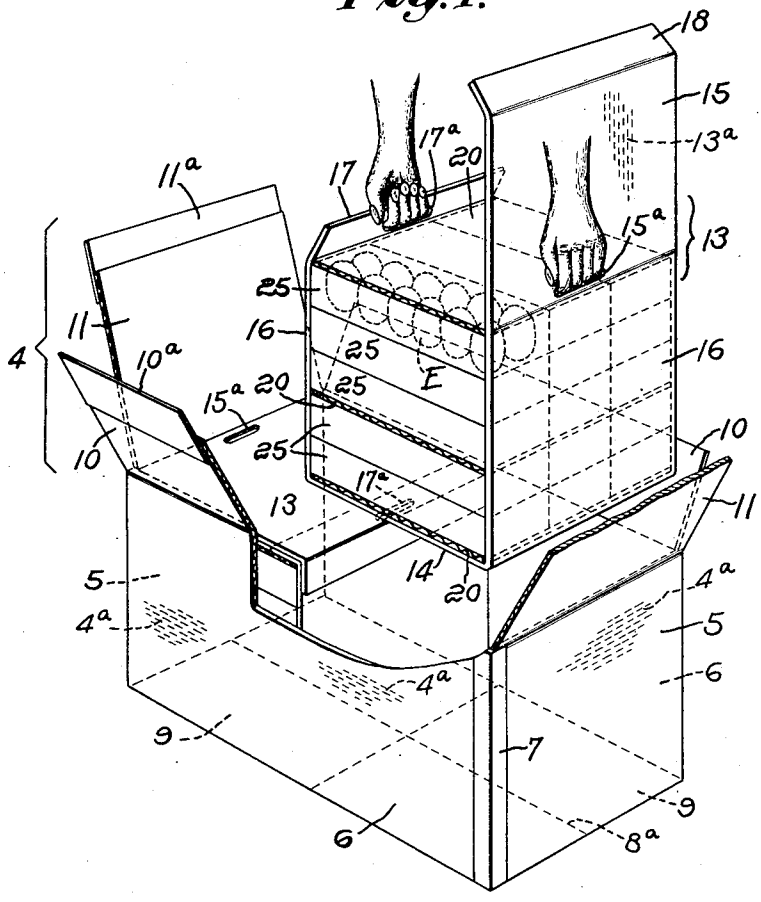


Fig. 2.

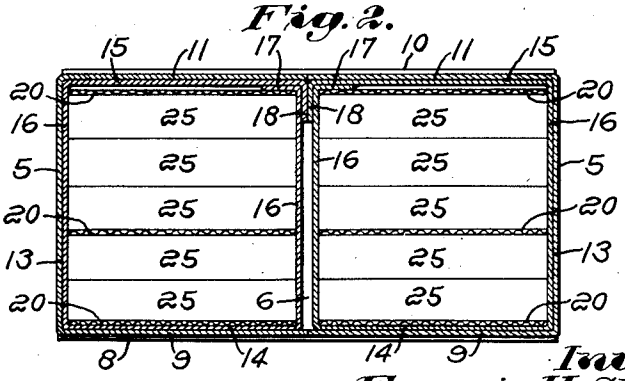


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Fig. 3.

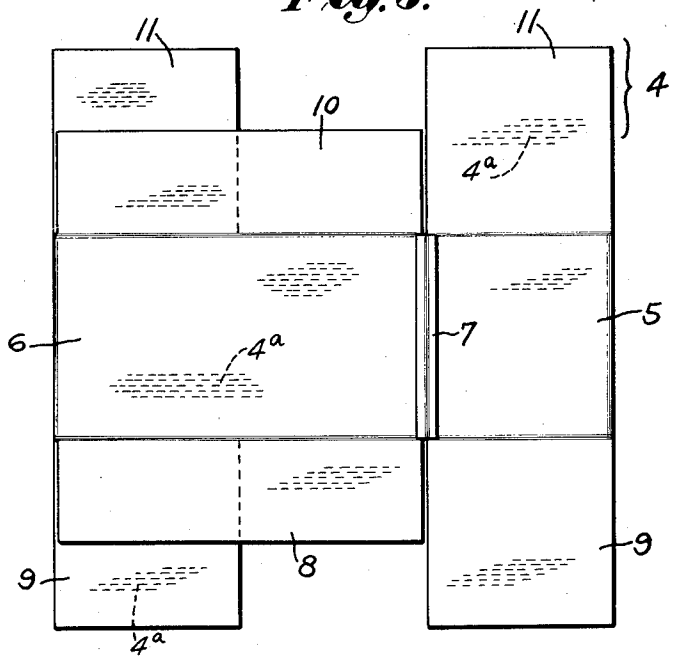



Fig. 4.

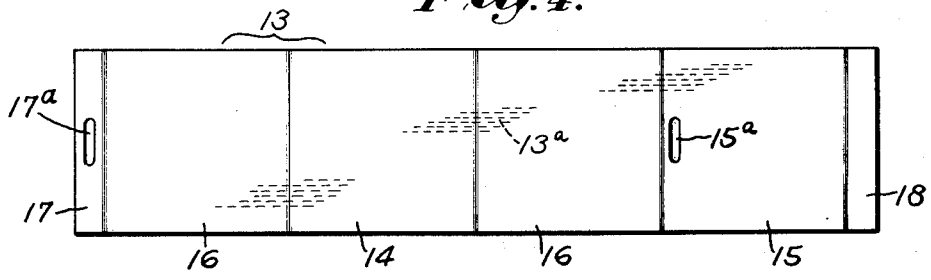
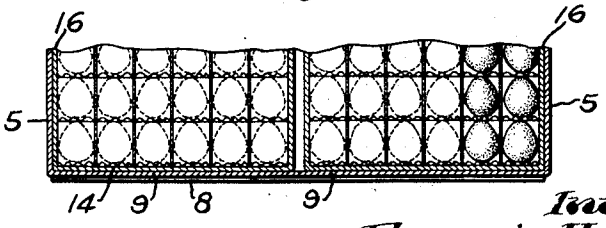



Fig. 5.

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# UNITED STATES PATENT OFFICE

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## EGG CASE

Application filed May 24, 1930. Serial No. 455,247.

My present invention relates to means for packaging eggs in lots of a number of dozen, such, for example, as 30-dozen or "crate" lots, and more particularly aims to provide a readily sealable substantially air-tight or ventilated, light-weight and otherwise improved package and case and content lifting or manipulating means therefor, for the shipment of eggs by poultry-men, packers and others, and for distribution, as to warehouses, chain stores and the like.

In the drawings illustrating, by way of example, certain embodiments of the invention;

Fig. 1 is a perspective of a complete package embodying the invention, with the top open and showing one of the inner casings or elements during insertion or removal thereof;

Fig. 2 is a longitudinal vertical section through a closed and sealed case or package such as that of Fig. 1;

Figs. 3 and 4 show the outer case of container of Figs. 1 and 2, and one of the inner casings, respectively, collapsed flatwise, as for shipment to a user, with the exception that the inner casing member of Fig. 4 is preferably doubled upon itself lengthwise for such shipment; and

Fig. 5 is a partial view, corresponding to Fig. 2, of a modified package also embodying the invention.

Eggs in large lots have heretofore been packed for shipment in standardized wooden crates, divided transversely by permanent wooden partitions. Such crates, are subject to splitting and breaking away at the joints, under the ordinary conditions of transportation. Also, they commonly have longitudinal or other gaps or open portions, rendering them non-air-tight. In accordance with my invention I employ, instead of such non-sealing wooden crate, a resilient, cushioning and non-splitting package, case or container preferably formed wholly of pulp material, such as corrugated paper board or the like, and in which the egg contents may be effectively sealed, although provisions for ventilation may be made should any user so prefer.

Referring first to Figs. 1 and 2, the package as a whole comprises an outer casing or element, indicated in its entirety by the numeral 4, and desirably formed from a single sheet of the above material, scored or otherwise marked for folding into the rectangular form illustrated in said figures. Said outer casing, as shown, comprises four vertical sides or walls, including the opposite end walls 5 and the longitudinal side walls 6 integrally hinged together at three corners of the formed case and hingedly connected and sealed at the fourth corner, as by means of the strip 7 of adhesive tape or the like.

Along the lower edges of the vertical sides are the bottom forming members, including the longitudinal bottom members 8 and the end-hinged bottom members 9. In their set-up position as in Figs. 1 and 2, it will be noted that said bottom members together provide a casing bottom of double thickness throughout, but either of the pairs of bottom members 8 and 9 may be of less extent in some instances.

The then under members are secured in position, as by one or more adhesive strips, sealing the bottom, or by other fastening means, such as wire staples. Each of the four bottom members herein have an area approximately one-half that of the entire bottom of the case, but they may be otherwise relatively proportioned if desired. Similar top closure members are provided along the upper edges of the case sides, integrally or otherwise hinged thereto, and herein including the longitudinal top-flaps 10 and the end top-flaps 11, together forming a complete or partial double-thick cover for the case, and adapted to be secured or sealed similarly as at the case bottom.

It should be particularly noted, referring to Figs. 1 and 3, that the corrugated paper board there illustrated is so disposed, in the formation of the outer casing 4, that the corrugations $4^a$ will extend lengthwise of the case sides and crosswise of its ends, that is, horizontally around the case, rather than vertically. In this manner the case is made specially resistant to horizontal pressures and shocks, and particularly longitudinally, since

the corrugated board will not readily buckle in the direction of its corrugations. Thus it is especially adapted to shipment in cars or trucks, wherein egg crates or cases are customarily placed with their long dimension parallel to the direction of travel, bringing the probable shocks in transportation against the ends of the case rather than broadside thereof. Also, by reason of the described arrangement of the corrugations, the corner folds are brought crosswise thereof, giving an extremely strong corner structure, not liable to buckle under vertical pressure.

Within the described outed casing or container are egg-manipulating devices, lifters or inner casings or casing elements, herein two, each indicated as a whole by the numeral 13. These inner casings are likewise formed of pulp or paper material, which may be the same as that of the outer casing. Each as illustrated comprises a single strip of such material, see particularly Fig. 4, creased or otherwise marked for folding, preferably transversely of its corrugations 13ª, into rectangular band-like form, including hingedly connected bottom, top and two opposite side walls 14, 15 and 16, respectively, the vertical sides being open in the illustrative example. Tuck or flap sections 17 and 18 may be provided at one or both ends of the inner casing strips. As herein shown, one such tuck 17 is provided along the free edge of one vertical wall 16, being adapted to fold over inwardly, to lie flat-wise against and preferably below the top wall 15. The other tuck 18, at the free edge of the top wall 15, is arranged to fold downwardly into vertical position against the adjacent side wall 16. Desirably hand-holds 15ª and 17ª are formed in the top member 15 and the tuck 17, respectively, located at substantially equal heights above the bottom of each inner casing when it is in set-up form as in Figs. 1 and 2.

Each inner casing 13 is constructed and arranged to receive and hold the customary or desired number of dozens of eggs, generally and as herein shown, fifteen dozen, either using the regulation or customary fillers or partitions and flats, as in Fig. 5, or egg cartons holding one dozen or one-half dozen, each placed in five layers of three dozen eggs each. In the package of Figs. 1 and 2 the eggs are first placed in cartons 25, in one-dozen or other lots. As illustrated there are fifteen one-dozen 2×6 egg cartons to each inner casing. The contained eggs are indicated at E in dotted lines in Fig. 1. The cartons are shown arranged in juxtaposed stacks, there being in this instance five cartons to a stack and three stacks, in other words, five carton layers of three cartons each. While the cartons are illustrated as disposed in parallelism in all the layers, they may be otherwise stacked or arranged, for example, with the cartons of alternate layers at right angles to those of the next overlying or underlying layer. It will be observed that the inner casings 13 are cubical or substantially so, and that three cartons side by side have an overall width equal or substantially equal to the length of one carton. Thus the cartons may be positioned in the inner casing in either direction. The inner casings themselves, being substantially cubical, may be placed in the outer casings with their open sides either at the longitudinal sides of the outer casing, as shown in Figs. 1 and 2, or at right angles thereto.

Referring to Figs. 1 and 4, the corrugations 13ª of the inner casings 13 are arranged lengthwise of said elements in their form as in Fig. 4. Thus when the inner casings are in use position their vertical walls 16 have the corrugations extending vertically, giving particular rigidity and strength in that direction to these inner casings and hence to the complete case, enabling a number of cases to be piled one on another with entire safety. In the horizontal walls 14 and 15 of the inner casings when positioned for use, as in Fig. 1, the corrugations 13ª run lengthwise the case, parallel to those of the outer casing 4, thus still further strengthen the case lengthwise. The inner casings as a whole have a general strengthening and additional cushioning effect for the entire case and its contents, by reason of the extra piles of the paper board contributed by them throughout, thus affording greater safety for the fragile contents and decreasing breakage. Moreover, the folds of the inner casings extend crosswise their corrugations 13ª, making these inner elements strongly resistant to transverse pressures of the completed case.

If desired, but not necessarily, cushioning "flats" or plate-like cushioning members 20, of any preferred contruction, may be employed within the inner casings, above, below and between any or all of the article layers. In Figs. 1 and 2 such cushioning members 20, of like size and shape as the bottom and top walls 14 and 15 of the inner casings 13, are shown below and above the article contents and between the second and third layers thereof from the bottom. It will be understood, however, that where the eggs are in small-lot cartons such additional cushioning members may be omitted entirely, or used only at the bottom and top of the inner casings, and in actual practice they have been found to be unnecessary.

In making up the package for shipment, the outer casing 4 is opened out from its knocked-down form of Fig. 3 into its set-up forms as in Figs. 1 and 2, or the corner hinge 7 may be applied at the place of use. The bottom forming members 8 and 9 are secured in closed position as by means of one or more strips of adhesive tape, as indicated in dotted lines at 8ª in Fig. 1. If used, a cushioning

flat 20 is placed upon the bottom wall 14 of each inner casing and the cartons are piled upon it, intermediate cushioning members being placed between such of the carton layers as desired. A top cushion 20, if employed, is laid above the cartons, whereupon each inner casing 13 may be grasped, conveniently by the hand-holds $15^a$, $17^a$ in the manner illustrated in Fig. 1, or otherwise, and let down into position within the outer casing. I find it preferable to position the inner casings in the manner of Figs. 1 and 2, that is, with their vertical tucks 18 at the then inner vertical walls of the two inner casings and flatwise against each other. They thus tend to separate these two main inner elements, as seen in Fig. 2, providing an additional cushioning effect between them. The inner casings or containers 13 may obviously be fitted with their egg layers or carton layers, as the case may be, either before inserting these inner elements in the outer casing 4 or afterwards.

The top members 10 and 11 of the outer casing may then be closed down, the end-hinged members 11 preferably being placed below the side-hinged members 10, although the reverse procedure may be followed if desired. These members may then be secured or sealed in their closed position, as by wiring or the like or by one or more strips of adhesive tape, seen at $10^a$ and $11^a$, Fig. 1, thus completely sealing the case and completing the package. But by reason of the independent and separately removable inner casings or lifters, the entire contents of the case may be thoroughly inspected at any time, even as to the bottom or any intermediate articles, it being necessary merely to open the case and lift one or both of the inner casings and contents to any extent desired. With egg crates as herebefore employed the bottom or intermediate contents could only be inspected by completely unpacking them layer by layer. These sling-like lifters greatly facilitate handling of the egg contents in 15-dozen lots, for a half-section of an egg case of the 30-dozen type, either manually or mechanically.

It has been found, particularly where the eggs are to travel a considerable distance, that they retain greater fullness in the substantially air-tight case of my invention as above described. The case forms an insulation which resists the effects of sudden changes in heat or cold, dampness or dryness, and the resulting more even temperature and humidity conditions minimize shrinkage of the egg contents.

It also prevents foreign odors being absorbed by the eggs, to which odors their porous shells make them extremely susceptible. As substantially any odor associated with an egg makes it practically worthless commercially, distinct savings result for this additional reason.

In Fig. 5 I have illustrated a package or case made up with the eggs not in cartons, but disposed in layers of three dozen each within the inner casings 13 and in cellular fillers between the cushioning flats 20. In other respects the package may be the same as in Figs. 1 to 4.

In the illustrated construction it will be seen that at least three or more complete layers of the paper or like sheet material are brought below and above the contained eggs, while at least a double thickness of such material is provided at the case ends. At one corner portion of each inner casing two additional thicknesses of material are supplied by the tucks 17, 18, either at the inner and adjacent corner portions of said inner casings, as illustrated, or at an outer corner, depending upon the manner in which the inner casings 13 are positioned within the outer container 4.

The described case, being constructed wholly of paper or pulp material, is less expensive than the wooden crates and associated means heretofore employed for packaging eggs in 30-dozen lots, but is found to provide a strong and rugged package particularly suited to its main purpose of packaging eggs in multi-dozen lots, with or without the use of small-lot cartons. It is relatively light in weight as compared with the former crates particularly adapting it to shipment by express and fast freight. Additionally, the novel paper-material case of my invention affords an excellent advertising medium, as its sides may readily be printed upon in a manner not practicable with the usual wooden crate heretofore employed.

My invention is not limited to the illustrative embodiments thereof herein shown and described, its scope being pointed out in my claims as follows:

1. An egg shipping and distributing case formed substantially wholly of fibrous sheet material of a weight and strength corresponding to that of commercial corrugated paper-board, said case comprising; a rectangular outer container, collapsible flatwise, and including four vertical walls and completely-enclosing top and bottom members; and two inner lifter casing members, each positionable and removable independently of said outer container, each as a unit including one-half the egg contents of said case, said contents comprising independent laterally slidable egg-container units stacked within said lifter members, each lifter member occupying approximately a one-half portion of the case and each having a substantially rectangular bottom section and two opposite side sections integrally foldably connected with said bottom section, said lifter members being openly constructed at their other two sides for independent lateral sliding of their received container units when

said lifter members are partly or wholly outside the case, each said lifter member constructed to receive and support its portion of said independent container units, whereby said lifter members and the container units stacked in them may be unitarily lifted and manipulated for inspection and rapid handling purposes.

2. In combination with an egg case of the 30-dozen type and with independent laterally slidable egg-container units to be stacked therein, an egg inserting and removing element adapted for loaded reception in and for removal from a half-section of said case, comprising a substantially rectangular bottom and two opposite side members hinged thereto, said element being open at its other vertical sides and being of fibrous sheet material and constructed and arranged to receive and support for manipulation as a unit a 15-dozen lot of eggs in said independent laterally slidable container units stacked within said element to constitute the contents of such one-half case section, and engaging means whereby the user may readily remove or insert said contents with respect to the particular case section, for inspection and rapid handling purposes.

In testimony whereof, I have signed my name to this specification.

FRANCIS H. SHERMAN.