

Dec. 3, 1957

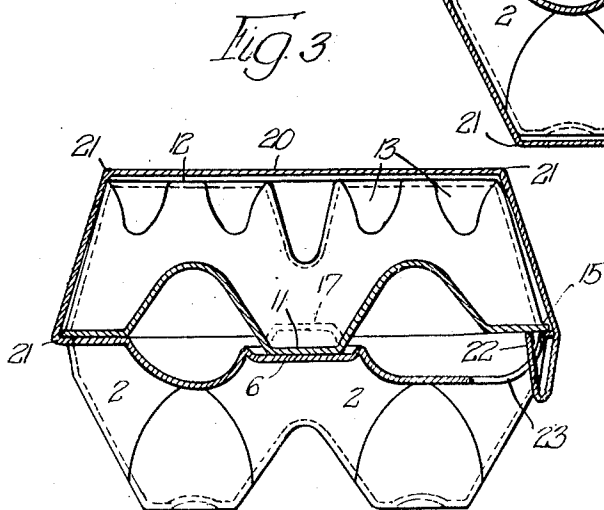
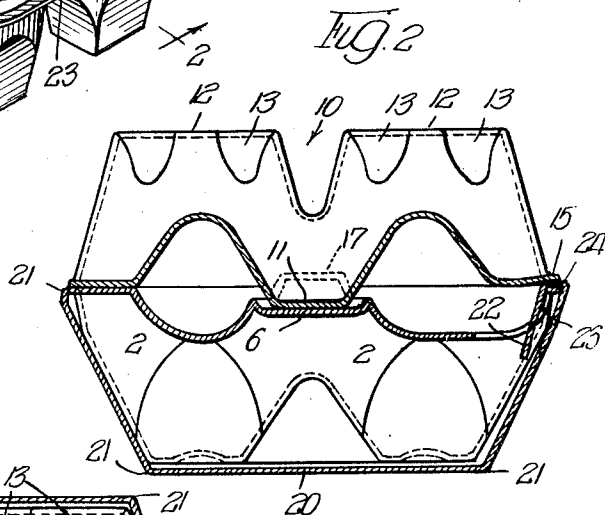
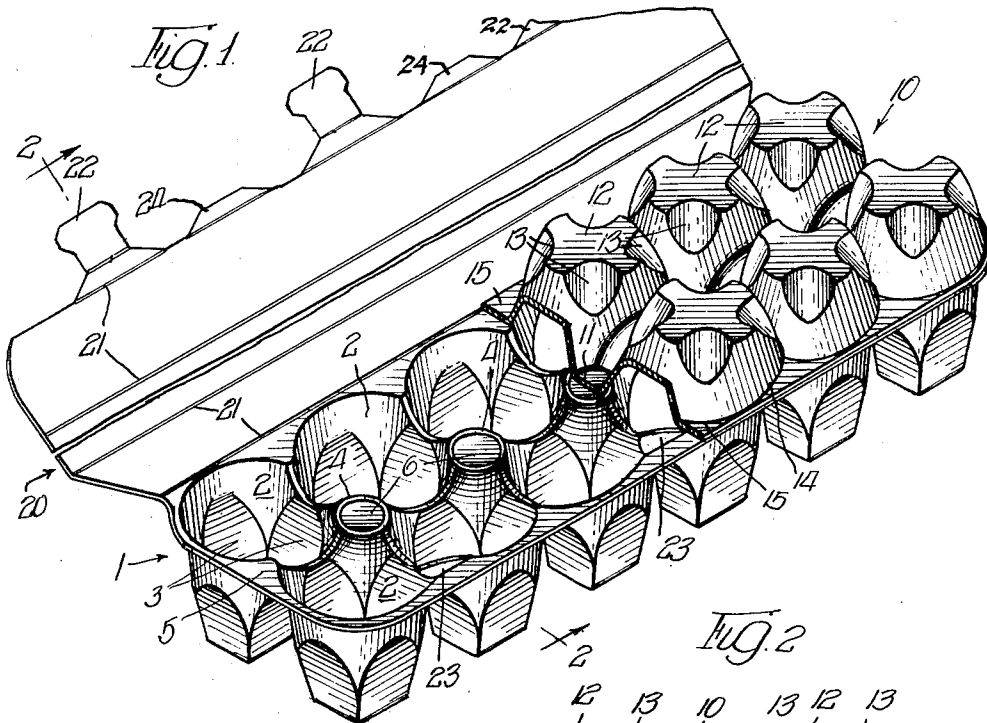
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2,815,162

CARTONS WITH REVERSIBLE FLAPS

Filed March 11, 1954

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

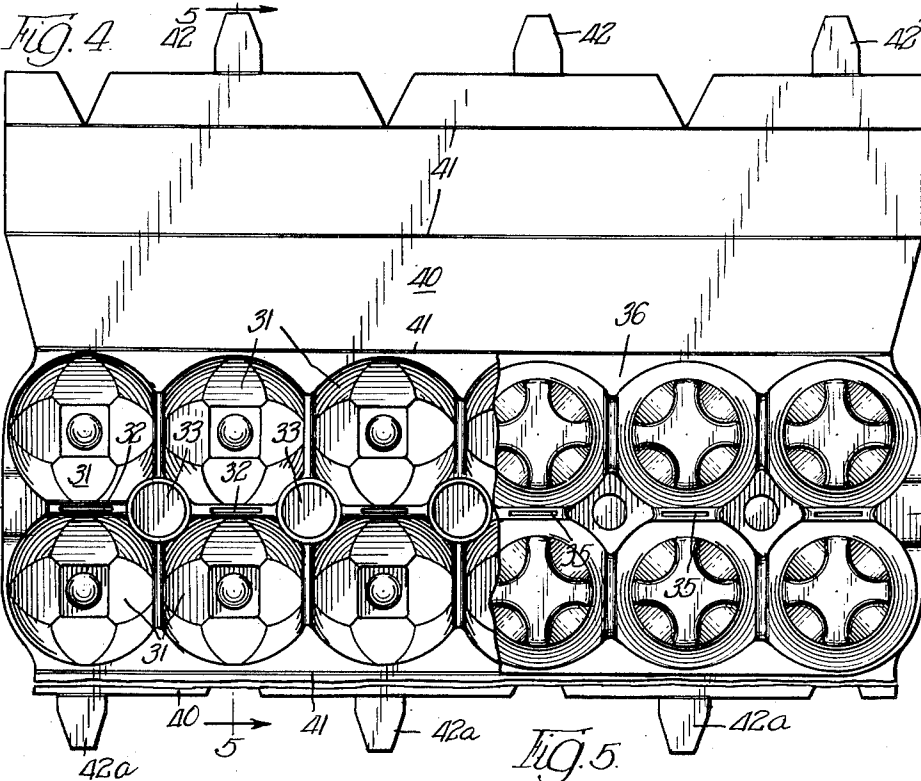


Fig. 5

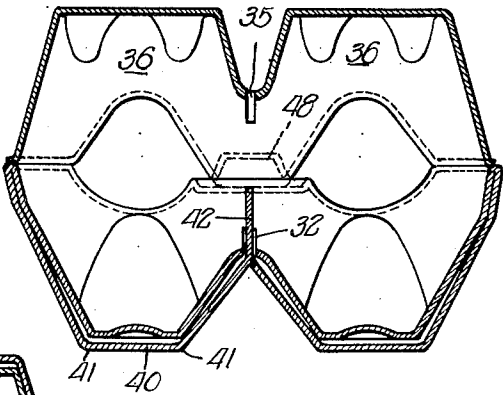
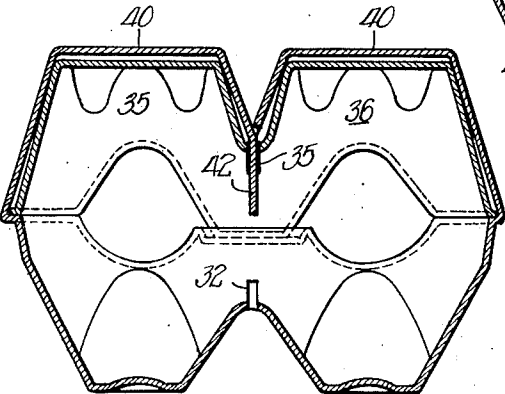


Fig. 6



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1

2,815,162

CARTONS WITH REVERSIBLE FLAPS

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9 Claims. (Cl. 229—2.5)

This invention relates to cartons for eggs and has for its principal object the provision of a new and improved carton of this type.

It is a main object of the invention to provide a carton which can be filled by the shipper, shipped to market in car or truckloads where the customary inspections may be made in the usual manner, after which the carton enters the channels of retail trade ultimately to be used by the consumer to carry eggs from the store to the home and, if desired, for keeping the eggs in the refrigerator.

Another object of the invention is to provide a carton for use in transmitting eggs from the shipper to the ultimate consumer, which carton is in two distinct and readily separable pieces thereby to permit it to be opened readily without injury to the carton, to permit necessary inspections of the eggs to be made in accordance with the established practices of the industry.

Another object of the invention is to provide a carton, a plurality of which can be placed in a standard egg case, then filled with eggs to form the usual three-dozen layer therein, and layers added to pack the usual thirty (30) dozen eggs in the case, which cartons afford adequate protection to the eggs in shipment, permit a tight pack in the case, and have cushioning adequate for the protection of the eggs.

Another object of the invention is to provide a carton having sufficient provisions for ventilation to permit adequate ventilation of the eggs in shipment in a refrigerated vehicle and also in cold storage should storing of the eggs be desirable.

Another object of the invention is to provide a carton having space upon which may be printed brand names and such other indicia as may be desired.

Another object of the invention is to provide a carton which can be made sufficiently cheaply to permit single use of the carton in an economical manner.

Further objects of the invention not specifically mentioned here will be apparent from the detailed description and claims which follow, reference being had to the accompanying drawings in which a preferred embodiment of the invention is shown by way of example and in which:

Fig. 1 is a perspective view of a carton with a portion of the cover cut away the better to show the construction of the carton;

Fig. 2 is a cross sectional view taken substantially along the line 2—2 of Fig. 1, looking in the direction of the arrows and showing the flap in one of its two positions;

Fig. 3 is a view similar to Fig. 2, showing the flap in its other position;

Fig. 4 is a plan view of a modified form of carton with part of the cover cut away the better to show the construction;

Fig. 5 is a cross sectional view taken substantially along the line 5—5 of Fig. 4, looking in the direction of

2

the arrows and showing the flaps in one of their two positions; and

Fig. 6 is a view similar to Fig. 5 and showing the flaps in their second position.

In the marketing of eggs, a shipper collects eggs from the farmers and packs them in standard cases containing thirty (30) dozen eggs protected by fillers and flats for shipment to market. The shipper may ship the eggs as received from the farmer as current receipts, or, as is more frequently the case, may candle the eggs and grade them for quality, size, cleanliness, etc., prior to placing them in the case. In either event, a carload of eggs thus collected and packed is shipped either to an open market or directly to a large purchaser of eggs, such as a jobber, or chain store. In either case, upon arrival at the market, certain inspections are to be made in accordance with long established practices.

In case of shipment to an open market, the market officials or representative of a jobber spot-check the car on the rails by opening, candling, and grading a number of cases picked at random throughout the car; and in the case of an official inspection by the exchange, an official inspection certificate based upon the findings of the inspection is issued and the car is bought on the strength of the certificate which is transferable and negotiable for resale without further inspection. In the case of shipment by truck, the truck is ordinarily unloaded prior to the inspection; however, the procedure in the inspection is the same as in the case of carload inspections of rail shipments.

In order that these inspections may be made, the carton must be capable of being opened without injury and the eggs exposed to view and capable of being handled in accordance with established practices known as commercial handling. After the shipment is purchased, it is the prevailing practice now for the jobber or other purchaser to re-handle the eggs out of the standard cases into retail cartons for delivery to the stores and from there to the ultimate consumer.

As is well understood by those skilled in the art, handling of the eggs deteriorates the quality of the egg and requires a longer time for the eggs to reach the consumer and furthermore is expensive. The industry is desirous of obtaining a carton which can be packed by the shipper at the collecting point, shipped to an open market, and the shipment inspected in the usual manner, and thereafter the cartons used in retail channels for ultimate delivery to the consumer without re-handling of the eggs out of the cartons except for the inspections that are necessary.

Although there are cartons on the open market in limited use in the shipment of eggs from the collecting points directly to a jobber or chain store, these cartons are not altogether satisfactory for this purpose and in no case are employed for shipment to an open market. In every instance such cartons make inspection of the eggs exceedingly difficult because of certain factors: First, the cartons are provided with covers permanently attached to the bottom or tray portion thereof and these covers cannot be removed for inspection. Furthermore, these cartons cover half or more of the egg in a vertical direction and commercial handling of the eggs out of the carton is therefore extremely difficult, if not impossible.

The present invention seeks to provide a carton which overcomes these objections, the carton consisting of two main members, a tray and a cover, which are separate and distinct so that the trays may be placed in a standard egg case side by side in a layer, then filled with eggs by the usual commercial handling practice, which eggs are held in upright position by the tray with a sufficient portion of the eggs exposed to permit commercial handling,

The covers are then placed over the eggs to complete the layer and additional layers added. During inspection the covers are removed completely so that the eggs may be handled out of the carton for inspection in the usual manner.

Permanently attached to the trays are flap means which, in the case of shipment from the collecting point to the market, are folded under the tray and secured to provide added strength in the carton and cushioning for the eggs in shipment. To prepare the carton for entry into the channels of retail trade, the flap means are reversed and folded over the covers to secure the covers in place, thereby to form a retail carton in which the consumer may carry the eggs from the store to the home and in which the eggs may be kept in the refrigerator if desired.

Present day cartons, insofar as I am aware, do not provide adequate ventilation of the eggs in shipment in a refrigerated car or truck and are so lacking in ventilation that storage of eggs in cartons in a cold storage plant is unsatisfactory. The carton of the present invention is designed to overcome this difficulty by providing for adequate ventilation of the eggs so that the shipper may pack eggs in the cartons at the collecting point without knowing the ultimate destination of the shipment, that is, whether it will immediately enter the channels of retail trade or will be placed in storage for future delivery to those channels. When the eggs are removed from storage, re-grading is necessary and the carton of the present invention permits commercial handling for this purpose, and furthermore the cartons may be reused to encase the eggs for the retail trade.

The invention will be best understood by reference to the accompanying drawings where, in Figs. 1 to 3, inclusive, there is shown a carton consisting of a tray indicated generally at 1 and containing two (2) rows of egg cups 2, each of which rows contains six (6) cups. The walls 3 of the egg cups extend upwardly and outwardly from the bottoms of the cup, are bowed inwardly slightly and positioned so as to tightly embrace and grip an egg and hold it securely and uprightly in the cup. The junctions between adjacent walls 3, which are four in number, are located outwardly from the egg so positioned in the cup to provide for ventilation of the tip of the egg. The bowing of the walls 3 adds resilience to the support of the egg and makes the walls deformable so as to grip eggs of various sizes.

Located between adjacent nests of four (4) cups are posts 4 which terminate below the middles of eggs disposed in the cups. The outer edge of the carton flares outwardly, as indicated at 5, and is planar, being located above the tops of the posts 4 and in a plane at the approximate middles of eggs in the cups. By this arrangement the eggs are supported and protected during shipment in such manner that they may be handled into and out of the tray in accordance with commercial handling practices.

The upper surfaces of the posts 4 contain indentations 6, and the cover portion of the tray, indicated generally at 10, contains feet 11 which register in the indentations 6 and serve to lock the cover against movement with respect to the tray. The cover contains inverted cups 12 and these cups are located so as to register over the cups in the tray when the cover is placed thereon. Each inverted cup 12 contains a plurality of indentations 13 arranged to engage the eggs adjacent to but not at the uppermost portion of the large end of the egg thereby to assist in holding the egg securely in the tray. The lowermost portions 14 of the inverted cups are of such dimension as to embrace the egg near or at its largest point, with the result that the egg is firmly and tightly supported in the carton and pressure on the egg is not against the air space at the large end of the egg.

The outermost edges of the cover 10 flare outwardly, as indicated at 15, and are positioned so that when the feet 11 on the cover engage the indentation 6 in the

post 4, the edges of the cover will register with and be supported on the flanged edge 5 of the tray.

In the embodiment of the invention shown in Fig. 1, flap means, indicated generally at 20, projects from one edge of the tray. This means may be an integral part of the tray formed from molded pulp material, as is the tray, or, if desired, may be formed of calendered paper and securely attached to the tray by suitable means within the teachings of the invention. In either event, the flap means is scored to form a hinge, as indicated at 21, to permit folding in two directions.

If the carton is being filled for shipment in a standard egg case to the open market, the flap means 20 is folded along score lines 21 in the manner shown in Fig. 2, that is, so that it lies beneath the cups 2 in the tray and alongside thereof on both sides of the tray. It will be noted from the drawings that there is a small space between the bottoms of the cups and the upper surface of the flap means in this position. This space, approximately one-sixteenth ($\frac{1}{16}$) of an inch in height provides cushioning, as will presently appear. The flap means contains tabs 22 which are projected through openings 23 in the tray to lock the flap means in place thereunder. Between the tabs 22 are smaller projections 24 which are folded over the top edge 5 of the tray, as shown in Fig. 2. When the carton is filled with eggs and the cover placed thereon, the bottom edge 15 of the cover bears against the extensions 24 to aid in securely holding the flap means in place on the tray.

The carton so formed is of such dimension that three (3) may be laid side by side in the compartment of a standard egg case to form a layer therein and the cartons may be stacked one upon the other, five (5) high, to fill the compartment. In the case of shipment in a wooden egg case, which is of standard design and is thirteen (13) inches high, the stack so formed will project three-eighths ($\frac{3}{8}$) of an inch above the top of the case, and when the cover of the case is secured in place at the two ends the stack will be forced downwardly to provide the tight pack necessary for the adequate protection of the eggs. Since the cover of a wooden egg case is secured only at the ends and bows up approximately one-fourth ($\frac{1}{4}$) of an inch at the center of the case, the added height of the stack insures a tight pack. In the case of shipment in a fiberboard egg case, the outside dimension of which is thirteen and a quarter ($13\frac{1}{4}$) inches, the stack of cartons will project one-eighth ($\frac{1}{8}$) of an inch above the case, and when the cover is secured in place at both ends and in the middle, as is the practice with such fiberboard cases, a tight pack is assured.

The flap means beneath the cups provides a leeway of one-sixteenth ($\frac{1}{16}$) of an inch beneath each layer. In case the cartons are filled with extra large eggs and the stack projects higher than specified above, when the lid is secured on the case the stack automatically adjusts itself by utilizing the leeway space between the layers and a tight pack is assured.

The carton thus formed is of such design as to have sufficient resiliency to permit compression as is required to form a tight pack. Bosses 13 engaging the eggs adjacent to but not at the tip of the large end thereof, provide cushioning in each layer without imposing strains upon the egg at its weaker points. The bosses 13 indented into the inverted cups strengthen the same, and since in this carton all feet on the cover extend downwardly and there are no posts extending upwardly, all the weight of upper layers resting on the cover is supported by the cups. This added strength provided by the bosses enables the cups to support this weight in a satisfactory manner. The covers of the trays in the upper layer bear against the under surface of the cover of the case and provide top protection for this layer and the use of a top cushion is not necessary. The flap means 20 disposed under the trays provide an added cushioning and strength at the bottom of each layer.

5

Upon arrival at the market, a case to be inspected is opened. The covers of the cartons being separate and distinct from the egg-supporting trays, may be completely removed to expose the eggs for such inspection as may be desired. The shape of the covers with all feet extending downwardly facilitates obtaining a good grip on the cover, making its removal easy. In case the shipment is to be officially graded, since the eggs are exposed more than half of their height, commercial handling practices may be followed without difficulty. In the event that the shipment is purchased by a jobber or retail store for immediate entry into the channels of retail trade, the jobber lifts and completely removes the cover to inspect for damage, and removal of damaged eggs, and if no damage is found there is no rehandling of the eggs.

To prepare the carton for shipment to the retail store, the flap means 20 is released from the tray and folded along score lines 21 in an opposite direction so as to position it over the cover in the manner shown in Fig. 3. Tabs 22 are inserted through the perforations in the tray as before and serve to fasten the tray and cover together to form a carton in which the consumer may carry eggs from the retail store to the home. As will be seen best in Fig. 3, the top of the carton so formed contains a large flat area upon which brand names and such other indicia as may be desired may be printed in a convenient manner.

In the event that the shipment to the open market is not to enter immediately into the channels of retail trade but rather is to be placed in cold storage, the carton of the present invention permits this. As will be seen in Fig. 2, the cover portion of the carton is provided with ventilating ports 17 disposed in the ends thereof and the tab holes 23 enable sufficient circulation of air around the eggs to provide for adequate ventilation of the eggs and the carton may therefore be placed in storage if desired.

In the modification of the invention shown in Fig. 4, the tray 30 is of the same general construction as shown in Fig. 1, except that the walls between adjacent cups 31 are provided with slits 32 extending from post 33 to post 33. On either side of the tray 30 is a flap means 40 scored at 41 and of such dimension as to extend but half way across the carton. The flap means is provided with tabs 42 and when folded under the cups in the tray, as shown in Fig. 5, the tabs 42 are projected through the slits 32 to secure the flap means in place under the tray. When thus positioned under the tray, the flap means is spaced from the bottoms of the cups a distance approximating the thickness of the material, as before. It will be noted that the tabs 42a on the opposite side of the tray are staggered with respect to the tabs 42 on the first mentioned side, and when folded under the tray in the manner shown in Fig. 5 the upwardly extending portions of the tabs 42 are positioned between the eggs in the cup and afford additional protection to those eggs.

When it is desired to prepare the carton for entrance into the channels of retail trade, flaps 40 are reversed into the position shown in Fig. 6, extending over the cover, and the tabs 42 are projected through slots 35 in the cover 36 of the carton. The flaps are spaced slightly from the tops of the inverted cups in the cover. The upper exposed surfaces of the flaps 40 are planar and brand names and other indicia may readily be printed thereon as desired.

The carton shown in Figs. 4 to 6, inclusive, like that of the other figures, is of such dimension as to pack in a standard egg case in the hereinbefore explained manner. Eggs shipped to open market may be handled into and out of the carton in accordance with the established practices of commercial handling, may immediately enter the channels of retail trade, or be placed in cold storage, since the covers 36 are provided with ventilating ports 48 and adequate ventilation of the eggs is assured.

The cartons shown in the drawings may be used for

6

direct shipments by the shipper to the ultimate consumer. In such instances the shipper fills the trays with graded eggs, places the covers thereover and folds the flap means over the covers to secure them in place. This places the cushion on the top of the carton rather than the bottom. In direct shipments no inspections are made prior to opening of the cartons by the ultimate consumer.

Throughout the drawings and specification a one-dozen carton is described. Obviously features described may be applied to cartons for a larger or smaller number of eggs, and other modifications and adaptations can be made by one skilled in the art within the teachings of the invention.

Having thus complied with the statutes and shown and described a preferred embodiment of the invention, what I consider new and desire to have protected by Letters Patent is pointed out in the appended claims.

What is claimed is:

1. A carton for encasing eggs from a collecting station through trade channels to the ultimate consumer, comprising: a tray, twelve cups in said tray, each comprising a bottom on which the tray rests and four walls extending upwardly and outwardly from said bottom, said walls terminating in a top portion of the tray that extends outwardly from the cups; posts in said tray disposed between said cups terminating in indented tops which are in a plane disposed slightly below said top portion, a cover for said tray separate and distinct therefrom; twelve inverted cups in said cover, one for each of said cups in the tray, feet on said cover registered with the indented top portion of the posts on said tray; a bottom portion on said cover extending outwardly from said inverted cups and registered with the top portion of said tray to aid said feet in supporting the cover on the tray; flap means on the tray reversible first to fit under the tray to provide a bottom cushion therefor during shipping, and second of fit over the cover to hold it on the tray to form a carton; and tab means on said flap means for securing the same in said first and second positions.

2. A carton as claimed in claim 1, in which the flap means is hingedly secured to one edge of the tray at the top thereof and contains a portion extending downwardly alongside the cups in the tray, a portion extending beneath the bottoms of the cups and a portion extending upwardly along the other side of the cups when the flap means is in said first position.

3. A carton as claimed in claim 1, in which the flap means is hingedly secured to one edge of the tray at the top thereof and contains a portion extending upwardly therefrom alongside the inverted cups in the cover, a portion extending over the tops of said inverted cups, and a portion extending downwardly along the other side of the inverted cups when the means is in said second position.

4. A carton as claimed in claim 1, in which the flap means is planar and integral with the tray and contains scores along which it may be bent either way out of the plane of the remainder of the means.

5. A carton as claimed in claim 1, in which the flap means in both positions is spaced from the carton to provide resilience resulting in automatic adjustment in height of a stack of cartons.

6. A carton as claimed in claim 1, in which the flap means consists of two planar members integral with the tray and disposed one on each side of the tray and contain scores along which the flaps may be bent in either direction.

7. A carton as claimed in claim 1, in which the flap means consists of two planar members integral with the tray, each of which members contains tabs that are projected through slots, in the tray in one position and the cover in the other position, and are then disposed between the eggs in the cups to aid in the protection of those eggs.

8. A carton for encasing eggs from a collecting station in the country through wholesale and retail markets to

7

the ultimate consumer, comprising a tray of one dozen capacity; integral flap means on said tray adapted to extend under the tray to form a bottom cushion for the tray during shipping; tab means on said flap means for securing the flap means in cushion forming position; a cover for said tray; means for supporting the cover on the tray, said cover being completely removable from the tray, said flap means being reversible to extend over the cover and said tab means securing the flap means over the cover thereby to secure the cover in place on the tray to form a carton.

9. A carton for eggs adapted to be filled and shipped to market by a shipper in a standard egg case and then modified by a jobber for distribution to the retail trade, comprising: a tray, a plurality of egg cups in said tray arranged in parallel rows; posts in the tray extending upwardly therefrom; a wall around the outer edge of the tray; a flange projecting outwardly from said wall and disposed in a plane parallel to and above a plane through the tops of said posts; flap means extending from the side flanges on said tray and extendible under the cups to form a bottom cushion for the tray during shipping; tab means on said flap means for securing the flap

8

means in cushion forming position; a cover; inverted cups in said cover registered with the cups in said tray; feet on said cover registered with the posts on the tray; flanged outer walls on the cover registered with the walls on the tray, said feet and cover walls supporting the cover on the tray, said flap means being reversible to extend over the cover and said tab means adapted to hold the flap means thereover to secure the cover in place on the tray thereby to form a carton.

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