Jan. 13, 1942. L. BENOIT 2,270,030

FILLER PACKAGE

Filed Aug. 12, 1938

Fig. 1

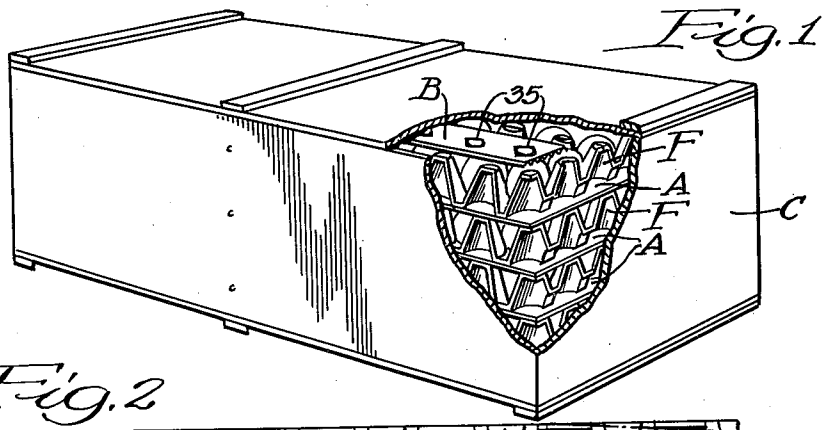


Fig. 2

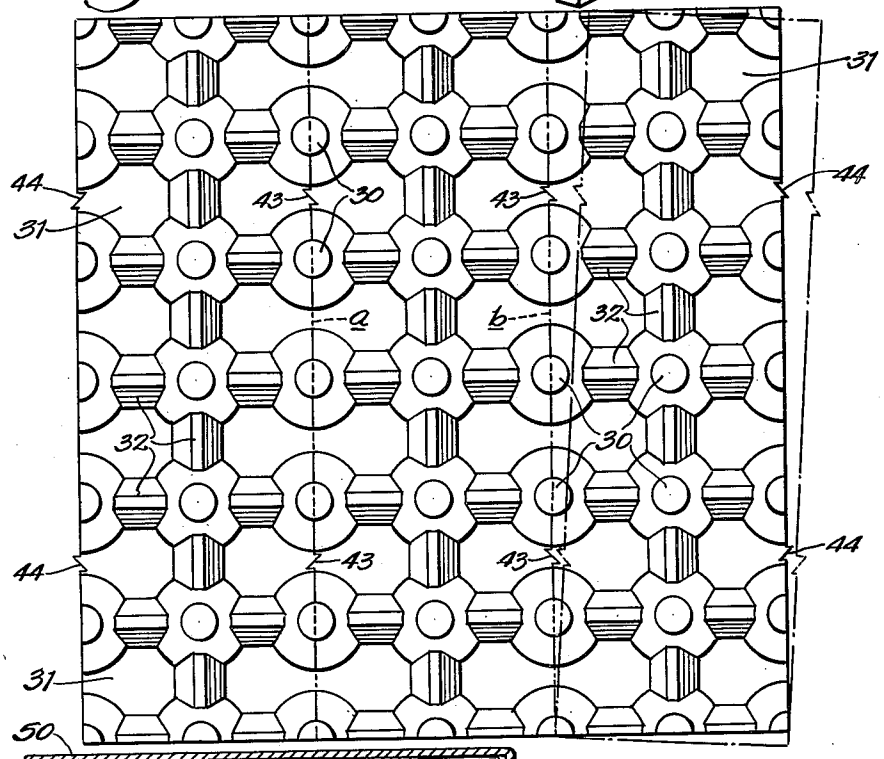
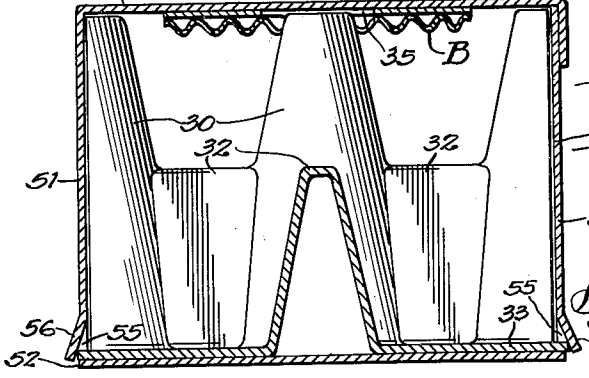


Fig. 3



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FILLER PACKAGE

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2 Claims. (Cl. 217—26.5)

My present invention has to do with certain improvements in a filler package for the accommodation of small articles, usually of a fragile nature, such as eggs and the like. It is advantageous in numerous respects. The parts entering into the present invention are few, simple and inexpensive. These same parts are also useable for bulk shipments prior to final packaging, and but a single filling operation is required, thereby reducing cost and handling operations to a minimum. The protection afforded by the present filler package is also very substantial. As part of each package, I provide an enclosure or wrapper having means which automatically locks with a holder that is assembled therewith. Accordingly, from the many standpoints of low cost, ease in handling, and enhanced protection, the present filler package, now to be described, has important advantages. The features of invention claimed herein were first disclosed in my application entitled "Filler package," filed August 10, 1935, under Serial No. 35,660, now Patent No. 2,082,564, dated June 1, 1937.

A suggestive exemplification of my invention is set forth in the accompanying drawing in the manner following:

Figure 1 is a perspective view of an egg case partly broken away to exhibit within the case several tiers of fillers and flats with eggs accommodated therebetween;

Fig. 2 is a top plan view of one of the fillers before severance into holders of package size; and

Fig. 3 is a transverse section through one of the filler packages.

In the ensuing description the word "case" will be used to designate a large box, such as is commonly employed for the reception of thirty dozen eggs or so which are individually contained in fillers arranged in tiers with flats therebetween. The term "filler," as used herein, refers to a structure having multiple cells, each for the accommodation of a single article. Such fillers are of large size, with capacity for, say, three dozen articles, and are commonly used for the packing of eggs in a case. Similar structures, tray-like in form, but of reduced capacity (usually one dozen) will be referred to herein as "holders," the cells thereof being arranged either 2 x 6 or 3 x 4. The term "enclosure" will be used to indicate a tube, wrapper or carton within which the holder is assembled for delivery to the consumer. The term "filler package" will describe the combined holder and enclosure. By noting the distinctions between these several terms, as used throughout the present specifications and claims, a clear understanding of my invention will be gained. Also in the succeeding description, I shall use the term "eggs" in typifying any small fragile article suitable for reception in the filler package of this invention.

The case C of Fig. 1 is shown as accommodating a series of flats A with intervening fillers F arranged in tiers, all as is usual practice. These fillers, for convenience in construction and handling, may be of one-piece construction, molded by preference from a pulp composition. The flats may conveniently be formed of a cushioned board, such as corrugated paper board. Each flat and filler is desirably of a size which will extend across one-half of the case which is separated from the adjacent half by a vertical partition.

Referring particularly to Figs. 2 and 3, each filler is shown as made up of a number of conical pillars **30** arranged in rows which cross each other. Each side edge of such a filler terminates in a plane which desirably extends through the axes of the several pillars which are comprised in a single row. Between these pillars are cells or pockets **31** separated from each other both by the pillars and by walls **32** in the form of webs which extend downwardly to join with a floor **33** at the base of the filler. The height of the pillars is desirably such that their tops which are flat will extend slightly above the upper ends of the eggs which are accommodated within the cells. The webs which interconnect the pillars are also made up of spaced walls which converge toward the top, and the cells are in the form of conical cups with the small ends down. Such a construction lends itself to nesting, so that only a minimum of space is required for storage or shipment.

When fitted into a case, and arranged in tiers with intervening flats, the tops of the pillars are adapted to extend through openings **35** which are provided in certain pads B each of which is so dimensioned as to overlie a dozen or so of cells. These pads may conveniently be formed of corrugated paper board. Their presence at the top of the filler, in flush relation therewith, serves to protect the upper ends of the eggs contained within the filler cells from shocks delivered from above.

The fillers are, by preference, preformed with lines of severability by which to facilitate their being separated into holders of reduced capacity suitable for assembly with an enclosure, such as

a tube, carton, wrapper, or the like, to form therewith a filler package. For this purpose, I provide through one or more rows of the pillars certain severance lines *a* and *b* produced by scoring, perforating, slitting, or other weakening of the material, the effect of which is to facilitate divisibility of a filler into two or more holders adapted to accommodate perhaps one dozen eggs each. Desirably two such lines of severance are provided on each filler, as indicated in Fig. 2, the resulting holders being then of 2 x 6 size.

Each line of severance is characterized by a pair of spaced oppositely facing offsets **43**, angular by preference, to provide transverse end shoulders. Similar offsets **44** are provided along the filler edges which lie parallel with and proximate to the lines of severance referred to. These offsets in each case are desirably formed as lateral extensions of the filler floor so as to present their points slightly beyond the plane defined by the sides of the filler.

So much for the construction of the filler itself which may readily be severed into two or more holders having cells 2 x 6 or 3 x 4. Each such holder is complete in itself in that it comprises a plurality of cells each accommodating a single article. Inasmuch as the lines of severance extend medially through the angular offsets **43**, the resulting formations are reversely disposed ratchet teeth upon opposite edges of the holder. Each holder is, furthermore, characterized by one or more rows of conical pillars extending between adjacent rows of cells, the upper ends of these pillars being receivable within the pad openings so as to sustain the pads at an elevation which about coincides with the pillar tops. This mounting of each pad upon a plurality of pillars serves, furthermore, to center the pad correctly over two or more rows of cells where it remains locked against displacement.

In practice, at a collecting point eggs may be graded and then packed into cases which are equipped with fillers of the kind herein described. Pads may optionally be positioned upon a filler, then a flat, then another filler, then more pads, etc. Inasmuch as the vertical height of the fillers is substantially the same as now employed for multi-piece egg fillers, and inasmuch as the pads, if used at that time, are so disposed as not to project above the top plane of the fillers, the case will have capacity for the usual number of eggs withal affording greater protection thereto.

At a distributing point the cases are opened and the eggs removed. In doing this each filler is lifted out, and, without disturbing the eggs, the filler is severed along the preformed lines of separation into two or more holders. In this operation, the pads, if previously inserted, remain in place by reason of their interlock with the pillar tops; if not previously used, the pads are then arranged in place, one with each holder. Each pad and holder combination is then ready for assembly with an enclosure of appropriate kind. The holder is a self-contained unit, in that it provides for the eggs a cellular load-sustaining tray, complete in itself, and capable of being handled as a unit. In the process of transformation from a filler to a holder the eggs are not touched, thereby dispensing with a handling or refilling operation which is now commonly practiced.

An enclosure E which is suitable for the present filler is illustrated in Fig. 3. As shown, it comprises an open-ended rectangular tube having a top **50**, side walls **51**, and a bottom **52**. The two side walls are each provided, near the bottom edges, with a U-shaped incision **55** defining a flap **56** which may yield outwardly. The spacing of these incisions on each wall should correspond with that of the teeth on the holder.

The holder, together with its associated pad, is adapted to be received by an endwise sliding motion within such an enclosure to provide a filler package. In this assembly operation the forward pair of ratchet teeth advance freely past the first incisions in the enclosure. The slant of the teeth may be such as to avoid all interference at this point. When the second pair of teeth reach a position opposite the same incisions, their shoulders will engage therewith to prevent further forward movement of the holder within the enclosure. Simultaneously, the other pair of teeth engage with the remaining incisions in the enclosure, so that reverse movement of the holder is prevented. The action of these two sets of interlocks is automatic. The flaps **56** need not be removed, but may be left in their normal planes where they are free to yield outwardly in response to engagement from the holder teeth.

The filler package thus provided affords complete protection for the eggs contained within its several cells. By reason of the suspended support afforded to the eggs, there is protection from shocks proceeding from below. Similar protection is afforded at the sides by the spaced double-walls lying to the outside of the eggs. At the top, where protection has usually been deficient, the interlocked pad which extends over each cell furnishes ample reinforcement. Accordingly, such a filler package, complete with contents, is well adapted for handling either as a single unit or with other like units when packed within a case.

The filler package of my invention, as will now be apparent, is very simple in construction and operation. The filler is designed for double duty, once in the case before severance and again after severance when its separated parts serve as holders. Because of its tray-like form, and its ability to sustain the load for which it is intended, it may be used independently of an enclosure, although for purposes of protection, particularly in handling or shipping, it is desirable that the holder be assembled with an appropriate enclosure. The interlock which I have provided is one which requires no bending or yielding on the part of the element which projects from the holder. If necessary, the entire holder may be sprung in slightly to assist in moving the projecting element to its locking position.

The holder itself differs from previous constructions, in that the walls which interconnect the pillars, as well as the outside rows of pillars, join with the floor, the edges of which lie in planes about coincident with the sides and ends of the holder. This is advantageous because of the greater area of the base for the holder, whereby tipping is rendered difficult, and because the side and end walls continue downwardly to join with the base at its edges, thereby adding to the protection which is provided for the eggs contained within the holder cells. Shocks proceeding from the sides or from the top or bottom are effectively resisted by this continuity in the wall structure of the pillars, the opposite ends of which terminate adjacent the top and bottom of a surrounding enclosure. In addition, the pillars are extended upwardly for a distance

slightly beyond the corresponding ends of the eggs or other articles to be accommodated within the cells, thereby supporting away from the eggs the top wall of the enclosure which rests upon the ends of the pillars. The cushion pads do not occupy any space required for the eggs, but remain positioned thereabove, this being a consequence of the extra height of the pillars.

The material of which the enclosure is made may be a light paper board. The enclosure serves very little purpose as a retaining element since the holder, together with its cushion pad, acts effectively to keep the eggs in place so long as the holder is not inverted. Accordingly, a light weight board is all that is required for the enclosure. The interlock between the holder and enclosure is one which requires no bending of a projecting element. The walls of the enclosure may give, as required, to permit the locking elements or teeth of the holder to reach their final position. In so doing, the locking elements are not bent or displaced in any way. This is of advantage because the resulting lock is more certain and does not require the use of a paper board which is of substantial weight.

In order that the filler may provide potential holders in the manner explained, it is desirable that the filler be of rectangular shape with partial pillars on each side the edges of which are extended in flush relation in a vertical plane; also that the line of severance which extends between two of the opposite sides of the filler proceed straight thereacross in a plane which will bisect the several pillars in a single row, whereby, upon separation of the filler into two holders, such pillars will be diametrically divided to define one holder side whose edges are extended flush in a vertical plane. With such a construction the severed holder will present four sides each alike in that the several edges which form these sides are extended in flush relation in a vertical plane which bisects an outside row of pillars. Uniformity in the structure may thereby be attained so as to facilitate use of the holder within an enclosure of appropriate character where the flush edges of each side fit snugly, if desired, against the inner face of the enclosure so as to improve the appearance of the package. The enclosure itself, as already pointed out, may be of light board or paper and its use is primarily to protect the eggs from contact with extraneous objects rather than from shocks which the cellular structure itself is amply sufficient to withstand.

The pad which may be fitted over the tops of the fillers in overlying relation to the cells, when applied to the pillars in a row through which the severance line extends, will serve to maintain the filler against separation. This is advantageous in the event that the severance line should leave the filler so weak that separation starts before intended, or even in cases where complete separation has taken place and it is desired later to reassemble and lock the holders in their original relationship. The pad will serve admirably as a lock under these conditions, and its use may be found advantageous on this account alone.

The various features of novelty which characterize my invention have been heretofore explained in detail, a summary thereof being added hereto in the following claims.

I claim:

1. A cellular holder open at the top and having a plurality of rows of upwardly tapering pillars having flattened upper ends, an elongated cushion pad having a row of apertures intermediate its opposed longitudinal edges frictionally receiving the upper end portions of the pillars of one row thereof and with the upper surface of the pad flush with the surfaces of said flattened upper ends, the opposite edge portions of the pad being freely suspended over the cells in said holder and in spaced relation to adjacent rows of pillars.

2. A cellular load-sustaining filler comprising a sheet-like base or floor, a plurality of rows of pillars projecting upwardly from the base, reinforcing walls uniting lower portions of the pillars and the base and defining with said pillars a plurality of depending cells, the edges of said base being provided with one or more interlock projections in the plane of the base, and a severance line extending through the filler in parallelism with said edges for providing a plurality of holders upon severance of the filler, said severance line being off-set in correspondence with the profile of said projections for providing like projections on the holders upon severance of said filler.

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