Aug. 22, 1933. J. L. COYLE 1,923,774

CARTON FOR EGGS AND THE LIKE

Filed Feb. 11, 1931

Fig. 1

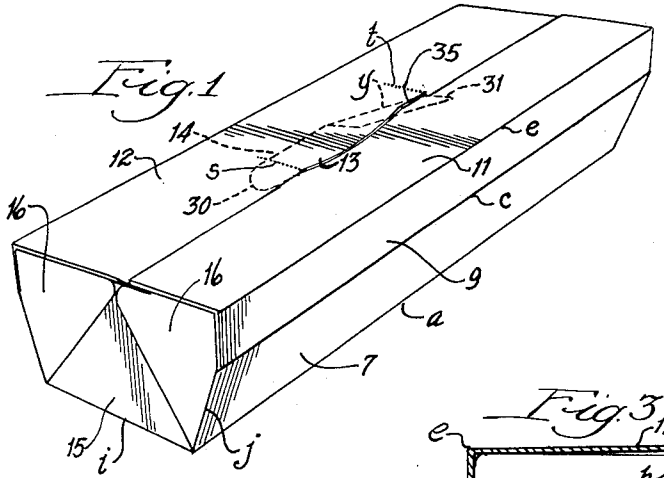


Fig. 2

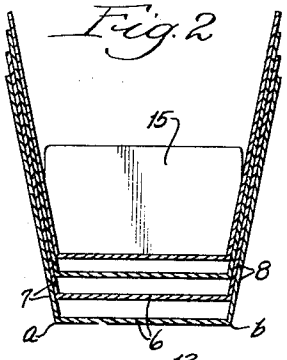


Fig. 3

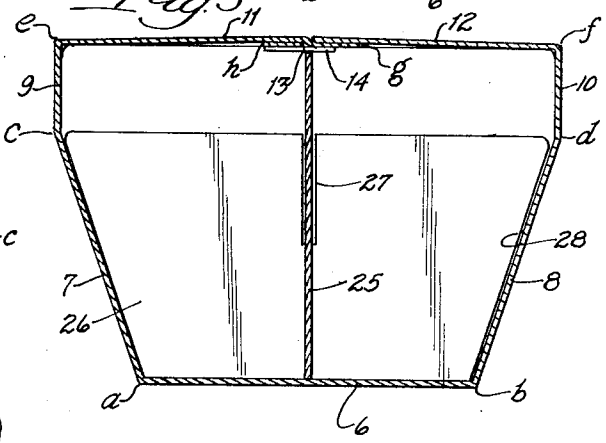


Fig. 4

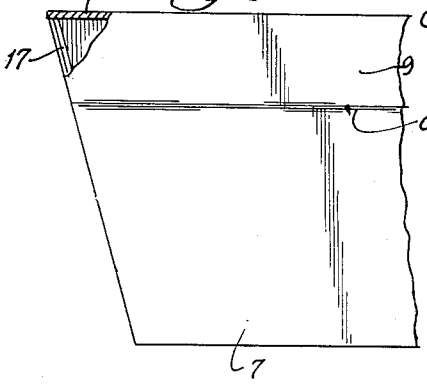


Fig. 5

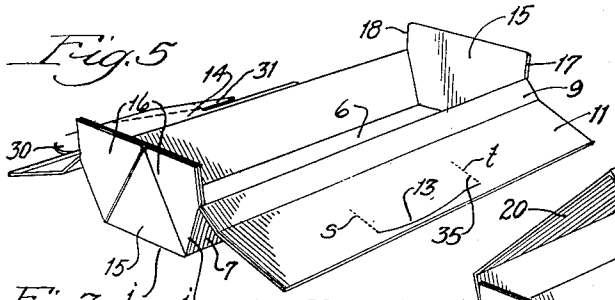


Fig. 6

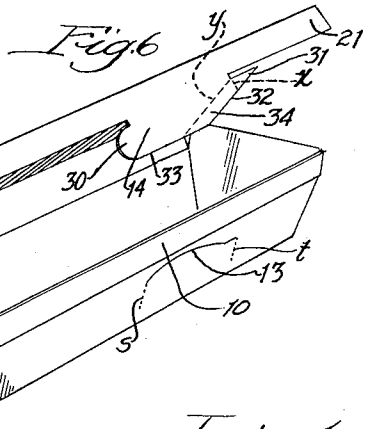


Fig. 7

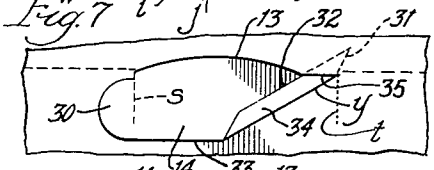
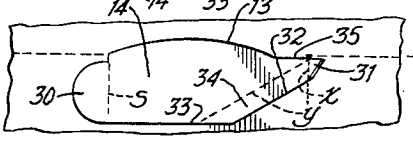


Fig. 8



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CARTON FOR EGGS AND THE LIKE

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Application February 11, 1931, Serial No. 514,922, and in Canada March 26, 1930

6 Claims. (Cl. 229—45)

This invention relates to a carton having advantages in the direction of simplicity, strength and compactness in use. The present improvements have to do with features by which the carton may be produced expeditiously at small expense, be nested with others for purposes of shipment or storage, be reinforced to withstand external forces, be maintained with its covers open for the convenient reception of eggs or other commodities, and be locked with its covers closed in a way to afford the desired protection.

A suggestive embodiment of my invention is disclosed in the accompanying drawing in the manner following:

Figure 1 is a view in perspective of the carton with its covers locked in closed position;

Fig. 2 is a transverse section through a plurality of such cartons nested together as for shipping or storage;

Fig. 3 which is an enlarged transverse section through the carton shows the disposition of a filler therewithin;

Fig. 4 is a fragmentary elevational view of one carton side adjacent an end thereof;

Fig. 5 which is a perspective view shows the covers opened widely to expose the carton interior;

Fig. 6 which is also a perspective view shows a carton having a modified form of cover; and

Figs. 7 and 8 which are details in elevation on an enlarged scale show the cover lock from the inside of the carton in two different positions of adjustment.

With a view to producing at a minimum of expense a carton having the characteristics already noted, I utilize a sheet of fibrous material blanked in proper form for bending along parallel lines *a*, *b*, to provide therebetween a bottom 6, and other bend lines *c*, *d* which define with the bend lines adjacent the bottom outwardly slanting sides 7 and 8, respectively, and still other bend lines *e* and *f* which define with the bend lines *c* and *d*, upper side extensions 9 and 10, respectively, extending substantially vertically, the opposite blank edges *g* and *h* defining with the bend lines *e* and *f* cover sections 11 and 12, respectively. One of these cover sections, near its free edge, may be provided with a slit 13 through which is insertable a locking tongue 14 which protrudes from the corresponding edge of the other cover section. As by means of this tongue and slit, provision is made for locking two cover sections in place over the top of the carton.

Outwardly inclined end walls for the carton are provided in each instance by turning up an extension 15 along a bend line *i* which is disposed transversely between the bend lines *a* and *b*, and securing this end extension slantingly in place as by flaps 16 of generally triangular shape which are extended laterally from the ends of the side walls 7 at bend lines *j*. The flaps so lapping the end extensions may be secured thereto by an adhesive, stitching, staples, or any other desired means of connection.

The carton so constructed presents a rigid structure in that the bottom, and slanting sides and ends occupy a permanently fixed relationship. The covers, however, when opened up, may be bent back along the lines *c* and *d*, (see Fig. 5). Initially these covers will flare outwardly in line with the slanting sides, as indicated in Fig. 2, whereby to facilitate nesting of the cartons. The end walls, as suggested, are also slanted outwardly for the same reason. When the covers are closed over the carton, the blank is required to bend along the lines *c* and *d* through a slight angle, and again through an angle of substantially 90° along the lines *e* and *f* so as to provide a protecting closure for the carton. In this position the side extensions 9 and 10 abut upper vertical extensions 17 and 18 of the end walls.

In the embodiment shown in Fig. 6 exactly the same construction appears with the exception of the cover which here consists of a single section 20 adapted to extend over the entire carton, there being a depending flange 21 along its free edge which laps past the proximate side extension 10. A locking tongue 14 extended laterally from the cover flange is adapted for insertion within a slit 13 formed in the side whereby to secure the cover down in place.

A carton having these characteristics is adapted to receive a filler of conventional construction having a central longitudinal partition 25 slotted in the usual way for interfitting with a plurality of cross walls 26 each of which has a central slot 27 extending downwardly from its upper edge. Such a construction provides a plurality of cells in each of which may be individually accommodated an egg or other desired article. The end edges of the partition and cross walls, the latter being designated by the numeral 28, may be slanted in conformity with the inclined side and end walls of the carton so as to fit snugly therewithin.

By the construction described I provide a carton which may be made of material which is relatively inexpensive and weak, but which,

nevertheless, because of the peculiarities of its construction, is endowed with all the strength necessary for the service of its intended purpose. This is due in part to the maintained angle along the lines *c* and *d* between the inclined and vertical side sections of the carton. These bends present in effect a reinforcement along the carton sides capable of withstanding distortion resulting from an externally applied force without assistance from the contained filler which is ordinarily weak. This reinforcement is enhanced by the connection between the cover sections which is such that one may not be forced past the other beyond the limit determined by the distance to which the locking tongues or hooks may pass into the slots forming the cooperating locking element.

As an added feature of advantage, the slanting or diverging side and end walls make for ease in the insertion of the fillers due to the fact that it is not necessary to accurately locate or center the fillers with respect to the cartons previous to the insertion of the former within the latter. The operation, therefore, of assembling the fillers within the cartons so constructed, that is, cartons having diverging side and end walls, and fillers having components with end edges also diverging in conformity therewith, is rendered easier and more expeditious of accomplishment.

A further feature of importance is the normal outward inclination of the cover or covers which extend upwardly from the carton side or sides. The lines of bend are in practice preformed as by scoring the blank, but the actual bending along the lines *c, d, e, f* may be deferred until after operation of filling is completed. By proceeding this way the side extension or extensions which eventually become the cover or covers are maintained in alignment with the slanting sides, thereby rendering possible the easy nesting and filling already mentioned.

The locking tongues 14 are of peculiar formation in that they co-operate with the associated slits to secure the cover in closed position either positively or frictionally, according as they are manipulated. This is rendered possible by providing for separate adjustments of certain foldable parts. As shown, the tongues in question are each formed at one end with a fixed extension 30, preferably rounded as appears best in Figs. 7 and 8. The other end of each tongue which is oppositely extended terminates in a pointed tab 31 adapted to be folded back upon the tongue along a bend line *x* which is disposed substantially transversely thereof in the plane of the base of the tab. The tongue in its entirety is insertable through the associated slit, the length of which is just sufficient to permit of such movement when the tab is folded back in this manner. Due to the tension inherent in the fibrous material of which the carton is desirably made, the tab will tend to spring out again after passing through the slit, thereby establishing a positive lock, as shown clearly in Fig. 8. The tongue end which carries the tab is defined in part by an oblique edge 32 having an angle such that this edge extends back an appreciable distance toward the opposite end of the tongue at its point of intersection with the free edge 33 thereof. In substantial parallelism with this oblique edge is a bend line *y* which meets with the base of the tab at the end of its bend line *x* proximate to the free edge of the carton cover. The tongue end thus defined by the oblique bend line *y* constitutes a flap 34 adapted to be folded back against the tongue. With the parts so adjusted the tongue is insertable through the slit to occupy the position indicated in Fig. 7. It will be noted, however, that the tab here remains in the same plane with the flap, and is projected past the proximate end of the slit so as to be prevented from passing therethrough. In other words, with the flap folded, but not the tab, the tongue, except for the tab, may pass through the slit. As the flap when so folded tends to spring back to its original position, it manifestly presses against the wall portions adjacent the slit to establish therewith a frictional connection.

For convenience in operation, I prefer that the slit be bowed outwardly from end to end as shown, also that the fixed tongue end be rounded to facilitate the in and out movements of the tongue. Such details as these, also the proportions and angles of the several tongue parts, may obviously be varied according as is found most desirable by exerience. The features of importance are the duplex adjustments permitting (1) the tongue without any bending at all to be slipped part way into the slit to loosely hold the carton cover in closed position, (2) the flap only to be folded under compression whereby the tongue, except for the tab, is insertable through the slit to establish a frictional connection in which is utilized the reactive expansive force of the material itself, and (3) the tab only to be folded under compression whereby the tongue in its entirety is insertable through the slit, following which the tab springs back sufficiently to establish a positive lock with the wall portions adjacent the slit. By this construction I provide a lock, adaptable to carton covers and other like conditions, which dispenses with any supplementary parts or operations. For example, a carton once fitted with eggs ready for the consumer need not be sealed, but instead be secured by the positive lock adjustment herein described. The breaking of this lock will require a tearing of the material (usually the tab or the slit end) which holds the parts together in a concealed manner, and this the consumer will have no difficulty in doing when he is prepared finally to open the carton. Thereafter, as occasion may require, the locking tongue may still be used by folding the flap to secure the cover down releasably in the manner already described.

As shown, the slit 13 terminates in a straight portion 35 at its end adjacent the tab 31. By so forming the slit with its end 35 extended in line with the two ends of the slit bow, it is easier to manipulate the tab to occupy either of the positions shown in Figs. 7 and 8, inasmuch as it swings upon the line *x* which is transverse to the straight end portion of the slit. I may also provide short weakened or scored lines *s* and *t* extending in parallelism from opposite ends of the slit. The area between such lines and the slit itself constitutes a pre-arranged section which may be torn along such lines whenever it is desired to break the lock, as already suggested.

I claim:

1. In combination with a structure having two walls in one of which is a slit, a tongue extended from one wall for insertion through the slit of the other, and duplex means having parts in common on the tongue foldable in either of two ways and engageable with wall portions adjacent the slit adapted to establish selectively a positive or frictional lock therewith.

2. In combination with a structure having two walls in one of which is a slit, a tongue extended from one wall for insertion through the slit of the other, means extended from opposite ends of the tongue beyond the ends of the slit, one of said means being foldable against the tension of the wall material in either of two ways in one of which it may pass through the slit to engage with adjacent wall portions whereby to establish a positive lock therewith, and in the other of which it remains outside of the slit while permitting the extended means at the opposite tongue end to pass therethrough.

3. In combination with a structure having two walls in one of which is a slit, a tongue extended from one wall for insertion through the slit of the other, means extended from opposite ends of the tongue beyond the ends of the slit, there being bend lines provided for one of said means whereby it may fold in either of two ways, one relatively obliquely of the tongue and the other relatively transversely thereof permitting said means to fold against the tension of the wall material either back against the tongue or back against the wall from which the tongue is extended, the said means in the first position remaining extended past the proximate end of the slit whereby to be prevented from passing therethrough, and in the second position being insertable through the slit to spring out after passing therethrough whereby to co-operate with the means extended from the opposite tongue end to establish a positive lock with the wall portions adjacent the slit.

4. In combination with a structure having two walls in one of which is a slit, a tongue extended from one wall for insertion through the slit of the other, a fixed extension projecting beyond one end of the tongue and a foldable tab extended beyond the opposite tongue end and the overall distance between the two end extensions exceeding the length of the slit through which the tongue is to be inserted, and means defining two lines of bend along one of which the tab is foldable back against the tongue to permit complete insertion of the latter through the slit and along the other of which the tongue, all except the tab, is insertable therethrough.

5. In combination with a structure having two walls in one of which is a slit, a tongue extended from one wall for insertion through the slit of the other, means extended from opposite ends of the tongue beyond the ends of the slit, one of said means being in the form of a tab foldable back into a plane adjacent that of the tongue along either of two bend lines in one of which the tab remains extended out beyond the tongue end and in the other of which it is brought in relative to the tongue end.

6. In combination with a structure having two walls in one of which is a slit, a tongue extended from one wall for insertion through the slit of the other, means extended from opposite ends of the tongue beyond the ends of the slit, one of said means being in the form of a tongue foldable back into a plane adjacent that of the tongue along either of two bend lines, one transversely of the tongue and the other obliquely thereof, the tab lying adjacent the tongue in the former position and in the latter adjacent the wall from which the tongue is extended.

JOSEPH L. COYLE.