July 12, 1955 G. C. PAXTON 2,712,894

SHIPPING BOX

Filed Aug. 16, 1954

Fig. 1

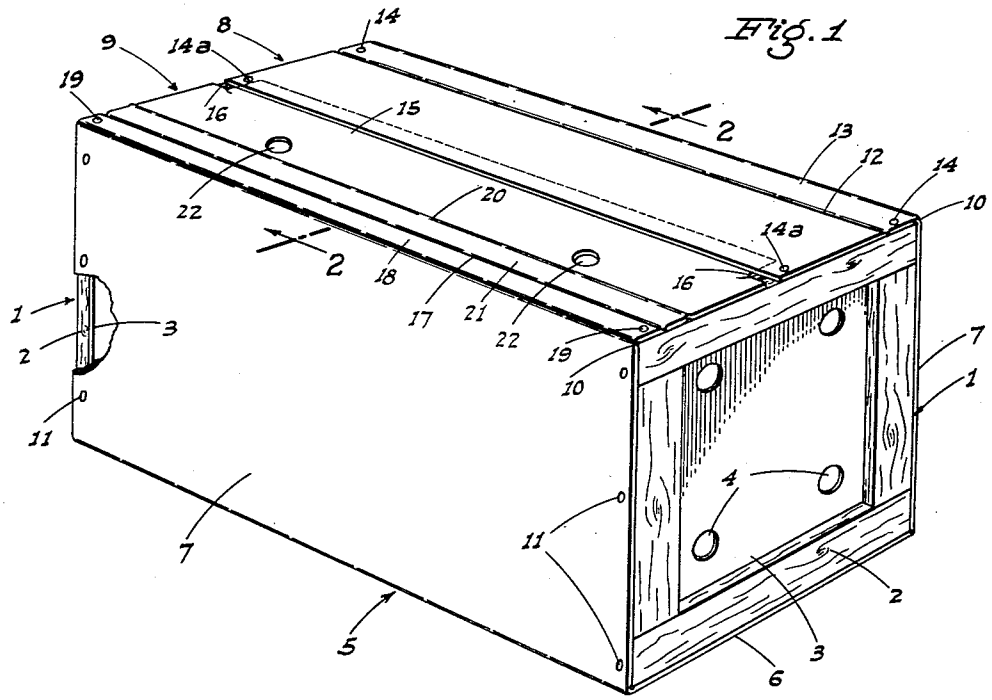


Fig. 2

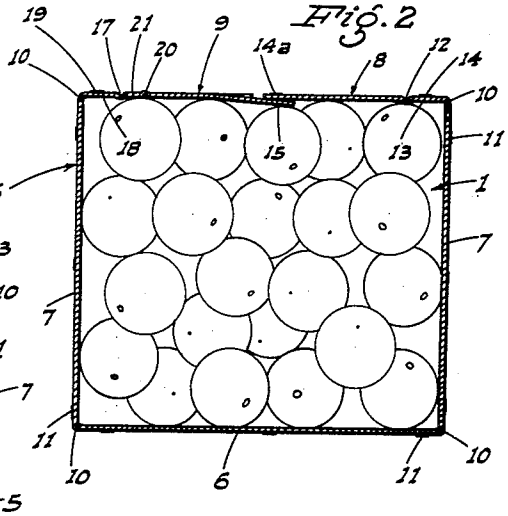
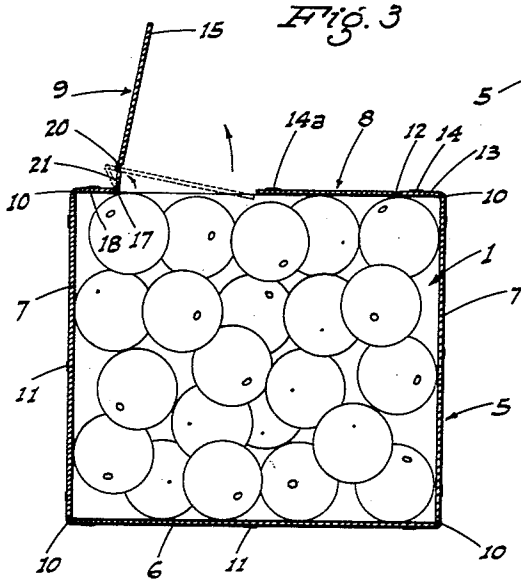


Fig. 3



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SHIPPING BOX

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4 Claims. (Cl. 229—44)

This invention relates to shipping boxes, particularly for perishable produce or other contents which may require inspection before the ultimate destination of the box is reached.

A major object of the invention is to provide a shipping box for the purpose having opposed half-lid sections in the form of flaps extending toward each other from the sides of the box and arranged to overlap each other at adjacent ends; the overlapped flap being so mounted in connection with the corresponding side of the box that it may be withdrawn from lapped engagement with the other flap without removal of any lid hold-down nails, and without distortion of said overlapped flap such as would prevent proper reengagement of such flap with the other flap.

The lid flaps may thus be made of relatively stiff and unbendable material so that the box when filled may be inverted without the pressure of the contents forcing the lid open and without the need of any nails being used to secure the overlapped flap in its proper box-closing position.

The above features are very desirable in a shipping box, as a good percentage of all boxes are opened for inspection at the auction markets, and at times a certain amount of repacking must be done when decayed produce is found in the boxes. With my particular box-lid construction, as herein described, the above operations may be carried out easily and expeditiously, without any nail pulling or renailing being necessary, and without any parts of the box being broken or distorted.

Another object of the invention is to provide a shipping box which is designed for ease and economy of manufacture.

Still another object of the invention is to provide a practical and reliable shipping box, and one which will be exceedingly effective for the purpose for which it is designed.

These objects are accomplished by means of such structure and relative arrangement of parts as will fully appear by a perusal of the following specification and claims.

In the drawings:

Fig. 1 is a perspective view of the improved box with the lid flaps closed and secured.

Fig. 2 is a cross section of the box on line 2—2 of Fig. 1; the box being shown filled.

Fig. 3 is a similar view, but showing the normally overlapped lid flap as lifted or opened clear of the lapping and relatively immovable lid-flap.

Referring now more particularly to the drawings and to the characters of reference marked thereon, the box includes rigid ends 1 each comprising a rectangular wood frame 2 and a panel 3 of veneer or other composite material over the inner face of the frame area; the panel being preferably perforated, as at 4, for ventilating purposes.

The bottom, sides, and lid portions of the box are formed as an integral unit 5 of relatively stiff material,

such as conventional corrugated board in which the corrugations extend lengthwise of the box. This unit extends between and connects the ends 1, and comprises a bottom 6, sides 7, a half-lid flap 8, and a cooperating half-lid flap, indicated generally at 9.

Before mounting the unit 5 on the ends 1 said unit is suitably scored, as at 10, to match the corners of the ends 1 and enable said unit to be readily bent to place.

The sides and bottom are then secured to the ends 1 by nails 11. The lid flap 8 is scored, as at 12, relatively close to its corner scoring so as to provide a narrow top strip 13 on said lid flap, between the scorings, which may be nailed to the ends 1, as shown at 14, while leaving the main portion of said lid flap free for opening and closing movement about the score 12 as a hinge. The lid flap 8 as a whole is of a width to extend substantially half way across the box, and after the box is filled said flap is secured to the box ends by a nail 14*a* at each inner corner of the lid flap, as shown in Fig. 1.

The cooperating lid flap 9 is of an over-all width to provide a tongue 15 of predetermined width arranged to underlap the flap 8 when the lid flaps are in a box closing position, as shown in Fig. 2. The tongue is cut back at its ends, as shown at 16 in Fig. 1, so that it may be moved to or from cooperating relation with the flap 8 without interfering with the corner nails 14*a* of said flap.

The lid flap 9 is formed with a longitudinal hinge-score 17 relatively close to the adjacent corner score 10 to provide a narrow box-end engaging strip 18 which is permanently secured to the box ends by nails 19. In addition, the flap 9 is formed with a longitudinal hinge-score 20 inwardly of, but relatively close to, score 17 to leave a narrow web 21 between the scores, of lesser width than the tongue 15. The main portion of the lid flap 9 is provided with openings 22 for finger entry to manipulate and lift said lid flap, as well as for ventilation purposes.

By reason of this arrangement, the lid as a whole, when fully closed and without the use of any nails in the flap 9 other than the nails 19 at the outer corners thereof, resists opening movement even by pressure exerted from within the box by the contents thereof upon inversion of the box.

If, however, it is desired to open the box for inspection or other purposes, it is only necessary to engage the fingers or lifting elements in the openings 22 and exert a combined outward and upward pull on the flap 9 at the hinge-score 20 to withdraw tongue 15 from under the lid flap 8, and then lift the lid flap 9 to a wide open position.

Due to the fact that the width of the web 21 is less than that of the tongue 15, said web must be swung on the double hinge formed by the scores 17 and 20, through an arc greater than 90°, as indicated in Fig. 3. This is a feature which prevents the above mentioned internal pressure from disengaging lid flap 9 from lid flap 8, since swinging of the web 21 to a right angle position relative to the top of the box is not sufficient to release the tongue from under the lid flap 8.

The openings 22 in the lip flap 9 are preferably close to score 20, as shown in Fig. 1, so that a more advantageous swinging movement may be imparted to the web 21 than would otherwise be the case.

The scorings 17 and 20 are also arranged relative to each other and to the adjacent parts of the lid flap which they connect, in a manner to facilitate the hinging movement of the web 21 and the main portion of the lid flap 9 in the proper direction.

The notched-end tongue provides a double lid thickness along the central portion of the box between the ends 1, giving added strength to the lid as a whole,

while enabling the nails **14***a* to be close to the inner edge of the lid flap **8** so that the overlapped portion thereof is stiffened against upward deflection.

From the foregoing description it will be readily seen that there has been provided such a shipping box as will substantially fulfill the objects of the invention, as set forth herein.

While this specification sets forth in detail the present and preferred construction of the shipping box, still in practice such deviations therefrom may be resorted to as do not form a departure from the spirit of the invention, as defined by the appended claims.

Having thus described the invention, the following is claimed as new and useful, and upon which Letters Patent are desired:

1. In a shipping box which includes end members, substantially rigid longitudinal lid-forming flaps overlying the end members, means to secure one flap on the end members to prevent upward movement of said flap, a tongue rigid with and projecting from the laterally inner edge of the other flap to underlap the first named flap when said other flap is in a box closing position, and longitudinal laterally spaced hinge-forming elements in the other flap, the outermost of which elements mounts said other flap on the box adjacent the corresponding side thereof; the lateral space between the hinge elements forming a web arranged to enable the tongue, upon upward swinging of the web, to be first pulled out from under the one flap and the other flap to be then swung up to an open position.

2. A structure, as in claim 1, in which the overlapped portion of the tongue is of a predetermined width and the width of the web is less than that of the tongue.

3. A structure, as in claim 1, in which said other flap is provided with openings for engagement with flap manipulating and lifting means.

4. A structure, as in claim 3, in which said openings are disposed adjacent but laterally inward of the web.

References Cited in the file of this patent

UNITED STATES PATENTS

573,782	Green	Dec. 22, 1896
1,109,392	Bitler	Sept. 1, 1914
1,970,636	Tanner	Aug. 21, 1934
2,552,643	Mulnix	May 15, 1951
2,666,567	Farrell	Jan. 19, 1954