Feb. 8, 1949. W. K. BRUCKHAUSER 2,460,870

BOX

Filed Nov. 13, 1945

Fig. 1

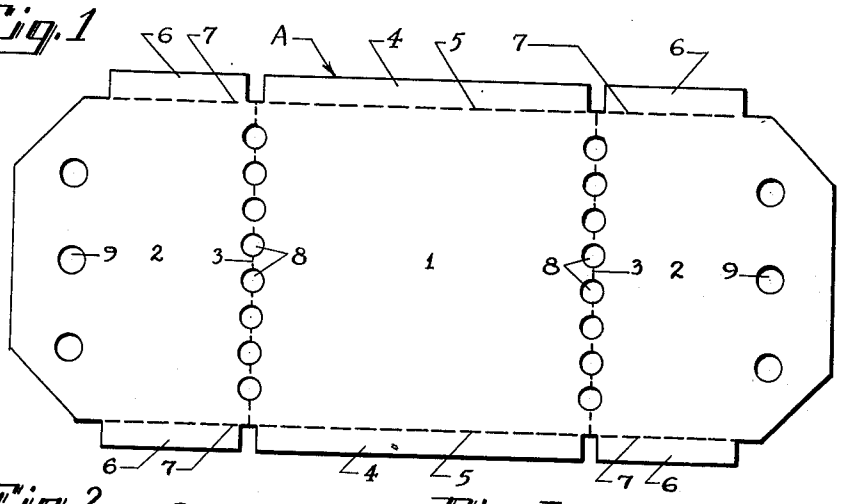


Fig. 2

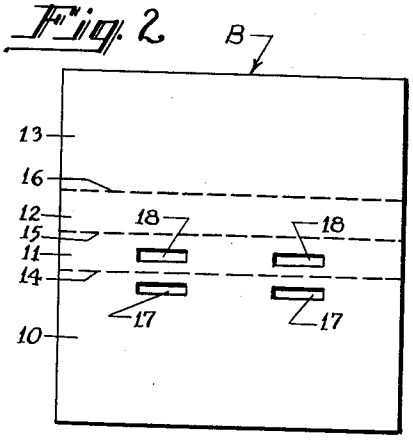


Fig. 3

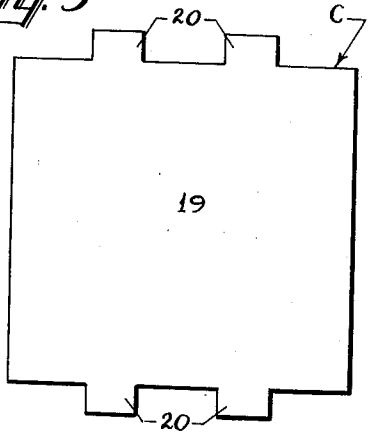


Fig. 4

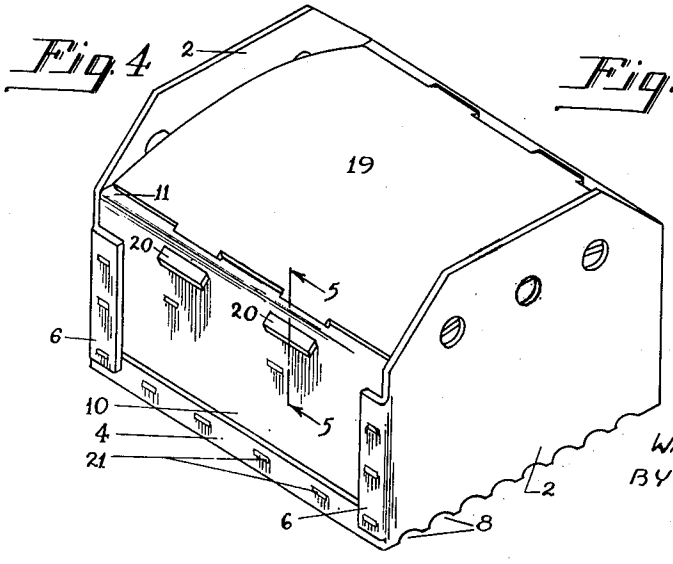
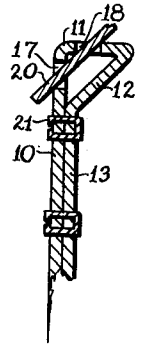


Fig. 5



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BOX

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3 Claims. (Cl. 229—23)

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This invention relates to new and useful improvements in containers, particularly of the type adapted for the packaging of certain fruits.

An object of this invention is to provide a box fabricated of corrugated board or the like for use in the packaging of tomatoes.

A further object of this invention is to provide a box of the type described with a reinforced structure in which the end walls thereof are adapted to receive and securely hold end portions of a removable lid.

A further object of this invention is to provide a box of the type described which may be economically manufactured from readily obtainable materials and which may be satisfactorily employed in place of known forms of wooden crates.

With these and other objects in view, the nature of which will become more apparent, the invention will be more fully understood by reference to the drawings, the accompanying detailed description and the appended claims.

In the drawings:

Fig. 1 is a plan view of the bottom and side wall blank from which the box is formed;

Fig. 2 is a plan view of the end wall blank thereof;

Fig. 3 is a somewhat reduced plan view of a blank for the lid thereof;

Fig. 4 is a perspective view of the assembled box; and

Fig. 5 is a sectional view taken on line 5—5 of Fig. 4.

Referring to the drawings in detail, the present embodiment of the invention comprises a blank A of corrugated board from which is formed a bottom panel 1 and side panels 2, 2 foldable along usual score lines 3. Securing and reinforcing tabs 4 are formed on the ends of the panel 1 and are foldable along the usual score lines 5. Each side panel 2 is provided with securing and reinforcing tabs 6 foldable along score lines 7. A plurality of apertures 8 are provided along the score lines 3 and serve as ventilation holes in the assembled box. Similar apertures 9 may be provided in each side panel 2. It may be noted that the corrugations in the board from which the blank A is formed preferably extend parallel to the scores 5 and 7, as viewed in Fig. 1, in order to provide desirable strength characteristics to the assembled box.

Each end wall for the box is formed from a generally rectangular blank B and consists of a panel 10 adapted to form an outer wall, a panel 11 adapted to form a top end flange in the assembled box, a panel 12 which supports the flange

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panel 11 and joins with an inner reinforcing wall panel 13. Panel 11 is defined by score lines 14 and 15, and the panel 12 is defined by score lines 15 and 16. It may be noted that the corrugations in the board from which the blank B is formed preferably extend laterally, as viewed in Fig. 2, in order to provide the desirable strength characteristics to the assembled box. The panel 10 is provided with a pair of generally rectangular apertures 17 located adjacent the score line 14, and the panel 15 is provided with a similar pair of apertures 18 positioned in alignment with the apertures 17.

The lid or cover C is a rectangular piece 19 of corrugated board or the like having a pair of tabs 20, 20 located on each of two opposite edges and which are adapted to be received into the apertures 17 and 18 of the end wall structure of the assembled box.

In the assembly of the box the end walls are formed from the blank B as indicated in Fig. 5 of the drawings in which the panel 10 forms the outer wall portion, the panel 11 forming an inwardly projecting top edge flange, the panel 12 forming a supporting web for the flange 11, and the panel 13 being positioned against the panel 10 and forming an inner reinforcing wall portion. The upper portion of the panel 10, and the panels 11 and 12 in each end wall thus form in effect a triangularly cross-sectioned girder which serves to strengthen the end walls. Suitable fastening means such as staples 21 may be provided to secure the parts together. The formed end walls of the box are incorporated into the assembly as illustrated in Fig. 4 of the drawings, the whole being secured together as by staples in the areas of tabs 4 and 6. It will be noted that the apertures 17 and 18 together form a channel or passage angularly disposed with respect to the plane of panel 11 and adapted to receive the tabs 20 of the box top 19. The lid 19 is applied to the box by inserting the tabs 20 on one end into the tab-receiving passages of one end wall, then the tabs 20 on the opposite end of the lid are inserted into the corresponding tab-receiving passages of the associated end wall after bowing the lid sufficiently to permit such insertion. The tabs 20 of the lid should be made sufficiently long that when the lid is applied to the box when filled with tomatoes or fruit the resultant upward bulging of the lid will not create such a foreshortening effect on the tabs 20 that they will become disengaged from the end walls. When the lid is in place it will be observed that the tabs 20 exert a considerable leverage on the end walls through contact with

the inner edges of the aperture 18 and upper edge of the aperture 17. This may cause a slight inward bending of the end wall flange portions along approximately the junction line between panels 12 and 13 which is resisted by the resiliency of the box material. Thus a binding force is exerted on the tabs 20 which serves to firmly hold them in position and which also tends to cause an upward bowing or arching of the lid. Therefore it is not necessary to bend or otherwise distort the tabs 20 out of the general plane of the lid in order to secure the lid. It is, of course, obvious that if it is so desired the lid 10 can be so proportioned that its length will cause it to remain bowed when applied to the box after insertion of the tabs 20 into the end wall apertures.

While for the purposes of illustration of the present embodiment of the invention a box has been shown fabricated from several separate blanks, it will be appreciated that a single blank could be employed for the bottom, side and end walls. However, substantial savings of material are effected through use of the separate blanks illustrated and consequently the use of a single blank for the box body is not believed to be desirable.

It is of course to be understood that various details of arrangements and proportions of parts may be modified within the scope of the appended claims.

I claim:

1. A paperboard box comprising a bottom, side walls, end walls, and a removable lid, at least two opposite of said walls being double-ply and consisting of an outer wall portion, a laterally projecting flange portion substantially at right angles to said outer wall, and an inner wall portion depending from said flange, said lid being provided on two opposite edges with tabs extending outwardly in the plane thereof, the flange and outer wall portions of said double-ply walls being provided with apertures located to define downwardly and outwardly extending tab-receiving passages whereby upon application of said lid the tabs thereof may be inserted through said passages and forces applied by edge portions of the material defining said passages against the tabs of said lid will both hold said tabs in position and effect a substantially uniform upward arching of said lid.

2. A paperboard box comprising a bottom, side walls, end walls, and a removable lid, at least two opposite of said walls being double-ply and consisting of an outer wall portion, a laterally projecting flange portion substantially at right angles to said outer wall, and an inner wall portion depending from said flange, said lid being provided on two opposite edges with tabs extending outwardly in the plane thereof, the flange and outer wall portions of said double-ply walls being provided with apertures located to define downwardly and outwardly extending tab-receiving passages whereby upon insertion of the tabs of said lid into said passages said lid and the tabs thereof are forced to assume a substantially uniform upwardly arched configuration and said end walls and flanges are forced to bend slightly inwardly of said box, the natural resiliency of the material of said lid, walls and flanges together exerting a binding force on the tabs thus frictionally securing the tabs within said passages.

3. A paperboard box comprising a bottom, side walls, end walls and a removable lid, at least two opposite of said walls being double ply and consisting of an outer wall portion, a laterally projecting flange portion substantially at right angles to said outer wall, and an inner wall portion depending from said flange and including an angularly disposed panel bent under said flange and terminating in a depending portion disposed in substantial face to face contact with said outer wall portion, the upper part of said outer wall portion, the said flange and the said angularly disposed panel together defining a channel of substantially triangular cross-section, and means for securing together those portions of the outer and inner wall portions which are disposed in substantial face to face contact, said lid being provided on two opposite edges with tabs extending outwardly in the plane thereof, the flange and outer wall portions of said double ply walls being provided with apertures located to define downwardly and outwardly extending tab-receiving passages approximately parallel with said angularly disposed panel whereby upon application of said lid the tabs thereof may be inserted through said passages and forces applied by edge portions of the material defining said passages against the tabs of said lid will both hold said tabs in position and effect a substantially uniform arching of said lid.

WILLIAM K. BRUCKHAUSER.

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