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P. THOMPSON
PACKAGING BOX OR TRAY

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Fig. 1.

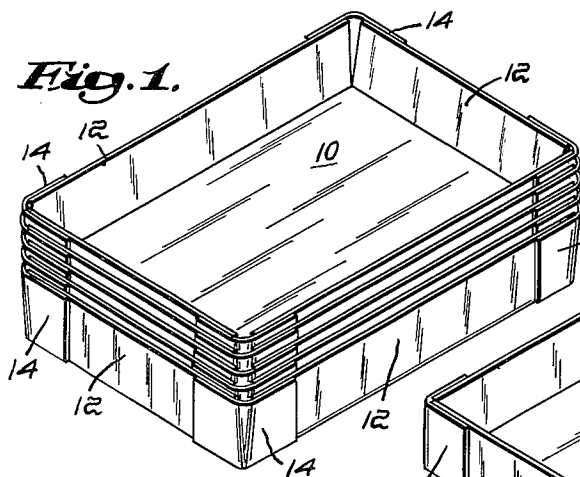


Fig. 2.

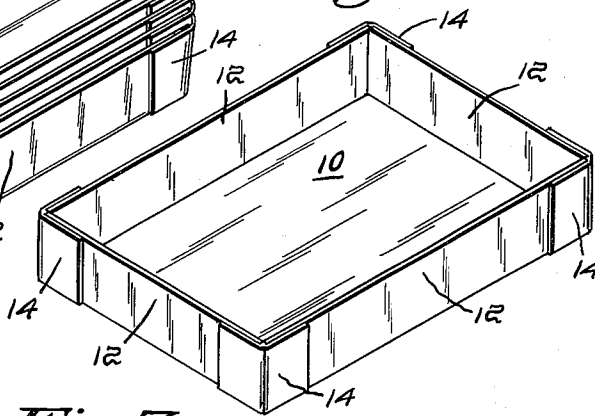


Fig. 3.

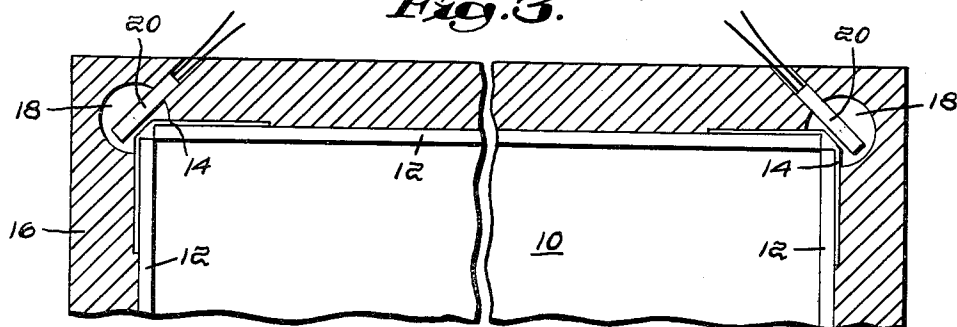
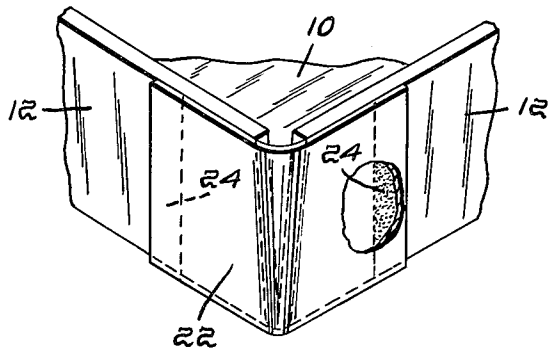


Fig. 4.



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PACKAGING BOX OR TRAY
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This invention relates to paperboard boxes or trays for packaging food and other products, and a primary object of the invention resides in the production of a novel box having a bottom panel and side wall panels integral therewith and flaring upwardly and outwardly therefrom in a manner permitting the boxes to nest compactly for shipping and storage purposes, together with shrinkable plastic film strips bonded to the side wall panels at the corners of the box and holding the panels in said flaring position for nesting purposes. The shrinkable film connecting the side walls at each corner of the box is normally of a length supporting the side walls in the flaring position but upon the application of heat the film is adapted to shrink to a length closing the side walls together at the corners of the box and supporting them in vertical position.

Various attempts have been made to provide a box that can be compactly shipped in either flat or nested form and conveniently set up to vertical side wall form when required for use. However such boxes heretofore known have required the employment of corner fasteners, tape, glue or the like or have embodied mechanical corner holding construction requiring the use of substantial setting-up machinery and providing a somewhat flimsy and loose holding of the side walls at the box corners. My invention herein eliminates all these objectionable features and provides a novel box that can be shipped in nested form to the consumer and quickly and conveniently set up to full and tight corner forming position merely by applying heat to the shrinkable corner holding films whereupon the ends of the side walls are drawn and held tightly together in corner forming relation with the side walls disposed in the required vertical position. The production of a novel box of this nature and for the purpose described comprises the primary object of the invention.

These and other features of the invention will be more readily understood and appreciated from the following detailed description of preferred embodiments thereof selected for purposes of illustration and shown in the accompanying drawing, in which—

FIG. 1 is a perspective view of a stack of nested trays embodying the invention.

FIG. 2 illustrates one of the trays after the corners have been heat shrunk and the side walls brought to vertical position,

FIG. 3 is an enlarged fragmentary sectional view showing the setting up of one of the nested trays to the form illustrated in FIG. 2, and

FIG. 4 is an enlarged fragmentary view showing a modified corner construction.

The tray or box shown in the drawing comprises a bottom panel 10 and side panels 12 integral therewith along straight scored lines and bent upwardly about said lines. As illustrated in FIG. 1 the side panels are raised to a position flaring outwardly from the vertical whereby a plurality of the trays are adapted to stack in nested

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relation. The ends of the side panels are connected together at each corner of the tray by a strip 14 of shrinkable plastic film bonded at its ends to the two corner forming ends of the side panels and of a length to form an open V between such ends of the panels at each corner of the tray. The side panels as thus supported flare outwardly from the vertical and permit the trays to stack in nested relation as illustrated in FIG. 1. Such stacking provides for compact and economical shipping and storing of the trays.

In the manufacture of one form of shrinkable plastic film the film is cooled while in stretched condition and is thus oriented in the direction of elongation. When the film is heated it contracts to its original form. The film strips 14 are of this shrinkable nature and when heated they contract substantially to the position shown in FIG. 2 in which the V openings at the corners of the tray are closed and the ends of the side panels at each corner are substantially in abutting relation and the side panels are held substantially in vertical position. In such position the tray is ready for packaging use.

In FIG. 3 is illustrated a fragmentary end portion of a jig 16 that can be conveniently employed in setting up the trays. The jig comprises a rectangular frame of an inside dimension substantially corresponding to the area of the bottom panel 10. At each corner of the jig is an opening 18 for an electric heating element 20 therein. As the flaring walled tray is passed downwardly through the frame the corner portions of the film strips 14 are subjected to heat from the heating element 20 and simultaneously therewith the frame crowds the side wall ends into corner forming abutting relation. Upon being heated the films shrink and when they cool upon leaving the heating elements they hold the side panels and corners snugly and firmly in the desired vertical packaging position shown in FIG. 2.

In FIG. 4 I have illustrated a modified corner construction in which the ends of each film strip 22 is bonded to the side panels 12 at 24 in areas spaced from the adjacent end margins of the panels, thereby providing a relatively long and free shrinkable strip portion intermediately between said areas.

It will be understood that the corner films can be heated by a simple hot plate, heated tunnel or chamber such as illustrated at 18 or any mechanical device which will heat and pass the trays along and set up the corners automatically. In any event the equipment required is extremely simple and the tray construction simple, economical and self-contained, no extra fasteners, glue or tape being required, and the resulting product provides a rectangular and tight corner tray particularly adapted to the packaging of products in neatly wrapped and closely stackable units.

Having thus disclosed my invention what I claim as new and desire to secure by Letters Patent is:

1. A paperboard box embodying a bottom panel having side panels integral therewith along straight scored lines and bent upwardly about said lines to a position flaring outwardly from the vertical whereby a plurality of the boxes are adapted to stack in nested relation, each end of each side panel being adjacent to the end of an adjacent side panel and forming an open V therewith, and a strip of shrinkable plastic film extending across each open V and bonded at its ends to the adjacent side

panel ends, the strips of plastic film being adapted to shrink upon the application of heat thereto to an extent substantially closing said open V's and maintaining the side panels in substantially vertical position.

2. The paperboard box defined in claim 1 in which each said strip of plastic film is bonded at its ends to the outer faces of the adjacent side panels in areas spaced from the adjacent end margins of said panels, thereby providing a relatively long and free shrinkable strip portion intermediately between said areas.

3. A paperboard box embodying a bottom panel having side panels integral therewith along straight scored lines and bent upwardly about said lines to a position sub-

stantially normal to the bottom panel, each end of each said panel being in substantially abutting relation with the adjacent end of an adjacent side panel and forming a corner of the box, and a strip of plastic film having shrinkable end portions bonded to the outer faces of said ends of the side panels at each corner of the box and a heat shrunken intermediate portion integral with said end portions and extending across the abutting adjacent ends of the side panels and holding them in said abutting relation and the side panels in said normal position.

No references cited.