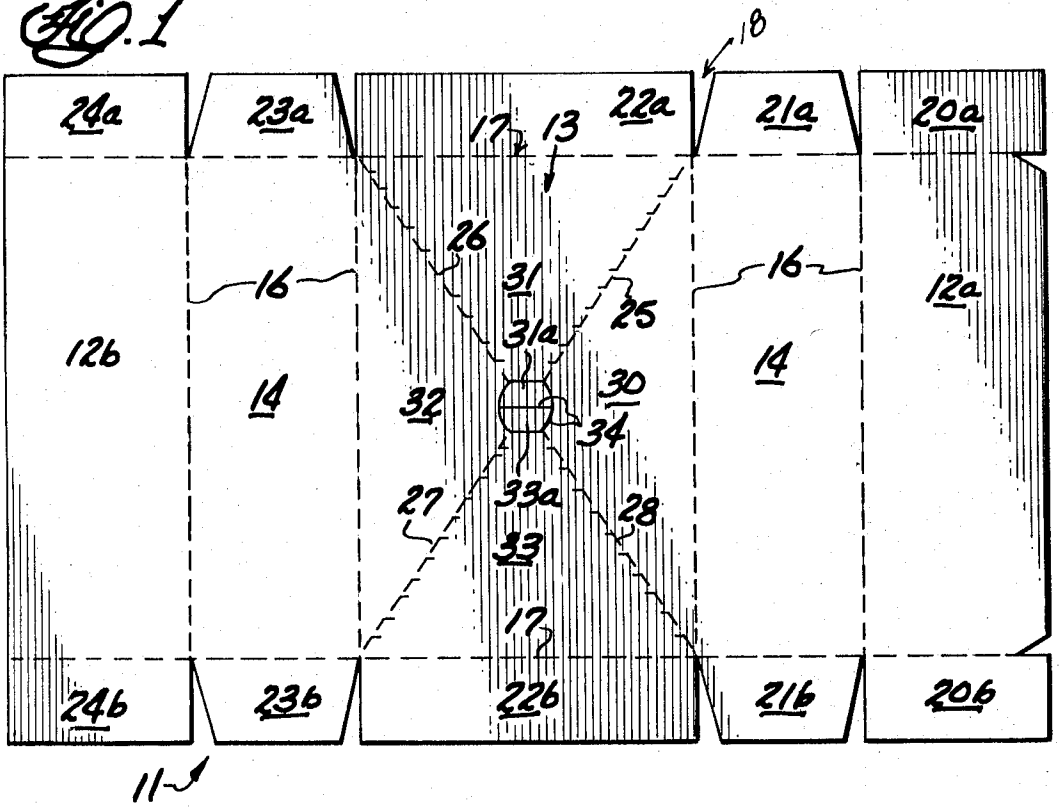
Nov. 28, 1967 C. L. CHAMPLIN 3,355,089

BOX CONSTRUCTION

Filed May 5, 1966 2 Sheets-Sheet 1

Fig. 1



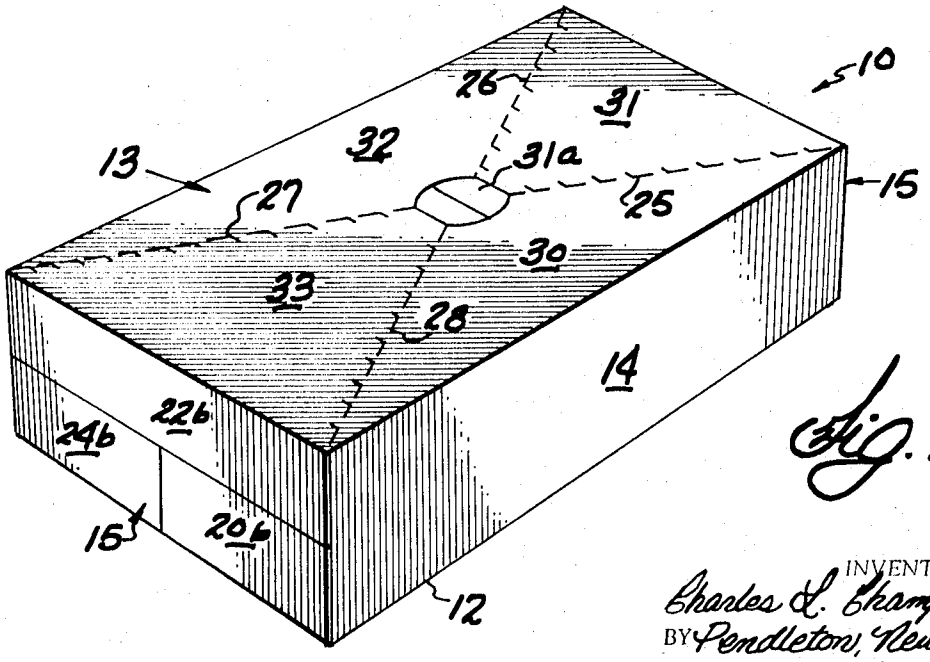


Fig. 2

INVENTOR.
Charles L. Champlin
BY Pendleton, Neuman, Seibold & Williams
Attorneys

Nov. 28, 1967 C. L. CHAMPLIN 3,355,089

BOX CONSTRUCTION

Filed May 5, 1966 2 Sheets-Sheet 2

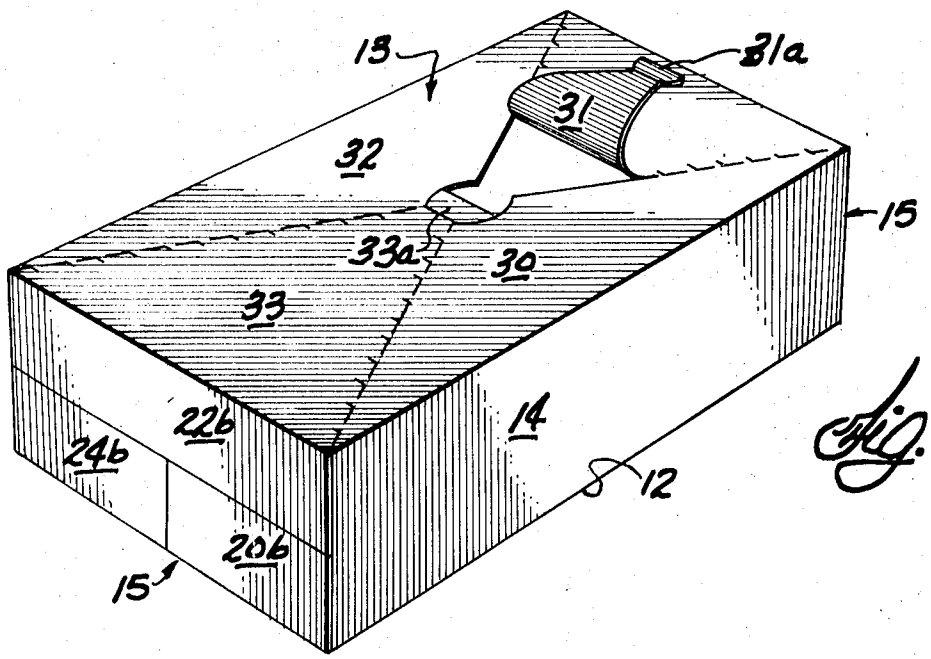


Fig. 3

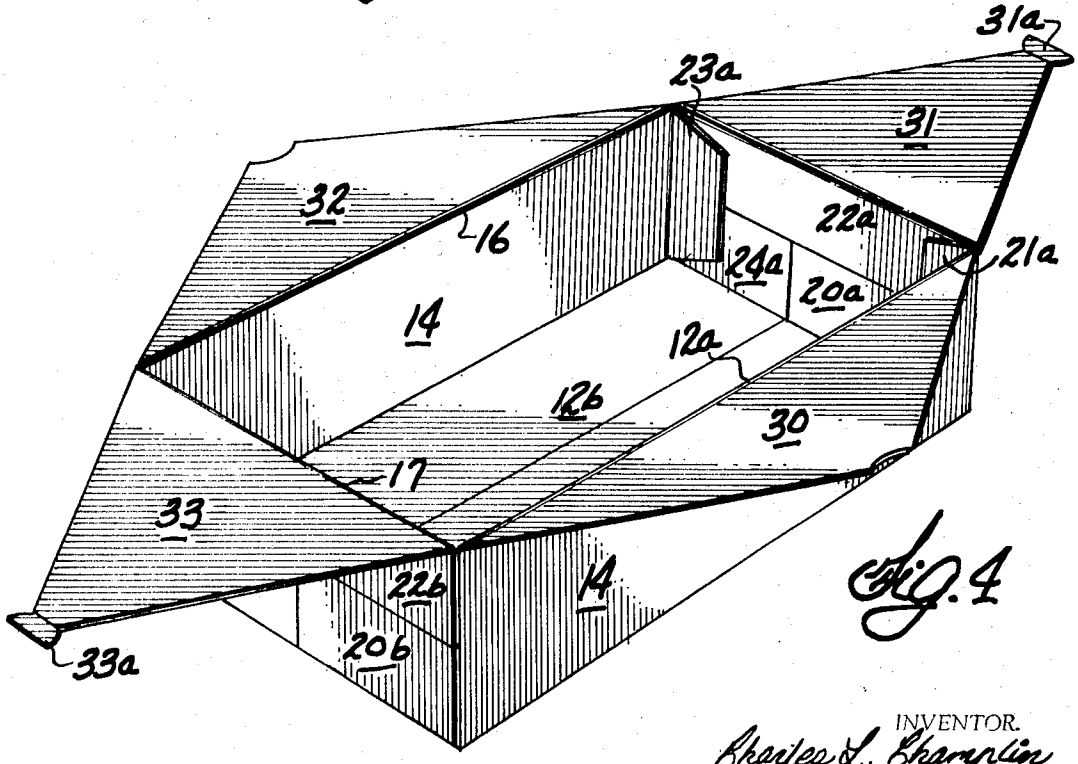


Fig. 4

INVENTOR.
Charles L. Champlin
BY Pendleton, Neuman
Seibold & Williams
Attorneys

United States Patent Office

3,355,089

Patented Nov. 28, 1967

3,355,089

BOX CONSTRUCTION

Charles L. Champlin, Rittman, Ohio, assignor to Packaging Corporation of America, Evanston, Ill., a corporation of Delaware

Filed May 5, 1966, Ser. No. 547,908
10 Claims. (Cl. 229—51)

This invention relates to a box construction formed from a blank of fibrous sheet material and capable of having the top panel thereof readily opened, when desired, to facilitate access to the contents of said box.

In the distribution to retail merchants of numerous consumer products which are individually packaged in folding cartons, metallic, plastic, and/or fibrous cans, glass or plastic bottles or the like, it is customary for a large quantity of such products to be disposed within shipping containers of corrugated or paperboard material. Upon receipt of such containers by the retail merchant, it is the practice for all the individual product packages to be marked with the selling price or other indicia before such packages are placed upon the display or self-service shelves or counters.

To facilitate the marking of the packages within the container, it is necessary that a substantial segment of the container be removed so that a corresponding portion of each package is sufficiently exposed so as to enable the stock boy, or other designated person, to manually affix the selling price or other indicia on the exposed package portion either by stamping, stencilling, or applying a gummed label.

Heretofore, with prior containers utilized for this purpose, difficulty has oftentimes been experienced by the retail merchants in readily opening the container top for purposes of exposing the contents for marking purposes. With most prior containers, the opening thereof required the use of a sharp tool such as a knife, which in the course of being used might accidentally damage or deface the accommodated products. Furthermore, in the course of opening such prior containers, the structural stability of the container was weakened to such an extent, as to render the container incapable of functioning properly as a tray for the products.

In certain types of retail operation, the products, after marking, are not removed from the shipping container but instead remain in the opened container for display to the customer. With various prior containers, once the container is opened, the container is unattractive in appearance and not conducive to promote the sale of the accommodated products.

With other prior art containers or boxes of the type in question, there was provided tear means which caused the structural strength of the container or box to be materially diminished and thus rendering same susceptible to accidental or premature opening.

Thus, it is one of the objects of this invention to provide an improved box construction which is not beset with the aforenoted shortcomings associated with the prior structures.

It is a further object of this invention to provide an improved box wherein all or a part of the top panel thereof may be readily removed so as to expose the contents.

It is a still further object of this invention to provide a blank for an improved box which may be formed with conventional high speed equipment and with a minimum of material waste.

It is a still further object of this invention to provide an improved box construction which may be transported to or stored by the customer in a collapsed tubular condition or in blank form.

It is a still further object of this invention to provide

a blank for an improved box which may be readily set up manually or by high speed automatic equipment.

Further and additional objects will appear from the description, accompanying drawings, and appended claims.

In accordance with one embodiment of this invention, a box formed from a blank of fibreboard material is provided which comprises a bottom panel, a top panel disposed in spaced registered relation therewith, and side walls delimiting and foldably connected to said bottom and top panels. The top panel is provided with a plurality of sections which are separated from one another by a plurality of tear scores. A portion of each section terminates at and is connected to a side wall. A second, or opposite, portion of each section terminates at a common location within said top panel.

For a more complete understanding of the invention reference should be made to the drawings wherein:

FIG. 1 is a plan view of the blank for one form of the improved box construction;

FIG. 2 is a perspective view of the improved box formed from the blank of FIG. 1 and shown in condition for shipment;

FIG. 3 is a perspective view similar to FIG. 2 but showing one of the top panel sections being partially folded back to an open position;

FIG. 4 is similar to FIG. 3 but with all the top panel sections fully opened.

Referring now to the drawings and more particularly to FIG. 2, a box **10** formed from a blank **11** of fibreboard material is shown. The box **10** includes a bottom panel **12**, which in the illustrated embodiment is of rectangular configuration, a top panel **13** of like configuration arranged in spaced registered relation with respect to panel **12**, and pairs of opposed side walls **14** and **15**. Obviously, the size and shape of the box may vary from that shown without departing from the scope of the invention.

Blank **11**, as seen in FIG. 1, is preferably formed of paperboard stock, the gauge thereof depending upon the type and weight of products to be accommodated within the set-up box. The overall shape of the blank is substantially rectangular and may be readily formed by conventional high speed equipment and with a minimum of material waste. The illustrated blank is provided with a plurality of spaced substantially parallel first foldlines **16**, and a pair of spaced substantially parallel second foldlines **17** arranged in transverse relation with respect to foldlines **16**. Foldlines **16** and **17** cooperate with one another to form top panel **13**, side panels **14**, and bottom panel sections **12***a* and **12***b*, the latter being disposed in adhesively secured overlapping relation, when the blank is set up to form the box **10**.

Foldlines **17** also cooperate with a plurality of slits **18** formed at the top and bottom edges of the illustrated blank **11** so as to form a plurality of closure flaps **20***a–b*, **21***a–b*, **22***a–b*, **23***a–b*, and **24***a–b*, which are in adhesively secured overlapping relation, when the blank is set up, and form opposed side walls **15**.

Top panel **13** in the illustrated embodiment is provided with a plurality of diagonally extending tear scores **25**, **26**, **27** and **28**. The scores **25–28** cooperate with foldlines **16** and **17** to form triangular sections **30**, **31**, **32** and **33**. At approximately the point of intersection of scores **25–28**, there is provided a pair of pull tabs **31***a* and **33***a* which are defined by slits **34**. The pull tabs are adapted to facilitate opening of the top panel **13** when desired, see FIG. 3.

The pull tabs are preferably located in the top panel **13** at a place wherein a void or space occurs therebeneath, which is formed by the accommodated products. By reason of this fact, initial grasping of one or both of the pull tabs is simplified.

The illustrated box is a bottom loading type, that is to say, the products to be accommodated are initially spotted on a loading platform, and then the blank **11** is brought down over the spotted products, so that the top panel is in registration with the tops of the spotted products. The side panels and bottom panel sections of the blank are then folded about the remainder of the spotted products. This manner of loading and setting up the box is in accordance with well known practices. It is to be clearly understood that the invention is not limited to this precise style of blank and box.

FIGS. 3 and 4 illustrate clearly the manner in which the top panel sections may be readily folded back independently of each other so as to give full exposure to the interior of the box. Once the sections **30–33** are fully opened (FIG. 4), the tops of the accommodated products (e.g. cylindrically shaped cans) will be exposed whereby the selling price or other indicia may be readily stamped thereon.

If desired, the portions of foldlines **16** and **17** which cooperate to delimit top panel **13** may be tear scores, as well, so that once the top panel sections have been fully folded back they may be readily separated or torn from the adjacent side walls **14** and **15**. Once the top panel sections have been removed from the box, the latter may readily serve as a sturdy, yet attractive, tray for the accommodated products. Opening and/or tearing of the top panel sections does not impair the structural strength of the remainder of the box.

The shape, size, and number of sections formed in the top panel may readily vary from that shown. In any case, however, it is important that the sections may be readily folded back to a fully open position without requiring the use of a tool or sharp instrument. Furthermore, the blank for the improved box may be formed from double-faced corrugated board, if desired.

Thus, it will be seen that an easy opening box and blank therefor have been provided which readily avoid the problems and shortcomings associated with prior structures. The improved box is of inexpensive construction and may be readily set up manually or by conventional high speed apparatus.

While several embodiments of this invention have been described above, further modifications may be made thereto and it is contemplated, therefore, by the appended claims, to cover any such modifications as fall within the true spirit and scope of this invention.

I claim:

1. A box formed from an integral blank of fibrous sheet material comprising a bottom panel, upright side walls delimiting said bottom panel, and a top panel disposed in spaced registered relation with respect to said bottom panel and having the periphery thereof hingedly connected to said side walls by foldlines; said top panel includes a plurality of sections separated from one another by a plurality of angularly disposed tear scores, a portion of each section terminates at a foldline connection with a side wall and a second portion of each section terminates at a common location disposed within said top panel.

2. The box of claim **1** wherein a pair of opposed side walls are formed by overlapping closure flaps foldably connected to the bottom and top panels and the remaining side walls.

3. The box of claim **1** wherein the second portions of predetermined top panel sections are provided with pull tabs.

4. The box of claim **1** wherein each top panel section may be folded to an open position relative to the side wall to which it is connected independently of the remaining top panel sections so as to expose the box interior.

5. The box of claim **1** wherein the connection between a top panel section and a side wall is defined by a tear score.

6. The box of claim **4** wherein the entire box interior is exposed when all of said top panel sections are folded to an open position.

7. A box blank formed of an integral sheet of fibrous material, comprising a plurality of first foldlines arranged in spaced relation and defining a top panel, bottom panel, and a pair of opposed side wall panels, said top and bottom panels being separated from one another by one of said side wall panels, a plurality of second foldlines angularly disposed with respect to said first foldlines, and a plurality of slits cooperating with said second foldlines to define end closure flaps foldably connected to opposite peripheral portions of said top, bottom, and side wall panels; said top panel being provided with a plurality of angularly disposed tear scores which cooperate with said foldlines to define sections, each section having a corresponding portion thereof terminating at a common location within said top panel.

8. The blank of claim **7** wherein the foldlines effecting delimiting of said top panel sections comprise tear scores.

9. The blank of claim **7** wherein said corresponding portion of a top panel section forms a pull tab.

10. The blank of claim **7** wherein each tear score extends from said common location to a foldline.

References Cited

UNITED STATES PATENTS

2,833,404	5/1958	Jacobs et al.	229—51
3,131,848	5/1964	Floyd	229—51
3,186,623	6/1965	Guyer	229—51

DAVID M. BOCKENEK, *Primary Examiner.*