May 16, 1933. A. E. KEPPLER 1,909,472

DISPLAY BOX

Filed May 25, 1932

Fig. 2.

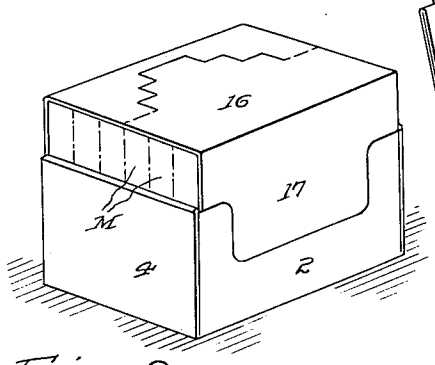


Fig. 3.

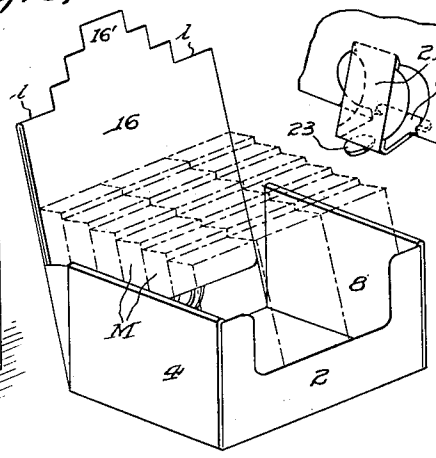


Fig. 4.

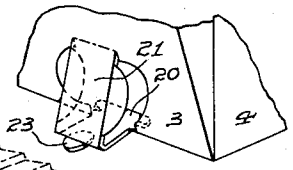


Fig. 8.

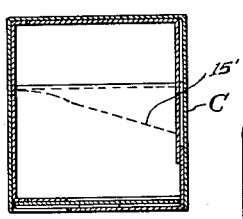


Fig. 5.

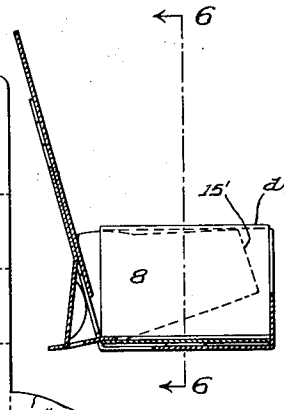


Fig. 6.

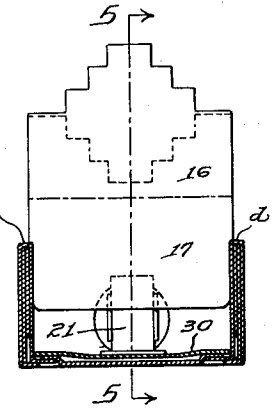


Fig. 1.

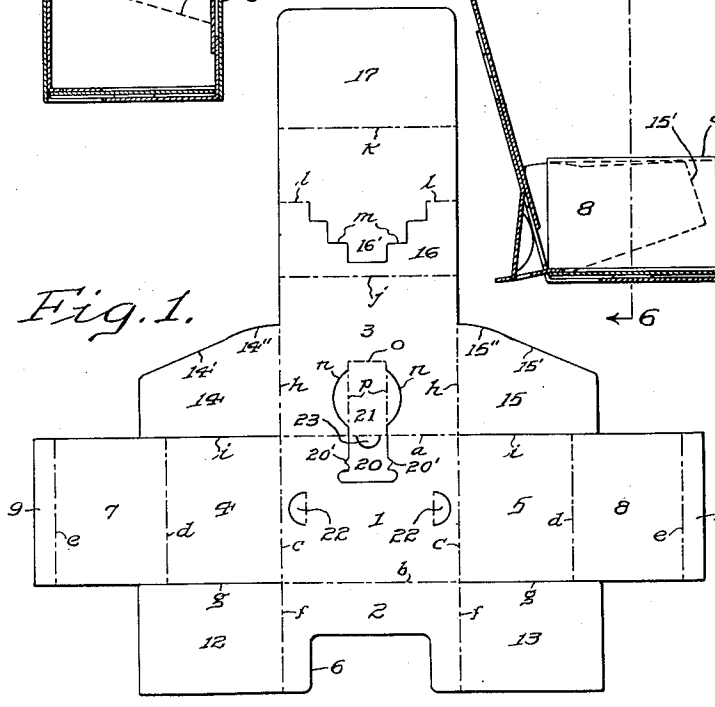
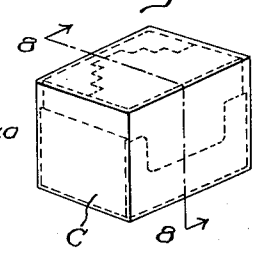


Fig. 7.



INVENTOR
Albert E. Keppler.

BY George K. Hellert
ATTORNEY

WITNESS
F. J. Hartman.

Patented May 16, 1933 1,909,472

UNITED STATES PATENT OFFICE

ALBERT E. KEPPLER, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO BROWN & BAILEY COMPANY, OF PHILADELPHIA, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA

DISPLAY BOX

Application filed May 25, 1932. Serial No. 613,388.

The principal object of my invention is to provide a novel form of box constructed from a single sheet of cardboard or the like, adapted to contain articles of merchandise and so designed as to attractively and effectively display the latter when the box is placed on a counter or other support.

A further object is the provision of a blank of cardboard or the like so cut and scored that it may be folded to form a box adapted to be filled with merchandise by the manufacturer thereof and then shipped, preferably while enclosed in an outer container, to the retailer who, upon receipt and after removal of the shipping container if employed, can then readily arrange the box for the display of the goods without removing the latter therefrom.

A still further object is the provision of a box of the character aforesaid which does not require the use of an adhesive or mechanical means such as staples, eyelets, or the like to hold the various parts in proper relation with each other after they have been bent up from the flat blank to form the box and which therefore may be placed in proper condition to receive the merchandise in a minimum of time and with a minimum of trouble.

Other objects, advantages and novel features of design, construction and arrangement comprehended by the invention are hereinafter more particularly pointed out or will be apparent to those skilled in the art from the following description of a box constructed in accordance therewith and illustrated in the accompanying drawing.

In the said drawing, Fig. 1 is a plan view of the cut and scored blank from which the box is formed and which is designed to be shipped flat by the box manufacturer to the merchandise manufacturer; Fig. 2 is a perspective view of the box as it appears after being formed up from the blank of Fig. 1 and filled with goods preparatory to shipment by the merchandise manufacturer to the retailer; Fig. 3 is a perspective view of the box after it has been placed by the retailer in proper condition to display the goods, which are indicated in both of these figures by broken lines. Fig. 4 is a fragmentary detail perspective view of the back of the box shown in Fig. 3; Fig. 5 is a vertical longitudinal section through the box as shown in Fig. 3 but with the goods removed and on the line 5—5 in Fig. 6, while Fig. 6 is a vertical transverse section on the line 6—6 in Fig. 5. Fig. 7 is a perspective view of the box on a smaller scale than as shown in Fig. 2 housed in a shipping container, while Fig. 8 is a longitudinal section on the line 8—8 of Fig. 7 but on the same scale as Figs. 5 and 6. The same characters of reference are used to designate the same parts in the several figures.

The blank of cardboard or other suitable material shown in Fig. 1 from which the box is made comprises portions designed to form the box bottom 1, front 2, back 3, and sides 4, 5, all attached to and surrounding the bottom and defined therefrom respectively by the scored lines *a*, *b*, and *c*—*c*. All of these several parts are rectangular save the front, which is desirably cut out as at 6 so as to more effectively show the goods when disposed within the box. Extending laterally outward from the sides 4 and 5 are inner side panels 7 and 8, both rectangular, of substantially similar size to the sides to which they are respectively attached and defined therefrom by the scored lines *d*—*d*. At the respective outer extremities of the side panels are locking flaps 9, 10 defined from the side panels measured vertically of the drawlocking panels are of the same length as the side panels measured vertically of the drawing but are of considerably less width measured laterally thereof. On opposite sides of the front 2 are guide flaps 12, 13 respectively defined from the front by the scored lines *f*—*f*; these flaps are rectangular and are separated from the respectively adjacent sides 4, 5 and side panels 7, 8 by the cuts *g*—*g*. Other guide flaps 14, 15 extend laterally outward from the opposite sides of the back 3, being defined therefrom by the scored lines *h*—*h* and separated from the sides 4, 5 and side panels 7, 8 by cuts *i*—*i*; these flaps are of substantially the same width measured along the scores *h*—*h* as are

the flaps 12, 13 measured along the scores *f*—*f* but are of considerably less width at their outer extremities, the upper edge 14′ or 15′, as the case may be, being consequently generally inclined from the free end of the flap toward the back 3. Preferably, the outer portion of these edges is made straight, as shown, and the inner portion 14″ or 15″ formed on an arc whose center is at the adjacent junction of the scores *h* and *a* for a purpose to be hereinafter described.

It will be noted that the back 3 is considerably wider, measured vertically in the drawing, than the front 2, its outer edge being defined by the scored line *j*. Beyond this line is an inner back panel 16 of substantially the same size as the back 3, its outer extremity being defined by the scored line *k* beyond which is a tongue 17 of somewhat less width measured in the same manner, than the adjacent panel 16. Preferably, the latter is transversely scored inwardly from the opposite edges for a short distance along the lines *l*—*l* midway between the scores *j* and *k*, and from the inner ends of these lines is then cut through with a zigzag or other cut *m* to define a tab 16′.

To assist in supporting the back of the box when in display position, the bottom 1 and back 3 are desirably cut and scored as now to be described in order to provide an easel or support adjacent the lower edge of the back; to this end, the bottom 1 is cut through inwardly from the scored line *a* midway of its ends to form a T-shaped tongue 20 preferably having small outwardly projecting generally triangular ears 20′ adjacent its head, while on the opposite side of this line the cuts defining the sides of the tongue are continued into the back 3 in parallel relation for a short distance, then oppositely bowed outwardly as at *n*—*n* and finally again brought into parallelism and their extremities connected by a scored line *o*, scores *p*—*p* being also made across the bases of the cuts *n*—*n* so that a portion 21 in the back 3 is defined by these several cuts and scores. Additionally, oppositely disposed locking tabs 22, each of which is formed by a crescent-shaped cut and a score connecting its ends, are provided in the bottom 1 adjacent the scores *c*—*c* and a similar tab 23 may be cut in the tongue 20 adjacent the score *a*.

The blank when cut and scored in the manner just described is in condition to be formed up into the box preparatory to receiving the merchandise it is intended to contain and is thus adapted to be shipped flat by the box maker to the manufacturer of that merchandise. When received by the latter the blank is formed up substantially in the manner now to be described, to wit, the flaps 12, 13 are bent up along the scores *f*—*f* substantially normal to the front 2 and the latter then bent up along the score *b* substantially normal to the bottom 1. The flaps 14, 15 are also bent oppositely inwardly along the scores *h*—*h* and the back 3 then bent up substantially normal to the bottom along the score *a*, thus bringing the flap 14 adjacent the flap 12 and the flap 15 adjacent the flap 13. The side panels 7, 8 are then bent upwardly along the scores *d*—*d* and the sides 4, 5 bent inwardly respectively against the flaps 12—14, 13—15, along the scores *c*—*c*, after which the side panels are folded down over the said flaps and the locking flaps 9, 10 tucked beneath the tabs 22. The extension 16, now about to form the top of the box, is then bent forwardly along the score *j* and the tongue 17 similarly forwardly and downwardly bent along the score *k*, thus placing the box in position to receive the merchandise which may be in the form, as shown, of a plurality of small rectangular packages M adapted to be stacked on end in the box. However, before placing the merchandise in the box and closing the top and tongue 17 thereover as shown in Fig. 2, I prefer to place in the bottom of the box a rectangular piece of cardboard 30 of sufficient size to completely overlay the bottom, the back edge of this auxiliary bottom, if it may be so termed, being inserted beneath the tab 20 which is first slightly bent upwardly along the score *a*, as the principal function of the auxiliary bottom is to prevent the tab being accidentally pushed outwardly with respect to the main bottom 1 while the box is being filled or afterward when being arranged for display purposes; its use is therefore optional but is preferred not only for the reason stated but also because it makes a neat finish and conceals the tabs 22 and adjacent locking flaps from view.

After the merchandise is stacked in the box and the top 16 and tongue 17 turned down into proper position thereover, the box presents the appearance shown in Fig. 2, the dimensions of the various parts being desirably so calculated that the top 16 will lie on the upper ends of the articles within the box, the upper part of said articles be visible above the sides of the box, and the tongue 17 extend below the lower edge of the cutout 6 in its front.

The filled box is now in condition for shipment and for this purpose is preferably covered by a shipping case or container C open at the bottom and of such dimensions as to snugly receive the box. This container forms no part of the invention and may be utilized or not, as desired, though it is generally preferred to employ it.

Upon receipt of the box by the retailer by whom the goods contained therein are to be displayed and sold, the shipping container is first removed, the tongue 17 and top 16 raised away from the goods, and the top then folded along the scores *l*—*l* so as to pro-

ject the tab 16′ above them as shown in Figs. 3 and 6, thus making an attractive display feature; the tongue 17 is then tucked down behind the goods. The back 3 and adjacent parts including the extension 16 and tongue 17 are then pushed rearwardly until they assume an angular position with respect to the rest of the box, the required hinging or pivoting movement taking place along the scored line *a* and the guide flaps 14, 15 moving outwardly and upwardly with respect to the sides 4, 5 and the side panels 7, 8 between which the ends of these flaps are disposed. Movement of the back and adjacent parts is of course limited by engagement of the free ends of the guide flaps in the folds formed along the line *d*—*d* as best shown in Fig. 5, and the permissible angularity of the back is thus determined by the width of these flaps at their free ends. When the flaps are drawn back, the curved edges 14″, 15″ thereof make a neat finish along the exposed upper edges of the flaps and close the space which would exist above the said edges and the upper edges of the sides if the edges of the flaps were made straight, and I therefore prefer to curve them in the manner described. Since the guide flaps 12, 13 are snugly held adjacent the sides 4, 5 and between the bends formed along the lines *d*—*d* and *c*—*c* the front of the box is maintained perpendicular to the bottom and does not move when the back is pushed into display position as just described. Of course, the goods stacked in the box will also assume or can be readily pushed into a position parallel with the back as shown in Fig. 3, thus making a very neat and attractive display.

In order to provide an additional support for the back, that portion 21 thereof defined by the cuts *n*—*n* is then pulled out, conveniently by grasping the tab 23, until further movement of the T-shaped tongue 20 is arrested by contact of its head with the adjacent portion of the back, the tongue during this movement sliding over the upper surface of the auxiliary bottom 30 and the ears 20′ snapping behind the back 3 so as to prevent the tongue from subsequently sliding back to its original position. The segmental ears defined by the scores *p*—*p* are then bent inwardly substantially at right angles to their original position as best shown in Fig. 4, thus adding to the rigidity of the part 21 and correspondingly enhancing the support it affords to the back 3 when arranged as shown in said figure.

If it is desired to return the box to the form shown in Fig. 2 at any time, it may be readily accomplished by substantially reversing the several operations to which reference has been made.

It will be apparent that when the box is arranged in display position as herein described, as well as when it is in condition for shipment after being formed up from the blank, the various parts are firmly and adequately locked together without the use of adhesives or mechanical fastening means other than those afforded by the blank itself, whereby a rigid and satisfactory container is provided which is not liable to get out of shape under the conditions of use to which it is necessarily subjected and which cannot accidentally come apart or revert to its initially unfolded condition.

While I have herein described and illustrated one embodiment of the present invention with considerable particularity, I do not thereby desire or intend to specifically limit myself thereto as numerous changes and modifications may be made therein if desired without departing from the spirit and scope of the invention as defined in the appended claims.

Having thus described my invention, I claim and desire to protect by Letters Patent of the United States:

1. A display box comprising a bottom, front and sides extending substantially vertically upward therefrom, side panels folded inwardly into parallelism with the sides along the upper edges of the latter, means for locking the side panels to the bottom, a back hingedly connected to the bottom along the rear edge of the latter for movement from substantially vertical to rearwardly inclined position, and guide flaps respectively connected to the front and to the back and extending between the respectively adjacent side panels and sides operative to maintain the front in fixed relation with the bottom and to limit the rearward movement of the back about its hinged connection therewith by engagement in the folds between the sides and side panels.

2. A display box comprising a bottom, front and sides extending substantially vertically upward therefrom, side panels folded inwardly into parallelism with the sides along the upper edges of the latter, means for locking the side panels to the bottom, a rectangular guide flap attached to each side of the front and projecting between the respectively adjacent side panels and sides to thereby hold the front in fixed relation to the sides and bottom, a back hingedly connected to the latter along its rear edge for movement from substantially vertical to rearwardly inclined position, and a guide flap extending forwardly from each side of the back between the respectively adjacent side and side panel, the upper edge of each flap being downwardly and forwardly inclined with respect to the plane of the bottom when the back is in vertical position and operative by engagement in the fold between the side and side panel to limit the extent of rearward move-

ment of the back about its point of connection with the bottom.

3. A display box comprising a bottom, vertically extending front and sides, side panels integral with the sides folded inwardly along the upper edges of the latter into parallelism therewith, means operative to hold the aforesaid parts in interlocked relation including guide flaps extending rearwardly from the front between the respectively adjacent sides and panels operative to hold the front in substantially fixed position, a back hingedly connected to the bottom along its rear edge for movement to and fro between vertical and rearwardly inclined position, and means extending forwardly from the back cooperative with the folds between the sides and side panels to limit the rearward movement of the back and determine its maximum angle of inclination from the vertical.

4. A display box comprising a bottom, vertically extending front and sides, side panels integral with the sides folded inwardly along the upper edges of the latter into parallelism therewith, means operative to hold the aforesaid parts in interlocked relation including guide flaps extending rearwardly from the front between the respectively adjacent sides and panels operative to hold the front in substantially fixed position, a back hingedly connected to the bottom along its rear edge for movement to and fro between vertical and rearwardly inclined position, and means extending forwardly from the back and cooperative with the folds between the sides and side panels to limit the rearward movement of the back and determine its maximum angle of inclination from the vertical, said back having an extension adapted when the back is in vertical position to be folded forwardly and then downwardly to cover the goods disposed in the box.

5. In a display box comprising a bottom and a back adapted to extend in rearwardly inclined position with respect thereto, means designed to form an easel support for the back comprising a portion of the back initially defined from the major part thereof by cuts and scores and adapted to be bent into outwardly inclined relation with respect to said major part, a portion of the bottom integral therewith, initially defined from the major part of the bottom by cuts and adapted to be slid rearwardly with respect to the bottom when the first mentioned portion is bent out from the plane of the back, said last mentioned portion having a T-shaped head operative to engage the back to limit the outward movement of both portions, and means for thereafter obstructing their movement in the opposite direction.

6. In a display box comprising a bottom and a back adapted to extend in rearwardly inclined position with respect thereto, means designed to form an easel support for the back comprising a portion of the back initially defined from the major part thereof by cuts and scores and adapted to be bent into outwardly inclined relation with respect to said major part, a portion of the bottom integral therewith, initially defined from the major part of the bottom by cuts and adapted to be slid rearwardly with respect to the bottom when the first mentioned portion is bent out from the plane of the back, said last mentioned portion having a T-shaped head operative to engage the back to limit the outward movement of both portions, means for thereafter obstructing their movement in the opposite direction, and means carried by the first mentioned portion adapted to be bent into angular relation therewith to afford additional stiffness thereto after it has been bent to back supporting position.

7. A box blank comprising portions respectively designed to form the bottom, sides, front and back of the box, side panels extending laterally from the side portions, guide flaps extending laterally from each side of the back portion, each having an outer edge disposed in oblique relation to the side edges of the back portion, rectangular guide flaps extending laterally from the front portion, locking flaps extending laterally from the side panels, means carried by the bottom adapted for engagement with said locking flaps when the blank is formed up into the box, an extension of substantially similar size as the back defined therefrom by a transversely extending score, and a tongue similarly defined from the extension and projecting therebeyond.

8. A box blank comprising portions respectively designed to form the bottom, sides, front and back of the box, side panels extending laterally from the side portions, guide flaps extending laterally from each side of the back portion, each having an outer edge disposed in oblique relation to the side edges of the back portion, rectangular guide flaps extending laterally from the front portion, locking flaps extending laterally from the side panels, means carried by the bottom adapted for engagement with said locking flaps when the blank is formed up into the box, an extension of substantially similar size as the back defined therefrom by a transversely extending score, and a tongue similarly defined from the extension and projecting therebeyond, said extension being inwardly cut and scored from its opposite sides to provide a tab adapted to project upwardly when the extension is bent downwardly against the back after the box is formed up.

In witness whereof, I have hereunto set my hand this 24th day of May, 1932.

ALBERT E. KEPPLER.

CERTIFICATE OF CORRECTION.

Patent No. 1,909,472. May 16, 1933.

ALBERT E. KEPPLER.

It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction as follows: Page 1, line 84, strike out the words "measured vertically of the draw-" and insert instead "by the scored lines e-e; these"; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 25th day of July, A. D. 1933.

M. J. Moore.

Acting Commissioner of Patents.

(Seal)