

May 16, 1933.

A. E. KEPPLER

1,909,474

DISPLAY BOX

Filed May 25, 1932

2 Sheets-Sheet 1

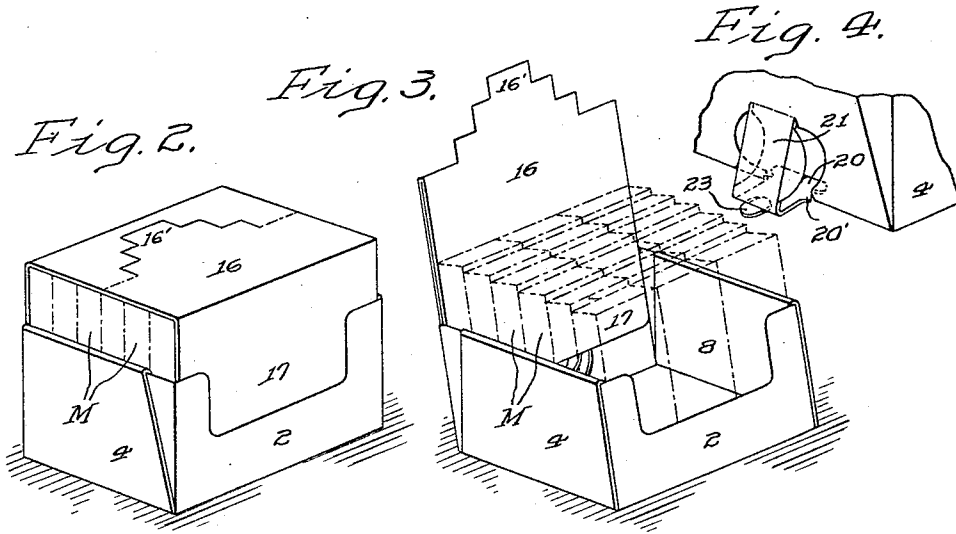


Fig. 8.

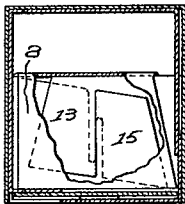


Fig. 5.

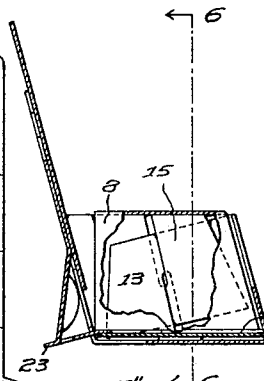


Fig. 6.

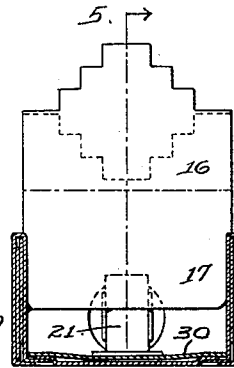


Fig. 1.

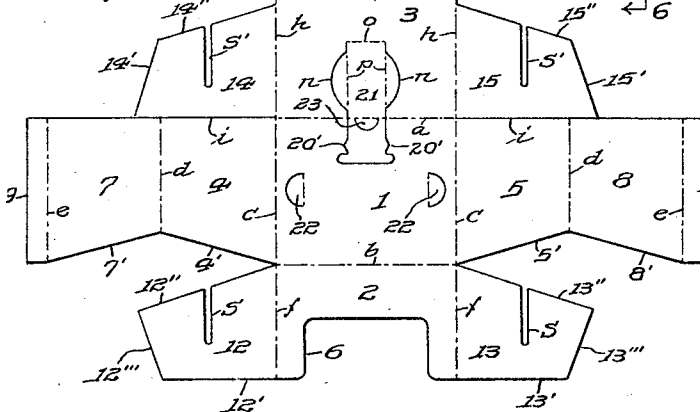
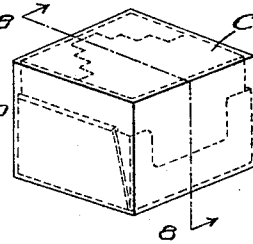


Fig. 7.



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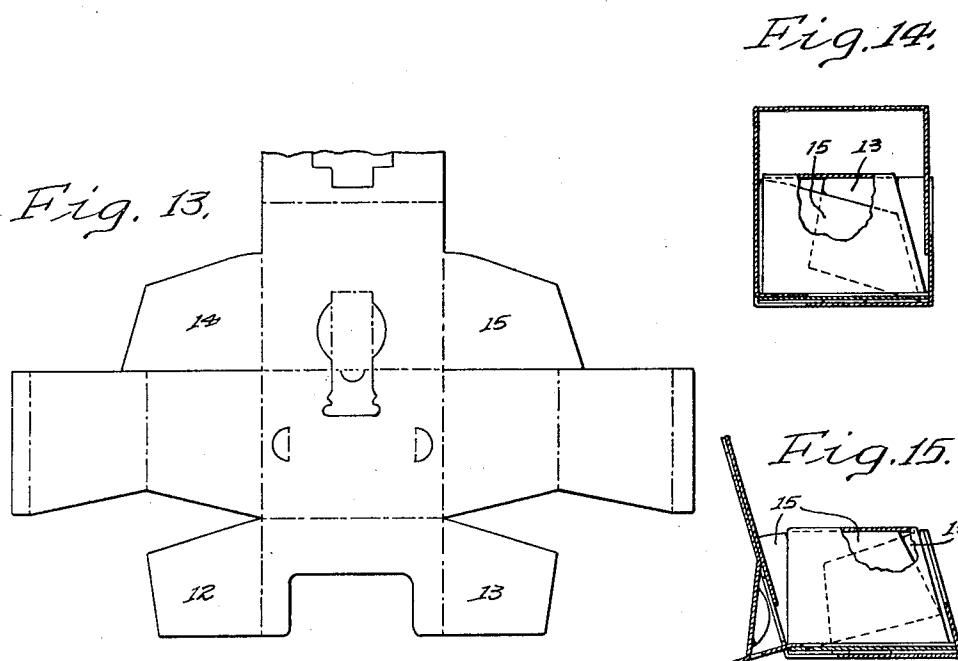
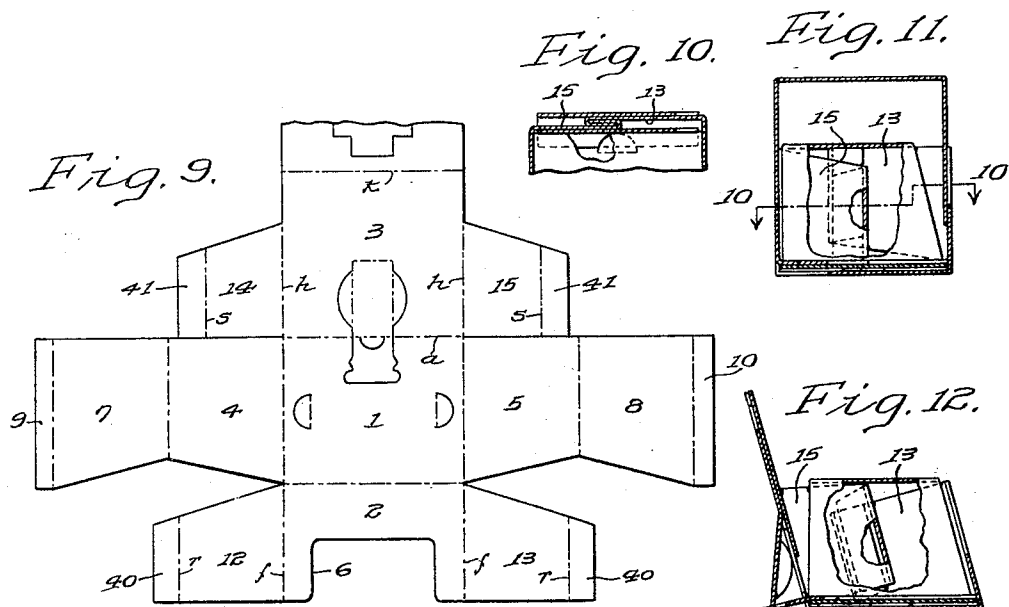
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DISPLAY BOX

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2 Sheets-Sheet 2



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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. 613,390.

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 from the shipping container, can then readily arrange the box to display the goods without removing the latter therefrom.

Another 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.

A still further object is the provision of such box which, when in display position, has its front and back rearwardly inclined with respect to the surface on which it is supported and, preferably, in parallel relation with each other, thereby enhancing the effectiveness with which the goods contained in the box are displayed, and which in certain of its forms embodies means interconnecting the front and back of the box in such manner that when one is moved from a substantially vertical position with respect to the bottom of the box to its display or inclined position with respect thereto, the other is constrained to move correspondingly, whereby both are maintained in substantially parallel relation with each other at all times, the extent of their possible movement being effectively limited to a predetermined degree.

Other objects, advantages and novel fea-

tures of design, construction, and arrangement, comprehended by the invention will be more particularly pointed out or apparent to those skilled in the art from the following description of certain boxes constructed in accordance therewith and illustrated in the accompanying drawings.

In the said drawings, Fig. 1 is a plan view of the cut and scored blank from which one of the said boxes 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 position to display the goods which latter 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 in Fig. 7 but on the same scale as Figs. 5 and 6. Fig. 9 is a fragmentary plan view of a cut and scored blank adapted to form a slightly different box comprised by the invention; Fig. 10 is a fragmentary horizontal section on the line 10—10 in Fig. 11 which, in turn, is a vertical longitudinal section of the box formed from the blank of Fig. 9 and thus generally corresponding to Fig. 8, but without showing the shipping container, while Fig. 12 is a fragmentary longitudinal section through the box in display position and thus generally corresponding to Fig. 5. Fig. 13 is a plan view of a cut and scored blank designed to form another box comprised by the invention; Fig. 14 is a vertical longitudinal section of the box formed from such a blank and thus generally cor-

responding to Fig. 11, while Fig. 15 is a fragmentary longitudinal section through the said box in display position and thus generally corresponding to Fig. 12. The same characters of reference are used throughout the drawings to designate the same parts, and in certain instances the relative thickness of the cardboard or other material from which the boxes are formed has been exaggerated somewhat to facilitate illustration.

I shall refer first to the blank and box formed therefrom shown in Figs. 1 to 8 inclusive. This blank is of cardboard or other suitable material and comprises portions designed to form the 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 . Of these several parts, the bottom and back are rectangular; the front is desirably cut out as at 6 so as to more effectively show the goods when disposed in the box, while the sides 4, 5 have straight edges disposed at right angles to each other on three sides and their front edges 4', 5' respectively inwardly inclined toward the adjacent scores c — c . Extending laterally outward from the sides 4, 5 are inner side panels 7, 8 which are of substantially similar size and configuration as the sides but have their front edges 7', 8' oppositely angularly disposed to the corresponding edges of the sides; the side panels are respectively attached to the sides and are defined therefrom by scored lines d — d extending parallel to the lines c — c , the angularity of the edges 4', 5', and 7', 8' with respect to the lines c — c determining the rearward inclination of the front and back of the box with respect to the vertical when it is formed up as hereinafter described and placed in display position. At the respective outer extremities of the side panels are locking flaps 9, 10 defined from the side panels by the scored lines e — e ; these locking flaps are of the same length as the side flaps measured vertically of the drawings but are of less width measured transversely thereof. On opposite sides of the front 2 are guide flaps 12, 13 respectively defined from the front by the scored lines f — f ; the front edges 12', 13' of these flaps are normal to these lines, while their rear edges 12'', 13'' form substantially the same angle therewith as do the edges 4', 5' with the lines c — c , while the outer edges 12''', 13''' of these flaps are preferably arranged substantially at right angles to the adjacent edges 12'', 13''. Each flap about midway of its rear edge 12''', or 13''' is provided with an inwardly directed slot S extending parallel to the lines f — f a little more than half way through the flap, while other guide flaps 14, 15 extend laterally outward from the opposite sides of the back 3, being defined there-

from by the scored lines h — h and separated from the sides 4, 5 by cuts i — i ; the front edges of the flaps as defined by these cuts are preferably of approximately the length of the edges 12'', 13'', their outer edges 13', 15' are respectively approximately the same length as the edges 12''', 13''' of the guide flaps 12, 13 and their rear edges 14'', 15'' are approximately the length of the edges 12', 13' thereof. The edges 14' 15' bear the same angular relation to the scores h — h as the edges 12''', 13''' bear to the scores f — f , but are oppositely disposed with respect thereto, while the edges 14'', 15'' respectively substantially parallel the edges 12'', 13''. Each of the flaps 14, 15 is provided with a slot S' extending inwardly from the edge 14'', 15'', as the case may be, in alignment with the adjacent slot S and of approximately the same length as the latter.

It will be noted that the back 3 is considerably wider, measured vertically in the drawings, 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, as the adjacent panel 16. Preferably the latter is transversely scored inwardly from its opposite edges for a short distance along the lines l — l midway between the scores j — 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 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. 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 end, 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 re-

ceiving 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; these flaps are now respectively brought together and the aligned slots S, S' hooked one within the other so that the portion of the flap 14 lying in prolongation of the slot S' is received in the slot S, and that portion of the flap 12 lying in prolongation of the slot S is received in the slot S', and the corresponding portions of the flaps 15, 13 similarly received in their adjacent slots. 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 and 13, 15 along the scores $d-d$, 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 with the 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 from 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 in the 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 parts of said articles will be visible above the sides of the box, and the tongue 17 will extend slightly below the lower edge of the cut-out section 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, and since all of the walls of the box extend substantially normal to the bottom 1 when the box is resting thereon, the container is desirably rectangular in shape. This container forms no part of the invention and may be utilized or not as desired although its employment will generally be preferred.

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 project 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 the tongue 17, are then pushed rearwardly until they assume an angular position with respect to the bottom of the box, the required hinging or pivoting movement of the back taking place along the score line a . By reason of the interengagement of the flaps 12, 14 and 13, 15 through the medium of the slots S, S', the front of the box, hinging about the score b , is constrained to follow this movement of the back which is limited by engagement of the edges 14'', 15'' of the guide flaps 14, 15 in the fold formed along the scores $d-d$ as best shown in Fig. 5, the permissible angularity of the back being thus determined by the width of these flaps. Likewise, rearward movement of the front of the box is limited by the engagement of the lower edges of the flaps 12, 13 with the bottom 1, also as best shown in Fig. 5. It will thus be apparent that through the interengagement of the guide flaps 12, 14 and 13, 15 through the medium of the slots S, S', the back 3 and front 1 are constrained to move in substantial parallelism, respectively hinging about the lines a , b when either is moved in one direction or the other so that, if desired, both of these parts may be returned to a substantially vertical position after they have been disposed in an angular one by simply pushing on the back or pulling on the front. Of course, the goods stacked in the box will also assume, or can readily be pushed into, a position parallel with the back as shown in Fig. 3 after the latter has been moved to display position as just described, thus making a very neat and attractive arrangement thereof for display purposes.

In order to afford 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 afforded to the back 3 when arranged as shown in said figure.

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

A slightly different arrangement for effecting corresponding movement of the front and back of the box when either of them is swung about its point of attachment to the bottom 1 is shown in Figs. 9 to 12, inclusive. In this form of the invention, the blank is substantially similar to that shown in Fig. 1 save that the guide flaps 12, 13 instead of being provided with obliquely disposed extremities, are terminated at the scores $r-r$ extending parallel to the scores $f-f$ and, similarly, the guide flaps 14, 15 are also terminated at the scores $s-s$ parallel to the scores $h-h$. Beyond the scores r , guide flaps 12, 13 are respectively provided with hook flaps 40 and the guide flaps 14, 15 with generally similar hook flaps 41, all of these flaps being relatively narrow measured parallel to the score a .

When forming up the box from a blank of the character of that shown in Fig. 9, substantially the same sequence of operations is followed as in the case of the blank shown in Fig. 1 save that the hook flaps 40, 41 on both sides of the box are mutually bent around each other as best shown in Fig. 10 after folding along the scores r and s and prior to the bending in and down of the side panels 7, 8. It therefore results because of the mutual engagement of these hook flaps one within the other after the box is fully formed up, that movement of the back of the latter around its line of connection a with the bottom 1 is operative to pull the front 2 rearwardly to a generally corresponding position of angularity, that is, through a generally corresponding arc; likewise, after the parts have been so rearwardly inclined, a forward pull on the front is operative to correspondingly move the back in a similar direction.

A still further modification of the invention is shown in Figs. 13 to 15, inclusive. In this case, the blank is substantially similar to that shown in Fig. 1 save that the slots S, S' are omitted. It therefore results that when the box is formed up from a blank of this character that the guide flaps 12, 14 and 13, 15 are devoid of any interconnection, so that either the back or the front may be swung about its line of connection with the bottom independently of the other. Consequently, when placing the box in display position, the back is first rearwardly inclined by pushing it away from the body of the box and the front then similarly inclined by pushing it toward the body, the guide flaps being so proportioned and designed that when the back and front are moved to the limit of their angular rearward movement, they will lie in substantially parallel relation as best shown in Fig. 15.

It will be apparent that when any of the boxes to which I have referred is arranged in display position, as well as when 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 the box in any of the said forms provides a rigid and satisfactory container 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 initially unfolded condition.

While I have herein described and illustrated certain embodiments of my invention with considerable particularity, I do not thereby desire or intend to specifically limit myself thereto, as numerous changes and modification 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 having a bottom, front, sides, and back, the front and back being respectively hingedly connected to the bottom for movement in a vertical plane, side panels folded inwardly and mutually interlocking means respectively extending rearwardly from the front and forwardly from the back operative to maintain the front and back in substantially parallel relation throughout their range of movement about their points of connection with the bottom.

2. A display box having a bottom, front, sides, and back, the front and back being respectively hingedly connected to the bottom for movement in a vertical plane, side panels folded inwardly along the upper edges of the sides into substantial parallelism with

the latter, and mutually interlocking means respectively extending rearwardly from the front and forwardly from the back between the sides and side panels, operative to maintain the front and back in substantially parallel relation throughout their range of movement about their points of connection with the bottom, said means being additionally operative by engagement with adjacent portions of the box to limit the extent of movement of the front and back in either direction.

3. A display box having a bottom and vertically extending sides in fixed relation therewith, a front hingedly connected to the bottom and a back similarly connected thereto, side panels folded inwardly along the upper edges of the sides into substantial parallelism therewith and provided with locking flaps, means for locking said flaps to the bottom, and mutually interengaging means extending rearwardly from the front and forwardly from the back between the sides and side panels operative to maintain the front and back in substantially parallel relation throughout their range of movement about their respective points of connection with the bottom.

4. A display box having a bottom, sides extending vertically therefrom, side panels folded inwardly along the upper edges of the sides to substantial parallelism therewith, means for locking said side panels to the bottom, a front and a back each hingedly connected to the bottom for movement in a plane normal thereto, a guide flap extending rearwardly from each side of the front, and a guide flap extending forwardly from each side of the back between the adjacent sides and side panels and interlocked with the adjacent first mentioned guide flap whereby when the back is moved from a position substantially normal to the bottom about its point of hinged connection therewith to a position rearwardly inclined with respect thereto, the front is constrained to partake of a similar movement and assume a position substantially parallel to the back.

5. A display box having a bottom, sides extending vertically upwardly therefrom, side panels folded downwardly and inwardly along the upper edges of the sides into substantial parallelism therewith, means for securing the side panels to the bottom whereby the sides and panels are maintained in fixed relation therewith, a front hingedly connected to the bottom along its forward edge, a back similarly connected to the bottom along its rear edge, guide flaps extending rearwardly from the front, and other guide flaps extending forwardly from the back between the adjacent sides and side panels and mutually engaging each other therebetween, whereby when the back is moved from substantially vertical to rear-

wardly inclined position, the front is constrained to follow such movement and assume a position in substantially parallel relation with the back at the conclusion thereof.

6. A display box formed from a single blank comprising a bottom, sides extending vertically upward therefrom having their front edges disposed in parallel rearwardly inclined relation, side panels folded inwardly along the upper edges of the sides into substantially parallel relation with the latter, a front hinged to the bottom along its forward edge, a back hinged to the bottom along its rear edge, and means respectively carried by the front and the back extending between the adjacent sides and side panels operative by mutual interengagement to limit the movement of the front and of the back about their respective points of hinged connection with the bottom.

7. A box blank comprising portions respectively designed to form the bottom, sides, front, and back of a box, side panels extending laterally from the side portions, each of the sides and their adjacent side panels having a free edge extending obliquely to the side edges of the bottom, a slotted guide flap extending laterally from each side of the front portion having a free edge in oblique relation to the side edges of said portion and a slotted guide flap extending laterally from each side of the back portion having a free edge in oblique relation to the side edges of said portion, the slots in the several guide flaps respectively extending inwardly from the oblique edges thereof substantially parallel to the side edges of the front and back portions and affording means for interlocking each guide flap on the front portion with the corresponding guide flap on the back portion to thereby maintain the front and back of the box in parallel spaced relation within defined limits oblique to the bottom when the blank is formed into a box.

8. A box blank comprising rectangular portions respectively designed to form the bottom, front, and back of the box, other portions adapted to form the sides thereof extending laterally from the bottom portion each having a free edge extending obliquely to the side edges of the bottom, side panels extending laterally from the side portions each having a free edge in correspondingly oblique but oppositely directed relation with said side edges, guide flaps extending laterally from the front portion each having a free edge extending obliquely to the side edges of said portion, and other guide flaps extending laterally from the back portion each having a free edge extending obliquely to the side edges thereof, the said oblique edges of the adjacent side panels

and guide flaps being in substantial parallelism.

9. A box blank comprising rectangular portions respectively designed to form the bottom, front, and back of the box, other portions adapted to form the sides thereof extending laterally from the bottom portion each having one free edge disposed normal to its side edges and another free edge disposed in oblique relation thereto, side panels extending laterally from the side portions each having a free edge in prolongation of the first mentioned edge of the adjacent side portion and another free edge in correspondingly oblique but oppositely disposed relation with the side edges of the bottom, guide flaps extending laterally from the front portion each having a free edge substantially parallel to the oblique edge of the adjacent side panel and another free edge substantially normal to the side edges of the bottom, other guide flaps extending laterally from the back portion each having a free edge extending in oblique relation thereto and in substantial parallelism with the oblique edges of the respectively adjacent side panels and first mentioned guide flaps.

10. A box blank comprising rectangular portions respectively designed to form the bottom, front, and back of the box, other portions adapted to form the sides thereof extending laterally from the bottom portion each having one free edge disposed normal to its side edges and another free edge disposed in oblique relation thereto, side panels extending laterally from the side portions each having a free edge in prolongation of the first mentioned edge of the adjacent side portion and another free edge in correspondingly oblique but oppositely disposed relation with the side edges of the bottom, guide flaps extending laterally from the front portion each having a free edge substantially parallel to the oblique edge of the adjacent side panel and another free edge substantially normal to the side edges of the bottom, other guide flaps extending laterally from the back portion each having a free edge extending in oblique relation thereto and in substantial parallelism with the oblique edge of the respectively adjacent side panels and first mentioned guide flaps, each of the guide flaps having a slot extending inwardly from its said oblique edge in substantial parallelism with the side edges of the bottom.

11. A box blank comprising rectangular portions respectively designed to form the bottom, front, and back of the box, other portions adapted to form the sides thereof extending laterally from the bottom portion each having one free edge disposed normal to its side edges and another free edge disposed in oblique relation thereto, side panels extending laterally from the side por-

tions each having a free edge in prolongation of the first mentioned edge of the adjacent side portion and another free edge in correspondingly oblique but oppositely disposed relation with the side edges of the bottom, guide flaps extending laterally from the front portion each having a free edge substantially parallel to the oblique edge of the adjacent side panel and another free edge substantially normal to the side edges of the bottom, other guide flaps extending laterally from the back portion each having a free edge extending in oblique relation thereto and in substantial parallelism with the oblique edges of the respectively adjacent side panels and first mentioned guide flaps, each of the guide flaps having a hook flap laterally projecting therefrom adapted for interengagement with the corresponding hook flap on the other guide flap on the same side of the blank when the box is formed up from the blank.

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

ALBERT E. KEPPLER.