

April 9, 1935.

A. E. KEPPLER

1,996,965

DISPLAY BOX

Filed Nov. 8, 1933

2 Sheets-Sheet 1

Fig. 1.

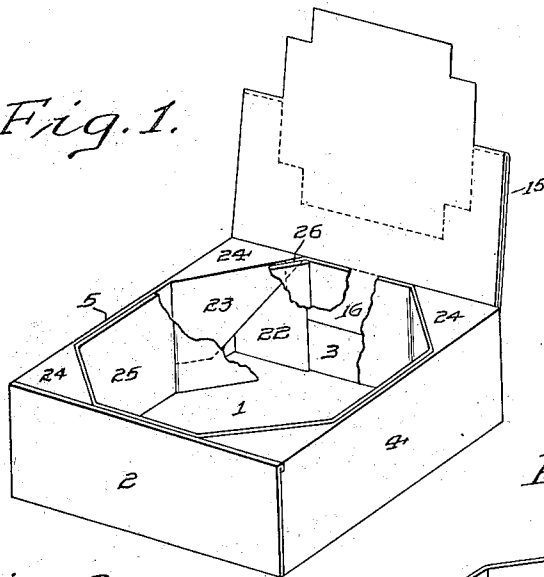


Fig. 2.

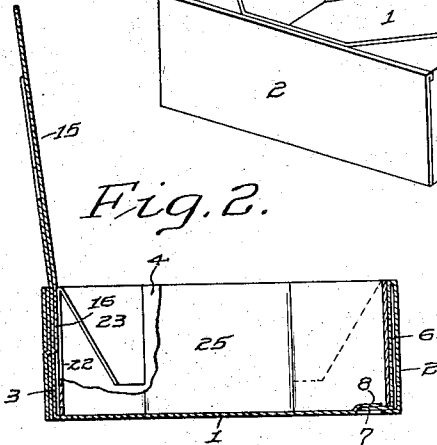


Fig. 3.

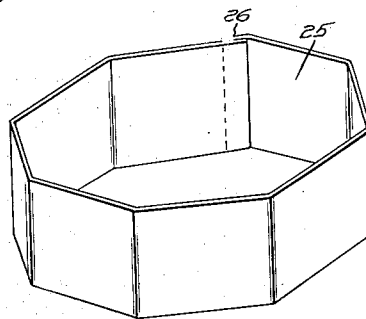
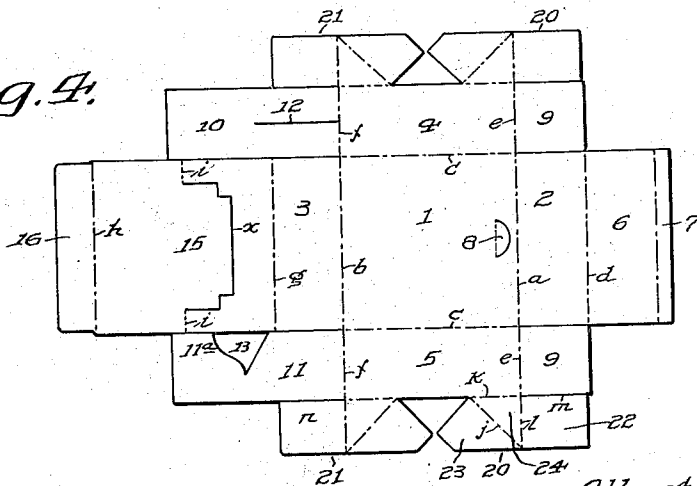


Fig. 4.



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WITNESS

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2 Sheets-Sheet 2

Fig. 5.

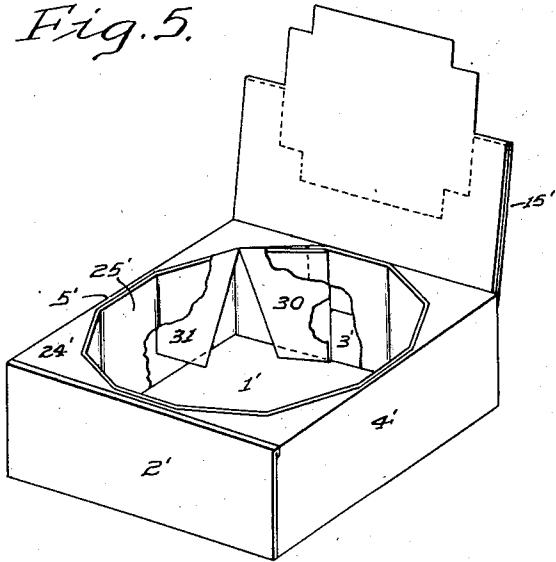


Fig. 6.

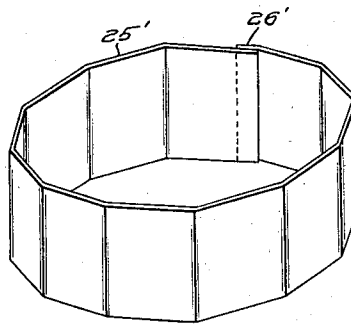
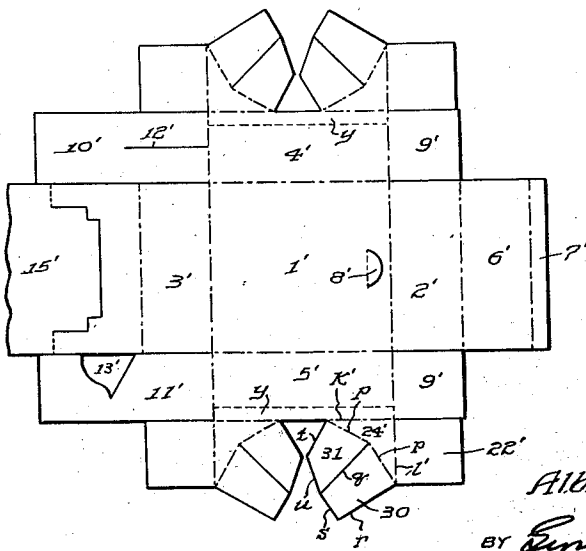


Fig. 7.



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UNITED STATES PATENT OFFICE

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DISPLAY BOX

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Application November 8, 1933, Serial No. 697,103

8 Claims. (Cl. 229-16)

Certain classes of articles such as link sausage, rubber tubing and the like, are usually put up by the manufacturer in coils of considerable length from which the retailer cuts off relatively short pieces from time to time as required by his customers.

A principal object of the present invention is to provide a box particularly adapted for reception and packaging of such goods which forms not only a satisfactory container for transporting them from the manufacturer to the retailer, but also an attractive and convenient receptacle for displaying them on the latter's counters or elsewhere.

A further object of the invention is to provide a display box of the character aforesaid, the component parts of which can be shipped flat from the box maker to the manufacturer of the goods which are to be packaged in the box after it is properly set up and which, after receipt by the retailer, may be readily placed by him in condition to effectively display the goods within the box.

A still further object of the invention is the provision of such a box, the component parts of which are preferably of cardboard or the like, which may be readily set up from knockdown condition in a minimum of time and with a minimum of difficulty by girls or other relatively unskilled labor; which is effective to preserve its contents from damage while in transit; which in its preferred embodiment is of rectangular form when in condition for shipment and may thus be packed snugly in crates or the like without loss of space, and which, because of its structural characteristics, is comparatively firm and rigid not only when in condition for shipment, but also when in display position.

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 certain boxes constructed in accordance therewith and illustrated in the accompanying drawings in which Fig. 1 is a perspective view of one of said boxes in display position with certain parts broken away to show internal construction; Fig. 2 is a longitudinal central section thereof; Fig. 3 is a perspective view of the retainer which forms a component element of the box, and Fig. 4 is a plan view on a somewhat smaller scale of the cut and scored blank from which the other component element of the box is formed. In Figs. 5-7 inclusive, respectively

corresponding to Figs. 1, 3 and 4, I have shown another slightly different box also constructed in accordance with the invention which, under certain conditions, may be preferred to that shown in the preceding figures. Throughout the drawings the same symbols are used to designate corresponding parts in the several figures, those employed in connection with the box shown in Figs. 5-7 being distinguished by a prime (').

Generally speaking, the box of my invention comprises when in condition to receive the goods to be packaged therein, a bottom bounded by front, back and side walls, a polygonal retainer resting on the bottom and having sides respectively in engagement with the several walls and means bridging the spaces between the other sides of the retainer and the corners of the box in such manner as not only to obscure said spaces from view but also to adequately support the adjacent portions of the retainer and thus maintain the latter in a substantially true polygonal shape against the pressure exerted thereon by the goods contained within it. Preferably, also, the box is provided with a top hinged to the back wall and, in the ordinary manner, the top may be cut and scored and provided with a flap which can be tucked either adjacent the front or rear wall depending on whether the top is in closing or open position whereby when bent up to the latter the top provides an attractive display feature, but as the particular arrangement and configuration of top form no part of the invention, they may be varied as desired and, in fact, in some instances, it may be preferred to omit the top entirely, the box then serving as an open container which can be temporarily wrapped in a suitable, preferably transparent, covering material for shipment after the goods are placed within it.

More particularly, and referring now to the blank shown in Fig. 4 which is of cardboard or other suitable material, it will be noted that it 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 is square and the others rectangular, the width of the latter measured normal to the scored lines being of course determined by the desired depth of the box. A panel 6 of substantially the same size and contour as the front 2 extends outwardly from the latter, being defined therefrom by the scored line *d*, and carries at its extremity a narrow locking flap 7 adapted to engage beneath a

tab 8 defined by an arcuate cut in the bottom of the box in the customary way. At the front ends of the sides 4, 5 are tucking flaps 9, 9 defined therefrom by scores *e—e*, while locking flaps 10, 10 defined from the sides by scores *f—f* extend rearwardly therefrom; these flaps are respectively provided with a slot 12 and a cutout 13 defining a tab 11*a* whereby the said flaps when folded to position may be locked together in the ordinary way. From the back 3 a portion 15 is extended to form the lid, being defined from the back by the score *g* and provided at its outer extremity with a tongue 16 beyond the score *h*; desirably, the part 15 approximates the shape and size of the bottom 1 so that when folded parallel thereto it will cover the latter to form a closure for the box. It is also preferably provided with a staggered cut *x* and scored transversely at *i—i* at the extremities of this cut but, if desired, the latter and the scores *i—i* may be left out or the whole top portion 15 omitted in case, on the one hand, the top is not to be used as a display medium or, on the other, not to be used at all as hitherto suggested.

The various parts of the blank to which reference has heretofore been made are commonly found in substantially similar form in numerous types of display boxes constructed from single blanks of material, and it will thus be readily understood that when the box is to be assembled, the front and rear walls are folded up along the scores *a—b* and the sides along the scores *c—c*, the tucking flaps 9, 9 then tucked between the parts 2, 6 and the locking flap 7 inserted beneath the tab 8, thus holding the front in substantially vertical position with respect to the bottom. The locking flaps 10, 11 are then brought around behind the back 3 and locked together through the medium of the slot 12, cutout 13 and tap 11*a* is inserted in the slot, thus completing the formation of the outer part of the box. The top can then be bent forward on the score *g* and the flap 16 bent down on score *h* and inserted behind the front, now formed by the panels 2, 6, thus closing the box which, in the absence of other parts now to be described, would thus form a rectangular container open, when the top is turned up from parallelism with the bottom, throughout the entire area bounded by the front, back and side walls.

The blank, in addition to the parts heretofore described, is provided with a retainer flap adjacent each outer corner of the side panels 4, 5 defined therefrom by a scored line *k* extending parallel to the scores *c—c* for a distance approximately equal to the width of the retainer flap measured normal to score *k*. From the inner end of this score another score *j* is extended outward at an angle of 45° to meet the score *l* constituting a prolongation of the score *e* or *f*, scores *k*, *j* and *l* thus defining in the flap an isosceles triangle of which *j* is the base. Each of the flaps 20 adjacent the front of the blank is extended beyond the score *l* and terminates just short of the score *d* if prolonged, being separated from the adjacent tucking flap 9 by a cut *m* while, in a similar way, each of the flaps 21 adjacent the back of the blank is likewise extended alongside the locking flaps 10, 11, being separated therefrom by a cut *n*, and terminates at a point just short of the score *g* if prolonged. The inner end of each flap is also cut on a line normal to its score *j* to provide an edge adapted to engage the adjacent side panel when the blank is folded, and is beveled on a line preferably parallel to said

score at the corner adjacent the proximate flap. Each retainer flap may therefore be considered as embodying three parts, or zones respectively designated as 22, 23, 24, which when the blank is bent up respectively occupy certain positions and perform certain functions as hereinafter more fully described.

Mention has already been made of the retainer which forms a component element of the completed box. This retainer 25 consists of a strip of cardboard or like material in width approximating that of the panels of the blank designed to form the walls and surrounding the bottom 1; it is transversely scored at intervals so it can be bent up to polygonal shape as best shown in Fig. 3, and is provided at one end with a narrow flap 26 which laps over the opposite end and is secured thereto by a suitable adhesive. The retainer can therefore be readily pressed down to approximately flat condition by collapsing it oppositely inwardly and, when so collapsed, takes up but little room during transit from the box maker to the goods manufacturer by whom it is bent out to normal position as shown in Fig. 3 preparatory to assembly with the folded-up blank to form the completed box. The particular retainer to which reference is now being made is octagonal, but retainers having a greater number of sides may also be employed as hereinafter described.

When the blank and the retainer are to be assembled to form the completed box, the sides, front and back walls of the former are bent up and the tucking and locking flaps arranged in the manner to which reference has already been made. The retainer flaps are then respectively bent transversely on scores *j* and *l* and downwardly on scores *k* so the parts 22 lie against the front or rear wall as the case may be, the parts 23 extend vertically downward from the scores *j* with the edges thereof which, in the flat blank, were normal to said scores engaging the adjacent side walls, and the triangular portions 24 defined by scores *j*, *k*, *l* extend parallel to the bottom, being sustained and braced by the parts 22, 23. The retainer is now inserted in the space bounded by the parts 23 of the retainer flaps and the front, back and side walls in such way that four of its sides lie respectively adjacent said parts and its other four sides, alternating therebetween, lie adjacent said walls, the retainer resting on the bottom 1, thus placing the box in condition to receive the goods which are to be packaged in it. After the goods are inserted, the cover, if provided, is brought forward and the flap 16 is tucked in between the front wall, the retainer and the parts 22 of the adjacent retainer flaps thus placing the package in condition for transit to the retailer who, on its receipt, throws the cover back, bends it transversely forward on the scores *i—i*, assuming the top is provided with them, and tucks flap 16 between the back wall, the retainer and parts 22 of the adjacent retainer flaps, thus putting the cover in display position.

It will be noted that when the retainer is in place, it bounds a polygonal cavity in which the goods can be readily coiled and that it is firmly supported on its several sides either by the side and back walls or by the retainer flaps, the parts 24 of which are snugly seated in the corners of the box and in turn supported by the depending parts 22, 23, the former abutting the adjacent side walls and the latter seating on the bottom adjacent the rear wall or on the locking flap 7, in turn resting on the bottom, adjacent the front

5 wall. Moreover, this support is afforded not only adjacent the upper margin of the retainer but also throughout substantially its full height since the parts 23 of the retainer flaps cannot readily
 10 be pushed outwardly from vertical position because of their aforesaid engagement with the side walls, while of course the latter as well as the front and back walls are firmly attached to the bottom. It therefore results that even though
 15 relatively heavy goods such as rubber tubing are enclosed in the box, the latter as a whole, as well as the retainer per se, adequately preserves its shape under normal conditions of service while as the spaces between the walls of the box and the diagonally extending sides of the container
 20 are obscured from view by the parts 24 of the retainer flaps, the box presents a very attractive and neat appearance and affords a desirable medium for the display of the goods which at any time can be drawn therefrom in such lengths as may be required.

While under usual conditions a box having an octagonal retainer as heretofore described will generally be preferred, a box embodying a container having a greater number of sides may sometimes be deemed desirable for packaging of certain classes of goods or for other reasons such, for example, as one having a twelve-sided retainer as illustrated in Figs. 5 and 6, as a retainer
 30 of this type naturally more nearly approximates an annulus than one having but eight sides.

In the construction of a box of this character, I employ a blank generally similar to that to which reference has already been made save that the retainer flaps are formed somewhat differently from those of the blank of Fig. 4. More particularly as shown in Fig. 7 each retainer flap comprises an outer end part 22' but instead of its part 24 approximating an isosceles triangle in shape and thus having a straight base score j , the base score in the blank of Fig. 7 is in two sections $p-p$ defining an included angle of approximately 150° with its vertex directed toward the intersection of the scores k' , l' . From the vertex
 45 of this angle, the retainer flap is cut on a line q bisecting the angle, thus forming two separate flaps 30, 31, the first of which is bounded by cut q , adjacent score p and edges r , s respectively normal and parallel to said score, while the second is bounded by cut q , adjacent score p , an edge t normal to said score and an edge u disposed at an angle sufficient to insure the end of the flap clearing the bottom of the box when the blank is set up.

In this form of the invention the retainer 25' is provided with twelve instead of eight sides and with the usual gumming flap 26', and when the box is to be assembled the blank is folded up in the usual way to form the walls and top. Thereupon, the retainer flaps are respectively bent over on the line k' and the parts 22', 30, 31 thereafter bent in and down on the scores l' , $p-p$ so as to bring parts 22' against the front or back wall as the case may be, the edge t against the adjacent side wall and the edge r against the back or front wall, the parts 22', 30, 31 thus affording firm support to the part 24' and retainer 25' after it is placed in position. The box as a whole now presents a distinctly rigid assembly
 70 while the spaces between the corners of the walls and the retainer are obscured from view as in the case of the preferred embodiment.

Under most conditions it is desirable to form the retainer flaps 20', 21' unitarily with the rest
 75 of the blank, but it will be obvious from an in-

spection of Fig. 7 that such construction entails a considerable wastage of material in cutting the blanks from stock, a condition which is equally true though to a lesser degree with the blank shown in Fig. 4. Therefore, if preferred, instead of making the retainer flaps integral with the blank, they may be cut from separate pieces of stock, desirably in pairs designed for disposition adjacent each side panel 4', 5', the flaps of each pair being connected by a narrow gluing strip
 10 approximating the length of the side panel. This strip is indicated by the dotted lines y in Fig. 7. The gluing strips are then respectively attached by a suitable adhesive to the appropriate side panels so that the flaps in effect form an operatively unitary structure therewith just as though they were cut from the same piece of stock. Such construction is equally applicable, of course, to the blank shown in Fig. 4 but is less likely to be deemed desirable in connection therewith since there is normally less waste of stock in cutting these blanks as an integral unit.

While I have herein described with considerable particularity certain boxes formed in accordance with my invention, I do not thereby desire or intend to specifically confine myself thereto or to any precise details of design, construction and arrangement of the various component parts as the principles of the invention may readily be embodied in boxes of other types and/or modifications made in various particulars with respect to said parts 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, and front, back and side walls, a polygonal retainer seated upon the bottom engaging each of the walls intermediate of its ends, and flaps hinged to certain of the walls each comprising a part closing the space between the adjacent walls and the retainer and a depending part vertically supporting the first mentioned part.

2. A display box comprising a rectangular bottom, and front, back and side walls extending vertically therefrom, a polygonal retainer seated on the bottom having a side in contact with each wall and other sides out of contact therewith adjacent the corners of the box, and flaps attached to certain of the walls, each having a part extending horizontally over the space between the retainer and the adjacent corner and other parts depending substantially vertically therefrom and respectively engaging one wall and the bottom of the box to support said first mentioned part.

3. A display box comprising a rectangular bottom, and front, back and side walls extending vertically therefrom, an octagonal retainer seated on the bottom having alternate sides engaging said walls and other sides extending diagonally across the corners of the box, mean carried by the walls interposed between each of said last mentioned sides and the adjacent corner of the box forming a closure for the space therebetween, and means integral with said last mentioned means forming a support for the inner edge thereof and engaging said diagonally extending walls of the retainer.

4. A display box comprising a rectangular bottom, and front, back and side walls extending vertically therefrom, a polygonal retainer seated on the bottom having opposed sides engaging said

walls and other sides extending substantially diagonally across the corners of the box, means respectively hinged to a wall adjacent each of said last mentioned sides and forming closures for the spaces between said sides and the adjacent walls, and means integral with and supporting each closure means substantially parallel to the bottom.

5. A display box comprising a rectangular bottom, and front, back and side walls extending vertically therefrom, an octagonal retainer seated on the bottom having alternate sides respectively engaging said walls and other sides extending diagonally across the corners formed at the junctions thereof, and a flap carried by one of the walls adjacent each corner having a part extending across the corner substantially parallel to the bottom and engaging the adjacent parts of the retainer and other parts depending adjacent the proximate walls forming supports for the first mentioned part.

6. A display box comprising a rectangular bottom, front, back and side walls, a polygonal retainer seated on the bottom having alternate sides engaging said walls and other sides extending substantially diagonally across the corners formed at the junctions thereof, and a flap hinged to each side wall adjacent each of said corners, each flap comprising a substantially triangular part fitting in the space between the proximate portion of the retainer and the ad-

acent portions of the walls and parts depending adjacent the walls providing vertical support for the substantially triangular part.

7. A display box comprising a bottom and front, back and side walls, a twelve-sided retainer seated on the bottom within and having sides respectively contacting said walls and other sides adjacent the corners formed by the intersections thereof and in spaced relation therewith, and flaps carried by certain of said walls adjacent said corners, each flap comprising a part extending to the proximate sides of the retainer in substantial parallelism with the bottom and other parts respectively depending adjacent the walls and supporting said first mentioned part.

8. A display box comprising a polygonal retainer and a unitary enclosing structure therefor, said structure providing a bottom supporting the retainer and front, back and side walls respectively in engagement with the retainer with their corners spaced therefrom, substantially triangular flaps respectively hingedly connected along an edge to one of said walls and bridging the spaces between the retainer and said corners, and other flaps depending therefrom each engaging one of said walls and affording vertical support to the adjacent substantially triangular flap, said retainer being freely insertable in and removable from said enclosing structure.

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