March 22, 1949. R. P. O'CONNOR 2,465,169

DISPLAY BOX

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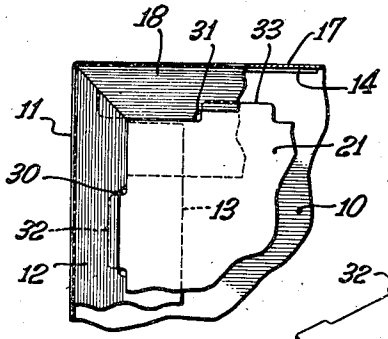


Fig. 4.

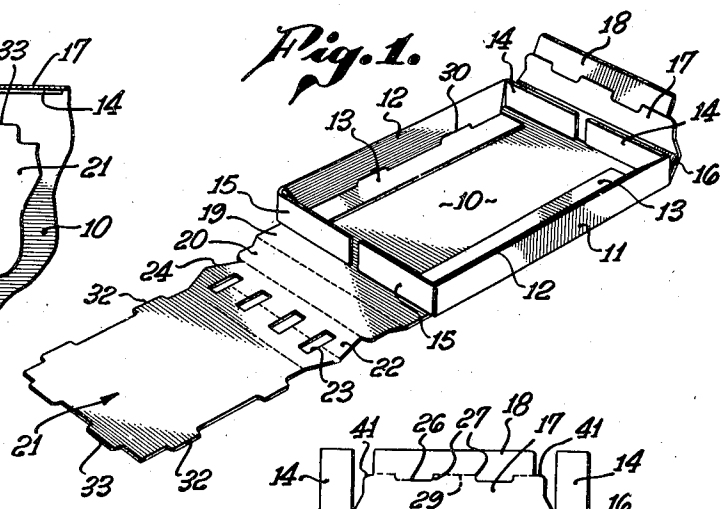


Fig. 1.

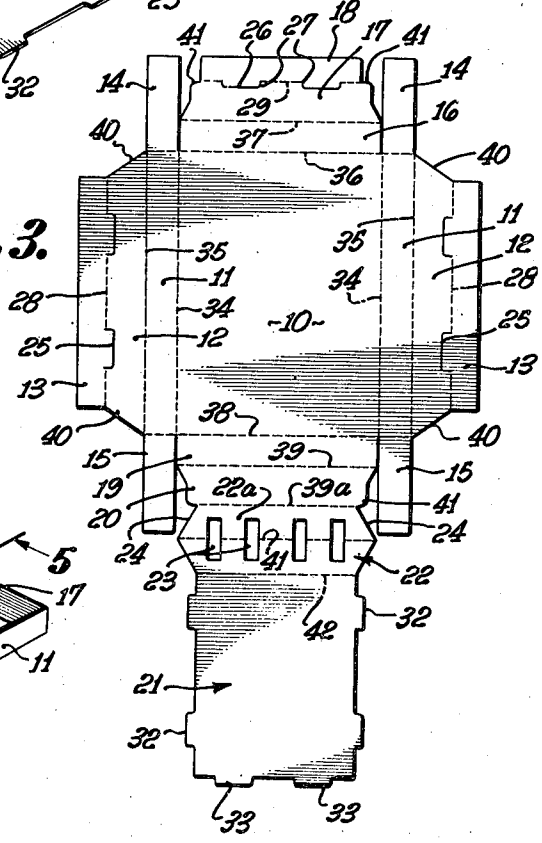


Fig. 3.

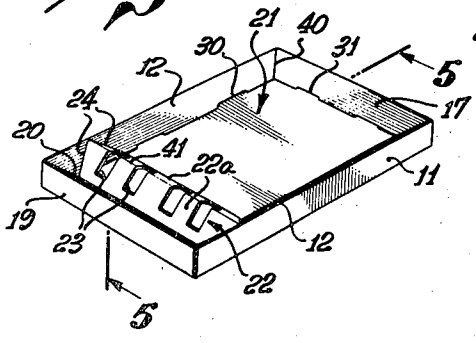


Fig. 2.

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Fig. 5.

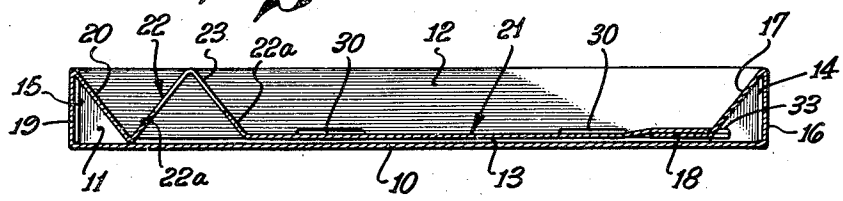


Fig. 6.

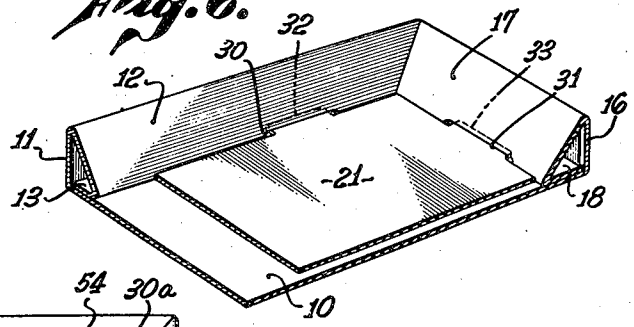


Fig. 7.

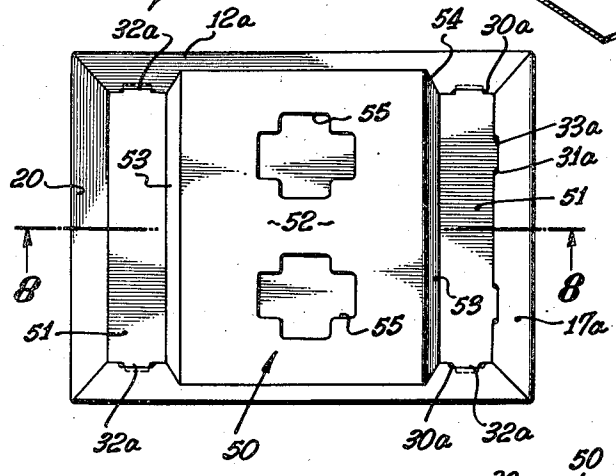
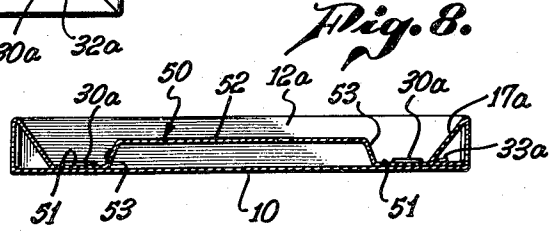


Fig. 8.



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DISPLAY BOX

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6 Claims. (Cl. 206—45.14)

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The present invention relates to boxes, and more particularly to paper or cardboard boxes or cartons suitable for holding and displaying various articles.

An object of the invention is to provide a display box which may be formed readily into a picture frame configuration.

Another object of the invention is to provide a box which may be formed from a single piece, and in which the various portions of the box are positively interlocked to retain the desired box shape, without the necessity of employing supplementary attachment devices, such as an adhesive.

Still another object of the invention is to provide a box having sloping inner side and end walls that are held in proper relation with respect to each other by a portion of the box which is capable of holding one or more articles.

A further object of the invention is to provide a box having sloping inner side and end walls and a panel secured to the inner walls in such manner as to overcome the inherent tendency of the inclined walls to lift the panel from its assembled position.

This invention possesses many other advantages, and has other objects which may be made more clearly apparent from a consideration of several forms in which it may be embodied. Such forms are shown in the drawings accompanying and forming part of the present specification. These forms will now be described in detail, illustrating the general principles of the invention; but it is to be understood that such detailed description is not to be taken in a limiting sense, since the scope of the invention is best defined by the appended claims.

Referring to the drawings:

Figure 1 is a perspective view of a display box, with portions folded into place;

Fig. 2 is a perspective pictorial view of the completely formed box;

Fig. 3 is a plan view of a unitary blank, disclosing the shape of the box or carton prior to its being folded;

Fig. 4 is a fragmentary plan view of a portion of the finished box shown in Fig. 2;

Fig. 5 is an enlarged section taken along the line 5—5 on Fig. 2;

Fig. 6 is a fragmentary perspective view of a modified form of box;

Fig. 7 is a plan view of still another form of box; and

Fig. 8 is a section taken along the line 8—8 on Fig. 7.

Referring to Figs. 1 to 5, inclusive, the box or

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carton may be made of stiff paper, cardboard, or the like, and includes a generally rectangular bottom section 10 from which outer side walls 11 can project upwardly. From these outer side walls, inner side walls 12 may extend downwardly toward the bottom 10. These inner side walls terminate in foot flaps or portions 13, adapted to lie on top of the bottom member 10.

End flaps 14, 15 project outwardly from both ends of each outer side wall 11. An outer end wall 16 projects upwardly from one end of the box bottom section 10, there being an inner end wall 17 extending downwardly toward the bottom from this outer wall. A foot flap 18 is integral with the inner end wall 17, and is adapted to rest upon the bottom 10 of the box.

An outer end wall 19 extends upwardly from the other end of the bottom section 10. This wall is integral with an inner end wall 20 adapted to extend toward the bottom of the box. A panel section 21 extends from this inner wall 20 toward the other inner end wall 17. This panel section includes an article holder portion 22, which may assume any desired shape. As shown in the drawings, it includes an inverted V-shaped member having holes 23 therein for the reception of articles to be displayed. The side edges 24 of the holder portion are tapered in an upward and outward direction, to conform to the slope or inclination of the inner side walls 12, as more particularly described below.

The panel section 21 may be disposed along the bottom of the box, or may be elevated thereabove, as desired. In any event, it extends from one end wall 20 to the opposed inner end wall 17.

For the purpose of interlocking the various parts with respect to one another, the inner side walls 12 may be provided with outwardly directed, shallow, generally U-shaped cuts or slits 25. Similarly, the inner end wall 17 may be provided with corresponding cuts or slits 26. In all instances, the legs 27 of the slits terminate substantially at the hinge or fold line 28, 29 between the inner wall portions 12, 17 and the adjacent foot portions 13, 18. These cuts or slits 25, 26, when the foot portions are bent along their respective fold lines, form slots 30, 31 adapted to receive the side tabs 32 and end tabs 33 on the panel section 21 of the box.

A unitary blank for the box is illustrated in Fig. 3, in which the various components of the box have been numbered to conform with the above description. The outer side walls 11 may be swung upwardly with respect to the bottom section 10 about their respective fold lines 34. The

inner side walls 12 may be swung inwardly and downwardly with respect to the outer side walls 11 about their respective fold lines 35, while the side foot portions 13 may be folded about their respective fold lines 28 where they join the inner walls.

Similarly, one of the outer end walls 16 may be folded about its fold line 36 at the end of the bottom section 10, and the end flaps 14 at this end of the box may also be folded about this same fold line 36. Of course, the sides of these end flaps 14 are not joined to the outer end walls 16, 17. The inner end wall 17 may be folded about a fold or hinge line 37 where it joins the outer end wall 16, whereas the end foot flap 18 may be folded around the hinge line 29 where the legs 27 of the U-shaped slits 26 terminate.

At the other end of the blank the outer wall portion 19 may be folded around the hinge line 38 at the edge of the bottom section 10, the end flaps 15 also being foldable about this same line with respect to the outer side walls 11. The inner end wall 20 is also foldable about the line 39 marking the upper end of the outer end wall 19, whereas the panel section 21, including the inverted V-shaped holder 22, may be folded about the line 39a marking the lower edge of the inner end wall 20 when folded to its final position. In view of the inverted V shape of the holder portion 22, its tapering sides 22a may be bent along the line 41 extending between the apices of its tapered edges 24, whereas the remainder of the panel portion 21 may be folded along a line 42 marking the termination of the holder portion, in order to lie adjacent the bottom 10 of the box.

In forming the box from the blank disclosed in Fig. 3, the end flaps 14, 15 are first bent upwardly about their respective hinge lines 36, 38 from the plane shown in the drawing, and the side wall members then folded upwardly about their hinge lines 34 adjacent the bottom section 10, to dispose the end flaps 14, 15 inwardly toward each other and on top of the hinge lines 36, 38 for the end wall portions 16, 19. When in this position, the outer side walls 11 extend upwardly from the box bottom. The inner side wall portions 12 may then be folded along the lines 35 to dispose them inwardly of the box toward one another, after which the foot portions 13 are folded along their hinge lines 28 to place them on top of the bottom section 10 and with their side slots 30 open, as shown in Fig. 1. The end wall 16 may now be folded upwardly about the fold line 36 at the bottom section to place the outer wall against the exterior of the end flaps 14, and the inner wall 17 then folded about its joining line 37 with the outer wall 16 to dispose it inwardly of this outer wall. The end foot portion 18 is then folded with respect to the inner end wall 17 to dispose it adjacent the bottom section 10 and on top of the side foot portions 13.

Thereafter, the opposite end wall 19 may be folded upwardly about the line 38 joining it with the bottom section 10, and the inner wall portion 20 folded about its hinge line 39 where it joins the outer wall section. The main portion of the panel 21 may then be disposed adjacent the bottom section 10 of the box, with its side tabs 32 and end tabs 33 in alignment with the corresponding side and end slots 30, 31. The end tabs 33 are inserted into the end slots 31 and the opposed side tabs 32 into the adjacent side slots 30, in order to lock the panel section 21 to the side and end members 12, 17 and dispose the tapered edges 24 of the holder portion in conformance and contact with the sloping inner side walls 12 (Fig. 2).

Since it is desired to have the finished box represent a picture frame, the inner walls 12 slope from the upper edges 35 of the outer walls 11 toward the bottom 10 of the box. A close fit at the corners of these inner walls can be obtained by beveling the ends 40 of the inner side walls 12 and inner end walls 17, 20, as shown in the drawings. When the various components of the box are folded, these beveled ends 40 will join one another along straight lines.

In order to further hold the box in its folded condition, the outer corners of the inner end walls 17, 20 may have projecting lugs 41 that will fit behind the adjacent beveled end edges 40 of the inner side walls 12, and thereby tend to prevent upward swinging of the inner end walls 17, 20.

By providing the tabs 32, 33 on the panel member fitting into the slots 25, 26 formed in the side and end members 12, 17, 20, the various parts are interlocked securely with respect to one another, and the inherent tendency of the inner wall members to swing upwardly about their fold lines is prevented. The panel section 21 rests upon the foot portions 13, 18 to assist in holding the inner wall members 12, 17, 20 in a downward position.

It is apparent that a box has been provided in which all of the parts are securely interlocked with one another, and in which the inner walls slope inwardly toward the bottom portion 10 of the box to provide a picture frame effect, in which articles disposed within the holder portion 22 of the box can be displaced attractively.

In the form of invention disclosed in Fig. 6, the foot portions 13, 18 are bent outwardly from the lower edges of the inner walls 12, 17, instead of being disposed in an inward direction, as shown most clearly in Figs. 1 and 4. The outward bending of these foot portions still provides the slots 30, 31 for the reception of the tabs 32, 33 on the panel section 21. The outward bending, however, possesses the advantage of making the side and end walls stronger and more rigid.

In the form of invention disclosed in Figs. 7 and 8, the panel portion 50 has been shaped to provide end sections 51 lying adjacent the bottom 10, in which side tabs 32a are disposed, adapted to be received within the companion slots 30a in the sloping side walls 12a. The free end of this panel section is also provided with tabs 33a adapted to be received within the slots 31a in the inner end wall 17a. Between the end sections 51, an elevated holder portion may be provided, consisting of a central flat section 52 resting upon the side walls 12a and supported by these tapered side walls above the bottom 10 of the box. This central section 52 has end walls 53 integral with the end sections 51 and provided with converging side edges 54 adapted to conform to the slope of the side walls 12a.

The central portion 52 may have one or more suitably shaped openings 55 in which articles can be received. These articles can rest upon the bottom section 10 of the box and be confined from lateral movement by the sides of the openings 55.

From the foregoing descriptions, it is apparent that a display box has been provided having a picture frame configuration, in which all of the parts are positively interlocked with respect to one another, so that the desired shape of the box is retained. Of course, if desired, the inner walls may be disposed at various angles with respect to the bottom, and for that matter, may be made

perpendicular to the bottom. Similarly, the angle of the outer walls 11, 16, 19 to the bottom 10 may be altered without departing from the present invention.

The inventor claims:

1. In a foldable box: a bottom section; outer side and end walls extending upwardly from said bottom section; inner side and end walls extending downwardly from said outer walls toward said bottom section; a panel section extending from one of said inner end walls toward the opposite inner end wall; said panel section having tabs projecting therefrom and fitting within slots in said inner side wall and in said opposite inner end wall; and lugs projecting outwardly from the ends of the inner end walls and engageable with the ends of the inner side walls.

2. In a foldable box: a bottom section; outer side and end walls extending upwardly from said bottom section; inner side and end walls extending downwardly from said outer walls toward said bottom section and being inclined with respect to said bottom section, said inner side walls having beveled ends adjacent companion beveled ends on said inner end walls; a panel section extending from one of said inner end walls toward the opposite inner end wall; said panel section and inner side walls having interlocking tabs and slots for holding said inner side walls against displacement with respect to said panel section.

3. In a foldable box: a bottom section; outer side and end walls extending upwardly from said bottom section; inner side and end walls extending downwardly from said outer walls toward said bottom section, said inner walls being inclined with respect to said bottom section, said inner side walls having beveled ends adjacent companion beveled ends on said inner end walls; a panel section extending from one of said inner end walls toward the opposite inner end wall; foot flaps extending along said bottom section from the lower edges of said inner side walls and said opposite inner end wall; said panel section having tabs projecting therefrom and fitting within slots in said inner side wall and said opposite inner end wall, said slots being adjacent said foot flaps.

4. A foldable box formed from a unitary blank: a bottom section; outer side and end walls extending upwardly from said bottom section; inner side and end walls extending downwardly from said outer walls toward said bottom section, said inner walls being inclined with respect to said bottom section, said inner side walls having beveled ends adjacent companion beveled ends on said inner end walls; a panel section extending from one of said inner end walls toward the opposite inner end wall; foot flaps extending along said bottom section from the lower edges of said inner side walls and said opposite inner end wall; said panel section having tabs projecting therefrom and fitting within slots in said inner side walls and said opposite inner end wall, said slots being adjacent said foot flaps; flaps extending from the opposite ends of said outer side walls and disposed between the outer and inner end walls at each end of the box; lugs at the ends of the inner end walls engaging the beveled ends of said inner side walls; said panel section having an article holder portion provided with side edges supported by said inclined inner side walls.

5. A folded open-faced display box comprising a bottom section, outer vertical side and end walls extending upwardly from said bottom section, inner side and end walls extending downwardly and inclined inwardly from said outer walls toward said bottom section, a panel section integral with one of said inner walls and extending toward the opposite inner wall, said panel section and inner walls having interlocking tabs and slots for holding said inner walls against displacement with respect to said panel section, and lugs projecting from the ends of some of the inner walls and engageable with the ends of the adjacent inner walls, said panel section having an integral upwardly extending slotted transverse rib for holding and displaying small packages.

6. A folded open-faced display box comprising a bottom section, outer vertical side and end walls extending upwardly from said bottom section, inner side and end walls extending downwardly and inclined inwardly from said outer walls toward said bottom section, said inner side walls having beveled ends adjacent companion beveled ends on said inner end walls, a panel section integral with one of said inner walls and extending therefrom toward the opposite inner wall, said panel section and at least one of said inner walls having interlocking tabs and slots, and lugs projecting outwardly from the ends of some of the inner walls and engageable with the ends of the adjacent inner walls, said panel section having an integral upwardly extending slotted transverse rib for holding and displaying small packages.

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