

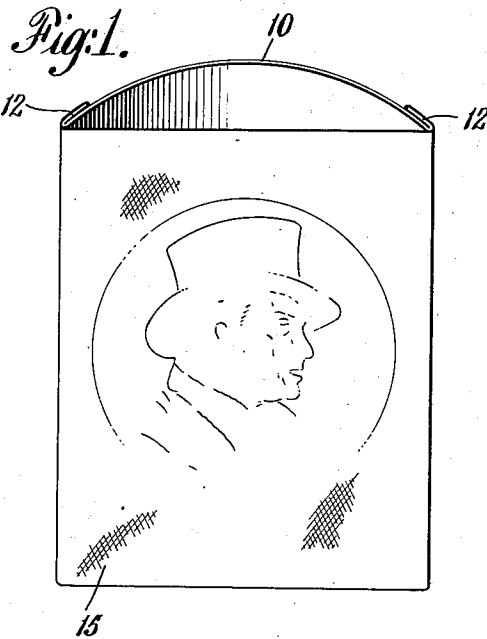
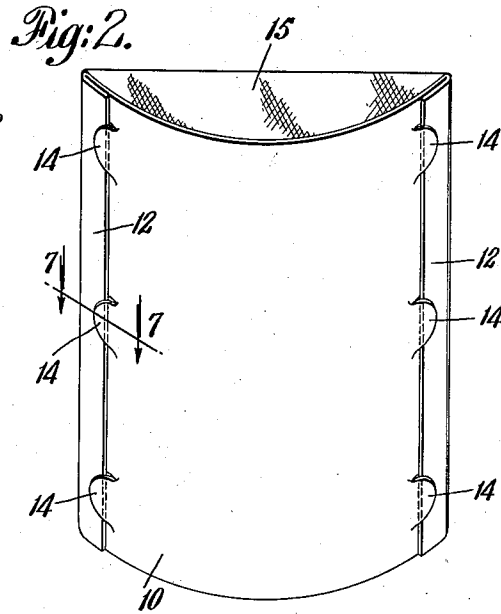
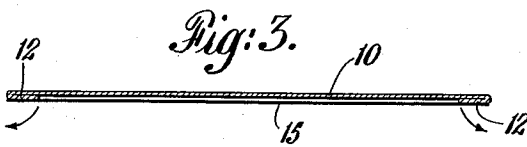
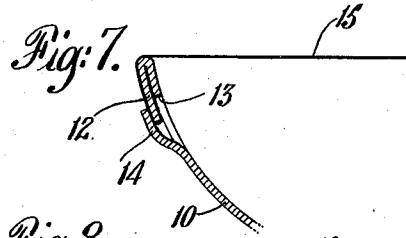
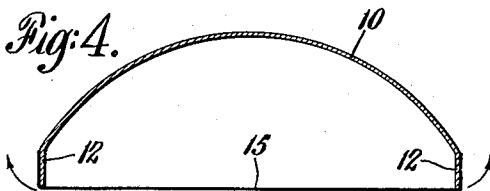
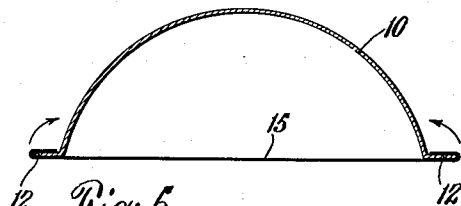
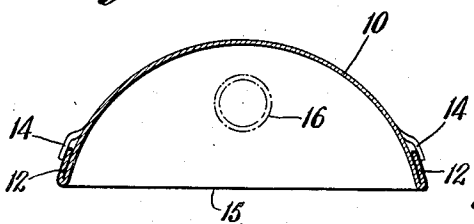
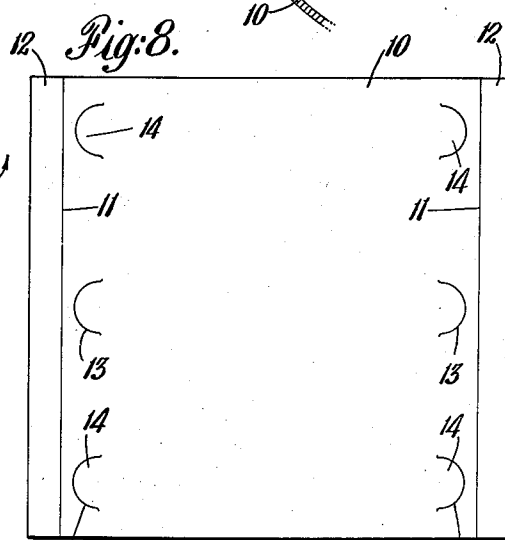
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2,160,724

DISPLAY DEVICE

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UNITED STATES PATENT OFFICE

2,160,724

DISPLAY DEVICE

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17 Claims. (Cl. 40—125)

This invention relates to display devices which are readily placed in condition to be conveniently packed for shipment or storage and may be easily but simply placed in display condition.

5 The main object of the invention is to provide a device of the character described which is of simple construction and low in cost.

10 A further object of the invention is to provide a device of the character described which shall be self-contained, requiring no auxiliary apparatus or fittings to support it or otherwise make it operable for display purposes.

15 A further object of the invention is to provide a device of the character described comprising a display surface held in a flat position in connection with a simple support which not only maintains the display surface in an upright position but also maintains it under tension, so that it will be flat and smooth without ripples or wrinkles.

20 It is a further object of the invention to provide a device of the character described which does not require pasting, gluing or any similar operation to change the device from its flat sheet or manufacturing and packing position into a condition for use.

25 It is a further object of the invention to provide a device of the character described wherein the display surface is formed by a flexible material incapable of self-support such as oil silk or paper or other suitable material.

30 A further object of the invention is to provide a device of the character described requiring only two parts for the display and its support, one part being a card of any material suitable for the purpose and the other the display surface.

35 One of the main objects of the invention is inexpensively (1) to stretch taut and smooth without ripples or wrinkles a flexible material incapable of self-support, (2) to erect such material simply and easily in upright display position and (3) to manufacture, ship and store a display device in flat condition.

Other and ancillary objects of the invention will appear hereinafter.

45 In the accompanying drawing which illustrates the invention—

Fig. 1 illustrates a perspective front view of my display device, when in an operative condition or condition for use;

50 Fig. 2 shows a perspective rear view of the device shown in Fig. 1;

Fig. 3 illustrates a top view of my display device when in a flat or leveled condition, as used for the purpose of manufacture, packing and shipping;

Figs. 4 and 5 show the top view of the device in two different stages of development during the process of transforming the device from the flat condition to that shown in Figs. 1 and 2;

Fig. 6 is a top view of the display device when in a condition as that shown in Fig. 1;

Fig. 7 is a sectional top view of a lock arrangement on line 7—7 of Fig. 2; and

Fig. 8 is a plan view of the card used in the display device.

Referring to the drawing, the suitably elastic card or sheet of pasteboard or cardboard 10, Fig. 8, is provided with two scored lines 11, extending throughout the entire length and located a definite distance away from, two parallel edges of the card. The strips or flanges 12, thus produced, may consequently be subjected to a hinging or bending action with relation to the remainder of the card, so that these flanges may be moved and turned on its scored line in either direction, from front (the side of the display sheet) to rear and vice versa. When the flanges are turned on their hinges or scored lines into their extreme forward position, they will lie against the front surface of the card 10 in the manner shown in Fig. 3.

When the card 10 is in a condition as that shown in Fig. 3, wherein the flanges 12 are turned against the front surface of the card, the visible and non-touching surfaces of both flanges are covered by a display sheet 15 of fabric preferably textile fabric, such as oil silk or the like and of which its size is approximately that of the bent card. This sheet, which may have printed or painted on its surface suitable advertising or other matter, is fastened to the outer surfaces of flanges 12 by any suitable means such as an adhesive material or stapling or other fastening means.

The display sheet may, instead of having pictures, printing or other matter, serve as a picture screen for receiving light projected pictures or other matter as from a stereopticon or moving picture projector.

Card 10 is also provided with a series of curvilinear slits 13, Fig. 8, located near to and in parallel alignment with the scores 11 on this card. These slits, made for the purpose of furnishing flaps or tabs 14, are here shown to number three per series. It is evident, however, that this number may be changed, and that furthermore the distance between the flaps 14 may be determined to suit any practical conditions.

The device thus far described may be changed from the flat condition as shown in Fig. 3, as

used for shipping, into an operative condition, as that used for manufacturing and display purposes and which will now be described, referring to Figs. 3, 4, 5 and 6, as follows:

5 The operator, holding the flat device of Fig. 3 in both his hands, will place his fore-fingers between the card 10 and the sheet 15 and separate the flanges 12 from the card. This will exert a tension on the fabric of sheet 15 and also cause
10 a bulge or bow on the card in a direction away from the sheet. When the flanges have been turned far enough, the card will have a curvilinear shape as that shown in Fig. 4.

If now the flanges are turned still further away
15 from the front surface of the card, into the position as shown in Fig. 5, the fabric will have been shortened still further relative to the card surface and the rounding or bowing of the card is subsequently increased still more.

20 By moving the flanges far enough, until they are stopped by the rear surface of the card, as shown in Fig. 6, the card will have received a maximum degree in curvature, large enough, to exert sufficient tension on the display sheet to
25 hold it taut and smooth, and provide a large enough area within the bowed end to provide a base on which the device may stand firmly and stably.

When in their rearward position as shown in
30 Fig. 6, the flanges or strips 12 may be secured or locked in that position by being inserted beneath the flaps 14 (see Figs. 2, 6 and 7) so that the device will be held in display position.

It will be apparent that the wider the strips 12
35 the more the card will be bowed for a given angular movement of the strips about their hinges, so that the tension upon the display sheet 15 and the bowing of the card may be regulated by regulating the width of the flanges.

40 It will now be seen that the present invention provides a display device which is extremely simple in its structural details and which, by an easy manipulation and method of procedure, can be converted from a flat, or shipping, condition into one wherein it is applicable for practical
45 and effective use without the necessity of any auxiliary apparatus for supporting it or otherwise.

While the card 10 is shown as being imperforate, it may be provided with openings or windows through which may be projected the light
50 from a picture projector whereby an image may be formed upon the screen or display sheet 15.

If desired an incandescent lamp 16 or other suitable illuminating means may be placed in the
55 space between the bowed card and the display sheet for the purpose of illuminating the latter.

While the invention has been illustrated in what are considered its best applications it may have other embodiments without departing from its spirit and is not therefore limited to the structures shown in the drawing.

What I claim is:

1. The combination with a suitably elastic card having hinged strips at opposite sides, of a flexible display sheet secured to said hinged strips,
65 the distance between the hinges of the respective strips being greater measured along said card than along said sheet whereby said card is bowed and the display sheet is tensed by the bowed elastic card.

2. The combination with a suitably elastic card, of a flexible display sheet secured to said card adjacent opposite sides; a strip hinged to one edge of said card and having said display sheet secured
70 thereto, the distance between the edges of the

card being greater measured along the card than along said sheet whereby the card is bowed and the sheet is tensed by the bowed elastic card.

3. The combination with a suitably elastic card having hinged strips at opposite sides of a flexible display sheet secured to said hinged strips, said hinged strips being adapted to be turned from front to rear of said card the distance between the hinges being greater measured along said card than along said sheet when said strips are
10 in their rearward position, such distance measured along said card being not greater than measured along said sheet when said strips are in their forward position whereby said card lies flat when said strips are in position toward the front
15 and draws edges of said card toward each other to bow the card when said strips are turned toward the rear of the card.

4. The combination with a suitably elastic card having hinged strips at opposite sides of a flexible display sheet secured to said hinged strips, the distance between the hinges of the respective strips being greater measured along said card than along said sheet whereby said card is bowed and the display sheet is tensed by the bowed elastic card and means for securing the hinged parts
25 in position to bow said elastic card.

5. The combination with a suitably elastic card having hinged strips at opposite sides of a flexible display sheet secured to said hinged strips, the distance between the hinges of the respective strips being greater measured along said card than along said sheet whereby said card is bowed and the display sheet is tensed by the bowed elastic card and tabs cut from the card to hold said
35 strips in position to bow said elastic card.

6. The combination with an elastic cardboard sheet having hinged strips at opposite sides, of a display sheet of textile material secured to said hinged strips, the distance between the hinges of the respective strips being greater measured along
40 said card than along said sheet whereby said card is bowed and the display sheet is tensed by the bowed elastic card.

7. The combination with a suitably elastic card having parallel hinged strips at opposite sides, of a flexible display sheet secured to said hinged strips, the distance between the hinges of the respective strips being greater measured along said card than along said sheet whereby said card is
50 bowed and the display sheet is tensed by the bowed elastic card and means for securing the hinged parts in position to bow said elastic card.

8. The combination with a suitably elastic card having parallel hinged strips at opposite
55 sides, of a flexible display sheet secured to said hinged strips, the distance between the hinges of the respective strips being greater measured along said card than along said sheet whereby said card is bowed and the display sheet is tensed
60 by the bowed elastic card and tabs cut from the card to hold said strips in position to bow said elastic card.

9. A display device, comprising a quadrilateral flexible card, having two rectangular flanges produced by scoring said card on lines parallel to oppositely located edges of said card, said card having flaps produced by slitting and located parallel to and near the scored lines of said card and a display sheet of flexible material, fastened
70 at two of its borders to said flanges, the distance between the scorings producing said flanges respectively, being at a greater distance apart measured along said card than along said sheet when the said flanges are in a position away from the
75

front of said card whereby a turn of said flanges in a direction away from said card, will bend said card and produce a tension on the material of said display sheet.

5 10. A display device, comprising a quadrilateral flexible card, having two rectangular flanges produced by scoring said card on lines parallel to oppositely located edges of said card, said card having flaps for locking said flanges and produced by slitting, being located parallel to and near the scored lines of said card, and a display sheet of flexible material, fastened at two of its borders throughout its length to said flanges, the distance between the scorings producing said 15 flanges respectively being at a greater distance apart measured along said card than along said sheet when the said flanges are in a position away from the front of said card whereby a turn of said flanges in a direction away from said card will bend said card and produce a tension on said sheet, the bend of said card being of a magnitude large enough to house an electric bulb between said display sheet and said card.

11. The method of changing a display device 25 from a flat condition, as used for shipping, manufacturing or storing, into an operative condition as used for display, comprising shortening the material of the display sheet held to flanges of the normally flat card of the display device, by 30 turning one or more of the said flanges away from one surface in a direction to the other surface of said card, thereby automatically bending said card to exert a thrust on the display sheet and substantially stretch its material, while at the same time providing a support on the edge 35 of the bent card on an extended area for maintaining the display sheet on the card in an upright position.

12. The method of changing a display device 40 from a flat condition, as used for shipping, manufacturing or storing, into an operative condition as used for display, comprising shortening the material of the display sheet at two of its side portions which are held to flanges of the normally flat card of the display device, by turning 45 one or more of the said flanges away from one surface in a direction to the other surface of said card, thereby automatically bending said card to exert a thrust on the display sheet and substantially stretch its material, while at the same time providing a support on the end of the bent card on an extending area for maintaining the display sheet on the card in an upright position.

13. The method of changing a display device 50 from a flat condition, as used for shipping, manu-

facturing or storing, into an operative condition as used for display, comprising shortening the material of the display sheet at two of its side portions which are held to flanges of the normally flat card of the display device, by turning 5 the flanges away from one surface in a direction to the other surface of said card, thereby automatically bending said card to exert a thrust on the display sheet and stretch its material, while at the same time providing a support on the 10 edge of the bent card on an extended area for maintaining the display card on the card in an upright position.

14. A display device comprising in combination a suitably elastic card capable of sustaining its own weight edgewise, a flexible display sheet collapsible edgewise under its own weight, said card engaging with said sheet along separated lines, said sheet being flat between said lines and said card being bowed between said lines 20 whereby said sheet is tensioned by said card and said card forms a base to support the device.

15. A display device comprising in combination a suitably elastic card capable of sustaining its own weight edgewise, a flexible display sheet collapsible edgewise under its own weight, 25 said card engaging with said sheet along separated lines, said sheet being flat between said lines and said card being bowed between said lines whereby said sheet is tensioned by said card and said card forms a base to support the device, said sheet and card being of substantially the same vertical width.

16. The method of changing a display sheet from a flat condition as used for shipping, manufacturing or storing, into an operative condition 35 as used for display, such display device comprising a flexible display sheet collapsible edgewise under its own weight and a suitably elastic card, which consists in bowing the card and engaging 40 its edges with separated portions of the display sheet thereby exerting a tension on a display sheet and at the same time providing a support on the edge of the bowed card on an extended area for maintaining the display sheet in an upright position. 45

17. The method of supporting and displaying a display sheet collapsible edgewise under its own weight which consists in engaging said sheet at separated portions with an elastic bowed card, 50 self-sustaining edgewise, thereby exerting a tension on the display sheet and at the same time providing a support on the edge of the bowed card on an extended area.

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