

March 4, 1958

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2,825,516

DISPLAY DEVICE WITH AUTOMATICALLY ACTING SUPPORT

Filed Nov. 25, 1953

2 Sheets-Sheet 1

Fig. 1.

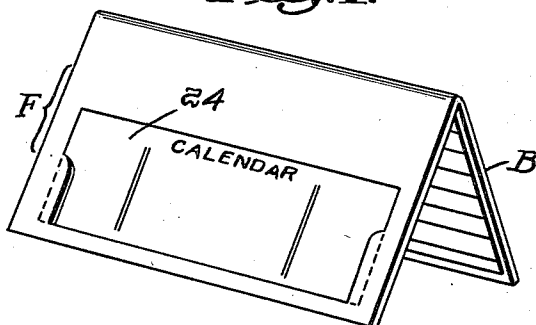


Fig. 2.

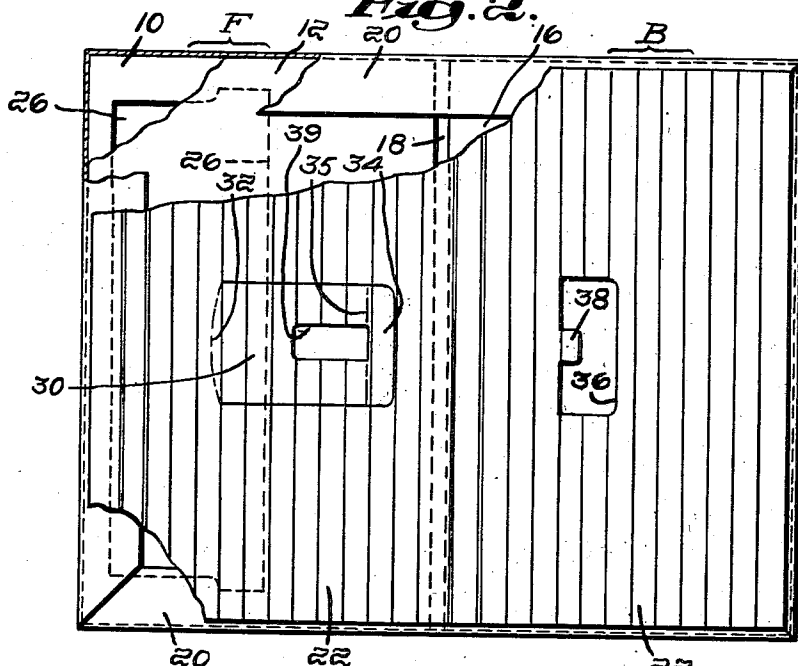


Fig. 3.

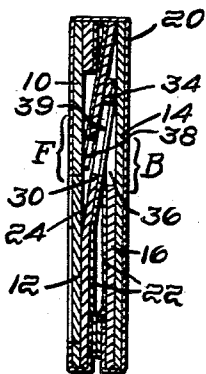


Fig. 4.

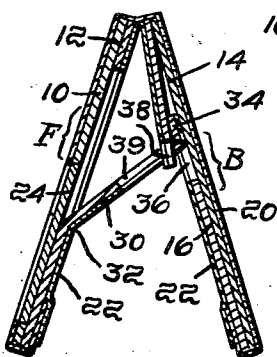
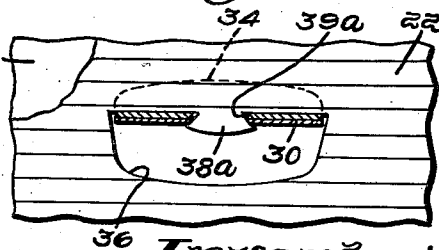


Fig. 5.



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Fig. 5.

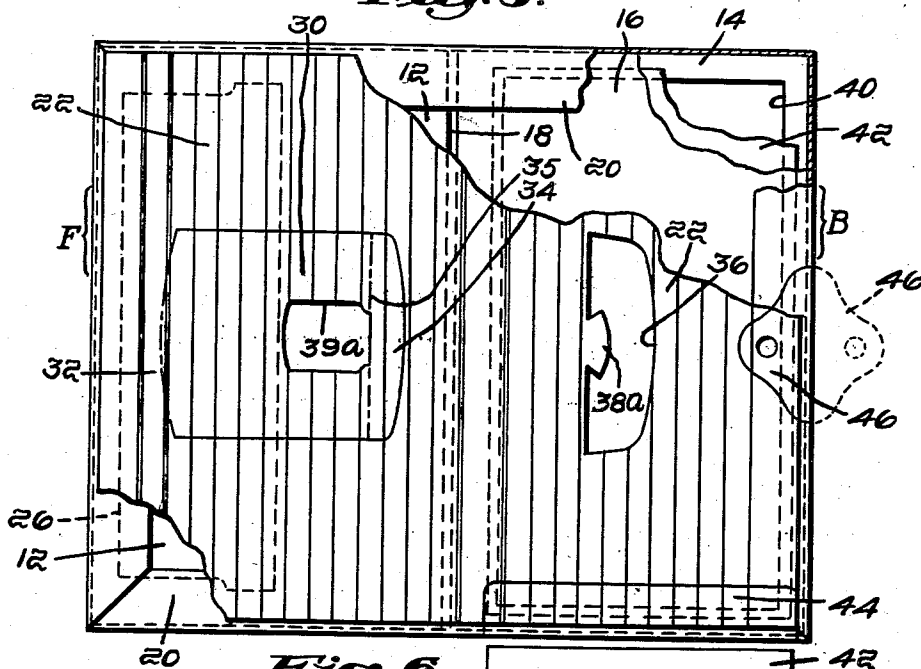
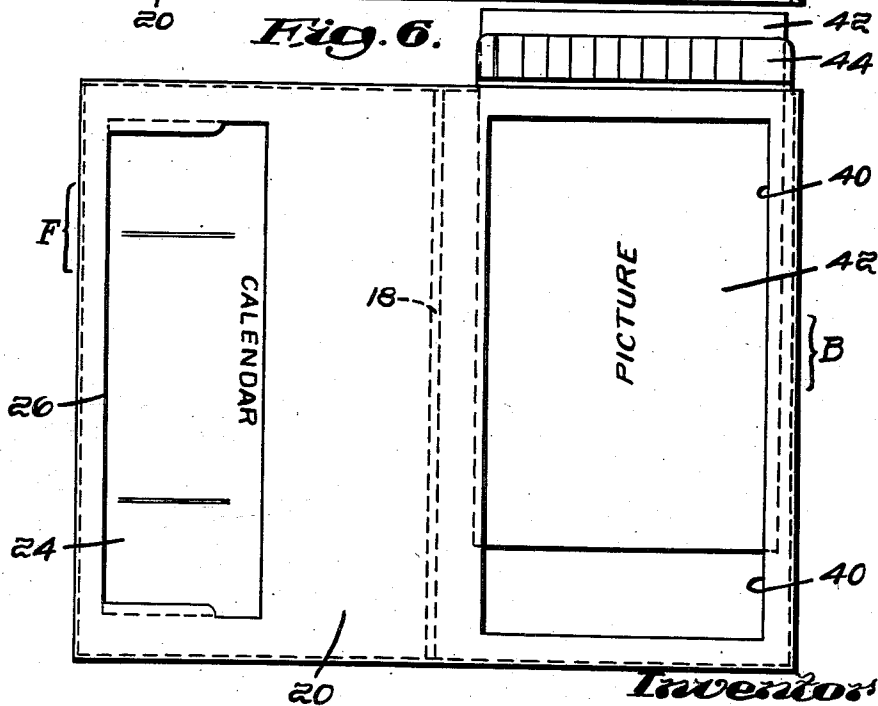


Fig. 6.



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DISPLAY DEVICE WITH AUTOMATICALLY ACTING SUPPORT

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6 Claims. (Cl. 248—35)

This invention relates to a display device having a support collapsible relative thereto which when erected will support the member with its display face in upright position on a horizontal surface. The primary and coordinate objects of the invention are to supply a structure wherein on erection of the support by a simple moving apart of the same and the supported portion the former will be automatically locked in the expanded position from which, however, the two parts are automatically released by a like simple collapsing movement, and to provide a structure wherein such locking mechanism is organized interiorly of the external faces of both parts so that not only is the structure neat and attractive in both its collapsed and erected position, but both of such extended faces may be utilized for display purposes throughout their area, since they are not interrupted or marred by any impairment of the continuity thereof or projection beyond them because of the presence of the locking construction.

My invention will be well understood by reference to the following description of a preferred embodiment thereof where it is shown organized as a desk calendar.

In these drawings:

Fig. 1 is a perspective of the calendar in use;

Fig. 2 is an inside plan view of the same, unfolded, with parts broken away;

Fig. 3 is a central vertical section of the device in Fig. 1 in collapsed position, the thickness of the parts shown in section being much exaggerated;

Fig. 4 is a similar view showing it in erected position;

Fig. 5 is an interior plan view with parts broken away, showing a modification;

Fig. 6 is an exterior plan view of the same device; and

Fig. 7 is a fragmentary view looking at the interior face of the back panel from a sectioning plane immediately forward of said face when the parts shown in Figs. 5 and 6 are in an erected position similar to that of Fig. 3.

Referring now to the desk calendar shown in Figs. 1-4, it embodies a front panel F having hinged thereto at its upper edge a back panel B preferably identical in size, the two being related as are the covers of a book, and when the two panels are partially opened out they may stand on the free edges opposite the hinge line thereof in the position shown in Fig. 1 or Fig. 4, and they may be shut together like a book to the closed position of Fig. 3. Herein we are more particularly concerned with internally organized means which, when the hinge members are opened from the position of Fig. 3 serves automatically to limit the extent of the opening movement as in Fig. 4, but which will also permit the return movement without manipulation of such means. The words "front" and "back" as herein used are to an extent arbitrary as will further appear from this specification.

It is contemplated that the structure will be made up from "boards" and "flexible material." By boards is meant material such as cardboard or binders' board of considerable thickness and rigidity as contrasted with

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freely flexible, more or less limp, material such as cloth, ornamental papers, imitation leather, and so on, which will herein be referred to as sheet material.

A preferred detailed construction of the device of Fig. 1 is illustrated in Fig. 2. Herein a pair of boards 10 and 12, of like size, are superposed as are a similar pair 14 and 16, and placed with two adjacent edges slightly spaced as indicated at 18 on a sheet of flexible material 20 which has previously been coated with glue. The edges of the sheet material are folded up and around the edges of the boards and sealed to the opposite faces thereof, which are toward the reader viewing Fig. 2, and which are the internal faces of the completed structure. As a result there is formed a folio the two sides of which, F and B, are formed by two boards, disconnected throughout their contacting faces but united by the covering which bridges three edges of each pair and hingedly connected by the covering material spanning the space 18.

The exterior front board 10 with its covering may be considered a display surface and may have attached thereto or incorporated therewith a calendar pad 24, so marked in Fig. 1. Herein (see particularly Fig. 2) there may be cut from the exterior front board 10, by means of a suitable die, an area 26 which when removed provides in the board a well to receive the calendar pad, which is retained therein by the corner fillets shown behind which it is slipped. The partly finished blank spread out in the position of Fig. 3 may also have, died out from the interior front board 12, a tongue 30 hinging on a weakened line 32 and extending from that line toward the hinge joint between the two panels. The distal end portion 34 of this tongue is hinged to the main body of the tongue on a weakened line 35, permitting it to fold relatively to the main body of the tongue. From the interior back board 16 is died out and removed an area providing a slot or opening 36 giving access to the space between the interior and exterior boards 16 and 14, and through which the tongue may be extended to move into that space. Herein also a short tab 38 projects from the lower side of slot 36 and the tongue has a clearance slot 39 to receive the tab, the slot 39 being located at the proximal side of line 35 for a purpose which will appear.

When the parts have been thus prepared the tongue 30 may be lifted, the front and back panels swung toward the closed position and the tongue inserted in the slot 36. When the closing movement is completed the tongue will slide up into the space between the interior rear board 16 and the exterior rear board 14 in the manner illustrated in Fig. 2 and the entire structure lies flat. In this position it is ready for distribution to the user and it may be transmitted in an envelope. The exterior surfaces of the two panels may be decorated or printed upon in any desired manner when the blank is extended in the flat form of Fig. 2, and as received by the user in the closed position of Fig. 3 attractive exterior surfaces effectively integral throughout the area are exposed. Display matter may be printed on the covering sheet in the area of the back panel B which indicates the fact already stated, that the distinction between the front and back is arbitrary.

Now when the user receives the folio in the position of Fig. 3, he has only to open it as a book would be opened. The tongue will tend to slide out from the slot, but as it reaches the position of Fig. 4 the terminal portion 34 thereof will bend about the line 35 and form a stop restraining further opening movement unless a considerable force is applied. The main body of the tongue then acts as a stay, tying together the angularly disposed panels.

The resistance to withdrawing the tongue may be increased by the provision of the tab 38 and cooperating slot 39 already described. When the tongue 34 is in-

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serted in slot 36 and slides up to the position shown in Fig. 3, the tab takes a position over the slot 39 and extends into the same, and when the parts are separated toward the position shown in Fig. 4 the two parts on either side of the slot 39 swing up on opposite sides of the tab so that the pull of the tongue in the erected position of the parts is against the back of the tab. The parts however may still be separated, more particularly by means of a quick jerk.

Referring to Figs. 1 and 2 of the drawings, it will be seen that I have there shown the interior surfaces of the panels as covered by a liner 22, having ruled lines thereon. Such a tabular form, whether formed by a liner or on the interior faces of the interior boards themselves, may be used to receive inscriptions, for example, notations concerning telephone numbers. While such inscriptions could be read when the device is erected into the position of Fig. 1 if the device were bodily lifted and examined from the bottom, it would of course not be convenient to make inscriptions unless the two parts could be opened out and spread flat. The arrangements described permit this to be done while preventing casual separation.

On the other hand, if it is desired to keep the parts from being moved past the position of Fig. 1 except as the result of a very considerable manipulation, the arrangement shown in Figs. 5 and 6 may be adopted, in which the slot 36 has a dovetailed tab 38a with an enlarged head and a narrow neck. The clearance slot 39a, to receive the tab, has an enlarged proximal portion through which the head of the tab may pass, but adjacent the fold line 35 it narrows so that the neck of the tab may pass into the end of the slot and with the overhanging portions of the head beneath the portions of the tongue at either side of the slot. Since the tongue cannot move down from the plane of the top of slot 34 its distal end cannot be jerked out from its position between the exterior and interior boards 14 and 16. In preparing the parts originally, however, the end of the tongue 30 may be simply slid in behind the dovetailed tab 38a and the latter will find its position in the slot 39a when the parts are first opened.

In the modification of Figs. 1 through 4 the covered exterior rear panel 14 is an unbroken element forming, with its covering, the rear exterior face of the device. Provided, however, that material is incorporated in the rear panel to cover over the tongue 34 as it moves over the rear interior board 16 and, at least in the space opposite the tongue, is of sufficient stiffness to guide the tongue and confine it in that space, other means of display may be organized in the parts of the rear panel corresponding to the exterior board 14. An example is shown in Figs. 5 and 6.

Referring to Figs. 5 and 6, in these figures the parts are generally similar to those in Fig. 2 except that, as seen in Figs. 5 and 6, an area of the exterior rear panel is died out by a rectangular cut which area, when lifted out, provides the sight opening 40 behind which may be received a picture 42 or mirror, or some similar device for display, which in Fig. 6 is shown in the intermediate stage of being inserted. To permit this insertion a portion of the interior rear panel 16 may be cut to form a flap 44 by a three-sided incision, the ends of which extend to the edge of the board so as to provide a hinge for the flap to the adjacent board 14 by the covering material bridging the edges of the two boards. The flap may be swung outwardly as shown in Fig. 6, to provide an entry to the space between the boards through which the picture 42 may be slid into place behind the sight opening 40 in the manner illustrated in Fig. 6. The flap then may be reclosed and neatly fills the opening from which it was lifted.

Since in the construction described the opening 40 formed in the exterior rear board extends over the position of the tongue 30 when the latter is slid in beneath

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the interior board as in Fig. 3, the picture 42 or other insert should have sufficient stiffness to in effect reestablish the board at this area. It has been found that card of the type used in souvenir postal cards will be adequate for an opening about three inches high and supported by a substantial overlap of the margin of the sight opening at the four sides, although there will be some bending incident to the opening and closing of the device.

If the picture is placed with its top toward the hinge line, it is presented right side up to an observer looking at the back of the structure whose position is as in Fig. 1. If he prefers to look at the picture rather than the calendar, or if the calendar were omitted, then the picture bearing panel would be considered the front and the other the rear. If the picture were placed with its top toward the side away from the hinge the locking tongue 34 could be disengaged and returned to lie in the space from which it was cut, the parts then having the position shown in Fig. 6, and the structure could then be hung from the right-hand edge of Fig. 6 for display in that position. For this purpose a tab 46 (see Fig. 5) may be formed from the interior rear board 16 by a cut intersecting the margin of the board, so that the tab when lifted hinges on the covering material bridging the adjacent edges of the front and rear boards and may be swung out to the dotted line position of Fig. 5 to form a hanger.

While in the examples illustrated and described it is not literally correct to say that the front and rear exterior faces as shown in Fig. 1 are unbroken, because in the case of the front face, when the calendar is put in a recess as above described, it is broken to accommodate the same and when one or more openings are provided in board 16 for display material as in Fig. 6 the rear face is broken. However, for practical purposes the continuity of the surfaces is reintegrated so that we have effectively integral display surfaces at the front and rear exterior faces between which and beneath which the supporting mechanism exemplified by the tongue 30 and the slot 36 are received. No portion of the tongue projects beyond these surfaces.

On account of the limitations of a patent drawing the thickness of the boards and of the covering material is shown disproportionately large in Figs. 3 and 4. Thus Fig. 1 represents a device with panels F and B about 6 inches wide and $3\frac{3}{8}$ inches high. The boards used therein are about $\frac{3}{16}$ of an inch thick and the covering material 20 a few thousandths.

I am aware that the invention may be embodied in other specific forms without departing from the spirit or essential attributes thereof, and I therefore desire the present embodiment to be considered in all respects as illustrative and not restrictive, as is in fact clear in several matters from the description itself. Reference is to be had to the appended claims to indicate those principles of the invention exemplified by the particular embodiment described and which I desire to secure by Letters Patent.

What is claimed is:

1. A display device having a display panel member and a supporting member hinged thereto along a horizontal axis providing a supporting leg when the members are swung apart, a tongue of stiff material hinged to one member on an axis parallel to the aforesaid axis and of a length to lie flatwise therewith and within the perimeters thereof when the members are closed, the other member including in the area opposite said tongue superposed inner and outer plies defining a space therebetween and having an opening to said space in the inner ply through which opening said tongue is extended into said space when the members are closed together, said tongue including a hinged distal end portion bendable angularly to the main body of the tongue and retained in said space as said main body is withdrawn in opening movement of the members.

2. In a display device having a display panel member

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and a supporting member hinged thereto along a horizontal axis providing a supporting leg when the members are swung apart, a tongue of stiff material hinged to one member on an axis parallel to the aforesaid axis and including a distal bendable end portion, said other member including in the area opposite said tongue superposed inner and outer plies defining a tongue-receiving space therebetween, said inner ply being formed with a tongue-receiving opening for insertion of said tongue into said space, said opening being located below said bendable distal end portion of the tongue when said members are closed, and said tongue extending through said opening into said space when the members are closed together, and the bendable distal end portion being angularly bent with respect to its body by the walls defining said space as said tongue is withdrawn during opening movement of said members.

3. A display device as set forth in claim 1 wherein a tab extends from a side of the opening and the tongue has a clearance slot terminating at the line of bend of said end portion, through which slot the tab extends when the members are moved apart.

4. A display device as set forth in claim 1 wherein a tab having an enlarged head extends from a side of the opening and the tongue has a slot the proximal portion of which is of a size to pass said head and which terminates at the line of bend of the distal portion in a narrower part which fits around the neck of the tab beneath the head thereof.

5. A display device comprising a panel incorporating two superposed boards, a supporting member hinged to one of the boards along a horizontal axis and providing a supporting leg when the members are swung apart, the

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leg having a tongue of stiff material hinged to said supporting member on an axis parallel to the aforesaid axis and of a length to lie flatwise with the parts when they are closed together and within the perimeters thereof, the board nearer said tongue having an opening receiving the end of the same and the board further from the tongue presenting a surface over which the tongue may slide in the closing movement of the structure, there being a tab extending from the side of the opening, the tongue having a clearance slot terminating adjacent to but spaced from the extremity of the tongue through which slot said tab extends when the members are moved apart.

6. A display device as set forth in claim 5 wherein the tab has an enlarged head and the slot has a proximal portion which is of a size to pass the head and terminates in a narrower part which fits around the neck of the tab beneath the head thereof.

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