

[54] SELF-ERECTING SHADOW BOX

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[51] Int. Cl.G09f 1/00

[58] Field of Search46/34.13; 40/124.1, 126 A,
40/154

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[57]

ABSTRACT

A self-erecting shadow box made of paperboard, or the like, for example, for use as a display means or a greeting card, includes an open front frame behind which is positioned a foldable, rigid sheet. An elastic member is used to draw side panels of the sheet towards each other so that the central portion of the sheet is displaced rearwardly, thus creating a rearwardly extending box. When viewed from the front, the central portion of the sheet is rearward of the open frame, the side panels of the sheet converge and the bottom panel slants upwardly, thus creating an illusion of additional depth. The shadow box is initially contained within an envelope which holds it flat and when it is removed therefrom the elastic means will automatically erect the shadow box.

16 Claims, 13 Drawing Figures

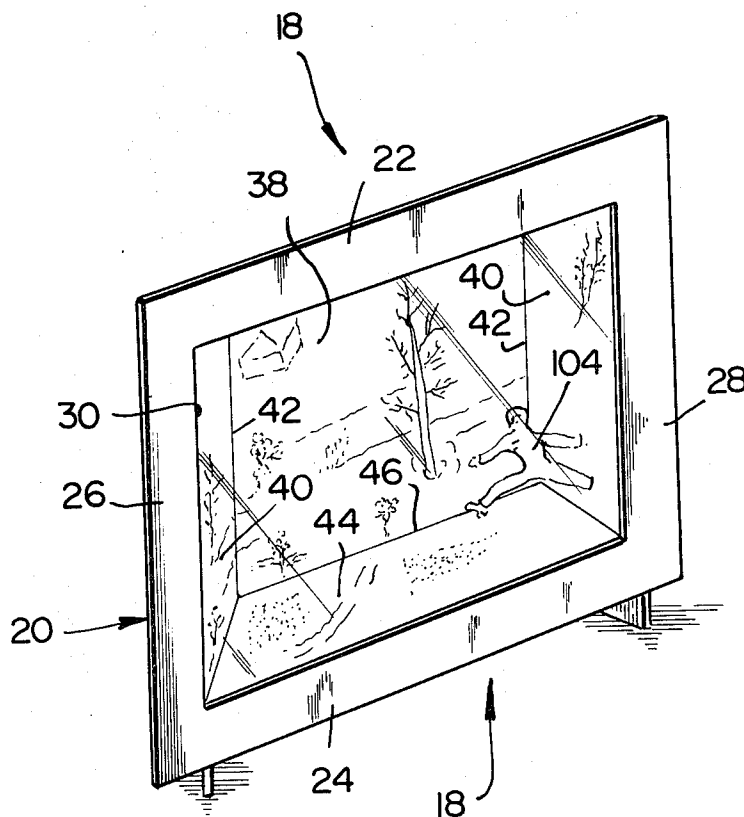


FIG. 1

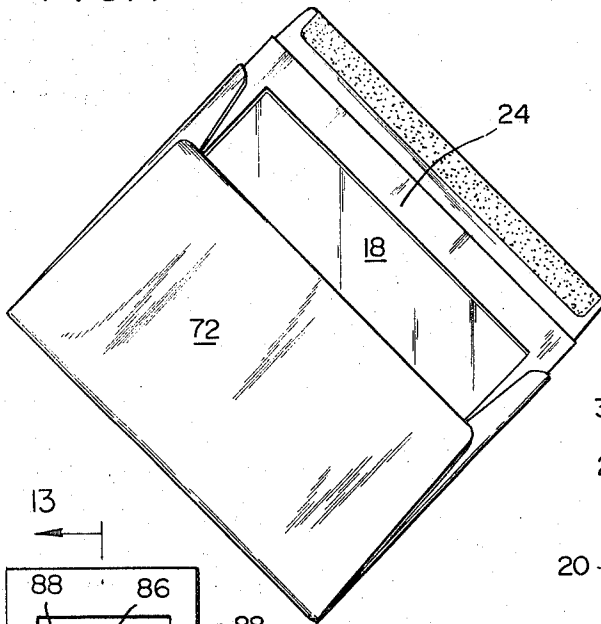


FIG. 2

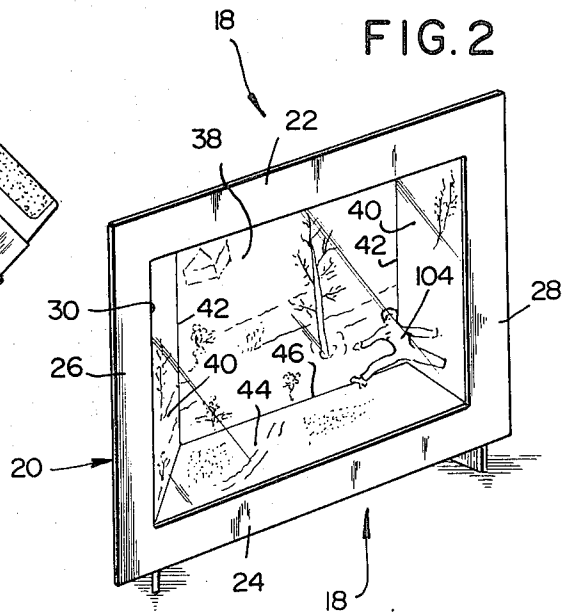


FIG. 12

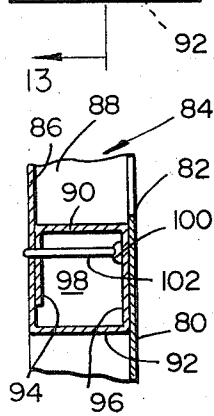
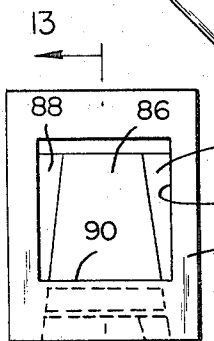


FIG. 13

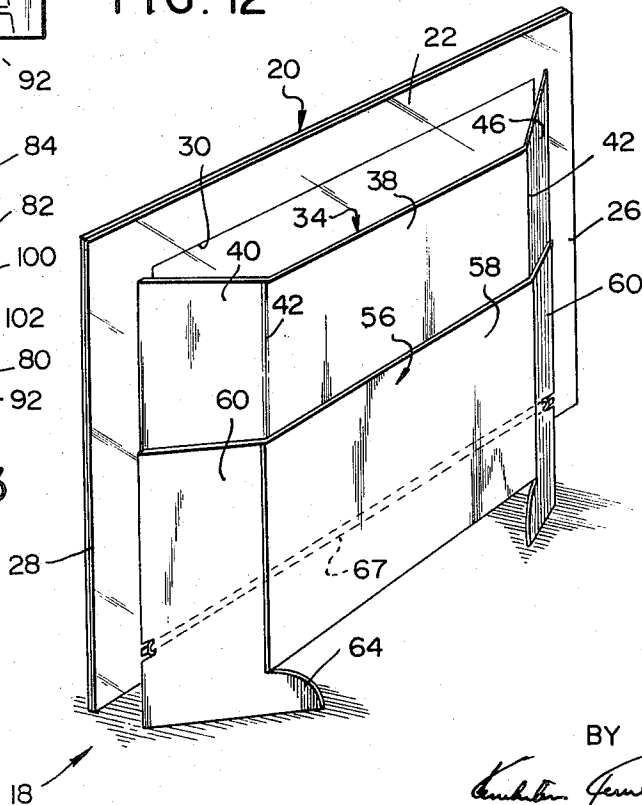


FIG. 3

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FIG. 4

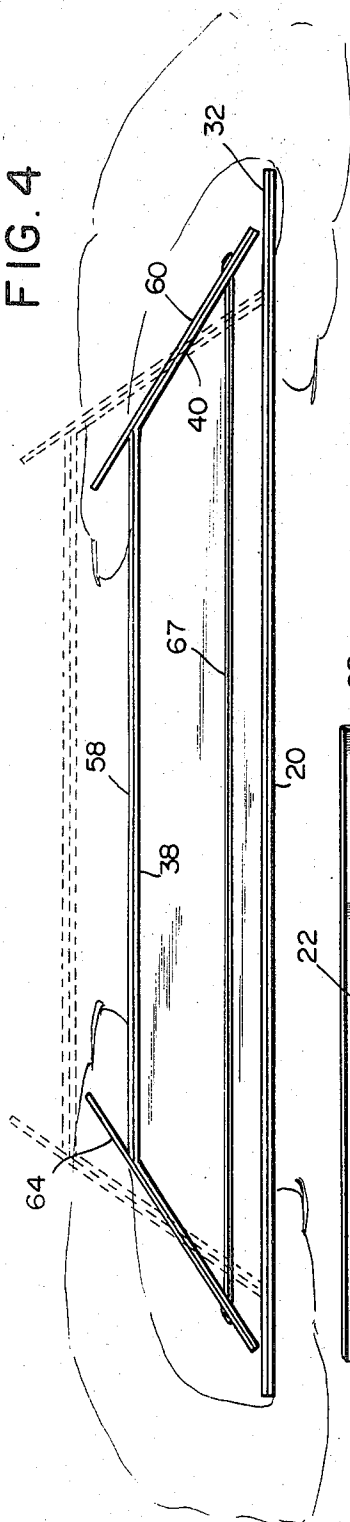
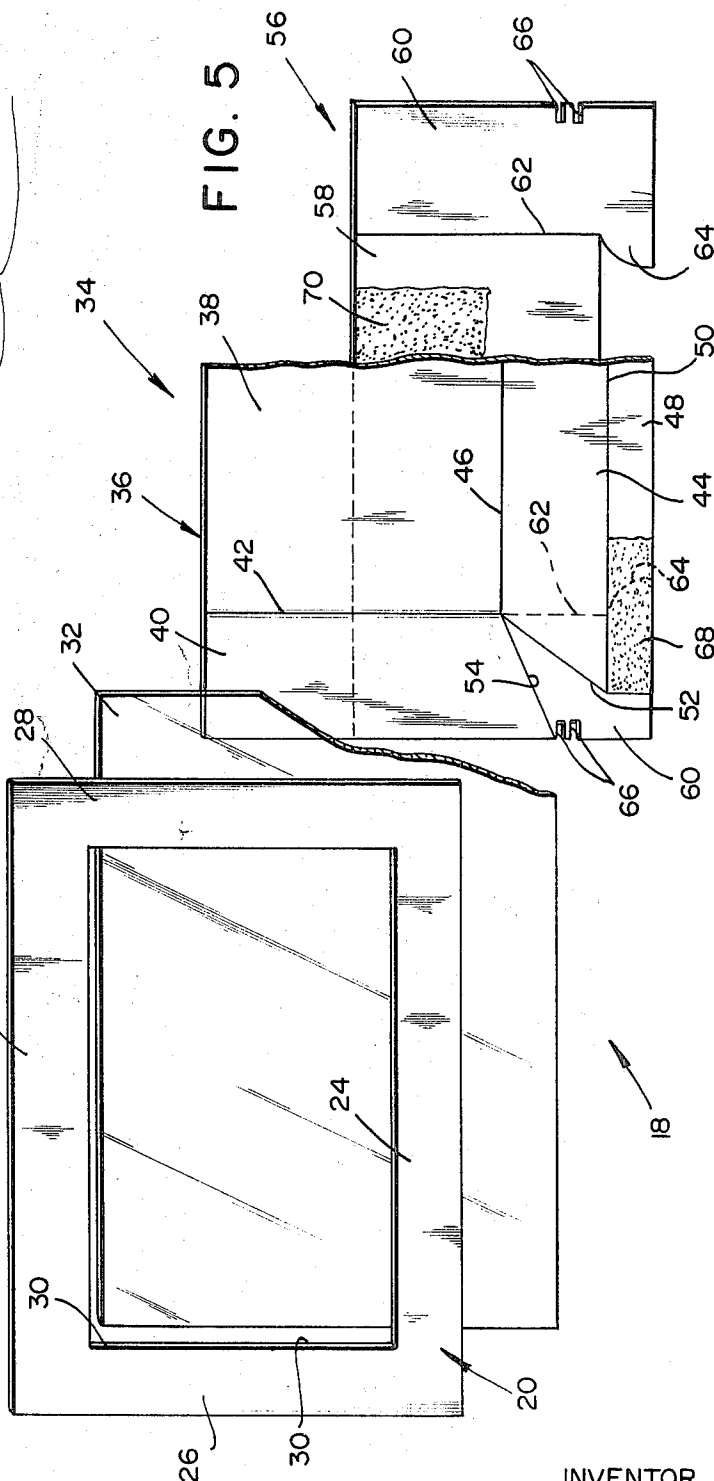


FIG. 5



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SELF-ERECTING SHADOW BOX

BACKGROUND OF THE INVENTION

1. Field of the Invention

A display means, greeting card, or the like, in the form of a flat paperboard shadow box that is self-erecting.

2. Description of the Prior Art

So far as the inventor is aware, there is no prior art that discloses a flat self-erecting shadow box. There are knock-down boxes and there are self-erecting displays; however, none of these relate to shadow boxes, these being devices wherein, in erected condition, a box extends rearwardly from an open front frame.

SUMMARY OF THE INVENTION

The present invention has utility as display means, greeting card, or the like. For purposes of this description the present invention will be described as a display means since in this context the illusion of additional depth of field provided by the structure of the present invention is highly useful. The present invention provides a very simple and low cost means for creating an illusion of additional depth when it is used as a display means for merchandise such as carpeting or other household furnishings. A first piece of paperboard is blanked out to provide an open flat frame. A second piece of paperboard is secured to the first piece of paperboard and is provided with appropriate fold lines so that selected portions thereof may be displaced rearwardly by the urging of an elastic member such as a rubber band. The elastic member moves the central portion of the second piece of paperboard rearwardly by pulling in the hinged side panels thereof to positions at an angle with respect to the central portion. A bottom panel hinged to the central section has a lower flap that is hinged to the bottom panel and is adhesively secured to the rearward surface of the front panel. Thus, the two side panels and the bottom panel, in combination and when erected, provide an illusion of added depth for the rearwardly located central section. Preferably, the top is left open to facilitate the admission of light. The elastic means for automatically erecting the shadow box may be almost completely concealed. In addition, means is provided to support the shadow box in a substantially vertical position. When not in use the box is held flat in any convenient manner as by disposing the same in an envelope which, because of its slight front-to-back depth, prevents erection of the box.

Accordingly, it is an object of the present invention to provide an improved, self-erecting paperboard shadow box.

Another object of the present invention is to provide a shadow box as described above having elastic means for automatically erecting the shadow box when it is removed from an envelope-type container in which it is held flat.

A further object of the present invention is to provide an improved, low cost shadow box, as described above, that may be fabricated from low cost materials.

Still another object of the present invention is to provide a self-erecting shadow box that may be shipped in a flattened condition within an envelope, or the like, and which is automatically erectable when removed from its container.

Other objects of the invention will in part be apparent and in part will be pointed out hereinafter.

The invention accordingly consists in the features of construction, combinations of elements, and arrangements of parts which will be exemplified in the constructions hereinafter described, and of which the scope of application will be indicated in the appended claims.

BRIEF DESCRIPTION OF THE DRAWINGS

In the accompanying drawings, in which are shown several of the possible embodiments of the invention,

FIG. 1 is a perspective view of the novel shadow box flat folded and disposed in an envelope;

FIG. 2 is a perspective front view of the shadow box in self-erected condition;

FIG. 3 is a perspective rear view of the erected shadow box;

FIG. 4 is a plan view of the shadow box showing the same in erected condition in dotted lines and in partially collapsed condition in full lines;

FIG. 5 is an exploded, fragmentary view, in perspective, of the components of the shadow box, exclusive of the elastic member;

FIG. 6 is a central sectional vertical view of the shadow box in erected condition;

FIG. 7 is a view similar to FIG. 6 of the shadow box in collapsed condition;

FIG. 8 is a fragmentary, horizontal sectional view of the shadow box in erected condition;

FIG. 9 is a fragmentary, elevational, rear view of an erected shadow box embodying an alternative form of the present invention;

FIG. 10 is a fragmentary, perspective front view illustrating a certain feature of the present invention;

FIG. 11 is a fragmentary, perspective view illustrating an alternative embodiment of the feature shown in FIG. 10;

FIG. 12 is a front elevational view of an erected shadow box embodying another form of the present invention; and

FIG. 13 is a fragmentary, vertical sectional view taken substantially along the line 13—13 of FIG. 12.

Referring first to FIG. 5, there are shown the several components, exclusive of the elastic member, of one embodiment of the present invention. The shadow box 18 includes a flat front frame paperboard member 20 having top and bottom strips 22 and 24, respectively, and side strips 26 and 28 for defining a central opening 30. A transparent sheet 32, e.g. of cellulose acetate, may be secured by any suitable adhesive means to the rear surface of the front frame member 20. A backdrop, generally designated by the reference character 34, is comprised of a single paperboard sheet 36 having a central section 38, a pair of side panels 40 that are hingedly secured to the central section 38 along fold lines 42, a bottom panel 44 hingedly secured to the central section 38 along a fold line 46 and a transverse flap 48 hingedly secured to the bottom edge of the bottom panel 44 along a fold line 50. The outboard ends of the bottom panel 44 are cut on an angle as shown by the reference character 52 while the bottom edge of both of the side panels 40 are also cut on an angle as shown by the reference character 54. The edges 52 and 54 form an acute angle therebetween and have a common junction with the fold lines 42 and 46.

A paperboard sheet 56 provides means for supporting the shadow box 18 in a substantially vertical position and by use of an arrangement described below is made functionally unitary with the sheet 36. The sheet 56 is comprised of a central section 58, and a pair of side panels 60 that are secured to the central section 58 along fold lines 62. The sheet 56 is further provided with a pair of feet 64 at the bottom or lower ends of the side panels 60. It will be noted, particularly in FIG. 5, that the outboard edges of the side panels 60 are both provided with a pair of closely spaced notches 66 near the bottoms of these panels in order to accommodate an elastic member 67 (FIG. 9) whose function will be described hereinafter.

The shadow box 18 comprising the present invention is assembled by adhesively securing the transparent sheet 32 to the rear surface of the front frame 20. The sheet 36 is secured to the rear surface of the front frame 20 by means of adhesive 68 that is applied to the transverse flap 48. The bottom edge of the flap 48 is in registry with the bottom edge of the bottom strip 24 of the frame member 20. The support sheet 56 is secured to the sheet 36 by means of adhesive 70. While adhesive has been illustrated in FIG. 5 as being only in the central section 38 of the sheet 56, it should be noted that the side panels 60 may also be adhesively secured to the rear surface of the side panels 40. The top edge of the sheet 56 is located midway of the height of the backdrop sheet 36, and said sheet 56 extends below the fold line 46, its bottom edge being below the bottom edge of the frame member 20 when the box is in erected condition (see FIG. 6) and in registry with the bottom edge of the frame member 20 when the box is in collapsed condition (see FIG. 7).

Turning now to FIG. 1, there is shown the shadow box 18 comprising the present invention disposed in an envelope 72. The shadow box 18 is in its first or collapsed condition (see also FIG. 7). When the shadow box 18 is removed from the envelope 72 it will automatically assume its second or erected position as shown in FIGS. 2, 3, 6 and 8. The elastic member 67 will urge the two side panels 40 in a direction towards each other, thus forcing the central section 38 rearwardly with respect to the front frame 20. The fold lines 42 and 46 will also move rearwardly and downwardly (the bottom panel 44 swinging about the fold line 50) until the side panels 40 and the bottom panel 44 assume a position that is at an angle with respect to the central section 38. The shadow box 18 may be collapsed as shown in FIG. 4 by pressing the front and the rear surfaces thereof towards each other. This effectively stretches the elastic member 67 and permits the side panels 40 to return to their first position in a plane that is substantially parallel to the plane of the frame 20. FIG. 9 is used to more clearly illustrate the preferred location of the elastic member 67. It should be clearly noted that in the preferred embodiment of the present invention, substantially all of the elastic member 67 is concealed between the front frame 20 and the sheet 56 below the bottom panel 44.

FIGS. 10 and 11 illustrate two different means for limiting the rearward movement of the central section 38 (and inward movement of the panels 40 and 60) when the shadow box 18 is removed from the envelope 72. In FIG. 10 it will be noted that in the erected condition the lower edges 54 of the panels 40 abut the marginal parts of the upper surface of the bottom panel 44 and thereby serve to limit the rearward movement of the central section 38. In FIG. 11 the outboard ends 52 of the bottom panel 44 are cut at an angle and engage the bottom edges of the side panels 54 in the erected condition to limit the rearward movement of the central section 38.

Referring now to FIG. 12 and to FIG. 13 there is shown still another alternative embodiment of the present invention. As previously described, the front panel 80 is provided with a central opening 82. The backdrop sheet 84 includes a central section 86, a pair of side panels 88 and two parallel spaced bottom panels 90 and 92. A pair of transverse flaps 94 and 96 are formed integrally with the central section 86 and the bottom panels 90, 92, respectively. In this embodiment the transverse flaps 94 and 96 are adhesively secured to the central section 86 and the front frame 80, respectively, in order to define a tubular parallelogram 98. In addition, registered notches 100 are formed in each of the side panels 88 in order to accommodate an endless, elastic member 102 that passes through the tubular parallelogram 98 and traverses the outside surfaces of the side panels 88 and the rear surface of the central section 86. The operation of this embodiment as regards the automatic erection thereof is the same as described hereinabove in connection with the previous embodiment. It should also be noted, particularly in FIG. 12, that the side panels 88 converge in an upward direction.

It will be evident from the foregoing that an improved low cost display means has been provided. A simple elastic member assures that the shadow box comprising the present invention will automatically be erected as soon as it is removed from its container. Because the side panels and the side edges of the bottom panel converge, a distinct feeling of added depth is imparted. The shadow box comprising the present invention may be very simply and economically fabricated by conventional techniques using paperboard, or the like, which may, if desired, be plastic coated. There is a minimum of assembly that is required and which cannot be automated. The fold lines and the cut-outs may all be made in a single operation as is well known in the art. The only additional operation required is the application of an adhesive to appropriate surfaces and then the subsequent assembly of the several components. Suitable designs may be imprinted on the visible areas of the shadow box as required.

As shown in FIG. 2 a side panel 40 may have a flat figure 104 carried thereby as by insertion of an arm of the figure in a

slot in said side panel between the fold 42 and side edge of the side panel. This figure will be sandwiched between the transparent sheet 32 in front and the side panel 40 and central section 38 in back when the box is collapsed and will project into the interior of the box when the box is erected.

It thus will be seen that there are provided devices which achieve the several objects of the invention and are well adapted to meet the conditions of practical use.

As various possible embodiments might be made of the above invention, and as various changes might be made in the embodiments above set forth, it is to be understood that all matter herein described, or shown in the accompanying drawings, is to be interpreted as illustrative and not in a limiting sense.

Having thus described the invention, there is claimed as new and desired to secure by Letters Patent:

1. A self-erecting shadow box comprising:

a. a frontally positioned open frame;

b. a backdrop including a central section, a pair of side panels hingedly secured to said central section along first and second fold parallel lines, a bottom panel hingedly secured to said central section along a third fold line and first transverse flap means hingedly secured to said bottom panel along a fourth fold line and to the rear of said frame; and

c. biasing means for urging said side panels from a first position that is substantially parallel to and adjacent the plane of said central section to a second position wherein said side panels extend rearwardly at an angle to the plane of said central section and said first, second and third fold lines are spaced rearwardly of said frame.

2. The shadow box in accordance with claim 1 wherein said biasing means comprises an elongated elastic member extending under tension between said side panels.

3. The shadow box in accordance with claim 1 further including means secured to said central section for supporting said shadow box substantially vertically in said second position.

4. The shadow box in accordance with claim 3 wherein said support means includes a rear member and a pair of side panels hingedly secured to said rear member along fifth and sixth fold lines that are substantially coincidental with said first and second fold lines.

5. The shadow box in accordance with claim 1 further including means for limiting the movement of said side panels to said second position.

6. The shadow box in accordance with claim 5 wherein said limiting means comprises an angled edge formed on the lower end of each said side panel, said angled edges being in abutment with the surface of said bottom panel in said second position.

7. The shadow box in accordance with claim 6 wherein said first fold line, said third fold line and one of said angled edges of said side panels have a common junction and wherein said second fold line, said third fold line and said angled edge of said other side panel have a common junction, said angled edges being convergent in a rearward direction in said second position.

8. The shadow box in accordance with claim 5 wherein said limiting means comprises angled edges formed on the opposite ends of said bottom panel, said angled edges being in abutment with the surface of said side panels adjacent thereto in said second position.

9. The shadow box in accordance with claim 8 wherein said first fold line, said third fold line and one of said angled edges of said bottom panel have a common junction and wherein said second fold line, said third fold line and the other angled edge of said bottom panel have a common junction, said angled edges being convergent in a rearward direction in said second position.

10. The shadow box in accordance with claim 1 wherein there is further included a second bottom panel that is spaced from and parallel to said first bottom panel in said second

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position and a second transverse flap secured to said central section in spacedly parallel opposition to said first transverse flap, said second bottom panel being hingedly secured to said central section and to said first transverse flap, said second transverse flap being hingedly secured to said first bottom panel for defining a tubular hinging parallelogram.

11. The shadow box in accordance with claim 10 wherein said biasing means comprises an endless elastic member extending through said parallelogram forwardly of said central section, around said side flaps and around the rear surface of said central section.

12. The shadow box in accordance with claim 1 further including means integral with said backdrop for supporting said shadow box in a rearwardly sloping almost vertical direction in said second position.

13. The shadow box in accordance with claim 1 wherein said side panels converge in an upward direction.

14. The shadow box in accordance with claim 1 wherein the side edges of the side panels ride on the rear of the open frame as the side panels move from the first position to the second position.

15. The shadow box in accordance with claim 1 in combination with an envelope in which the shadow box is positioned and substantially filled with the side panels in their first position.

16. A combination as set forth in claim 15 wherein the bottom edge of the shadow box is adjacent the mouth of the envelope.

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