

Feb. 21, 1939.

F. A. SUNDERHAUF

2,148,179

COLLAPSIBLE ILLUMINATED DISPLAY

Filed May 26, 1938

2 Sheets-Sheet 1

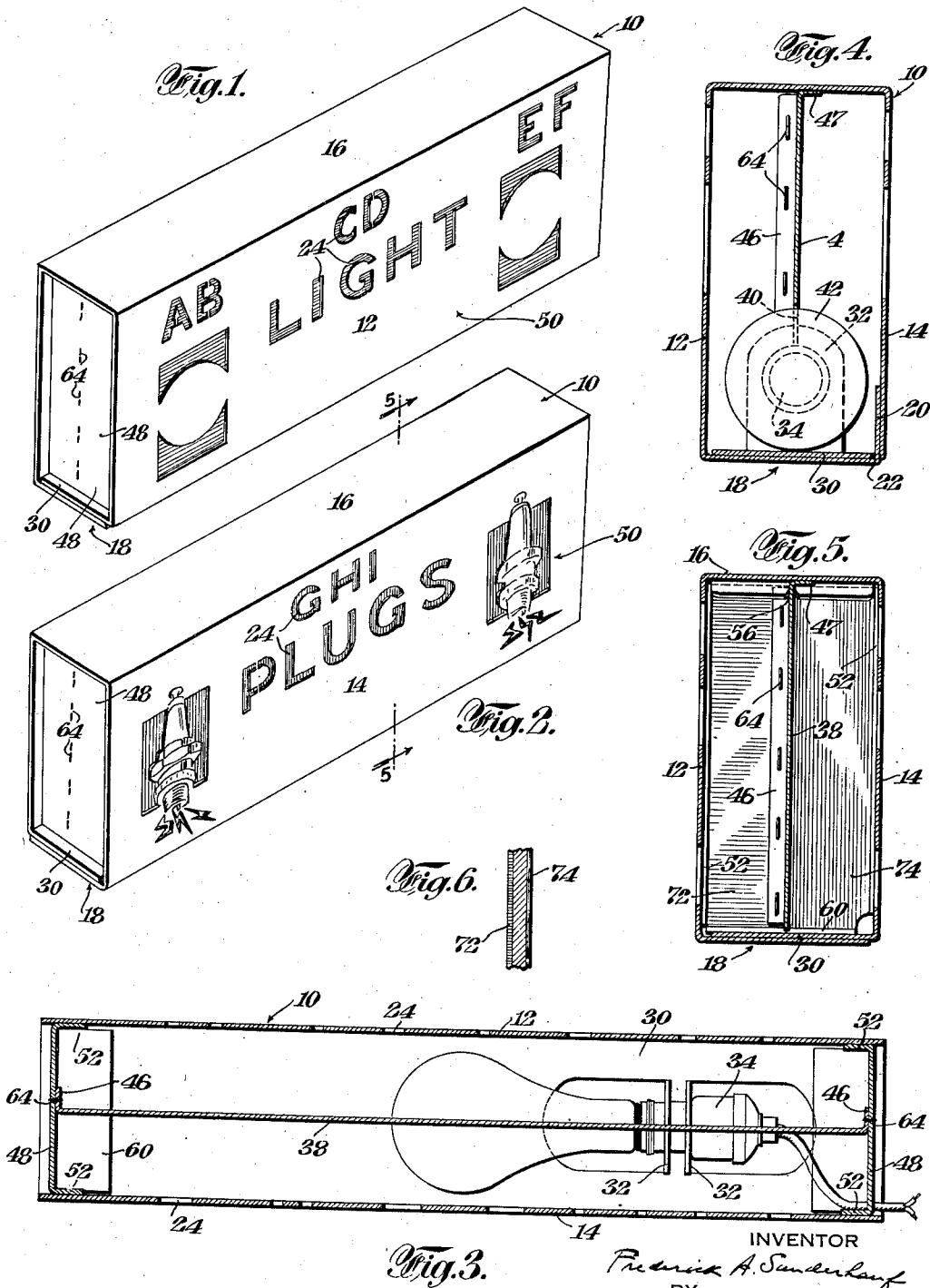


Fig. 3.

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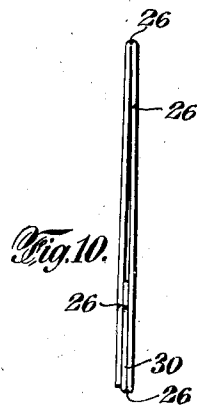
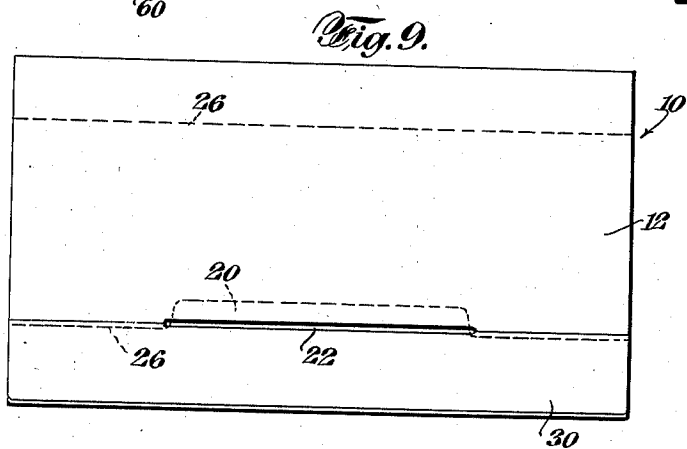
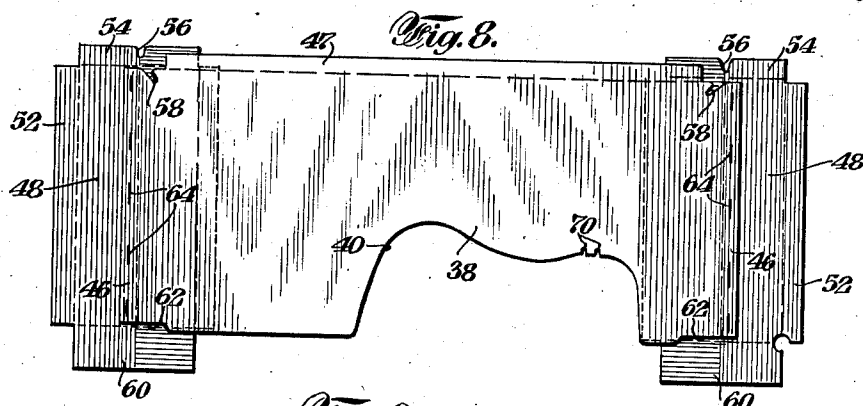
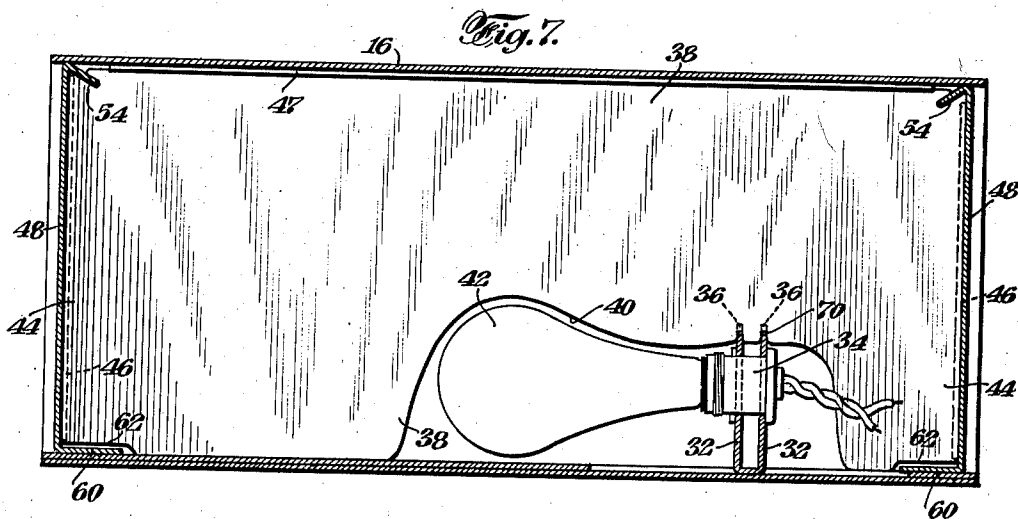
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COLLAPSIBLE ILLUMINATED DISPLAY

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2 Sheets-Sheet 2



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2,148,179

COLLAPSIBLE ILLUMINATED DISPLAY

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Application May 26, 1938, Serial No. 210,123

14 Claims. (Cl. 40—133)

This invention relates to an improved, collapsible or knock-down sign formed preferably of foil mounted on cardboard so as to be relatively water-proof and fire resistant and of a type particularly adapted to give a glowing "neon" effect at night and also to provide a sign for both day and night use, and is to be regarded as an improvement of the class of illuminated sign described and claimed in United States Patent No. 2,086,893 issued July 13, 1937, to Charles W. Beldon.

Heretofore, various illuminated displays have been suggested which were suitable for giving light effects, but generally as a class such displays have been expensive to fabricate and if they were capable of being shipped in collapsed form, were difficult to assemble. Certain of the displays and signs have had incorporated therein breakable glass parts and none of the prior art structures provides a single and economical collapsible cardboard and metal foil illuminated display manufactured essentially from a one-piece integral blank, together with a supplementary partition member, and adapted to give two sales messages, one on one side of a box-like structure, and the second message on the other side of the structure, both messages being illuminated from a single bulb.

Therefore, it is an object of my invention to provide a collapsible, metal foil covered cardboard sign which may be shipped flat, which is cheap and economical to fabricate being formed of simple parts, which is easy to assemble, and when, when assembled, forms a strong and stable display structure suitable for day and night display purposes.

It is a further object of my invention to form such a sign or display in a box-like form and to arrange a partition member in the center of the sign so that one light bulb may be utilized to illuminate sales messages stenciled on opposite sides of the box-like sign, it being possible if desired, to project two different colored reflected lights, for example, one red and one blue, through the said stencils, the light emanating from a single bulb, and to so arrange the sign that colored reflected light is directed through the stenciled openings to give a characteristic "neon" effect or other colored light effects.

It is a further object of my invention to form such a sign from a one-piece main body blank by a single stamping operation, such main body portion providing the top and bottom and sides of the box-like display, and to additionally provide a collapsible partition member to which the

ends of the box-like display are hingedly connected, the said partition member and ends being adapted to stiffen and to support the otherwise collapsible main body portion.

These and various other objects and advantages will be readily understood from the following description taken in connection with the accompanying drawings of preferred embodiments in the invention, in which modifications may be made without departing from the scope of the appended claims.

In the drawings:

Fig. 1 is a perspective of a sign embodying my invention showing one side wall stenciled with a sales message;

Fig. 2 is a view similar to Fig. 1 but with the box-like display reversed to show its opposite wall;

Fig. 3 is a cross-section taken substantially along the line 3—3 of Fig. 2 and includes an illustration of an electric bulb which is used to illuminate the sign;

Fig. 4 is a cross-section taken substantially on the line 4—4 of Fig. 2;

Fig. 5 is a cross-section taken substantially on the line 5—5 of Fig. 2;

Fig. 6 is an enlarged fragmentary section of the partition member;

Fig. 7 is a section taken on line 7—7 of Fig. 2;

Fig. 8 is a side elevation of the partition member with the two end portions of the box-like sign hingedly connected thereto;

Fig. 9 is a plan view, without stencil cut-outs, of the main body portion of the same;

Fig. 10 is an enlarged fragmentary cross-section of a stenciled side wall of a sign embodying my invention;

Figure 11 is an enlarged fragmentary section showing the manner of applying the aluminum foil.

In these figures a main body or casing portion 10 is die-cut and die-scored from a rectangular blank of foil covered cardboard or paper stock in such manner as to provide side walls 12 and 14, a top portion 16, and an overlapping bottom portion 18, which latter, when the sign is assembled, is secured by inserting flap 20 in elongated slot 22. As indicated, side walls 12 and 14 will ordinarily be die-cut with stencil as at 24 to provide letters or symbols to give a sales message.

The main body or casing portion 10, as indicated in Fig. 10, is score-cut as at 26 to define its top, bottom, and side walls, and to permit easy foldability, and the same may be folded flat thus allowing its easy and economical shipping and

handling. As indicated in Fig. 11, the interior of main body portion 10 will ordinarily be covered with aluminum foil 28 to give the same a highly light reflective surface and to fireproof the same, and if desired the exterior of the main body or casing portion 10 may also be covered with aluminum foil as this has a display value and also gives an outer surface to the sign which is water and fire resistant. Inner bottom panel member 30 is die-cut and die-scored to provide two flap members 32 which are hingedly connected to panel member 30 and which may be swung upwardly to a vertical position as indicated in Figs. 4 and 7 to provide a support for the electric light socket 34. The flap members 32 will ordinarily be provided with notches as at 36.

A stiffening and partitioning member 38 is provided and is arranged to run from one end of the main body portion to the other and to extend vertically, and is of such size that it will contact the top 16 of the main body portion and the bottom panel member 30, except for its cut-out portion 40 which generally conforms to the shape of an electric light bulb 42 as best shown in Fig. 7. Both ends 44 of partition member 38 are marginally die-scored to provide hinged panels 46, it being possible to fold the said panels to a plane which is perpendicular to the plane of partition member 38. The top of partition member 38 is provided with an elongated stiffening panel member 47 which may be folded to a plane which is perpendicular to the plane of partition member 38 and which, when the partition member 38 is in position, is adapted to contact the top 16 of main body portion 10.

End portions 48 for the assembled illuminated signs or displays, the latter identified as 50, are so formed as to tightly fit within the ends of main body portion 10 and are provided with elongated stiffening side flaps 52, a top flap 54 which latter may be notched as at 56 to fit into a cooperating notch 58 provided in the partition member 38, and also a bottom flap 60 which when folded to a plane perpendicular to the plane of the ends 48 lies within the recess indicated as 62 formed in the partition member 38, thus allowing the bottom of flap 60 to lie in the same plane as the bottom of the partition 38. As illustrated in Fig. 8, end members 48 are connected to the hinged panels 46, preferably by metal wire fastenings or clips indicated as 64, thus allowing the partition member 38 and the connected ends 48 to be folded flat. The flaps upon ends 48 when the displays 50 are assembled give a strong, stable, and sturdy construction. Two notches 70 are provided in the partition member 38 to cooperate with the notches 36 provided in the foldable flaps 32 when the same are in an upright position, thus giving an interlock between the main body portion and the partition member 38, tending to stiffen the same and also tending to maintain the flaps 32 in upright position, as well as centering member 38.

The partition member 38 will ordinarily be coated with some type of colored paint or pigment, preferably a bright colored flat finish paint, and as indicated in Fig. 6, one side of partition member 38 may be colored with a blue paint identified as 72, and the other side covered with a red paint identified as 74; but it will be understood that these colors are given by way of example only and that while the red does give the characteristic "neon" light effect, that any desired colors may be employed.

In operation, when the sign is assembled light

rays emanating from the single electric light bulb 42 will strike the bright metal reflective foil 28 and be reflected upon the pigmented surfaces of partition member 38 and then projected outwardly through the stenciled openings 24. Light rays striking the blue painted side 72 of partition member 38 will give a reflected blue colored light, and those rays striking the red painted side 74 will give a reflected red light. The electric light bulb 42 is positioned in the lower portion of the displays 50 in order to reduce to a minimum any direct projection of unreflected light rays through the stenciled openings 24, and for practical purposes it may be said that there are substantially no light rays projected through stencil openings 24 directly from light bulb 42. It will be recognized that the illuminated display 50 as described, possesses night-time display value because of the colored light and also that the stenciled sales message may also be read during the day-time when the sign is unilluminated.

It will be understood that while the illustrated forms of the invention which I have described represent certain preferred embodiments, I do not wish to limit myself to the details as shown since it is obvious that the same may be widely varied without departing from the spirit of the invention as described and claimed in the appended claims.

Having described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A collapsible, illuminable sign of generally box-like structure, suitable for day and night display purposes and adapted for giving two separate and distinct sales messages comprised of a main body casing member which includes top and bottom wall members and side wall members for said box-like structure die-cut and die-scored from an integral blank, the inside of said casing member including an area of highly light reflective metal foil and each of the said side wall members being die-cut with a stenciled sales message, a supplementary flat partition member pigmented on both sides lying in a vertical plane longitudinally of said casing member and dividing the same into two parts, end wall members for said body casing member hingedly connected to said partition member so that the end members and partition member can be collapsed flat, and means of illumination within said casing, the said means of illumination and the pigmented partition member being so arranged as to project reflected colored light through the stenciled sales messages of said side wall members indirectly by reflecting the light upon the pigmented partition member.

2. A structure as defined in claim 1 wherein the partition member extends from the bottom to the top of the main body casing member and is provided at its top margin with an elongated perpendicularly foldable stiffening flap.

3. A structure as defined in claim 1 wherein said end members are provided with inwardly foldable marginal flaps adapted to stiffen the box-like structure.

4. A structure as defined in claim 1 wherein the bottom wall member of said main casing member includes two overlapping panel portions, locking means to lock the panel portions together, and two inwardly and upwardly foldable lamp socket support members die-cut from and hingedly connected to the inner of said overlapping panel portions.

5. A structure as defined in claim 1 wherein the bottom wall member of said main casing

member includes two overlapping panel portions, locking means to lock the panel portions together, two inwardly and upwardly foldable lamp socket support members die-cut from and hing-
 5 edly connected to the inner of said overlapping panel portions, and locking means for locking said socket members when in upright position to the partition member.

6. A structure as defined in claim 1 wherein the inner surface of said main body casing is covered by bright light reflective aluminum foil, thus making the display fire resistant.

7. A structure as defined in claim 1 wherein said partition member upon its margins continuously contacts the top, bottom, and end members of said box-like structure, except for a cut-out in its lower portion, said cut-out substantially conforming in shape to an electric light bulb, and wherein the said means of illumination for the display includes a single electric light bulb positioned in said cut-out.

8. A structure as defined in claim 1 wherein said partition member is pigmented on one side with pigment of one color and upon the other side with pigment of another color so that the stencils on alternate sides of the display are illuminated in different reflective colored lights.

9. An illuminable sign suitable for giving two separate and distinct sales messages which comprises a substantially closed casing which includes two upwardly extending wall members each being die-cut with a stenciled sales message, the inside surface of said casing being at least partially covered by a bright highly light reflective metallic foil, a pigmented partition member pigmented upon both sides separating said wall members, and means of illumination within said casing, said means of illumination and the pigmented partition member being so arranged as to project reflected colored light through the stenciled sales messages of said upwardly extending wall members indirectly by reflecting the light upon the pigmented partition member.

10. A structure as defined in claim 9 wherein the means of illumination includes a single electric bulb so positioned that certain of its light rays are reflected upon one side of said partition member and certain other of its rays are reflected upon the other side of said partition member, and wherein said partition member is pigmented on one side with pigment of one color and upon the other side with pigment of another color so that the stencils in the two upwardly extending wall members are illuminated in different reflected colored lights.

11. A relatively flat collapsible illuminable sign formed essentially of paper stock suitable for giving two separate and distinct sales messages which comprises a substantially closed foldable casing which includes two upwardly extending wall members each being die-cut with a stenciled sales message, the inside of said casing being provided with a light reflective area, a pigmented partition member pigmented upon both sides separating said wall members, and means of illumination within said casing, said means of illumination and the pigmented partition

member being so arranged as to project reflected colored light through the stenciled sales messages of said upwardly extending wall members indirectly by reflecting the light upon the pigmented partition member.

12. A relatively flat collapsible illuminable sign formed essentially of paper stock having both day and night display value suitable for giving two separate and distinct sales messages which comprises a substantially closed foldable casing which includes two upwardly extending wall members each die-cut with a stenciled sales message, a pigmented partition member pigmented on one side with pigment of one color and upon the other side with pigment of another color separating said wall members, stiffening means for stiffening said partition member, and means of illumination within said casing including a single electric light bulb so positioned that certain of its light rays are reflected upon one side of said partition member and certain other of its rays are reflected upon the other side of said partition member, said means of illumination and the pigmented partition member being so arranged as to project reflected colored light of one color through one of the stenciled sales messages and reflected colored light of another color through the other of the stenciled sales messages of said upwardly extending wall members.

13. A collapsible, illuminable sign of generally box-like structure, suitable for day and night display purposes and adapted for giving two separate and distinct sales messages comprised of a main body casing member which includes top and bottom wall members and side wall members for said box-like structure, the inside of said casing member including a highly light reflective area and each of the said side wall members being die-cut with a stenciled sales message, a flat partition member pigmented on both sides dividing the said casing into two parts, end wall members for said body casing member hingedly connected to said partition member so that the end members and partition member can be collapsed flat, and means of illumination within said casing, the said means of illumination and the pigmented partition member being so arranged as to project reflected colored light through the stenciled sales messages of said side wall members indirectly by reflecting the light upon the pigmented partition member.

14. An illuminable sign suitable for giving two separate and distinct sales messages which comprises a substantially closed casing which includes two upwardly extending wall members each being die-cut with a stenciled sales message, a light reflective area upon the inside surface of said casing, a pigmented partition member pigmented upon both sides separating said wall members, and means of illumination within said casing, said means of illumination and the pigmented partition member being so arranged as to project reflected colored light through the stenciled sales messages of said upwardly extending wall members indirectly by reflecting the light upon the pigmented partition member.

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