

L. POWELL.
SIGN.

APPLICATION FILED JAN. 8, 1909.

1,039,187.

Patented Sept. 24, 1912.

3 SHEETS—SHEET 1.

Fig 1

Fig 2

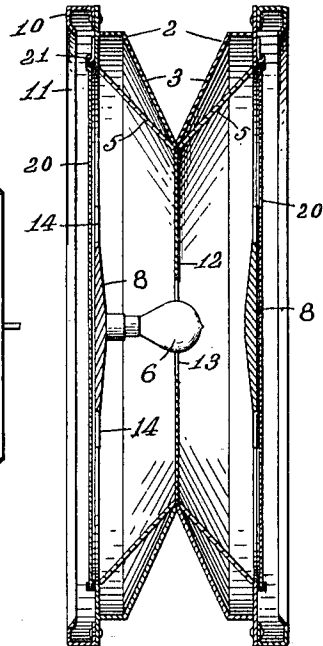
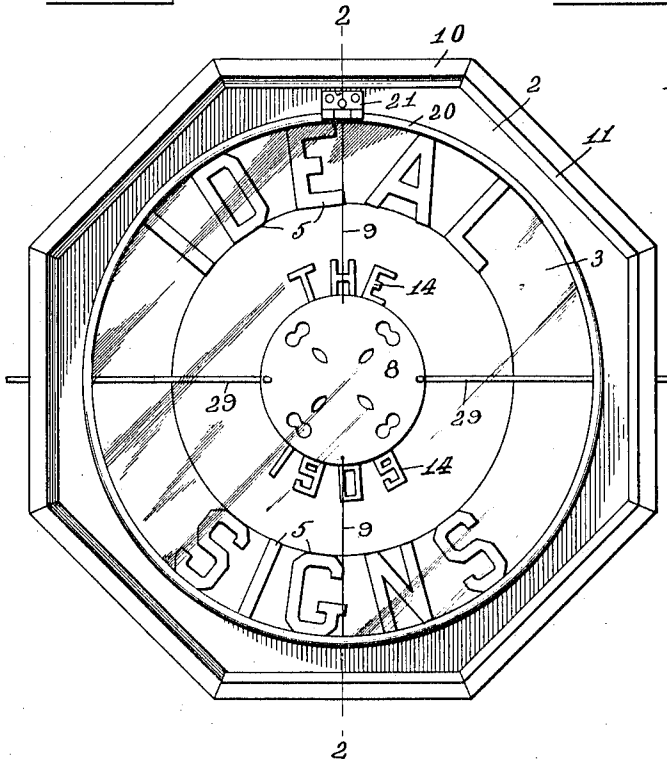
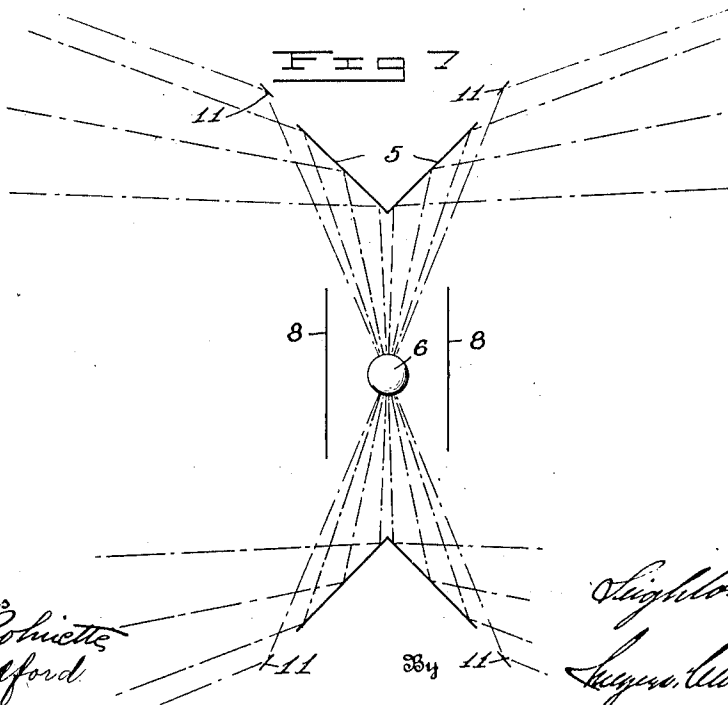


Fig 7



Witnesses
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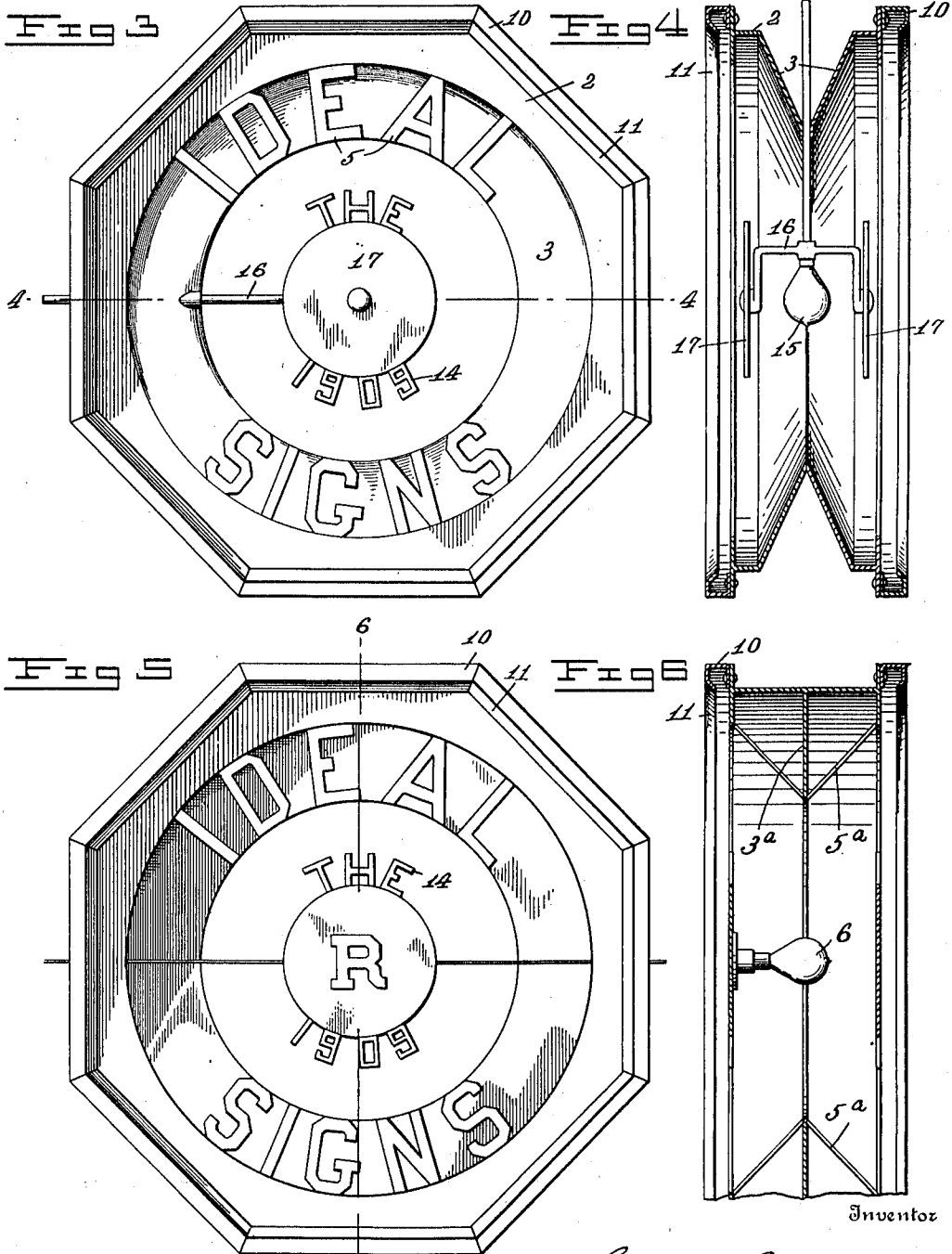
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3 SHEETS—SHEET 2.



Witnesses
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3 SHEETS—SHEET 3.

Fig 8

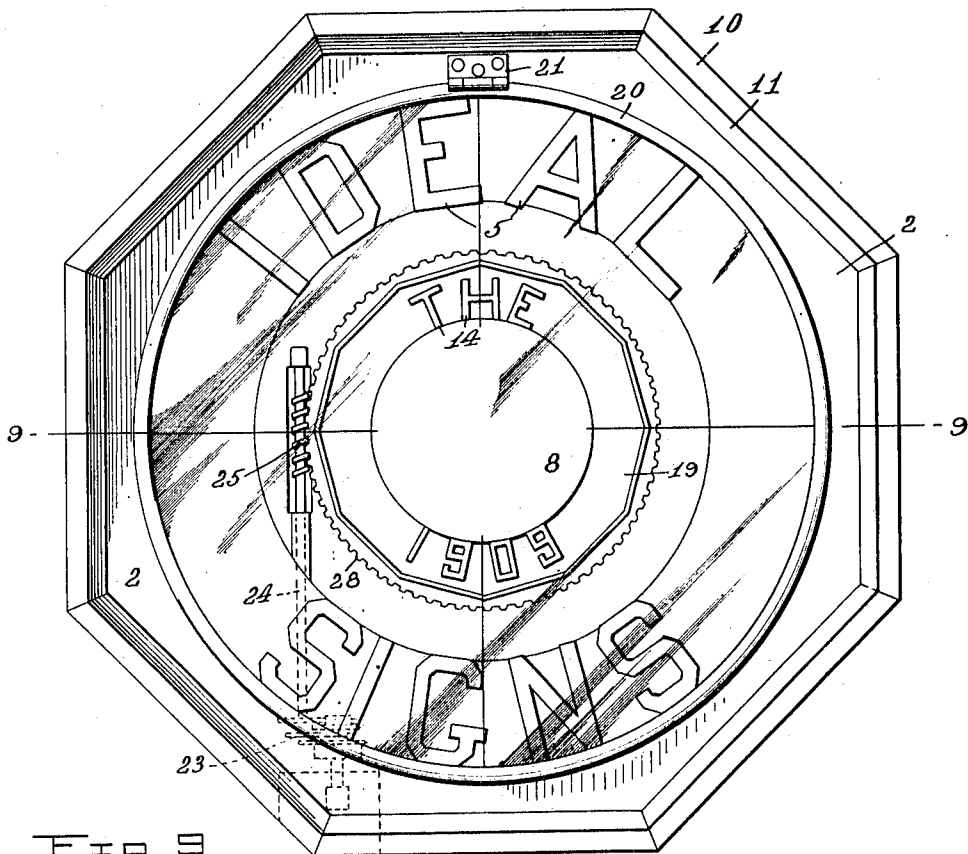
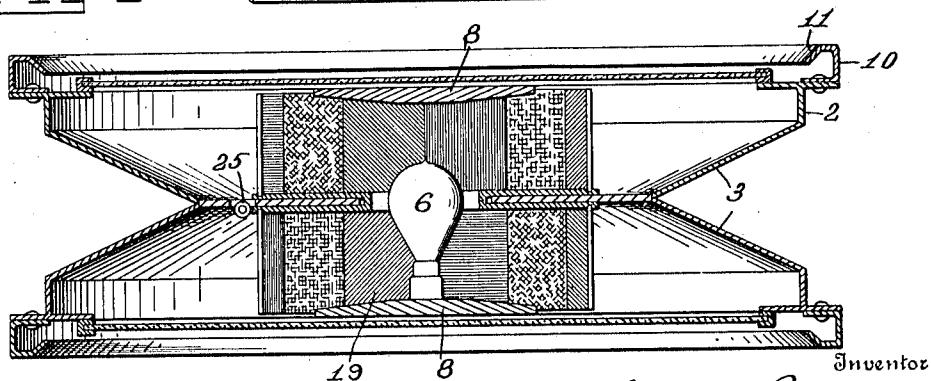


Fig 9



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UNITED STATES PATENT OFFICE.

LEIGHTON POWELL, OF THE UNITED STATES ARMY.

SIGN.

1,039,187.

Specification of Letters Patent. Patented Sept. 24, 1912.

Application filed January 8, 1909. Serial No. 471,289.

To all whom it may concern:

Be it known that I, LEIGHTON POWELL, a citizen of the United States, of the United States Army, now stationed at Fort Leavenworth, in the county of Leavenworth and State of Kansas, have invented new and useful Improvements in Signs, of which the following is a specification.

The present invention relates to advertising signs of that type in which the rays of a suitably placed light (generally electric) are thrown against the surface to be illuminated.

The purpose of the present invention is to reduce the number of lights required and consequently the cost of manufacture and maintenance of the sign to a minimum, and to obtain the greatest possible illuminating effect from a single light.

By the construction which I have invented, I am enabled to secure an illumination in all directions of two sides of a sign from a single light, and I accomplish this by so placing the light with respect to the surfaces to be illuminated that both sides of the sign will be lighted up equally at the point where the letters of the sign are placed, while the direct rays from the illuminating light itself will be shut off from the eyes of the observer, or so modified and reduced as to prevent an objectionable glare.

Various details of improvements will be pointed out in the disclosure hereinafter, and that which I consider my invention will be set forth in the appended claims.

In order that the invention may be clear to those skilled in the art I have illustrated in the accompanying drawings herewith several embodiments of my invention, and in said drawings, Figure 1 is a side view of a sign constructed in accordance with my invention. Fig. 2 is a vertical sectional view on line 2—2 in Fig. 1. Fig. 3 is a side view of a sign embodying the same general features as those illustrated above but differing therefrom as to details. Fig. 4 is a sectional view on line 4—4 of Fig. 3. Fig. 5 is a view showing a slightly different form of sign. Fig. 6 is a sectional view on line 6—6 of Fig. 5. Fig. 7 is a diagrammatic view to illustrate the direction of the light rays. Fig. 8 is a side view of a sign embodying features additional to those disclosed in the other views. Fig. 9 is a sectional view on line 9—9 of Fig. 8.

Referring to the drawings by numerals,

like numbers indicating like parts in the several views, and particularly to Figs. 1 and 2, 2 denotes the rim or frame of the sign, which, as indicated in the several sectional views, may be of light metal of sufficient thickness to make the sign structure rigid against wind pressure and like strain, from which frame 2 sheet metal sides 3 extend on converging lines so as to meet at an apex and form reëntrant angles with reversely inclined surfaces on opposite sides of the sign. In the form shown the sign is substantially circular, although it will be understood that any geometrical form suitable for the purpose may be adopted, and I do not limit myself to the circular design shown and described, this being adapted merely for illustrative purposes.

Adjacent, or upon the reversely inclined surfaces 3, the letters 5 which are to be illuminated may be placed, and these letters may lie fixed or delineated upon the surfaces 3, or, as shown in Fig. 2, they may be mounted in an outstanding inclined position relative to its surface. The letters 5 may be of any suitable design and material and may be provided with reflecting surfaces such as tinsel, or aluminum leaf, or mercury backing, or any pleasing form or structure of letter may be adopted.

Mounted centrally of the vertical and horizontal planes of the sign is a light, which may be of any suitable type, an electric light 6 being shown in the present case, and this light 6 may be supported in any suitable manner, as by attaching it rigidly to the inner face of the blind 8, which blinds are mounted on either side of the light 6 so as to intercept the direct rays of light from the lamp 6, these plates 8 being supported in any suitable manner, preferably by means of fine suspending wires 9 which drop from the surrounding frame 2 to the opposed blinds 8, two of which wires (29) serve to complete the lighting circuit. These blinds 8 may, if desired, be burnished on their inner surfaces so as to reflect and diffuse the light from the lamp 6, and, further, may be convexed or coned on their inner faces to reflect the light from the lamp at an angle and throw it against the inclined letters or surfaces, but will preferably be painted or dulled on their outer surfaces so as to form from the outside, a complete non-reflecting blind. In some cases, however, vari-colored translucent decorative disks on

which may be set opaque characters, will be substituted for the opaque blinds, thus modifying the direct rays from the light 6 and preventing an objectionable glare at the center of either face of the sign which would destroy the effect of the principal characters at the periphery of the sign. These disks add an additional decorative feature to the sign.

As will be seen, the light receiving surfaces (letters or parts which are to be illuminated) are arranged oppositely inclined (on a section taken radially through the sign), said surfaces intersecting in a line spaced from the lamp or source of light rays, the latter being located on a line cutting or bisecting the angle formed by these converging surfaces. It will be seen that with this arrangement of letters and light, both sides of the sign will be illuminated from the light 6, for the rays of light, as will appear from the diagram in Fig. 7, will be thrown against the two sides of the sign in all directions, illuminating each with equal brightness, while at the same time the direct light rays will be shut off from the observer, or so modified and reduced as to prevent an objectionable glare at the center of the sign which otherwise would destroy the effect of the reflected rays upon the character at the periphery of the sign.

The frame 2 hereinbefore referred to is preferably surrounded by a border 10 suitably ornamented and of such shape as to provide on its outer surface a flat inclined face 11 against which the rays of light strike, so as to be plainly visible from the front of the sign, giving an effective illuminated border when the sign is lighted at night, and obviously the entire ornamental border being visible in the day-time adds to the attractiveness of the sign. The flat inclined face may be suitably ornamented or decorated so as to give the proper light receiving surface and one which will be pleasing to the eye of the observer.

While the sign may be left open through its center, as shown in Figs. 3, 4, 5 and 6, and in some cases this may be desirable on account of wind resistance, I provide a central partition 12 (see Figs. 1, 2, 8 and 9) which extends from the ridge formed by the inclined surfaces 3 and forms the center of the sign, and this central partition of thin sheet metal may, of course, be utilized to support letters or other advertising matter. When the central partition 12 is used it will be cut-away, as at 13, to form an aperture in which the light 6 will lie and distribute light on both sides of the partition 12. In order to inclose and protect the sign from the weather, I may provide glass fronts 20, which are preferably hinged, as at 21, or otherwise detachably mounted to permit access to the interior. In case the partition 12

is not used and the sign is left open through its center, as shown by Figs. 3, 4, 5 and 6, the glass 20 will be omitted.

To add to the effectiveness of the sign I preferably mount at the edge of the blind 8, a series of letters 14, which may be opaque or translucent, and the rays of light from the lamp 6 striking these letters will make them stand out effectively at the edge of the blind, adding to the attractiveness of the sign. In some cases designs may be cut out of the body of the blind 8 and the openings backed with translucent material to produce ornamental effects. (See Fig. 1.)

When the translucent disks hereinbefore described are used, opaque characters may be attached to them for advertising or decorative purposes. (See Fig. 5.)

In Figs. 3 and 4 I have illustrated the lamp as lying in the vertical plane of the sign instead of being placed parallel with the axis of the sign, as in Figs. 1, 2, 5 and 6. In this case, while the sign structure remains the same, the light 15 will be carried by a fork 16 extending to the center of the sign, which fork serves as a conduit for the lighting circuit and supports blinds or disks 17 similar to those already described on opposite sides of the light 15. It will be apparent that the reflection from the light against the inclined letters of the sign will be similar to that hereinbefore described.

In Figs. 5 and 6, it will be observed that I have discarded the sloping or inclined side sections disclosed in the preceding figures, and the frame, as shown in section in Fig. 6, is substantially T-shaped with a central wall 3^a dropping from the horizontal web of the frame with the inclined letters 5^a secured at one end to this central wall 3^a, and engaging the side walls of the frame at their upper ends, as will be clear from inspection of Fig. 6, so that the letters 5^a have the same, or nearly the same inclined relation to the source of light, as in the other constructions.

In order to render more attractive the light and its effect upon the letters, I may inclose it in a revoluble cylinder 19 of glass or other transparent material, the different sections of which are differently colored, as for example, red, green, etc., so that as it is rotated a constantly changing light will be thrown around the periphery of the sign. This cylinder 19 may be revolved in any suitable manner, as by a small motor 23 set without the sides 4 with worm shaft 24 and worm connections 25 to the cog wheel 28 as best shown by Figs. 8 and 9.

It will be seen that the construction of sign disclosed herein permits the illumination of both sides of the sign from a single light, and that the sign structure and the combination of parts is such that all the elements lie within the planes of the sign walls, there being no projecting parts. This re-

sults in a sign which may be readily constructed and packed for shipment in complete form without the necessity of assembling or setting up the various parts of the sign when it reaches its destination, the only thing necessary being to hang the sign and connect the light. Furthermore, the compactness of the sign enables it to be hung in any convenient place, either as an exterior or interior sign, with no cumbersome projections to be taken care of. Again, the novel arrangement of light and its associated parts within the marginal planes of the sign protects such elements, and danger of their being broken or bent out of shape, as would be the case if they projected beyond or outside of the sign, is eliminated.

While I have shown particular structure in illustrating my invention, it will be apparent that it may be varied both as to design and mechanical details of construction, and I do not, therefore, limit myself to the details of construction shown and described, except so far as I am limited by the scope of the appended claims.

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

1. An illuminated sign comprising a frame, and a single source of light therein, said frame having diverging visual light-receiving surfaces surrounding said source of light and carrying sign characters, said surfaces diverging away from said source respectively from opposite sides of a geometrical plane in which the source of light lies, the lines of divergence of the surfaces intersecting said plane without and spaced from the source of light, whereby said source of light will directly illuminate said sign characters.

2. An illuminated sign comprising a frame, and a single source of light lying centrally within the frame, the frame having visual light-receiving diverging conical sign bearing surfaces adapted to intersect within a geometric plane passing through the light, the line of intersection being spaced considerably from the source of light.

3. An illuminated sign comprising a frame having visual light-receiving diverg-

ing conical surfaces adapted to intersect in a common plane and carrying sign characters, a single source of light lying within said plane and adapted to directly illuminate said sign characters, and blinds having illuminated characters on either side of said light.

4. An illuminated sign comprising a frame having visual light-receiving diverging conical surfaces adapted to intersect in a common plane and carrying sign characters, a single source of light lying within said plane and adapted to directly illuminate said sign characters, blinds on either side of said light, and illuminated letters projecting from the periphery of said blinds.

5. An illuminated sign comprising a frame, and a source of light therein, said frame having diverging visual light-receiving sign characters annular with respect to said source of light, said characters diverging away from said source respectively from opposite sides of a geometrical plane in which the source of light lies, the lines of divergence of the characters intersecting said plane without and spaced from the source of light, blinds on either side of said light, and means having its axis extending through and at a right angle to said plane and operating intermediate said blinds for producing changing color effects on the sign characters.

6. In a sign of the kind described, a plurality of concaved sign surfaces, and a single disk within said surfaces, said disk being in the form of a flat plate and provided with a lamp opening substantially as set forth.

7. The combination of two concaved body members having sign surfaces converging to a common plane, a flat center disk in the form of a single plate, separating the converging sign surfaces and provided with a lamp opening, and a lamp located in said opening.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

LEIGHTON POWELL.

Witnesses:

ALLEN B. KAERYFER,
WALTER V. GALLAGHER.