

D. F. DUCK,

SIGN.

APPLICATION FILED DEC. 6, 1916.

1,256,533.

Patented Feb. 19, 1918.

2 SHEETS—SHEET 1.

Fig. 1.

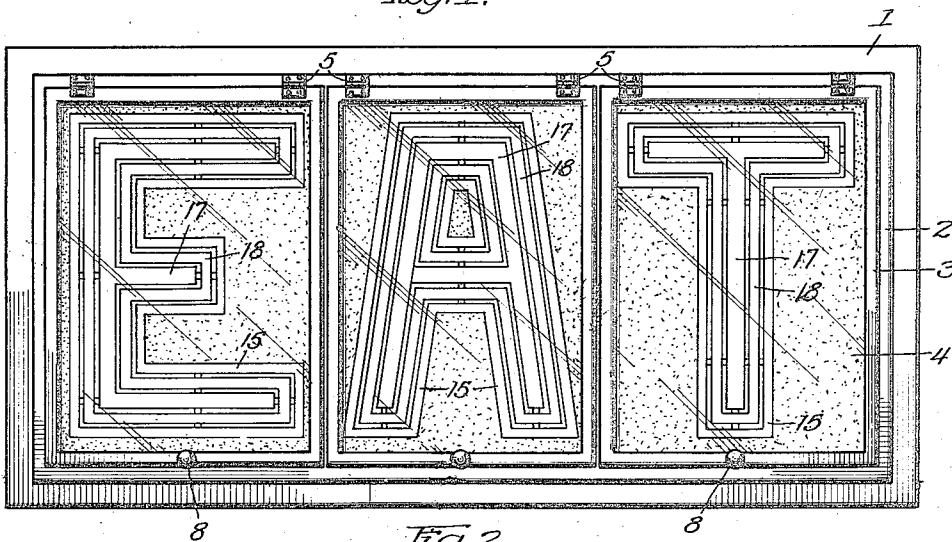


Fig. 2.

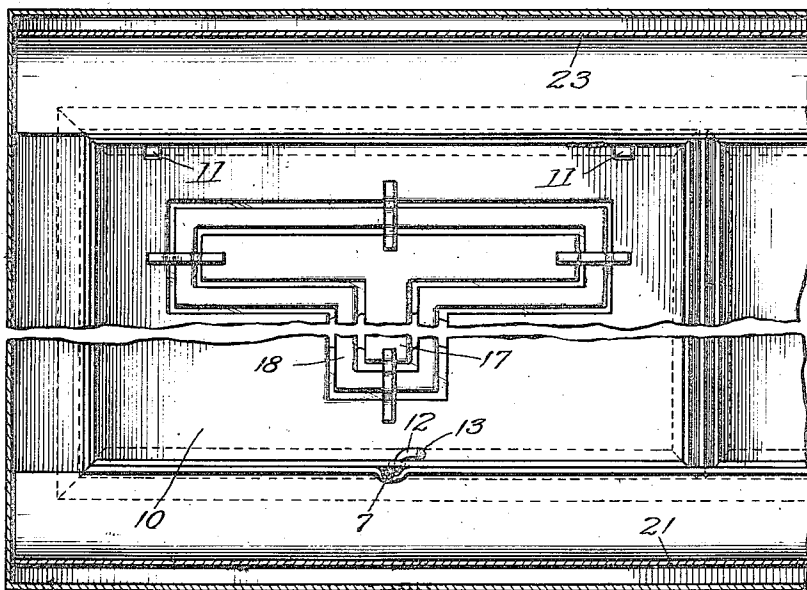
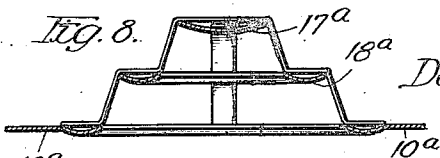


Fig. 8.



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2 SHEETS—SHEET 2.

Fig. 3.

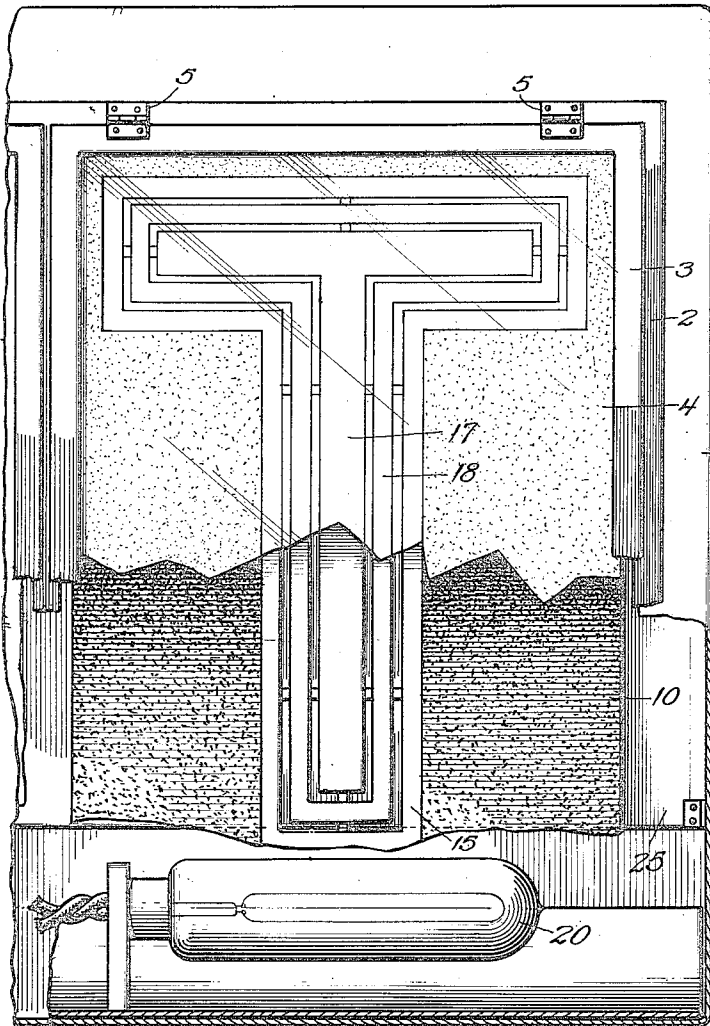
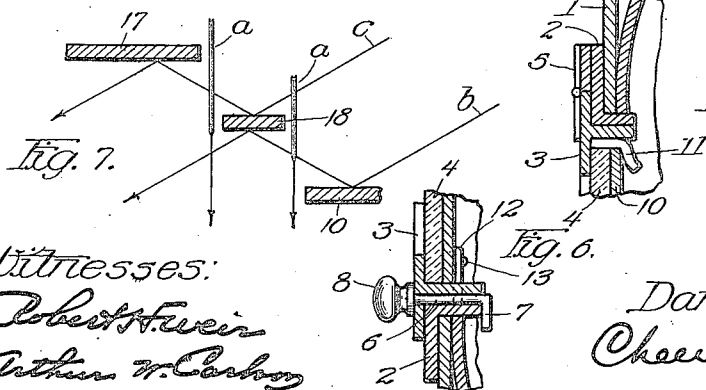
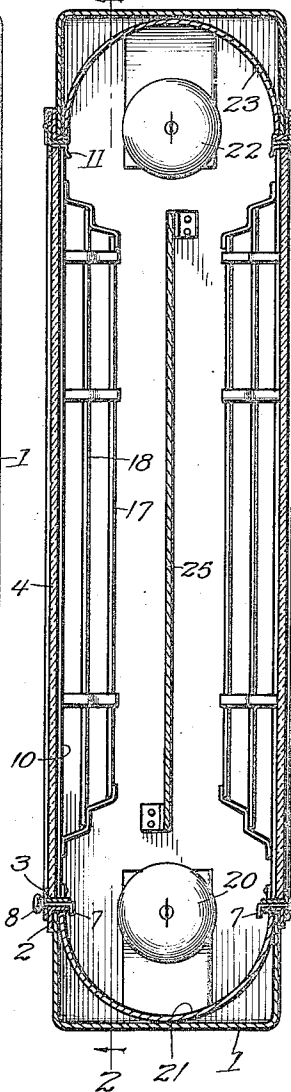


Fig. 4.



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SIGN.

1,256,533.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, DANIEL F. DUCK, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Signs, of which the following is a specification.

My invention relates to signs which are illuminated from the inside by electric lamps or otherwise. The principal object of the invention is to provide a construction whereby the letters will give the appearance of having a plurality of outlines arranged parallel at the straight portions and arranged concentrically at the curved portions of the letter. Ancillary to this principal object it is my purpose to provide means whereby the intervening spaces shall transmit light from the inside to the outside, where it will be visible by the observer. It is also my object to provide advantageous details of construction whereby the principal objects may be advantageously and efficiently carried out.

I obtain my objects by the construction illustrated in the accompanying drawings, in which:

Figure 1 is a front view of a sign embodying my invention.

Fig. 2 is a vertical section on the line 2-2 of Fig. 4;

Fig. 3 is a front elevation of the sign, various parts of which are broken away to better reveal the relative position of the parts.

Fig. 4 is a front-to-rear vertical section of the sign.

Figs. 5 and 6 are sectional detail views showing certain features of construction.

Fig. 7 is a diagrammatic view suggesting the manner in which the light rays travel, and

Fig. 8 is a detail view in cross section showing the letter in modified form, the front surfaces here being convex instead of plane.

Similar numerals refer to similar parts throughout the several views.

The sign may be single face or double face, but for the sake of illustration I have shown a double face sign, particularly in Fig. 4.

In the form selected to illustrate the invention, the sign has an outside casing 1,

preferably of sheet metal. Ordinarily this is rectangular both in front elevation and end elevation, the length being usually the greatest dimension, the height smaller and the thickness smallest.

There are openings in each front for each of the letters of the sign. The openings are reinforced at the marginal edges by members such as the angle irons 2. The doors themselves have frames 3 supporting panes 4 of glass. The panes are transparent and the doors are suspended from hinges located preferably at the top. Any suitable form of latch is provided for holding the doors closed. According to the present design I have mounted a shaft 6 rotatably in the door frame, as shown in detail in Fig. 6. This has a hook 7 at its inner end and is rotated by a head 8 on the outside of the door. By swinging the hook 7 down it will engage the inside of the angle iron 2 and hold the door securely closed.

Back of the glass in each door frame there is a plate 10 preferably of sheet metal. This is rectangular in outline and has the same dimensions as the pane of glass. It is held adjacent to the glass by any suitable means. In the construction illustrated, the glass and the plate are held in position at the top by a set of clips 11, shown in detail in Fig. 5, and at the bottom by a finger 12 pivoted on a pin 13, as shown in detail in Fig. 6. Thus, the plate may be easily removed from the door frame at any time.

Each plate 10 has a central opening in the shape of the letter which it is to represent. In the preferred form, the outer face of this plate is blackened or painted with some dark color, and a stripe 15 of white paint or light pigment of some kind is applied to the face of the plate around the margin of the opening, as best shown in Fig. 3. Rigidly fastened within the opening in the plate are strips 17 and 18. These are preferably of sheet metal and arranged in separate, parallel planes one back of the other, as best shown in Figs. 4 and 7. In the best form, these strips are also laterally offset to such an extent that when viewed from the front a space will appear between the adjacent edges of the strips. In other words, these strips in the most advantageous form are parallel to and separate from each other, both when viewed from the edge as

in Fig. 4 and from the front as in Figs. 3 and 7. Thus, they may be said to be arranged in echelon.

An electric lamp 20 or other suitable source of light is mounted at the bottom of the casing and the light rays are reflected upward by a reflector 21. When desired, a similar source of light 22 and reflector 23 may be mounted at the top of the casing in position to supply light from the top.

Where a double faced sign is desired, a central partition 25 may be arranged midway between the two fronts as shown in Fig. 4.

In operation, after the parts have been assembled and the light turned on, the rays from the inside of the casing will both pass directly through the letter between the strips and will also illuminate the front of the strips 17 and 18 and thus render them visible from the front. The inside of the casing will be flooded with light and the rays will be dispersed in many directions. In Fig. 7 I have suggested two types of rays, the rays *a*, *a* traveling straight out from the inside sign, thereby producing the brightest portion of the sign, and the rays *b*, *c* being reflected and illuminating the front of the strips 17 and 18, and hence furnishing a light of secondary intensity. To illustrate; the ray *b* striking the back of the plate 10 will be reflected forward to the front of the adjacent strip 18 which will reflect the light and throw it forward where it will be visible to the observer. In the same way, the ray *c* will strike back of the strip 18 and be reflected to the front of the strip 17. As a result of this construction, the letters will have the appearance of being formed of parallel bright lines bordered by surfaces of secondary intensity. As a result, the sign will have a peculiar and attractive appearance, and the letters might be referred to as skeleton letters having a double outline of light. It will be understood that the number of strips may be varied, although I consider that the most effective sign is produced by employing two strips between the plate and the axes or center lines of the letter.

It is not essential that the front faces of the strips 17 and 18 be absolutely flat. An attractive effect is produced by curving them somewhat and arranging them with their convex faces forward, as illustrated in Fig. 8. In this form, plate 10^a is in front and the strips 17^a and 18^a are arranged behind it.

I have for clearness herein used the term sign "letters," although the term will be understood to include numerals and arbitrary symbols.

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

1. A sign letter comprising a plurality of symbols certain of which are of skeleton formation, said symbols being spaced apart with the outer edges of one symbol spaced inwardly of the corresponding inner edges of the adjacent symbol.

2. A sign letter comprising a solid symbol and a corresponding skeleton symbol, said symbols being spaced apart with the outer edges of one symbol spaced inwardly of the corresponding inner edges of the other symbol.

3. A sign letter comprising a solid symbol and a plurality of corresponding skeleton symbols, said symbols being spaced apart, the edges of the solid symbol being spaced inwardly of the corresponding inner edges of the adjacent skeleton symbol, and the outer edges of a skeleton symbol being spaced inwardly of the corresponding inner edges of an adjacent skeleton symbol.

4. A sign letter comprising a base having a symbolic opening therein, a solid symbol and a corresponding skeleton symbol arranged over said opening and spaced apart from said base and from each other, the edges of the solid symbol being spaced inwardly of the corresponding inner edges of the skeleton symbol, and the outer edges of the skeleton symbol being spaced inwardly of the symbolic opening in the base.

In witness whereof, I have hereunto subscribed my name.

DANIEL F. DUCK.