Sept. 1, 1931. J. T. COCHRAN 1,820,964

SIGN

Filed March 22, 1929

Fig. 1.

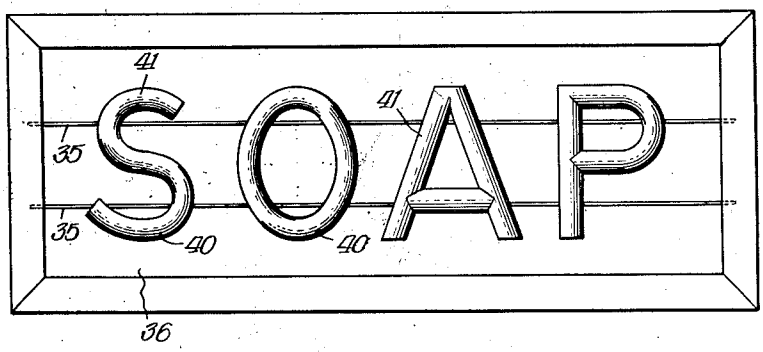


Fig. 2.

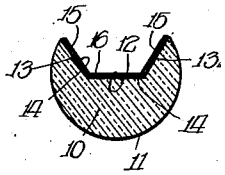


Fig. 2a.

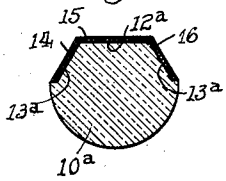


Fig. 3.

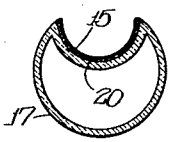


Fig. 4.

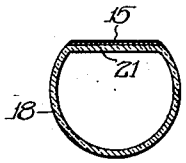


Fig. 5.

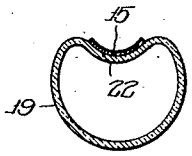


Fig. 6.

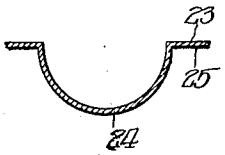


Fig. 9.

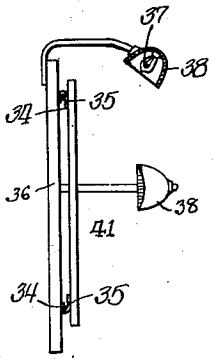


Fig. 7.

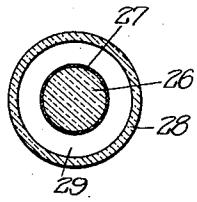
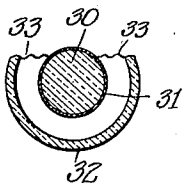


Fig. 8.



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UNITED STATES PATENT OFFICE

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SIGN

Application filed March 22, 1929. Serial No. 349,057.

This invention relates in general to a display sign which may be illuminated or not, as desired, and has more particular reference to the structure of the letters for simulating a sign of electrified gas filled tubing.

One of the principal objects of the invention is in the provision of a sign character or letter which is composed of a transparent body having a reflecting surface, either colored or plain, to simulate neon signs of gas filled tubing. A further object of the invention is in the provision of a sign letter or character which is simple and inexpensive, not likely to break and easily applicable to signs for use for display purposes at all times whether illuminated or not.

A further object of the invention is in the provision of a reflecting sign letter or character which is interchangeably applied in making up a sign resembling a more expensive gas filled tube sign. A still further object is in the provision of an interchangeable letter or character for signs which may have any desired color so that when applied to an illuminated sign the color will be reflected through the body of the letter, and visible in the chosen color to a person in front of the sign.

Other objects of the invention will appear hereinafter, the accompanying drawings illustrating more or less diagrammatically an embodiment of the invention and different sections showing how letters or characters for accomplishing the desired result may be made.

In the accompanying drawings Fig. 1 is a front view of a simple sign composed of letters constructed in accordance with the principles of this invention; Figs. 2*a* and 2 to 8, inclusive, are cross sections of different body formations for the letters; and Fig. 9 is a diagrammatic representation of an illuminated sign resembling an electrified gas filled tube sign.

The gas filled tubular signs now commonly known as neon tubes are objectionable not only because of their first cost but also because the letters are not readily interchangeable, and for the further reason that the letters or characters being formed of tubes are very fragile, subject to heat and cold and if broken the contents of the tubes may ruin or damage anything with which it comes in contact.

The present invention is designed and intended to provide a substitute which overcomes these objections by providing individual letters or characters which may be easily made in stock shapes and sizes so that they are interchangeable and may be varied for changing the lettering of any sign; the letters are formed so that they may be used with or without illumination, and the backs provided with reflecting surfaces which will reflect light rays through the body of the letters, either from natural or artificial light, giving the reflected rays any suitable color which may be applied to the letter itself, thus differing from neon signs in which only a few colors are available.

It is intended that these letters or bodies of the letters may be molded, cast, cut or otherwise formed from glass, bakelite, celluloid, cellophane or any other suitable transparent material which may be cut or shaped in the desired manner. Preferably the outer or exposed surface of the letter is curved or rounded to present a neat and attractive appearance, and the rear side is shaped or formed to provide one or more reflecting surfaces, either straight or curved to which is applied a mirroring medium as well as a coloring, if desired. The body of the letter may be solid, as shown in Figs. 2*a* and 2, or tubular, as shown in some of the other figures, or it may combine a tubular and solid form, as shown in Figs. 7 and 8.

In the form shown in Fig. 2 there is a solid body 10 formed of transparent material having an outer curved surface 11 and a rear recess forming reflecting surfaces 12 and 13. To these reflecting surfaces may be applied a transparent coloring 14 in the form of a paint, dye or other suitable material. To and over this coating of color, a mirroring medium 15 is applied, such, for example as a thin layer of foil or any well known mirror coating, and to the back of the mirroring coating is applied a layer 16 of paint, shellac or any other suitable preservative and binder.

The same coloring and mirroring coating may be applied to each of the other forms, but is not again described in detail.

The body 10*a* of Fig. 2*a* has reflecting surfaces 12*a* and 13*a* extending outwardly instead of inwardly as in Fig. 2 with the same or similar coatings. These solid bodies shown in Fig. 2 and Fig. 2*a* with the convex outer surfaces act as a lens, dispersing the rays and magnifying the reflections from the rear surfaces.

As indicated in Figs. 3, 4 and 5, the transparent bodies 17, 18 and 19 may be solid or tubular in form, and if tubular, the interior spaces may be filled with a liquid of any suitable color. In the form shown in Fig. 3 the reflection surface 20 is practically semicircular in form; in Fig. 4 the reflection surface 21 is flat; in Fig. 5 the reflection surface 22 is curved or in the form of an arc of a circle.

The structure shown in Fig. 6 is intended to represent the cross section of a portion of a letter embossed or raised from a sheet 23 of metal, the outer exposed surface 24 being left bright and therefore constituting a natural reflector which may be coated with a lamp dip or other coloring for presenting colored letters or characters. The other surface 25 should be of contrasting color or unfinished so that the surface 24 will stand out clearly therefrom. A sign of this kind is adapted to be used for license plates.

In the form shown by Fig. 7, a solid rod or bar 26 is completely mirrored or covered with foil 27 and enclosed in a transparent tube 28 of glass or other material, leaving a space 29 which may be filled with dye or colored liquid. It is also obvious that the outer tubing 28 may be plain or colored to produce the same result. In the form shown by Fig. 8, a body 30 has a mirrored surface 31 and is held at equal distances from a transparent shell 32 with spacing means 33 holding the parts in place.

In the forms shown by Figs. 7 and 8, the inner body member carries one color and the outer shell a complementary or contrasting color or a liquid of different color may be enclosed in the space 29.

However the letters or characters are formed they may be made in stock sizes and shapes so that the letters are interchangeable and may be varied to form different words so that different signs can be made up quickly and easily with the letters. Each letter may be provided with one or more projections 34 (Fig. 9) for engaging slots or wires 35 in a framed background 36 and for display purposes; an electric lamp 37 having a guard 38 is mounted above or at one side of the sign so that the rays from the lamp will shine directly upon the letters 40 and will be reflected therefrom.

When the letters are made up with a curved reflecting surface, as shown in Figs. 3, 5 and 7, the reflection viewed by a person will be continuous within the range of the reflection. When the letters are constructed with a flat reflecting surface, as shown in Figs. 2 and 4, they are best reflected only from the number of reflecting surfaces which they have.

In applying a structure such as shown in Fig. 2 to the letters 40 in Fig. 1, a distinct reflected ribbon of light will appear for each letter at each of the angular reflecting surfaces 12 and 13, as indicated by the numerals 41 in Fig. 1.

By making the body of the letter of transparent material, the reflected light is also refracted and the mirroring surface is clean and bright and the numerals are distinct, they will shine and glow in ordinary daylight and under an artificial light they give a brilliant appearance, resembling the gas filled tubes of neon lights.

Signs made of these letters may be varied in color as desired or the message on the sign may be changed by using different letters. The breakage of one letter does not render the whole sign inoperative, it requires only the substitution of a new letter of stock form. No expensive wiring is necessary for making this sign operative at night, and yet the letters under artificial light give the appearance of a radiant glowing letter.

I claim:

1. A sign comprising letters and characters each formed of transparent material forming a lens and having a portion of its surface at the rear of the lens covered with reflecting media and having portions angularly related to each other but with the lens portion common to all.

2. A sign comprising letters and characters, each having its rear portion provided with a reflecting surface consisting of a plurality of angularly related flat portions, and means applied to the flat portions for reflecting light through the front of the letter, the front portion forming a magnifying lens.

3. Letters and characters for signs comprising a transparent body rounded at the front exposed side to form a convex lens and having a reflecting surface at the rear side composed of angularly related side portions running with the letter having the lens in common and means for applying color to the body which will be reflected from the reflecting surface and magnified by the lens when light is applied to the body.

4. A transparent letter or character for signs comprising an outwardly curved body forming a magnifying lens and having flat reflecting surfaces running with the letter or character and angularly related to each other in cross section at the rear side, means for covering the reflecting surfaces with reflecting media and means for applying a trans-

parent color to the body which is reflected therefrom and magnified when light is applied to the reflecting media.

5. Letters and characters for signs comprising bodies with outwardly rounded lens portions simulating transparent glass tubing having angularly related reflecting surfaces extending lengthwise of the body of the letter or character at the rear side thereof and reflecting means applied thereto for projecting light rays through the lens portions of the body.

6. Sign letters and characters comprising transparent bodies having outwardly curved front surfaces constituting magnifying lenses and rear reflecting surfaces running with the letters or characters and angularly related to each other in cross section, means applied to the rear surfaces for causing reflection and dispersion of light rays through the body, and color means interposed between the body and the reflecting means for causing a corresponding color reflection through the body resembling a glass tube.

7. Sign letters and characters comprising transparent bodies having outwardly rounded front surfaces constituting magnifying lenses and rear sides with reflecting surfaces thereon running with the letters and characters, the rear surface having sides angularly disposed in cross section with respect thereto, a coloring medium applied to the reflecting surfaces and reflecting means applied to the reflecting surfaces over the coloring medium.

8. The combination with a sign comprising letters and characters, each formed of a transparent body having a reflecting back with side surfaces angular in cross section with respect thereto and having a common convex lens at its front side directed toward the sign whereby the light will be reflected through the transparent body from the reflecting surfaces to a person viewing the sign from the front thereof.

9. The combination with a sign comprising characters each formed from a body of transparent material having an outwardly rounded surface constituting a magnifying lens and resembling glass tubing from the front thereof and having a reflecting surface at the rear composed of a flat back with lateral side extensions angularly related thereto all having the lens in common, means applied to the rear for mirroring reflected light therethrough, and a coloring media interposed betwen the surface and the mirroring means, and a source of light in front of the character whereby colored rays of light are transmitted through the body of the character and visible to a person at the front of the sign.

10. A lighted sign simulating an electrified gas filled tubing comprising characters each consisting of a transparent body rounded at the front to provide a convex magnifying lens and having reflection surfaces running with the body of the characters at the rear and comprising a flat central surface with sides angularly related thereto and having the lens in common, a coloring medium supplied to the reflection surfaces, and a mirroring reflector applied to the surfaces over the coloring medium, a source of light disposed in front and directed toward the characters whereby the rays therefrom are reflected through the body, each character modified by the color applied to it.

11. A sign letter or character comprising a body of transparent material having an outwardly rounded front portion constituting a magnifying lens and a rear reflecting surface running lengthwise of the body of the letter or character comprising a flat central surface and angular side reflecting surfaces extending rearwardly therefrom, the reflecting surfaces all having the lens in common.

12. A sign letter or character comprising a body of transparent material having a convex lens at its front and a flat central reflecting surface at the rear with side extensions in a forward direction therefrom, the reflecting surfaces and the lens running with the body of the letter or character.

JOSEPH T. COCHRAN.