

March 10, 1942.

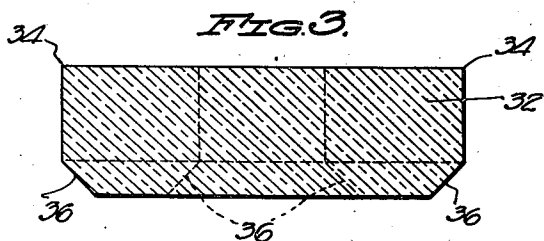
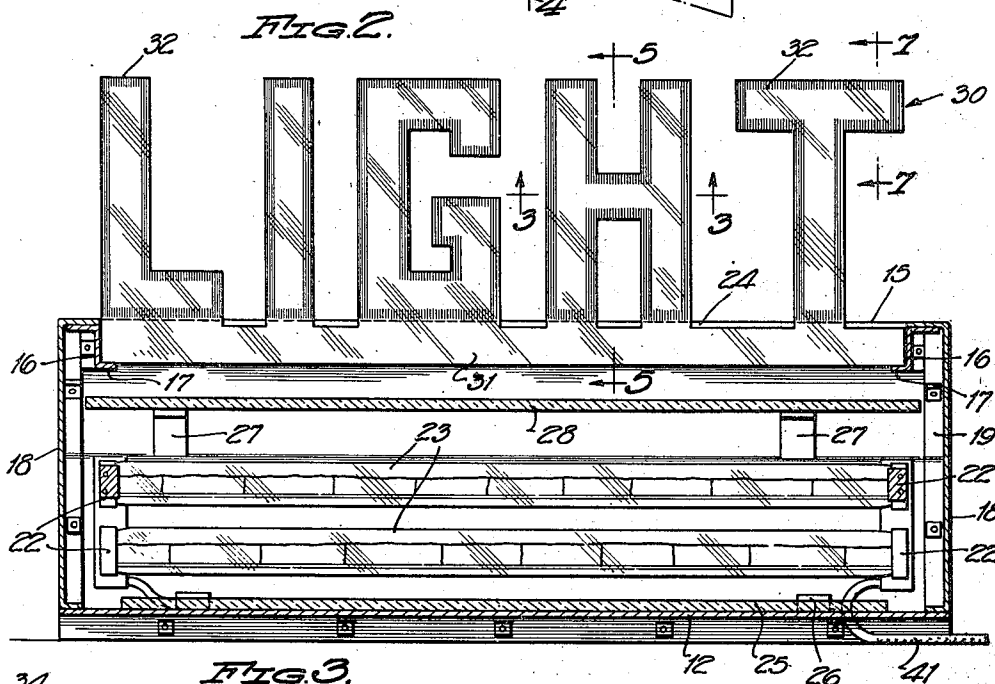
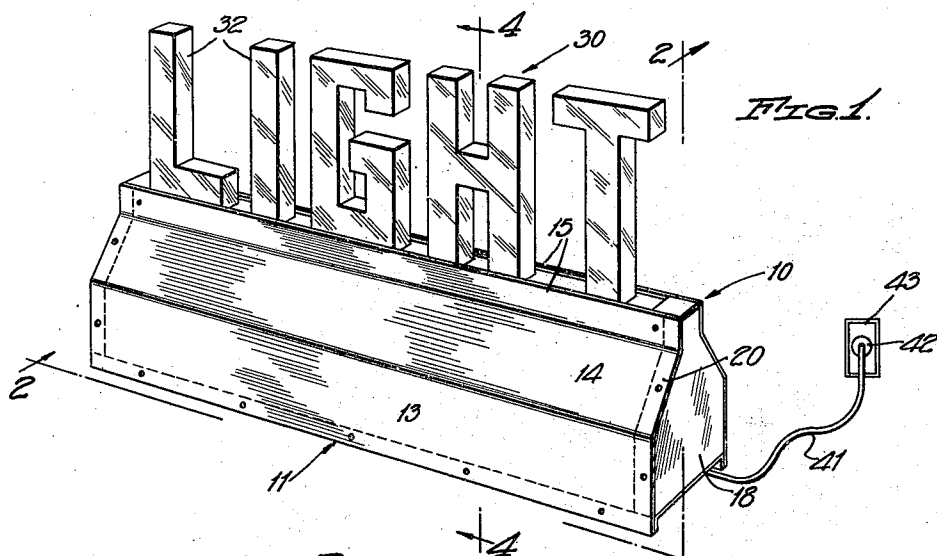
A. GAUTHIER

2,276,185

ILLUMINATED SIGN

Filed April 25, 1939

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

FIG. 4.

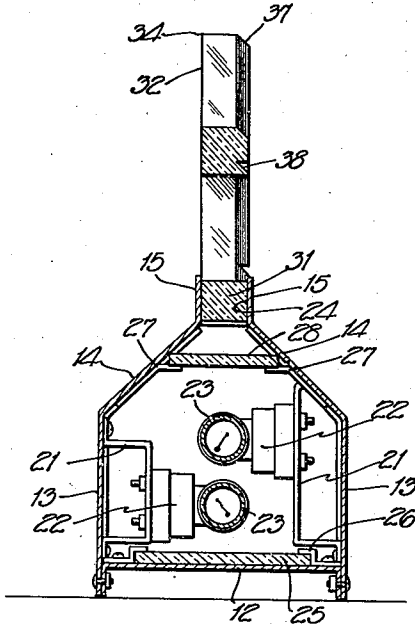


FIG. 8.

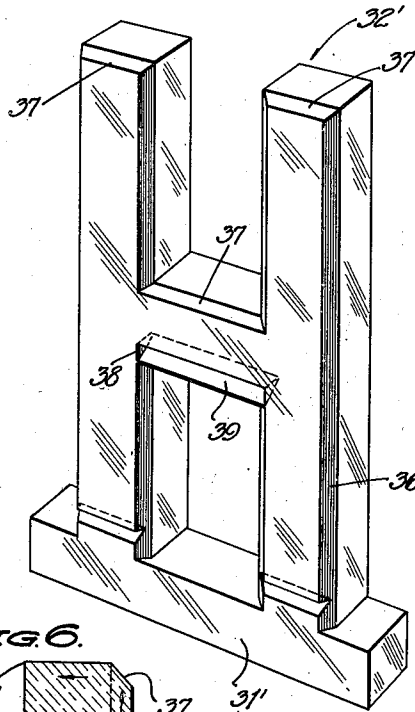


FIG. 5.

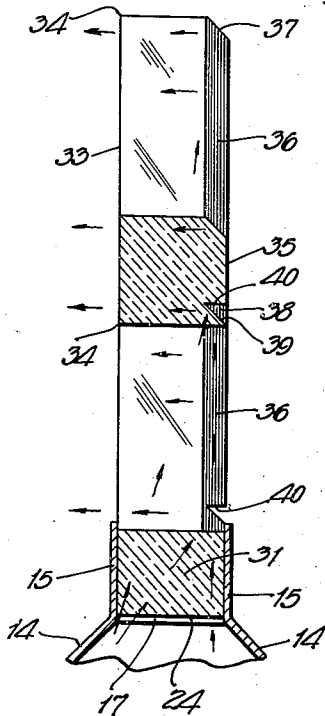


FIG. 6.

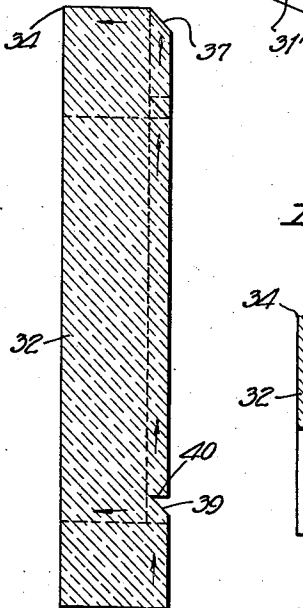
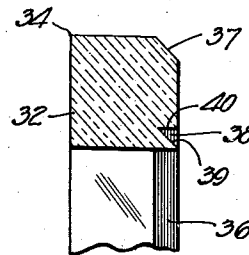


FIG. 7.



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UNITED STATES PATENT OFFICE

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ILLUMINATED SIGN

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Application April 25, 1939, Serial No. 269,925

9 Claims. (Cl. 40—130)

This invention relates to illuminated signs.

The primary object of the invention resides in a transparent sign which is illuminated by reflected light rays and preferably by colored light rays which are picked up by angular edge surfaces at the rear side of the sign characters to produce a colored outline corresponding to that of the sign characters.

Another feature of the invention is to provide an illuminated sign which imparts to the eye of an observer the appearance of a sign of the "Neon" type but which is illuminated by reflected colored light from a concealed source.

A further feature of the invention is the provision of an illuminated sign in which the outline of the sign characters are illuminated in a clear, sharp, and distinct manner but by a visible colored light which is a soft glow so as to be readable without eye strain or glare.

Another feature of the invention is to construct a sign of the above kind in which the sign characters are interchangeable so that the display may be changed at will by the user of the sign.

A still further feature of the invention is to provide an illuminated sign which is inexpensive of manufacture, easy of installation, and which may be maintained in working order at a relatively low cost.

Other features of the invention will become apparent as the following specification is read in conjunction with the accompanying drawings, in which:

Figure 1 is a perspective view of a sign constructed in accordance with my invention.

Figure 2 is a vertical longitudinal sectional view on the line 2—2 of Figure 1, the vertical shade lines on the sign characters illustrating the manner in which the outline of the sign characters visually stand out when the sign is illuminated and an observer is looking at the front thereof.

Figure 3 is an enlarged horizontal sectional view on the line 3—3 of Figure 2.

Figure 4 is a vertical transverse sectional view on the line 4—4 of Figure 1.

Figure 5 is an enlarged vertical transverse sectional view on the line 5—5 of Figure 2.

Figure 6 is an enlarged central vertical transverse sectional view through the sign character "T."

Figure 7 is an enlarged detail vertical sectional view through the cross arm of the sign character "T," taken on the line 7—7 of Figure 2.

Figure 8 is a perspective view of a single sign

character, illustrating the manner in which interchangeable signs may be formed by making the sign of a row of individual characters.

Referring to the drawings by reference characters, the numeral 10 designates an illuminated sign constructed in accordance with my invention and which includes an elongated sheet metal housing 11 which consists of a bottom wall 12, vertical side walls 13—13, upwardly converging top walls 14—14 which terminate in spaced relation and which have vertical upstanding flanges 15—15 integral therewith. Spacer members 16 connect the flanges 15—15 adjacent opposite ends and each spacer member is provided with an inwardly extending lip 17 disposed well below the top of the flanges. End walls 18—18 close the ends of the housing and each is provided with inwardly extending flanges 19 which have threaded openings therein to receive the threaded shanks of screws 20 which pass through registering openings in the side and top walls. By removing the screws 20, the end walls 18—18 may be removed to facilitate access to the interior of the housing 11 through the ends thereof.

Mounted within the housing 11 adjacent opposite ends thereof and at each side of the longitudinal center of the housing is a pair of horizontally aligned brackets 21—21. Each pair of brackets 21—21 supports an electric lamp terminal 22 which supports the ends of an incandescent lamp 23 of the tube type. The lamps 23 are disposed in spaced superposed relation and in vertical alinement with the slot 24 defined by the flanges 15—15 and end walls 18—18. A light reflecting mirror 25 is supported upon and extends substantially the length of the bottom wall 12 and is secured thereto by clips 26. The mirror 25 is face up so as to reflect upwardly the rays of light picked up by it from the lighted lamp 23.

Mounted on brackets 27 fixed to the inner side of the top walls 14—14 is a removable colored glass panel 28. The plate 28 is interposed between the artificial source of light produced by the lamps 23 and the slot 24, so that colored light rays will be reflected upwardly throughout the length of the slot.

Having described a support and a concealed light source for my illuminated sign, I shall now explain in detail, the sign proper which is designated in its entirety by the numeral 30, and which is made up of the letters L-I-G-H-T, which combined spell the word "Light." In Figures 1 to 7 inclusive of the drawings, the sign characters are supported by and are integral with an elongated base 31, and each sign character by the

numeral 32. The sign 30 is constructed of a clear solid transparent substance resembling plate glass but known by the trade name of "Lucite." The substance known as "Lucite" is a plastic composition, and being crystal clear, and unlike glass, it is free of any natural light reflecting elements. Light freely passes throughout the entire thickness of the "Lucite" but by beveling and imparting a frosted appearance to the beveled surfaces in a manner now to be described, I am able to control the picking up of light rays and impart illumination to sign characters formed of this composition. The base 31 is square or rectangular in cross section and of a width to snugly fit between the flanges 15—15, and of a length to overlie the length of the slot 24 with its ends seated on the lips 17—17.

Each sign character 32 is provided with a flat front surface 33 and the outline of the front surface is defined by sharp corner edges 34. The rear of each sign character has a flat rear surface 35 which is parallel to the front surface 33 and all vertical rear edges are beveled as at 36. The rear top horizontal edge of each character is beveled as at 37 as are the top rear horizontal edges of such parts as the cross bar of the letter H and the similar edge of the lower jaw of the letter G. The base of each sign character is horizontally undercut as at 38 as are the bottom horizontal edges of the cross bar of the H, the cross head of the letter T and other sign characters having similar horizontally disposed edges in their make up. Each horizontal undercut edge includes a beveled light reflecting surface 39 and a horizontal shoulder 40. In every instance, the corner edges of the rear side of the transparent sign characters are beveled to pick up and forwardly project light rays so as to impart a border outline of the transparent sign characters when the same are viewed from the front, as illustrated by the vertical shade lines in Figure 2. While I have referred to certain of the side edges of the character as being "vertical," I wish it to be understood that this term includes any upwardly and downwardly extending edges which may be at a slight angle, such as the sides of the letters "A", "V", "W", and the like.

The lamp terminals 27 are electrically connected to one end of an electric cord 41 and the other end of the cord is provided with an attachment plug 42 which is shown in Figure 1 as being connected to an electric outlet 43.

Whereas the sign 10 will function in daylight it is especially adapted for night display, and in practice, the light rays from the tube lamps 23 are reflected upwardly through the colored glass panel 28, and the colored light rays from the panel 28 pass upwardly through the slot 24, thence upwardly through the solid transparent bodies of the sign characters 32. As before stated, the sign is viewed from the front and the colored light passes upwardly through the uninterrupted solid bodies of the sign characters, but such colored light rays are invisible to the eye, but certain of the colored light rays are picked up by the beveled or angular surfaces 36, 37, and 39, and these surfaces appear illuminated and visibly produce an outline corresponding to the border edges of the sign characters. The light source produced by the tube lamps 23 is of uniform intensity throughout the length of the sign so that all sign characters will be illuminated by light of the same intensity.

In day light, the sign 10, if exposed to the rays of the sun will pick up the sun's rays in the same

manner that it picks up the colored rays from the light housing 11, and the outlines of the sign characters will brilliantly reflect the light rays so as to be visible from the front.

In Figure 8 of the drawings, I have shown an individual sign character 32' representative of the letter "H" and which is mounted on a base 31' of a length sufficient to support the sign character. The sign character 32' is identical to the sign character 32 and like parts are identified by similar reference characters. An entire alphabet and a series of numbers may be made up as individual sign characters to facilitate the formation of different sign displays by interchangeably arranging the sign characters on the housing 11. In such case, a clear transparent bridge panel may be seated on the lips 17—17 before inserting the individual sign characters 32' between the flanges 15—15. Also, the flanges 15—15 may be made resilient to clampingly engage the bases 31' of the sign characters 32', and in such case, a transparent bridge panel is not necessary.

I wish it to be understood, that whereas I have illustrated the light source beneath the sign characters, the same may emanate from either end and above the sign if desired. If the sign 30 is displayed in a location where the light pick up surfaces may receive light from street lighting, other illuminating signs or other like sources, the source of light produced by the lamps 23 may be dispensed within.

Whereas I have mentioned that the transparent sign characters are made of a composition of material known by the trade-name of "Lucite," other materials having like characteristics may be used if desired, and I do not limit myself to the exact details of construction herein set forth, nor to anything less than the whole of my invention as set forth in the appended claims.

Having thus described the invention, what I claim as new and desire to secure by Letters Patent of the United States, is:

1. An illuminated sign comprising a block-like body of a predetermined sign character shape constructed of a solid crystal clear substance and having flat vertically extending side surfaces and flat top and bottom horizontally disposed surfaces, which surfaces combined define a border outline of the block-like body, a concealed source of light beneath said body having its light rays directed upwardly through said body from the underside thereof, inwardly beveled light intercepting and forwardly reflecting surfaces provided at the rear edges of the vertically extending side surfaces of said body and at the top horizontal surfaces thereof, V-shaped recesses provided in the rear surface of said body adjacent the edges of the bottom surfaces thereof and extending the length of said bottom surfaces, the bottom angular walls of said V-shaped recesses being disposed in the path of light from said source of light and constituting light intercepting and forwardly reflecting surfaces, whereby the light intercepting and reflecting surfaces pick up rays of light from said source of light and reflect them forwardly through said body to impart a uniform illuminated border outline to the body when viewed from the front thereof.

2. An illuminated sign including a flat block-like sign character constructed of a solid transparent substance comprising a base and a sign character body integral with and rising from said base, a horizontally disposed substantially V-shaped recess provided in the rear face of said body and extending thereacross, and constituting

a line of demarcation between said base and said body, the lower angular wall of said recess constituting a light pick-up and light reflecting surface, beveled light pick-up and light reflecting surfaces provided along the rear corner edges of said body and coacting with the light pick-up and light reflecting surface of said recess to form light pick-up and light reflecting surfaces completely about said body, and a source of light beneath the sign character for directing light rays upwardly therethrough, for interception and forward reflection thereof by all the light pick up and light reflecting surfaces whereby to impart an illuminated border outline to said body when viewed from the front thereof.

3. An illuminated sign including a flat block-like sign character constructed of a solid transparent substance comprising a base and a sign character body integral with and rising from said base, a horizontally disposed substantially V-shaped recess provided in the rear face of said body and extending thereacross and constituting a line of demarcation between said base and said body, the lower angular wall of said recess constituting a light pick-up and reflecting surface, beveled light pick-up and light reflecting surfaces provided along the rear corner edges of said body and coacting with the light pick up and light reflecting surface of said recess to form light pick up and light reflecting surfaces completely about said body, a housing having a light emitting opening in the top thereof, said sign character having its base extending through the opening into said housing, means supporting the sign character in position upon said housing, and a source of light contained in said housing whereby light rays therefrom will pass upwardly through the sign character which are picked up and forwardly reflected by the light pick-up and light reflecting surfaces to impart an illuminated border outline to the body of the sign character when viewed from the front thereof.

4. A sign comprising a solid transparent body of a predetermined sign character shape defined by vertically extending edges and upper and lower horizontally disposed edges, a source of light for projecting light rays vertically through the thickness of said transparent body, inwardly beveled light intercepting and reflecting surfaces at the rear of said body along the vertically extending edges and along the upper horizontal edges thereof, substantially V-shaped recesses in the rear of said body along the lower horizontal edges thereof, the lower inclined walls of the recesses being disposed in the path of the projected light rays from the source of light to provide light intercepting and reflecting surfaces which combined with the inwardly beveled surfaces define continuous light intercepting and reflecting surfaces completely about said body to impart a "neon-like" illuminated outline to the body when viewed from the front thereof.

5. An illuminated sign comprising in combination, a transparent sign character, a fixed source of artificial light located edgewise thereof, said transparent sign character comprising a solid transparent body, substantially V-shaped recesses provided in the rear of said body along certain of the edges thereof, the inclined surfaces of the V-shaped recesses nearest the source of light constituting light intercepting and reflecting surfaces, and inwardly beveled light reflecting surfaces along the remaining rear edges of said body and coacting with the aforementioned inclined light reflecting surfaces to define a border out-

line of light intercepting and reflecting surfaces of a shape corresponding to the outline of said body whereby light rays are picked up by the combined light reflecting surfaces and are forwardly reflected through the body to impart a visibly illuminated uniform outline thereof when viewed from the front.

6. An illuminated sign including a sign character comprising a solid body constructed of a transparent crystal-clear substance whose inherent characteristic is normally non-light reflecting whereby light rays from any direction may pass therethrough without interception, illuminating means for directing light rays through the thickness of the body of said characters, substantially V-shaped recesses provided in the rear of said body along portions of the edges thereof to provide inclined light intercepting and reflecting surfaces disposed in the path of the light rays, and beveled light intercepting and reflecting surfaces along the other portions of the rear edges of said body which combined with the inclined light intercepting and reflecting surfaces define a complete border outline of said body, certain of said light rays passing through said body being picked up by said inclined and bevel light intercepting and reflecting surfaces for forwardly reflecting the same to impart a uniform illuminated border outline to said sign character.

7. A sign comprising a solid transparent body of a predetermined sign character shape defined by vertically extending edges and upper and lower horizontally disposed edges, inwardly beveled light intercepting and reflecting surfaces at one side of the body along the vertically extending edges and along the upper horizontal edges thereof, substantially V-shaped recesses in said body in the same side thereof as said beveled surfaces and disposed along the lower horizontal edges thereof, the inclined surfaces of the V-shaped recesses constituting inclined light intercepting and reflecting surfaces, said inwardly beveled surfaces and said inclined surfaces combined defining a continuous border outline conforming to that of said body, and a source of light for projecting light rays through the thickness of said solid body in the direction of the inclined surfaces, certain of the light rays therefrom being intercepted by the inclined and beveled light intercepting and reflecting surfaces to impart a neon-like illuminated outline to the body when viewed from either side thereof.

8. An illuminated sign including a flat block-like sign character constructed of a solid transparent substance comprising a base and a sign character body integral with and rising from said base, a horizontally disposed substantially V-shaped recess provided in one face of said body and extending thereacross and constituting a line of demarcation between said base and said body, one of the angular walls of said recess constituting a light pick up and light reflecting surface, beveled light pick up and light reflecting surfaces provided along the corner edges of said body on the same side thereof as the recess and coacting with the light pick up and light reflecting surface of said recess to form light pick up and light reflecting surfaces completely about said body, and a source of light disposed edgewise of the sign character for directing light rays edgewise therethrough in a direction toward the angular wall of the recess for interception and forward reflection thereof by all the light pick up and light reflecting surfaces whereby to im-

part an illuminated border outline to said body when viewed from the front thereof.

9. An illuminated sign including a block like body of predetermined sign character shape constructed of a solid transparent substance having opposed parallel edges, a source of light at one of the sides of said body for directing light rays toward said body edgewise thereof, a substantially V-shaped recess provided along one of the said edges in one face thereof to provide an inclined

light intercepting and reflecting surface disposed in the path of light rays from said source of light, and an inwardly beveled light intercepting and reflecting surface provided on the other of the opposed parallel edges on the same face of the body as the substantially V-shaped recess, whereby both opposed parallel edges of the body appear illuminated when the body is viewed face on.

ALFRED GAUTHIER.