July 22, 1952 J. W. PATTERSON, JR 2,603,893

OSCILLATING VARIABLY LIGHTED LETTER SIGN

Filed Oct. 18, 1949 3 Sheets-Sheet 1

Fig. 1

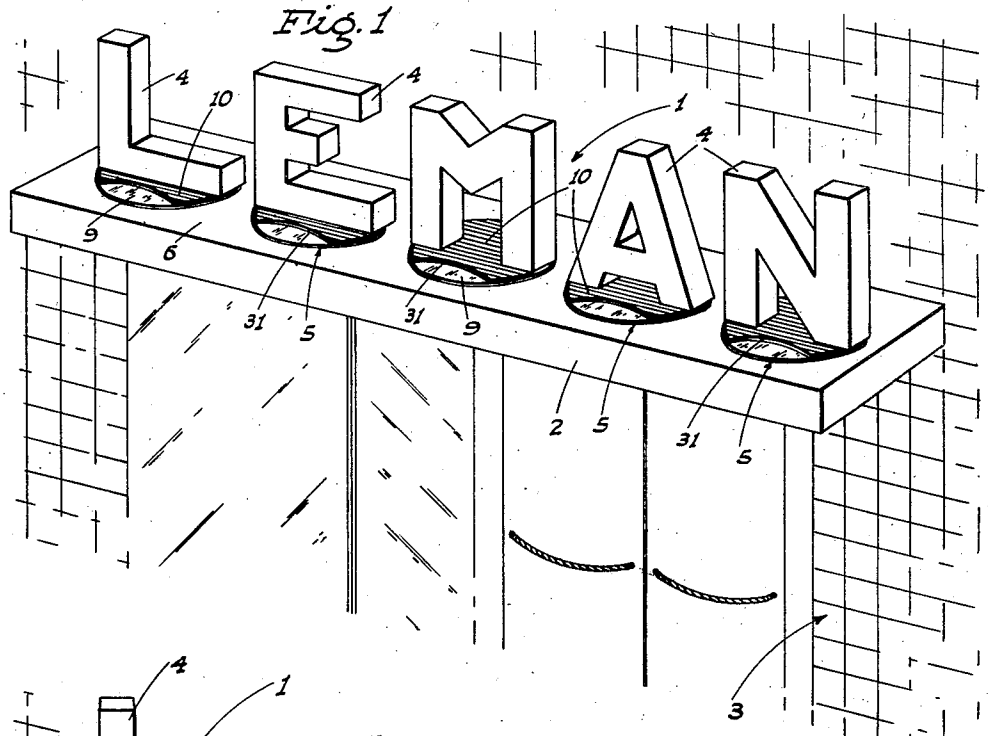
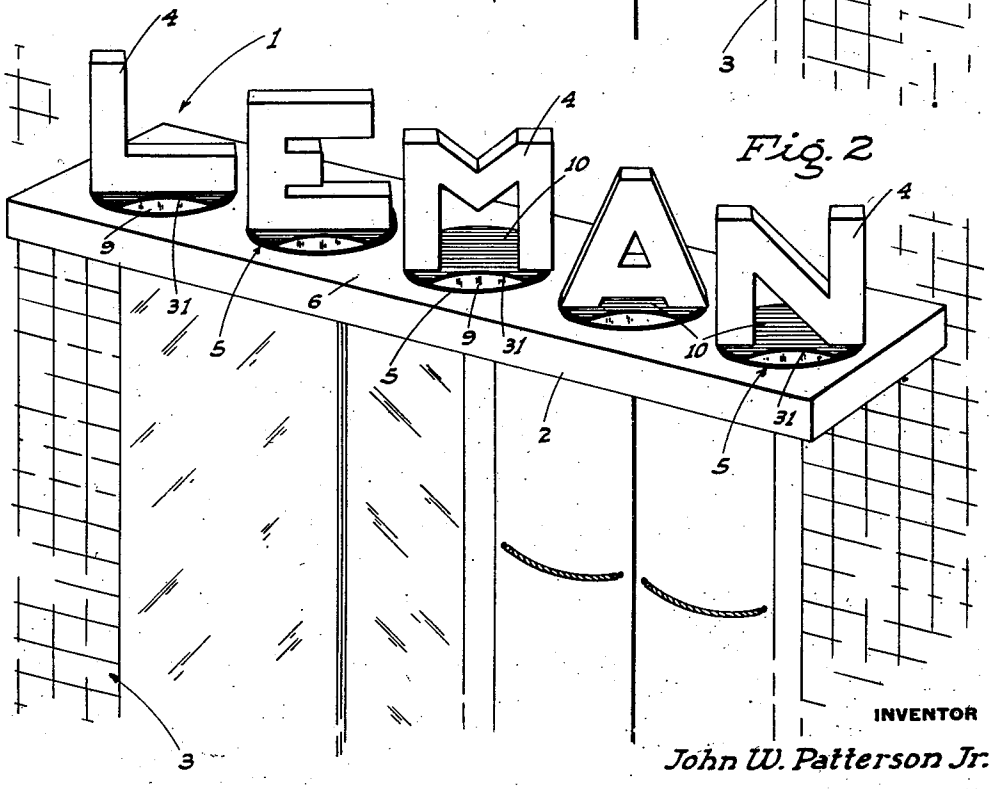


Fig. 2



INVENTOR

John W. Patterson Jr.

BY Webster & Webster

ATTORNEYS

July 22, 1952 J. W. PATTERSON, JR 2,603,898

OSCILLATING VARIABLY LIGHTED LETTER SIGN

Filed Oct. 18, 1949 3 Sheets-Sheet 2

Fig. 3

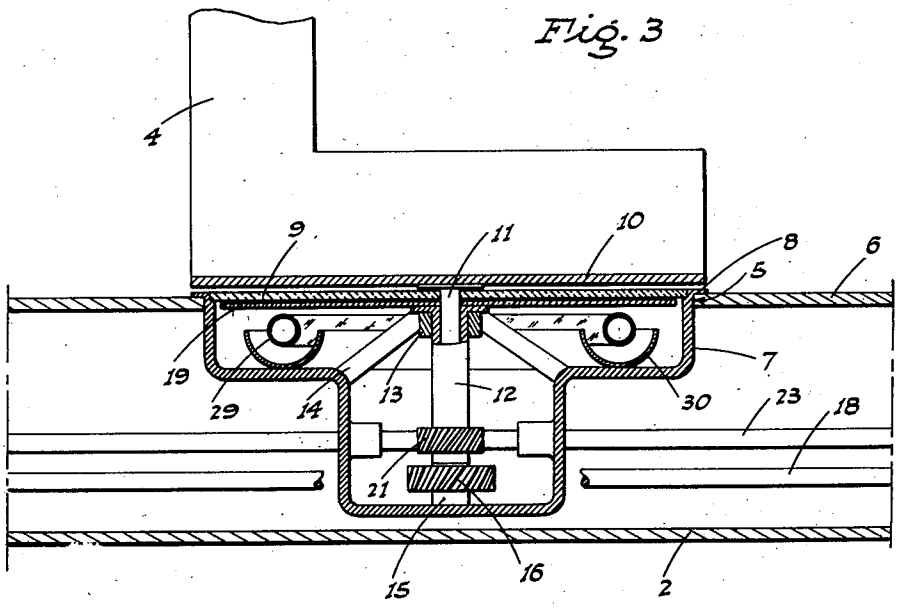


Fig. 4

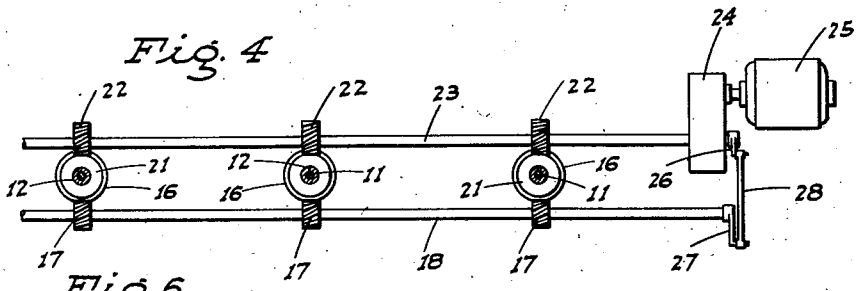


Fig. 6

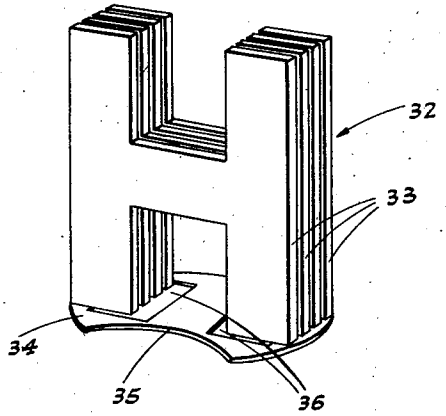
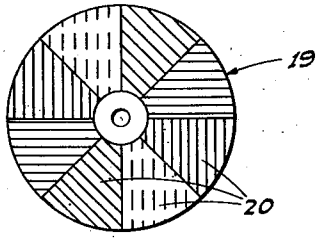


Fig. 5



INVENTOR

John W. Patterson Jr.

BY Wright Brothers

ATTORNEYS

July 22, 1952 J. W. PATTERSON, JR 2,603,898

OSCILLATING VARIABLY LIGHTED LETTER SIGN

Filed Oct. 18, 1949 3 Sheets-Sheet 3

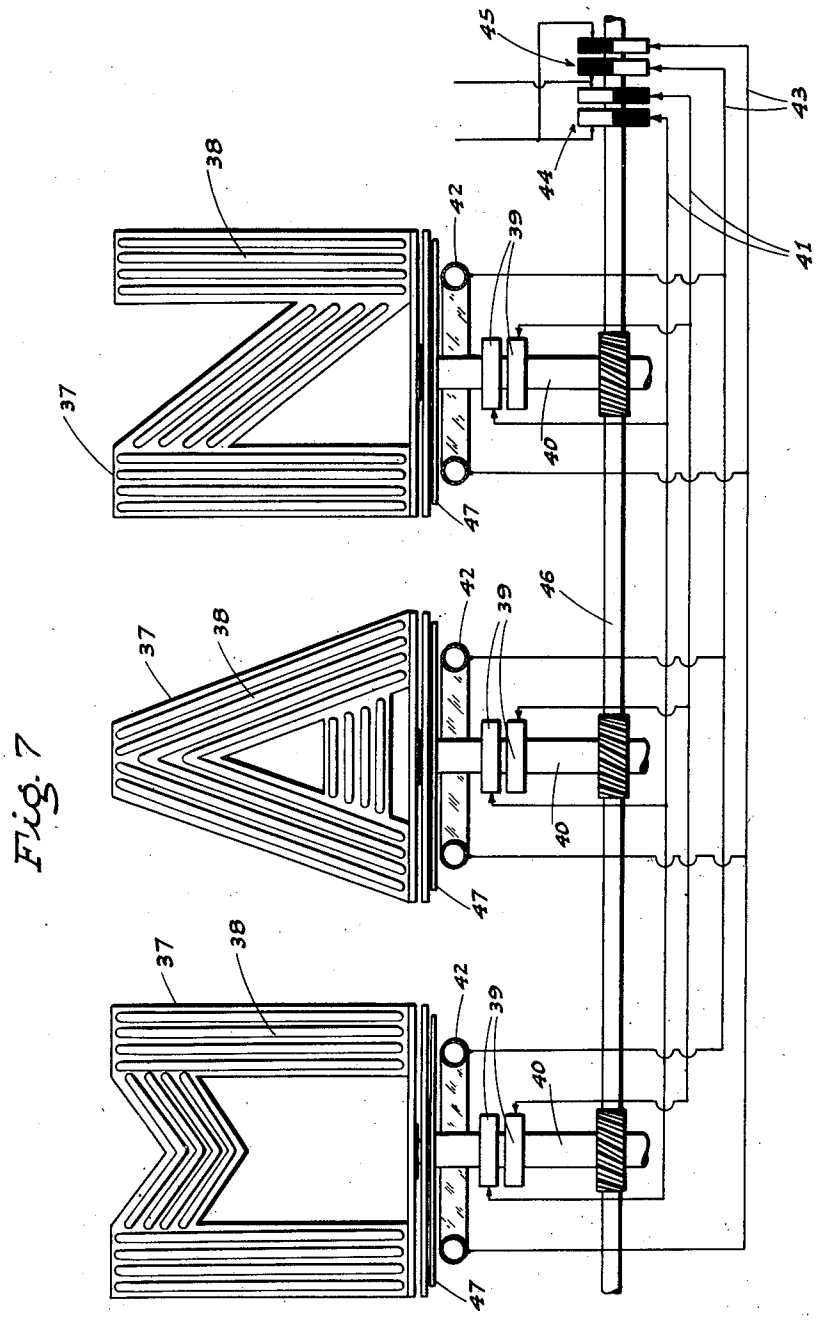


Fig. 7

INVENTOR
John W. Patterson Jr.
BY White & White
ATTORNEYS

Patented July 22, 1952

2,603,898

UNITED STATES PATENT OFFICE

2,603,898

OSCILLATING VARIABLY LIGHTED LETTER SIGN

John W. Patterson, Jr., Sacramento, Calif.

Application October 18, 1949, Serial No. 121,976

7 Claims. (Cl. 40—77)

1

This invention is directed to, and it is a primary object to provide, a novel illuminated sign for commercial use, such as on stores or the like.

Another object of the invention is to provide an illuminated sign which includes upstanding three-dimensional indicia, such as letters spelling a store name, and novel apparatus operative to simultaneously impart turning motion to such indicia and to illuminate the latter with light of continuously varying color whereby the sign is eye catching and attractive in appearance.

A further object of the invention is to provide an illuminated sign which includes novel mechanism for actuating the base plate and adjacent coaxial color wheel which corresponds to each indicia of the sign; each base plate, which supports a corresponding indicia, preferably oscillating through a part-circle, while the related color wheel preferably constantly rotates in one direction only.

A still further object of the invention is to provide an illuminated sign, having turning and continuously variably colored indicia, wherein each such indicia may comprise, as a modification, a plurality of facing but spaced, upstanding laminations; the arrangement being such that all of the laminations are color illuminated on corresponding faces whereby a very unique additional effect is attained.

It is also an object of the invention to provide an illuminating sign of the type described, wherein each of the turning indicia is faced with fluorescent light tubes, and a control circuit is provided for on-off switching, in predetermined order, for the light source which variably-color illuminates such indicia, and the fluorescent tubes on the latter. The unique appearance of the sign is thus further enhanced.

An additional object of the invention is to provide an illuminated sign which is designed for ease and economy of manufacture; ready installation; and long life with a minimum of maintenance and repair.

A still further object of the invention is to provide a practical and reliable illuminated sign, and one which will be exceedingly effective for the purpose for which it is designed.

These objects are accomplished by means of such structure and relative arrangement of parts as will fully appear by a perusal of the following specification and claims.

In the drawings:

Fig. 1 is a front perspective view of the sign as mounted for use on a store; the upstanding indicia of the sign facing forward, and the store front being shown somewhat diagrammatically.

2

Fig. 2 is a similar view, but shows the indicia as simultaneously part-turned in one direction as during operation of the sign.

Fig. 3 is an enlarged, fragmentary sectional elevation of the actuating mechanism, especially the driving connections with the base plate and color wheel corresponding to one of the indicia.

Fig. 4 is a fragmentary plan view, somewhat diagrammatic, of said actuating mechanism.

Fig. 5 is a plan view of one of the color wheels, detached.

Fig. 6 is a perspective view of one of the laminated form of indicia.

Fig. 7 is an enlarged fragmentary elevation showing the indicia as faced with fluorescent light tubes; the control circuit being diagrammatic, and part of the actuating mechanism being omitted for clarity.

Referring now more particularly to the characters of reference on the drawings, and at present to Figs. 1–5 inclusive, the sign assembly is indicated generally at 1, and includes a hollow, elongated platform housing 2 affixed to, and projecting forwardly from, a store front 3 or the like at an appropriate elevation for viewing.

A plurality of indicia, as indicated at 4, upstand in a row along the platform housing 2, and in the present embodiment such indicia 4 are three-dimensional or block letters which spell out, for example, the store name.

As the structural arrangement in association with each indicia 4 is alike, a description of one such arrangement will suffice for all, except as to the common actuating mechanism, which will hereinafter be described in detail.

A circular opening 5 is formed in the top 6 of the platform housing 2 below each indicia 4, and a case 7 is suspended into said housing through such opening, being supported by an annular peripheral flange 8 at the upper end of said case.

A circular pane 9, of glass or other transparent or translucent material, is fitted into the top of the case 7 as a protective member.

Above the case 7 and pane 9 there is a vertical axis, circular base plate 10 on which the corresponding indicia 4 is secured in a position extending diametrally of said base.

A spindle 11 is fixed centrally to the base plate 10 and projects downwardly through an opening in the pane 9, and thence is turnably supported in a rotary sleeve 12 journaled in a bearing 13; said bearing being supported in the case by a spider 14.

The rotary sleeve 12 terminates short of the bottom of the case 7, and the spindle 11 projects

below the lower end of said sleeve; being journaled in a bottom bearing 15. Intermediate the sleeve 12 and bottom bearing 15, the spindle 11 is fitted with a gear 16 driven by a pinion 17 on a longitudinal shaft 18 which extends lengthwise within the hollow platform housing 2; such shaft extending through the case 7.

The shaft 18 is actuated in the manner and for the purpose hereinafter described.

Directly below the glass pane 9 there is a circular color wheel 19 fixed axially on the upper end of the rotary sleeve 12, and such color wheel includes a multiplicity of different color segments 20 through which light is adapted to be transmitted; the color wheel 19 being of a diameter closely approaching that of the pane 9 and base plate 10.

Adjacent but short of its lower end the rotary sleeve 12 is fitted with a gear 21, driven by a pinion 22 on a longitudinal shaft 23 in the platform housing 2; the longitudinal shaft 23 being on the opposite side of the spindle 11 and sleeve 12 relative to the longitudinal shaft 18, but also extending through case 7.

The longitudinal shaft 23 is constantly driven, in one direction, from a reduction gear box 24 actuated by an electric motor 25.

The longitudinal shaft 18 is oscillated through a predetermined part-turn by means of suitable mechanism connected between the reduction gear box 24 and said shaft 18. Such mechanism, in the present embodiment, comprises a reduction gear box actuated crank 26 and a parallel crank 27 on the adjacent end of the shaft 18; said cranks being connected by a link 28. The throw of the crank 26 is considerably less than the throw of the crank 27, whereby upon a full revolution of said crank 26, the crank 27 will first throw only a part-circle in one direction and then a part-circle in the other direction relative to dead-center, causing oscillation of the longitudinal shaft 18. When this occurs the spindle 11 and the related indicia 4 are similarly oscillated. Thus, starting from a position with the indicia 4 all facing forwardly, as in Fig. 1, said indicia oscillate, simultaneously, so as to first turn and face in one direction and then turn and face in another direction. By way of example see Fig. 2.

This simultaneous oscillation of the indicia 4 is accompanied by continuously varying color illumination of each thereof, which is accomplished as follows:

A light source, such as an annular, fluorescent tube 29, is mounted in the case 7 directly below each color wheel 19 in concentric surrounding relation to the rotary sleeve 12; such annular, fluorescent tube 29 being horizontally disposed, and there being an upwardly opening, annular, reflector trough 30 mounted directly below said tube.

The corresponding, circular base plate 10 is formed, in front of each indicia 4, with an elongated peripheral notch 31, whereby light from the fluorescent tube 29, which passes upwardly through the color wheel 19 and pane 9, projects through the notch 31 and casts upon the face of the indicia 4. Thus, in any oscillatory position of each base plate 10 and the corresponding indicia 4, light from the tube 29, as variably colored by the color wheel 19, projects through each notch 31 to constantly maintain the related indicia 4 color-illuminated; such color illumination constantly changing by reason of the oscillation of the notched base plate 10, together with the rotation of said color wheel.

The resultant appearance of the sign is unique and attractive, producing an effect which catches the eye to a much greater extent than a stationary sign with non-varying color illumination.

While it is contemplated in the present embodiment that the indicia 4 oscillate less than a full circle, it is possible for them to be arranged for full-circle rotation, in which event there would be opposed peripheral notches so that both faces of the indicia 4 are illuminated.

It will also be recognized that although the present embodiment pertains to an illuminated sign wherein the indicia 4 are in a horizontal row, the arrangement may—for example—be arranged in a vertical row, or otherwise.

In Fig. 6 there is illustrated a modified form of the indicia. In this modification the indicia, indicated generally at 32, is of three-dimensional form, but is made up of a plurality of facing but spaced laminations 33; such indicia being mounted on a base plate 34 peripherally notched at 35, as before. However, in this instance the base plate 4 has a separate opening or port 36 therethrough directly below each leg of the indicia. Consequently, not only is the face of the indicia 34 variably color-illuminated from the notch 35, but additionally the adjacent faces of the laminations 33 are likewise variably color-illuminated through the ports 36. This adds to the unique ornamental appearance of the sign when it is in operation.

In Fig. 7 there is a further embodiment of the invention, and here each indicia 37—adapted to oscillate as before—is faced with fluorescent light tubes 38 whose energizing circuit includes leads (not shown) which run to connection with corresponding slip rings 39 on the related rotary sleeve 40. The input terminals of the slip rings 39 are connected to a supply circuit 41; the slip rings 39 corresponding to the several indicia 37 being wired in parallel in said circuit.

The annular, fluorescent light tubes 42 below each of the indicia 37, for variably color-illuminating the same as before, are connected in parallel in a separate supply circuit 43. Each of the supply circuits 41 and 43 has a rotary interrupter interposed therein, such interrupters being indicated at 44 and 45 respectively, and fed in conventional manner from a master supply circuit, as shown. The rotary interrupters are driven from the longitudinal shaft 46 which rotates the color wheels 47, and are thus constantly actuated.

It is preferred that the rotary interrupters 44 and 45 be set in opposition so that the tubes 38, and 42, corresponding to each indicia 37, are energized alternately whereby such indicia are first variably colored by light projected from below, and are then face-illuminated.

While alternate energization of the tubes 38 and 42 is contemplated, other combinations are readily possible. For example, by omitting one or the other of the rotary interrupters, either the tubes 38 or the tubes 42 may be constantly energized, with the other tubes having on-off, or blinking control.

While this specification sets forth in detail the present and preferred construction of the device, still in practice such deviations from such detail may be resorted to as do not form a departure from the spirit of the invention, as defined by the appended claims.

What is claimed is:

1. An illuminated sign comprising an open topped mounting case, a vertical spindle jour-

naled in the case and extending to the top of the same, an opaque base plate fixed on the upper end of the spindle, an upstanding sign element fixed on the plate, the latter having an off-center opening in front of the element for the passage of light therethrough, a sleeve turnable on the spindle, a color wheel fixed on the sleeve below and adjacent the base plate, the plate being larger than the wheel, a light source in the case below the color wheel, and mechanism to rotate the sleeve and oscillate the spindle.

2. A device as in claim 1, with a protective pane of light-transmitting material over and sealing the open top of the case between the base plate and color wheel; the spindle passing through the pane.

3. A device as in claim 1, in which said mechanism includes a worm gear on the sleeve, a worm gear on the spindle, worms separately meshing with said gears, parallel shafts on which the worms are mounted, a motor driven unit applied to the sleeve-driving worm shaft to constantly rotate the same, and a crank and link connection between the shafts.

4. A mechanism, as in claim 3, in which the shafts are on opposite sides of the spindle whereby to enable the worm gears to be close together vertically while maintaining the shafts separated sufficient for the mounting of the crank and link unit therebetween.

5. An illuminated sign comprising an exposed upstanding indicia, a fixed opaque housing below the indicia having a circular opening in the top substantially as wide as the indicia, an opaque

base plate on which the indicia is fixed disposed directly above the opening, in overlapping relation thereto, said plate having an opening therethrough in front of the indicia, means mounting the plate in the housing for rotation about a vertical axis, an upwardly shining light source in the housing below the plate to direct light through the openings, and actuating mechanism in the housing to turn the plate.

6. A sign as in claim 5, in which the indicia includes a plurality of horizontally spaced facing laminations; the base plate having another opening therethrough directly below the indicia whereby light from said source is directed upwardly between the laminations.

7. A sign as in claim 5, with a constantly rotating color disc in the housing directly below and covering the opening therein.

JOHN W. PATTERSON, JR.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,707,965	Scantlebury	Apr. 2, 1929
1,803,598	Craig	May 5, 1931
2,194,238	Weaver	Mar. 19, 1940

FOREIGN PATENTS

Number	Country	Date
256,109	Great Britain	Aug. 5, 1926
714,860	France	Sept. 14, 1931