Oct. 28, 1941. F. S. GANOUNG 2,260,744

ELECTRICAL SIGN

Original Filed June 24, 1938 2 Sheets-Sheet 1

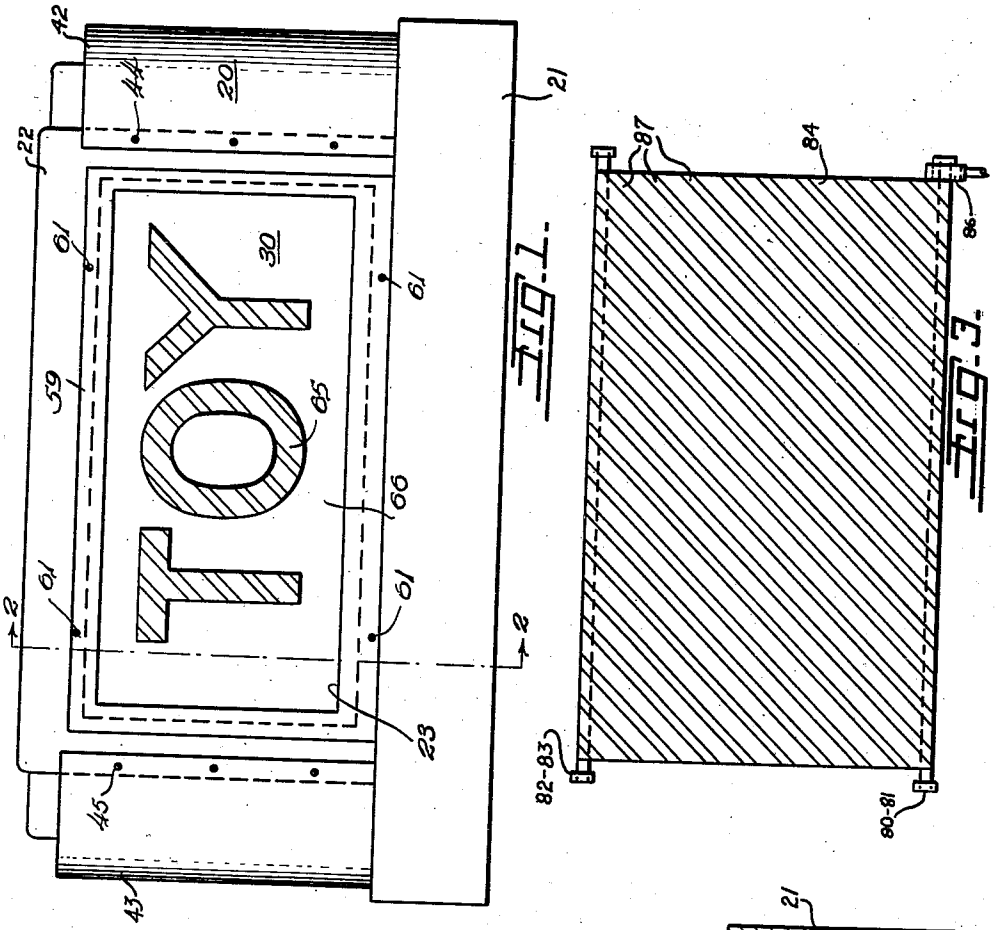


FIG. 1.

FIG. 3.

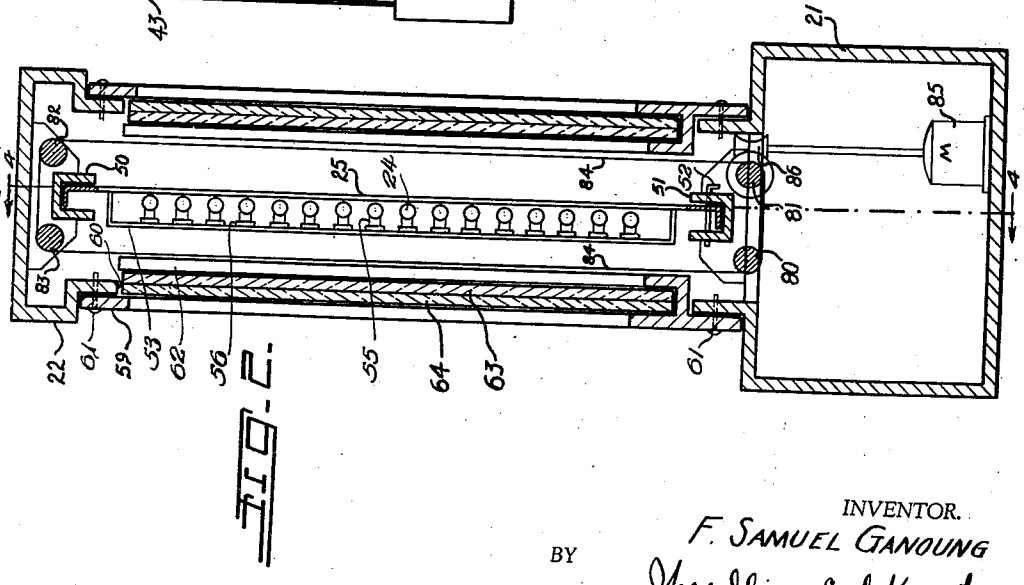


FIG. 2.

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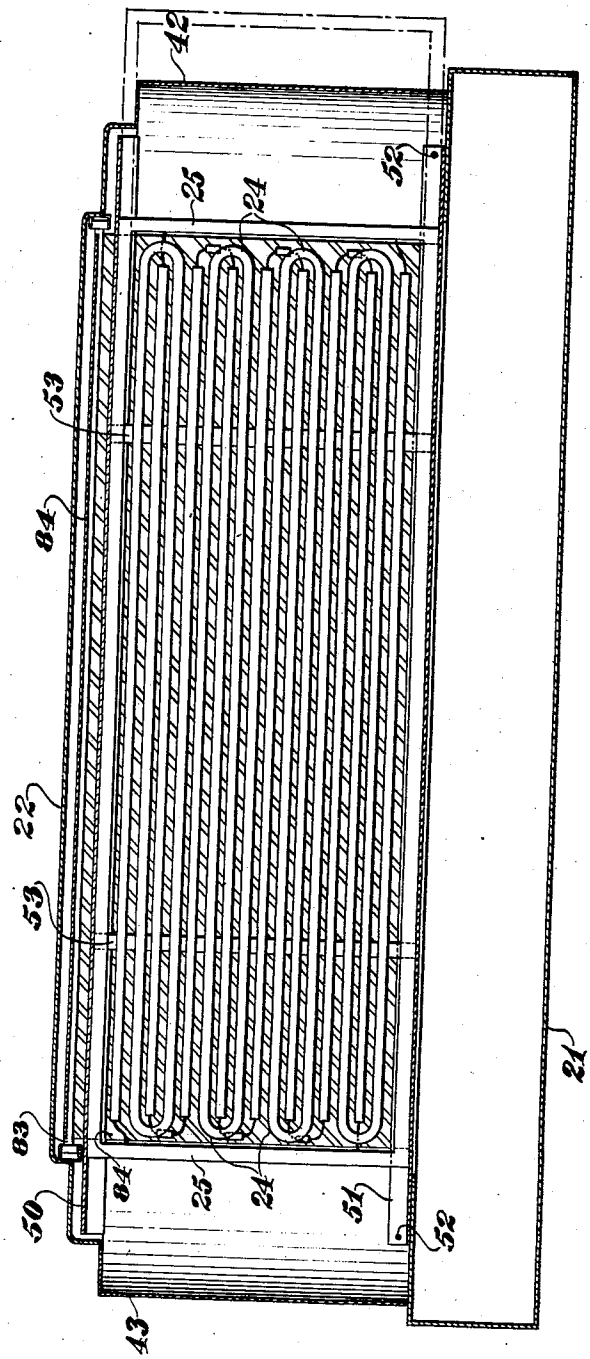


Fig. 4.

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Patented Oct. 28, 1941 2,260,744

UNITED STATES PATENT OFFICE

2,260,744

ELECTRICAL SIGN

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Original application June 24, 1938, Serial No. 215,593. Divided and this application August 10, 1939, Serial No. 289,461

3 Claims. (Cl. 40—133)

My invention relates in general to electrically illuminated signs, and more particularly to signs which have continuous means for interrupting the light illuminating the display pattern to give the effect of a moving display pattern.

An object of my invention is to provide a gaseous tube sign which gives the effect of a moving display pattern.

An object of my invention is the provision of a gaseous tube sign which protects the electrically energized parts from dirt, insects, hail, sleet and ice.

Another object of my invention is to mount the gaseous tube means in a closed housing to protect it from foreign matter and against breakage.

Another object of my invention is the provision of a sign illuminated by gaseous tubes which is adaptable to give any desirable display pattern including any letter, symbol, character, ornament or design, or any combination of such arrangement, which cannot be directly produced by the configuration of the gaseous tubes themselves.

Another object of my invention is the provision of a design illuminated by gaseous tubes which gives clear cut and defined display patterns, including any letter, symbol, character, ornament or design, or any combination of such arrangement.

Another object of my invention is the provision of utilizing a bank of gaseous tube means and of diffusing the light emanating from the gaseous tube means to give a substantially solid glowing background to illuminate a display pattern, including any letter, symbol, character, ornament or design, of any combination of such arrangement, and to give a clear cut illuminated display pattern which is visible in the daylight as well as at night.

Another object of my invention is the provision of an illuminated field opening in the design housing which permits a change of display patterns, including any letter, symbol, character, ornament or design, or any combination of such arrangement, without installing a new sign.

Another object of my invention is the provision of a peripheral frame which engages the illuminated field opening in the sign housing and which permits the exchange of display patterns by changing one pattern for another in the peripheral frame.

Another object of my invention is the provision of gaseous tube means which may be constructed in sections and which may be arranged to utilize the different kinds of gases in the tubes of each section to give different emanations of colors for illuminating the display pattern in the illuminated field opening of the sign.

Another object of my invention is the provision of interrupting the light illuminating the display pattern to give the effect of a movable display pattern.

Another object of my invention is the provision of a bank of gaseous tube means which may be readily inserted in or withdrawn from the housing of the sign.

Another object of my invention is the provision of mounting a diffusing material at a distance from the bank of gaseous tube means to produce an illuminated field of a substantially solid glowing background.

Another object of my invention is the provision of a sign which may be easily washed as a window and which gives beautiful designs of any color combination or of changeable gaseous tube colors and which gives a display pattern legible at acute angles of vision.

Another object of my invention is the provision of a sign which provides a double faced display pattern with the same gaseous tubing which is ordinarily used for a single faced sign.

Another object of my invention is the provision of a sign which may be readily manufactured and which may be maintained at a minimum of expense.

Another object of my invention is to provide an endless interrupting means for alternately interrupting the light which falls on the face of the sign.

A further object of my invention is to provide a single endless interrupting means for giving the apparent effect of movement to both of the faces of a sign.

A fuller understanding of my invention may be had by referring to the following description and claims, taken in conjunction with the accompanying drawings, in which like parts are designated by like reference characters, and in which:

Figure 1 illustrates a sign having a display pattern in which the light passing through the illuminated portions of the display pattern is intercepted;

Figure 2 illustrates an enlarged cross sectional view, taken along the line 2—2 of Figure 1, showing the endless interrupting means for intercepting the light illuminating the display pattern to give the effect of a moving display pattern;

Figure 3 illustrates an endless means having interrupting portions to interrupt the light pass-

ing through the display pattern as shown in Figure 2; and

Figure 4 is a longitudinal cross-sectional view taken along the line 4—4 of Figure 2, and shows the manner in which the bank of gaseous tubes may be longitudinally removed from the housing.

With reference to Figures 1 and 2, my invention comprises generally an electrically illuminated sign having a housing 20 with a base portion 21 and a sign portion 22, a bank of gaseous tube means 24 arranged to illuminate the display pattern illustrated by the reference character 30, and an endless light intercepting belt means 84 driven by a motor 85. The sign portion 22 is arranged to have an illuminated field opening 23 into which the display pattern 30 is arranged to be interchangeably mounted. A display pattern is provided on both sides of the sign portion 22, making a double faced display pattern with the same gaseous tube means.

A further detailed description of my sign housing and electrical arrangement may be found in my pending application, Serial No. 215,593, filed June 24, 1938, of which this application is a division, Patent No. 2,188,294, issued January 23, 1940.

The housing of the design may be constructed of any suitable material and any particular configuration to meet the needs of the customer. To facilitate the construction of the sign housing and to give access to the enclosed part and to afford the interchangeability of the section of gaseous tubes, the end portions 42 and 43 which extend around the end of the housing are arranged to be removably mounted thereon by means of screws 44 and 45, respectively. The inside of the sign portion 22 of the housing 20 is arranged to have an upper slide rail 50 and a lower slide rail 51 to slidably receive the frame 25 upon which the section of gaseous tube means are mounted. Therefore, in assembling or disassembling the gaseous tube means, it is only necessary to remove the pin 52 in the end of the lower slide rail 51 and slide the frame out of the opened end of the sign portion 22, the dash-dot line in Figure 4 showing the bank of gaseous tube means partly removed in a longitudinal direction from the housing. The construction makes my sign very flexible and adaptable to changeable desires of the customer for the reason that the bank of gaseous tube means may be arranged in any number of sections which emanate different colors therefrom to produce a variety of colors upon the display pattern.

The gaseous tube means may be mounted upon the frame 25 in any suitable manner and as illustrated I employ upright frame members 53 which carry a plurality of receptacles 56 holding insulated supports 55 and to the latter of which the gaseous tubes may be attached by suitable means such for example as of a wire looped around the tube.

Mounted within the illuminated opening 23 of the sign portion 22 is a peripheral frame 59. When the peripheral frame 59 is mounted in the illuminated opening 23 it engages the edge portion 60 of the opening 23. As illustrated, in Figure 2, the peripheral frame 59 may be held in engagement with the edge portion 60 by means of screws 61. On the rearward side of the peripheral frame 59 there is provided an engaging flange 62 which extends around the two vertical sides and the bottom of the peripheral frame. The engaging flange 62 does not extend along the top edge of the peripheral frame 59 so that the display pattern may be inserted in the engaging flange 62 from the top.

I utilize a diffusing material 63 and an opaque means 64 which may be readily inserted in the engaging flange 62 of the peripheral frame 59. The diffusing material 63 may be constructed of diffusing glass which may be purchased readily upon the market or of any other suitable material to produce an illuminated field of a substantially solid glowing background. The bank of gaseous tube means is located at a distance from the diffusing material 63 so that the longitudinal rib effect of the light emanating from the bank of gaseous tube means is substantially dispersed to lose the linear identity. In an embodiment of my invention which I have constructed, I find that the distance between the bank of gaseous tube means and each of the diffusing materials 63 on opposite sides of the bank of gaseous tube means may be in the neighborhood of 2½ to 3 inches. The opaque means 64 may comprise glass or any other material arranged to have a display pattern provided thereon. The display pattern may be produced by painting or otherwise covering certain portions of the glass and producing an opaque surface through which the light cannot emanate. The painted or otherwise covered portion is indicated by the reference character 66 and the display pattern which comprises letters is indicated by the reference character 65. The light which emanates through the display pattern is clear cut and produces illuminated characters or letters which may be easily read in the day time as well as at night and at an acute angle of vision.

The different arrangements of the display patterns may be readily exchanged by merely withdrawing one display pattern from the engaging flange 62 and inserting a new display. In making the change, it is only necessary to unscrew the screws 61 and remove the peripheral frame 59 until the upper edge thereof is free from the edge portion 60 of the opening 23. This permits the display pattern to be slidably moved upwardly from the engaging flange 62. After the new display pattern is inserted, the peripheral frame 59 is again mounted in the opening 23 by means of the screws 61. When the peripheral frame 59 is mounted in the opening 23 the edge portion 60 of the opening 23 constitutes a stop to keep the display pattern in position.

I utilize an endless light intercepting belt means 84 which may be arranged to roll around a set of rollers 80 and 81 mounted in the lower part of the sign portion 22 and a set of rollers 82 and 83 mounted in the upper part of the sign portion 22. The endless intercepting belt material 84 may be driven by any suitable means such for example, as employing a worm drive 86 to drive the roll 81 by means of a motor 85. The endless intercepting belt means 84 may comprise a transparent flexible piece of material having provided thereon inclined strips 87 of opaque material so that light does not emanate therethrough. As the motor 85 drives the roll 81 the endless intercepting means 84 moves continuously around the inside of the sign housing and causes the intercepting strip 87 to blank out the light from the bank of gaseous tube means and produces an effect of the letters moving to attract the attention of the purchasing public. Other suitable means for intercepting the light emanating from the gaseous tube means giving a moving effect to the display pattern may be employed, other than the utilization of an end-

less intercepting means illustrated in the drawings.

From the above description and drawings it is manifest that the difficulty encountered by gaseous tubes breakage and the electrical break down between the electrodes of the gaseous tubes to ground are completely obviated since dirt, insects, rain, and ice, are prevented from contacting the energized parts inside the housing. Thus, I have produced a sign which may be illuminated from gaseous tubes and which obviates the large maintenance expense which is incident to the exposed type of gaseous tubing and at the same time, I have produced a sign which is adaptable to any color combination which may be effected by changing the various sections of the gaseous tube means to produce light of different color. In this description, the term display pattern is understood to include any letter, symbol character, ornament or design, pictorial or otherwise, or any combination of the arrangement.

Although I have described my invention with a certain degree of particularity, it is understood that the present disclosure has been made only by way of example and that numerous changes in the details of construction and the combination and arrangement of parts may be resorted to without departing from the spirit and the scope of the invention as hereinafter claimed.

I claim as my invention:

1. A gaseous tube sign construction comprising, in combination, a housing having an illuminated field opening, a peripheral frame for engaging the peripheral edge portion of the said opening, said peripheral frame having engaging shoulder means, a diffusing material positioned adjacent said peripheral frame and arranged to be engaged by the engaging shoulder means to form a closed housing, a bank of gaseous tube means, means for mounting the bank of gaseous tube means in the housing to protect same from damage, said bank of gaseous tube means being positioned substantially parallel and at a distance from the diffusing material to produce an illuminated field of a substantially solid glowing background, opaque means having transparent character portions, and means for mounting the opaque means externally of the diffusing material in the engaging means to produce clean cut illuminated characters through the transparent character portions, said diffusing material and opaque means slidably fitting in the engaging means, said edge portion of said opening constituting means to hold said diffusing material and said opaque means from sliding out when said peripheral frame engages the said peripheral edge portion, movable light intercepting means having surface portions arranged to move between and substantially parallel to the bank of gaseous tube means and the diffusing material, means for actuating the movable means, means for removing the peripheral frame from the housing in a direction away from the surface portions of the movable light intercepting means without disturbing the latter, and means for removing the bank of gaseous tube means in a direction substantially parallel to the said surface portions of the light intercepting means without disturbing the latter.

2. A gaseous tube sign construction comprising, in combination, a housing having an illuminated field opening, a peripheral frame for engaging the peripheral edge portion of the said opening, said peripheral frame having engaging shoulder means, a diffusing material positioned adjacent said peripheral frame and arranged to be engaged by the engaging shoulder means to form a closed housing, a bank of gaseous tube means, means for mounting the bank of gaseous tube means in the housing to protect same from damage, said bank of gaseous tube means being positioned substantially parallel and at a distance from the diffusing material to produce an illuminated field of a substantially solid glowing back ground, opaque means having transparent character portions, and means for mounting the opaque means externally of the diffusing material in the engaging means to produce clean cut illuminated characters through the transparent character portions, said diffusing material and opaque means slidably fitting in the engaging means, said edge portion of said opening constituting means to hold said diffusing material and said opaque means from sliding out when said peripheral frame engages the said peripheral edge portion, movable light intercepting endless means having surface portions arranged to move between and substantially parallel to the bank of gaseous tube means and the diffusing material, means for actuating the movable endless means, means for removing the peripheral frame from the housing in a direction away from the surface portions of the movable light intercepting means without disturbing the latter, and means for removing the bank of gaseous tube means in a direction substantially parallel to the said surface portions of the light intercepting means without disturbing the latter.

3. A gaseous tube sign construction comprising, in combination, a housing having an illuminated field opening, a peripheral frame for engaging the peripheral edge portion of the said opening, said peripheral frame having engaging shoulder means, a diffusing material positioned in the field opening and engaged by the engaging shoulder means to form a closed housing, a bank of gaseous tube means, means for mounting the bank of gaseous tube means in the housing to protect same from damage, said bank of gaseous tube means being positioned substantially parallel and at a distance from the diffusing material to produce an illuminated field of a substantially solid glowing back ground, opaque means having transparent character portions, means for mounting the opaque means externally of the diffusing material in the engaging means to produce clean cut illuminated characters through the transparent character portions, movable light intercepting means having surface portions arranged to move between and substantially parallel to the bank of gaseous tube means and the diffusing material, means for actuating the movable means, means for removing the peripheral frame from the housing in a direction away from the surface portions of the movable light intercepting means without disturbing the latter, and means for removing the bank of gaseous tube means in a direction substantially parallel to the said surface portions of the light intercepting means without disturbing the latter.

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