March 11, 1930. W. G. KEITH 1,750,319

SIGNAL DEVICE

Original Filed Oct. 16, 1926

Fig. 1.

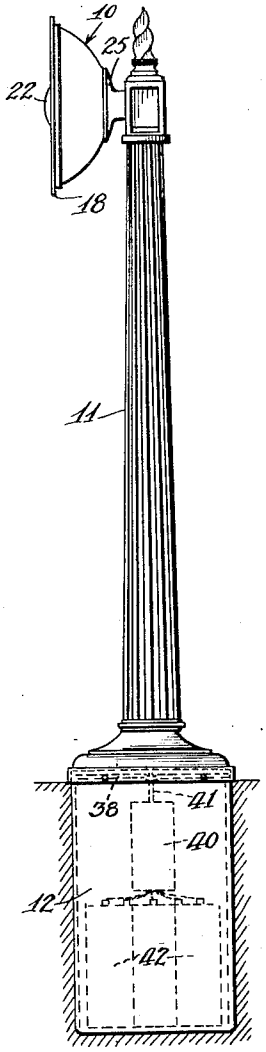

Fig. 2.

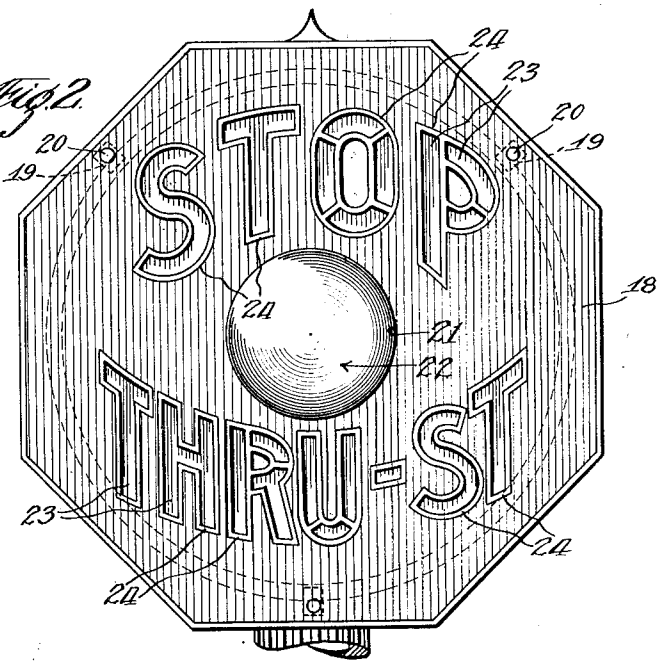

Fig. 3.

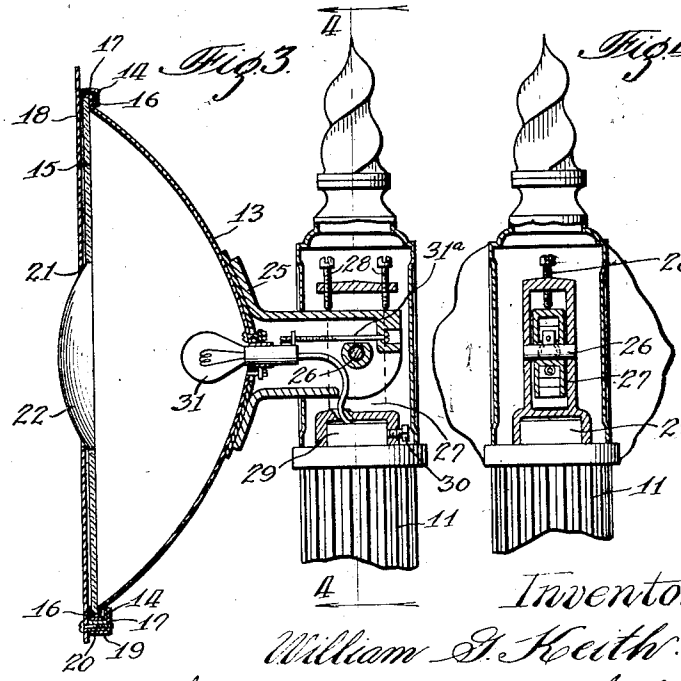

Fig. 4.

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UNITED STATES PATENT OFFICE

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SIGNAL DEVICE

Original application filed October 16, 1926, Serial No. 142,012. Divided and this application filed July 31, 1928. Serial No. 296,517.

This invention relates to signal devices and has special reference to a new and novel construction for electrically operated and controlled signal devices.

More particularly this invention relates to an electric signal device comprising an improved signal head, having an adjustable support for a parabolic reflector, the latter having a face plate with characters perforated therethrough on the front face thereof whereby the rays of light from the illuminating means are evenly distributed to all the characters.

It is particularly desirable in signal devices of the above mentioned type, to provide a construction which will be artistic in appearance, simple in construction, and non-complicated and effective in operation. The present invention, in conforming to these requisites, provides that the operating mechanism be concealed in a container below the ground level in order that the above-ground construction may be simple and artistic in appearance. Also, it is well known that a periodic lighting or flashing is much more effective in attracting attention than a fixed light, and therefore, this device is preferably operated by a timed electrical switch, of the tiltable fluid contact-making and breaking type, which is mounted in a novel and simple manner.

One of the objects of this invention is to provide a new and novel construction for signal devices.

A further object of this invention is to provide an improved signal head or lamp casing for a construction as hereinbefore mentioned in which the light is evenly distributed over the entire surface of the head or casing.

A further object of this invention is to provide an improved face plate for a device as indicated above, in which the characters are provided by means of perforating said plate and in so outlining the perforations as to make the characters more pronounced during the flashing periods of either day or night.

Further objects and advantages will be apparent from the description and drawings forming a part of this specification to which reference may now be had for a more complete understanding of the characteristic features of this invention, in which drawings:

Figure 1 is a side elevational view of the construction of the signal head of the present invention as supported on a standard;

Fig. 2 is a front elevational view, partially in section, of the signal head.

Fig. 3 is a central vertical sectional view of the upper portion of the device showing in detail the signal head and its connection with the standard; and

Fig. 4 is a sectional view taken on the line 3—3 of Fig. 2.

Referring more particularly to the drawings, the signal device includes a signal head 10 adjustably mounted on a standard 11, which latter is mounted on a container 12.

The signal head 10 comprises a reflector shell 13, substantially parabolic in contour, having an L-shaped flanged portion 14 extending therefrom. A glass disc 15 rests in said L-shaped portion 14 and is cushioned therefrom by means of a U-shaped gasket 16, preferably of felt and over-lapping the peripheral edge of said glass disc. The disc is held securely in position in said flanged portion by means of a U-shaped metal clamping ring 17. A metal face plate 18 is provided on the outer side of the glass disc 15 and is secured to the ring 17 by means of brackets 19 which are welded, or otherwise suitably fixed, to said ring 17 and bolts 20, the latter extending through said plate and in threaded engagement with said brackets.

The face plate 18 is provided with a central opening 21 through which a lens 22 projects. This lens, usually of a red color, is cemented or fixed in some suitable manner within an aperture in the glass disc 15 and is for the pur-

pose of changing the direction of light rays issuing from the signal head which intensifies or magnifies such light and acts as a warning of danger. The plate also contains a group of letters or characters 23 which are perforated therein, thereby allowing light rays to pass through said perforation thus bringing the characters to view.

It has been found very desirable to outline the character with a substantially heavy white line 24, and to enamel, paint, or in any suitable manner darken the remainder of the background of the plate. It will be apparent from this construction that during the daytime, the perforated portions will appear darkened when the lamp is not lighted and the white line will aid greatly in distinguishing the characters. If it were not for this white line there would be no break between the darkened background and the darkened perforations of the characters, and consequently the characters would be practically non-distinguishable. During the night-time, the white line serves to aid in distinguishing the characters, and moreover, enlarges the characters by means of absorbing light from the lamp when lighted. If the white line were omitted from the periphery of the characters, these latter would appear hazy and indistinct, due to the dissipation of light adjacent the edges of the perforations. However, if this dissipated light be absorbed by a white line, a definite outline is produced which aids materially in distinguishing characters.

The reflector shell 13 is given a contour of a substantially parabolic character for the purpose of evenly distributing the light on the face plate 15 and in order to tilt the signal head to conform with the grade of the street, the shell is fixed to a bracket 25 which is pivotally mounted on a pin 26 in a yoke 27. The signal head 10 is then held in the desired position by means of screws 28 in threaded engagement with said yoke 27 and which screws extend therethrough to bear against one surface of said bracket member 25. These screws must, however, be positioned one on each side of a line extending vertically from the center of the pin 26. The yoke 27 is mounted on a projecting portion 29 of the standard 11 and is fixed thereto by means of a set screw 30.

A lamp 31 is positioned in the reflector shell 13 and is slidably mounted in suitable brackets attached to the rear of said reflector shell and within the bracket 25. As a means for positively adjusting the lamp to the focal length of the lens 22, a screw 31^a is secured to the bracket 25 and extends therefrom to have threaded engagement with a bracket fixed to the lamp. It will be noted that this adjustment may be operated conveniently from the rear and that there is no interference with the reflecting properties of the reflector.

A housing 32 is mounted on the standard 11 and over the pivotal construction in order to protect the same from the deteriorating effect of the elements and also in order to improve the general appearance of the device.

The standard 11 is provided with a base portion 33 which is adapted to fit over the container 12 and be fixed thereto by means of bolts 34 engaging slots 35 in said base portion and extending therethrough to be threaded in said container.

The container 12 is provided with lugs 36 having recesses 37 therein and adapted to support a suspension rod 38 having a depressed portion 39 located preferably centrally thereof. An electrical switch 40 is perpendicularly suspended in the container by means of a hook 41 secured to the switch and extending therefrom to engage the depressed portion 39 of the suspension rod 38. The switch 40 is shown as being operated and controlled by means of the batteries 42, although it is to be understood that any source of electrical supply may be employed.

The electrical switch 40 is preferably of the tiltable fluid contact-making and breaking type and the device, as herein illustrated, is for the purpose of periodically lighting the lamp 31 in the signal head 10. However, it is not believed to be necessary to describe the mechanism and operation of the specific structure shown herein as it is fully described in a copending application, Serial Number 142,012, filed October 16, 1926, of which this application is a division.

As a result of this invention, a new and novel construction is provided for a signal device. The characters on the signal head are more readily distinguished due in part to the heavy white line adjacent the edge of the perforations and due also to the parabolic contour of the reflecting chamber which evenly distributes the light rays over the entire surface of the face of the signal head. And further, due to the operating mechanism being concealed in the container beneath the ground level, said operating mechanism is readily accessible, is more firmly positioned, is maintained at a more uniform temperature, is less susceptible to injury in the event the post should be knocked down, and the above ground construction is simpler and more artistic.

While a single embodiment of this invention is herein shown and described, it is to be understood that the device is not to be limited to that specific structure since various modifications may be apparent to those skilled in the art without departing from the spirit and scope of the invention, and therefore, the same is to be limited only by the scope of the appended claim and the prior art.

I claim:

In a signal device, a support, a reflector

mounted on said support, a glass disc supported in said reflector, a face plate having perforated characters thereon and a central opening therein and mounted on the front of said reflector, a lens mounted in said disc and projecting through said central opening, and illuminating means in said reflector, said reflector being of a substantially parabolic cross-section whereby the rays of light are evenly distributed over said face plate to illuminate said characters.

In witness whereof, I have hereunto subscribed my name.

WILLIAM G. KEITH.