

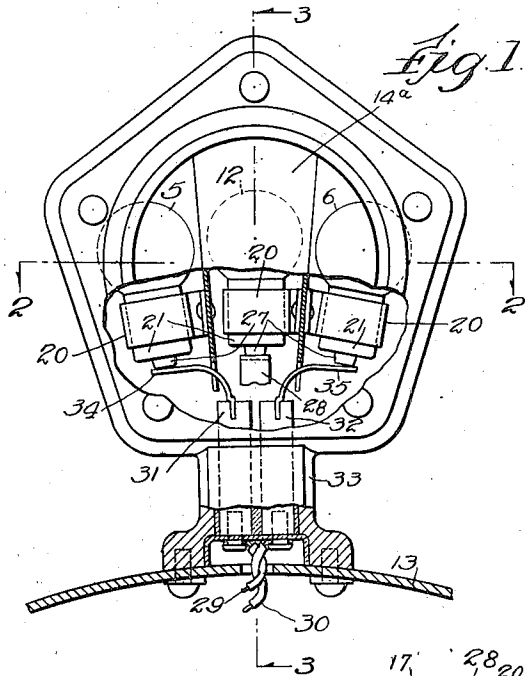
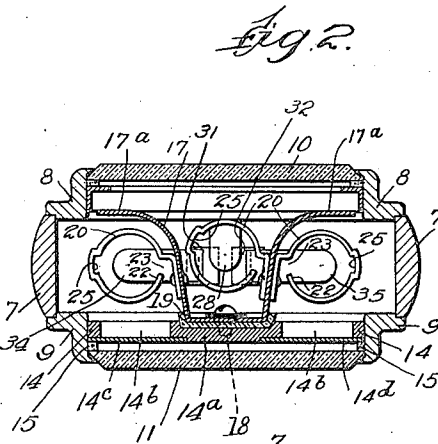
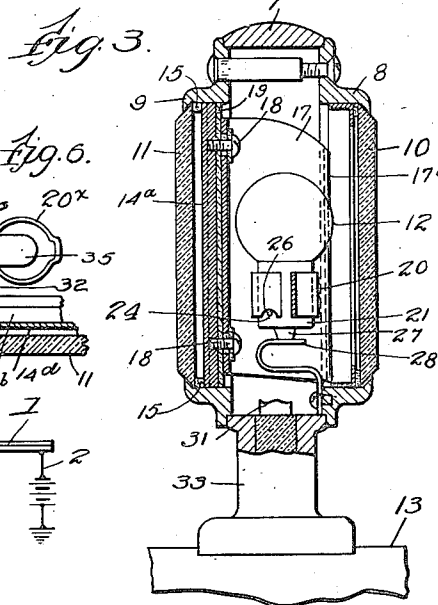
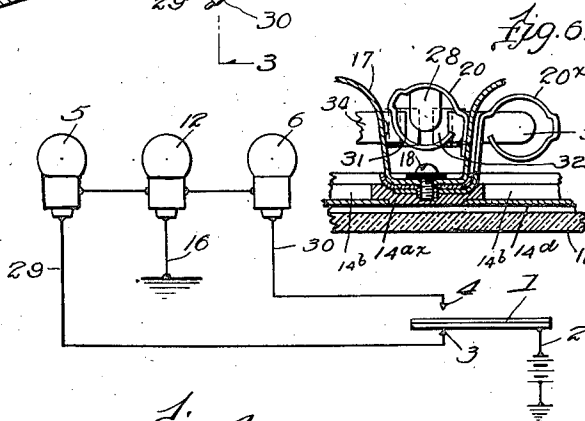
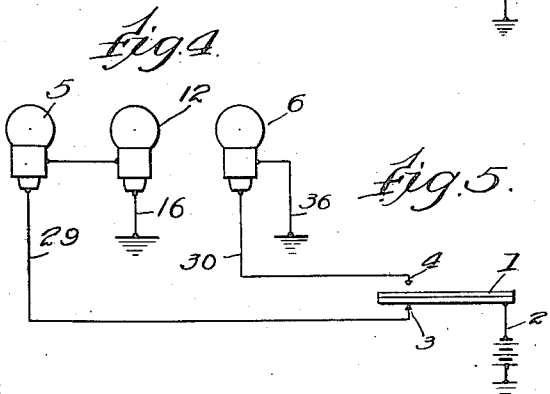
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A. C. WOOD

ELECTRIC SIGNAL FOR INTERNAL COMBUSTION ENGINES

Filed Sept. 9, 1922



Witness:
W. H. Plummer

Inventor:
Andrew C. Wood,
By *Burton & Burton*
his Attys.

UNITED STATES PATENT OFFICE.

ANDREW C. WOOD, OF CHICAGO, ILLINOIS, ASSIGNOR TO STEWART-WARNER SPEEDOMETER CORPORATION, OF CHICAGO, ILLINOIS, A CORPORATION OF VIRGINIA.

ELECTRIC SIGNAL FOR INTERNAL-COMBUSTION ENGINES.

Application filed September 9, 1922. Serial No. 587,181.

To all whom it may concern:

Be it known that I, ANDREW C. WOOD, a citizen of the United States, residing at the city of Chicago, in the county of Cook and the State of Illinois, have invented certain new and useful Improvements in Electric Signals for Internal-Combustion Engines, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof.

This invention relates to an improved form of electrically operated signal for use with an internal combustion engine to advise the operator of temperature conditions in the engine. It consists of the features and elements of construction and their combination as hereinafter described and shown in the drawing and as indicated by the claims.

In the drawings:—

Figure 1 is a rear elevation partly in section showing an instrument embodying this invention.

Figure 2 is a plan section taken as indicated at line, 2—2, on Figure 1.

Figure 3 is a vertical section taken as indicated at line, 3—3, on Figure 1.

Figure 4 is a wiring diagram showing the connection of the indicating device with a thermostat on the engine.

Figure 5 is a modified wiring diagram.

Figure 6 is a detail section similar to Figure 2 showing a slight modification in the mounting of one of the lamp sockets.

The instrument to which this invention relates is the indicating device which is designed to co-operate with a thermostatic device carried by the engine or associated with it in position to be affected by changes of temperature. Such thermostatic device is indicated in the wiring diagrams, Figures 4 and 5 at 1, and is shown as having electric connections consisting of a battery wire, 2, and a pair of separated contact points, 3 and 4, wired respectively to a lamp, 5, and a lamp, 6. These lamps are carried in the instrument shown in Figure 1 which is designed to be mounted on the hood, radiator cap or front fender of an automobile so that its rear face may be constantly in view from the driver's seat. The instrument casing consists of a frame, 7, with a front flange, 8, and rear flange, 9, in which there are respectively carried cover glasses, 10 and 11. In addition to the lamps,

5 and 6, this instrument is designed to carry centrally in the frame a third lamp, 12, and particularly when the instrument is mounted as indicated in Figure 1 on the fender, 13 of the automobile, the lamp, 12, showing a white light through the cover glass, 10, will serve as a marker or "parking light" for the car when it is left standing at the curb or elsewhere adjacent a roadway. Behind the lamp bulbs the casing is fitted with an opaque disk, 14, preferably of metal, having a central section, 14^a, which obscures the middle lamp, 12, from the view of the driver. Window portions, 14^b, register with the other two lamps; the window opposite the lamp, 5, is fitted with a green color screen, 14^c, and the window behind the lamp, 6, is provided with a red color screen, 14^d. Preferably for somewhat diffusing the color effect, the rear surface of the cover glass, 11, may be etched or frosted and it is also spaced away from the color screens by a gasket, 15, as shown in Figure 2.

The intention is that with the wiring as shown in Figure 4, the middle lamp, 12, shall burn continuously and that one or the other of the lamps, 5 and 6, shall be lighted practically all the time to assure the driver that the device is in service and also to advise him of the condition of the engine. As shown in the wiring diagram the lamp, 12, is therefore connected in series with the lamp, 5, and provided with a grounded return connection, 16. So long as the engine temperature does not exceed the limit of safety the thermostat, 1, will maintain the contact at 3, and keep the circuit closed through the lamps, 5 and 12. If the safe temperature is exceeded the thermostatic bar, 1, will open this circuit and move into contact with the point, 4, thus lighting the lamp, 6, and extinguishing the lamp, 5, giving the operator a red signal instead of a green one to advise him of the dangerous condition.

The drawings show a convenient construction for supporting the lamps in the casing and securing the desired electrical connections in a relatively simple manner. A shield member, 17, of sheet metal is secured by screws, 18, to the central opaque portion, 14^a, of the disk, 14, being insulated therefrom by a spacer, 19, of paper or fiber. Said shield, 17, extends forwardly at both sides of the middle lamp, 12, separating it

from the lamps, 5 and 6, and curving around the latter to extend in front of them at 17°. A socket or holder is provided for each of the lamps by riveting to the shield, 17, a curved strip, 20, circularly shaped to encompass the base, 21, of the lamp; the curved end, 22, of the strip, 20, stops short of forming a complete circle, leaving a gap or slot, 23, to accommodate one of the usual locking pins, 24, which project from the base, 21, of the lamp. An offset portion, 25, in the strip, 20, at the opposite side of the circle admits the opposite pin, not shown in the drawings, and as the lamp base is inserted into this socket or holder it is pushed in far enough to carry the pins past the lower edge of the strip, 20, so that the lamp may be rotated slightly, permitting the pins to drop into suitable notches, 26, formed in said lower edge to retain the lamp.

Each lamp base, 21, is formed with a central contact point, 27, below the middle lamp, 12; a spring contact arm, 28, mounted directly on the frame supplies the ground connection for this lamp. All three of the sockets or holders, 20, being attached to the metallic shield, 17, it is evident that they are electrically connected in accordance with the diagram of Figure 4. Lead wires from contacts, 3 and 4, are shown in Figure 1 at 29 and 30, respectively, connected to terminal posts, 31 and 32, in the stem, 33, of the frame, 7, and insulated from said frame. At their upper ends said posts carry spring contact arms, 34 and 35 for engaging the central contacts, 27 of the signal lamps, 5 and 6, respectively.

Ordinarily the engine temperature will become excessive only while the engine is running and in care of an operator. It may, therefore, be preferable to connect the lamps as shown in Figure 5 so that the central parking light, 12, is in series only with the green or safety lamp, 5. Then when the red light is switched on by excessive temperature affecting the thermostat, 1, the lamp, 12, will be extinguished and this fact will serve as an incentive to the driver to make sure that his engine is cooled down to a safe temperature before he leaves the car standing alone. It is obvious that to modify the construction in accordance with the diagram of Figure 5, it will only be necessary to "ground" the socket or holder, 20, for the lamp, 6, on the frame, 7, of the instrument, instead of connecting it with the lamp, 12, as for example, by letting the attaching arm by which it is supported extend around under the insulation, 19, without touching the shield, 17, but into contact with the disk, 14.

I claim:—

1. A combined parking light and engine temperature signal for motor vehicles consisting of a casing adapted to be suitably

mounted on the vehicle for casting illumination both forwardly in the direction of travel and rearwardly for observation by the driver; front and rear cover glasses for the casing; three signal lamps in the casing; means obscuring one of them rearwardly and permitting it to cast illumination forwardly; means obscuring the other two forwardly and permitting them to cast illumination rearwardly; means for distinguishing the rearwardly illuminating lamps from each other by color; two circuits in which said lamps are energized, the forwardly illuminating lamp and one of the rearwardly illuminating lamps being in series in one circuit, and the other rearwardly illuminating lamp being in the other circuit, and a thermostatically operated switch influenced by engine temperature for closing said circuits alternatively according to engine temperature.

2. The construction defined in claim 1, the forwardly illuminating lamp being in both circuits; whereby the forward illumination accompanies both rearward illuminations.

3. The construction defined in claim 1, the rearwardly obscuring means for the forwardly illuminating lamp having mounted upon it and carrying the forwardly obscuring means for the rearwardly illuminating lamps, said forwardly obscuring means being extended from the rearwardly obscuring means between the lamps for cutting off the lateral illumination or diffusion of light from their respective beams into each other's paths.

4. In the construction defined in claim 1 foregoing, the rearwardly obscuring and forwardly obscuring means for the lamps respectively being mounted one upon the other with interposed insulation, the sockets or holders for the lamps being mounted on the forwardly obscuring means, the rearwardly obscuring means being mounted on the frame structure and the circuits being grounded on said frame structure.

5. The construction defined in claim 1 having the rearwardly obscuring means electrically conductive and mounted on the frame structure, the circuits being grounded on the frame structure, the forward obscuring means being insulatively mounted on the rearwardly obscuring means, the sockets or holders for the lamps being mounted on said forwardly obscuring means.

6. In the construction defined in claim 1 foregoing, the forwardly obscuring means being extended between the lamps for cutting off diffusion of light from the lamps respectively into their respective paths of illumination and being curved convexly forward and rendered reflective for equalizing the beam of the forwardly illuminating lamp over the area of the cover glass.

7. In the construction defined in claim 1 foregoing, the rearwardly obscuring means being an opaque plate having a window opening for the beams of the rearwardly illuminating lamps, and color screens in the window openings for distinguishing the rearward illuminations from each other. 15

8. In the construction defined in claim 1 foregoing, the rearwardly obscuring means 10 being an opaque plate having a window opening for the beams of the rearwardly illuminating lamps, and color screens in the window openings for distinguishing the rearward illuminations from each other, said color screens being spaced forwardly from the rear cover glass and said glass being frosted for diffusing the color illuminations. In testimony whereof, I have hereunto set my hand at Chicago, Illinois, this 1st day of September, 1922.

ANDREW C. WOOD.