W. K. SPARROW.

ALARM FOR SIGNAL LAMPS.

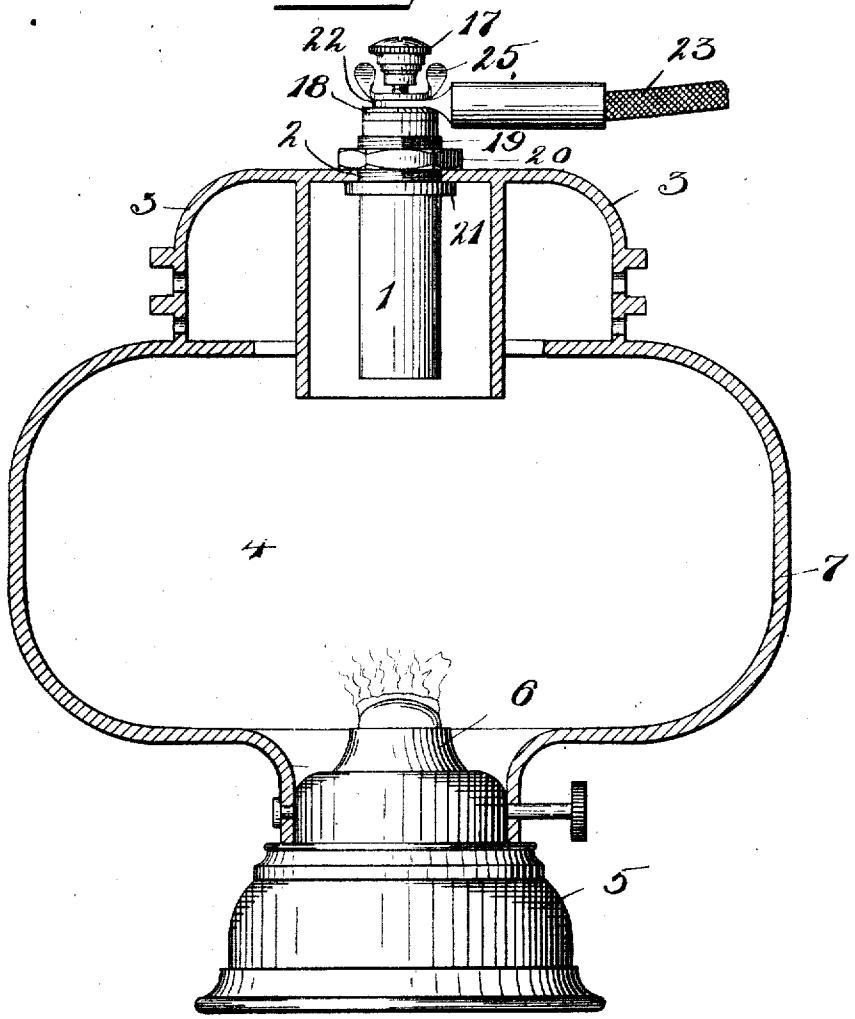
APPLICATION FILED JUNE 18, 1908.

912,433.

Patented Feb. 16, 1909.

2 SHEETS—SHEET 1.

Fig. 1.



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2 SHEETS—SHEET 2.

Fig. 2.

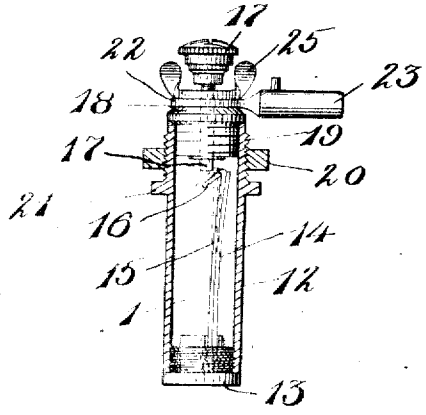
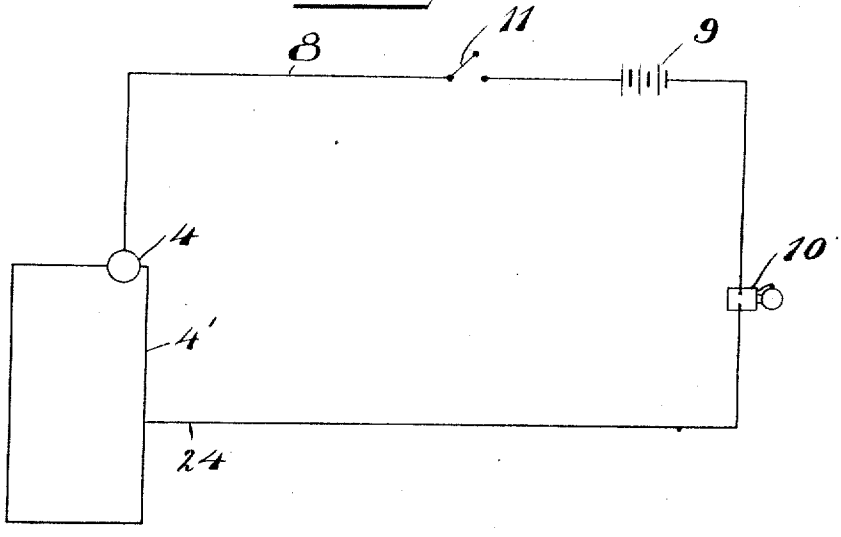


Fig. 3.



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UNITED STATES PATENT OFFICE.

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ALARM FOR SIGNAL-LAMPS.

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Application filed June 18, 1908. Serial No. 439,165.

To all whom it may concern:

Be it known that I, WILLIAM K. SPARROW, a citizen of the United States, residing at South Nyack, Rockland county, New York, have invented certain new and useful Improvements in Alarms for Signal-Lamps, of which the following is a full, clear, and exact description.

My invention relates to improvements in automatic alarms for signal lamps, such as those employed upon automobiles, in light-houses, or in any situation where the lamp or light is not ordinarily visible to one in charge or responsible therefor, and the object thereof is to provide a device which will serve to operate an audible or visual signal to indicate whether or not the lamp, not ordinarily so in view, is burning.

The preferred embodiment of my invention is indicated in the accompanying drawings, in which—

Figure 1 is a side elevation partially in section, of a lamp provided with my improvement; Fig. 2 is a vertical section of a thermostatic signal-operating device embodying the invention; Fig. 3 is a conventional diagram showing the arrangement of the device with the lamp and the operating circuits used therewith.

In the embodiment of my invention herein selected for illustration, the device consists of a thermostat inclosure and protector 1, which may be mounted in a suitable aperture 2 in the cap or chimney 3 of the lamp 4. The lamp herein shown is that ordinarily employed as a headlight upon automobiles and comprises the usual reservoir 5, burner 6 and globe 7.

Referring particularly to the conventional diagrams shown in Fig. 3, the apparatus in general comprises the lamp 4, to which the thermostat is attached, said lamp being shown conventionally as mounted upon an automobile 4'. Electrical connections employed in the operation of the device are also shown, consisting of a circuit 8, which includes a battery 9, a signal bell 10 and a switch 11, whereby when the thermostat is in position upon the lamp the signal bell 10 will be sounded under proper conditions, to indicate whether or not the clamp is in operation.

Referring to Fig. 2, the thermostat consists of the cylindrical body portion 12 having a screw plug 13 mounted in the base thereof, upon which plug is secured a composite thermal strip consisting of any desirable thermal couple of metal strips which are unequally expansible under the influence of heat. In this case the couple consists of a brass strip 14 and a steel strip 15, which are suitably secured together throughout their lengths by rivets, or in any other desired manner. The upper extremity of the steel strip is bent at 16 to present a contact surface which coöperates and is normally in contact with a contact screw 17, suitably mounted in an insulating plug 18 secured within the upper extremity of the body portion 12. The upper extremity also of the body portion is screw-threaded at 19 to receive a nut 20, by means of which and a collar 21 the device may be secured to the lamp.

An electrical connection 22 here shown as a metal plug, and collar mounted within and upon the insulating member 18, and in which the contact screw 17 is threaded, provides for connection with the battery through the lead wire 23, which may be connected in any suitable manner in the circuit 8 (Fig. 3).

The body portion 12 of the thermostat is grounded through the lamp, and the opposite terminal 24 of the circuit will also be suitably grounded, in the case of an automobile, upon the frame 4' of the machine.

In the initial operation of the apparatus, the switch 11 in circuit 8 is open and the lamp is lighted. The heat of the lamp serves to expand the thermal couple within the thermostat, and owing to the difference in expansion of the strips 14—15, the heat will serve to bend the couple strip away from contact screw 17, thus breaking the circuit 8, it being understood that after the lighting of the lamp, switch 11 is closed. Should the lamp accidentally go out or burn too low, the consequent cooling of the thermal couple will permit the same to again resume its normal position in contact with the contact screw 17, thus again closing the circuit 8 and ringing the signal bell 10, whereby the operator will be warned of the improper condition of the lamp.

In order to vary the sensitiveness of the instrument, the contact screw may be adjusted to any desired position with relation to the contact surface 16 of the thermal couple and held in such adjustment by means of the binding nut 25, so that the scope of operation of the device may be

varied within very considerable limits. This adjusting feature also provides for compensating for any permanent deflection of the thermal couple, due to the frequent expansion and contraction thereof.

It will be observed that the protective casing 1 prevents the deposit of carbon on the contacts and any short-circuiting thereby.

While I have here shown a particular embodiment of the invention, it is to be understood that the same may be varied in details and arrangement of parts without departing from the spirit or scope thereof.

What I claim is:

1. A thermo electric signaling device, comprising a casing, a thermal couple mounted therein, a contact member adjustable on said casing and insulated therefrom, a contact face on said couple inclined to said adjustable contact to effect rubbing contact therewith, and a signaling circuit connected with said couple and contact member.

2. A thermo electric connection comprising a thermal couple, a support therefor, a contact member adjustable on said support and insulated therefrom, said couple having a contact face at its movable end inclined to said contact member to effect rubbing contact therewith and an electric circuit connecting said couple and contact member.

3. A thermo electric connection comprising a casing, a thermal couple mounted therein and having a free end, a contact member adjustable in said casing, said couple having its free end bent to present an inclined contact face to said contact member to effect rubbing contact therewith, and an electric circuit connecting said couple and contact member.

4. A thermo-electric signaling connection comprising a casing, an adjustable electric contact carried within but insulated therefrom, a thermal couple carried within and electrically connected with said casing and extending adjacent said contact, said couple having a contact face arranged at an angle to said contact whereby sensitiveness or cooperation between said parts may be secured.

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