

Feb. 11, 1936.

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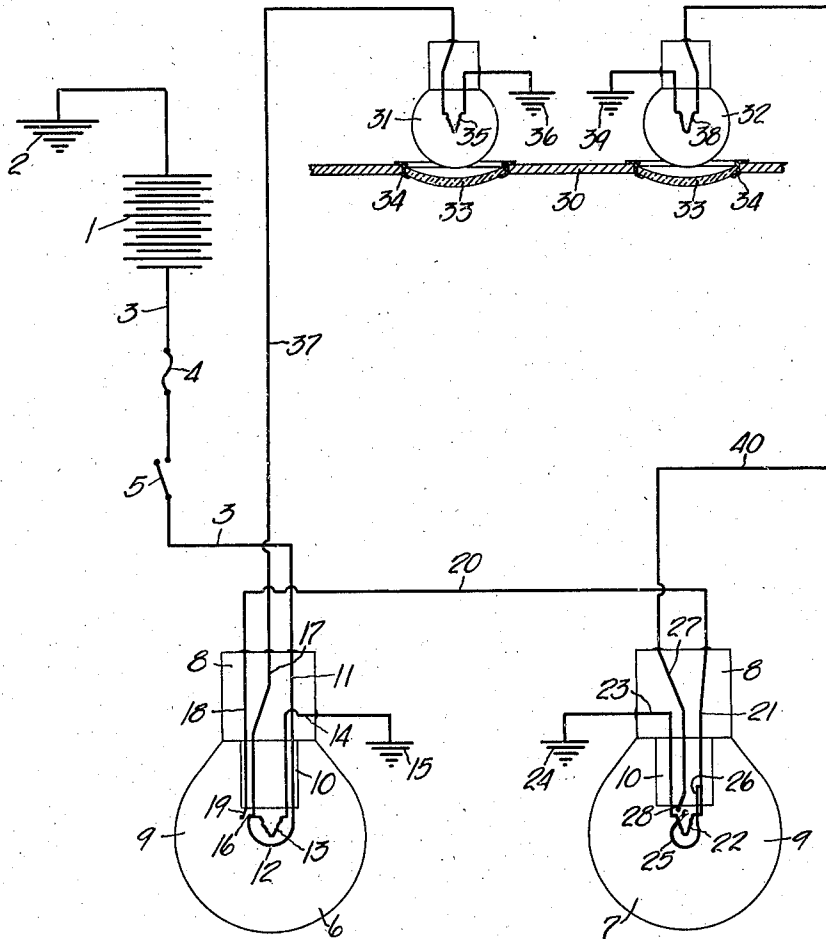
2,030,664

FLASHING SIGNAL SYSTEM FOR MOTOR VEHICLES

Filed March 18, 1935

2 Sheets-Sheet 1

FIG. 1.



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FIG. 2.

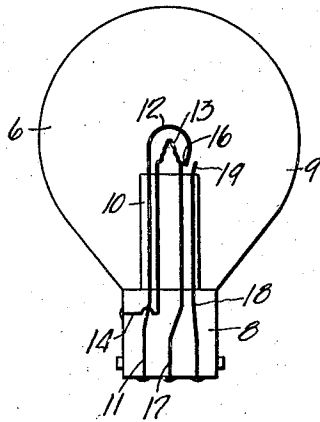


FIG. 3.

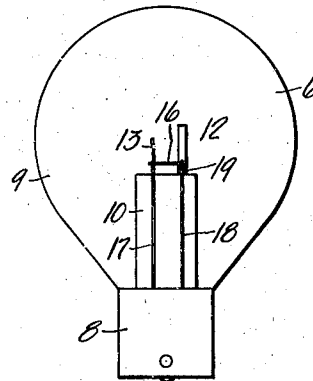


FIG. 4.

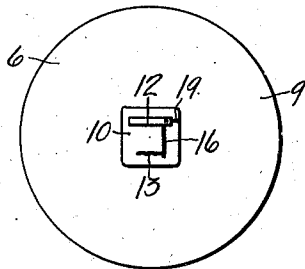


FIG. 7.

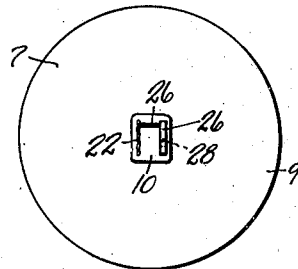


FIG. 5.

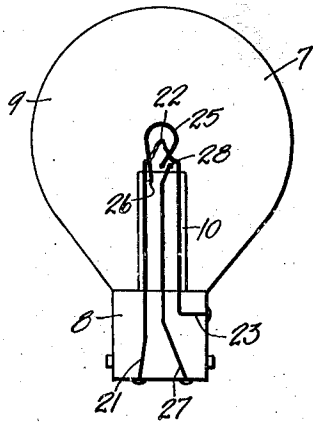
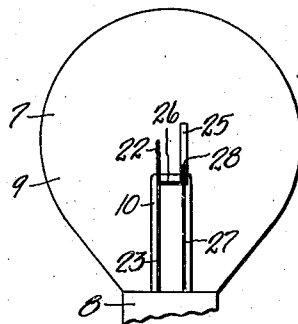


FIG. 6.



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FLASHING SIGNAL SYSTEM FOR MOTOR VEHICLES

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6 Claims. (Cl. 177-329)

This invention relates to flashing signal systems for motor vehicles, and particularly to a flashing stop light arrangement for automobiles.

The primary object of the invention is to provide a thermostatically controlled signal circuit by which a pair of electric lamps may be alternately flashed or energized.

A further object is to provide a system of this character having means for informing the operator of the vehicle of the operation of the flashing signals and of the source of trouble or failure when such occurs in the system.

A further object is to provide a motor vehicle with a pair of flashing signals and a pair of auxiliary signals each operatively associated with one of said flashing signals to be energized upon the energizing of the associated flashing signal.

A further object is to provide a signal system including a signal and an associated indicator, said signal including thermally responsive means for controlling said indicator.

A further object is to provide a signal system including an electric lamp having a filament, a thermally responsive member, and a conductor, said thermal member being actuable for contact with said filament and said conductor.

Other objects will be apparent from the description and the appended claims.

In the drawings:

Figure 1 is a diagrammatic view of the signal system.

Figure 2 is a view in side elevation illustrating one form of signal element, the electrical connections in the plug thereof being diagrammatically shown.

Figure 3 is another side view of the signal element taken at right angles to Figure 2.

Figure 4 is a top plan view of the signal element.

Figure 5 is a side view of another form of signal element used in the system, the electrical connections in the plug thereof being diagrammatically illustrated.

Figure 6 is a side view of the signal element taken at right angles to Figure 5.

Figure 7 is a top plan view of the signal element shown in Figures 5 and 6.

Referring to the drawings, the numeral 1 designates an operating battery suitably grounded at 2 at one terminal. The other battery terminal has a conductor 3 connected therewith, there being a suitable fuse 4 interposed in said conductor. A suitable control switch 5 is also interposed in conductor 3, said switch being operable to energize the signal, and being prefer-

ably connected with the brake pedal when the signal system is to be used for an automobile stop signal. The signal elements comprise the electric lamps 6 and 7, which are preferably mounted at opposite sides of the rear of the vehicle. The electric lamp 6 comprises a conventional plug member 8 carrying a glass globe 9 within which is disposed a glass stem 10 extending from plug 8 to a point substantially centrally of the globe, as is conventional in the art. A conductor 11 extends through the plug and glass stem and is adapted to be connected with line 3 in any suitable manner. A thermally actuable member 12 having one of its ends imbedded in the stem 10 and electrically connected with conductor 11, extends from said stem and is bent substantially in U-shape with its free end spaced from said stem. A filament 13 is disposed in the globe, one end thereof being connected with a conductor 14 extending through the stem and plug and being grounded at 15. The other end of filament 13 is normally engaged by a contact portion 16 carried by the free end of thermal member 12. A conductor 17 extends through the stem and plug from the last named end of the filament. A conductor 18 also extends through the plug and stem and terminates at its inner end in a contact portion 19 normally spaced and insulated from the thermal member 12, contact 16 thereof, and the filament.

A line 20 is connected with conductor 18 of lamp 6 and extends to lamp 7. The lamp 7 also comprises a plug 8, glass globe 9 and glass stem 10, there being a conductor 21 extending through said plug and stem and suitably connected to line 20. At its inner end conductor 21 is connected with one end of a filament 22 whose other end is connected to conductor 23 extending through the stem and plug and grounded at 24. A thermally actuable member 25 is fixedly mounted at one end of the lamp stem and is of substantially U-shape with its free end spaced from said stem and from said filament, said thermal member 25 being electrically connected with conductor 21 by means of a conductor 26. A conductor 27 extends through the lamp plug and stem and carries a contact portion 28 projecting from said stem in spaced relation to said thermal member.

It will thus be seen that upon operation of the control switch 5, as by depressing the brake pedal of a vehicle, a circuit is closed from battery 1 through line 3 to lamp 6, causing the filament 13 of said lamp to be energized. As said filament

13 generates heat, the thermal member 12 is caused to expand and shift away from the filament and into engagement with contact 19 of conductor 18. Thus filament 13 is deenergized, and a circuit is closed through line 3, conductor 11, thermal member 12, contact 19, conductor 18, and line 20 to conductor 21 and filament 22 of lamp 7. The energizing of filament 22 generates heat which actuates thermal member 25 to shift the same into engagement with contact 28 of conductor 27. The circuit energizing filament 22 is maintained until the lamp 6 cools sufficiently to contract and actuate thermal member 12 of lamp 6 to shift from contact 19 thereof to open the circuit to lamp 7 and subsequently cause contact 16 of thermal member 12 to engage filament 13 to again energize said filament 13. In this way the lamps 6 and 7 are alternately energized or flashed as long as switch 5 is closed.

Mounted in the interior of the vehicle, as on an instrument panel thereof, designated as 30, are a pair of electric lamps 31 and 32. The lamps 31 and 32 are positioned adjacent suitable lens 33 mounted in suitable bezels 34 supported by instrument panel 30. The filament 35 of lamp 31 is grounded at 36 at one end and is connected at its other end to a line 37 which also has connection with conductor 17 of lamp 6. Thus when the filament 13 of lamp 6 is energized, the filament 35 of lamp 31 is simultaneously energized. The filament 38 of lamp 32 is grounded at 39 at one of its ends and is connected at its other end to a line 40 which has connection with conductor 27 of lamp 7. Thus when the filament 22 of lamp 7 is energized and heated, thermal member 25 of said lamp shifts into engagement with contact 28, and filament 38 of lamp 32 is energized. Thus the operator of the vehicle is informed by means of the flashing of auxiliary lamps 31 and 32 regarding the operation of the signal lamps 6 and 7. In the event the filament 13 of lamp 6 falls, whereby the thermal member 12 remains unactuated, the lamp 31 will burn continuously during the time switch 5 is closed, thus indicating the seat of the trouble as being in lamp 6. In the event the filament 22 of lamp 7 falls, the thermal member 25 of said lamp consequently being unactuated, the lamp 32 will not flash, thus locating the source of the trouble as being in lamp 7. Thus the auxiliary lamps 31 and 32 serve to inform the operator regarding the condition of lamps 6 and 7 and to localize the trouble in the system when such occurs.

The invention having been set forth, what is claimed as new and useful is:—

1. A signal system comprising two electric signal lamps each having a filament and a thermally responsive member, said lamps being connected to be alternately energized under the control of, the thermally responsive member of one

of said lamps, an auxiliary lamp electrically connected to the filament of said control lamp to be energized simultaneously therewith, and an auxiliary lamp controlled by the thermally responsive member of the other signal lamp.

2. A signal system comprising two connected electric signal lamps each including a thermally responsive member, said lamps being alternately flashed under the control of the thermally responsive member of one of said lamps, and auxiliary electric lamps connected in pairs with said signal lamps and each controlled by the thermally responsive member of the signal lamp with which it is paired.

3. A signal system comprising a pair of lamps each including a filament, a conductor spaced from said filament, and a thermally responsive member; the thermally responsive member of one lamp being connected with a source of power, means connecting the conductor of said first lamp with the filament and thermally responsive member of the second lamp, an auxiliary electric lamp connected with the filament of the first lamp, and a second auxiliary electric lamp connected with the conductor of said second lamp.

4. A signal system comprising two electric signal lamps each having a filament, a thermally responsive member associated with the first of said lamps for alternately flashing said lamps, two auxiliary lamps, and means for connecting said auxiliary lamps to said signal lamps in pairs to energize an auxiliary lamp when the signal lamp paired therewith is energized, including a thermally responsive member energized by the second signal lamp to close the circuit to its auxiliary lamp.

5. In a signal system, an electric lamp having a filament, a conductor spaced from said filament, and a thermally responsive member connected with a source of power and normally engaging said filament; and a second lamp connected to the conductor of the first lamp, said thermally responsive member being shiftable into engagement with said conductor to energize said second lamp and deenergize said first lamp periodically.

6. A signal system comprising a line connected with a source of current; a signal lamp comprising a filament, a spaced conductor, and a thermally responsive member connected to said line and normally engaging said filament; an auxiliary lamp connected to said lamp filament; a second signal lamp comprising a filament and a thermally responsive member connected to said conductor in parallel, and a conductor normally spaced from said thermally responsive member; and a second auxiliary lamp connected to the conductor of said second signal lamp.

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