Dec. 17, 1935. J. T. WADE 2,024,897

SAFETY HEADLIGHT OR SPOTLIGHT

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Fig. 1.

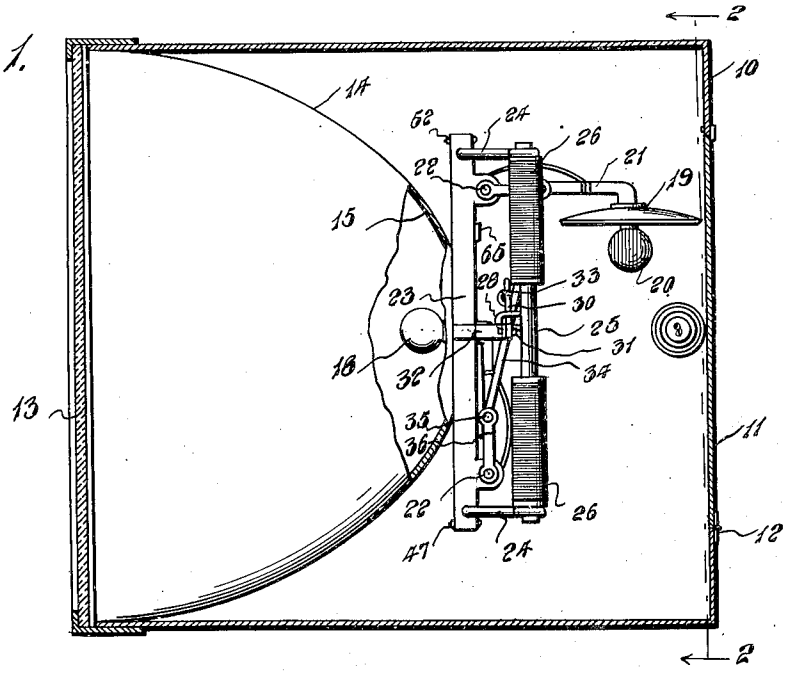
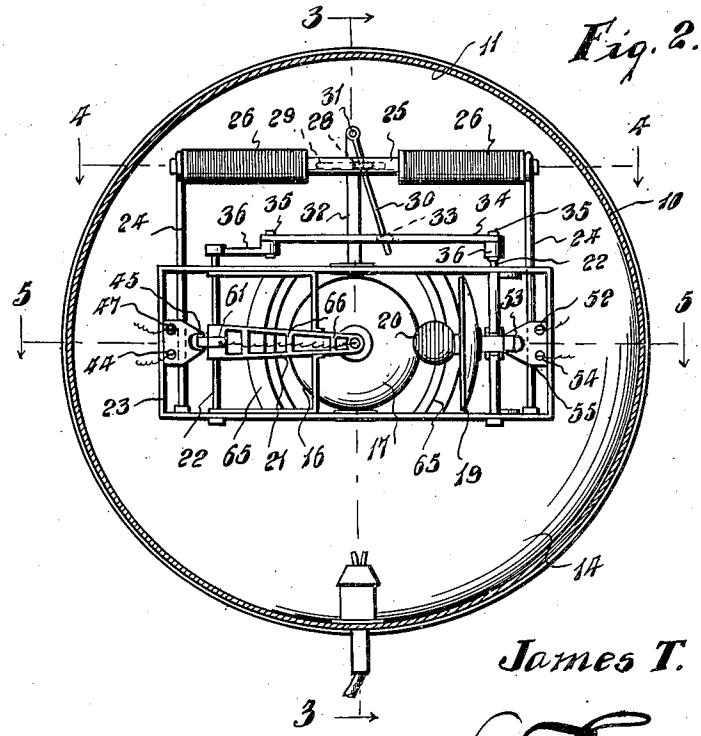


Fig. 2.



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Fig. 3.

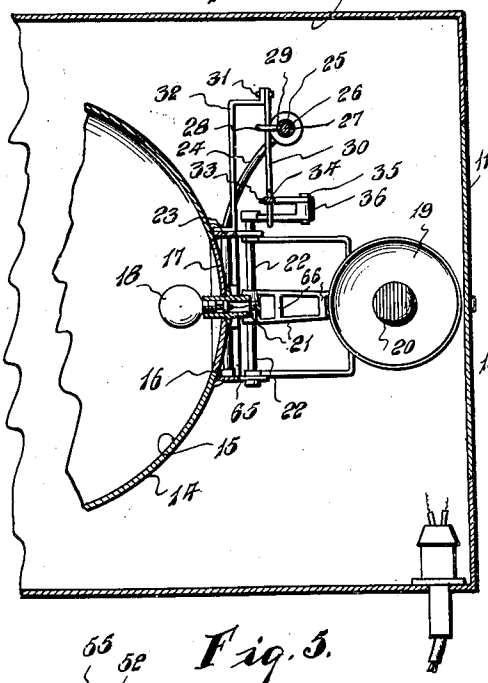


Fig. 4.

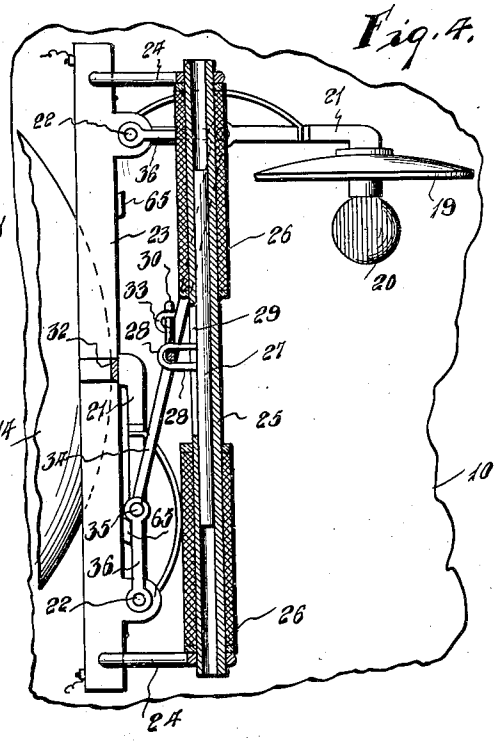


Fig. 5.

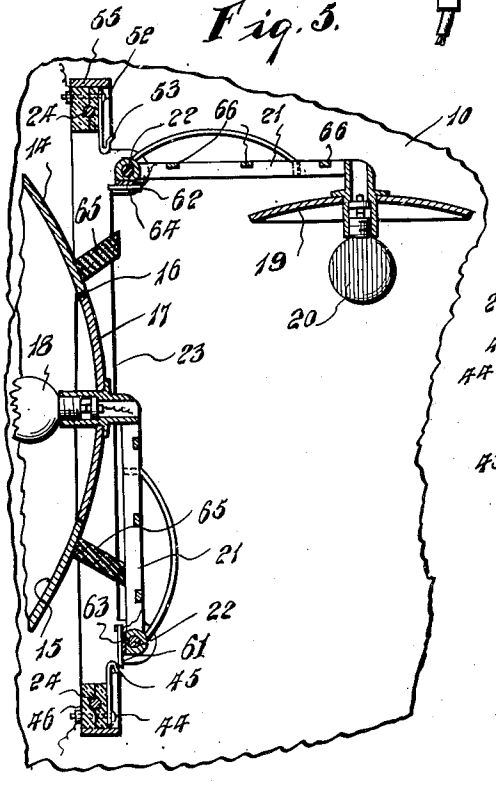
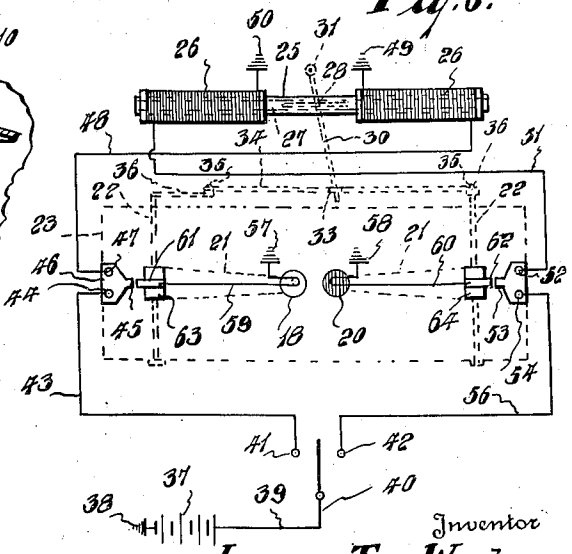


Fig. 6.



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SAFETY HEADLIGHT OR SPOTLIGHT

James T. Wade, Ogden, Utah

Application March 20, 1935, Serial No. 12,086

3 Claims. (Cl. 240—37)

This invention relates to a safety light signaling means capable of use in any instance where ordinary illumination is desired and signaling illumination at times is desired, as in the case of a headlight, spotlight, tail light or otherwise in connection with self-propelled vehicles, railway rolling stock.

It is primarily aimed to provide means whereby a signaling lamp, usually, but not necessarily red, may be substituted for an illuminating lamp, expeditiously and interchangeably.

The more specific objects and advantages will become apparent from a consideration of the description following taken in connection with accompanying drawings illustrating an operative embodiment.

In said drawings:—

Figure 1 is a horizontal sectional view illustrating my improvement;

Figure 2 is a vertical sectional view taken on the plane of line 2—2 of Figure 1;

Figure 3 is a vertical sectional view taken on the plane of line 3—3 of Figure 2;

Figure 4 is a cross sectional view taken on the line 4—4 of Figure 2;

Figure 5 is a horizontal sectional view taken on the line 5—5 of Figure 2; and

Figure 6 is a view in a diagram showing the electrical connections.

Referring specifically to the drawings, illustrating one embodiment of the invention by way of example, 10 designates a suitable casing or housing having a closure 11 hinged thereto at 12 which permits access at desired times to the parts for inspection, oiling, repair and the like. Fastened in any suitable way across the front of the casing is a lens 13 behind which is a usual parabolic reflector 14, the interior reflecting surface being indicated at 15. The rear of the reflector 14, however, is cut away to provide a central round opening 16.

In accordance with the invention, said opening 16 is adapted to be selectively occupied by a round reflector section 17 which carries a lamp 18 for ordinary illumination or by a reflector 19 which carries a lamp 20 for signaling illumination and which lamp is usually red. The invention includes means whereby the said reflector sections and lamps are quickly substituted one for the other.

Horizontally movable arms 21 respectively carry one of said reflector sections and a lamp and such arms are rigidly connected to vertical shafts 22 journaled in a suitable frame 23, such as a skeleton rectangular frame, suitably carried by the reflector 14 on the rear surface thereof.

Uprights 24 are carried by and extend above the frame 23 and mount a copper or other suitable conducting tube 25 between them. Windings or solenoids 26 surround the tube 25 adjacent opposite ends and slidable within the tube 25 is an iron or other metallic armature 27 from which a loop 28 extends through an elongated slot 29 of the tube 25 to enable reciprocation of the armature 27.

An arm 30 extends loosely through the loop 28, being pivoted at 31 at the upper end of a bracket 32 rising from the frame 23. Said arm 30 also passes through a loop or eyelet 33 of a connecting link 34 pivoted at 35 to cranks 36 rigidly connected to the upper ends of the shafts 22. As a result, it will be realized that the solenoids 26 are energized as later explained, one at a time, pulling the armature 27 towards it and accordingly rocking the arm 30, sliding link 34, and rocking the cranks 36, shafts 22 and swinging the arms 21 so that one reflector member 17 and lamp 18 will move out of the opening 16 while reflector member 19 and lamp 20 move into such opening 16, or vice versa.

The electric current for energizing the solenoids 26 and for illuminating the lamps 18 and 20, is supplied for instance by a battery 37, one side of which is grounded as at 38, and the other side of which has a conductor 39 leading to a switch arm 40 adapted to contact selectively with contact members 41 and 42. From the contact 41 a conductor 43 leads to a post 44 in conducting relation with a contact 45 suitably mounted and insulated at 46 on the frame. Conductor 44 is in conducting relation with a contact 47 from which a conductor 48 leads to one of the solenoids 26. Both of the solenoids 26 are grounded as at 49 and 50. From the other solenoid 26, a conductor 51 leads to a contact or post 52 in conducting relation with a contact 53 and a contact 54, suitably mounted as at 55 on the frame 23. From the contact 54, a conductor 56 leads to the contact 42.

One side of the lamps 18 and 20 are grounded as at 57 and 58, and the other side by means of conductors 59 and 60 lead to contact fingers 61 and 62, carried by insulating blocks or the equivalent 63 and 64, attached to the shafts 22.

It will be seen that the lamps 18 and 20 are illuminated only when the switch 40 respectively engages the contacts 41 and 42, and when the reflector section carrying them occupies the opening 16 because it is only at that time that the

contacts 45 and 61 can engage or the contacts 53 and 62 can engage, since, when the reflector sections are retracted, the contacts are disengaged as shown at the top of Figures 4 and 5 to advantage.

Bumpers or buffers of rubber or any other suitable material may be provided on the reflector 14 at 65 to be engaged by the arms 21 when a reflector and lamp is moved to utile position in order to cushion the blow and reduce the shock.

Obviously the arms 21 may be of any desired form, preferably being skeleton and light in weight, and equipped with any suitable bracing or reinforcing as at 66.

No limitation as to the use of the lamp is to be implied, nor as to the color of the bulb. For instance, the principles of the invention may be used on railroad engines, motors, vehicles of all kinds, and particularly by highway patrolmen, doctors, ambulances, fire departments, etc.

Various changes may be resorted to provided they fall within the spirit and scope of the invention.

I claim as my invention:—

1. A device of the class described having a reflector provided with an opening, reflector sections interchangeably applicable to said opening, electric lamps carried by said reflector sections, one of said lamps being a signal lamp, an arm mounting each reflector section, said arms being spaced apart and movable in opposite directions one after the other, electromagnetic means operable to shift said arms, means to energize the electromagnets and supply current to said lamps including switches, said arms serving to close the switches in the operative position of the reflector sections and to open said switches in the open position of the reflector sections, a frame on the reflector, shafts journaled in the frame, cranks on the shafts, linkage connecting the cranks, and an arm operated by the electromagnetic means to shift the links.

2. A device of the class described having a reflector provided with an opening, reflector sections interchangeably applicable to said opening, lamps carried by said reflector sections, one of said lamps being a signal lamp, an arm mounting each reflector section, electromagnetic means operable to shift said arms, said lamps being electric, means to energize the electromagnets and supply current to said lamps including switches, said arms serving to close the switches in the operative position of the reflector sections and to open said switches in the open position of the reflector sections, a frame on the reflector, shafts journaled in the frame, cranks on the shafts, linkage connecting the cranks, an arm operated by the electromagnetic means to shift the link, said link having a loop through which the arm passes, an armature for the electromagnetic means having a loop through which the link passes, a bracket on the frame to which the link is pivoted, said electromagnetic means having a tube provided with a slot through which said last mentioned link passes, and uprights rising from the frame mounting said tube.

3. A device of the class described having a reflector provided with an opening, reflector sections interchangeably applicable to said opening, lamps carried by said reflector sections, one of said lamps being a signal lamp, an arm mounted each reflector section, electromagnetic means operable to shift said arms, said lamps being electric, means to energize the electromagnets and supply current to said lamps including switches, said arms serving to close the switches in the operative position of the reflector sections and to open said switches in the open position of the reflector sections, a frame on the reflector, shafts journaled in the frame, cranks on the shafts, linkage connecting the cranks an arm operated by the electromagnetic means to shift the link, said link having a loop through which the arm passes, an armature for the electromagnetic means having a loop through which the link passes, a bracket on the frame to which the link is pivoted, said electromagnetic means having a tube provided with a slot through which said last mentioned link passes, uprights rising from the frame mounting said tube, and said switches comprising parts carried by the frame and by said arms.

JAMES T. WADE.