Dec. 3, 1946. F. J. O'FARRELL 2,411,935

SIGNAL LAMPS

Filed Nov. 7, 1944

Fig. 1.

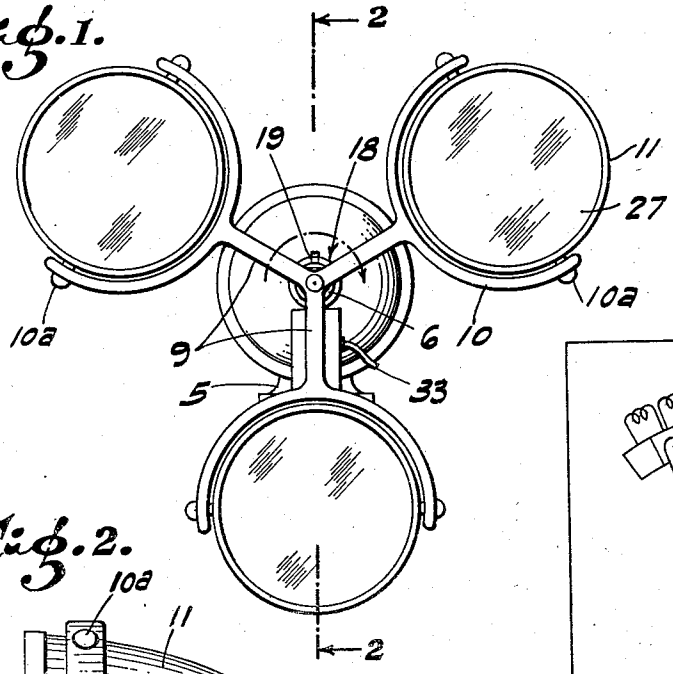


Fig. 3.

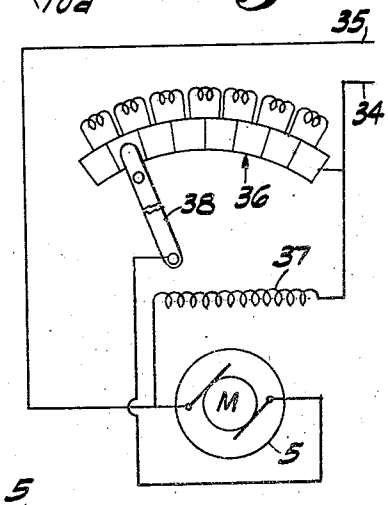
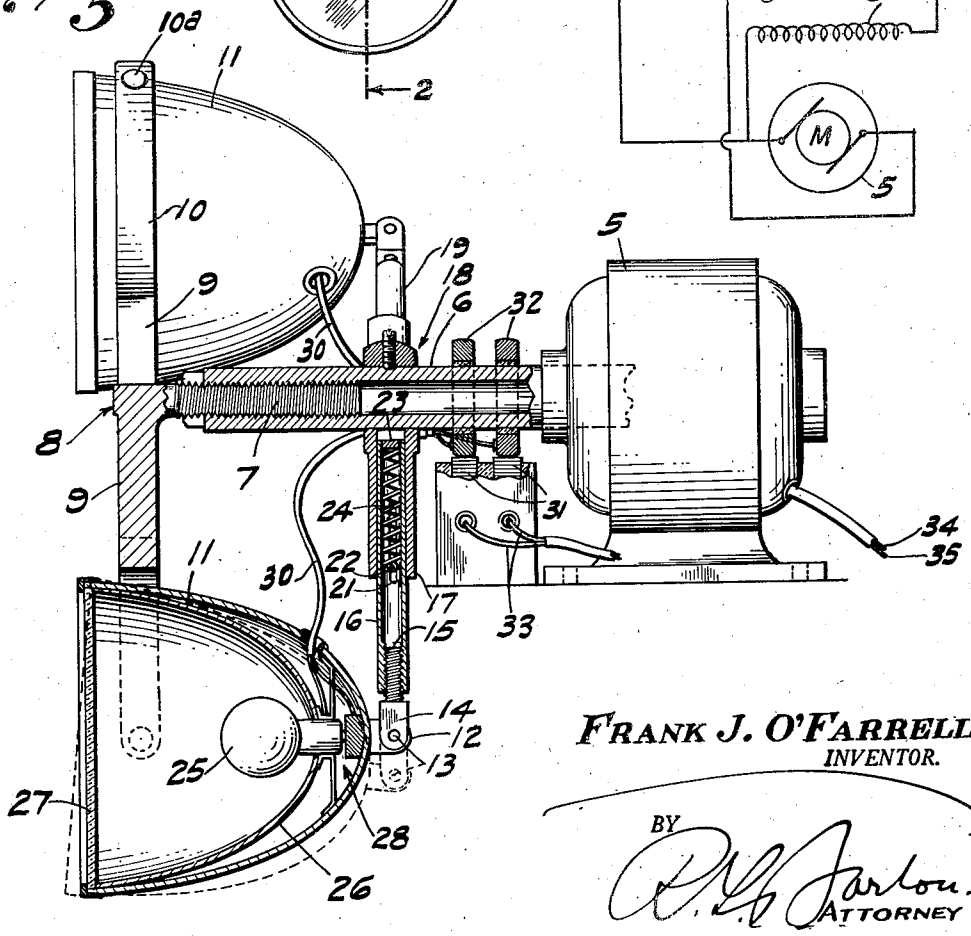


Fig. 2.



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Patented Dec. 3, 1946 2,411,935

UNITED STATES PATENT OFFICE

2,411,935

SIGNAL LAMP

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Application November 7, 1944, Serial No. 562,321

6 Claims. (Cl. 240—48)

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This invention relates to signal lamps for use on transports, whether vehicles, ships or airplanes.

Speaking more specifically, the invention pertains to signal lamps for the above stated uses which are rotatably mounted in a set, all the lamps of the set being adjustable simultaneously to focus their light rays upon a point located at predetermined selected distances in advance of the automobile or other transfer means equipped with the invention.

The vehicle lamps which have heretofore been in use have no means whereby the driver may change the point of focus to suit varying weather conditions. Also there is a lack of clear vision directly ahead and on either side in foggy, rainy or snowy weather, when a poor warning is afforded of an approaching vehicle.

This invention overcomes the foregoing defects by combining a plurality of revolving lights in such a manner that their beams intersect at the desired point in advance of the vehicle, thus, if for example three lamps are used, multiplying the light three times.

Furthermore, the invention provides for changing the point of intersection of the beams of light from a set of rotating lamps, by the use of a rheostat speed control (located on the instrument panel), whereby the point at which the beams intersect may be moved closer to or farther away from the vehicle as changing weather conditions demand.

The aforesaid rheostat speed control also enables the driver to lower the intersecting beams from the lamps, thus preventing any glaring effect upon the eyes of an approaching motorist.

The device provided by this invention produces light beams which, after intersecting, will spread and will illuminate both right and left as well as ahead.

When the device is installed on railway trains, the revolution of the plurality of lights will attract the attention of approaching motorists a farther distance away from crossings and will therefore more efficiently warn them of approaching trains.

Referring to the accompanying drawing, which illustrates what is at present deemed to be a preferred embodiment of the invention,

Fig. 1 is a front elevation of the device.

Fig. 2 is a section thereof on line 2—2 of Fig. 1.

Fig. 3 is a wiring diagram.

Referring in detail to the drawing, the motor 5 is furnished with a tubular shaft 6 having an internally screwthreaded outer end portion into

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which is screwed, to rotate therewith, a screwthreaded rod or stem 7 which projects axially from and is shown as an integral part of a tree 8 having triplet limbs 9. Each of said limbs 9 carries at its outer end a semicircular yoke or bifurcation 10 between the extremities of which is pivotally supported at 10a at diametrically opposite points the wide end portion of a semi-elliptical lamp casing 11, it being understood that the term "semi-elliptical" means that the lamp casing comprises one-half of an elliptical figure divided at a right angle to its long axis. From the convex end of said lamp casing projects an axial lug 12 to which is pivoted at 13 the bifurcated head 14 of a threaded stem 15 that is screwed into a tube 16, said tube, in turn, being in part contained slidably in one of the three tubular arms 17 of a spider 18, the central portion of which is apertured to fit around the motor shaft 6 and is secured to said shaft by means of a set screw 19.

Each tube 16 has a pair of diametrically opposite longitudinal slots 21, and through both these slots passes a pin 22 having its ends fixed to opposite side of the tubular arm 17. The inner end of each tube 16 is closed by a disk 23 welded or otherwise secured therein. Between said disk and the pin 22 is placed a spiral compression spring 24.

Each lamp casing 11 contains a lamp 25 provided with a parabolic reflector 26, said reflector having a suitable lens 27 and the inner end thereof, together with the lamp 25, being provided with a suitable mounting means 28.

The electrical connection between the source of power and the rotating lights is made through the three leads 30 which are in circuit with carbon brushes 31 making contact with metal collars 32 fixed to the motor shaft 6.

Wires 33 connected to a suitable source of power as for example a battery not shown are conductors for energizing the lamps 11.

The motor 5 is connected by conductors 34 and 35 to a suitable source of power, as earlier explained, there being included in the circuit formed by said conductors a rheostat 36 and field 37. The rheostat 36 is preferably mounted within convenient reach of the driver so that when a shorter focus of the lamps is desired over what is normally provided for by the setting of the focus for a particular motor speed, an adjustment of the rheostat arm 38 will cause a faster speed of the motor and therefore a greater projection of the arms 16 due to the increased centrifugal force, in turn causing the rays of light from the

lamp structures to intersect the produced axis of the shaft at a shorter distance from the device.

Thus the pyramiding of the rays from the lamps to intersect at selective distances in front of the vehicle to intensify the light penetration of fogs of different densities will afford the driver a clearer view for safe driving.

What I desire to claim is:

1. In a device of the kind described, a shaft, means whereby said shaft is rotatably supported, a plurality of limbs carried by and extending radially from said shaft, a lamp structure carried by each of said limbs and arranged to direct a beam of light across the produced axis of said shaft, said lamp structure being pivotally supported for pivotal adjustment in a plane extending along the axis of said shaft and radial thereto, and means rotating with said shaft controlled by centrifugal force automatically to swing all of said lamp structures in unison to vary the distance from the device at which the beams of light from said lamp structures intersect the produced axis of said shaft, the latter means comprising a spider having tubular arms which extend radially from said shaft and which are furnished with extensible portions pivotally connected with the rear portions of said lamps.

2. In a device of the kind described, a shaft having a screw-threaded bore leading into an end portion thereof, a tree for carrying lamps, said tree having a stem screwed into said bore, a plurality of lamps having casings carried by said tree in radially spaced relations to said shaft, means to rotate said shaft together with said tree and lamps, said lamp casings having front portions pivotally connected with said tree to swing in planes alining with the axis of said shaft, and means carried by said shaft and radially extensible in relation to it, said extensible means being connected with the rear portions of said lamps to move outwardly under the urge of centrifugal force caused by the rotation of said shaft and including springs which oppose said outward movement.

3. In a device of the kind described, a shaft having a screw-threaded bore leading into an end portion thereof, a tree for carrying lamps,

said tree having a stem screwed into said bore, a plurality of lamps having casings carried by said tree in radially spaced relations to said shaft, means to rotate said shaft together with said tree and lamps, said lamp casings having front portions pivotally connected with said tree to swing in planes alining with the axis of said shaft, and a spider having a central portion surrounding said shaft, said spider having arms which extend radially from said shaft and which are furnished with extensible portions pivotally connected with the rear portions of said lamps, and springs carried by said arms to oppose their extension under the urge of centrifugal force caused by the rotation of said shaft.

4. The subject matter of claim 3, and said extensible spider arms comprising radially inner and outer tubular arms, said arms being longitudinally slidable in relation to each other, said outer arms having screwed into them threaded stems which at their outer ends are pivotally connected to the rear portions of said lamps.

5. In a device of the kind described, a shaft, means whereby said shaft is rotatably supported, a plurality of limbs carried by and extending radially from said shaft, a lamp structure carried by each of said limbs and arranged to direct a beam of light across the produced axis of said shaft, said lamp structure being pivotally supported for pivotal adjustment in a plane extending along the axis of said shaft and radial thereto, means rotating with said shaft controlled by centrifugal force automatically to swing all of said lamp structures in unison to vary the distance from the device at which the beams of light from said lamp structures intersect the produced axis of said shaft, a motor whereby said shaft is driven, conductors forming a circuit in which said motor is included, and a rheostat in said circuit operable to vary the speed of said motor thereby to cause the beams of the lamps to intersect the produced axis of said motor driven shaft at varying distances from the vehicle.

6. The subject matter of claim 1, and springs carried by said arms to oppose their extension under the urge of centrifugal force caused by the rotation of said shaft.

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