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LIGHTING SYSTEM FOR AUTOMOBILES

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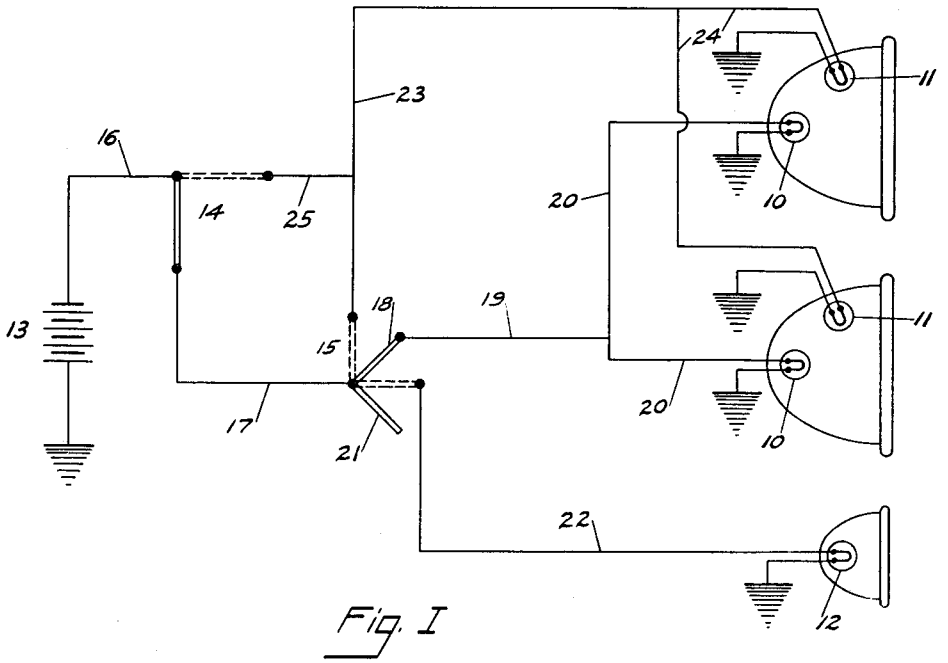


Fig. I

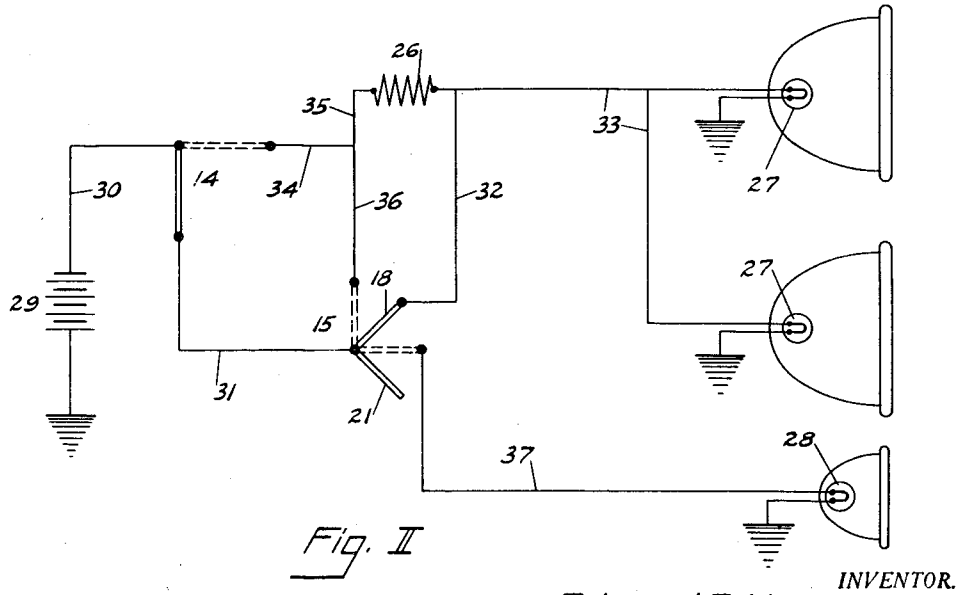


Fig. II

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LIGHTING SYSTEM FOR AUTOMOBILES.

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My invention relates to lighting systems for automobiles, and has for one of its objects, to provide an automobile with a lighting system including the usual headlights and an auxiliary light, with suitable circuits for said lights arranged to be controlled by two different switches, one of which may be employed to effect the dimming of the headlights independently of the other switch, the latter being adapted to simultaneously effect the dimming of the headlights and the turning on of the auxiliary light.

Another object is the provision of a pair of switches such that they may be adapted in the same way to either one of two systems of wiring, the one embodying additional lamps for "dimming", and the other employing a resistance for accomplishing the dimming of a single set of head lamps.

Other objects will appear from the description to follow, covering certain embodiments of the invention, which, for the purposes of the present application, I have illustrated in the accompanying drawings, in which:

Figure I is a diagrammatic view of a lighting system embodying the invention, and

Fig. II is a diagrammatic view illustrating a slightly different form of the invention.

It is well-known that the blinding effect produced by the glare of the headlights, seriously interferes with the vision of those driving machines approaching from an opposite direction, and many accidents have occurred, due largely or solely to this cause. It is therefore an important object of the present invention to provide a lighting system having means by which the lights normally employed can either be instantly extinguished or have their intensity reduced, or in any suitable manner be made to afford different degrees of illumination, the arrangement being such that an auxiliary lamp can be turned on simultaneously to furnish sufficient light to permit the driver to proceed with safety.

The disclosure in Fig. I shows a pair of headlight casings containing the usual lamps 10 of the desired candle power, and also containing additionally, the lamps 11, of less candle power or of the same candle power, but set out of focus in the reflector. The lamps 11, if desired, may be placed outside of the headlight casing at any other suitable point upon the automobile, as, for instance, in side lamp casings. In addition to the lights 10 and 11, an auxiliary light 12 is provided, preferably in front of the hood below the headlight casings. A battery 13 or other supply source is provided for furnishing current to said lights through circuits, in which two switches are shown diagrammatically in Fig. I. These switches, for the purpose of readily distinguishing one from another, will be hereinafter referred to as the primary and secondary switches 14 and 15 respectively, the former constituting a three-contact single arm switch, and the latter, a four-contact double arm switch or its equivalent. When the switches 14 and 15 are in the normal running positions shown by full lines, current from the battery is supplied through a conductor 16, switch 14, conductor 17, switch arm 18, and thence through conductors 19 and 20 to the main lamps 10, and back to battery through ground. If it is desired to turn on the auxiliary light 12 and to simultaneously reduce the degree of illumination of the roadway, one method is to cut out the main headlights 10, and at the same time turn on the "dim" lights 11, thus producing in effect, a dimming of the headlights. This is done by moving the secondary switch 15 to the position indicated by dotted lines, thus placing the arm 21 in position to close the auxiliary light circuit through conductor 22, at which time the arm 18 will simultaneously open the main headlight circuit and close the circuit for lighting the "dim" lights 11, to which current will flow from the battery through conductor 16, primary switch 14, conductor 17, secondary switch arm 18, and thence through conductors 23, 24 to said lamps. It will therefore be seen that the four-contact double arm switch 15 is moved directly from one operating position to the other, accomplishing two results by each movement, thus simplifying the duties of the driver.

If it is desired to produce, in effect, the dimming of the headlights without turning on the auxiliary light 12, as will be desirable for city driving where the auxiliary light is not ordinarily required and is sometimes considered objectionable, the primary switch 14 will be moved from the full to the dotted line position shown, when it is desired to extinguish the lamps 10 and to turn on the lamps 11, current then flowing from battery

through conductor 16, primary switch 14, conductor 25, and thence through conductors 23 and 24.

Another feature of the arrangement shown in Fig. I is, that the dimming effect produced through the burning of the "dim" lights 11, is made possible simultaneously with the turning off of the main lights 10 and the turning on of the auxiliary light 12 by means of the four-contact switch 15, which facilitates operation by reducing the number of switch movements through elimination of an intermediate position for the switch.

The disclosure in Fig. II differs slightly from that shown in Fig. I, in the omission of the lights 11, and in the substitution of a resistance 26 for effecting the dimming of the headlights 27, the same primary and secondary switches 14 and 15 being used for controlling said headlights 27 and also the auxiliary light 28. In this case, the switches are also shown in what may be termed the normal running position with the headlights bright and the auxiliary light cut out, current passing from battery 29 through conductor 30, primary switch 14, conductor 31, secondary switch arm 18, conductors 32 and 33 to the lamps 27 and thence back to battery through ground, the resistance 26 being entirely cut out of the headlight circuit.

If it is desired to dim the headlights without turning on the auxiliary light, as will be desirable for city driving, the single arm of the primary switch 14 may be moved to the dotted line position shown, at which time current will flow from battery through conductor 30, switch 14, conductors 34 and 35, resistance 26, and thence to the lamps 27 through conductors 33.

If, however, it is desired to dim the headlights and simultaneously turn on the auxiliary light, the primary switch 14 will remain in the full line position shown, and the secondary switch 15 moved to the dotted line position indicated, current then passing through conductor 31, arm 18, conductors 36 and 35, resistance 26, and conductors 33 to the headlights, while current for lighting the auxiliary lamp 28 will flow through conductor 31, switch arm 21, and conductor 37 to said auxiliary lamp and back to battery through ground.

When it is desired to cut out all of the lights, the primary switch 14 is opened, thus disconnecting the battery from the different lamp circuits.

With the arrangement shown, the secondary switch is adapted both to effect the dimming of the headlights, and the cutting in of the auxiliary light, or to brighten the headlights and cut out the auxiliary light, the results in either case being performed by a single operation of the switch, that is, by moving directly from one circuit closing position to another, thereby simplifying the movements by reducing the number of operations.

The primary and secondary switches may be located at any desired points convenient to the driver, the secondary switch being preferably mounted either on the steering wheel or column (not shown), while the primary switch is preferably mounted on the instrument board and may control other circuits (not shown), and be combined with the mounting for the ignition switch, if desired.

While I have shown and described in considerable detail, a specific embodiment of my invention, it is to be understood that this showing and description is illustrative only and for the purpose of rendering the invention clear, and that I do not regard the invention as limited to the details of construction illustrated and described, except in so far as I have included such limitations within the terms of the following claims.

I claim as my invention:

1. In a lighting system for automobiles, an electric current supply source, headlights, an auxiliary light, a primary switch, a secondary switch, electrical means for producing either bright or dim illumination in said headlights, conductors adapted to connect said electrical means and said auxiliary light with said current supply source through said switches, the secondary switch having two operating positions in one of which it is adapted to effect the dimming of the headlights and the turning on of the auxiliary light, and in the other of which it is adapted to turn off the auxiliary light and produce bright illumination of the headlights, the primary switch being arranged to effect the bright or dim illumination of the headlights when the secondary switch is in the latter position, and to effect dim illumination only when the secondary switch is in the former position.

2. In a lighting system for automobiles, an electric current supply source, headlights, an auxiliary light, a primary switch having two circuit closing positions, a secondary switch, and conductors connecting said lights with said supply source through said switches, including means for dimming said headlights, said primary switch having a bright and a dim position the latter of which is unaffected by the secondary switch, either of said switches being adapted to cut in or cut out said headlight dimming means, and one of said switches being adapted to turn off and on the auxiliary light in any operative position of the other switch.

3. In a lighting system for automobiles, an electric current supply source, headlights, an auxiliary light, primary and secondary switches each having a plurality of operating positions, conductors adapted to connect said lights with said supply source through said switches, including a resistance for the headlight circuit, the primary switch being adapt-

ed when in one position to effect the dimming of the headlights independently of the secondary switch, and in another position, to cooperate with the secondary switch in one of its positions to cut in the auxiliary light and dim the headlights, and in another position of the secondary switch, to brighten the headlights and cut out the auxiliary light.

4. In a lighting system for automobiles, an electric current supply source, headlights, an auxiliary light, a primary switch, a secondary switch, conductors adapted to connect said lights with said supply source through said switches, including a resistance adapted to be placed in series with the headlights by means of either switch, the primary switch having two operating positions in each of which said source may be connected with the headlights through said resistance, said primary switch being adapted in one position to effect the dimming of the headlights independently of the secondary switch, and in the other, co-operating with said secondary switch either to brighten the headlights and cut out the auxiliary light, or to dim the headlights and cut in the auxiliary light.

5. In a lighting system for automobiles, an electric current supply source, headlights, an auxiliary light, a three-contact switch, a four-contact switch, and conductors adapted to connect said lights with said supply source through said switches, said four-contact switch having two operating positions, in one of which the auxiliary light is cut out, and in both of which it is adapted to close the headlight circuit, said three-contact switch having bright and dim positions, in either of which it is adapted to close the headlight circuit, and in the dim position it is adapted to be unaffected by either operating position of the four contact switch.

In testimony whereof, I affix my signature.

EDWARD E. HUNTINGTON.