

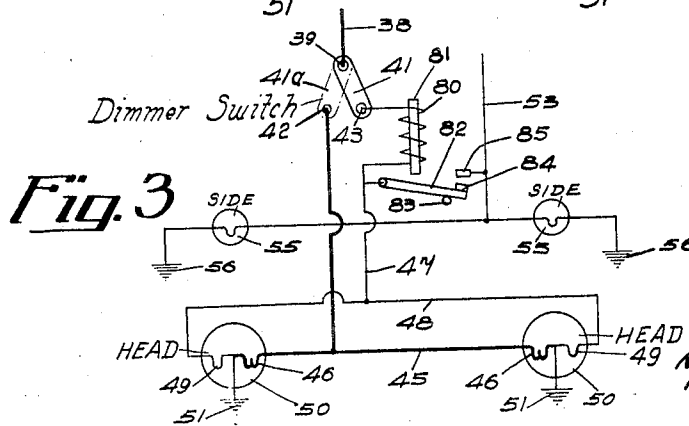
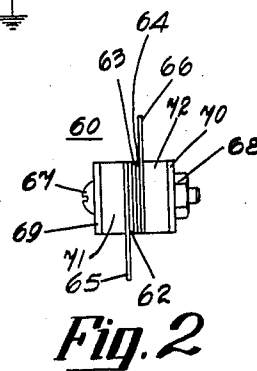
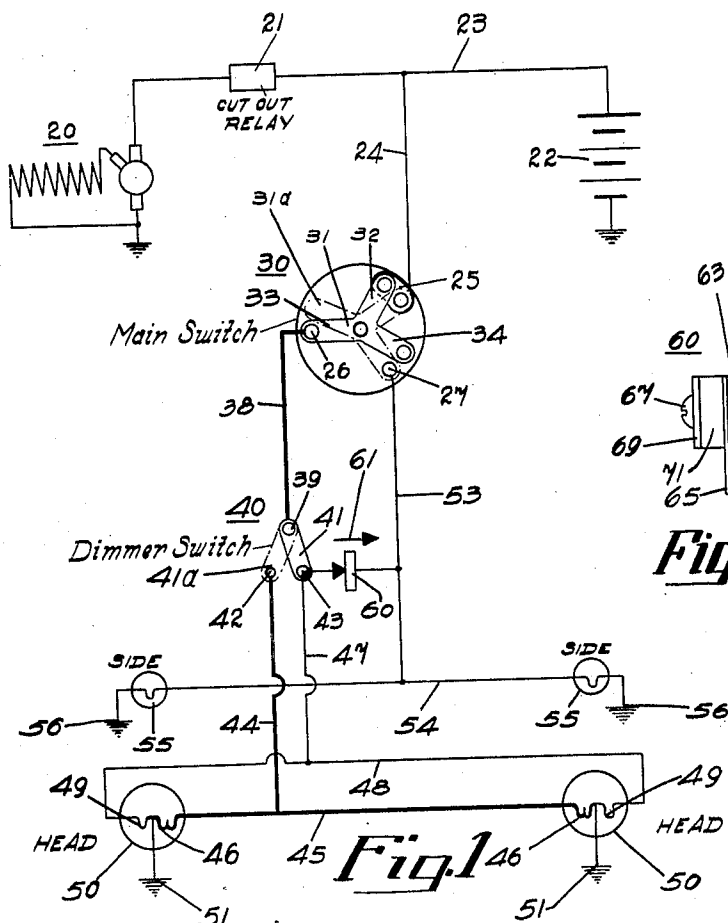
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AUTOMOBILE LIGHTING SYSTEM

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AUTOMOBILE LIGHTING SYSTEM

Application filed May 7, 1931. Serial No. 535,683.

This invention relates to an electric lighting system for an automotive vehicle and more particularly to the type of lighting system which comprises a main switch for turning on either the head lamps or the side lamps of the automobile as desired and a separate switch for controlling the dimming of the head lamps. Frequently the dimmer switch is foot operated and is mounted upon the floor of the automobile in convenient reach of the driver, while the main switch is mounted elsewhere for example on the instrument board or in such position as to be operated by a lever at the steering wheel.

It is an object of the present invention to provide for lighting the side lamps whenever the head lamps are dimmed. In the disclosed embodiment of this invention this aim is accomplished by means which requires no alteration of the main switch or of the dimmer switch. As provided a one-way electric valve or rectifier is located between the dimmer terminal of the dimmer switch and the circuit of the side lamps so that when the dimmer switch is turned to dim position the side lights will burn while the head lamps burn dimly. However, when the main switch is turned to bright position the circuit of the head lamp will disconnect the circuit of the side lamp and no current will flow back through the dimmer switch terminal through the head lamps dimming the circuit.

Further objects and advantages of the present invention will be apparent from the following description, reference being had to the accompanying drawing wherein a preferred embodiment of one form of the present invention is clearly shown.

In the drawing:

Fig. 1 is a diagrammatic view illustrating the use of the present invention.

Fig. 2 is a side view of a rectifier which can be used in the present system.

Fig. 3 is a diagram of a modification of the invention.

Referring to Fig. 1, 20 designates the generator connected by the usual cut-out or reverse current relay 21 with a storage battery 22. The battery charging system wire 23 is connected by a wire 24 with an elongated contact 25 of a main lighting switch 30 which is provided with a head lamp contact 26 and with a side lamp contact 27. The movable switch contact 31 is provided with arms 32, 33 and 34 engageable respectively with contacts 25, 26 and 27. Contact 26 is connected by a wire 38 with a terminal 39 of a dimmer switch 40 having a movable contact 41 for connecting the terminal 39 either with a bright terminal 42 or with a dim terminal 43 of the dimmer switch. The terminal 42 is connected by wires 44 and 45 with a light filament 46 of a head lamp 50 grounded at 51. Wires 47 and 48 connect terminal 43 with a dim filament 49 of a head lamp 50. Wires 53 and 54 connect the side lamp terminal 27 of the main switch 30 with a side lamp 55, grounded at 56.

The dim terminal 43 of the dimmer switch 40 is connected with the side lamp circuit wire 53 by a one-way electrical valve or rectifier 60 which will permit current for lighting purposes to pass in one direction only as indicated by an arrow 61. Referring to Fig. 2, showing a known form of electrical valve, numeral 62 designates a copper disc provided with a layer of copper oxide 63 which is clamped against a soft metal disc 64 made of lead or other soft conducting substance. The parts 62, 63 and 64 are clamped between terminal plates 65 and 66, by a bolt 67 and a nut 68 which extends through the parts 62 to 66 inclusive, and also through washers 69 and 70 and insulators 71 and 72. In this type of rectifier the amount of current which can flow from the copper disc 62 to the soft metal disc 64 is about three times that which will flow in the opposite direction. It is to be understood, however, that the present invention is not limited to the particular rectifier disclosed but other types may be used.

When the main switch movable contact 31 is turned into the full line position shown in Fig. 1, it will connect the battery terminal 25 of the switch 30 with the head lamp terminal 26. When the dimmer switch contact 41 is in the position 41a shown by the dot-dash line position in Fig. 1, the bright filament 46 of the head lamp 50 will burn. When the dimmer switch contact 41 is turned in the

full line position the dim filament 49 or filament of lower candle power of the head lamp 50 will burn, and at the same time sufficient current will be permitted to pass to the side lamp through the rectifier 60 to cause the side lamp to burn. When parking the automobile the main switch movable contact 31 is moved into parking position 31a indicated by the dot-dash lines. In this position, the contact 31 connects the battery terminal 25 with the side lamp terminal 27 and disconnects the head lamp terminal 26 from the battery. Current will then flow from the main switch 30 through the wires 53 and 54 to effect the lighting of the side lamps 55. Although the dimmer switch movable contact 41 engages the dim terminal 43 at this time no current can flow to the head lamp filament 49, because head lamp terminal 26 of the main switch is disconnected from the battery. Since the rectifier 60 affords substantially greater resistance to current flow from the wire 53 to the wire 47 there will be substantially no current flowing from the battery to the dim filament 49 of the head lamps while the main switch is in position for lighting the side lamps.

In the modified form of the invention shown in Fig. 3 the lighting of the side lamps 55 in response to the movement of the dimmer switch contact 41 into engagement with contact 43 is effected automatically by a relay comprising a magnet winding 80 connected in series with contact 43 and wire 47 and surrounding a core 81 toward which a magnetizable armature 82 is movable from its normal position in which it rests upon a strip 83. The armature 82 is connected with wire 47 and carries a contact 84 engageable with contact 85 connected with wire 53. Whenever the main switch movable contact 31 is in position for connecting the battery with the side lamps and the dimmer switch contact 41 is moved into dim position in which it engages contact 43, the magnet coil 80 will be energized to cause contact 84 to be engaged with contact 85 thereby permitting current to flow from wire 47 to the side lamps 55 thereby causing them to burn when the head lamps burn dimly. When the dimmer switch contact 41 is moved into position 41a in which it engages contact 42, the head lamp bright filaments 46 will be connected with the battery, but the side lamps 55 will not burn. When the main switch contact 31 is moved into position 31a in order to disconnect the head lamp circuit from the battery and to connect the side lamp circuit with the battery, current will not flow at the same time to the head lamps since the circuit between wires 53 and 47 is interrupted when magnet winding 80 is disconnected from the battery.

From the foregoing description of the construction and mode of operation of the pres-

ent invention it is apparent that I have provided for the lighting of the side lamps through the dimmer switch without requiring alteration of the dimmer switch or the main switch, in order to prevent the burning of the dim filament of the head lamps when parking.

While the form of embodiment of the present invention as herein disclosed, constitutes a preferred form, it is to be understood that other forms might be adopted, all coming within the scope of the claims which follow.

What is claimed is as follows:

1. A lighting system for vehicles comprising in combination; a current source; head lamp circuit; side lamp circuit; a switch for connecting either the head lamp circuit or the side lamp circuit with the current source; means independent of said switch having a control member movable into one position for causing a head lamp to burn brightly or into another position for causing the head lamp to burn relatively dimly; a conductor adapted to connect said independent means with said switch; and means responsive to movement of the control member into the "dim" position for causing the side lamp circuit and head lamp circuit to be connected with the current source.

2. A lighting system for vehicles comprising in combination; a current source; head lamp circuit; side lamp circuit; a switch for connecting either the head lamp circuit or the side lamp circuit with the current source; additional means having a control member movable into one position for causing a head lamp to burn brightly or into another position for causing the head lamp to burn relatively dimly; a conductor to connect said additional means with said current source through said switch; and a one-way valve connected in parallel upon movement of the control member into the "dim" position for causing the side lamp circuit to be connected with the current source.

3. A lighting system for vehicles comprising in combination; a current source; a plurality of head lights; a plurality of side lights; a circuit controller electrically connecting the head lights and side lights to said current source; a bright circuit and a dim circuit; manual means independent of said circuit controller for connecting alternately the bright and the dim circuits with the controller said independent means being electrically connected with said controller; a circuit for connecting the side lights to the controller; and means for connecting the dim circuit and the side light circuits in parallel.

4. A lighting system for vehicles comprising in combination; a current source; a bright head light circuit; a dim head light circuit; a side light circuit; a circuit controller for connecting each of said circuits to the cur-

rent source; a rectifier connected in parallel with the dim circuit and interposed between said dim circuit and said side circuit; and means to actuate the circuit controller connecting the side circuit with the current source without affecting the dim and "bright" circuits.

5. A lighting system for vehicles comprising in combination; a current source; a head lamp circuit; a side lamp circuit; a switch operable in one position to connect the side lamp with the current source or movable in another position to connect the head lamp with the current source without affecting the head lamp circuit; means having a control member movable in one position for causing the head lamp to burn brightly or in another position for causing the head lamp to burn relatively dimly; and a one-way valve connected in parallel with the dim circuit upon the movement of the control member into the "dim" position for causing the side lamp to be connected with the current source.

6. A lighting system for vehicles comprising in combination; a current source; a head lamp electrically connected to the current source; a side lamp electrically connected to the current source; a rectifier interposed between the head lamp and the side lamp circuits; and means operable in one position to cause the head lamps to burn brightly or into another position to cause the head lamps to burn dimly and cooperating with the rectifier to cause the side lamp to burn simultaneously therewith.

7. A lighting system for vehicles comprising in combination; a current source; head lamp circuit; side lamp circuit; a switch for connecting either the head lamp circuit or the side lamp circuit with the current source; means operable independent of and connected electrically with said switch having a control member movable into one position for causing a head lamp to burn brightly or into another position for causing the head lamp to burn relatively dimly; and electro-magnetic means responsive to movement of the control member into the "dim" position for causing the side lamp circuit to be connected with the current source.

8. A lighting system for vehicles comprising in combination; a current source; a plurality of head lights; a plurality of side lights; a manually operable circuit controller electrically connecting the head lights and side lights to said current source, a bright circuit and a dim circuit; additional manual means for connecting alternately the bright and the dim circuits with the controller; a circuit for connecting the side lights to the controller; and electro-magnetic means for connecting the dim circuit and the side light circuits in parallel.

9. A lighting system for vehicles comprising in combination; a current source; a plu-

70 rality of head lights; a plurality of side lights; a circuit controller electrically connecting the head lights and side lights to said current source; a bright circuit and a dim circuit; manual means independent of said circuit controller for connecting alternately the bright and the dim circuits with the controller; a circuit for connecting the side lights to the controller, a switch for connecting the dim circuit with the side light circuit; and an electro-magnet in the dim circuit for effecting the closing of said independent switch when said manual means is operated to connect the dim circuit with the controller.

10. In a lighting system, the combination comprising, a current source, head lights having a bright and a dim filament, a side light, a circuit controller electrically connecting the head light and side light to said current source, a bright circuit and a dim circuit, a switch operable independently of said circuit controller for connecting alternately the bright and dim circuits with the circuit controller, said dim circuit including a one-way valve connected in parallel with the dim circuit and causing said side light to be connected with the current source; and means to actuate the circuit controller to a position for closing the side light circuit with the current source without affecting the dim and "bright" circuits.

In testimony whereof I hereto affix my signature.

FRANK H. PRESCOTT.

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