An apparatus for decreasing the intensity of car signal lamps comprises a plurality of signal lamp circuits respectively including pairs of signal lamps such as taillights, stoplights, and turn signal lights, a light intensity decrease-preventing circuit and a switch for a pair of fog lamps. The signal lamp circuits respectively have selector switches and light intensity decreasing resistors. The light intensity decrease-preventing circuit includes a relay coil and a diode connected in series to each other. The switch for fog lamps is connected in parallel to the light intensity decrease-preventing circuit. The selector switches are changed over so that the fog lamps are lighted and the light intensity of the signal lamps is not decreased. Thereby, the fog lamps can be lighted without decreasing the light intensity of the signal lamps. However, the intensity of the signal lamps can be decreased only when the fog lamps are turned off and the lighting switch is closed.

1 Claim, 1 Drawing Figure
APPARATUS FOR DECREASING THE INTENSITY OF CAR SIGNAL LAMPS

BACKGROUND OF THE INVENTION

a. Field of the Invention

The present invention relates to an apparatus for decreasing the intensity of car signal lamps such as taillights, stoplights, and turn signal lights of cars or other types of vehicles.

b. Description of the Prior Art

When the brightness of the signal lamps of the car is increased so as to raise their visibility in the daytime, this daylight intensity is too bright and dazzling in the nighttime, and there is the danger of interfering with the vision of the driver of the following car. In order to decrease the intensity of the lights at night to less than that used in daylight, light decreasing resistors are inserted in the respective signal lamp circuits by closing the lighting switch. Generally, this resistor inserting operation is carried out by closing the lighting switch and exciting a relay coil and then switching over the selector switches of the respective signal lamps. However, as mentioned above, in the conventional apparatus of this type, when the lighting switch is closed so as to light fog lamps or headlamps even at a time when a long visual distance of the signal lamps is required as in the case of fog, rain, or dusk, the intensity of the signal lamps is automatically decreased, which causes a problem for safe driving.

SUMMARY OF THE INVENTION

An object of the present invention is to overcome the above-mentioned conventional drawback.

Another object of the present invention is to provide an apparatus for decreasing the intensity of car signal lamps, wherein only when the fog lamps are turned off and the lighting switch is closed, that is, during the time when only the headlamps are being used, the intensity of the signal lamps is decreased; but when the lighting switch is closed and the fog lamps are lighted, the intensity of the signal lamps is not decreased.

A further object of the present invention is to provide an apparatus for decreasing the intensity of car signal lamps such that wherein when a long visual distance is necessary as in the case of fog, rain, or dusk, and also when it is preferable to clearly illuminate the area forward of the car to some degree, the fog lamps can be lighted without decreasing the intensity of the signal lamps.

Further features and advantages of the present invention will be apparent from the ensuing description with reference to the accompanying drawing.

BRIEF DESCRIPTION OF THE DRAWING

The drawing is a circuit diagram of the present invention showing fog lamps and signal lamp circuits, in which headlight circuits are omitted.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring to the drawing, 1 is a battery, 2 is a lighting switch, 3 and 4 are taillights, 5 and 6 are stoplights, and 7 and 8 are turn signal lights. It is well known that when lighting switch 2 is closed, taillights 3 and 4 are lighted; when brake switch 9 is closed, stoplights 5 and 6 are lighted; and when contact point P1 or P2 of direction indicating selector switch 10 is closed, turn signal light 7 or 8 is lighted.

Further, as is well known, turn signal lights 7 and 8 are intermittently turned on and off by a flasher unit 11. The taillights 3 and 4 are respectively connected to a common circuit A provided with a light intensity decreasing resistor R1. However, this resistor R1 is not particularly necessary in the present invention. The stoplights 5 and 6 are respectively connected to a common circuit B provided with a selector switch S1 consisting of a parallel circuit of a normally closed contact K1 and a light intensity decreasing resistor R2. The turn signal lights 7 and 8 are respectively connected to different circuits C and D.

Circuit C is provided with a selector switch S2 consisting of a parallel circuit of a pair of contact points P1 and a pair of contact points P2 of selector switch 10. When relay coil 12 is excited, a current flows into fog lamps 14 and 15 via relay coil 12 and diode 13, so that relay coil 12 is energized.

When relay coil 12 for driving said selector switches S1, S2, and S3 is not energized, the contactor K1 is closed, and the contactors K2 and K3 are respectively contacted with the contact points P1 and P2. However, when relay coil 12 is excited, the contactor K1 is opened and the contactors K2 and K3 are respectively switched over to the contact points P3 and P4. Said relay coil 12 and a diode 13 connected in series to each other compose a light intensity decrease-preventing circuit. This circuit and switch 16 for a pair of fog lamps 14 and 15 are connected in parallel to each other.

It should be noted that said diode 13 is so connected that relay coil 12 is not actuated when the fog lamp switch 16 is closed.

Since the apparatus for decreasing the intensity of car signal lamps according to the present invention is constructed as described above, fog lamps 14 and 15 can be lighted without decreasing the light intensity of the signal lamps. That is, when both lighting switch 2 and fog lamp switch 16 are closed, fog lamps 14 and 15 are lighted. In this case, the current to be supplied to relay coil 12 via fog lamp switch 16 is cut off by diode 13. Further, by closing lighting switch 2, taillight 3 and 4 are lighted; however, since the light intensity decrease-preventing circuit including relay coil 12 and diode 13 is short-circuited by fog lamp switch 16, relay coil 12 is not excited. In this case, selector switches S1, S2, and S3 are maintained in a condition as shown in the drawing, and fog lamps 14 and 15 can be lighted while lighting taillights 3 and 4 and the other signal lamps with the same brightness as for the daytime. Next, when fog lamp switch 16 is opened and lighting switch 2 is closed, a current flows into fog lamps 14 and 15 via relay coil 12 and diode 13, so that relay coil 12 is ener-
gized and selector switches S₁, S₂, and S₃ are changed over and the light intensity decreasing resistors are inserted into the respective signal light circuits. Consequently, in this case, taillights 3 and 4 are turned on in a reduced light intensity condition and when brake switch 9 is closed, stoplights 5 and 6 are lighted in a reduced light intensity condition; further, when contact point P₁, or P₂, of the direction indicating switch 10 is closed, turn signal light 7 or 8 is lighted also in a reduced light intensity condition. Further, as described above, when fog lamp switch 16 is opened and lighting switch 2 is closed, a current passes thru the fog lamp circuit. However, by the resistance of relay coil 12, or if necessary, by further inserting an additional resistor in this circuit, fog lamps 14 and 15 can be substantially made so as not to be lighted.

As already mentioned, according to the present invention, the visual distance of the signal lamps can be made longer for situations such as fog, rain, or dusk. Further, the present invention has an effect that the signal lamps can be lighted in the same brightness as in the daytime when it is necessary to illuminate the area forward of the car under a condition that the fog lamps are lighted. Of course, when it is not necessary to use the fog lamps in the nighttime, the light intensity of the signal lamps is automatically decreased by turning off the fog lamps, so that blinding of the driver of the following car can be prevented.

We claim:

1. An apparatus for decreasing the intensity of car signal lamps, comprising:
   a plurality of signal lamp circuits respectively including pairs of signal lamps such as taillights, stoplights and turn signals, each of said lamps respectively serially connected to a parallel circuit comprised of a leg having a normally closed selector switch and a leg having a light intensity decreasing resistor each of said circuits adapted to be connected to a power source;
   a light intensity decrease-preventing circuit comprising a relay coil and a diode appropriately serially connected thereto, said relay coil being operatively coupled to each of said normally closed selector switches for activation thereof when sufficient current flows through said relay coil;
   a fog lamp;
   a normally opened fog lamp switch serially connected to said fog lamp and said light intensity decrease-preventing circuit being connected in parallel with said fog lamp switch, one end of said parallel connection adapted to be connected to a power source;
   whereby said relay coil may be activated when said fog lamp switch is in the normally open position thereby activating said normally closed selector switches operatively coupled to said relay coil and said relay coil being deenergized when said fog lamp switch is closed thereby causing said selector switches to return to their normally closed states.

   * * * *