

June 12, 1928.

1,673,581

F. NAUGLE

LIGHT DIMMER SWITCH

Filed Jan. 28, 1925

FIG. 1.

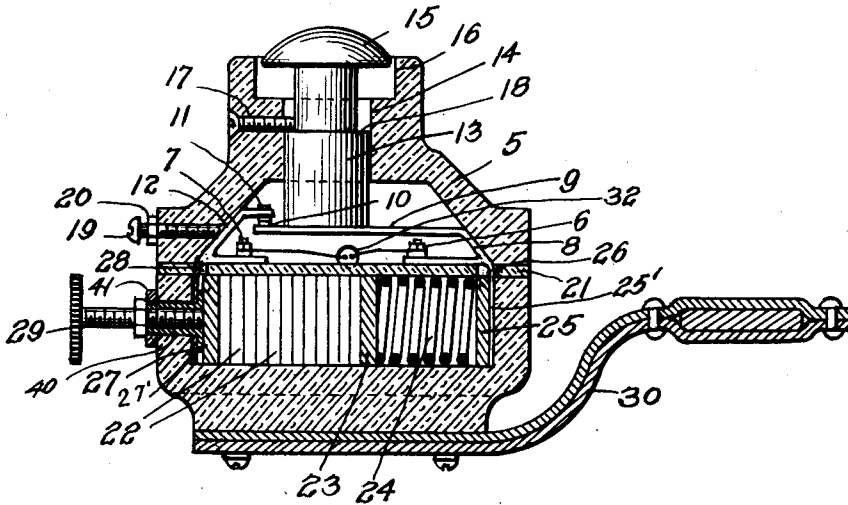


FIG. 2.

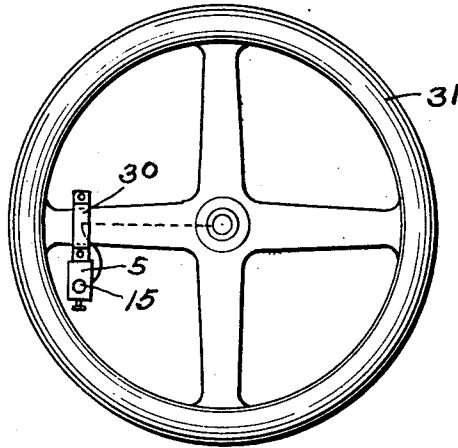
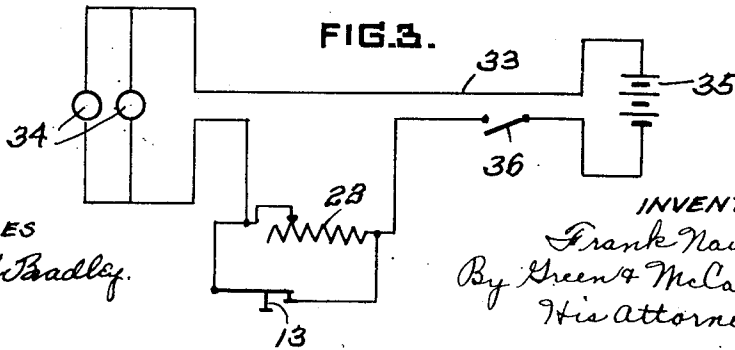


FIG. 3.



WITNESSES
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LIGHT-DIMMER SWITCH.

Application filed January 28, 1925. Serial No. 5,236.

This invention relates to electric switches and more particularly to dimmer switches of the resistance type used in connection with the lighting circuits of motor vehicles.

5 The trouble encountered in night driving which is caused by the glaring headlights of passing motor vehicles is too well known to warrant description, and it must be admitted that the use of special lenses and
10 focusing of the light bulb has failed to eliminate this cause of danger. The most effective remedy is for drivers to dim the vehicle lights on passing, but this remedy is generally disregarded, due to the difficulty of
15 manipulating the dimmer switch, because of its usual inaccessible location on the dash.

An object of this invention is to provide a switch of the type set forth which can be easily operated so as to momentarily dim the
20 headlights of the vehicle to which it is adapted and which can also be located in any position convenient to the driver such, for example, as on the steering wheel of the vehicle.

25 A further object is to provide a switch of the type set forth which can be easily operated to dim the headlights without removing the hand from the steering wheel and which will automatically operate to brighten the
30 headlights when the necessity for dimming has passed.

A still further object is to provide a dimmer switch which can be readily attached to any motor vehicle, which is simple and
35 cheap to construct and is positive in operation.

These and other objects which will be apparent to those skilled in this particular art are accomplished by means of this invention, one embodiment of which is shown for
40 the purposes of illustration in the accompanying drawings, in which Figure 1 is a transverse section through one form of apparatus embodying this invention. Fig. 2 is a
45 plan view of the same attached to the steering wheel of a motor vehicle and Fig. 3 is a diagrammatic view of a lighting circuit showing the application of this invention thereto.

50 The illustrated embodiment of this invention includes a housing 5 formed of any desired insulating material and provided with binding posts 6 and 7. One binding post 6 is secured to a terminal plate 8 having a
55 spring arm 9 extending across the hollow in-

terior of the body portion 5. A contact 10, formed on the free end of the arm 9, is adapted to ordinarily engage a second contact piece 11 formed on a terminal plate 12 which is secured to the other binding post 7. 60

A push button 13 extends upwardly through an opening 14 formed in the top of the housing 5 and at its lower end rests upon the terminal plate spring arm 9. The head 15 of the push button is adapted to slide
65 within a counterbore 16 and a stop screw 17 extends inwardly to the opening 14 so as to engage a shoulder 18, formed on the push button, and prevent its accidental removal from the device. 70

A set screw 19 engages the terminal plate 12 and is adapted to adjust the position of the contact 11 and the latter may be locked in the adjusted position by means of a lock nut 20 on the set screw. 75

The terminal plates are mounted upon a removable insulating partition plate 21 which separates the interior of the housing into an upper and lower compartment. A dimming resistance is provided in the lower
80 compartment and includes a series of carbon or graphite discs 22 which cooperate to form a built up resistance. A metal spring follower 23 is slidably mounted in the lower compartment and is yieldingly pressed into
85 engagement with one end of the resistance by a spring 24 inserted between the spring follower and a conducting plate 25 which is electrically and mechanically connected to an arm 25' formed on the terminal plate 8
90 and extending downwardly through a perforation 26 formed in the insulating partition plate 21.

The other end of the resistance engages a follower 27 which is electrically connected
95 with the terminal plate 12 by means of a depending arm 27' extending through a perforation 28 in the partition and clamped against a headed bushing 40 by means of a nut 41 threaded on the outer end thereof. 100
The follower 27 may be moved longitudinally of the lower compartment by means of a resistance adjusting screw 29 threaded through the bushing 40 so as to vary the pressure between the plates 22 and to correspondingly vary the resistance thereof. 105
The screw 29 forms an electrical connection between the bushing 40 and the follower 27. This provides a positive control over the degree of dimming made necessary by low 110

battery voltage, different road conditions or variations in lamps or reflectors as well as desires of the driver.

5 A mounting or clamp 30 is secured to the housing so that the latter may be attached to any convenient part of the motor vehicle, such, for example, as a spoke of the steering wheel 31, as illustrated in Fig. 2.

10 An opening 32 is provided in the housing through which the wires of the lighting circuit may be introduced for attachment to the terminal posts 6 and 7.

The switch is inserted directly in the lighting circuit 33 which carries the current 15 to the headlights 34 from any desired source 35. Assuming that the dash switch 36 is closed the current ordinarily passes through the terminal plates 8 and 12 and the contacts 10 and 11 so that the headlights give their 20 full effect when the dash switch is properly closed in the usual manner. When it is desired to momentarily dim the headlights, such as when passing another vehicle, it is merely necessary to depress the push button 25 13 so as to separate the contacts 10 and 11 against the spring pressure of the arm 9. This breaks the short circuit around the resistance and forces the current to pass there-through with the corresponding dimming 30 effect or lessening of the current passing through the headlights. When the other ve-

hicle has been passed the short circuit is automatically closed upon release of the push button by the spring arm 9 again bringing the contacts 10 and 11 into electrical connection. The operation of the device is so 35 simple as to induce the driver to use it. It can be operated without moving the hand from the wheel or can be so placed as to render it operable by the knee or elbow, and 40 the resistance is automatically cut out so as to brighten the headlights when the necessity for dimming has passed.

Having thus described the preferred embodiment of my invention, what I claim as 45 new and desire to secure by Letters Patent is:

A dimmer switch for lights including a housing, a variable pile resistance within said housing and included in the light circuit, an adjusting screw extending through 50 one wall of said housing for varying said resistance, a shunt circuit for short circuiting said resistance, including a yielding contact and a push button for moving said contact 55 to break said shunt circuit and dim said lights.

In testimony whereof, I have hereunto subscribed my name this 7th day of January, 1925.

FRANK NAUGLE.