Nov. 17, 1925. 1,562,007

H. C. SMITH ET AL

FOOT CONTROLLED DIMMER

Filed March 1, 1924

Fig. 1.

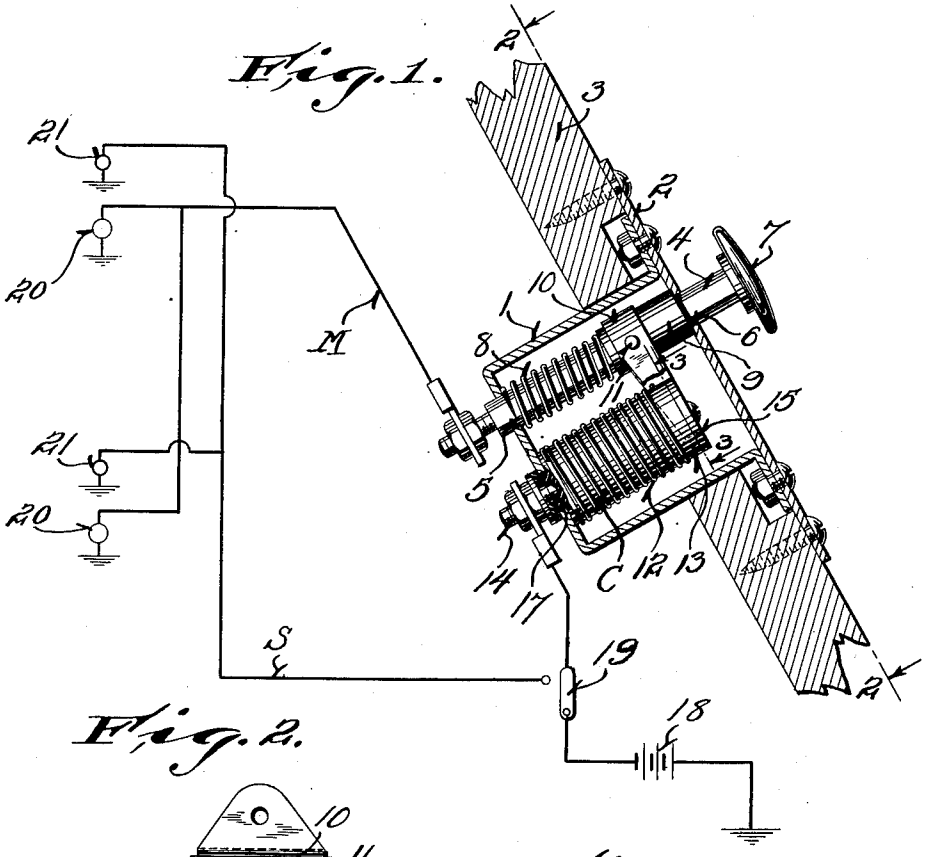


Fig. 2.

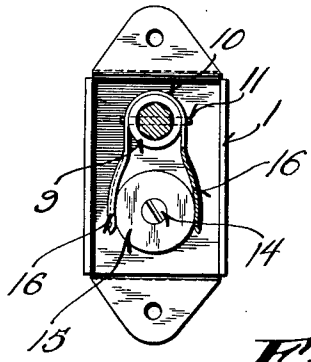


Fig. 3.

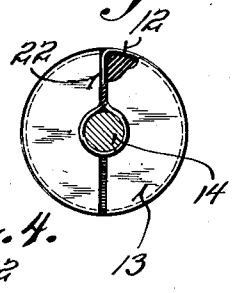
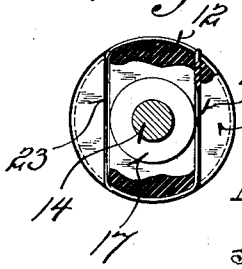


Fig. 4.



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UNITED STATES PATENT OFFICE.

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FOOT-CONTROLLED DIMMER.

Application filed March 1, 1924. Serial No. 696,334.

To all whom it may concern:

Be it known that we, HARRY C. SMITH and PERCY ROBERT COCKCROFT, both citizens of the United States, and residents of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Foot-Controlled Dimmers; and we do hereby declare that the following is a full, clear, and exact description thereof.

This invention relates to foot controlled dimmers for automobile headlights.

The object of the invention is to provide a simple inexpensive headlight dimmer to be installed in the floor board of an automobile and operated by foot.

This type of dimmer is particularly advantageous as it permits the driver to dim the headlights of the machine without removing either hand from the steering wheel. A further advantage of this invention lies in the fact that an electrical contact is formed when the dimmer is not in use and hence the driver is not required to keep a foot on the plunger which operates the dimmer when driving with the headlights lit.

An embodiment of the invention is shown in the accompanying drawings in which:—

Figure 1 represents a longitudinal section of the device in position on the car together with a wiring diagram.

Figure 2 is a view taken on the line 2—2 of Figure 1.

Figure 3 is a view taken on the line 3—3 of Figure 1 showing the means of fastening the resistance coil to the main circuit.

Figure 4 is an end view of the insulated resistance coil and shows the means for fastening the dead end of the resistance wire.

Referring to the drawings more particularly by numerals, 1 represents the casing which is suitably mounted on the plate 2, said plate being fastened in a suitable manner to the floor board 3 of the machine as a means for mounting the unit.

The hexagonal movable foot plunger 4 is slidably mounted through the hexagonal apertures 5 and 6 of the casing 1 and the plate 2, respectively. The hexagonal foot plunger is provided with a knob or disc 7 upon which the pressure of the foot is exerted to operate the dimmer. The spring 8 which surrounds the plunger 4 bears on the casing 1 and against the collar 9 thus acting to restore the foot plunger 4 to its natural position after the pressure of the foot has been released from the knob 7. The jawed contact 10 is rigidly mounted on the collar 9 and plunger 4 by means of the pin 11.

The resistance coil C formed by the wire 12 is wound on an insulated core 13, which is mounted in the casing 1 by means of the bolt 14. The metal disc 15 which is held in position by the bolt 14 is in engagement with the jaws 16 of the contact 10 and serves as a means for completing the electrical circuit when the foot plunger 4 is in its normal position. The insulated core 13 is provided with a shoulder 17 which serves to insure a perfect insulation of the resistance coil C from the casing 1.

The wiring diagram consists of the battery 18 with a ground connection, the switch 19 which is adapted to close selectively either the main circuit M; which includes resistance coil C, the plunger 4, and the lamps 20 of the headlights with their respective ground connections; or the second circuit S which includes the dimmer lamps 21 with their respective ground connections.

The method of connecting the resistance coil C to the main circuit M through the bolt 14 is shown in Figure 3. The wire 12 is placed in the slot 22 and then wound about the bolt 14 and then turned back into the slot and wound about the portion of the wire in the slot. In this manner a contact is formed between the resistance coil and the main circuit M.

The method of fastening the dead end of the resistance coil C on the core 13 is shown in Figure 4 and is accomplished by directing the wire 12 through the slot 23 thence around the bottom of the core 13 and back through the slot 24; it is then bent over one of the turns in the coil directed back into the slot 24 and there fastened to the piece of the wire already in the slot 24.

The operation of the dimmer is very simple in its nature; when pressure is exerted on knob 7 the plunger 4 is depressed carrying with it the contact 10 and the jaws 16. These jaws 16 slide over the resistance coil C and in engagement therewith. When the jaws 16 have moved a sufficient distance to break their contact with the disc 15 it then becomes necessary for the current supplied to the main circuit M to pass through the resistance wire 12. The resistance in the portion of the wire 12 which is now in the main circuit M is sufficient to materially decrease

the ordinary voltage supplied to the headlights; hence they are dimmed. The intensity of the headlights is regulated by the amount of resistance which is thrown into the main circuit M so the distance through which the plunger 4 is moved is the controlling element in the dimming of the headlights.

It will be observed that owing to the foot control the operator can produce a series of intermittent flashes for signalling an oncoming vehicle operating full glare lights and, of course, the dimmers can be held in their functioning position for any length of time without inconveniencing the operator who has full use of both hands for manipulating the machine.

The object of the polygonal shape of the foot plunger 4 and the apertures 5 and 6 is to prevent a rotary motion of the foot plunger when it is depressed. The elimination of this motion insures a perfect contact between the resistance coil C and the contact jaws 16 which is essential to the perfect operation of the device.

Although the invention has been described in considerable detail in the foregoing specification; it is understood that it may be embodied in various ways without departing from the spirit of the invention and hence is to be limited only by the claim hereinafter recited.

We claim:—

A foot control dimmer for automobiles comprising a plate adapted to be secured to the automobile, a casing suspended from said plate and secured thereto, a plunger slidably mounted in said plate and casing and having a foot operated knob, a spring urging said plunger upwardly, a pair of spring contact fingers of resilient material carried by said plunger, an insulating pillar secured within said casing, a resistance element wound about said pillar and embraced by said spring contact fingers, said pillar having a contact at its upper end contacting with one end of said resistance element.

In testimony that we claim the foregoing we have hereunto set our hands at Milwaukee, in the county of Milwaukee and State of Wisconsin.

HARRY C. SMITH.
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