

K. KLEINERT.
DIMMING SWITCH FOR PROJECTION LAMPS.
APPLICATION FILED AUG. 2, 1915.

1,238,155.

Patented Aug. 28, 1917.

Fig. 1.

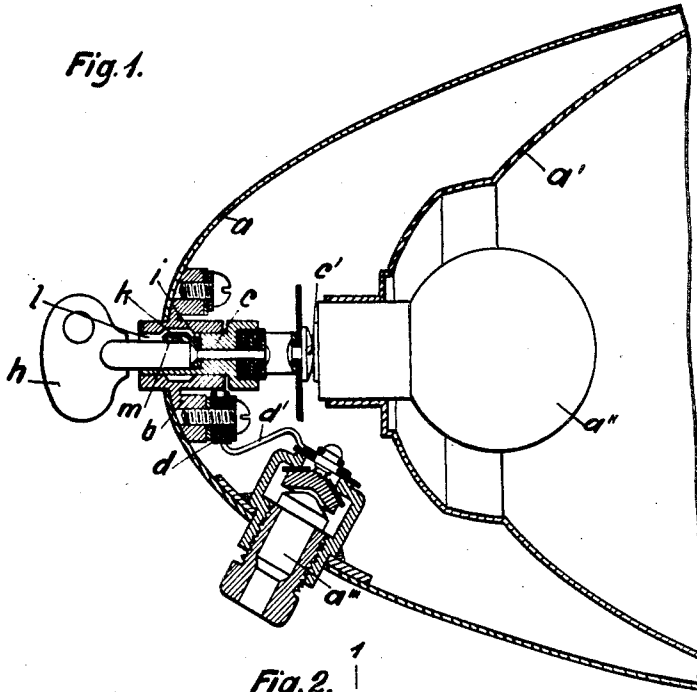


Fig. 2.

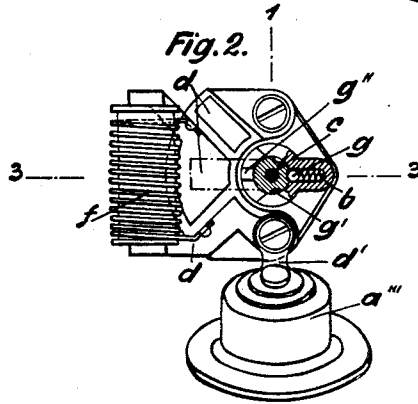
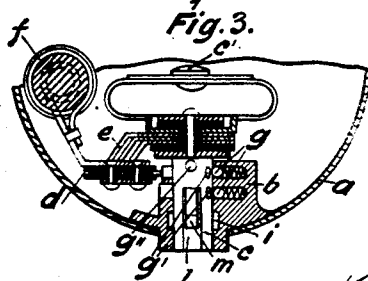


Fig. 3.



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UNITED STATES PATENT OFFICE.

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DIMMING-SWITCH FOR PROJECTION-LAMPS.

1,238,155.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, KARL KLEINERT, a subject of the Emperor of Austria-Hungary, residing at Traubenstrasse 57, Stuttgart, Germany, have invented certain new and useful Improvements in Dimming-Switches for Projection-Lamps; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

It is sometimes desirable to provide for electric projection lamps, a dimming switch with a removable key for positioning the switch and for locking it in operative position against unauthorized use. This is particularly the case for headlights on automobiles or motor boats which are often left unattended. With this idea in view, I provide a dimming switch having a key, which, when in operative position can turn the switch to provide the desired electrical connection from the source of current supply to the arc or incandescent lamp forming the source of light, and which can be removed. In the preferred embodiment the key is removable at all operative positions of the switch, that is, whether the lamp is cut off, dimmed, or burning at full candle power; and the switch together with the dimming resistance are mounted directly in the lamp housing. These and other features are described hereinafter and shown in the accompanying drawings in which,

Figure 1 is a central vertical section along line 1—1 of Fig. 2, showing the preferred embodiment with an incandescent headlight for an automobile as an example;

Fig. 2 is a front view of the dimming switch apparatus alone; and

Fig. 3 is a section on line 3—3 of Fig. 2.

The headlight is provided with a housing *a*, a reflector *a'*, an incandescent lamp *a''*, and a cable connector *a'''*, in the well known way. The switch socket *b* is fastened centrally of the housing so as to project outwardly thereof through the rear opening as shown. The three contact segments *d* are mounted on the switch socket and insulated from each other. The resistance coil *f* is supported by the intermediate contact segment and one of the outer contact segments. The ends of the resistance winding of the coil are electrically connected to the supports so that the winding is connected between

the two contact segments. The cable connector *a'''* is electrically connected through the conductor *d'* to the same outer contact segment, and the other outer contact segment is electrically disconnected so as to give the switch a cut-out position.

The switch shaft *c* is rotatably mounted in the switch socket with its axis in line with the contact button of the base of the incandescent lamp *a''*. The switch shaft carries a contact button *c'* spring pressed into frictional contact with the contact button on the lamp base, and it also carries a brush *e* electrically connected to the button *c'* and adapted to engage the contact segments *d* successively when the switch shaft is rotated. The other terminal of the lamp filament is connected to the shell of the lamp base and therethrough to the casing *a* of the headlight and the other terminal of the cable connector *a'''*. Thus, when the brush *e* engages the disconnected contact segment *d*, the filament of the lamp *a''* is cut out; and when the brush *e* engages the intermediate contact segments *d*, the lamp is dimmed by the resistance *f*; and finally when the brush *e* engages the contact segment connected to the cable connector, the lamp burns at full candle power.

The spring pressed balls *g* are adapted to engage the depressions *g'* in the switch shaft when the brush *e* engages any one of the contact segments *d*. Thus the brush is lightly held in operative position notwithstanding the vibration to which the equipment is subjected. The switch shaft *c* is also provided with a pin *g''* arranged to engage an abutment on the socket *b* in both limiting positions of the switch shaft.

The key *h* is adapted to turn the switch shaft *c* to bring the brush *e* into engagement with the contact segments *d* successively. The switch shaft has a key hole *i* for the key and a groove *l* permitting the insertion and withdrawal of the tongue *k* of the key in whatever position the brush *e* may have. The bent spring *m* snaps over the tongue *k* and disengageably holds the key in turning engagement with the switch shaft.

By the foregoing means, the brush *e* may be brought into engagement with any one of the contact segments *d*, to cut off the lamp, or to cause it to burn at full or reduced candle power, and the key *h* may be removed at any of these positions to prevent unau-

10 paratus with the projection lamp, as shown, an efficient electrical contact is provided between the button *c'* and one terminal of the lamp filament. The dimming coil *f* is nicely associated with the switch so that extra wires
15 and connections for connecting it in electrical circuit are obviated by the construction of the supporting means therefor. The whole arrangement is compact and not liable to be rendered inoperative by vibration and the provision of the removable key as aforesaid, permits the desired connection of the headlight while the car is unattended without the possibility of unauthorized interference.

20 Having thus described my invention, what I claim is:

1. The combination with a projection lamp having a housing and an incandescent lamp, of a key operated dimming apparatus mounted inside of the housing and comprising a key socket, a removable key positioned in said socket by said key, a plurality of segments fast with said socket and insulated from each other, a brush carried by said
30 shaft in position to engage said segments successively, a dimming resistance electrically connected between segments, a contact member carried by said shaft in electrical connection with the brush and with the insulated terminal of the lamp, and electrical connections to the other terminal of the lamp and to said shaft to complete the circuit through the switch and lamp.

45 2. The combination with a projection

successively, a dimming resistance electrically connected between segments, a contact member carried by said shaft in electrical connection with the brush and with the insulated terminal of the lamp, and electrical connections to the other terminal of the lamp and to said shaft to complete the circuit through the switch and lamp, said key being removable from said socket at all engaged positions of the brush.

3. The combination with a projection lamp having a housing and an incandescent lamp, of a key operated dimming apparatus mounted inside of the housing and comprising a key socket, a removable key positioned in said socket, a switch shaft rotatable in said socket by said key, yielding means lightly holding said key in said socket in engagement with said shaft, a plurality of segments fast with said socket and insulated from each other, a brush carried by said
75 shaft in position to engage said segments successively, a dimming resistance electrically connected between segments, a contact member carried by said shaft in electrical connection with the brush and with the insulated terminal of the lamp, and electrical connections to the other terminal of the lamp and to said shaft to complete the circuit through the switch and lamp.

In testimony whereof I affix my signature, 85 in presence of two witnesses.

KARL KLEINERT.

Witnesses:

ADOLF LEBBERS,
PAUL WOLFART.