F. E. ALTEMUS.

LIGHTING SWITCH.

APPLICATION FILED OCT. 28, 1915.

1,298,854.

Patented Apr. 1, 1919.

2 SHEETS—SHEET 1.

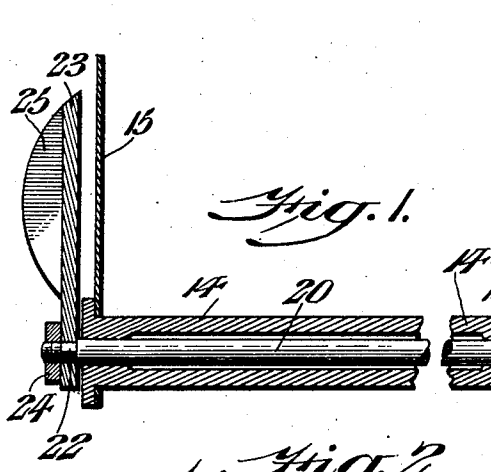


Fig. 1.

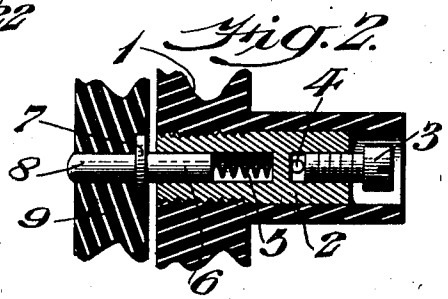


Fig. 2.

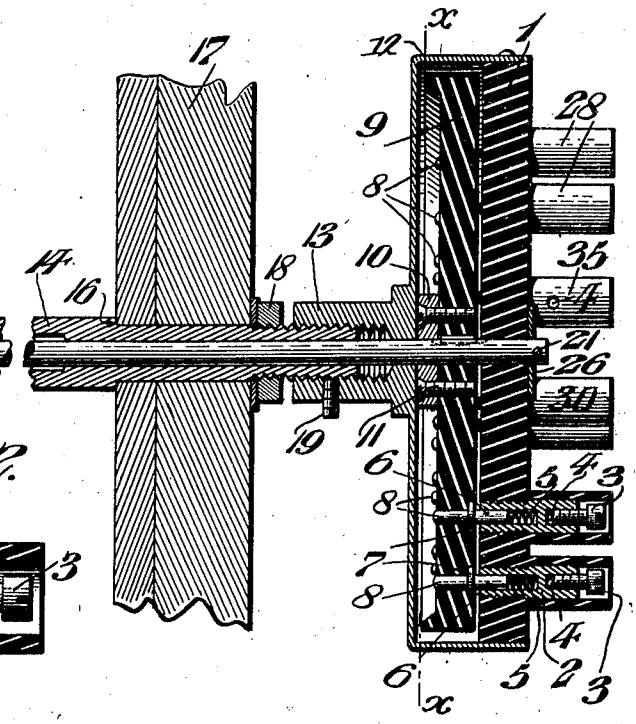


Fig. 4.

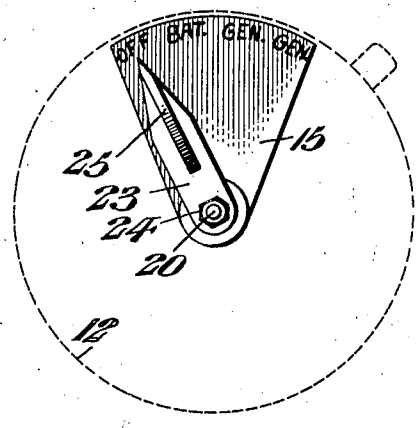
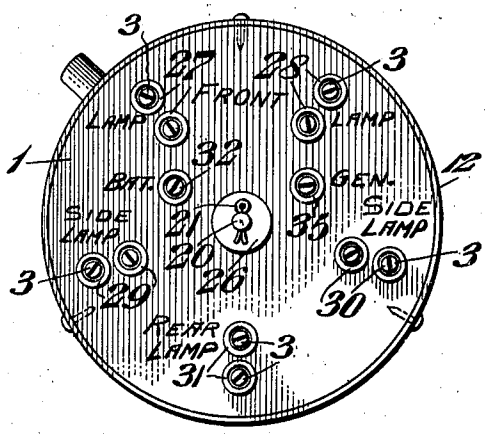


Fig. 3.



WITNESSES

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2 SHEETS—SHEET 2.

Fig. 5.

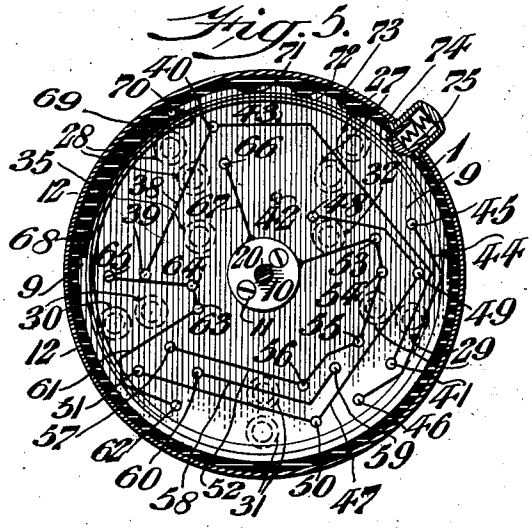


Fig. 6.

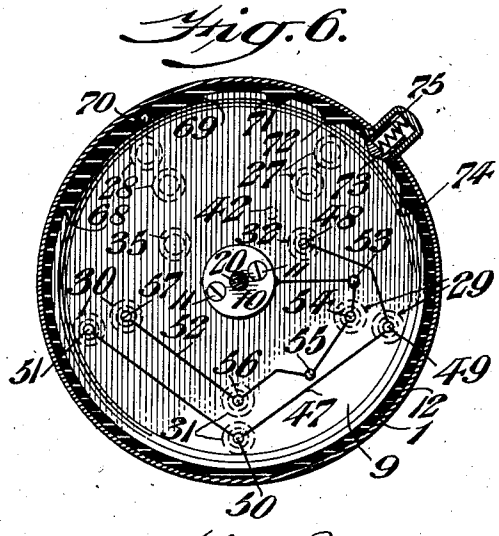


Fig. 7.

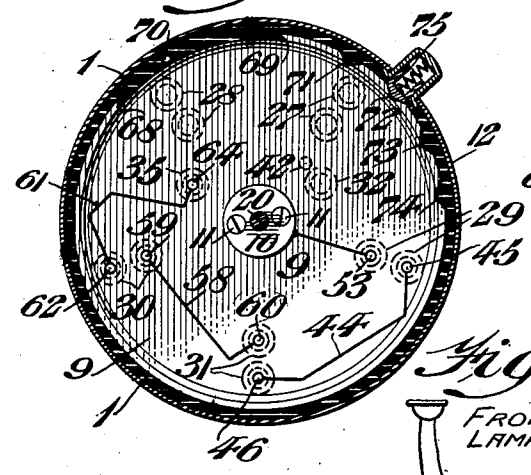


Fig. 8.

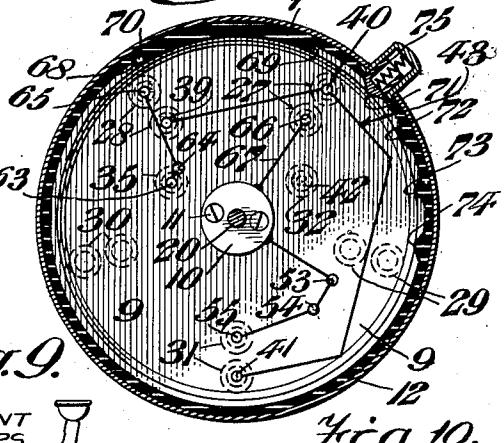


Fig. 9.

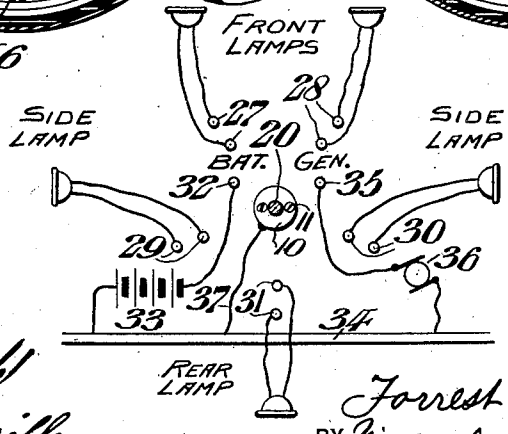
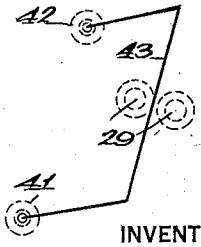


Fig. 10.



WITNESSES

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UNITED STATES PATENT OFFICE.

FORREST E. ALTEMUS, OF PHILADELPHIA, PENNSYLVANIA.

LIGHTING-SWITCH.

1,298,854. Specification of Letters Patent. Patented Apr. 1, 1919.

Application filed October 28, 1915. Serial No. 58,384.

To all whom it may concern:

Be it known that I, FORREST E. ALTEMUS, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Lighting-Switch, of which the following is a specification.

One of the objects of my present invention is to devise a novel electric controlling switch which is adapted to control and form different circuits for the electric lights and especially for automobile lights by the proper actuation of a single arm or indicator.

It further consists of a novel construction and arrangement of an electric switch which is adapted to be employed in conjunction with different types of currents, such as for example, a battery or generator system.

Other novel features of construction and advantage will hereinafter more clearly appear in the detailed description.

For the purpose of illustrating my invention, I have shown in the accompanying drawings one form thereof which is at present preferred by me, since the same will give in practice satisfactory and reliable results, although it is to be understood that the various instrumentalities of which my invention consists can be variously arranged and organized and that my invention is not limited to the precise arrangement and organization of these instrumentalities as herein shown and described.

Figure 1 represents a sectional elevation of an electric switch embodying my invention.

Fig. 2 represents a sectional view of a portion thereof on an enlarged scale.

Fig. 3 represents a front elevation of my device.

Fig. 4 represents a rear elevation of my device.

Figs. 5, 6, 7 and 8 are similar sectional views taken on the line x—x of Fig. 1, showing diagrammatically the manner in which the circuits are formed.

Fig. 9 represents a wiring diagram.

Fig. 10 represents diagrammatically a modified form.

Similar numerals of reference indicate corresponding parts in the figures.

Referring to the drawings:

1 designates a stationary plate or disk of insulating material which carries the terminals leading to the lamps. Each of such terminals, as seen in Fig. 2, comprises a binding post 2 carried by the plate 1 and having a set screw 3 to engage the conductor which is passed through the aperture 4. The opposite end of a binding post is recessed as at 5 to receive a spring pressed plunger 6. The tendency of the spring is to move its plunger outwardly into the path of the enlarged head 7 of a contact 8 carried by a rotatable plate or disk 9. The plate 9 is formed of insulating material and has secured thereto a collar 10 by means of fastening devices 11 of any desired type. The plate 1 has connected therewith in any desired manner a cover 12, which incloses the plate 9 and its adjuncts, and is connected to a support 13 which is interiorly threaded to engage the threaded end of an extension bolt 14, the outer end of which carries a dial 15. The bolt 14 has a shoulder 16 adapted to engage a support 17, such as for example, the dash of the vehicle. The bolt 14 has a nut 18 in threaded engagement therewith to secure the bolt to its support.

19 designates a set screw engaging the support 13 and the extension bolt 14 to secure the parts in their adjusted position. 20 designates a rod passing through the bolt 14, the support 13, and the plates 9 and 1. Secured to the part 20 to turn with it is the plate 9.

21 designates a fastening device, such as a cotter pin, located at one end of the rod 20, and the opposite end of such rod has a polygonal shaped portion 22 to receive a pointer or indicator arm 23 which is maintained in assembled position by means of a nut 24 on the end of the rod 20. The pointer is provided with an outwardly extending flange 25 forming a grasping portion. A bearing washer 26 is secured to the plate 1 for the rod 20. The terminals on the plate 1 are arranged in the present instance for two front lamps, two side lamps, and a rear lamp.

27 and 28 designate the terminals for the front lamp, which are carried by the plate 1. 29 and 30 designate the terminals for the side lamps, and 31 designates the terminals for the rear lamp. All of these lamp terminals are carried by the stationary plate 1. 32 designates a battery terminal which is in electrical connection with a battery 33, which is grounded on the frame 34. 35 designates a generator terminal which is in electrical connection with a generator 36

which is also grounded on the frame 34. The rod 20 is grounded by the line 37 connected with the frame 34. The terminals on the rotatable plate 9 are constructed and connected in the following manner:

The rotatable plate 9 is provided with a conductor 38 having the contact points 39, 40 and 41. The contact point 42 is also provided which may be connected with the conductor 38 by means of the conductor 43, in which case the latter would be disconnected from the contact 40 see Fig. 10. 44 designates a conductor having contacts 45 and 46. 47 designates a conductor having the contacts 48, 49, 50 and 51. 52 designates a conductor having the contacts 53, 54, 55, 56 and 57, said conductor being electrically connected with the rod 20. 58 designates a conductor having the contacts 59 and 60. 61 designates a conductor having the contacts 62, 63, 64 and 65. 66 designates a contact electrically connected by a line 67 with the shaft 20. The periphery of the plate 9 is cut away to form shoulders 68 and 69, with which a stop 70 carried by the plate 1 cooperates to limit the relative movement of said plate. The outer periphery of said plate 9 is provided with the recesses 71, 72, 73 and 74, with the walls of which a spring pressed plunger 75 is adapted to interlock, said plunger being carried by the cover 12.

The operation of the switch will now be readily apparent to those skilled in this art, and is as follows:

The switch is constructed so that it may be mounted on the dash-board of an automobile without necessitating the drilling of holes or injuring the dash-board. One of the bolts fastening the steering wheel to the dash-board is taken out and through this hole the switch is mounted. The extension bolt or sleeve 14 on which the dial 15 is fastened brings such dial into a position accessible to the driver of the automobile. The source of electrical supply is electrically connected with the corresponding binding post on the switch and if two sources of electric supply are provided, each source is connected with its respective binding post. The two conductors from each lamp are connected with their respective terminals on the switch. When the parts are in the position seen in Fig. 5, the plate 9 is in its inoperative position, the parts appearing as in Fig. 3, in which case the indicator 23 points to the off position and all the contacts of the switch are electrically disconnected.

If the plate 9 is rotated one point or to the position seen in Fig. 6, which corresponds to the battery position indicated in Fig. 3, the side and rear lamps are in operation by the battery current.

In this case, the lamps are for the same voltage as the battery and are connected in parallel, as shown by the wiring in Fig. 6. The negative side is connected to the shaft 20, from which the current passes to the frame of the car to which the negative side of the battery is also connected.

Upon the turning of the indicator 23, another point to the right, the parts assume the position seen in Fig. 7. In this case, the current is supplied from a different source, being connected to the generator, and as the voltage is three times as high as the battery current, the side lamps and rear lamp are connected in series. The current flows from the generator through the lamps to the shaft 20 and is grounded on the frame to which the other side of the generator is also connected. Since the lamps are connected in series, if one lamp burns out, the others are extinguished, thus serving as a warning to the operator.

By moving the indicator an additional point to the right, the parts will move into the position seen in Fig. 8, in which another series connection is made connecting the front lamps in series with the generator. A tap from the first point of the second front lamp is taken to the rear lamp. When it is desired to run the rear lamp on the battery, the portion 43 of this line is disconnected from the contact point 40 and connected with the contact point 42, so that when the contact point 42 has been moved into electrical connection with the battery, the rear lamp will be operated independently by the current supplied from the battery. In this case, two sources of electrical current of different nature and operating independently pass through the switch to the lamps which are to be lighted.

In practice, the battery current is used only when the engine is not running so that there is no waste of the battery. My invention is especially designed to be employed in conjunction with a generator carried by cars in which a sufficient voltage is generated to light the lamps to full candle power when connected in series, and the wiring diagrams, for such purpose, are shown in Figs. 7 and 8. In Fig. 9, I have illustrated diagrammatically the wiring diagram for the different lamps.

It will be apparent that in accordance with my present invention, the operator may readily light the desired lights and operate them either from the battery or the generator by the proper actuation of the indicator 23.

In Fig. 5, I have illustrated diagrammatically all of the wiring which is carried by the insulating plate, but in Figs. 6, 7 and 8, I have simply shown enough of this wiring to show the manner in which the different circuits are made.

It will now be apparent that I have devised a novel and useful electric switch for auto and other lighting, which embodies the features of advantage enumerated as desir-

able in the statement of the invention and the above description, and while I have, in the present instance, shown and described a preferred embodiment thereof which will give in practice satisfactory and reliable results, it is to be understood that the same is susceptible of modification in various particulars without departing from the spirit or scope of the invention or sacrificing any of its advantages.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. An electric lighting switch comprising in combination, stationary sets of contacts, a stationary contact, a second stationary contact, rotatable contacts to selectively engage said first or second stationary contacts, rotatable sets of contacts in electrical connection with said first mentioned rotatable contacts and adapted to close a selected circuit through said stationary set of contacts and said first or second stationary contacts.

2. An electric lighting switch comprising in combination, sets of contacts on a stationary insulated plate, said plate being provided with a contact, said plate being also provided with a second contact, contacts on a rotatable insulated plate adapted to selectively engage said first or second contact on said stationary plate, sets of contacts on said rotatable plate in independent electrical connection with said first mentioned contacts on said rotatable plate, and means for rotating said rotatable plate to cause a set of contacts thereon together with one of said first mentioned contacts on said rotatable plate to close a selected circuit through said stationary set of contacts and said first or second stationary contacts.

3. An electric lighting switch comprising in combination sets of predetermined contacts on a stationary insulated plate, said plate provided with an independent contact, said plate also provided with a second independent contact, contacts on a rotatable insulated plate located in a path of travel of said first or second mentioned independent contacts on said stationary plate, sets of predetermined contacts on said rotatable plate in independent electrical connection with said first mentioned contacts on said rotatable plate, said sets of contacts located in a path of travel of said sets of contacts on said stationary plate, means for rotating said rotatable plate to close a predetermined electric circuit, means for retaining said rotatable plate in relative position in respect to said stationary plate, and means to limit the movement of said rotatable plate.

4. An electric lighting switch comprising in combination sets of contacts on a stationary insulated plate, said plate being provided with a contact, a second contact on said plate, contacts on a rotatable insulated plate adapted to selectively engage said first or second contact on said stationary plate, sets of contacts on said rotatable plate in independent electrical connection with said first mentioned contacts on said rotatable plate, a cover secured to said stationary plate and incasing said rotatable plate, an extension sleeve secured to said cover, a rod passing through and bearing in said extension sleeve, said rod fixed to said rotatable member, means coacting between said stationary plate, cover and rotatable plate to frictionally retain said rotatable plate in respect to said stationary plate, means on said extension sleeve and rod remote from said cover and said rotatable plate for indicating and operating the device to close a predetermined electric circuit.

5. In a device of the character stated, a stationary insulated plate, a contact on said plate, a second contact on said plate, a rotatable insulated plate, contacts thereon adapted to selectively engage said first or second contact, other contacts on said rotatable plate in independent electrical connection with said first mentioned contacts on said rotatable plate, a cover for said stationary plate, an extension sleeve projecting from said cover, a rod secured to said rotatable member and having its bearings in said sleeve, a dial on the outer end of said extension sleeve, and a pointer on the outer end of said rod and collocated in proximity to said dial.

FORREST E. ALTEMUS.

Witnesses:
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