

Aug. 25, 1931.

C. E. WILSON

1,820,264

SWITCH

Original Filed May 6, 1922

2 Sheets-Sheet 1

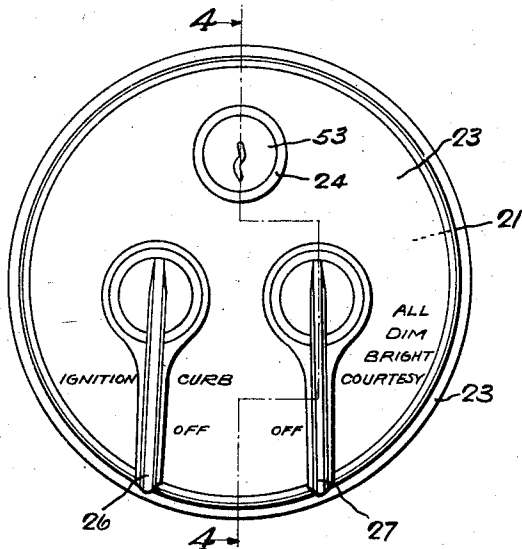


Fig. 1.

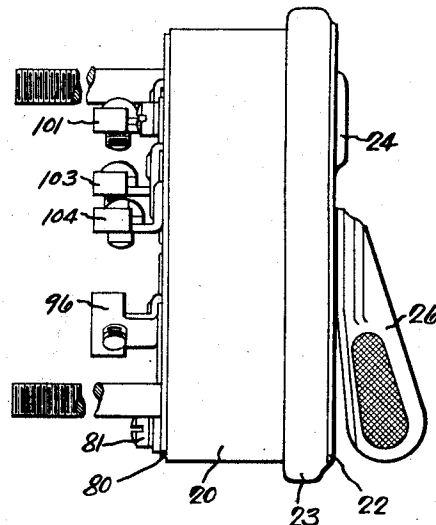


Fig. 2.

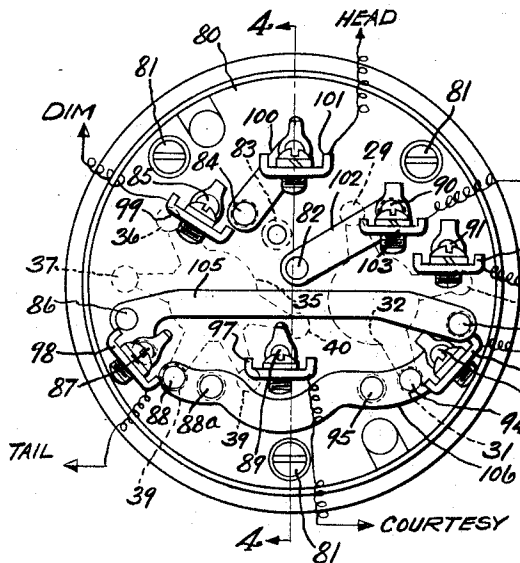


Fig. 3.

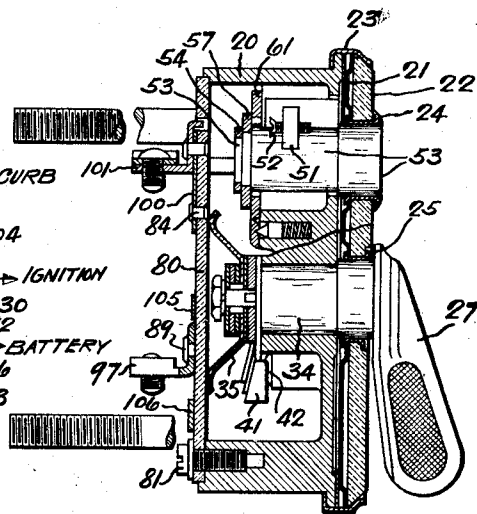


Fig. 4.

Inventor

Charles E. Wilson

By Spencer Hardman & Fehr  
his Attorneys

Aug. 25, 1931.

C. E. WILSON

1,820,264

SWITCH

Original Filed May 6, 1922

2 Sheets-Sheet 2

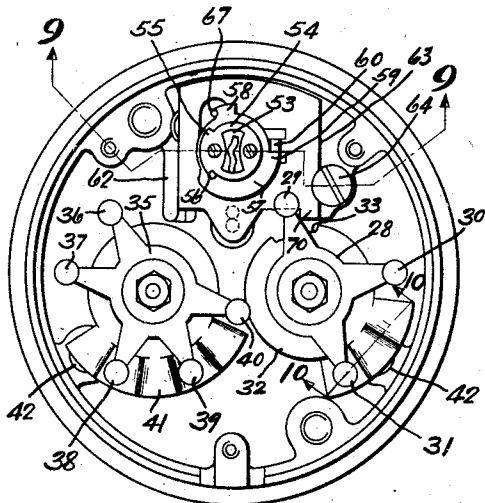


Fig. 5.

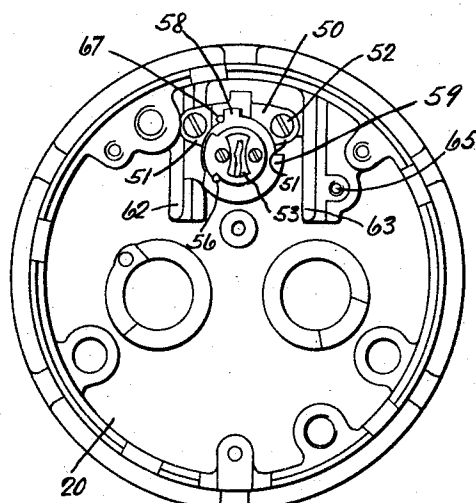


Fig. 6.

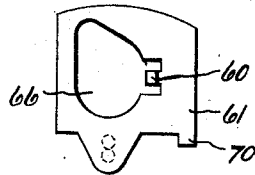


Fig. 7.

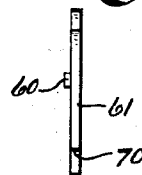


Fig. 8.

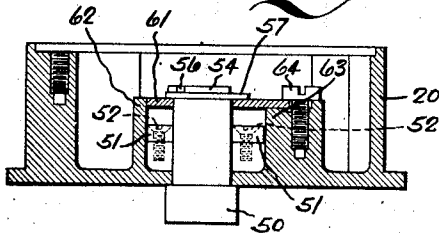


Fig. 9.

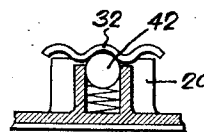


Fig. 10.

Inventor

Charles E. Wilson

Spencer Hardman & Fehr  
his Attorneys

# UNITED STATES PATENT OFFICE

CHARLES E. WILSON, OF ANDERSON, INDIANA, ASSIGNOR TO DELCO-REMY CORPORATION, OF DAYTON, OHIO, A CORPORATION OF DELAWARE

## SWITCH

Original application filed May 6, 1922, Serial No. 558,852, now Patent No. 1,678,893, dated July 31, 1928.

Divided and this application filed February 12, 1927. Serial No. 167,823.

This invention relates to lighting and ignition switches for automobiles and has among its objects the provision of a switch which is relatively compact and small in dimensions but which can be used to control a relatively large number of lighting circuits as well as to control the ignition.

In carrying out this aim of the invention, it is a further object to provide the maximum number of positions for the light switch lever, and to provide a plurality of off positions for the ignition switch lever, in order that the ignition lever may be used to control certain lighting circuits.

This application is a division of a copending application, Serial No. 558,852, filed May 6, 1922, now Patent 1,678,893, patented July 31, 1928.

Further objects and advantages of the present invention will be apparent from the following description, reference being had to the accompanying drawings, wherein a preferred form of embodiment of the present invention is clearly shown.

In the drawings:

Fig. 1 is a front view of a switch embodying the invention;

Fig. 2 is a side view thereof;

Fig. 3 is a back view thereof;

Fig. 4 is a sectional view, the switch casing section being taken on the line 4—4 of Fig. 1, and the switch back section being taken on the line 4—4 of Fig. 3;

Fig. 5 is an inside view, the switch back being removed;

Fig. 6 is a back view of the housing and lock assembly;

Figs. 7 and 8 are plan and edge views of the switch lock bolt;

Fig. 9 is a sectional view taken on the line 9—9 of Fig. 5; and

Fig. 10 is a sectional view taken on the line 10—10 of Fig. 5.

Referring to the drawings, the switch housing 20 carries dial 21 and glass dial cover 22 attached to said housing by means of bezel ring 23 in a manner described in the copending application of Harry E. Norviel, Serial No. 481,138, filed June 28, 1921. The cover 22 and dial 21 are attached to-

gether by means of ferrules 24 and 25 as disclosed in the copending application of Harry E. Norviel, Serial No. 535,920, filed Feb. 11, 1922.

The dial 21 bears three indicia, Ignition, Off and Curb to indicate the positions of the ignition switch handle 26; and also indicia "Off", "Courtesy", "Bright", "Dim" and "All" to indicate the positions of the lighting switch handle 27.

Handle 26 includes a barrel or hub carrying contact 28 having fingers 29, 30 and 31, also carrying a ratchet plate 32 having a notch 33. Handle 27 includes a similar barrel or hub 34 (Fig. 4) carrying a contact 35 having fingers 36, 37, 38, 39 and 40, also carrying a ratchet plate 41. The construction of these handles and the parts carried thereby is described and claimed in the copending application, Serial No. 481,138. A spring pressed ball 42 cooperates with each ratchet (as shown in Fig. 10) to yieldingly maintain the switch handles in their different positions. Each handle extends through one of the ferrules 25 (Fig. 4).

A lock of the Yale type comprises a lock housing 50 having lugs 51 by means of which the housing is mounted upon the switch housing 20 using screws 52. Within housing 50 is a rotatable key operated barrel 53 which projects through ferrule 24. Barrel 53 carries disc 54 having segment 55 adapted to contact with pin 56 carried by plate 57 which is loosely mounted concentric with disc 54. Plate 57 has lugs 58 and 59 adapted to engage a lug 60 carried by locking bolt 61 which is slidably mounted upon guides 62 and 63 provided in housing 20. A screw 64 threaded into hole 65 in housing 20 assists in holding bolt 61 upon the guides. The lock housing 50 extends through the opening 66 in bolt 61, and also a stop pin 67 against which the lug 58 may strike (Fig. 5). Pin 67 is carried by lock housing 50. Bolt 61 is provided with lug 70 adapted to be moved into the notch 33 of ratchet plate 32 when the lock barrel 53 is turned clockwise as viewed in Fig. 5. Therefore when the bolt 61 is in locked position, the handle 26 cannot be moved into ignition position

(meaning ignition on), but the handle 26 can be moved from off to curb position (meaning curb or parking light on).

Referring to Fig. 3, the switch back 80, which is attached by screws 81 to housing 20, carries switch contacts 82 to 89 inclusive which are arranged in a circular row concentric with axis of contact 35. Switch back 80 carries contacts 90, 91, 92, 93, 94 and 95 which are arranged in a circular row which is concentric with the switch contact 32. Contact 93 is connected with battery terminal post 96, contact 89 with courtesy light terminal post 97, contact 87 with tail light terminal post 98, contact 85 with dim light terminal post 99, contact 84 with strip 100 and head light terminal post 101, contacts 82 and 90 with strip 102 and curb light terminal post 103, and contact 91 with ignition terminal post 104. Strip 105 connects contacts 86 and 87 with contact 92. Strip 106 connects contacts 93, 94 and 95 with contacts 88 and 88a.

When the levers 26 and 27 are in the position shown in Fig. 1, and the contacts 32 and 35 in the position shown in Fig. 3, the battery terminal 96 will not be connected with any of the work circuits such as the ignition and lighting circuits indicated in Fig. 3. If the lever 26 be moved clockwise to ignition position as shown in Fig. 1, then the contact 32 will be moved counterclockwise as viewed in Fig. 3, and the contact finger 31 will engage the contact 93 and the contact finger 30 will engage the contact 91 thus connecting the battery with the ignition circuit. If the lever 26 be moved counterclockwise into curb position shown in Fig. 1 then the contact 32 will be moved clockwise so that the contact finger 31 will engage the contact 95 and the contact 29 will engage the contact 90 and so that the contact finger 30 will engage the contact 92. In this manner the battery terminal 96 will be connected with curb light terminal 103 and with the tail light terminal 98. Thus it is apparent that the ignition lever 26 may be utilized when not in use for making an ignition circuit connection, in establishing a connection from the battery to the parking lights which are provided for by curb light and a tail light. This feature of the invention is advantageous since the one lever can be used not only as an ignition switch lever but also as a light switch lever for controlling a lighting circuit which is used only when the car is parked and the ignition should be turned off. As the result of this, the lighting switch lever 27 can be used to take care of an additional lighting circuit. It is apparent from the drawings that the lever 27 can have but five positions, where the proportions shown are maintained. It is of course to be understood that if the dimensions of the switch were enlarged or

the contacts made smaller it would be possible to provide more circuit controlling positions for the lever 27. But whatever may be the dimensions of the switch and the relative proportions of its parts, the utilization of the ignition switch lever as a lighting switch lever will increase the capacity of the switch since it is possible to add more circuit controlling positions for the lighting switch lever than would otherwise be possible.

Counterclockwise rotation of lever 27 into courtesy position results in clockwise movement of contact 35 as viewed in Fig. 3 wherein the finger 36 will engage contact 85, finger 38 will engage contact 87 and finger 40 will engage contact 89, and contact finger 39 will engage contact 88a. In this manner the battery terminal 96 will be connected with the courtesy circuit terminal post 97, with tail light terminal post 98 and with dim light terminal post 99.

Movement of lever 27 into bright position will cause the contact 35 to be moved clockwise so that finger 40 is off contact, finger 39 is on contact 88, finger 38 is on contact 86, finger 37 is off contact and finger 36 is on contact 84. In this manner battery terminal post 96 will be connected with tail light terminal post 98 and with head lamp terminal post 101.

Movement of the lever 27 into dim position will cause the contact 35 to be moved clockwise as viewed in Fig. 3 until the finger 40 contacts with contact 88a, finger 39 with contact 87, finger 38 with no contact, finger 37 with contact 85, and contact finger 36 with contact 83 which is not connected with any circuit. The battery terminal post 96 will therefore be connected with tail lamp terminal post 98 and with dim light terminal post 99.

When the lever 27 has been moved into all position each finger of contact 35 will be moved clockwise four spaces or so that contact 40 touches contact 88, contact 39 touches contact 86, contact 35 touches contact 84, and contact 36 touches contact 82. Therefore the battery terminal post will be connected with tail lamp terminal post 98 with head lamp terminal post 101 and with curb lamp terminal post 103.

It is apparent from the foregoing that there has been provided a lighting and ignition switch which is relatively very compact in construction and small in dimensions and is capable of providing an ignition circuit connection and five different lighting circuits. A lock has been provided to lock the ignition lever in off positions, that is, to prevent this lever from being moved into ignition circuit making position. However both the ignition lever and the lighting switch lever may be moved to select any one of the lighting circuits while the ignition is locked.

While the form of mechanism herein shown and described constitutes a preferred form of embodiment of the invention, it is to be understood that other forms might be adopted, all coming within the scope of the claims which follow.

What is claimed is as follows:

1. A lighting and ignition switch for automobiles comprising, in combination, a case, a plate carried by the case and carrying terminals for connection with a current source, an ignition circuit and a plurality of lighting circuits respectively, two series of stationary switch contacts insulatively supported by the plate and arranged in arcuate rows, connections carried by the plate for connecting the terminals with the contacts respectively, certain of the lighting circuit terminals being connected with contacts of both series of stationary contacts, two shafts supported by the case for rotation concentrically with respect to the two arcuate series of stationary contacts, operating handles respectively carried by the shafts, a movable contact member engageable with one series of stationary contacts and operated by one of the handles in the same direction of rotation from off position to connect the current source terminals with certain ones of the various lighting circuit terminals, and a movable contact member engageable with the other series of stationary contacts and movable by the other handle from off position to a position for connecting the current source terminal with the ignition circuit terminal by a movement of the handle in a direction which is opposite to that in which the other handle is moved to complete the lighting circuits, movement of the last mentioned handle into off position interrupting the ignition circuit, and continuing the movement of the handle in the same direction further than off position causing certain of the lighting circuit terminals to be connected with the current source terminal.

2. A lighting and ignition switch according to claim 1 in which the operating handles are levers which are located approximately parallel when they occupy off positions, in which the levers are moved in opposite directions and away from each other respectively to control the lighting and ignition circuits, and in which the ignition lever is moved from ignition—on position to off position and to a position for connecting one of the lighting circuit terminals with the current source terminal by a movement toward the lighting switch lever.

In testimony whereof I hereto affix my signature.

CHARLES E. WILSON.