Aug. 3, 1926. 1,594,474

W. L. SLAYTON

ELECTRIC SWITCH

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Fig 1

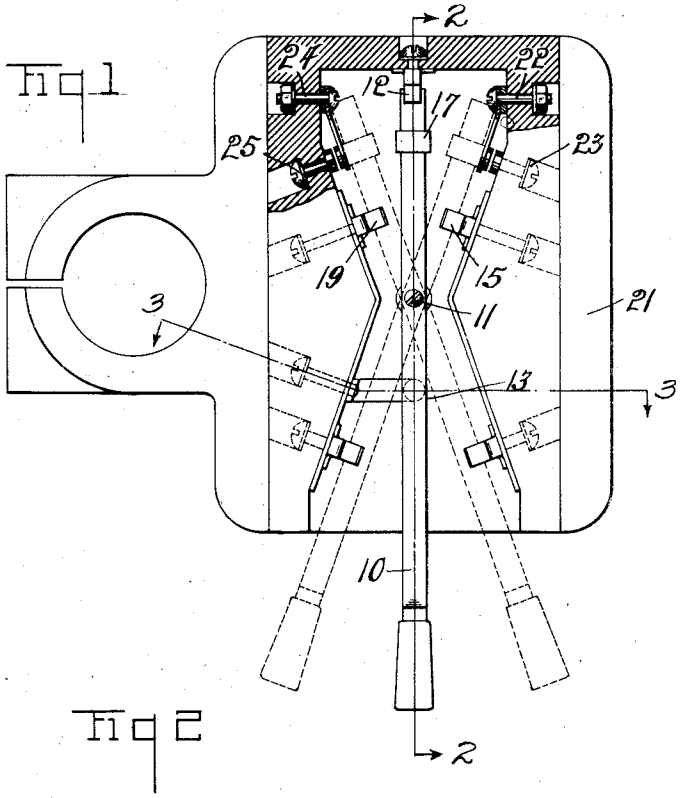


Fig 2

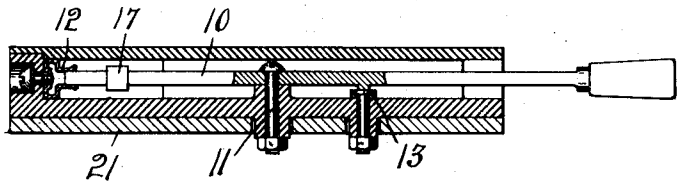
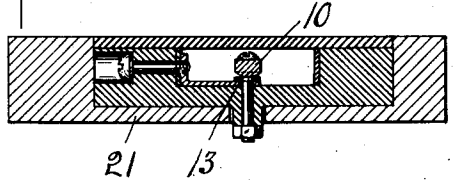


Fig 3



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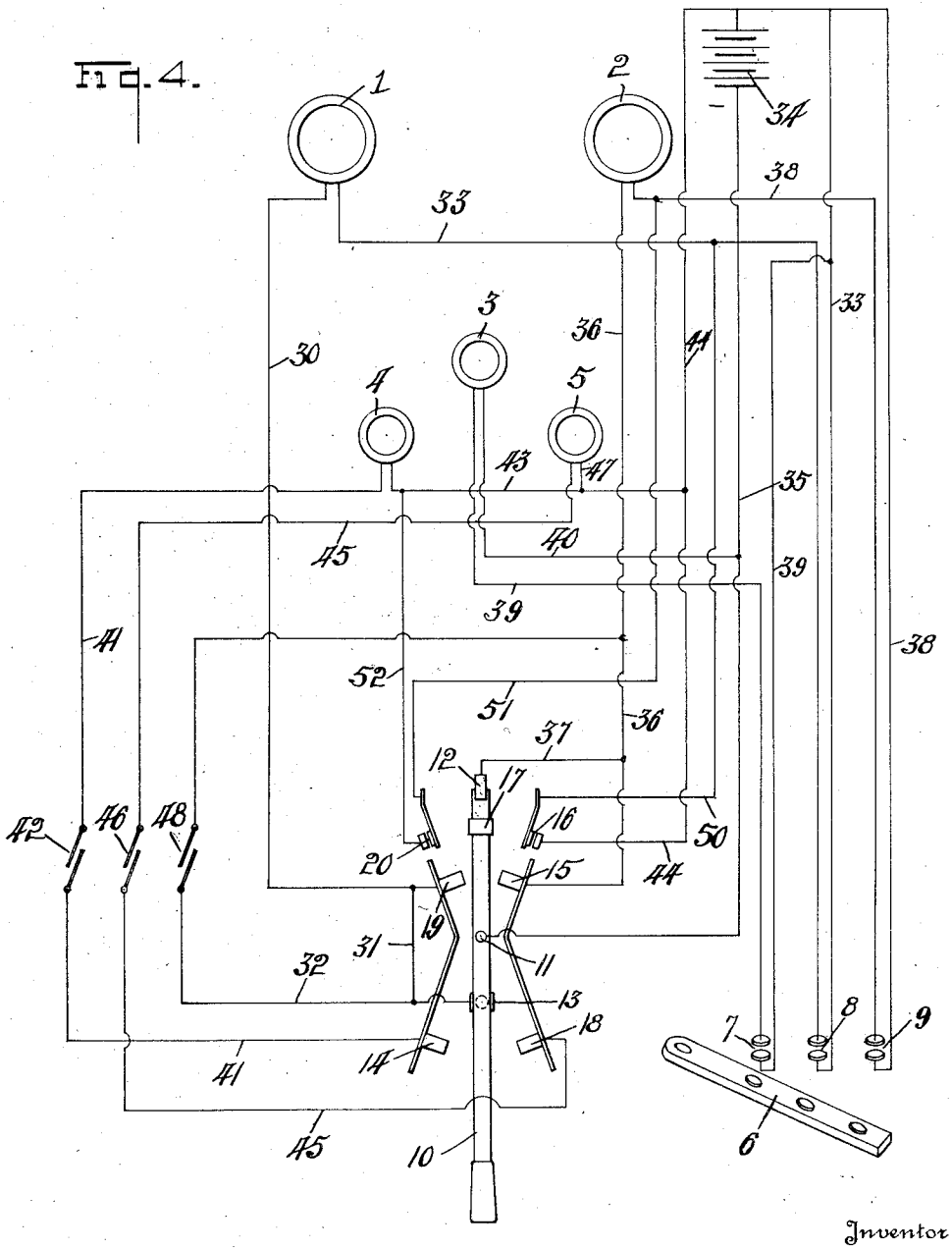
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Fig. 4.



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UNITED STATES PATENT OFFICE.

WALTER L. SLAYTON, OF TOLEDO, OHIO.

ELECTRIC SWITCH.

Application filed February 18, 1924. Serial No. 693,487.

This invention relates to electric switches and more particularly pertains to a switch for use in connection with automobiles to effect signalling of the direction which the automobile is to take.

The primary object of the invention is to provide a novel and improved form of switch for effecting operation of the various signals, as will hereinafter more particularly appear.

Further objects and advantages of the invention will be apparent from the following detailed description thereof.

While the invention in its broader aspects is capable of embodiment in numerous forms, one embodiment thereof is illustrated in the accompanying drawings, in which,—

Fig. 1 is a plan view of the manually operable signal control switch with the cover plate removed.

Fig. 2 is a section thereof on the line 2—2 in Fig. 1.

Fig. 3 is a section thereof on the line 3—3 in Fig. 1, and

Fig. 4 is a diagrammatical view of the regular and signal lighting circuits and control means therefor.

Referring particularly to Fig. 4, 1 and 2 designate respectively the left and right headlights, and 3 the tail-light, which head and tail lights are customarily used in a large number of motor vehicles, and 4 and 5 designate respectively the left and right rear side lights, which are employed in connection with the signalling system.

The manual control for the headlights 1 and 2 and tail-light 3 is shown as comprising a switch lever 6 adapted to be thrown to simultaneously close a tail-light switch gap 7, a left headlight switch gap 8 and a right headlight switch gap 9.

The manually operable signal control switch is illustrated as comprising a switch lever 10, which pivots at 11 and when in the neutral position shown in Fig. 4 and in full lines in Figs. 1, 2 and 3, closes an electrical connection through the switch lever between a contact 12 and the center pivot or binding post 11 for the lever, and also between a contact 13 and said center binding post 11. When the handle end of the switch lever 10 is thrown to the left, it breaks electrical connection with the two contacts 12 and 13 and closes a contact at one side of its pivot 11 with a contact 14, and at the other side of its pivot with a contact 15. The lever also, when thrown to such left position, engages and effects a closing of an electric switch 16, an insulating part 17 of the lever engaging the switch. When the lever is thrown to the right it breaks its electrical connection with the contacts 12 and 13 and closes electrical connection with contacts 18 and 19 disposed at opposite sides of its pivot 11, and at the same time the insulation 17 engages and closes an electrical switch 20. It will be understood that the lever 10 has an electrical conducting portion which electrically connects with the center binding post 11, and also makes contact with the different contacts 12, 13, 14, 15, 18 and 19. The lever 10 and the different contacts therefor are mounted in or carried by a housing 21 mounted within convenient reach of the driver and shown in the present instance as clamped on to the enclosing column of the steering post. The members of the switch 16 have respective binding posts 22 and 23 and the members of the switch 20 have respective binding posts 24 and 25 (Fig. 1).

The left headlight 1 has a wire 30 extending from one side thereof to the contact 19 and such wire has a connection 31 with a wire 32, which connects with the contact 13. The other side of the lamp 1 has its lead 33 in connection with the positive side of the battery 34 through the manual switch control gap 8, the negative side of the battery being in connection through a lead 35 with the pivot binding post 11 of the signal control lever 10. It is thus evident that when the regular lighting switch 6 is closed and the signal switch 10 is in its neutral position, the lighting circuit for the lamp 1 will be closed.

The lighting circuit for the headlight 2 comprises the lead 36 from such light, which connects with the contact 15 and also connects through the wire 37 with the contact 12. The other side of the lamp is connected through a lead 38 and interposed switch gap 9 with the positive side of the battery, the circuit with the lamp then being closed through the battery lead 35 and lever 10 which, when in its neutral postion, closes the connection between the center binding post 11 and the contact 12.

The circuit of the tail-light 3 is entirely independent of the signal switch and comprises the wire 39, which has the regular

switch gap 7 disposed therein and connects with the left headlight wire 33 between the switch gap 8 and battery, the other line 35 of the battery being connected to the tail-light through a wire 40.

The rear side signal light 4 has a wire 41 leading from one side thereof to the contact 14 and has a vibrator switch 42 disposed therein. The other side of the lamp 4 connects through a wire 43 with a wire 44 that is connected to the positive side of the battery 34. It is thus evident that when the signal lever 10 is thrown to the left it will close the connection between the contact 14 and binding post 11, thereby closing the circuit of the rear sidelight 4.

The rear sidelight 5 has a wire 45 leading from one side thereof and in connection with the contact 18, a vibrator switch 46 being disposed in said wire. The other side of the lamp 5 has a connection 47 with the wire 43, which latter wire leads to the battery through the wire 44, the circuit thence being closed with the contact 18 through the battery lead 35, binding post 11 and signal lever 10 when the lever 10 is thrown to its right position.

The wire 32, which at one end connects with the contact 13, forms a shunt connection between the wire 31 and the wire 36 and has a vibrator switch 48 disposed therein. It is thus evident that when the signal lever 10 is thrown to the left, the lamp 1 will be in circuit with the vibrator switch 48 through the wires 30, 31, 32 and 36 to the contact 15, thence across the lever to the binding post 11 and thence through the wire 35 to the battery, the other side of which is connected through the wires 33 and switch gap 8 with said lamp.

The only purpose of the two auxiliary switches 16 and 20 is to render the signal circuits of the headlights 1 and 2 operative when the main control switch 6 is open, or, in other words, during daylight driving, the switch 16 when closed effecting a closing of the circuit of the light 1 through the battery 34 and the switch 20 when closed effecting a closing of the circuit of the light 2 through the battery 34. For this purpose, a wire 50 connects the wire 33 to the contact binding post 22 of the switch 16 and the other binding post 23 of such switch is connected to the battery wire 44. In like manner, the binding post 24 of the switch 20 is connected by a wire 51 to the wire 38 of the headlight 2 and the binding post 25 of such switch is connected by a wire 52 to the wire 43 and thence through the wire 44 with the battery.

The operation of my signal system, in connection with the lighting circuits of an automobile having the customary front set of lights 1 and 2 and tail-light 3 and equipped with the extra rear side lights 4 and 5 for signalling purposes, is as follows: For night driving, the control switch 6 is thrown to closed position, thereby effecting a closing of the circuits in which the two headlights 1 and 2 and tail-light 3 are disposed, the same as in the usual automobile lighting systems. If it is desired to turn to the left and to indicate such turning by a flickering of the left lights 1 and 4, the driver throws the signal lever 10 to the left, thereby closing connection between each of the contacts 14 and 15 with the binding post 11. This breaks the connection between the neutral contacts 12 and 13 and therefore causes the current to the light 1 to pass through the vibrator switch 48, and thence through the wire 36, contact 15 and lever 10 to the binding post 11, instead of passing to the binding post 11 through the contact 13 and lever 10, which latter is the case when the lever is in its neutral position. At the same time, the side light 4 is caused to flicker due to its circuit, in which the vibrator switch 42 is disposed, being closed by the engagement of the switch lever 10 with the contact 14, thereby closing the circuit between such contact and the binding post 11. If it is desired to cause a flickering of the lights 2 and 5 to signal a right-hand turning, the lever 10 is thrown to the right to break connection between the neutral contacts 13 and 12 with the binding post 11, and to close the connections between each of the contacts 18 and 19 with said binding post. Closing of the connection between the contact 19 and binding post 11 brings the vibrator switch 48 into the circuit with the lamp 2, thereby causing a flickering of the light in such lamp; and the closing of the connection between the contact 18 and binding post 11 closes the circuit of the rear side light 5, in which circuit the vibrator switch 46 is disposed. The throwing of the lever 10 to the left or right causes its insulating part 17 to engage and close one or the other of the auxiliary lighting switches 16 and 20. If the main light control switch 6 is closed as for night driving, the closing of the auxiliary switches 16 and 20 will have no effect. If, however, the main switch 6 is open as for daylight driving, the closing of the switches 16 and 20 perform the same function with respect to the headlights 1 and 2, respectively, as the closing of the switch gaps 8 and 9 of such lights by the main control switch 6.

It is evident that my signal system is adapted particularly for use in connection with an automobile having only two front lights and that a movement of the signal lever 10 to the left will effect a flickering to take place in the left hand front light 1 and rear side light 4 without affecting the lighting action of the other front light

2, and that a movement of the signal lever to the right will effect a flickering of the light to take place in the right hand front light 2 and rear side light 5 without affecting the lighting action of the other front light 1. It is also apparent that if the main lighting switch 6 is open, the lighting circuit for the headlight in which the signalling is to take place is closed through the respective auxiliary switch 16 or 20.

I wish it understood that my invention is not limited to any particular arrangement or form of the parts, as different features of the invention are capable of numerous modifications and changes without departing from the spirit of the claim.

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

A single pole double throw rotary switch comprising a centrally pivoted switch lever, radially disposed contacts arranged in opposed relation at the opposite sides of the pivotal point of said lever, spaced contacts at the opposite sides of said pivotal point intermediate said radially disposed contacts, and normally open co-operating contacts adjacent to and alined with said first mentioned contacts adapted to be closed upon closing said first mentioned contacts.

In testimony whereof, I have hereunto signed my name to this specification.

WALTER L. SLAYTON.