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J. O. BOLTON ET AL

AUTOMOBILE SIGNAL SWITCH

Filed Oct. 21, 1922

Fig. 1.

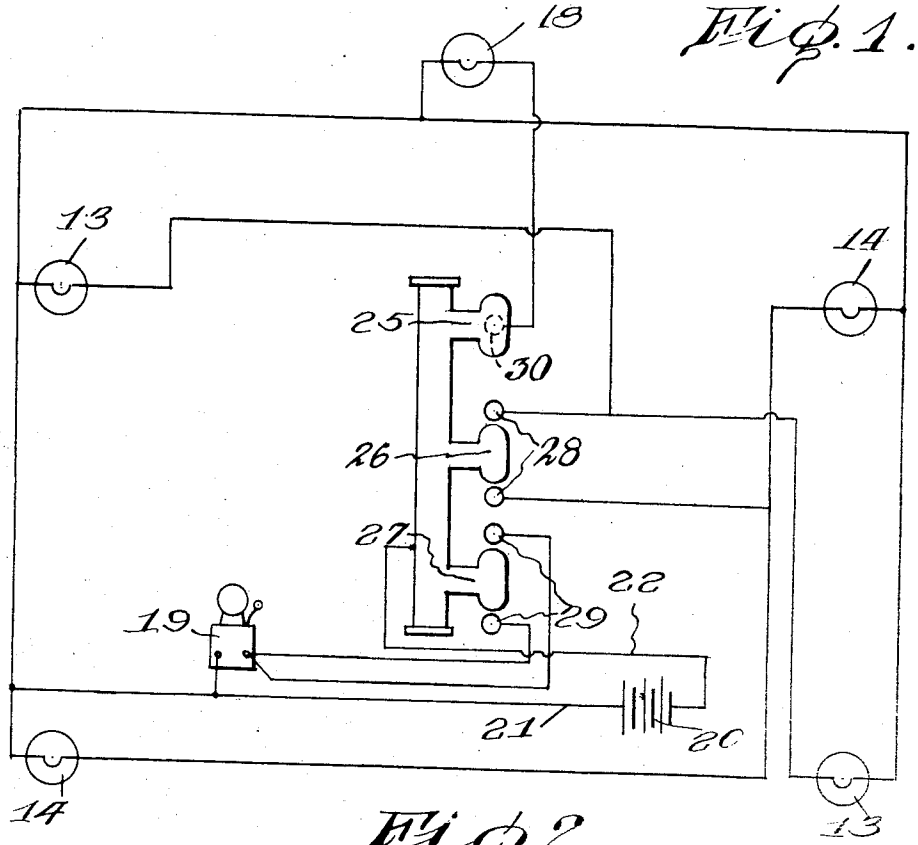


Fig. 2.

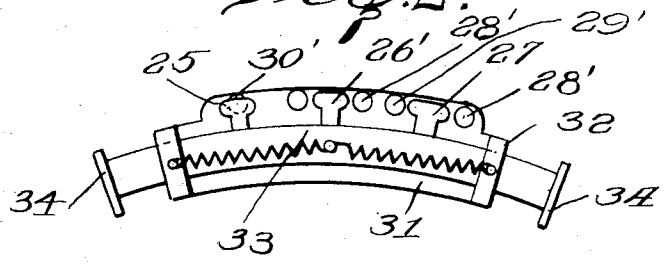
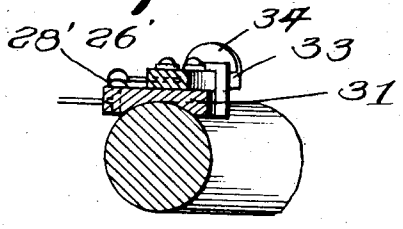


Fig. 3.



Inventor
Jesse O. Bolton
James H. Stump
William Anderson.

Watson E. Coleman

Attorney

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UNITED STATES PATENT OFFICE.

JESSE O. BOLTON, JAMES H. STUMP, AND WILLIAM ANDERSON, OF MEMPHIS, TENNESSEE.

AUTOMOBILE SIGNAL SWITCH.

Application filed October 21, 1922. Serial No. 596,029.

To all whom it may concern:

Be it known that we, JESSE O. BOLTON, JAMES H. STUMP, and WILLIAM ANDERSON, citizens of the United States, residing at Memphis, in the county of Shelby and State of Tennessee, have invented certain new and useful Improvements in Automobile Signal Switches, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to improvements in switches and more particularly to a form of switch especially adapted for use in the signal circuits of automobiles.

An important object of the invention is to provide a signal switch for use in indicating the intention of the driver in so far as turning movements of the vehicle are concerned, which is so constructed and mounted that it is semi-automatically operated by the shifting of the operator's hand upon the steering wheel as his hands are moved to effect a turning movement of the steering wheel.

A further object of the invention is to provide a switch of this character which is mounted upon the steering wheel and which has hand engaged portions against which the hands of the operator abut to operate the switch during movement of the hands about the steering wheel to effect the steering movement.

A still further object of the invention is to provide a device of this character which is simple in construction and arrangement, durable in service and a general improvement in the art.

These and other objects we attain by the construction and arrangement shown in the accompanying drawings wherein for the purpose of illustration is shown a preferred embodiment of our invention and wherein like reference characters designate like parts throughout.

In the drawings:

Figure 1 is a wiring diagram showing the manner of connecting the switch in a signal light circuit;

Figure 2 is a plan view of the switch; and

Figure 3 is vertical sectional view taken therethrough.

In the diagram shown in Figure 1 means are provided for operating right or left turn signals as desired and for operating a straight ahead signal when neither of the right or left turn signals are in operation and for likewise operating an audible signal 19 during the operation of either of the right or left turn signals. This means consists in a suitable source of current 20 having one terminal thereof grounded to the ground of the car by a wire 21 and the other terminal thereof connected by a wire 22 with a switch 23. This switch is diagrammatically shown in the form of a rotatable post 24 having extending radially therefrom arms 25, 26 and 27. The arm 26 operates intermediate a pair of contacts 28 and may be engaged with either thereof and the arm 27 operates intermediate a pair of contacts 29 and engages with one of the contacts 28. One of the contacts 28 is connected with each of the lamps 14, the other terminal of the bulb of these lamps being grounded to the ground of the car. Each of the contacts 29 is connected with one terminal of the audible signal 19 and the other terminal of the audible signal is grounded to the ground of the car. The lamp of the straight ahead signal has one terminal thereof grounded and the other one connected with a contact 30 which is adapted to be engaged by the arm 25 of the switch when the arms 26 and 27 are arranged intermediate their contacts 28 and 29 and out of engagement therewith.

It will be seen that the switch being rotated to bring the arm 26 into engagement with one of its contacts 28, the lamps of the corresponding signal element will be illuminated and a signal given for right or left turn as the case may be. At the same time the arm 27 comes into engagement with one of its contacts 29 completing the circuit through the audible signal 19 and giving an audible warning of intention on the part of the operator to change direction. During periods when the car is moving straight ahead the switch arms 26 and 27 will be arranged intermediate their contacts and accordingly the arm 25 will be engaged with the contact 30 and the straight ahead signal will be illuminated.

In Figures 2 and 3 we have shown the construction of the switch 23. In this switch we provide an arcuate segment 31 of suitable insulating material provided at its ends with guides 32. Through the guides 32 operates an arcuate conductor element 33 having at

its ends portions 34 projecting beyond the ends of the segment 31 by means of which it may be engaged to shift it through the guides 32. This segment has arms 25′, 26′ and 27′ corresponding to the arms 25, 26 and 27 of the switch 23, these arms operating between contacts 28′ and 29′ corresponding to the contacts 28 and 29 of the switch hereinbefore described, and a further contact 30′ corresponding to the contact 30 of this switch. These contacts 28′, 29′ and 30′ are carried by the segment 32 and electrically connected with the signal lights and audible signal in exactly the same manner hereinbefore described, the wiring circuit being identical with that shown in Figure 2. Springs 35 are provided for maintaining the shifting segment 33 in position with the contact arm 25′ in engagement with the arm 30′.

In the use of the device the arcuate segment 31 is arranged upon that portion of the steering wheel uppermost when the wheels of the car are directed straight ahead. As is well known to those familiar with the operation of cars, a driver preparatory to making a turn with the vehicle which he is driving, shifts his hand upwardly on the steering wheel so as to obtain a grip permitting him to turn the wheel without cramping his arms. With the switch arranged in this manner, the operator by simply moving his hand upwardly until he comes into engagement with the switch, forces the switch over, making the contact which illuminates the desired signals and immediately upon release of the wheel and return of the operator's hands to the normal position, the switch assumes a position with the straight ahead signal illuminated. By this construction the necessity of the operator removing his hands from the wheel is entirely eliminated and the operation of the switch becomes practically automatic in that no thought as to the proper direction of turning the switch and practically no actual thought is necessary for the correct operation thereof. It will furthermore be obvious that the construction and arrangement hereinbefore set forth are capable of some change and modification without materially departing from the spirit of our invention and we accordingly do not limit ourselves to such specific construction and arrangement except as hereinafter claimed.

We claim:—

1. In combination with an automobile steering wheel, a switch attached thereto including arcuate stationary and movable elements, said movable element being provided at the ends thereof with hand engaged portions against which the hand of the operator contacts in moving about the steering wheel to shift the same, spaced arms carried by one of said members, a contact element with which one of said arms is normally engaged, spaced contact elements arranged upon opposite sides of the other of the arms and with which the other arms are selectively engageable, said last named arms being out of engagement with the contacts thereof when the first named arm is engaged with its contact.

2. In combination with an automobile steering wheel, a switch attached thereto including arcuate stationary and movable elements, said movable element being provided at the ends thereof with hand engaged portions against which the hand of the operator contacts in moving about the steering wheel to shift the same, spaced arms carried by one of said members, a contact element with which one of said arms is normally engaged, spaced contact elements arranged upon opposite sides of the other of the arms and with which the other arms are selectively engageable, said last named arm being out of engagement with the contacts thereof when the first named arm is engaged with its contact, and means for yieldably maintaining the arm bearing segment with the arm thereof in engagement with its contact.

3. In combination with an automobile steering wheel, a switch attached thereto including stationary and movable elements curved to correspond to the curvature of the wheel rim and mounted upon said rim, said movable elements being provided at the ends thereof with hand engaged portions positioned to be engaged by the hand of the operator in moving about the steering wheel to shift the same, springs connecting the movable and stationary contacts normally holding the movable contact centrally positioned with relation to the stationary element, arms carried by said movable contact and contact elements carried by said stationary element with which said arms coact.

In testimony whereof we hereunto affix our signature.

JESSE O. BOLTON.
JAMES H. STUMP.
WILLIAM ANDERSON.