April 8, 1924. 1,490,005

J. T. GLASS

SWITCH

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Fig. 1.

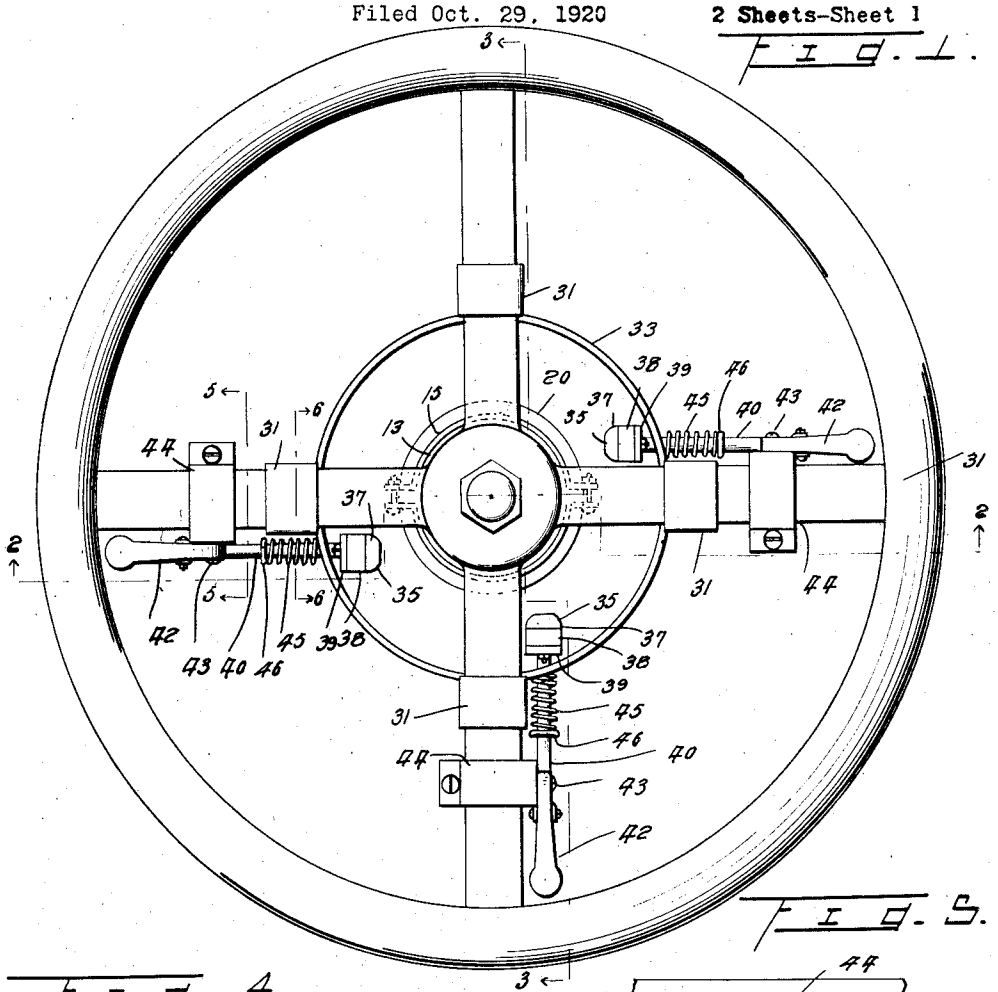
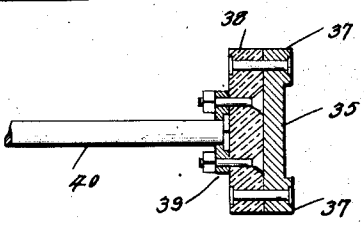


Fig. 5.

Fig. 4.



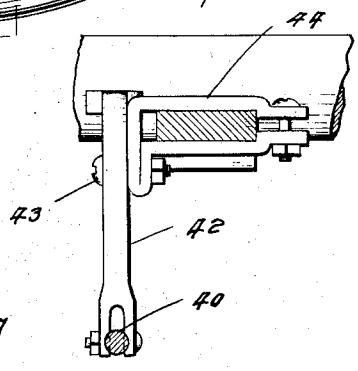


Fig. 6.

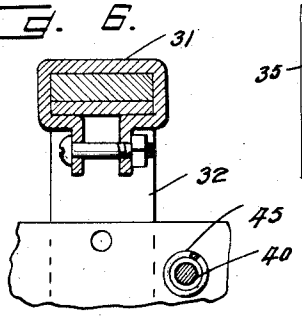
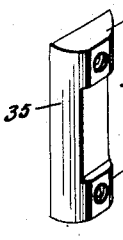


Fig. 7.



Inventor
J. T. Glass.
By [signature] Attorney

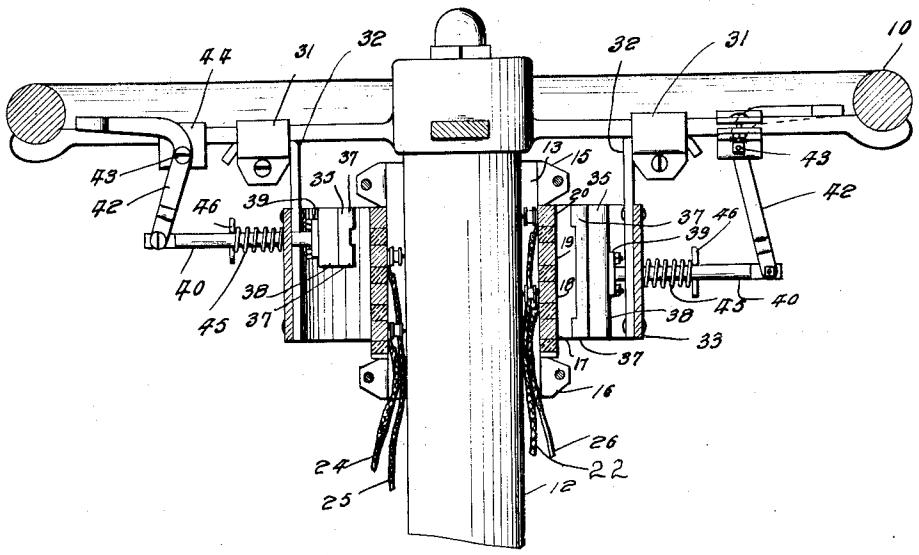
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J. T. GLASS

SWITCH

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FIG. 2.



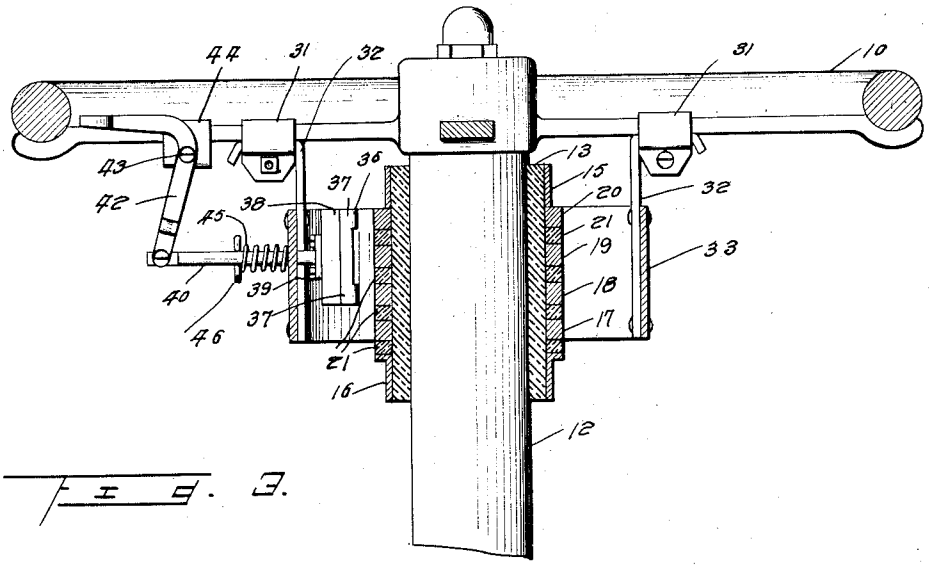


FIG. 3.

Inventor
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By A. Kaufmann Jr. Attorney

Patented Apr. 8, 1924. 1,490,005

UNITED STATES PATENT OFFICE.

JOHN T. GLASS, OF CENTRALIA, WASHINGTON.

SWITCH.

Application filed October 29, 1920. Serial No. 420,480.

To all whom it may concern:

Be it known that I, JOHN T. GLASS, a citizen of the United States, residing at Centralia, in the county of Lewis and State of Washington, have invented certain new and useful Improvements in Switches; 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.

This invention relates to a switch for operating automobile direction signals, and more particularly to means including a plurality of switches for controlling circuits leading directly to the signals,—indicating movement to the right or left, or indicating the intention of the driver of the car to come to a stop.

An object is to provide means for connection with a steering wheel, and including switches per se and switch operating elements, conveniently located, and adapted to be controlled without the necessity of removing the hands from the wheel.

A further object is to provide, in connection with a plurality of conducting rings, means for connecting one of the rings with a source of current, means for connecting the remaining rings respectively with the signals to be operated, and means for mounting a plurality of switches, to be controlled in the manner specified.

A still further object is to provide for the mounting of the apparatus on a steering wheel and pillar of usual construction by means of clamping elements especially provided for the purpose.

With the foregoing and other objects in view, the invention consists in the novel construction, combination, and arrangement of elements hereinafter described and claimed, it being understood that modifications or variations in details may be made without departing from the scope of the invention.

In the drawings:

Figure 1 is a top plan view of the device connected with a steering wheel.

Figure 2 is a sectional view taken on the plane indicated by the line 2—2 of Figure 1, looking in the direction indicated by the arrows.

Figure 3 is a similar view taken on the plane indicated by the line 3—3 of Figure 1, looking in the direction indicated by the arrows.

Figure 4 is a sectional view of one of the contact elements.

Figure 5 is a sectional view taken on the line 5—5 of Figure 1, looking in the direction indicated by the arrows.

Figure 6 is a sectional view taken on the line indicated by the line 6—6 of Figure 1, looking in the direction indicated by the arrows, and

Figure 7 is a detail perspective view of one of the contact elements.

The steering wheel of an automobile is designated 10, and the housing of the steering pillar is shown at 12. Suitable insulation 13 surrounds the housing and is retained in position by means of clamps 15 and 16. Encircling this insulation are the rings 17, 18, 19 and 20, acting as conducting elements, and being insulated from each other as shown at 21. The upper conducting ring 20 is connected with a source of current by means of a wire 22, and the remaining rings are connected directly with the signals, any suitable number of rings being provided, in order to serve the purpose intended. In the present instance, I have provided for signals indicating right and left, and a signal indicating the intention of the driver of the car to stop. The wire extending from the rings below the ring 20 and designed for connection with the signals referred to, are designated 24, 25 and 26, and circuits are completed through any one of these wires, and through the conducting ring 20, by means of the elements described below.

Connected with the spokes of steering wheel 10 are clips 31 supporting brackets 32, which in turn support the annular elements 33 surrounding the upper end of the steering pillar.

In order to complete a circuit between conducting rings 20, and either of the remaining rings, I provide bridging contact elements 35, these elements being each provided with spaced projections 37, the distance between the elements 37 of a given device 35 corresponding to the distance between the rings to be bridged. Each element 35 is mounted on an insulating base 38, the latter being connected with a plate 39 carried by the transverse stem 40. The stem or bar 40 has pivotal connection at its outer end with an angle lever 42 pivotally mounted at 43 on a bracket 44 connected with one of the spokes. Surround-

ing each stem or bar is a coiled spring 45, one end of which abuts a pin or the like 46, the other end engaging the surface of annular element 33 through which the bar passes. The spring acts to throw the contact device or bridging element 35 out of engagement, it being desired to complete the circuit only for the length of time the operator desires to actuate or illuminate a given signal, his finger remaining on the operating angle lever during that time.

Having thus described the invention, what I claim is:—

1. In a device of the class described, a plurality of contact rings insulated from each other, one of the rings adapted to be connected with a source of current, the remaining rings adapted to be connected with devices to be operated selectively, and bridging devices each including spaced contacts for bridging a circuit between that ring connected with the source of current and another of said rings, the contacts of the bridging devices being differently spaced.

2. In a device of the class described, a plurality of insulated conducting rings, and means for bridging the space between one of said rings and either of the remaining rings, said means comprising a plurality of pairs of spaced contact devices, the contacts of the several pairs being differently spaced, a stem for each bridging device, means for resiliently mounting the bridging device and stem, and operating means connected with the stem.

3. A switch to be applied to the steering post housing of an automobile comprising a series of independent contact rings adapted to be mounted on the steering column, one of said rings being adapted to be connected to a source of electricity, and bridging devices normally held in inoperative position and slidably mounted beneath the steering wheel, said bridging devices being adapted to form a connection between the ring connected to the source of electricity and a predetermined one of the other of said rings.

4. A switch to be applied to a steering wheel and steering post housing of an automobile, the same comprising a master annular contact and a plurality of independent annular contacts to be mounted on the steering post housing below the steering wheel, an element surrounding the contacts and spaced therefrom, brackets secured to said element and adapted to engage the spokes of the steering wheel to support said element, a plurality of contact-bridging devices having stems slidably passing through said element and spaced one from the other and supported by said element, a coil spring surrounding each of said stems and bearing at one end against said element to normally hold said bridging devices out of engagement with said contacts, a clip to be mounted on each of the spokes of the steering wheel, and an operating lever pivoted to each of said clips and having operative connection with the stem of a predetermined bridging device.

5. A switch to be applied to a steering wheel and steering post housing of an automobile, the same comprising a master annular contact and a plurality of independent annular contacts to be mounted on the steering post housing below the steering wheel and insulated from the housing and from each other, an element surrounding the contacts and spaced therefrom, brackets secured to said element and adapted to engage the spokes of the steering wheel to support said element, a plurality of contact-bridging devices having stems slidably passing through said element and spaced one from the other and supported by said element, a coil spring surrounding each of said stems and bearing at one end against said element to normally hold said bridging devices out of engagement with said contacts, said bridging devices adapted to engage with the master annular contact and with a predetermined one of the other contacts, a clip to be mounted on each of the spokes of the steering wheel, and an operating lever pivoted to each of said clips and having operative connection with the stem of a predetermined bridging device, said operating levers adapted to move the bridging device with which they are connected into circuit closing position when the levers are depressed.

6. A switch to be applied to a steering wheel and steering post housing of an automobile, the same comprising annular contacts supported by the steering post housing below the steering wheel, means supported from one of the spokes of the steering post wheel and slidably receiving the stem of a contact-bridging device, a coil spring surrounding said stem and engaging said element and normally holding said bridging device out of contact with said annular contacts, a clip removably secured to said spoke of the wheel, and an operating lever pivotally secured to said clip and having operative connection with said stem, whereby when said lever is depressed the bridging device will be moved into contact with said annular contact members.

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

JOHN T. GLASS.

Witnesses:
J. A. REESE,
H. C. SMITH.