Sept. 11, 1928. 1,683,970

J. GEYER ET AL

DIRECTION INDICATING SWITCH MECHANISM

Filed Jan. 11, 1927

Fig. 1.

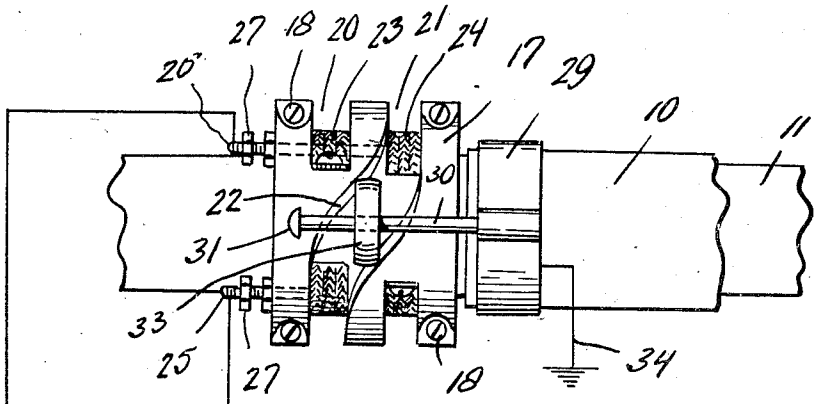
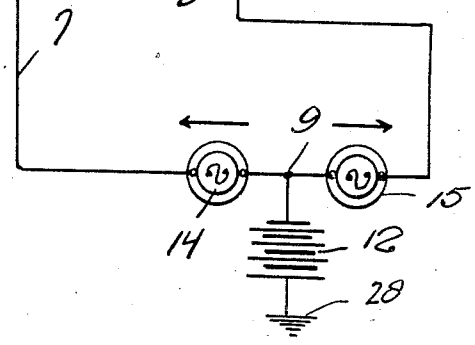
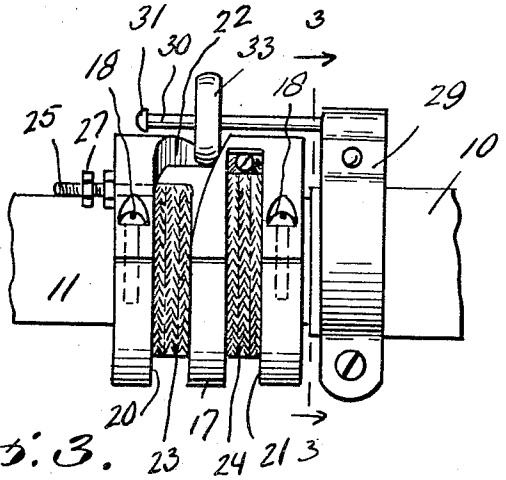


Fig. 2.





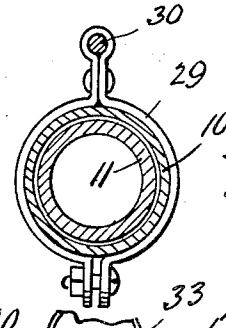


Fig. 3.

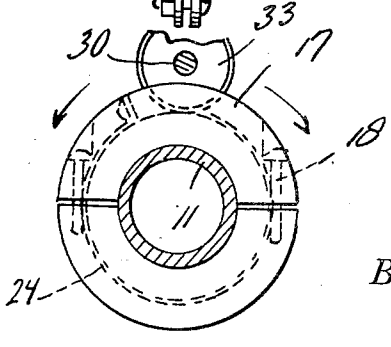


Fig. 4.

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UNITED STATES PATENT OFFICE.

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DIRECTION-INDICATING SWITCH MECHANISM.

Application filed January 11, 1927. Serial No. 160,480.

The present invention relates to improvements in switching devices for operating signals and has particular reference to a mechanism for controlling the operation of direction indicating signals for vehicles.

An object of the invention is to provide an improved device which is controlled by the movement of the steering post of a vehicle to operate a signal, or signals, to indicate the direction in which the vehicle is turning.

Another object is to so construct the switching device that the wear on certain parts thereof is minimized so as to be practically negligible.

A further object of the invention is to provide a device of this nature which is exceedingly simple in its construction, inexpensive to manufacture, not likely to easily become out of order, thoroughly efficient and reliable in operation, durable, and otherwise well adapted for the purpose for which it is designed.

With the above and numerous other objects in view as will appear as the description proceeds, the invention resides in certain novel features of construction and in the combination and arrangement of parts as will be hereinafter more fully described and claimed.

In the drawings:

Figure 1 is an elevation of the device showing the same associated with the steering column and post such as is used in an automobile,

Fig. 2 is another elevation thereof taken at right angles to that shown in Fig. 1,

Fig. 3 is a detail transverse section taken substantially on the line 3—3 of Fig. 2 looking in the direction of the arrows,

Fig. 4 is a section taken on the same line as Fig. 3 but looking in the opposite direction.

Referring to the drawing in detail, it will be seen that the numeral 10 denotes an ordinary steering column having mounted therein in the usual well known manner or any preferred manner the steering post 11. The steering column and steering post have been illustrated merely by way of example to represent any stationary and rotatable member respectively for the purpose of bringing out the operation of the switching device about to be described in detail.

An annulus 17 is composed of a pair of separable sections secured together as at 18 and also clamped about the steering post 11 so as to rotate therewith. This annulus has formed in its outer surface a pair of transversely spaced circumferentially disposed grooves 20 and 21, each of these grooves being continuous throughout approximately three hundred and forty degrees, the opposite ends of the grooves being connected by an inclined branch groove 22 angling across the peripheral face of the annulus. The annulus 17 is constructed of insulating material of any suitable nature. Electric conducting strips 23 and 24 are fixed in the bottoms of the grooves 20 and 21 respectively. A terminal 25 is engaged with the strip 23 and a similar terminal 26 is engaged with the strip 24. These terminals 25 and 26 extend from the same end of the annulus 17 and are adapted to receive suitable elements such as nuts 27 in order that wires 7 and 8 may be engaged respectively with the terminals 26 and 25. These wires 7 and 8 lead respectively to electrice signals 14 and 15 which are connected by wiring 9 to a source of electrical energy 12 which is grounded as at 28. A clamp 29 is engaged on the steering column 10 so as to be stationary and has fixed thereto a pin 30 which projects across the periphery of the annulus 17 and is headed as at 31 at its extremity. A wheel, disk, or any suitable annular element 33 is rotatable and slidably mounted on the pin 30 and rides in grooves 20, 21 and 22. The element 33, the pin 30 and the clamp 29 are constructed of electric conducting material thereby forming a ground connection through the steering column 10 as is indicated diagramatically at 34.

When the vehicle on which the steering column 19 and steering post 11 is mounted is moving straight ahead the parts are disposed as is indicated in Fig. 1, that is, the element 33 is disposed in the branch groove 22. It will be seen that when the post 11 is revolved in one direction, the annulus will revolve therewith causing the element 33 to move into groove 20 and engage contact strip 23 thereby causing the circuit to the electric signal 15 to indicate the movement of the vehicle in one direction. When the steering post 11 is revolved in the opposite direction the annulus 17 is revolved there-

with and then the element 33 will move into the groove 21 thereby engaging contact strip 24 to close the circuit energizing the other electric signaling element 14.

It is thought that the construction, utility, operation, and advantages of this device will be clearly understood without a more detailed description thereof. It will be seen that the present embodiment of the invention is exceedingly simple in its construction, will operate with accuracy, efficiency, and reliability, and that there are practically no parts which can easily become out of order. This present embodiment of the invention, however, has been disclosed merely by way of example since in actual practice it attains the features of advantage enumerated as desirable in the statement of the invention and the above description. It will be apparent that numerous changes in the details of construction, and in the combination and arrangement of parts may be resorted to without departing from the spirit or scope of the invention as hereinafter claimed or sacrificing any of its advantages.

Having thus described our invention what we claim as new is:

1. In a switching device of the class described, an annulus of non-conducting material having formed in its outer surface a pair of transversely spaced circumferentially disposed grooves and an inclined branch groove angling across said outer surface and connecting the opposite ends of the pair of grooves, conducting the strips mounted in the bottoms of said pair of grooves, a pin, a follower element rotatable and slidably mounted on said pin and extending into the grooves, said annulus and said pin adapted to be mounted on members one of which is rotatable with respect to the other whereby the follower element will engage either of the strips of conducting material for closing the circuits.

2. In combination, a rotatable member, a stationary member, an annulus mounted on one of the members and formed of non-conducting material having formed in its outer surface a pair of transversely spaced circumferentially disposed grooves and an inclined branch groove angling across the outer surface and connecting the opposite ends of the pairs of grooves, conducting strips mounted in the pair of grooves, a pin, means for mounting the pin on the other member, and a follower element slidable on the pin and extending into the grooves.

3. In combination, a rotatable member and a stationary member, an annulus formed in sections, for securing the sections about one of the members, said annulus being formed of non-conducting material having formed in its outer surface a pair of transversely spaced circumferentially disposed grooves and an inclined branch groove angling across said outer surface and connecting the opposite ends of the pair of grooves, conducting strips in the pair of grooves, a pin, a clamp in which the pin is fixed, said clamp being clamped about the other member, a disk slidable and rotatable on said clamp and extending into said groove for engaging the contact strips upon rotation of the rotatable member.

In testimony whereof they affix their signatures.

JOHN GEYER.
JOSEPH SWITZER.