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C. D. WIEMER

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SWITCH

Filed April 13, 1922

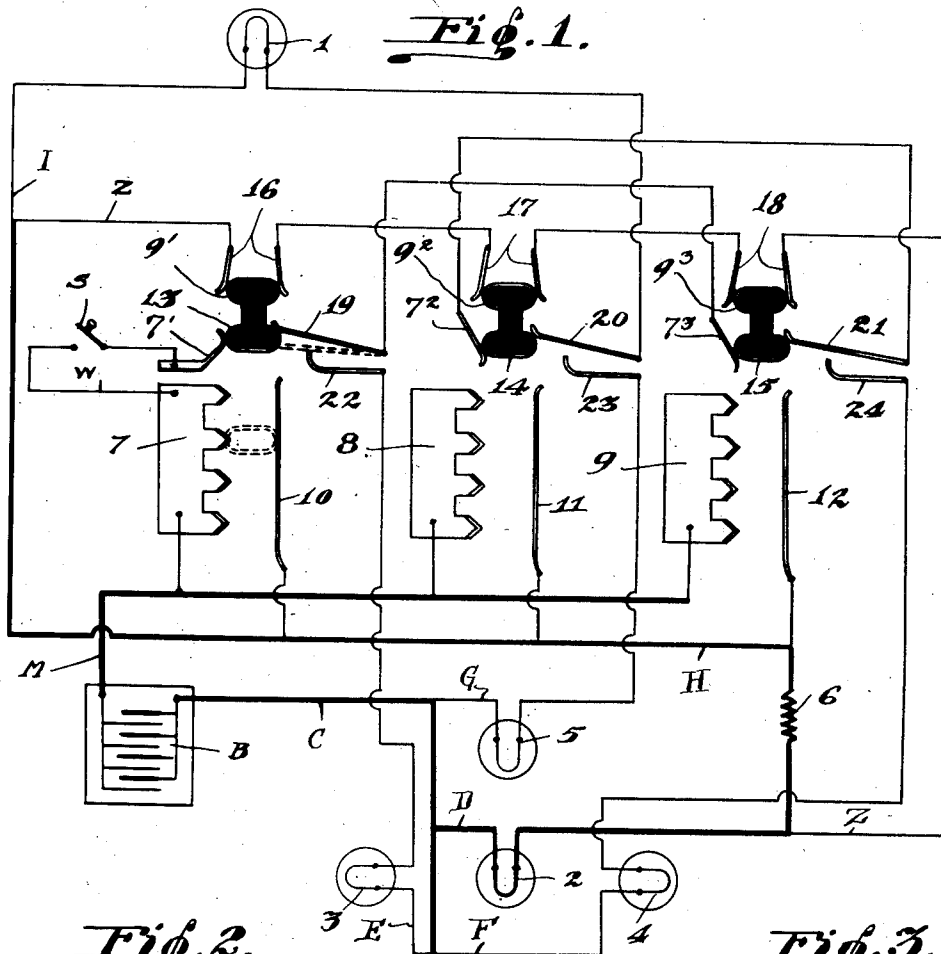


Fig. 2.

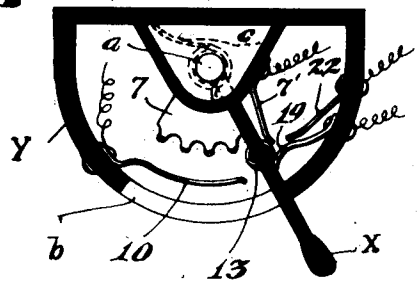
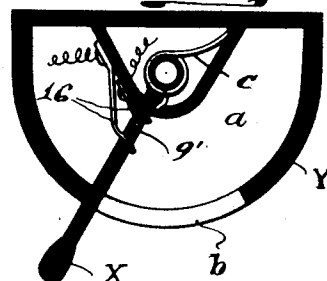


Fig. 3.



Inventor
Charles D. Wiemer,

By **M. Crandall**

Attorney

UNITED STATES PATENT OFFICE.

CHARLES D. WIEMER, OF LOS ANGELES, CALIFORNIA.

SWITCH.

Application filed April 13, 1922. Serial No. 552,376.

To all whom it may concern:

Be it known that I, CHARLES D. WIEMER, a citizen of the United States, and resident of Los Angeles, in the county of Los Angeles and State of California, have invented new and useful Improvements in Switches, of which the following is a specification.

This invention is a switch mechanism particularly adapted for use in connection with a signaling system for a vehicle, whereby drivers of other vehicles as well as pedestrians, may be warned of the intended movement of the vehicle upon which the device is installed.

The signalling system preferably includes a usual tail-light, an indicator light adjacent the driver and adapted to show the working of the system, and lights adapted to respectively warn of an intention to stop, and to turn to the right and to the left.

The switch mechanism controlling these lights, comprises three elements, which are so arranged as to respectively control the stop and turn signalling lights. When one of the switch elements is actuated, the corresponding signalling light, is illuminated and preferably caused to flicker, and at the same time the indicator light adjacent the driver is similarly illuminated.

In the day time, when the tail-light is not normally burning, actuation of one of the switch elements, will also cause flickering illumination of the tail-light, and at night, when the tail-light and the indicator light are normally illuminated, they will be caused to flicker, when one of the switches is operated.

In practice, the system is preferably so arranged that the tail-light will have a reduced intermittent illumination, when it is caused to flicker, in order that the signalling light may be readily seen.

The invention thus provides a flickering signal, which will quickly attract attention, and positively warn of the intended movement of the vehicle.

The invention will be readily understood from the following description of the accompanying drawings, in which:—

Figure 1 is a diagrammatic showing of the improved switch mechanism and signalling system.

Figs. 2 and 3 are plan views of one of the switch elements, looking from opposite sides.

The system, as illustrated, is adapted for use upon a motor vehicle or the like, the usual indicator light mounted upon the instrument board being shown at 1, and the tail-light at 2. Lights 3, 4 and 5 are preferably mounted at the rear of the machine, and are for signalling respectively, an intention to turn to the right, to turn to the left and to stop.

The three units of the switch mechanism are of similar construction, and each comprises a housing Y and a switch lever X.

Multiple point feeder contacts are positioned in the respective housings, and are shown at 7, 8 and 9. Contact strips 10, 11 and 12 are spaced from the multiple point contacts, and form complementary feeder contacts.

The switch levers X carry bridges 13, 14 and 15, which, when the levers are actuated, establish electrical connection between the complementary contacts, and due to the multiple point construction of contacts 7, 8 and 9, an intermittently made and broken circuit is established as the switch levers are swung upon their pivots. When the limit of movement of a switch lever is reached, it is released, and returned to its original position by a spring c.

Spaced contacts 16, 17 and 18 are supported by the respective switch housings, and when the switch levers are in inoperative position, these contacts are bridged by conductors 9¹, 9², and 9³, carried by levers X. When the switch levers are actuated, contacts 16, 17 and 18 break the circuit in which they are arranged.

Spaced contacts 7¹—19, 7²—20, and 7³—21 are also supported by the respective switch housings, and are bridged by bridges 13, 14 and 15; when the switch levers are in inoperative position. Circuits are broken at these points when the bridges 13, 14 and 15 are shifted with the respective levers, and upon release of contacts 19, 20 and 21, they swing into contact with strips 22, 23 and 24 carried by the switch housings.

Considering the switch construction more in detail, attention is directed to Figures 2 and 3 showing one of the switch units, and inasmuch as such units are complementary, the construction of but one unit is necessary to afford a clear understanding of the invention. In forming the switch the housing

Y and the switch lever X are formed of a suitable insulating material; the lever X being pivoted at *a* within the housing and extending through a slot *b* in the latter; the lever being normally held retracted by the spring *c* and maintained in the position shown in Figure 2 with the bridge thereon effecting electrical connection between the contact members 7¹ and 19 and maintaining the contact member 19 out of electrical connection with the contact member 22. The multiple point contact member indicated at 7 is arranged with its contact points disposed on an arc concentric with the pivotal mounting *a* of the lever in such manner that as the latter is advanced, the bridge indicated at 13 will pass successively over the multiple points and operate to effect electrical connection with the contact member 10 which extends on an arc in spaced relation to the contact points on the contact 7, from which it will be seen that in moving the switch lever X throughout the length of the slot *b*, in either a forward or backward direction the contact member 13 will be intermittently moved in and out of engagement with the contact member 7.

A source of electrical energy for the system is shown at B, and the main feed line M leads from the same to the respective contacts 7, 8 and 9. Leading from the source of electrical energy B is a conductor C from which lead conductors D, E, F, and G leading through the tail light 2 and signal lights 3, 4, and 5, respectively; the conductor B connecting with a conductor H through a resistance coil 6, which conductor H connects with the contact strips 10, 11 and 12 and leads to a conductor I passing through the lamp 1 and connecting with the contact 20. The conductor E passing through lamp 3 connects with contact 22; conductor F leading through lamp 4 connects with contact 24, and conductor G leading through lamp 5 connects with contact 23. A shunt circuit conductor Z around the resistance coil 6 leads from the conductor D to the conductor I in which is arranged the pairs of contact members 16, 17, and 18.

Contacts 7¹—19, 7²—20, and 7³—21 are connected in series, and at one end are connected to the multiple point contacts as by the line W, while at their opposite end they are connected to the side of light 1 which is opposite the connection between said light and the line C.

A switch S is preferably provided in the line W, for controlling the tail-light, as will be hereinafter explained.

The operation of the system is as follows:—

A circuit is provided for the tail-light and the indicator light, which, when switch S is closed, is a closed circuit for steady burning of said lights, except when one of the sig-

nal lights is illuminated, by moving its controlling switch. This is the normal condition at night; in the day time this circuit is opened by opening switch S, so that the tail-light and indicator light do not burn under normal conditions, that is, when the signal lights are not illuminated.

This circuit may be traced as follows:—battery B, line M, contact 7, line W, the contacts of the three switches of which contact 7¹, bridge 13, contact 19, is an example, then through light 1, shunt circuit Z, and light 2, back to the battery.

Under such normal conditions, circuits through the signal lights are broken. When one of the switch levers is actuated to illuminate the desired signal light, said light is caused to flicker, and at the same time the indicator light 1 and the tail-light are caused to flicker, whether or not they have been previously illuminated. The resistance 6 is also placed in the circuit through the tail-light, to prevent overillumination of the same when not in series.

When a switch lever is actuated to cause this result, contacts will be made and broken as follows; reference being made to the left hand switch of Fig. 1.

Line Z is broken at contacts 16, bridge 13 breaks connection with contacts 7¹—19, and makes connection with contact 10, while alternately making and breaking with contact 7. At the same time contact 19 engages contact 22.

The circuit through the tail-light may then be traced as follows:

Battery B, line M, the intermittent circuit formed by contact 7, bridge 13, and contact 10, conductor H, resistance 6, conductor D the tail-light, and back to the battery.

At the same time the circuit through the indicator light 1 and signal light 3 is as follows:

Through the intermittent circuit making means as previously described,—that is, through line M, contact 7, bridge 13, contact 10, conductor H, conductor I through light 1, thence through contacts 19—22, the light 3, and line C back to the battery.

The circuits for each of the other switches and their corresponding signal lights may be similarly traced when the respective switches are actuated.

It will thus be seen that the tail-light and indicator light may be illuminated irrespective of the operation of the signal lights, and that when one of the signal lights is illuminated, it is caused to flicker, and at the same time, the tail-light and the indicator light will also flicker. Furthermore, when a signal light is illuminated, the brilliancy of the tail-light is intermittent, in order to readily observe the signal light.

It will be apparent that various changes may be made in the construction as thus de-

scribed, without departing from the spirit of the invention.

What is claimed is:

1. A switch for a signalling system comprising a contact having spaced contact points, a movable contact cooperating therewith to intermittently engage the contact points when the switch is actuated, and a circuit maker and breaker comprising a fixed contact and a movable contact actuated by said first movable contact, said circuit maker and breaker being arranged whereby an electric circuit including said first movable contact is opened, and a circuit including said fixed contact is closed, when the switch is actuated.

2. A switch for a signalling system comprising a contact having spaced contact

points, a movable contact cooperating therewith to intermittently engage the contact points when the switch is actuated, a circuit maker and breaker comprising a fixed contact and a movable contact actuated by said first movable contact, said circuit maker and breaker being arranged whereby a circuit including the first movable contact is opened, and a circuit including said fixed contact is closed, when the switch is actuated, and a second circuit maker and breaker comprising a contact movable with the first movable contact and having a contact cooperating therewith, said circuit maker and breaker being arranged whereby a circuit is opened when the switch is actuated.

CHARLES D. WIEMER.