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STEERING WHEEL CONTROL MEANS FOR ELECTRICALLY OPERATED SIGNALS.

APPLICATION FILED JULY 26, 1916. RENEWED OCT. 16, 1918.

1,287,680. Patented Dec. 17, 1918.

Fig. 1.

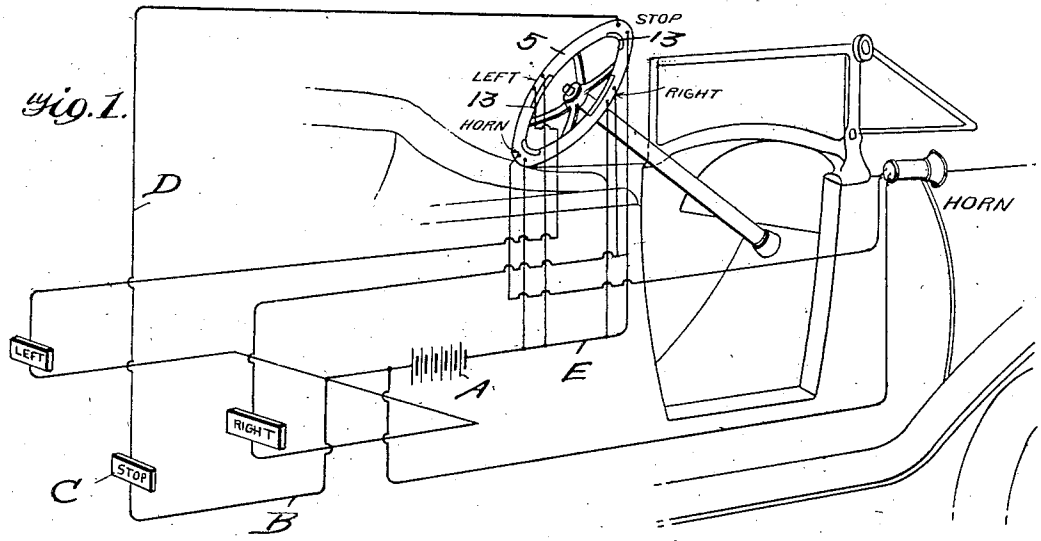


Fig. 2.

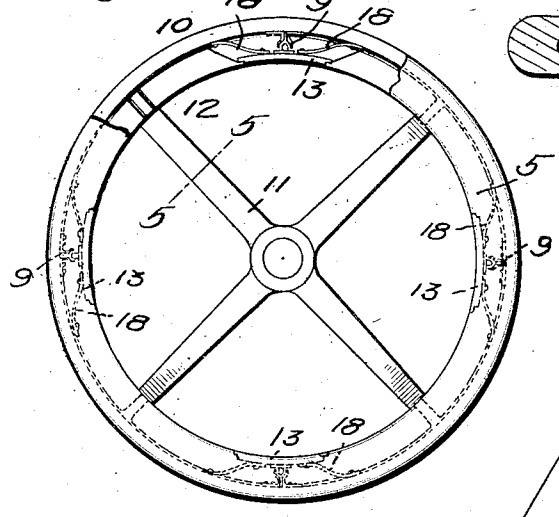


Fig. 7.

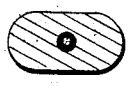


Fig. 3.

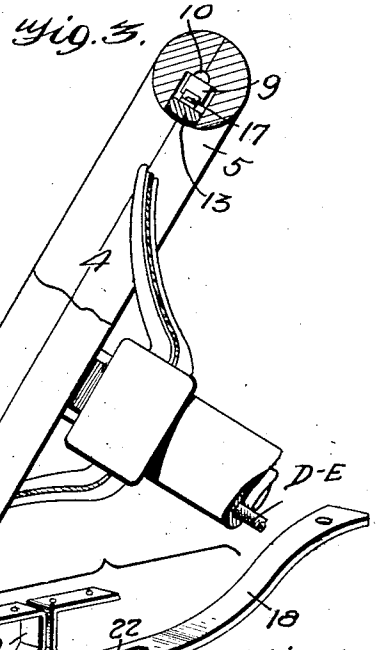


Fig. 4.

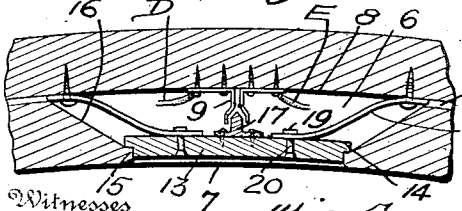
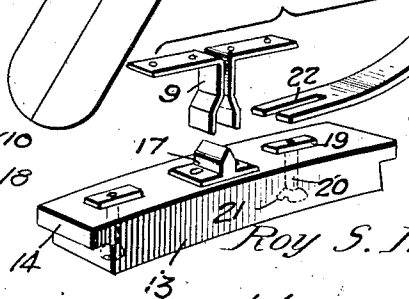


Fig. 5.



Fig. 6.



Witnesses

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STEERING-WHEEL CONTROL MEANS FOR ELECTRICALLY-OPERATED SIGNALS.

1,287,680. Specification of Letters Patent. Patented Dec. 17, 1918.

Application filed July 26, 1916, Serial No. 111,414. Renewed October 16, 1918. Serial No. 258,486.

To all whom it may concern:

Be it known that I, ROY S. HANNA, a citizen of the United States, and a resident of St. Petersburg, in the county of Pinellas and State of Florida, have invented a certain new and useful Improvement in Steering-Wheel Control Means for Electrically-Operated Signals, of which the following is a specification.

One of the principal objects of the invention is to provide an improved means whereby electrically operated signals carried on a motor car may be controlled and actuated without the necessity of the driver removing his hands from the steering wheel.

Another object of the invention contemplates an arrangement whereby the finger actuated blocks and associated parts may be readily dismounted at will to give access to the various switch devices for purposes of cleaning and renewal.

A still further object resides in the arrangement of the blocks in such manner that they will not become accidentally depressed or shifted by reason of the driver's hands moving into various positions on the steering wheel.

A still further object of my invention is to provide an improved device of the character described, which will be extremely simple, durable, efficient in operation, and inexpensive to manufacture.

With these and other objects in view, the invention resides in the construction, combination, and arrangement of parts hereinafter more fully described and claimed, and illustrated in the accompanying drawings, in which like characters of reference indicate like parts throughout the several figures, of which:

Figure 1 represents a view in perspective of a steering wheel signal control device, constructed according to my invention, the electrical circuits being diagrammatically represented;

Fig. 2 represents a top plan view of a wheel, portions being broken away;

Fig. 3 represents a side elevational view partially in section of the steering wheel;

Fig. 4 represents a sectional view taken on the plane indicated by the line 4—4 of Fig. 3;

Fig. 5 represents a sectional view taken transversely of one of the wheel spokes, on the plane indicated by the line 5—5 of Fig. 2;

Fig. 6 represents a detail perspective view of one of the blocks and associated parts, the elements being shown in disconnected relation for the purpose of clearness in illustration;

Fig. 7 represents a view similar to Fig. 5 of a modified form of spoke.

The steering wheel 5 supports a separate contact or circuit closing device for each of the circuits employed in the signaling system, and since the construction in each instance is the same, a description of one will suffice for all. This signaling system may include a number of direction indicating and stop signals of suitable construction, and one or more horns or other audible signals.

The wheel is provided with a recess 6 for receiving each of the circuit closing devices, each recess opening on the inner periphery of the wheel, as at 7. On the floor 8 of the recess is secured a pair of separated resilient metallic tongues 9. These tongues form the terminal members of the circuit wires of one of the circuits. A description of the circuit in which the "stop" signal is included illustrates the operation of the device.

From a battery A suitably located on the car, extends a wire B to the "stop" signal C. This signal may be of ordinary construction well known in the art and need not therefore be described. Another wire D extends from the top signal and terminates at one of the tongues 9. A wire E leading from the opposite pole of the battery terminates at the other one of the pair of tongues 9. When the circuit is closed across these tongues 9, the stop signal will be actuated, and will remain in operation as long as this circuit remains closed. When the circuit is broken the signal will become inoperative.

In order that the wires which terminate at the tongues 9 may be properly housed and protected, the wheel is provided with a groove 10 and at the points where this groove passes the outer ends of the spokes 11 of the wheel, recesses or openings 12 are cut in the wheel which communicate with the groove 10. The outer ends of these openings 12 aline with channels 13 formed in the edges of the spokes 11, as indicated in Fig. 5. The wires D—E extend from the tongues 9 in opposite directions through the groove 10

and are then extended out through the closest openings 12 in the wheel, are led along the channels in the spokes which aline with these openings, and are then directed down through the outer casing of the steering wheel, as indicated by D—E in Fig. 3.

As indicated in Fig. 7, the wheel spokes may if found preferable, be made hollow or formed with one or more internal channels or bores for receiving the conducting wires.

Arranged in the recess 6 in the steering wheel is a substantially rectangular block 13 made of suitable material. This block is slightly curved to conform with the curvature of the steering wheel and the ends of the block adjacent its inner face are shouldered as at 14. These shoulders 14 coact with shoulders 15 formed on the inclined front walls 16 of recess 6, in limiting outward movement of the blocks. The block is normally arranged in the position indicated in Fig. 4, through the medium of springs to be hereinafter described, and when in this position it will be noted that the outer face of the block lies inside of the inner surface or periphery of the steering wheel, so that the hands of the operator may be readily shifted about from place to place on the steering wheel without danger of accidentally depressing the block.

On the inner face of the block is mounted a metallic lug 17, which acts, when the block is pressed inwardly, to wedge between the tongues 9, thus closing the circuit across them and actuating the signal. The block will be pressed in by a thumb or finger of the driver, and when pressure is released the block will again be forced outwardly whereby to open the circuit.

A pair of leaf springs indicated at 18 is secured at their inner ends against the floor of recess 6 adjacent the ends of the latter, by suitable connecting means and the outer ends of these springs 18 bear against the inner face of block 13. The outer ends of the springs extend toward each other and the springs are suitably bent so as to normally retain the block in position for keeping the lug 17 out of contact with the spring tongues 9. The springs are detachably connected with the block by means of turn buttons 19 carried on shanks 20 which shanks extend laterally through the blocks and are provided with screw heads 21 whereby they may be turned by a screw driver or allied instrument.

The outer ends of the springs 18 are provided with slots 22 of a width substantially equal to the width of the turn buttons 19, and in assembling the device after the springs have been secured in position, the block is slipped into the recess the turn buttons 19 being in alinement with each other and parallel with the slots 22 in the springs 18. Thereafter the shanks 20 are turned at right angles so as to twist the buttons 19 into positions to lie transversely of and across the outer ends of the springs 18, thus retaining the block in connection with the springs.

It will of course be understood that a length of shanks 20, substantially equal to the thickness of the springs 18 extends beyond the inner face of the block so that the turn buttons will be positioned beyond the inner face of springs 18, whereby they may be readily turned to lie transversely of the springs. The slots 22 in the springs allow play of the springs as the block is pushed inwardly or moved upwardly.

The block may be readily removed to allow access to the parts contained within the recess, by simply turning the shanks 20 to realine the buttons 19 with the slots 22 in the springs, whereupon the block may be manipulated to be withdrawn from the recess.

It will be understood from the foregoing that I have provided a control means which is characterized by great convenience and ease of operation, and which presents an exceedingly simple construction, and while the device is capable of actuation without the necessity of loss of time by removal of the driver's hands from the steering wheel, yet, as already pointed out, there will be no danger of accidentally bringing any of the signals into operation. An advantage lies in the fact that the various elements of the device are concealed and hidden from view within the steering wheel, so that the finished appearance of the latter is not broken or marred.

Although I have described the preferred embodiment of my invention, I may desire to make such changes in the construction, combination, and arrangement of parts as do not depart from the spirit of the invention and the scope of the appended claims.

I claim:

1. In a signal control, a steering wheel having a recess therein and having a groove for receiving wires, said groove communicating with openings leading to the surface of the wheel, through which openings the wires are led, metallic spring tongues secured against the floor of the recess in spaced relation to each other, said tongues forming terminals for the wires, a depressible block arranged in the recess and having a metallic lug adapted to engage the tongues when the block is depressed for closing the circuit across said tongues, leaf springs secured at their inner ends to the floor of the recess, said springs at their outer ends bearing against the block, and means carried by the block for detachably engaging said springs.

2. A signal control device including a steering wheel having a recess therein, contact tongues secured against the floor of the

recess, wires leading from said tongues through a groove in the wheel and extending out through openings leading to the surface of the wheel, a depressible block arranged in the recess and having its ends provided with shoulders adapted to engage the walls of the recess for limiting movement of the block outwardly from the recess, a lug carried by the block movable into engagement with the terminal tongues for closing a circuit across them when the block is detached, springs secured to the wheel within the recess and bearing against said block for normally retaining the latter in position for keeping the lug out of engagement with the terminal tongues, and means carried by the block detachably engaging the springs, said means adapted to be manipulated for allowing detachment of the block from the springs.

3. A control device including a steering wheel having a recess therein opening on the periphery of the wheel, contacts arranged within the recess, wires leading from the contacts through a groove in the wheel and to the outside thereof through openings provided in the wheel communicating with the groove, a depressible block arranged in the recess having shoulders coacting with the walls of the recess in limiting outward movement of the block, means carried by the block for closing a circuit across the terminals when the block is depressed, resilient means arranged in the recess normally retaining the block in outward position, and means detachably connecting the block with said resilient means.

4. A control device including a steering wheel having a recess opening at the periphery of the wheel, a depressible block arranged in the recess, circuit control means operable by the block, springs arranged in the recess bearing against one face of the block and normally retaining the latter in outward position, said springs having their ends adjacent the block provided with slots, turn buttons carried by the block engaging over the springs for retaining them in engagement with the block, and means whereby the turn buttons may be moved into position to aline with the slots in the springs whereby the block may be detached from said springs.

5. A control device including a steering wheel having a recess therein opening at the periphery of the wheel, a depressible block arranged in the recess, electrical contact devices arranged within the recess including an element carried by the block adapted to effect closure of an electrical circuit when the block is depressed, spring means for normally retaining the block in extended position, and means coöperating with the spring means in detachably securing the block in place in the recess.

ROY S. HANNA.