

R. E. BOORAEM.
 OPERATING INDICATOR FOR VEHICLES.
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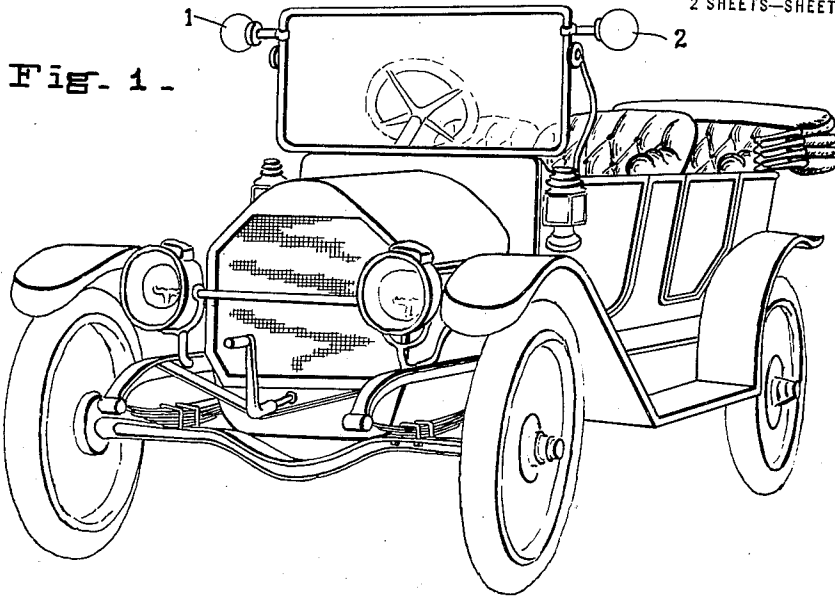
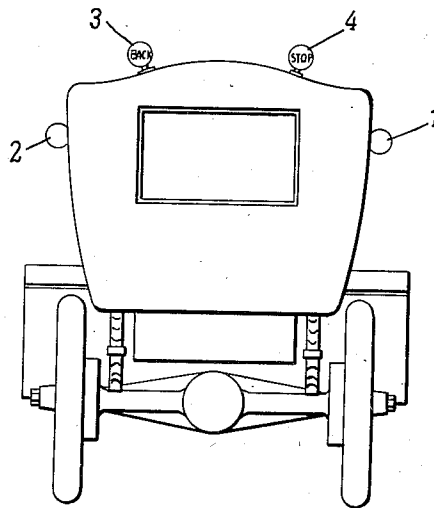
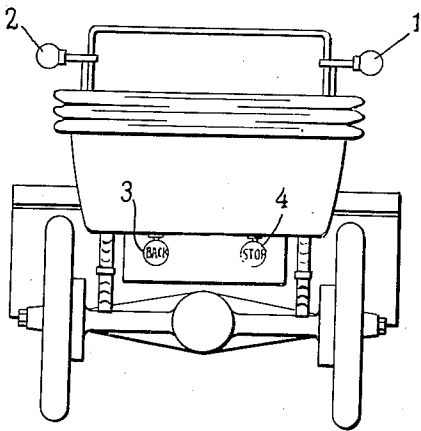


Fig. 3.

Fig. 2.



WITNESSES

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 2 SHEETS—SHEET 2.

Fig. 4.

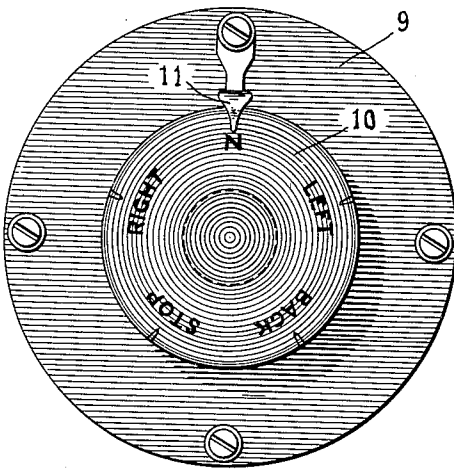


Fig. 5.

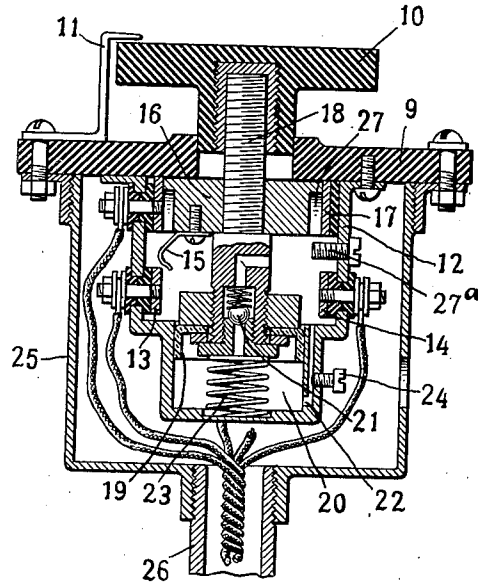
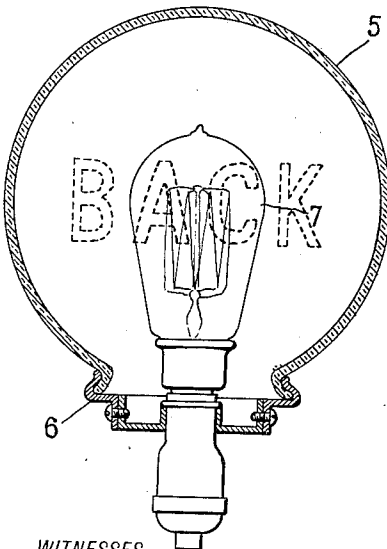


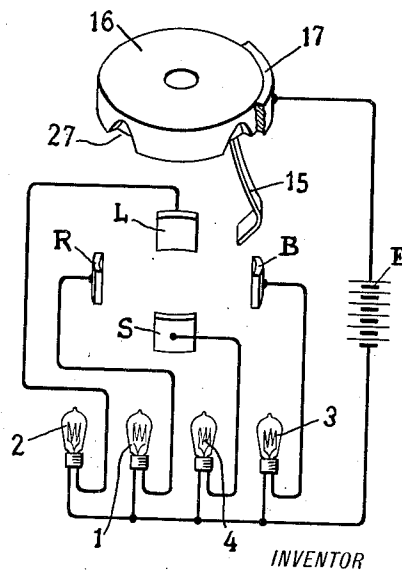
Fig. 6.



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Fig. 7.



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OPERATING-INDICATOR FOR VEHICLES.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ROBERT E. BOORAEM, a citizen of the United States, and a resident of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Operating-Indicators for Vehicles, of which the following is a full, clear, and exact description, whereby any one skilled in the art may make and use the same.

The invention relates to devices and a system of signals by which the direction of movement of a vehicle may be indicated by the operator.

It pertains more essentially to signals for a moving vehicle of the trackless type, such as automobiles and consists essentially of providing a means by which the operator may indicate to the drivers of other vehicles his intention of operation of his own car.

Many signaling devices have been devised which show lights and signs at the rear of the car for the purpose of instructing the following driver as to the intended movements of the car ahead. These ordinarily have consisted of signs illuminated to show different words as, for instance, "Right", "Left" (indicating a turning movement), or "Stop" and "Back." In all such devices, the driver operating a car must first of all notice the changing signal and secondly must hesitate to read the particular signal. These devices have the disadvantage of requiring special attention and do not in any sense, approach that which is quickest and nearest to the senses, namely, a visual moving signal.

It is the object of the present invention to provide a signaling system which is immediately under the control of the operator and which will, by a flash or moving signal, immediately indicate either to those approaching or those following the intention of the driver of the car bearing the signals.

It is a further object of the device to free the operator of all obligation of utilizing his hands or feet for maintaining a given signal for any predetermined period of time. In other words, the operator may set his signal and be assured that the signal will remain for a predetermined period of time during which he may be at liberty to operate his car without reference to further transmittal of signals.

A still further object of the device is to insure the setting of a proper signal and

the maintenance of said signal for a predetermined period. The question of the setting of the signal and its change is immediately under the control of the operator. Applicant is aware that a series of electric circuits for signals have been controlled from a single apparatus, and is also aware that push buttons have been employed having a retarding action to maintain a closed circuit for a definite period of time and arranged to prevent holding the closed contact beyond a certain period of time. He is also aware that mechanically operated devices have been employed for operating electric circuits for sign and display lighting. The invention hereinafter defined contemplates more than this, in that it provides the definite selection of a given circuit to be closed; then, an absolute free movement of the closing member under manual manipulation with assurances of the proper circuits being closed, even though the selector is not turned to the exact point of indication; and finally, a retarded movement of the actuator and selector which will break the circuit selected after a definite predetermined period of time. The device must be manually set and any given circuit closed. Thereafter, it will take care of itself and break the circuit automatically.

Referring to the drawings Figure 1 is an illustrative view showing the position of the forward signals. Fig. 2 is an illustrative view of the rear of the vehicle shown in Fig. 1, with the signals "Stop" and "Back" in relative position. Fig. 3 illustrates the rear signals for "Stop" and "Back" as applied to a covered car, commonly known as a limousine. Fig. 4 is a top plan view of the controlling box. Fig. 5 is a sectional view through said box. Fig. 6 is a sectional view illustrating the arrangement of the signal lights. Fig. 7 is a diagrammatic view of the wiring for the system.

It is the intention of the present invention to provide a positive signal directly under the control of the operator by which said operator may indicate to a car approaching or to a car following that he is about to turn to the right; turn to the left; stop or reverse his direction of movement and back up.

In order to give such a combination of signals, it is apparent that he must have under his immediate control a selective mechanism in the operation of which he will

"flash" only the desired signal and no other during the time which he is moving his signaling apparatus.

As illustrated in the drawings, the mechanism is shown as providing a "right" and "left" signal at the forward end of the car and within sight from the rear thereof with the "stop" and "back" signals arranged directly in the rear of the car, each of said signals being controlled individually from a single operating device or switch.

With this system, the operator may set a given signal and thereupon attend to the manipulation of his car without further reference to the signal device, being assured that it will automatically re-set itself or extinguish the particular signal given during the period of time occupied by him in operating his car after giving the signal.

Referring to the drawings, 1, 2 represent the forward signals which, as illustrated herein, are attached to the wind shield and extend outwardly a sufficient distance to be plainly seen from the rear of the car, although within the limits of "side-rake" of the vehicle.

Referring to Fig. 2, there are illustrated two signal devices 3, 4 at the left and right respectively of the rear of the vehicle, which indicate a backing movement or a stop of the vehicle. These rear signals corresponding to 3 and 4 and indicating "Back" and "Stop" are shown in Fig. 3 as mounted upon the top of the vehicle which would be the case where a closed vehicle of the limousine type was employed.

In fact, a complete system of signals indicating "Right," "Left," "Back" and "Stop" might be mounted upon the top of the limousine body at the rear. It is preferred, however, to have the turning signals indicating "Right" and "Left" always under the observation of the operator, as is the case where they are mounted upon the wind-shield or in a position forward of the driver.

The particular form of signal suggested and illustrated herein consists of white semi-opaque globes 5 (specifically illustrated in Fig. 6). These globes are mounted in a suitable base 6 and have within them a lamp bulb 7 of distinctive color, such, for instance, as red. The circuits of these lamps contained in the globes 7 are illustrated in diagram in Fig. 7 and the controlling mechanism for the circuits is specifically illustrated in Figs. 4 and 5. With the semi-opaque globes 5 and the interior globes of different color, it is apparent that in ordinary running merely white bulbs are shown and as soon as the circuit is closed, either one of the lamps of the interior or colored globes 7 will show a distinctive signal. Red is mentioned as an appropriate color for signal, but, of course, the invention is not limited to a particular color.

In the case of the rear lights indicating "Back" and "Stop," the same system of globes and lamps may be employed but in this instance, the interior of the globe 5 would have, or the globe 7 or some intermediate member, would have imprinted upon it a semi-translucent word indicating the particular signal desired, as, for instance, "Stop" or "Back." These letters or words are to be formed of an appropriate material and color to make a clear showing when the interior lamp is lighted.

In practically all vehicles now used there is an electric ignition and lighting system which may be utilized for signal purposes such as herein defined or if required, an individual source of electrical energy may be employed. The wiring diagram for such a system is illustrated in Fig. 7 wherein L indicates the contact which controls the lamp 2, giving the signal to turn to the left. The contact R controls the circuit for the lamp 1, giving the signal to turn to the right. The contact B controls the lamp 3, giving the signal for backing and the contact S controls the lamp 4, giving the signal for "stop".

All of the contacts L, R, B and S are effective as the operating button or handle 10 is turned into proper position to close the circuit for the respective lamps from a source of electrical energy E, which source of energy may be the magneto, storage battery or any other source of electrical equipment which is desired.

In Figs. 4 and 5, there is shown in detail a form of apparatus for controlling the various contacts of the circuits and the signals. This device is designed to be applied to the steering wheel or in any convenient position for the operator and consists of a suitable plate 9 preferably of insulating material centrally arranged, upon which, is a revolvable controlling button 10. This button bears on its upper surface proper indicia, such as "Left," "Right," "Back," "Stop" and "N" indicating the neutral or "off" position of the apparatus.

Dependent from the plate 9 is a contact box 12 which has insulated therefrom a series of contact members 13, 14, etc., corresponding to the contacts L, R, B, and S of the diagram of Fig. 7. These various contacts are connected by wires to the source of electrical energy and cooperate with a contact finger 15 suitably mounted upon a cylindrical member 16 which fits snugly within the casing 12 and is electrically connected through the sliding contact member 17 with the source of electrical supply. The cylindrical member 16 is connected with the button 10 through a bolt or bar 18 which forms a supporting shaft for the piston 19 which fits within a cylinder 20 at the lower end of the casing 12.

The piston 19, as illustrated, consists of a suitable air-tight member suitably clamped upon the spindle 18 and working in the cylinder 20 and forms in part a dash-pot to retard the upward movement of the spindle 18 and button 10, after it has been depressed. The lower end of the spindle 18 is provided with a relief valve 21 so that the piston 19, together with the connected parts may be readily depressed into the cylinder 20. A by-pass 22 is effective for controlling the upward movement of the parts which are under pressure by a spring 23. The speed of operation of the piston 19, through the action of the by-pass 22 may be controlled by an adjustable screw 24.

The whole mechanism described is suitably incased in a cup 25, through which the electrical connections pass through tubing 26. Thus the parts are insured against the action of the weather and injury from abrasion.

The cylindrical member 16 is provided with a series of tapered notches or grooves corresponding in number and position to the signal points, such, for instance, as "Left", "Right", "Back" and "Stop". These grooves are indicated at 27 and are effective for positively locating the button 10 when it is desired to make an electrical circuit connection for either of the signals desired. In order to depress the member 16, one of said grooves must be brought into registering position with a lug 27^a, preferably located coincident with the position of the indicator 11. This arrangement insures closing of the circuits only for specific given signals and the bevel of the grooves 27 permits sufficient latitude for rapid operation.

In operation, the button 10 is turned by the operator until the proper signal indicia falls beneath the indicator pointer 11. Thereupon, he depresses the button. This may be freely done in view of the valve 21. The operation is merely momentary and he may then devote his attention to directing his car. When the button is depressed, the circuit is closed for the particular signal desired and remains closed until the by-pass 22 has permitted the spring 23 to reinstate the various parts of the mechanism and break the circuit. There is a particular advantage in this arrangement inasmuch as the operator may at a moment's notice, set and give his signal and rely upon said signal being maintained for a sufficient period for him to operate his car. In the event of his being compelled to give particular attention to the operation of his car thereafter, he may be assured that the signal will be thrown off. No matter what the position of the dial on the button 10 may be, he can always re-set any specific signal without flashing any signal which is not desired at the moment.

Obviously the specific indicia for signals may be varied to a very considerable extent without departing from the spirit or intent of the invention and the exact and specific mechanism for controlling the signals may be varied and modified to suit the exigencies of any particular case.

The main feature of the signal devices and system resides in the ability to change permanently fixed blank signaling devices to specific indicative signals and automatically maintain any given signal for a predetermined period of time. For instance, all signals normally show white. Any signal may be instantly set under color or with a word signal. Any signal so set will remain a fixed signal for a sufficient period of time for the operator to accomplish the operation of his car.

From the above, it is apparent that there is a flashing or moving signal which will attract the attention of the drivers of oncoming vehicles and will remain as a signal for an appreciable period of time.

This system differs materially from those in which a word or other indicia is flashed and in the manipulation of which the driver must either devote his attention to the signal for an appreciable time or must release the signal after it has been given. It is apparent that the hereinabove described device frees the operator from all obligation except that of setting his signal and after he has operated his car, he is assured that his signals are blank. In other words, he will never run under a false or improper signal.

What I claim as my invention and desire to secure by Letters Patent is:

1. The combination in a device of the character described for controlling the electrical circuits of a series of signals, a selective controlling device for closing either of said circuits, said device comprising a rotary selector, means for depressing said selector devices for preventing depression of the selector except at predetermined positions, devices for retarding the movement of said selector after it is set and contact devices operatively connected with the selector and the several circuits.

2. In a device for controlling a plurality of signal circuits, a supporting plate, an inner casing bearing on its inner periphery insulated contact members, a rotatable contact member adapted for closing a circuit through either of said first named contacts, said rotary contact having a reciprocating motion during the making and breaking of the circuit, a dash-pot for retarding the movement of reciprocation of the rotary contact member, and a check valve permitting unrestricted movement thereof during the making of the contact of any circuit.

3. In a device for controlling a plurality

of signal circuits, a supporting plate, an inner casing bearing on its inner periphery insulated contact members, a rotatable contact member adapted for closing a circuit through either of said first named contacts, said rotary contact having a reciprocating motion during the making and breaking of the circuit, a dash-pot for retarding the movement of reciprocation of the rotary contact member, a check valve permitting unrestricted movement thereof during the making of the contact of any circuit, and an inclosing casing.

4. In a device for controlling a plurality of signal circuits, a supporting plate, a rotary selective actuator extending there-through, a cylindrical casing guiding said actuator and suspended within the plate, a rotatable and reciprocating contact member borne upon the rotary selective actuator, means permitting a free reciprocation of said actuator and contact in one direction, and a dash-pot retarding the movement thereof in an opposite direction.

5. In a device for controlling a plurality of signal circuits, a supporting plate, a rotary selective actuator extending there-through, a cylindrical casing guiding said actuator and suspended within the plate, a

plurality of contacts one for each circuit arranged in said cylindrical casing, a rotatable and reciprocating contact member borne upon the rotary selective actuator, means permitting a free reciprocation of said actuator and contact in one direction, and a dash-pot retarding the movement thereof in an opposite direction.

6. In a device for controlling a plurality of signal circuits, a supporting plate, a rotary selective actuator extending there-through, a cylindrical casing guiding said actuator and suspended within the plate, a plurality of contacts one for each circuit arranged in said cylindrical casing, a rotatable and reciprocating contact member borne upon the rotary selective actuator, means permitting a free reciprocation of said actuator and contact in one direction, a dash-pot retarding the movement thereof in an opposite direction, and means for causing registration of the movable and stationary contacts upon depression of the rotary selector.

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Witnesses:

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