E. E. OLSON.

AUTOMOBILE SIGNAL.

APPLICATION FILED MAY 20, 1921.

1,409,898.

Patented Mar. 14, 1922.

2 SHEETS—SHEET 1.

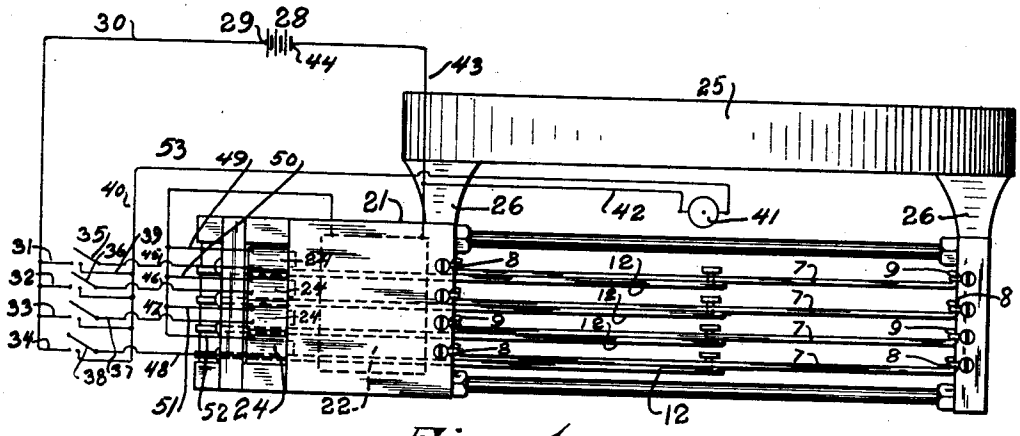


Fig. 1.

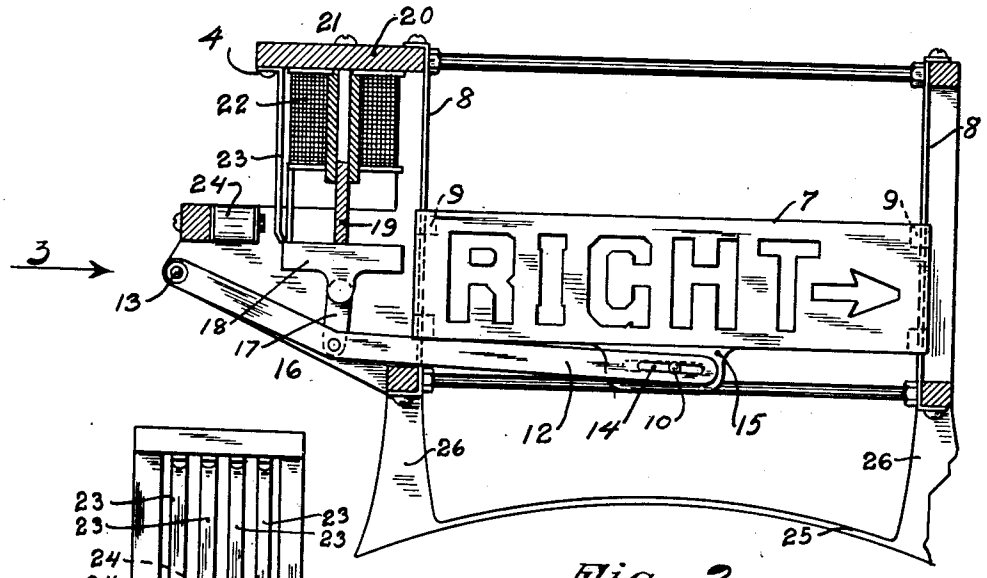


Fig. 2.

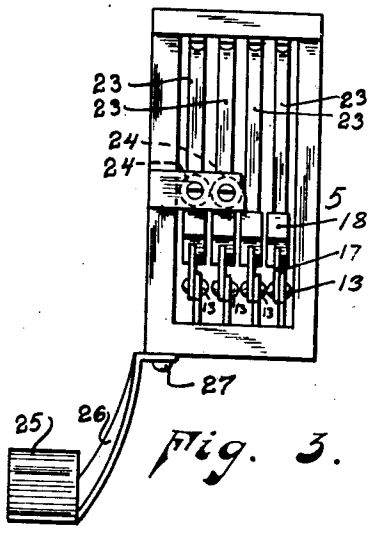


Fig. 3.

Inventor

E. E. Olson.

By A. J. Brown

Attorney

E. E. OLSON.

AUTOMOBILE SIGNAL.

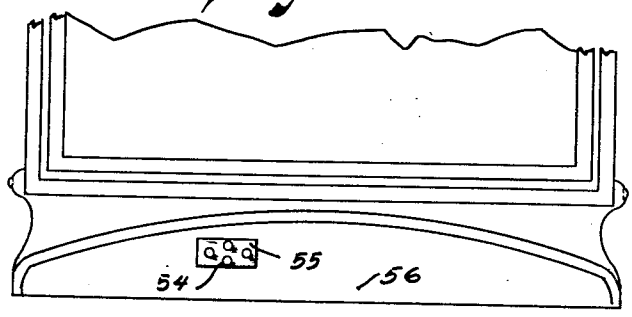
APPLICATION FILED MAY 20, 1921.

1,409,898.

Patented Mar. 14, 1922.

2 SHEETS—SHEET 2.

Fig. 4.



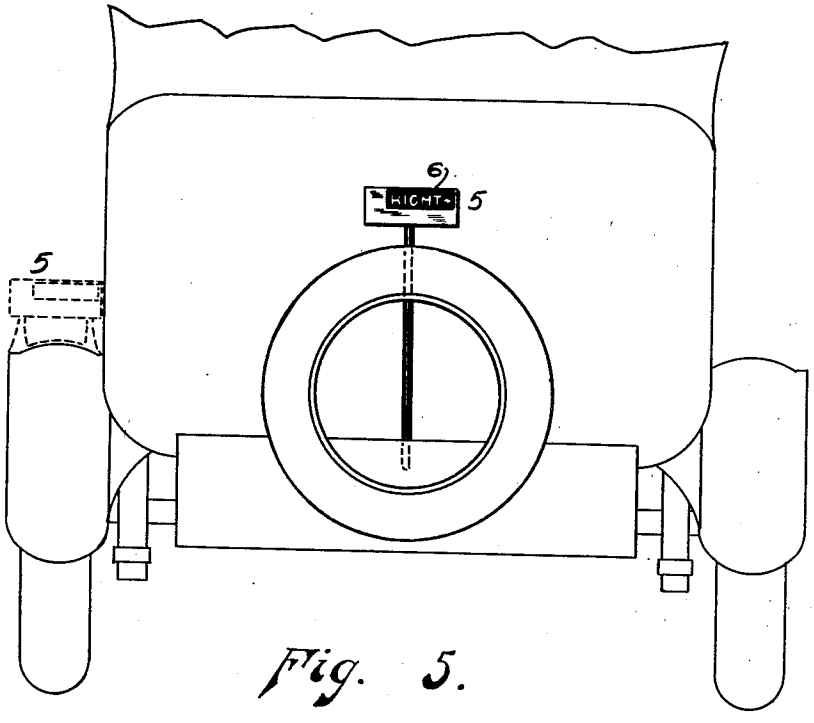


Fig. 5.

Inventor

E. E. Olson.

By A. J. Boyle

Attorney

UNITED STATES PATENT OFFICE.

EMIL E. OLSON, OF DENVER, COLORADO, ASSIGNOR TO CHARLES A. SARBER, OF NEW YORK, N. Y.

AUTOMOBILE SIGNAL.

1,409,898. Specification of Letters Patent. Patented Mar. 14, 1922.

Application filed May 20, 1921. Serial No. 471,174.

To all whom it may concern:

Be it known that I, EMIL E. OLSON, a citizen of the United States, residing at 3305 Julian Street, in the city and county of Denver and State of Colorado, have invented certain new and useful Improvements in Automobile Signals; and I do 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, reference being had to the accompanying drawings, and to the characters of reference marked thereon, which form a part of this specification.

My invention relates to improvements in automobile signals, my object being to provide a portable device adapted to be attached to any automobile and through the medium of which the driver of the machine may by the pressing of a button, display a signal indicating that he is about to turn to the right or left or that he is about to stop, or that he is about to reverse or back the machine.

Briefly stated, the device consists of a box-like structure mounted on a bracket attached to any convenient part of an automobile as, upon the fender, either front or rear. Or the device may be mounted centrally in the rear of a machine.

Within the casing of the device are mounted, to move vertically, four plates or signal members which are provided respectively with the words "Right," "Left," "Stop," "Back." Each of these signal members is guided vertically within the casing from a lower concealed position into an exposed position where the signal member is seen through an opening in the casing. Each signal member is lifted by an arm properly connected therewith and actuated by an electro-magnet of the solenoid type, each arm being connected with an armature or keeper provided with a core which extends into an opening in the magnet which is provided with coils in the usual manner. As the magnet is energized by pushing a button, for instance, the proper sign is displayed. The armature of each signal is normally locked against movement when the magnet is energized by a light leaf spring. However, as the button is pushed for energizing the main magnet, a supplementary magnet is also energized and is laterally disposed and acts upon the spring to release the armature corresponding with the signal member which is to be actuated while all of the other armatures, and consequently all of the other signal members, are locked against movement in response to the attraction of the magnet. It will be understood that only one supplementary magnet is energized at any one time. An electric light is also located in the circuit and may be lighted whenever the circuit is closed for the purpose of displaying any signal member, the electric light being located within the casing in the rear so that when any signal member is raised to the exposed position the light will shine through the letters formed therein. Each signal member is preferably composed of a plate of metal having letters cut therein, a piece of thin, white cloth or muslin being applied to the rear surface of the plate whereby the signal member may constitute a day signal by showing white letters when the circuit is not closed through the electric light or when a light is not employed.

Having briefly outlined my improvement I will proceed to describe the same in detail, reference being made to the accompanying drawing in which is illustrated an embodiment thereof.

In this drawing:

Fig. 1 is a top plan view of my improved signal, the various electrical circuits being indicated diagrammatically.

Fig. 2 is an elevation partly in vertical section of my improved device.

Fig. 3 is an end view of the same or a view looking in the direction of arrow 3, Fig. 2.

Fig. 4 is a view from a position directly in the rear of the dash and windshield showing the push buttons for closing the different circuits.

Fig. 5 is a rear view of an automobile showing the signal in two positions, one in full lines, centrally mounted, in the rear of the machine, and the other in dotted lines supported upon one of the rear fenders.

The same reference characters indicate the same parts in all the views.

Let the numeral 5 designate the casing or box-like structure of my improved device having an opening 6 in the rear to permit the exposure of any one of a number of signal members 7, each, as illustrated in the drawing, consisting of a metal plate having

letters cut therein to form a word indicating the signal which the driver desires to give; the four words contemplated by me being right, left, back, stop, the letters being preferably covered in the back by some white, thin material of such character as to permit the rays of light to pass readily therethrough. Each of these signal members 7 is mounted to slide vertically on a pair of guide wires 8 the opposite ends of the signal members having parts 9 bent around the wires in a suitable manner to permit their free sliding movement in a vertical direction. Each signal member is connected by means of a pin 10 with an arm 12 which is pivotally connected with the frame as shown at 13, the pin 10 passing through a slot 14 formed in the adjacent end of the arm, the signal member having a part 15 projecting from its lower edge and carrying the pin 10. Pivotally connected with each arm 12 as shown at 16 is a link 17 which is connected with an armature 18 provided with a core 19 which is adapted to slide freely in the central opening 20 of an electro-magnet 21 of the solenoid type, the same being provided with the usual coils 22. It will be understood that there is an armature 18 for each arm 12 and consequently for each signal member 7. Each armature is normally held at its lowest position of movement or in a position corresponding with the concealed position of its corresponding signal member by a light spring 23 which is secured as shown at 4 to the framework of the device which extends outwardly beyond the coils of the magnet. This spring-locking device is composed of magnetic material and when a supplemental magnet 24 is energized, it acts upon the lower extremity of the spring 23 to move the latter sufficiently to release the magnet 18. It must be understood that there is a supplemental magnet for each spring 23 and that these supplemental magnets are separately or individually energized, according as it is desired to display the one signal member or the other. It should also be explained that the main magnet 21 is magnetized whenever any push button is pressed and each one of the armatures 18 is equally attracted whenever the main magnet is energized. However, only one armature can move as only one of the springs 23 is attracted at any one time by its supplementary magnet, there being as many distinct circuits so far as the supplementary magnets are concerned, as there are supplementary magnets.

The frame or casing of the signal is supported by a bracket 25 having two supporting arms 26 to which the casing is secured as shown at 27.

Referring now to the circuits, let the numeral 28 designate the battery from one pole 29 of which leads a conductor 30. From the conductor 30 four branch wires 31, 32, 33 and 34 lead to switch arms 35, 36, 37 and 38 respectively. When these switch arms are closed they connect the main wire 30 with short conductors 39 leading to a main wire 40 which is connected with an electric lamp 41 located within the casing of the signal, the other terminal of the lamp being connected with the conductor 42 which is connected with a main wire 43 leading to the opposite pole 44 of the battery. Again, when any switch arm 35, 36, 37 or 38 is in the closed position, it connects the main battery 30 with a conductor 45, 46, 47 or 48, these last named conductors leading respectively to one terminal of a supplemental magnet 24. From the opposite terminals of the magnets 24 lead conductors 49, 50, 51 and 52, to a conductor 53 which leads to one terminal of the main magnet 21 whose terminal is connected with the conductor 43 leading to the pole 28 of the battery as heretofore explained.

The push buttons 54 for closing the various circuits of the supplementary magnets as well as that of the main magnet and the electric light, as shown in the drawing, are mounted on a plate 55 which is preferably supported on the dash 66 of the automobile where it is conveniently accessible to the driver.

From the foregoing description the use and operation of my improved device will be readily understood. Assuming that the driver wishes to give the signal that he will turn to the right, he pushes the proper button 24 and closes the magnet circuit through one of the supplementary magnets 24, the main magnet 21 and the electric light 41. As soon as this occurs, the supplementary magnet 24 corresponding with the proper signal member 7, will act on the proper spring 23 to release the armature 18 connected with the arm 12 of the signal member 17 in which is formed the letters of the word "Right." Consequently the armature will move upwardly attracted by the main magnet 21, the arm 12 will be lifted and corresponding movement imparted to the proper signal member which will then be exposed through the opening 6 of the casing as shown in Fig. 5. As soon as the pressure ceases to act on the push button 54, the magnets will be deenergized and the armature 18 actuated by the weight of the signal member 7 and the arm 12 will move downwardly against the action of the spring 23, until the armature is below the spring when the latter will return to its locking position and prevent the upward movement of this particular signal member until the proper supplementary magnet 24 is again energized. When it is desired to operate any other signal member 7, the driver will press the corresponding push button 54 which will be propery desig-

nated on the dash-board, in which event the main magnet 21 will be energized the same as before, but a different supplementary magnet will be energized and a different spring 23 actuated to release the proper armature in order that the desired signal member may be lifted to the exposed position in the same manner as heretofore described.

I claim:

1. An automobile signal comprising a casing, a plurality of signal members mounted to move vertically therein independently of one another, actuating arms connected with the respective signal members, a common electro-magnet for actuating all the arms, locking devices for the respective arms, supplemental magnets for releasing the locking devices, electrical circuits in which the supplemental magnets are respectively located, in all of which circuits the common magnet is located, and means for closing the said circuits independently of each other.

2. An automobile signal comprising a casing, a plurality of signal members mounted to move therein independently of one another, actuating arms connected with the respective signal members, a common electro-magnet for actuating all of the arms, each arm having connected therewith a part composed of magnetic material arranged in suitable proximity to the magnet, locking devices for the respective arms, supplemental magnets for releasing the locking devices, electrical circuits in which the supplemental magnets are respectively located and in all of which circuits the common magnet is located, and means for closing the said circuits independently of each other.

3. An automobile signal comprising a casing, a plurality of signal members mounted to move therein independently of one another, actuating arms for the several signal members, an armature connected with each arm, a common magnet for the several armatures, spring dogs for normally locking the respective armatures against movement when the common magnet is energized, supplemental magnets for releasing the respective dogs, and circuits for the respective supplemental magnets in all of which the common magnet is located.

4. An automobile signal comprising a casing, a number of signal members movable therein, a common electro-magnet for actuating the several signal members, a locking dog for each signal member, supplemental electro-magnets for releasing the several dogs, and circuits in which the supplemental magnets are respectively located and in all of which the common magnet is located.

5. An automobile signal comprising a casing, a plurality of signal members movable in the casing independently of one another, means for normally locking the several signal members against movement, supplemental electro-magnets for releasing the locking means, a common electro-magnet for actuating all of the signals, and circuits in which the several electro-magnets are respectively located and in all of which the common magnet is located.

In testimony whereof I affix my signature.

EMIL E. OLSON.