Nov. 22, 1927. 1,649,936

C. VAN ALLEN

AUTO SIGNAL

Filed May 15, 1926 2 Sheets-Sheet 1

Fig. 1.

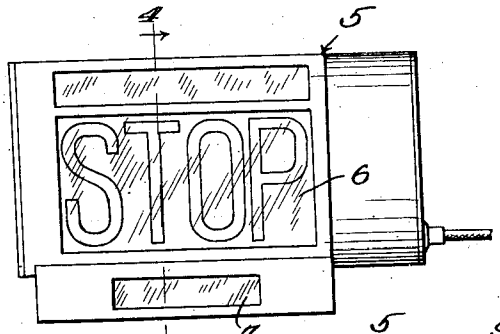
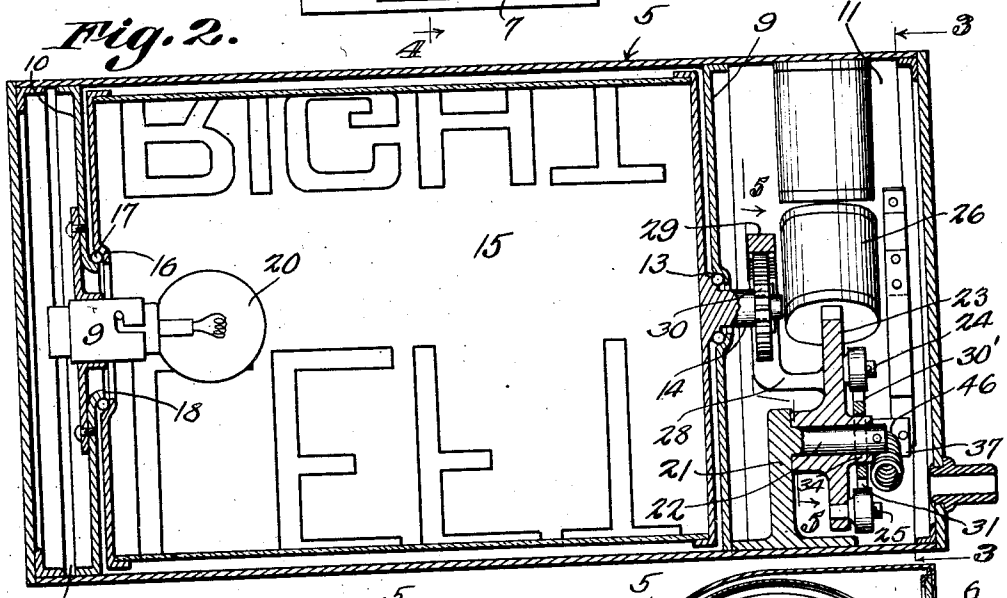


Fig. 2.



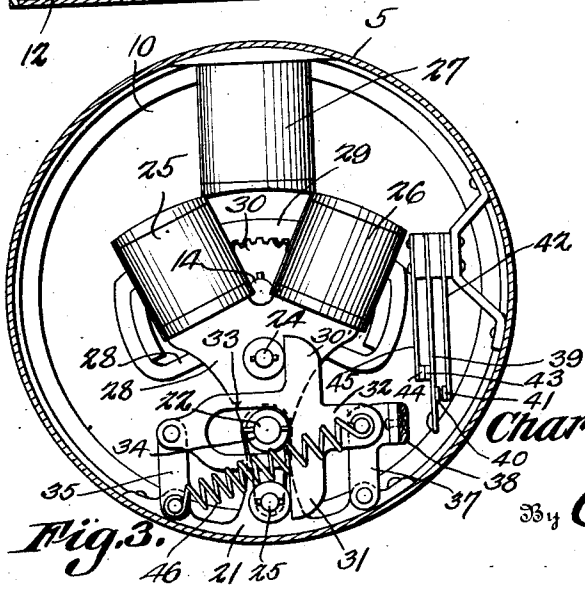


Fig. 3.

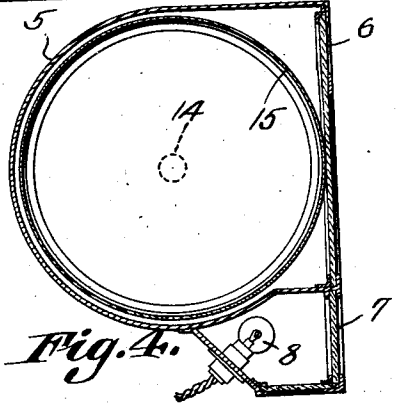


Fig. 4.

Charles Van Allen Inventor,

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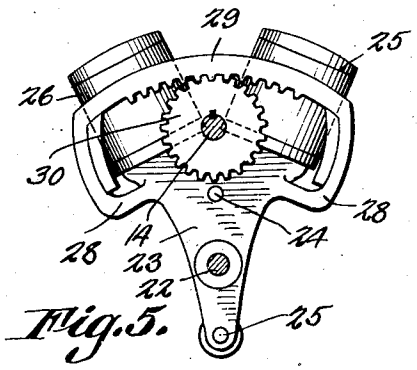


Fig. 5.

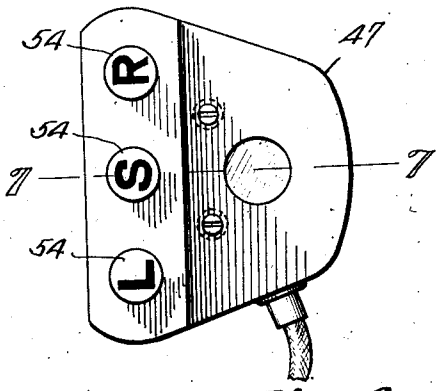


Fig. 6.

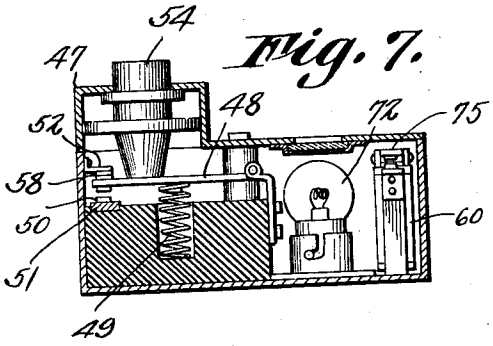


Fig. 7.

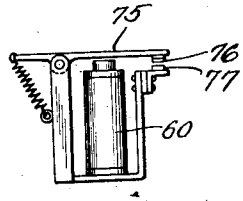


Fig. 8.

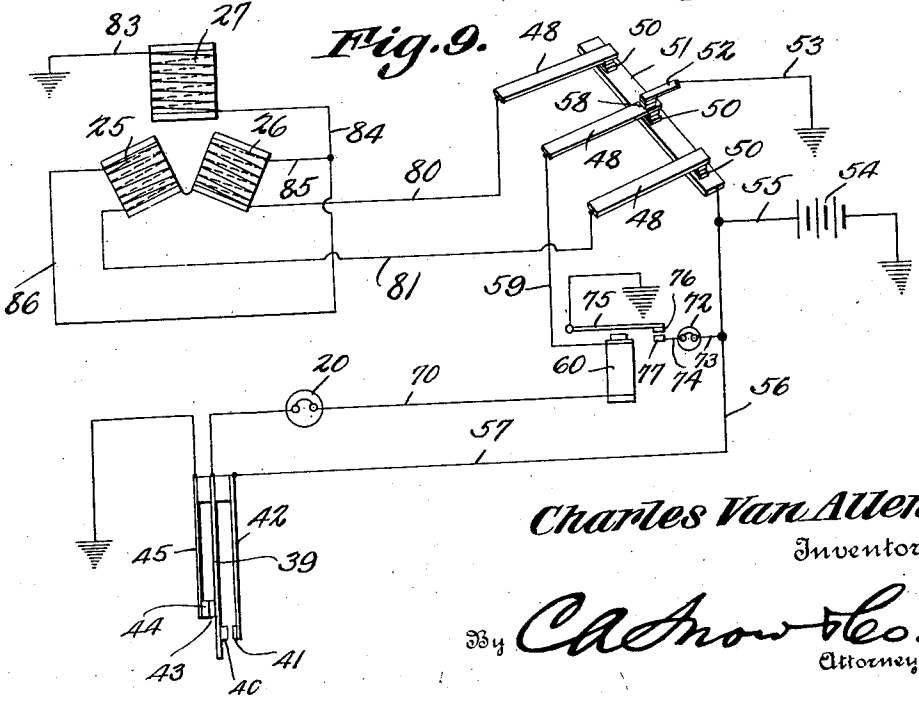


Fig. 9.

Charles Van Allen
Inventor

By C. A. Snow & Co.
Attorneys.

Patented Nov. 22, 1927. 1,649,936

UNITED STATES PATENT OFFICE.

CHARLES VAN ALLEN, OF WILLISTON, NORTH DAKOTA, ASSIGNOR OF ONE-HALF TO BYRON WARD, OF WILLISTON, NORTH DAKOTA.

AUTO SIGNAL.

Application filed May 15, 1926. Serial No. 109,326.

This invention relates to signaling devices and more particularly signaling devices used on motor vehicles for indicating to drivers of machines operating in proximity with the machine equipped with the signal, the movements to be made by the machine.

Another important object of the invention is to provide a tell-tale lamp in circuit with the various signals of the signaling device, so that the operator may tell at a glance whether or not the signaling device is properly operating.

A still further object of the invention is to provide means for automatically lighting a lamp with each movement of the signaling device, to illuminate the signaling device.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed, may be made within the scope of what is claimed, without departing from the spirit of the invention.

Referring to the drawings:

Figure 1 is an elevational view of a signaling device constructed in accordance with the invention.

Figure 2 is a longitudinal sectional view through the casing of the signaling device.

Figure 3 is a sectional view taken on line 3—3 of Figure 2.

Figure 4 is a sectional view taken on line 4—4 of Figure 1.

Figure 5 is a detail view of the signal shifting mechanism.

Figure 6 is an elevational view of the switch housing.

Figure 7 is a sectional view taken on line 7—7 of Figure 6.

Figure 8 is an elevational view illustrating one of the solenoids for actuating a switch to the tell-tale lamp.

Figure 9 is a diagrammatic view illustrating the signaling device and its circuits.

Referring to the drawings in detail, the device includes a housing indicated generally by the reference character 5 that has its front wall cut away and closed by means of the translucent member 6, the lower portion of the front wall being indicated at 7 and also formed of translucent material preferably colored red.

Within the compartment closed by the wall 7 is the usual tail lamp 8. Partitioning members 9 and 10 respectively are positioned adjacent to the ends of the casing 5 and define compartments 11 and 12 at the ends of the casing, the compartment 11 being especially designed for containing the solenoids, and other operating mechanism for operating the signal.

A bearing opening indicated at 13 is formed in the central portion of the partition 9, and in which bearing opening the shaft 14 is positioned, which shaft supports one end of the cylindrical signaling member 15, while the opposite end thereof is formed with a depression defining a ball race 16 for the reception of the balls 17.

The balls 17 also rest on the curved portion 18 of the partition 10, thereby supporting the inner member or signaling member in such a way as to insure the movement thereof. A lamp socket is indicated at 19 in which the lamp 20 is positioned, which lamp is designed to illuminate the interior of the signaling device when the various switches are operated.

Arranged within the compartment 11 is a bracket 21 which is formed with a laterally extended shaft 22 on which the segment 23 is mounted, the segment 23 having lateral shafts 24 and 25 arranged in vertical spaced relation with each other at opposite sides of the shaft 22.

Mounted on the segment 23 are coils 25′ and 26, which are adapted to be attracted to the coil 27 arranged within the upper portion of the compartment directly over the coils.

Extending rearwardly from the segment is an arm 28 that has a curved rack bar 29 adapted to mesh with the teeth of the gear 30 secured to the shaft 14 to rotate the shaft, when the segmental rack 29 is moved. Mounted on the shafts 24 and 25 are rollers that engage the arms 30′ and 31, which arms extend vertically from the member 32, which is formed with an elongated opening 33 in which the bars 34 moves. A link 35 connects one end of the member 32 to the supporting

bracket 21 secured within the lower portion of the compartment, while the link 37 connects the opposite end of the member 32 with the bracket 21 as clearly shown by Figure 3.

Insulating members 38 are secured to one end of the member 37 and are adapted to engage the substantially long arm 39 that carries a contact member 40 on one surface thereof, which contact member is adapted to engage the contact member 41 of the arm 42. A contact member 43 is also carried on the arm 39 and engages the contact member 44 carried on the arm 45, the contact members 43 and 44 being normally in engagement, to complete a circuit.

A coiled spring indicated at 46 has connection with the member 32 and the bracket 21, to normally return the member 32 to its initial position after the same has been operated to display a signal.

The switch housing which is indicated by the reference character 47, houses the contact bars 48 which are normally held to the limit of their upward movements by means of the coiled springs 49, the bars 48 having contact members secured to the under surfaces thereof, which contact members are designed to engage the contact members 50 of the bar 51, which is arranged directly thereunder.

These contact members are three in number, there being provided one bar for completing the circuit to cause the "stop" signal to be illuminated, one to cause the "right" signal to be operated, and one to cause the "left" signal to be operated.

The central bar is also provided with a contact member on its upper surface adapted to contact with the arm 52 that is grounded through the medium of the wire 53. Buttons 54 are provided over the bars 48 so that when the buttons 54 are depressed, the bars 48 may be moved to cause the contact members carried thereby to complete circuits.

The contact members of the bar 51 are in circuit with the battery 54, through the wires 55 and 56, the wire 56 being connected with the wire 57 which in turn connects with the switch bar 42.

Mounted on the upper surface of the central contact bar is a contact point 58 which is normally contacting with the contact member carried by the arm 52, the bar 48 carrying contact member 58 being in circuit with the switch member 39 through the wires 59, solenoid 60, wire 70 and lamp 20, to the end that when the bar 48 is moved to close the circuit between the contact members carried thereby, the lamp 20 will be lighted to illuminate the stop signal which is normally lying at the rear of the translucent member that closes the forward wall of the casing.

The tell-tale light which is indicated at 72 is in circuit with the source of electric supply, through the wires 73 and 74, the circuit being controlled by the movement of the bar 75 that carries contact member 76 and contact member 77, the tell-tale light 72 being light to indicate that the circuits to the signaling device are operating properly.

The remaining bars 48 are in circuit with the coils 25′ and 26, through the wires 80 and 81, the coil 27 associated with the coils 25′ and 26 being grounded at 83 and supplied with lead wires 84, 85 and 86.

The operation of the device is as follows:

Assuming that the operator wishes to display the stop signal, the central bar 48 is depressed which completes the circuit to the lamp 20 through the wires 59, magnet 60 and wire 70 from where the current passes through the arm 39 and arm 45 to the ground.

Should it be desired to display the signal indicating "left", the bar 48 directly under the button supplied with the indicating character "L" thereon is depressed, which completes the circuit to the coil 25′, through wire 81 and completes the circuit to the coil 27 through the wires 84 and 86, causing the coil 25 to be attracted, or moved to the right, from the position shown by Figure 3 of the drawings.

With this movement, the roller carried by shaft 24 engages arm 30′, moving the arm to the right and causing the member 38 to engage the arm 39 which is moved to cause the contact 40 carried thereby to engage the contact member 41 and complete the circuit to the lamp 20 illuminating the interior of the casing. Simultaneously with the movement of the arm 30′, the rack bar 29 is moved, which in turn moves the gear 30 to rotate the cylindrical signaling member 15 to cause the indicating characters indicating "left" to move opposite the front wall of the casing, displaying the signal "left."

When the button which has been pressed is released by the operator, the coiled spring 46 will act to return the segment 23 to its normal position bringing the word "Stop" before the display opening of the casing.

Should it be desired to operate the signal to indicate a turn to the "right", the button carrying the character "R" is depressed, which in turn depresses the bar 48 thereunder, to the end that the circuit is completed to the coil 26 through wire 80 and through the bar 51 to the ground.

The circuit is also completed to the coil 27 through wires 84 and 85, to the end that the coil 27 attracts the coil 26, moving the segment 23 to the left, with the result that the roller carried by arm 25 engages the arm 31, moving the same to the right and causing the arm 39 to complete a circuit to the lamp 20, to illuminate the interior of

the casing. It will of course be obvious that as the segment 23 moves, in the direction as described, the rack bar 29 will operate to move the gear 30 to cause the indicating characters indicating "right", to be brought before the display opening of the casing.

I claim:

A signaling device including a casing having a display opening, a rotary member carrying indicating characters mounted in the casing, a shaft extending from the rotary member and carrying a gear, a segment pivotally mounted in the casing, electric coils mounted on the segment, a stationary coil in the casing and adapted to cooperate with the first mentioned coils to move the segment laterally, spaced shafts on the segment, a central shaft disposed between the spaced shafts, a spring controlled member operating adjacent to the segment and cooperating with the shafts for returning the segment to its normal position, and a rack carried by the segment and cooperating with the gear for moving the rotary member when the coils are energized.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature.

CHARLES VAN ALLEN.