July 24, 1928. 1,677,883

E. F. CARLSEN

AUTOMOBILE SIGNAL

Filed Jan. 5, 1924 2 Sheets-Sheet 1

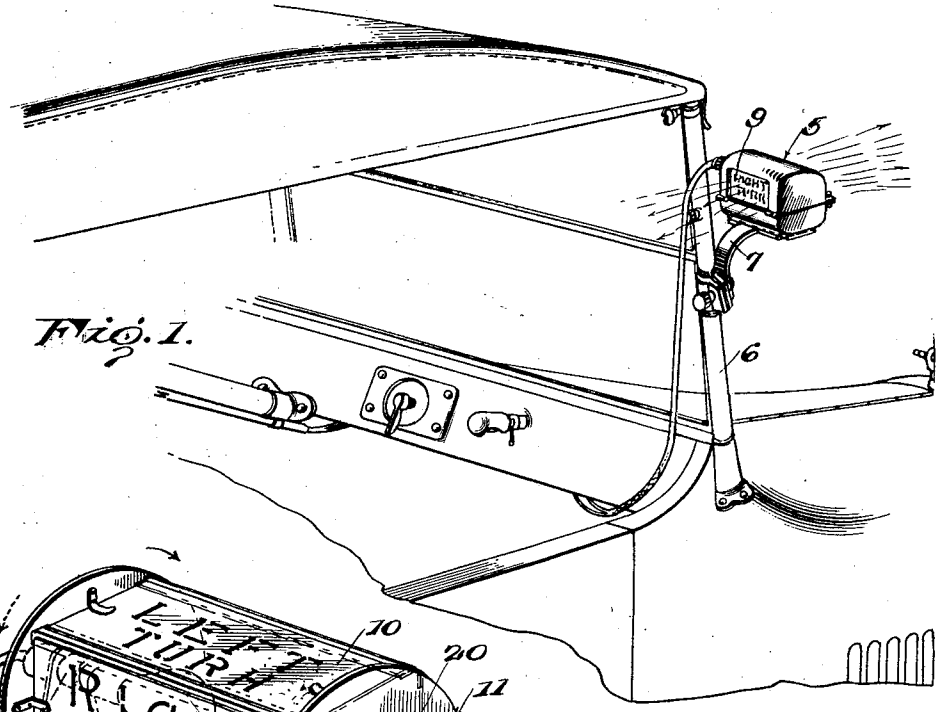


Fig. 1.

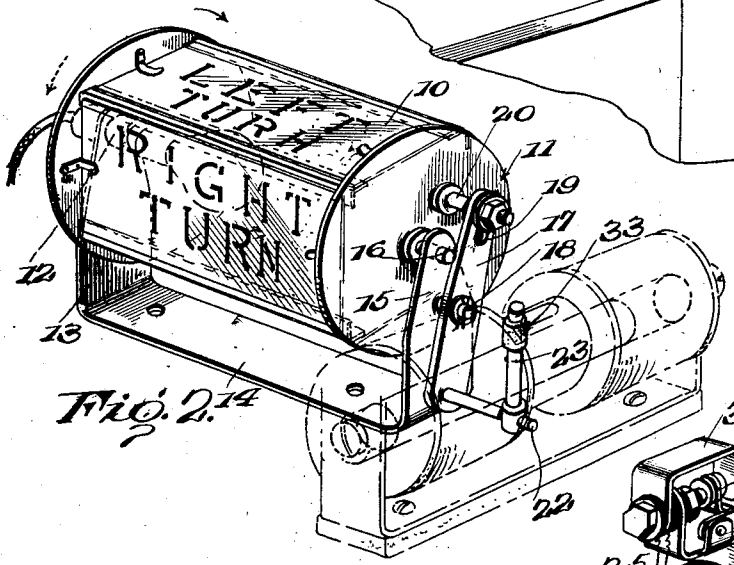


Fig. 2.

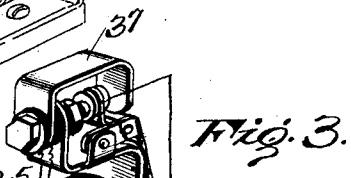
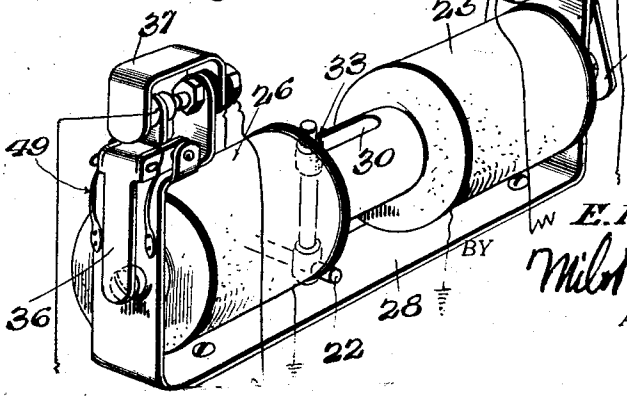


Fig. 3.



WITNESS

INVENTOR

E. F. Carlsen

BY Miller B. Stevens & Co.

ATTORNEYS

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Fig. 4.

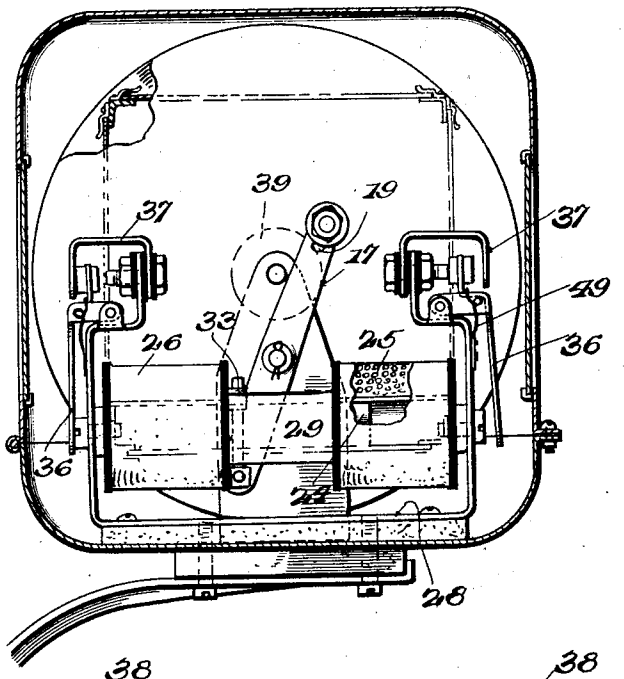
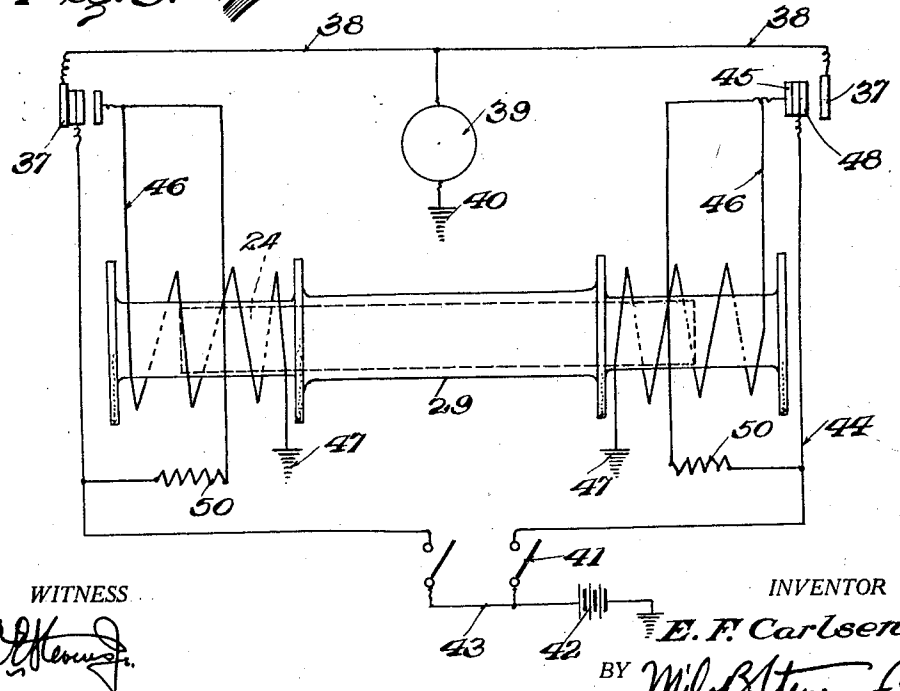


Fig. 5.



WITNESS

INVENTOR

E. F. Carlsen.

BY Miller & Stevens Co

ATTORNEYS

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UNITED STATES PATENT OFFICE.

EINAR F. CARLSEN, OF CHICAGO, ILLINOIS.

AUTOMOBILE SIGNAL.

Application filed January 5, 1924. Serial No. 684,620.

This invention relates to signals especially adapted for use on automobiles.

An important object of this invention is to provide a vehicle signal capable of being seen from the front or rear and having a solenoid by means of which an indicating drum may be properly positioned for indicating the intention of the driver of either turning to the right or the left.

A further object is to provide a novel circuit in which a resistance element operates to cut down the flow of current through the energized coil when the core has been drawn into the coil so that a minimum amount of current is consumed for merely holding the core in retracted position.

A further object is to provide a vehicle signal which may be conveniently operated from a point adjacent the driver and which will effectively advise those in the vicinity of the vehicle of the intention of the driver of changing his direction of travel.

A further object is to provide a signal of the character specified which may be conveniently attached to a vehicle and which is neat in appearance and cheap to manufacture.

Other objects and advantages will be apparent during the course of the following description.

In the accompanying drawings forming a part of this application and in which like numerals are employed to designate like parts through the same,

Figure 1 is a perspective of the signal applied.

Figure 2 is a perspective of the signal with the casing removed.

Figure 3 is a perspective of a solenoid and associated elements.

Figure 4 is a vertical transverse sectional view through the signal.

Figure 5 is a diagram illustrating a circuit embodied in the invention.

In the drawing wherein for the purpose of illustration is shown a preferred embodiment of the invention the numeral 5 generally designates a casing which may be attached to a windshield 6 or any other convenient part of the vehicle by means of a bracket 7. Though the signal is shown applied to the right side of the vehicle it is to be understood that the same may be applied to the left side if desired, or found more convenient.

The casing is provided with openings 9 in the front and rear sides thereof and by means of which the indicia on the flat sides 10 of a drum 11 may be viewed from the front or rear of the vehicle. The opposite sides 10 of the drum are perforated with corresponding indicia. That is to say, a pair of the sides may be provided with such indicia as "Right turn" and the pair of sides may be provided with the words "Left turn".

The drum 11 is provided at one end with a socket 12 for connection with an electric light and the socket is connected to the standard 13 of a U-shaped supporting member 14. The other standard 15 of the member 14 has connection with a pin 16 carried by one end of the drum. It is thus seen that the drum may be rocked for presenting the proper indicia at the sight openings.

The drum 11 may be electrically rocked by means of a lever 17 pivoted as indicated at 18 to the standard 15. The upper end of the lever is slotted as indicated at 19 to receive a pin 20 carried by the adjacent end of the drum. When the lever 17 is rocked the drum will be rotated the desired extent for presenting the proper indicia at the sight openings.

In carrying out the invention the lower portion of the lever is provided with a laterally projecting arm 22 having connection with an upstanding pin 23 extended through the core 24 of aligned magnetic coils 25 and 26. The coils 25 and 26 are supported by a U-shaped bracket 28 and are joined by a connecting sleeve 29, the upper portion of which is slotted as indicated at 30 for the reception of the upper portion of the pin 23. This limits the movement of the core into the several coils. It might be stated that the pin 23 is provided with a small cushioning member or collar 33 which engages the ends of the slots and thereby reduces the noise to a minimum during the operation of the signal. This also prevents the parts from being unnecessarily strained.

When the core is moved into one of the solenoids a magnetic force is created at the outer end of the coil and this draws the adjacent free end of a lever 36 inwardly so that the upper end of the same will engage an inverted U-shaped contact 37 in the lamp circuit 38.

Specifically, the lamp 39 has connection with the wires 38 and the ends of the wires have connection with the contacts 37 which

are engaged separately by the upper ends of the levers 36, one side of the lamp 39 being grounded as indicated at 40.

In carrying out the invention switches 41 have connection with a source of current 42 by a wire 43 and when one of the switches is closed the current travels through a wire 44, a contact 45, a second wire 46 and the coil. From the coil it is grounded as indicated at 47. Figure 5 illustrates that the contact 48 is normally in engagement with the contact 45 and when the lever 36 is swung outwardly at its upper end against the tension of the coil spring 49 the contact 48 will be engaged with the contact 37 so as to complete the circuit through the lamp.

Now the current must flow from the main wire 44 through a resistance element 50 and through the coil in a decreased quantity. The automatic cutting in of the resistance element 50 greatly reduces the current supply to the coil as very little current is required to maintain the core within the coil. The expense of operating the signal is thus minimized.

When the signal is not in operation the lamp 39 will give off no light and consequently it is not necessary to provide any means to maintain the drum in a set position or conceal the indicia thereon.

A signal constructed in accordance with this invention is cheap to manufacture and consumes but a little current. It may be operated from the battery. The switch 41 may be of any suitable type and may be mounted upon the steering column or other point adjacent the operator of the vehicle. When one side of the switch is closed the other side is, of course, open.

I claim:—

1. A signal of the character specified comprising alined magnetic coils, a core received in said coils, a bracket supporting said coils, contact levers connected intermediate their ends to the upper portions of said brackets and having free terminal portions arranged in the field of magnetic force of said coils, and U-shaped contact members carried by said upper portions of the bracket and having terminal portions extended downwardly and arranged at opposite sides of and in the path of travel of said contact levers.

2. A signal of the character specified comprising aligned magnetic coils, a core in said coils, a signal having means whereby the same is operated upon energization of either coil, a bracket supporting said coils, contact levers connected intermediate the ends thereof to said brackets and having free terminal portions arranged in the field of magnetic force of said coils, and inverted U-shaped contact members carried by the upper portions of said bracket and having terminals extended downwardly and arranged at opposite sides of said contact levers, and conductor wires connected to said levers and to said downwardly directed terminals of said U-shaped contact members.

3. An automobile signal comprising a support having upstanding end portions, a drum rotatably connected to said upstanding end portions of the support and bearing indicia, a pin extending longitudinally from one end of said drum at a point spaced laterally from the axis of the drum, a lever connected to one of the upstanding end portions of said support and having connections with said pin, said lever being provided with a laterally projecting arm having an upstanding portion, alined magnetic coils arranged at opposite sides of said upstanding portion of said arm and having a connecting sleeve provided with a slot receiving said upstanding portion of the arm, a core movable through said sleeve and said coils and having connection with the upstanding portion of said arm, and a cushioning member mounted on said upstanding portion and adapted to engage the ends of said slot to limit endwise movement of said core.

In testimony whereof I affix my signature.

EINAR F. CARLSEN.