Aug. 25, 1942. A. BERGGREN 2,293,795

AUTOMOBILE DISPLAY SIGN

Filed Sept. 23, 1940

Fig. 1.

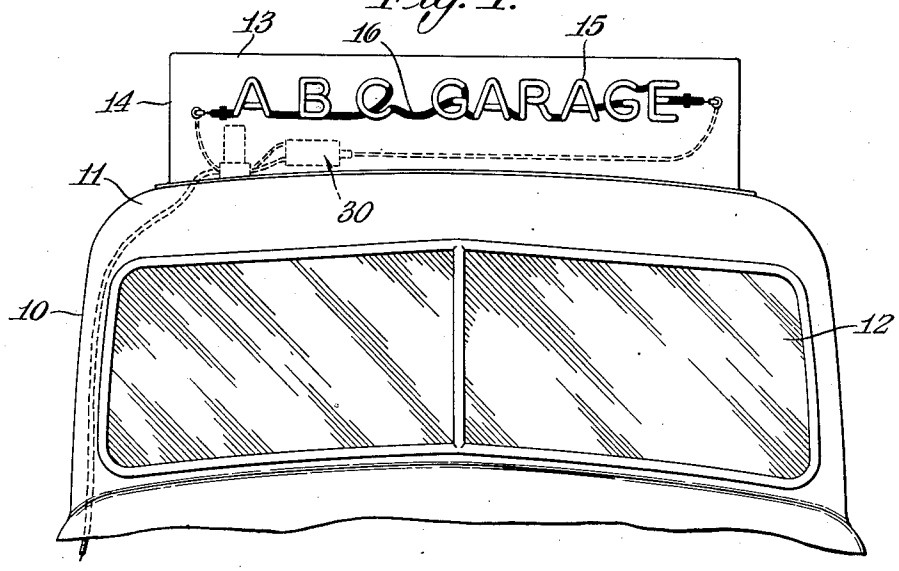
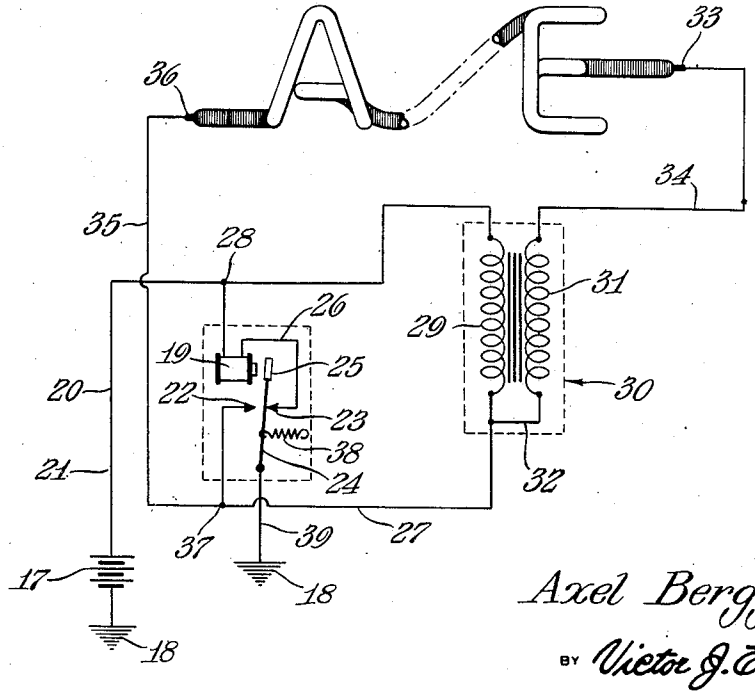


Fig. 2.



Axel Berggren.
INVENTOR

BY Victor J. Evans & Co.
ATTORNEYS

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AUTOMOBILE DISPLAY SIGN

Axel Berggren, Waterford, Conn.

Application September 23, 1940, Serial No. 357,981

1 Claim. (Cl. 176—124)

My invention relates to new and useful improvements in advertising or display means for automotive vehicles.

An important object of my invention is to provide a display means that may be easily attached to an automotive vehicle and which may be satisfactorily operated from the storage battery of the vehicle.

Another object of my invention is to provide a device of the above-mentioned character wherein the sign or advertising display comprises an illuminated tube and wherein means is provided for efficaciously changing the direct current from the battery to the alternating or pulsating current required to illuminate the gas within the tube.

Still another object of my invention is to provide a display means of the above-mentioned character which employs a minimum of parts and which operates with a maximum of efficiency.

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

In the drawing, forming a part of this specification, and wherein like numerals are employed to designate like parts throughout the same,

Figure 1 is a fragmentary front elevation of an automotive vehicle and illustrating an advertising means embodying my invention associated therewith, and

Figure 2 is a diagrammatical view of my device.

In the accompanying drawing, wherein for the purpose of illustration is shown a preferred embodiment of my invention, the numeral 10 designates an automotive vehicle having a top 11 and front windshield 12. For the purpose of illustration, I have shown the sign or advertisement 13 as being fixedly mounted on the top 11 which sign is illustrated as extending transversely of the vehicle; however, it is to be understood that the sign may be mounted on the vehicle in the manner desired and that its location is not restricted to any particular part of the vehicle body.

The sign comprises an elongated supporting panel 14 which rises vertically from the vehicle top whereby the gas filled tube 15, carried by the panel will be clearly visible to persons passing the vehicle. The tube is transparent, being preferably formed of glass, and it is bent at selected intervals along its length to define the various letters or characters comprising the sign, and the separate characters are connected by integral tubular sections which are blackened, as at 16. The tube is filled with a suitable gaseous substance, such as neon, and when a pulsating current is discharged therethrough the entire tube will be illuminated. The blackened sections 16 between the individual characters will not permit the illuminated gases within the sections to be seen, whereby only the unblackened sections of the tube which define the characters are visible.

I have devised a simple and inexpensive arrangement for providing the pulsating current which is required to be discharged through the tube. The storage battery 17 of the vehicle comprises a satisfactory source of power, and the generator (not shown) of the motor may be used to maintain the battery in a charged condition. One terminal of the battery is connected to a common ground 18 and the other terminal thereof is connected to one terminal of an electromagnet 19 by the conductor 20. A suitable switch 21 is connected to the conductor 20 for opening and closing the circuit to the battery. A pair of spaced contacts 22 and 23 are arranged below the electromagnet and a pivoted arm 24 is mounted to oscillate between the contacts. A yieldable spring 38 is attached to the arm 24 and normally holds the same in engagement with the contact 23 and disengaged from the electromagnet 19. Except for its engagement with the spaced contacts, the arm 24 is not connected in the circuit but it is connected to the common ground 18 by the conductor 39. A portion of the arm extends beyond the contacts and in proximity to the electromagnet which portion carries a metallic part 25 for cooperation with the magnet. The contact 23 is connected to one terminal of the electromagnet by the conductor 26, and the other terminal of the electromagnet is connected to the conductor 20 at the point 28. The contact 22 is connected to the conductor 27 and the point 37. The primary coil 29 of a transformer 30 is connected to the conductor 27 while the secondary coil 31 is connected to the conductor 27 by the conductor 32 and to the terminal 33 at one end of the tube 15 by the conductor 34. The conductor 35 connects the terminal 36 at the other end of the tube 15 with the conductor 27 at the point 37.

If the switch 21 is closed to permit current from the battery 17 to flow along the conductor 20, the electromagnet will be energized and the current will flow through the conductor 26 to the contact 23. By reason of the fact that the coil spring 38 normally holds the arm in engagement with the contact 23, the current may then flow

along the arm and along the conductor 39 to ground.

When the electromagnet is thus energized, the part 25 of the arm extending beyond the contacts will be attracted by the magnet and the arm moved into engagement with the contact 22. Movement of the arm by the magnet to effect engagement thereof with the contact 22 will break the above-described circuit at the contact 23 and permit the current to flow along the conductor 27 in a manner to traverse the primary coil 29 of the transformer. As the current flows along the conductor 27 to the contact 22 it will have access to ground through the arm 24 and conductor 39. It may thus be seen that in the second position the electromagnet will not be energized and the spring 38 may, therefore, return the arm to its initial position.

As the arm moves away from the contact 22 the current will be induced to flow into the secondary coil 31 of the transformer from whence it will traverse the conductor 34, tube 15 and conductors 35 and 27. The oscillating movement of the arm 24 will be essentially rapid and each time the arm moves away from the contact 22 current will be induced to flow through the tube 16. It may thus be seen that the vibratory actuation of the arm will induce an alternating or pulsating current to traverse the tube in a manner to effect illumination of the characters.

I have found that the parts hereinabove described are sufficient to produce the desired result, which parts may be easily assembled and the entire arrangement inexpensively manufactured. When it is desired to illuminate the sign it is only necessary to close a switch which may be located at 21 to permit the current to flow from the battery through the circuits hereinabove described. When the switch is open the sign will not be illuminated, and no current is drawn from the battery to weaken or in any way adversely affect the same.

It is to be understood, that the form of my invention, herewith shown and described, is to be taken as a preferred example of the same, and that various changes in the size, shape and arrangement of parts may be resorted to without departing from the spirit of my invention, or scope of the appended claim.

Having thus described my invention, I claim:

In an electrical display system having a gaseous conduction tube with an electrode at each end thereof, a vibrator arm having an armature at its free end, the said arm being disposed to swing between and make contact with either of a pair of fixed circuit contacts, an electro-magnet mounted to attract the armature and swing the said arm against one of the said circuit contacts, a conductor connecting one terminal of the said electro-magnet with the opposite circuit contact, means yieldingly holding the arm against the last mentioned circuit contact, a transformer having one terminal of its primary coil connected by a conductor to an electrode of the tube and one terminal of its secondary coil connected to the opposite electrode of the tube, the said conductor connecting the primary coil with the tube having connection with the opposite terminal of the secondary coil and with the circuit contact to which the arm is swung by the electro-magnet, a battery, a lead connecting one terminal of the battery with a terminal of the electro-magnet and with a terminal of the primary transformer coil, and connections grounding the opposite terminal of the battery and the fixed end of the vibrator arm.

AXEL BERGGREN.