

March 21, 1933.

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1,902,331

DISPLAY DEVICE

Filed June 14, 1932

2 Sheets-Sheet 1

Fig. 1.

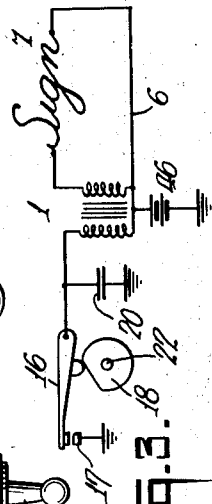
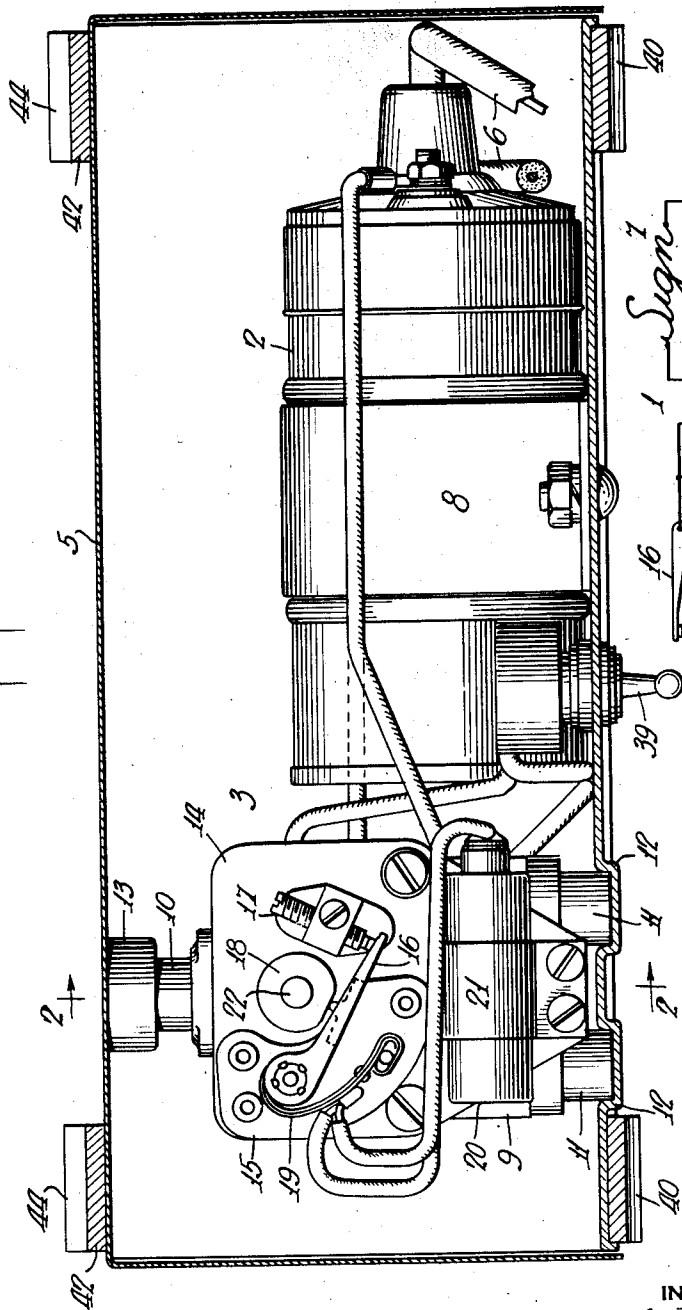


Fig. 3.

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FIG. 2.

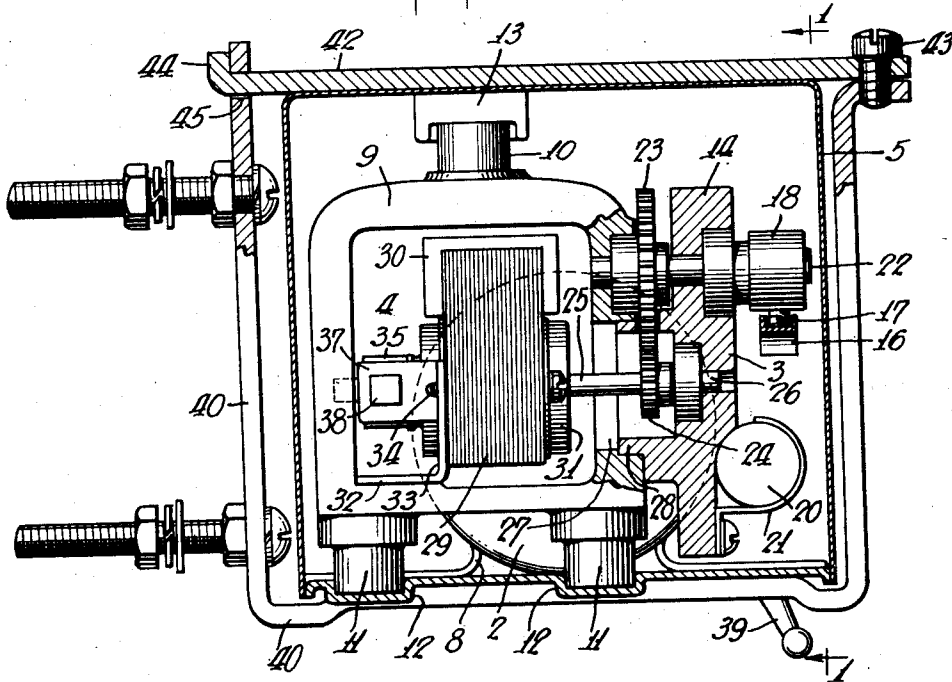


FIG. 4.

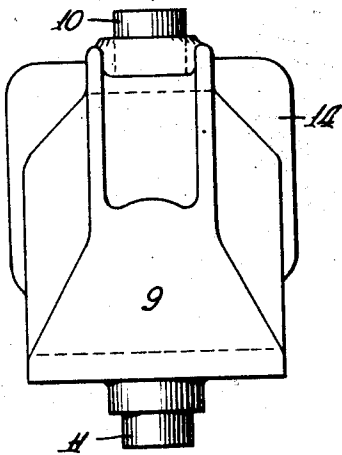


FIG. 5.

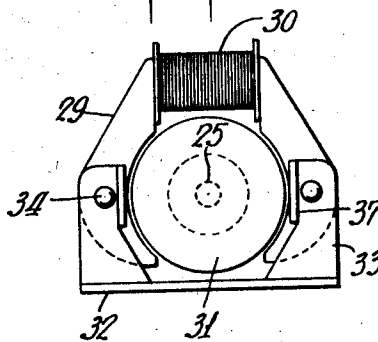
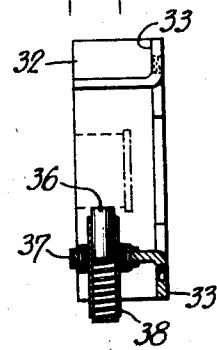


FIG. 6.



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DISPLAY DEVICE

Application filed June 14, 1932. Serial No. 617,099.

My invention relates to improvements in advertising devices and particularly to such devices comprising a neon tube or the like, the contents of which are adapted to glow when a suitable current is passed through the tube.

An object of the invention is to provide an advertising device comprising a sign or other display member constructed of such tubing and energized by power apparatus in compact and portable form; so that the device can be easily set up and readily taken down and is therefore especially adapted for use upon automobiles, trucks and other vehicles, as well as for temporary use at stationary points.

A further object of the invention is to provide a neon tube advertising device that is inexpensive to produce and very economical and efficient in operation.

The foregoing and other objects and advantages of the invention are described in the ensuing specification, taken with the accompanying drawings, which illustrate a preferred embodiment of the improvement; but the right is, of course, reserved to make changes in structural details or the arrangement of various members without departing from the principle of the invention or exceeding the scope of the appended claims.

On the drawings:

Fig. 1 is a side view, with the casing in section, of the power apparatus employed in the practice of my invention, taken on the line 1—1 of Fig. 2;

Fig. 2 is a transverse section taken on the line 2—2 of Fig. 1;

Fig. 3 is a diagram of the circuit of the advertising device;

Fig. 4 is a side view of a supporting frame carrying the motor of the power apparatus;

Fig. 5 is a side view of the motor; and

Fig. 6 is a top view of a bracket by means of which the motor is mounted in the supporting frame.

On the drawings the same numerals identify the same parts throughout.

On the drawings the numeral 1 indicates an induction coil, similar to an ordinary ignition coil for an automobile; this coil

being enclosed in a housing 2; and the primary circuit thereof is arranged to be opened and closed by a suitable motor driven interrupter indicated as a whole by the numeral 3. The motor is shown at 4 (Fig. 2) and the coil, the interrupter and the motor are enveloped by a suitable casing 5. The operating circuit connected to the secondary of the coil is shown at 6 on Fig. 3 and it includes a neon tube construction of such shape as to afford the desired appearance. The induction coil of transformer 1 in its housing 2 is made fast to the bottom of the casing 5 by means of an encircling strap 8.

The motor 4 is made fast in the casing adjacent one end of the coil by mounting it in a framework 9 having a boss 10 at the top and bosses 11 at the bottom which project into recesses 12 in the bottom of the casing 1. At the top is a projection 13 having a similar recess for the upper boss 10. At one side this frame 9 supports a plate 14 of metal, to the outer face of which is secured a sheet of insulation 15; and on this sheet is insulatably mounted a pivoted breaker lever 16 having a contact thereon to engage a fixed contact on the end of an adjustable screw 17 mounted on the plate 14, and connected to ground. An anchored spring 19 engages the lever 16 and normally holds the fixed and movable contacts in engagement with each other. The contacts are separated by a cam 18 which engages the usual projection of insulation on the lever, and periodically forces the lever 16 away from the screw 17. The plate 14 also mounts a condenser 20 secured in place by a clip 21. This condenser is in parallel with the fixed and movable contacts; and the coil, the condenser and the interrupter are suitably connected together by insulated conductors as shown in Figs. 1 and 3.

Cam 18 is mounted on a shaft 22 which rotates in suitable bearings in the plate 14 and one side of the frame 9 and carries a gear 23 which meshes with a suitable pinion 24 on the motor shaft 25. The ends of this shaft 25 turn in bearings in the plate 14 and the other side of the frame 9. The side of

the frame carrying the plate 14 has a counter-bore or shouldered opening 27 and the frame has a circular boss or hollow projection 28 also shouldered to fit within the opening 27; and the plate 14 may be secured to the frame 9 in any suitable way. The pinion 24 is preferably located within the boss 28 of the plate 14 as shown in Fig. 2.

The motor comprises a yoke-shaped frame 29 made up of laminations and supporting a field coil 30. The armature is indicated at 31 and is mounted on the shaft 25 to rotate between poles of the yoke 29. To hold the motor in proper position within the frame 9, I employ an angle-shaped bracket 32 which is secured to the bottom of the frame and has spaced apart up-turned portions 33 bolted to the yoke 29 at each side of the armature 31 as shown at 34. The commutator of the armature is shown at 35 and it is engaged by a brush 36 mounted in one of a pair of horizontal projections 37 at the inner edges of the portions 33. This brush can be mounted in a socket 38 insulated from the bracket 32. It will be connected to one side of the source of current and the other terminal of the armature of the motor may be grounded.

At the bottom of the casing 2 is a switch 39 located in the circuit of the motor and at 40 are U-shaped straps encircling the ends of the casing 5. One side of these straps carry bolts 41 to enable the apparatus to be made fast to a suitable support. At the top each yoke has a bar 42 fastened to the out-turned end of one arm of the yoke by a screw 43, the opposite end being turned up as shown at 44 and being passed through a slot 45 in the other arm as shown in Fig. 2. The bars 42 are put in place by passing their bent ends through the slots 45 so that their extremities 44 engage one arm of the yoke after the manner of a hook and then the opposite ends are fixed to the yoke by the screws 43. The induction coil 2 is adapted to be energized by a battery 46, which may be the ordinary storage battery used on automobiles and trucks for ignition purposes and for starting and lighting.

This device can be effectively operated with current obtained from an ordinary six volt battery, and the motor can be run upon energy from the same source. When the device is installed in an automobile or delivery wagon, the sign is disposed in a conspicuous position and the casing with the power apparatus is hung up by causing the bolts 41 to engage with any suitable supporting part of the car. The circuit of the coil 2 and the motor will be controlled by the switch 39, the motor and the coil circuit being preferably in parallel. Hence to start the apparatus it is only necessary to throw the switch and the motor will then turn the cam 18 at a sufficient number of revolutions

to energize the coil and cause the sign 7 to give practically continuous light. The device requires very little power and the battery can continue to be used while the car is being operated to furnish ignition and lighting current as well as energy for the sign.

Having described the invention, what is claimed is:

1. An advertising device comprising a casing containing a transformer adapted to have its secondary circuit connected to a neon sign, a frame in the casing, a plate secured to the frame, an interrupter on the plate connected to the primary of the transformer, a motor in said frame, and gearing between the frame and the plate to enable the motor to operate the interrupter.

2. An advertising device comprising a transformer adapted to have a neon sign connected to its secondary winding, a motor, a frame encircling the motor, an interrupter for the primary of the transformer, a plate secured to the frame and carrying the interrupter, a shaft carrying a cam mounted in the plate and one side of the frame, a gear on the shaft between said plate and frame, a motor in the frame, and a pinion on the shaft of the motor engaging said gear.

3. An advertising device comprising a transformer adapted to have its secondary connected to a neon tube sign, a frame, a motor in said frame, an interrupter for the primary of the transformer operated by said motor, an angle-shaped bracket secured within said frame and supporting said motor, the bracket having up-standing portions at its ends secured to the frame of the motor and a projection on one of said portions mounting a brush for said motor.

4. An advertising device comprising a casing, a transformer in the casing adapted to have its secondary connected to a neon tube sign, a circuit breaker for the primary of the transformer, a frame, a motor supported by said frame, said frame having an opening in one side, a plate carrying an interrupter having a hollow projection entering said opening, a cam shaft for the interrupter mounted in the frame and in said plate, a gear on said shaft between the frame and the plate and a pinion on the motor shaft within said projection on said plate for driving said gear.

In testimony whereof I affix my signature.

LUDVIG P. KONGSTED.