June 9, 1931. M. W. BERGER 1,808,880

MEANS FOR BARBER POLE ILLUMINATION

Filed Nov. 27, 1929

FIG. 1.

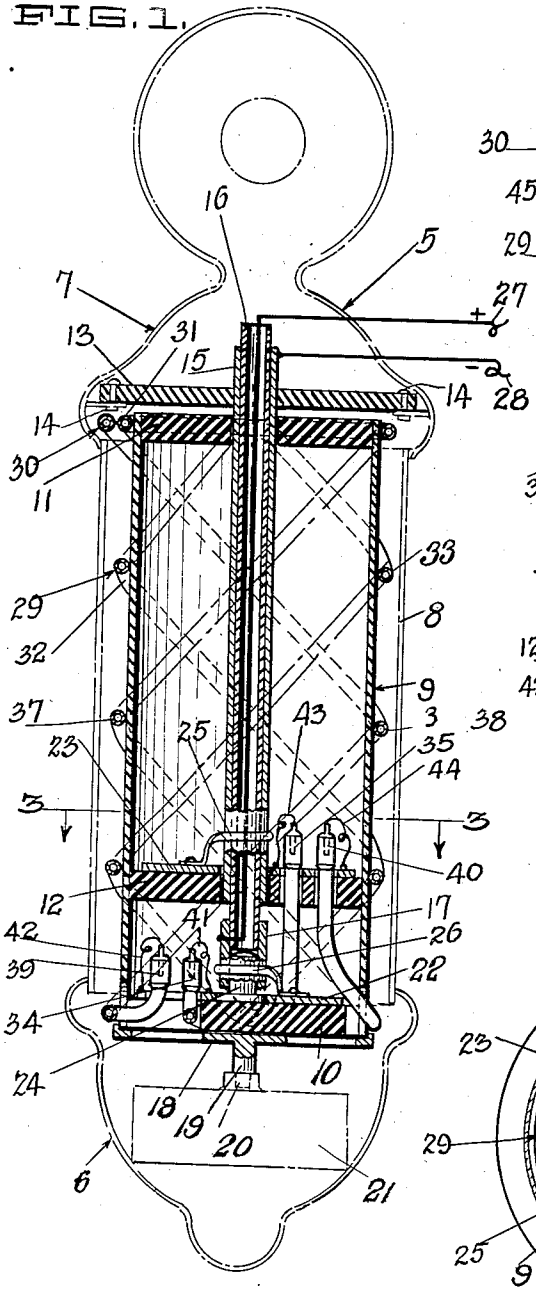


FIG. 2.

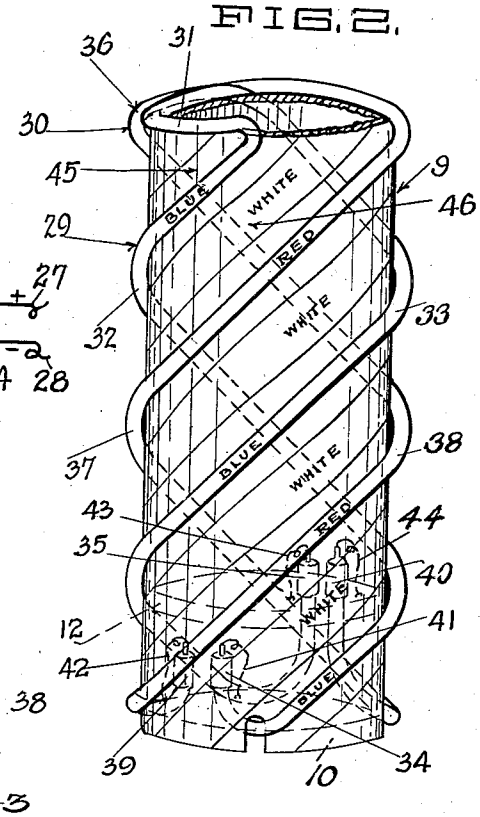
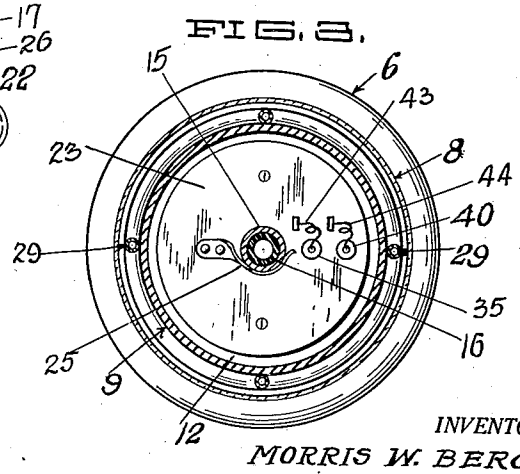


FIG. 3.



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UNITED STATES PATENT OFFICE

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MEANS FOR BARBER POLE ILLUMINATION

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The present invention relates, generally, to improvements in display advertising devices, but more particularly to improvements in mechanically operated illuminated barber poles.

The latest type of barber pole commonly in use at the present time consists of a cylindrical glass case in which is mounted a revolvable transparent cylinder operated by means of power generated by a spring motor mounted in the lower end of the case. The revolvable cylinder is provided with spirally arranged stripes alternately colored red, white, and blue, and the interior of said revolvable cylinder is provided with means for its illumination at night by an interiorly arranged electric globe.

The device of the present invention consists of the usual cylindrical glass case and support and the usual driving motor, but the inner revolvable cylinder is constructed of fibre and is provided with encircling inert-gas tubes of spiral form having correspondingly colored stripes forming a background for the tubes and intermediate stripes of white spirally arranged between the colored stripes thereof.

The tubes, as thus arranged about the fibre cylinder, consist of alternating blue and red colors and these tubes are each formed from a single piece of tubing bent upon itself and rolled in spiral form about the cylinder with the free ends terminating in electrodes arranged in pairs in the lower end of the cylinder.

The primary object of the invention is the provision of an attractive illuminated display device of the class indicated, which embodies spirally arranged inert-gas tubes the convolutions of which are alternately arranged as to colors.

Another object of the invention is the provision of an illuminated barber pole of the class indicated, which embodies novel means for causing the energization of the electrodes of the different sets of tubes, as the cylinder carrying these tubes is rotated in the case.

Still another object of the invention is the provision of a mechanically operated illuminated display device in which the inert-gas tubes forming the double spirals may be inserted over the cylinder or removed therefrom for repairs as a single unit.

Other objects and advantages of the invention will become apparent with reference to the subjoined specification and the accompanying one sheet of drawings, in which:

Figure 1 is a vertical sectional view showing my improved display device embodying the revolvable cylinder having the neon tubes in place thereon and mounted for rotation in the usual type of barber pole case, which is indicated in dot-and-dash outline, as it forms no part of the present invention;

Figure 2 is a perspective view indicating the spiral arrangement of the tubes about the revolvable cylinder in alternate arrangement, as to colors, and also indicating the positioning of the terminals, or electrodes, of the tubes within the cylinder end; and

Figure 3 is a transverse sectional view taken through the case and the cylinder and illustrates the upper set of electrodes and the contact brush therefor.

Referring more particularly to the drawings, in which the preferred form of my invention is illustrated, the numeral 5, in a general way, designates the usual barber pole case, having a lower support 6 and an upper illuminated housing 7, between which is mounted a fixed cylindrical glass case 8.

The inner cylinder 9 is revolvable in the case 8, and comprises a cylindrical tube of fibrous material having fibre end discs 10 and 11 and a third fibre disc 12 arranged above the lower disc 10. An upper fibre support 13 is arranged in the housing 7 and is suitably secured in place by bolts, or the like, 14, said support 13 having a central opening through which a fixed metal tube 15 extends, said tube forming the axis of rotation of the cylinder 9 and terminating at the bottom face of the disc 12.

A fibre tube 16 is fitted inside the brass tube 15 and forms a tight fit therein, the lower end of said tube 16 extending below the lower end of the tube 15 and provided at its

lower end with a brass contact sleeve 17, as is clearly indicated in Figure 1.

The lower end of the cylinder 9 is supported by means of a spider 18 and the disc 10 fits within this flanged spider, said spider having a downwardly extending driving spindle 19 having a squared lower end 20 fitting into a socket carried by the spring motor 21, which is arranged in the lower end of the case and windable by means of a crank (not shown), the motor carrying the full weight of the cylinder 9 and its tubes. The discs 10 and 12 are each provided with fixed metal plates 22 and 23, respectively, the plate 22 being provided with an upwardly extending stub-shaft 24 forming a turning fit in the metal sleeve 17, which is fixedly secured to the lower end of the fibre tube 16.

The plate 12 is provided with a wiping contact clip 25 and the plate 22 is provided with a like clip 26. The clip 25 bears against the brass tube 15 and the clip 26 bears against the metal sleeve 17, said plates 22 and 23 being fully insulated from all metal parts by the fibre discs 10 and 12 and the fibre tube 16.

The primary wire 27 of the electric circuit enters the inner fibre tube 16 and extends downwardly therethrough and is secured to the sleeve 17, and the secondary wire 28 is connected to the outer metal tube 15, so that both clips 25 and 26 and plates 22 and 23 are energized at all times when the electrical circuit is energized. A transformer, of course, is placed in this line, as is the usual practise, but, as it has no connection with the present invention, it has been omitted from the drawings.

The cylinder 9 is provided with a set of spirally disposed inert-gas tubes 29 and 30, these tubes being bent upon themselves, or doubled, and then coiled about the surface of the cylinder in alternate arrangement. For instance, the tube 29 is first bent around the upper end of the cylinder, as indicated at 31, with its intermediate sections 32 and 33 spirally disposed about the cylinder and terminating in upbent electrodes 34 and 35, said tube being provided with a gas combination to produce a blue light.

The tube 30 is looped, as indicated at 36, and its intermediate spiral convolutions 37 and 38 are alternately arranged with respect to the convolutions 32 and 33 of the tube 29, as indicated in Figure 2, said convolutions terminating in upbent electrodes 39 and 40, and provided with a neon gas adapted to produce a red light.

The cylinder 9 is notched at its lower edge, as indicated in Figures 1 and 2, so that the various extremities of the tubes including the electrodes may be worked through the discs 10 and 12 when the tubes are slipped over the cylinder in assembling the device, or in repairing the same.

The electrodes 34 and 39 are electrically connected to the plate 22 by means of suitable wires 41 and 42, respectively, and the electrodes 35 and 40 are electrically connected to the plate 23 by means of suitable connections 43 and 44, respectively.

Colored background stripes 45 are spirally painted upon the surface of the cylinder 9 and the tubes are centrally arranged thereon, said stripes being painted colors corresponding to the colors of the tubes and providing alternate white stripes 44 therebetween, as clearly indicated in Figure 2, the stripes and tubes, when illuminated, presenting the tri colors red, white, and blue in spiral formation about the cylinder.

When in operation the cylinder 9 is rotated by the spring motor 21 about the fixed tube 15 and the spring contact clips 25 and 26 contacting the tube 15 and the sleeve 17, respectively, cause the energization of the various electrodes 34, 35, 39 and 40 and the consequent illumination of their respective tubes 29 and 30, to give off a blue and a red light with the dividing white strip therebetween.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States, the following:—

1. In a device of the class described, a revolvable opaque cylinder, independent inert-gas tubes semi-spirally arranged about said cylinder and having their intermediate sections alternating with each other and their electrodes positioned within an adjacent end of the cylinder, said tubes containing inert-gases of diverse character, and adapted, when illuminated, to display alternate colors, means for energizing the electrodes thereof, and means for constantly rotating said cylinder.

2. In a device of the class described, a revolvable cylinder having a fixed axial support extending therethrough about which it rotates, a plurality of inert-gas tubes arranged semi-spirally about said cylinder and adapted to rotate therewith, each consisting of a looped section and spirally wound intermediate sections, the intermediate sections thereof being alternately arranged relative to each other and terminating in independent electrodes and supports within said cylinder for said electrodes.

3. In a device of the class described, a revolvable cylinder of non-electric conductor material having a fixed axial support about which it rotates, a plurality of doubled inert-gas tubes arranged spirally from end to end of said cylinder and each consisting of a looped section and intermediate semi-spiral convolutions arranged in alternate relation to each other and terminating in electrodes, supports within the cylinder for said electrodes, said tubes containing gases of such character as to adapt

them when illumined, to display alternate colors of red and blue and electrical contact means carried by said supports.

4. In a device of the class described, a revolvable display unit comprising a fibre cylinder having fibre end discs and an intermediate fibre disc secured therein, a pair of inert-gas tubes spirally disposed about said cylinder from end to end thereof, said tubes being looped about the upper end of the cylinder and having their intermediate sections spirally wound thereabout in alternate relation and terminating in electrodes arranged in pairs, one pair of which is positioned above the lower end disc and the other pair above the intermediate disc within the cylinder.

5. In a device of the class described as claimed in claim 4 and including, means for the energization of said electrodes to cause the illumination of said tubes.

6. In a device of the class described as claimed in claim 4, and including means for the energization of said electrodes to cause the independent illumination of said tubes, and means for rotating said cylinder.

7. A lighting unit for a pole comprising a rotatable cylinder of non-conducting material, a lower end member for said cylinder, a central fixed tube extending through said cylinder and supported loosely on said end member, an inert gas tube mounted on the exterior of said cylinder and rotatable therewith, electrodes within said cylinder for the ends of said gas tube, and means carried by said fixed tube for connecting said electrodes to a source of electrical energy.

In testimony whereof I hereunto affix my signature.

MORRIS W. BERGER.