

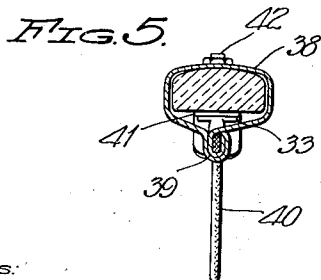
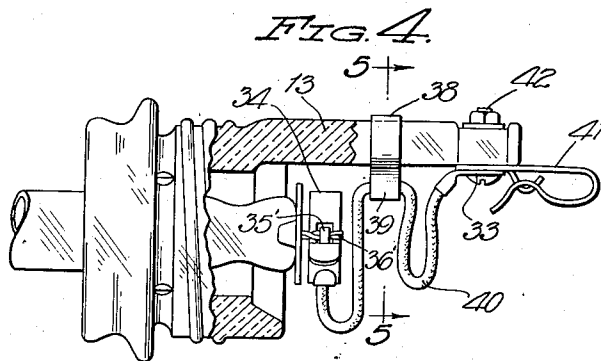
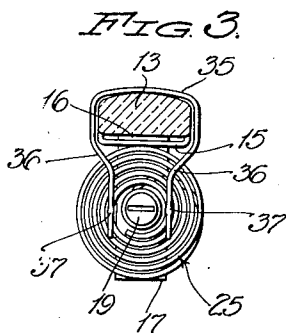
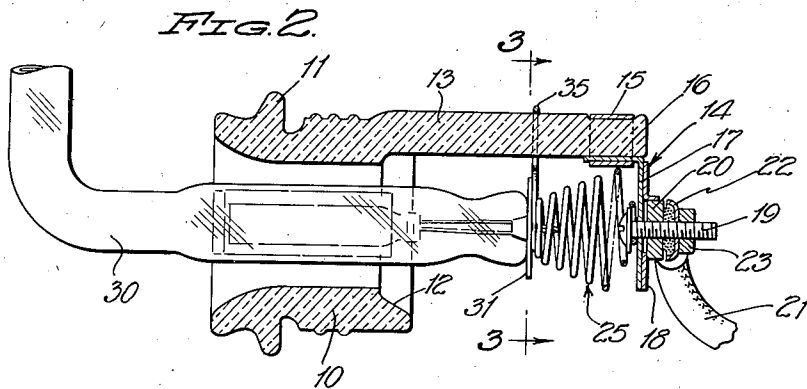
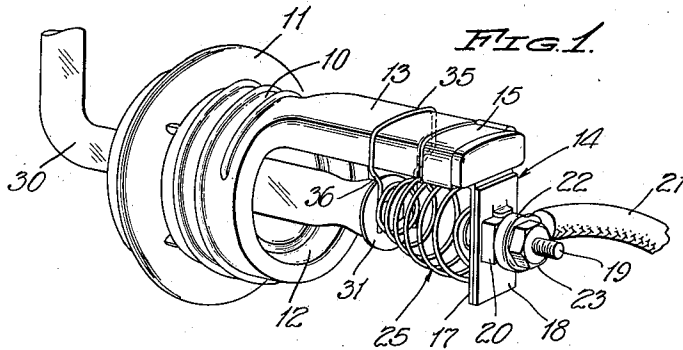
Jan. 9, 1940.

H. L. KRESGE

2,186,703

ELECTRICAL CONNECTION FOR ELECTRIC SIGNS

Filed Feb. 7, 1939



WITNESS:
E. H. L. Kresge

HARRY L. KRESGE.
INVENTOR
BY *Ely & Patterson*
ATTORNEYS

UNITED STATES PATENT OFFICE

2,186,703

ELECTRICAL CONNECTION FOR ELECTRIC SIGNS

Harry L. Kresge, New York, N. Y.

Application February 7, 1939, Serial No. 255,019

2 Claims. (Cl. 173—328)

This invention relates to new and useful improvements in electric signs and more particularly it relates to an insulator and electrode connection for neon signs. One type of insulator and electrode connector for such signs, in more or less general use is known as a post bushing and it is this type of connection to which the present invention relates. The subject matter of the present application is similar in many respects to that illustrated in my prior patent, No. 2,147,847.

Because of the fact that the electrodes of signs of the neon type are not of uniform length, it is necessary to employ an electrical connection between the source of supply and the electrode, which connection must be of a type to adjust itself relatively to electrodes of various lengths in order that the bushing and its associated parts may be of standard or uniform construction.

It is one of the objects of this invention to improve the construction and operation of electrical connections of the post bushing type in such a manner that arcing due to short circuiting between the electrode connection and the post is eliminated.

Another object resides in a novel construction whereby a more perfect electrical connection between the sign electrode and the conductor which supplies the current thereto, is had.

Other objects of the invention will appear as the nature thereof is better understood and reference will therefore be had to the following specification and claims and to the accompanying drawing, in which,

Figure 1 is a perspective view illustrating the invention in its preferred form,

Figure 2 is a longitudinal sectional view thereof,

Figure 3 is a transverse sectional view taken substantially on the line 3—3 of Figure 2,

Figure 4 is a view in elevation partly in section illustrating a slightly modified form of the invention, and

Figure 5 is a transverse sectional view taken substantially on the line 5—5 of Figure 4.

In that form of the invention illustrated in Figures 1 and 2, the bushing comprises a hollow cylindrical member 10 having the usual enlarged portion or flange 11. The opposite end of the body portion is chamfered or cut away as at 12 to provide a shed for moisture or the like. Projecting from the periphery of the end of the main body portion 10, there is a post which constitutes or provides a supporting arm 13 which is rigid in character and said arm has its free

end spaced an appreciable distance from the adjacent end of the main body portion 10. The cylindrical body is made of porcelain, glass or other suitable non-conducting material and the arm 13 is preferably formed as an integral portion thereof.

Carried by the arm at a point adjacent its free end, there is an electric terminal 14. This terminal comprises a body portion of substantially right angular form and is secured to the arm 13 by a band, clip or the like 15 which passes around the arm 13 and the member 16 of the terminal 14, the latter extending along the inner face of the arm 13 as shown in Figure 2.

The portion 17 of the terminal 14 extends at substantially right angles to the arm 13 and in the present embodiment of the invention, a plate 18 is clamped between the portion 17 by a bolt 19 and a nut 20 threaded thereon. The free end of a conductor 21, which constitutes the source of power, is passed around the bolt 19 and clamped in position thereon by means of a clamping washer 22 and a nut 23.

Extending from the terminal 14 in a direction towards the cylindrical member 10, there is a conductor 25 which in that form of the invention illustrated in Figures 1 through 3, comprises a coiled spring, the major portion of which is tapered as illustrated. The coil spring conductor is secured to the member 17 of the terminal 14 by the bolt 19 as illustrated and through the medium of the terminal 14, has electrical connection with the conductor 21.

The reference numeral 30 designates the sign electrode and this projects through the cylindrical member 10 of the post bushing and upon its free end it carries a contact washer or plate 31, which forms a terminal such as described in my prior patent, No. 2,130,768, issued September 20, 1938, and is adapted for engagement with the reduced end of the coil spring conductor 25 thus to supply current to the electrode of the sign.

In practice, the cylindrical member 10 is inserted in an opening in the box or housing in which the sign is enclosed, with the electrode extending through cylindrical member into engagement with the spiral spring conductor as shown in the drawing.

Means is provided to suspend the free end of the spiral spring conductor from the rigid arm 13 in order that the electrode terminal 31 will, when the bushing is assembled, be in position to be engaged by the terminal 31 of the electrode.

In that form of the invention illustrated in Figures 1 through 3, the means for suspending

the free end of the spiral spring conductor comprises a member 35 which is both rigidly and electrically connected to the spiral spring conductor and which also embraces or passes around the rigid arm 13 of the bushing. The member 35 is substantially of inverted U-shape and its legs 36 are secured preferably to the last convolution of the conductor 25 by welding as illustrated at 37 in Figure 3.

In addition to providing means for suspending the free end of the spiral spring, the member 35 performs another function, namely, by reason of its being in circuit with the conductor 25, it passes the current around the arm 13 and this, I have found in actual practice, prevents jumping of the current from the conductor 25 to the arm 13, should the arm be wet or, as is sometimes the case, foul by reason of dirt or other deposits thereon.

From the foregoing, it will be apparent that the member 35 suspends the conductor 25 in proper position to be engaged by the terminal 31 of the sign electrode and at the same time by forming a conductor for passing the electric current around the arm 13, arcing is eliminated.

In that form of the invention illustrated in Figures 3 and 4 I have shown what is known as a "pig tail" connection which is designated 40. The reference numeral 41 designates a conventional clip which is secured to the arm 13 by a bolt 42. The "pig tail" connection 40 has a terminal 33 which receives the bolt 42 and a clip 34 of conventional type which has electrical engagement as at 35' with the terminal 36', also of the type described in my patent above mentioned, and which has electrical connection with the electrode 30 of the sign. To prevent sagging of the "pig tail" connection 40, I provide a clip 38 which embraces the arm 13, as illustrated in Figure 5 and which also has a portion 39 which embraces the "pig tail" connection 40 at a point between its ends and suspends the same intermediate of its ends in looped form from the arm 13, as best illustrated in Figure 3.

By this construction and arrangement of parts it will be obvious that the "pig tail" connection is supported in such a manner that it cannot contact with any of the metallic portions of the sign and thereby cause short circuiting thereof. Furthermore, the clip 38 having electrical connection with the "pig tail" connection 40, passes the current around the arm 13 to prevent arcing

between the "pig tail" connection and the arm 13 as in the preferred form.

From the foregoing it is apparent that the present invention provides a new and improved bushing construction and arrangement for neon signs in which the objects are efficiently accomplished, and while the invention has been disclosed in its preferred forms it is to be understood that it is not to be limited to the specific constructions shown but may be illustrated in other forms without departing from the spirit and scope thereof.

Having thus described the invention, what is claimed as new, is:

1. A bushing for illuminated electric signs comprising a hollow cylindrical body, a rigid arm extending from one end of the hollow cylindrical body and having its free end spaced an appreciable distance from the body portion, an electrical contact member carried by said arm adjacent the free end thereof, a flexible electric conductor connected at one of its ends to said electrical contact member and extending from the outer end of the arm towards the hollow cylindrical body and having its other end free for electrical connection with an electric sign electrode, and means for suspending said electrical conductor from said arm, said conductor suspending means comprising a separate inverted U-shaped member slidably mounted upon the arm and having its legs rigidly connected to the conductor in circuit therewith.

2. A bushing for illuminated electric signs comprising a hollow cylindrical body, a rigid arm extending from one end of the hollow cylindrical body and having its free end spaced an appreciable distance from the body portion, an electrical contact member carried by said arm adjacent the free end thereof, a flexible electric conductor in the form of a compressible coiled spring connected at one of its ends to said electrical contact member and extending from the outer end of the arm towards the hollow cylindrical body and having its other end free for electrical connection with an electric sign electrode, and means for suspending said electrical conductor from said arm, said conductor suspending means comprising a separated inverted U-shaped member slidably mounted upon the arm and having its legs rigidly connected to one of the convolutions of the coil spring conductor in electrical circuit therewith.

HARRY L. KRESGE.