C. BOBE.

INCANDESCENT ELECTRIC LAMP.

APPLICATION FILED MAR. 2, 1918.

1,286,514. Patented Dec. 3, 1918.

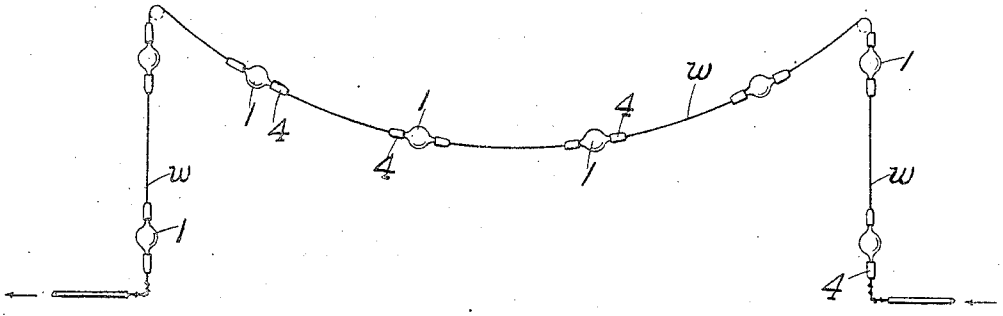


FIG. 1.

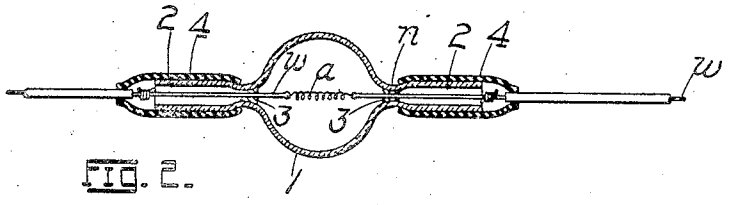


FIG. 2.

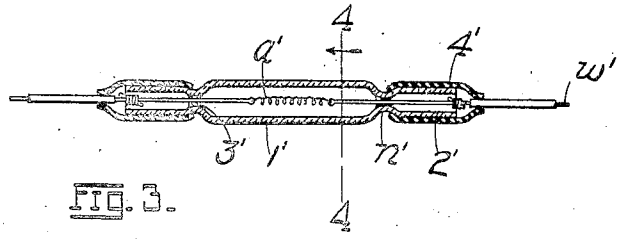


FIG. 3.

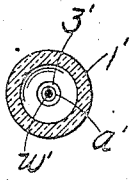


FIG. 4.

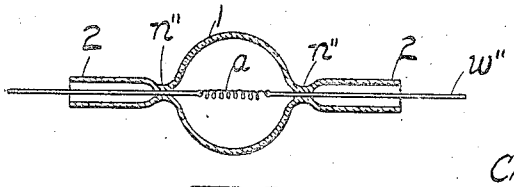


FIG. 5.

WITNESSES:

Harry A. Beinus

Joseph Richey

INVENTOR.

Charles Bobe.

BY Emil Stark

ATTORNEY.

UNITED STATES PATENT OFFICE.

CHARLES BOBE, OF ST. LOUIS, MISSOURI.

INCANDESCENT ELECTRIC LAMP.

1,286,514. Specification of Letters Patent. Patented Dec. 3, 1918.

Application filed March 2, 1918. Serial No. 220,082.

To all whom it may concern:

Be it known that I, CHARLES BOBE, a citizen of the United States, residing at St. Louis, State of Missouri, have invented certain new and useful Improvements in Incandescent Electric Lamps, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

The present invention is directed to improvements in incandescent electric lamps for decorating purposes, especially such as are used to illuminate Christmas trees, walls, ceilings, and the like, the object sought being to construct the lamps in such a way that they may be readily and quickly installed in large numbers without the use of individual sockets to receive the lamps and without the use of individual finger keys for controlling the current to the lighting filaments. The advantages of the invention will be fully apparent from the following detailed description in connection with the accompanying drawing in which—

Figure 1 represents a series of lamps made according to my invention; Fig. 2 is an enlarged longitudinal middle section through one of the lamps; Fig. 3 is a section similar to Fig. 2 showing however a modified form of lamp; Fig. 4 is a cross-section on the line 4—4 of Fig. 3; and Fig. 5 is a section similar to Fig. 2 showing a modified method of sealing the lamp to the conducting wire.

Referring to the drawings, and for the present to Figs. 1 and 2, w represents a wire which may be brought into circuit with any suitable electrically charged conductor as well understood in the art. Disposed at intervals along the wire are bulbs 1, provided with tubular terminals or arms 2 connected to the bulb by reduced portions or necks n containing suitable perforated insulating sealing plugs 3. The arms 2 are protected by sleeves 4 of rubber or equivalent insulating material, said sleeves extending from the necks n to points beyond the free ends of the arms as shown. The wire w comprises a series of sections, a section being inserted and passed through each sleeve 4, arm 2 and plug 3, into the bulb 1 where it terminates, the adjacent terminals of contiguous sections being connected within the bulb by a suitable resistance filament a of carbon, tungsten or equivalent lighting material well understood in the art. Under my arrangement every wire section has its opposite ends terminating in a bulb, the ends of contiguous sections in each bulb being joined by a filament a. In this way we may distribute a large number of lamps along a wire and at any distance apart, depending on the lengths of the individual wire sections. To illuminate a Christmas tree for example, all that we need do is to string the lamps among the branches of the tree in any desired manner so as to produce any desired effect. Store windows may be dressed most artistically at the hands of a skilled window dresser, it being only necessary to bring the free ends of the wire into circuit with any charged conductor, and turning on the current. The lamps being arranged in series it follows of course that with the current on, all the lamps will light; and with the current off, all the lamps will be extinguished.

In the form above described the bulb 1 is substantially spherical, but in Figs. 3 and 4 I show a cylindrical form of bulb 1′ terminating in arms 2′, connected with the body of the bulb by necks n', the latter being provided with insulating sealing plugs 3′ for the passage of the wire sections w', adjacent sections being connected within the bulb by a lighting filament a'. The arms 2′ are protected by sleeves 4′ very much on the order of the form first described. It is evident from the foregoing that the invention is susceptible of a large number and variety of modifications without involving a departure from the nature or spirit thereof.

In the forms above described, the wire sections are sealed to the necks n, n', through the medium of fusible sealing plugs 3, 3′, respectively. I may however seal the wire directly to the neck as shown in the modification in Fig. 5. In that figure we have the same lamp as shown in Figs. 1 and 2, but in lieu of sealing the neck of the lamp to the wire through the intermediate sealing plug 3, as is done in the first form described, I fuse the neck n'' directly to the wire w'', which may be any suitable wire capable of being sealed directly to glass. Instances of such wire are platinum wire, steel wire coated with platinum and copper wire prepared specially for sealing to glass.

It will be noted that the lamp here shown is devoid of the usual exhaust "tip" which projects from the bottom of every known form of bulb lamp, such tip being the result

of sealing the lamp after the air has been exhausted. In my improvement, Figs. 1 to 4, the conducting wire is first passed through the lamp from end to end and through the sealing plugs in the necks, whereupon first one neck and its plug are heated to fusing temperature and sealed to the wire, then the air is exhausted through the opposite end of the lamp (past the wire in the plug) after which the opposite neck and its plug are fused and sealed to the wire. In the modification in Fig. 5, first one neck n'' is sealed directly to the wire w'', the air is then exhausted through the opposite end, after which the opposite neck n'' is sealed to the wire and the lamp ready for service. Before the necks n, n', n'', are fused to the wire either through the intermediate plugs 3, 3', or directly without the intervening plugs, there is sufficient clearance between the wire and the passage-way of the neck or plug to permit the air to be exhausted therethrough. After fusion, the parts while still soft are pressed and worked against the wire so that an air tight seal results. In effect, and for all practical purposes we may regard the conducting wire as being sealed at two points to the lamp, there being a seal on each side or at each end of the bulb 1 (1').

Having described my invention what I claim is:

As an article of manufacture, a string of incandescent lamps comprising a conducting wire composed of a series of sections, a plurality of bulbs terminating in tubular arms connected to the bulbs by reduced neck portions, the adjacent ends of contiguous wire sections passing through the necks into the bulbs and sealed to the necks aforesaid and having their terminals connected by lighting filaments in the bulbs, and suitable insulating sleeves passed over the arms of the bulbs.

In testimony whereof I affix my signature, in presence of two witnesses.

CHARLES BOBE.

Witnesses:
EMIL STAREK,
HARRY A. BEIMES.