July 23, 1929. P. O. CARTUN 1,722,176

INCANDESCENT LAMP

Filed May 12, 1926

Fig. 1

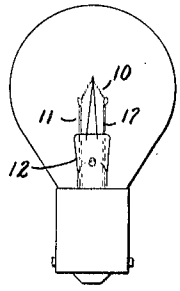


Fig. 2

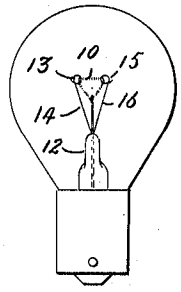


Fig. 3

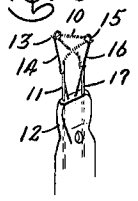


Fig. 4

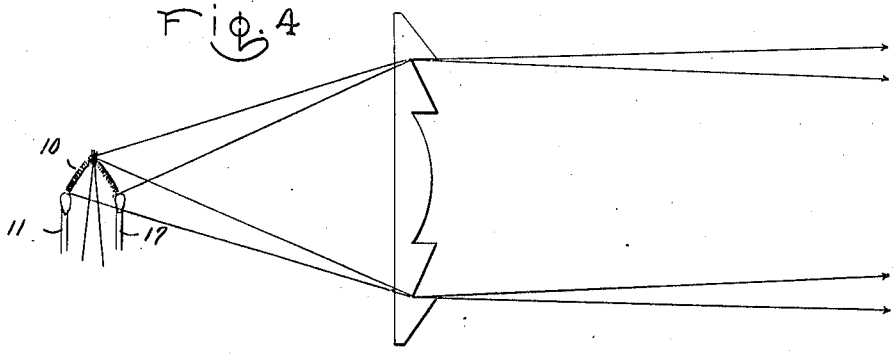
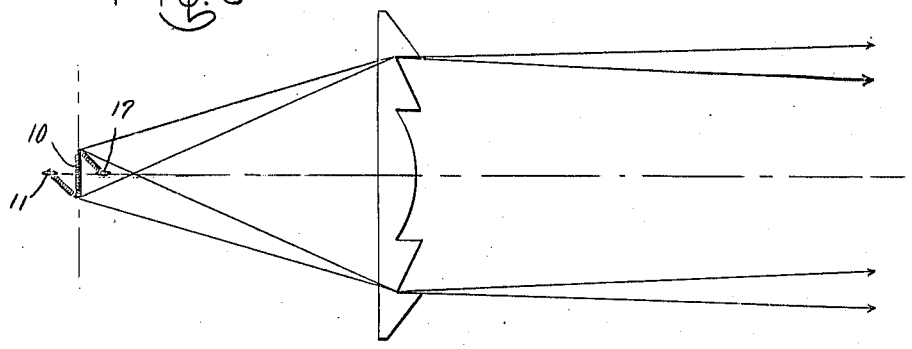


Fig. 5



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Patented July 23, 1929. 1,722,176

UNITED STATES PATENT OFFICE.

PAUL O. CARTUN, OF CLEVELAND HEIGHTS, OHIO, ASSIGNOR TO GENERAL ELECTRIC COMPANY, A CORPORATION OF NEW YORK.

INCANDESCENT LAMP.

Application filed May 12, 1926. Serial No. 108,635.

My invention relates to incandescent electric lamps, and more particularly to lamps for projection or signal purposes. Still more particularly my invention relates to incandescent lamps suitable for railway signaling. The object of my invention is to produce a lamp having a greater concentration than heretofore of the filament, and consequently easier focusing of the lamp. A further object of my invention is to reduce the number of filament supports and thus to reduce the heat losses. A still further object of my invention is to provide a construction which may be readily assembled and thus to reduce the cost of production. Further features and advantages of my invention will appear from the following description of a species thereof.

In the drawing Fig. 1 is an elevation of a lamp comprising my invention; Fig. 2 is an elevation at right angles to that of Fig. 1; Fig. 3 is a perspective view of the filament mount; Fig. 4 is a diagrammatic view in elevation showing the combination of the lamp filament with a lens used in signal lamps; and Fig. 5 is a similar view in plan. In Figs. 4 and 5 the filament is shown enlarged.

As shown in Figs. 1, 2, and 3, the filament 10 is of the concentrated coiled type and is ordinarily composed of tungsten. The filament extends from the end of the leading-in conductor 17, which is sealed in the glass stem 12 in the usual manner, to a loop 13 of a support wire 14 which is embedded in the stem. The filament then passes over to the loop 15 of a similar support wire 16 and then back to the end of the other leading-in conductor 11. The embedded ends of the supports 14 and 16 are practically in line with those of the leading-in conductors 11 and 17, but these supports extend obliquely in opposite directions from the plane of the clamped or sealed portion of the stem so that at their looped ends they are separated sufficiently to carry the desired length of filament. On the other hand, these supports 14 and 16 converge toward a plane at right angles to that of the clamped or sealed portion of the stem and disposed half-way between their embedded ends. The result is that the looped ends of said supports are in the said plane, and the portion of the filament which extends therebetween is in the direction of a line in said plane and substantially perpendicular to the plane of the clamped or sealed stem portion. In Fig. 4 the filament and a portion of the leading-in wires are shown on an enlarged scale in combination with a Fresnel lens used in signal lamps. This view of the filament and supports corresponds to that of Fig. 1. In Fig. 5 is shown the same combination in plan. It will be apparent from an inspection of these figures that the filament is disposed symmetrically with reference to the center plane of the clamped or sealed portion and also symmetrically with reference to the plane which is perpendicular to and bisects the clamped or sealed portion. The result is that no matter how the lamp is turned, substantially the same amount of filament is exposed and the same amount of candle-power obtained. It will be apparent also that such a lamp should be comparatively easy to focus. These results are obtained with only two extra support wires and without additional glass elements.

What I claim as new and desire to secure by Letters Patent of the United States, is:—

In an electric incandescent lamp, the combination of a stem having a flat sealed portion, a pair of leading-in conductors embedded in said portion and extending upwardly therefrom, a pair of support wires having their lower ends embedded in said sealed portion and extending upwardly and in opposite directions from the plane thereof, the line connecting their upper ends being in a plane substantially perpendicular to the said sealed portion and located substantially half-way between the embedded ends of said support wire, and a single filament supported at the ends of said leading-in conductors and support wires.

In witness whereof, I have hereunto set my hand this 10th day of May 1926.

PAUL O. CARTUN.