

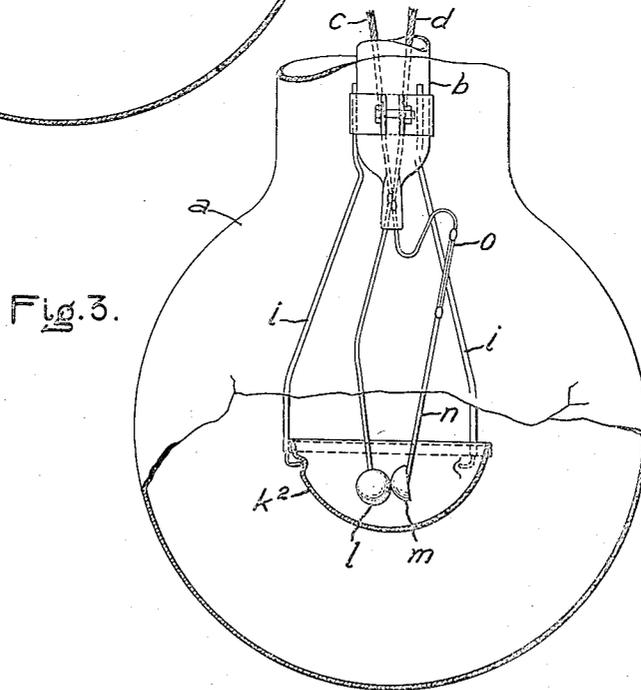
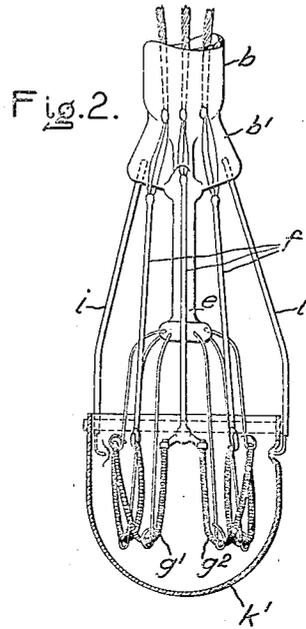
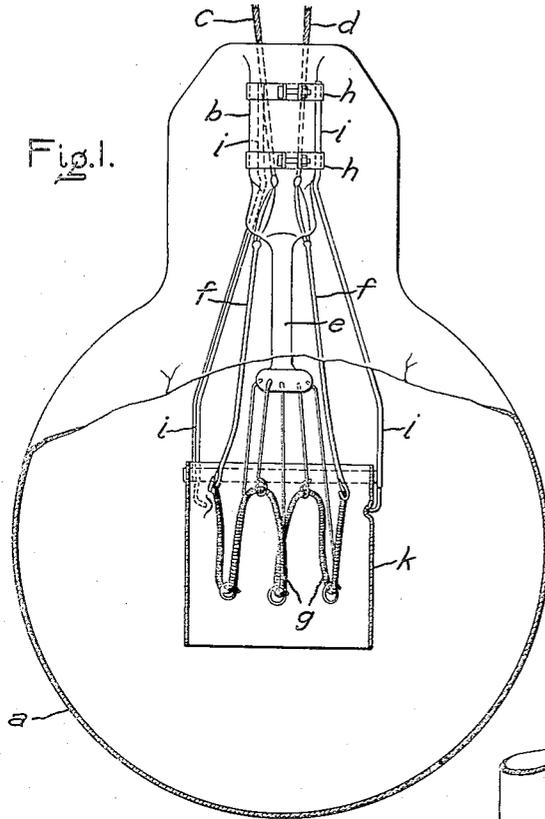
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E. HURWITZ

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ELECTRIC LAMP FOR BEACON LIGHTS

Filed April 27, 1929



Inventor:
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UNITED STATES PATENT OFFICE

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ELECTRIC LAMP FOR BEACON LIGHTS

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High-power incandescent lamps have been used as light sources for beacons and light houses because such lamps are very easily operated. However, the light from such an incandescent lamp must not start from a concentrated or a semi-concentrated light source, since otherwise the ridges of the system of lenses (mostly Fresnel lenses) would cause undesirably wide and extensive shadows and would thus considerably affect the light distribution. For this reason, lamps for this service have been provided with a bee-hive shaped light radiator consisting of several wires braided together, but the distribution of the light emitted by such lamps was not entirely satisfactory, since the luminous circumferential surface of the light radiator did not have everywhere the same luminous intensity because of the dark meshes between the bright wires.

The object of this invention is to provide in the interior of an electric lamp, a large luminous surface of even and high luminous intensity. To this end, a diffusing screen such as a ground glass, or opal glass, translucent quartz, or porcelain, is mounted inside of the lamp to surround the high-power light source very closely. Inasmuch as the light source itself is made invisible, owing to the diffusing screen which acts as a light radiator, the light source may be of any shape and may even be concentrated. It may consist of one or of several helically-wound filaments which are crowded into a narrow space, or it may consist of a hemispherical or spherical tungsten electrode to which an arc discharge takes place.

In the accompanying drawing which shows some of the several forms of electric lamps embodying and made according to the invention, Figure 1 is a longitudinal section of an incandescent lamp with a cylindrical diffuser; Figure 2 an elevation of a lamp mount provided with a cup-shaped diffuser; and Figure 3 is a longitudinal section of a tungsten arc lamp with a bowl diffuser.

Figure 1 shows an incandescent lamp which comprises a spherical glass bulb *g*, preferably filled with an inert gas and having a stem *b* which carries the current leads *c* and *d*, the

arbor *e*, the inner leads *f*, and the coiled filament *g*. Supports *i* secured or clamped to the stem preferably by clamps *h* hold a translucent diffusing screen *k*, which closely surrounds the filament *g*. The screen may consist of any kind of diffusing material, such as ground glass, opal glass, translucent quartz glass, or porcelain.

The incandescent lamp shown in Figure 2 is in general of the same design, but has two coiled filaments *g*¹ and *g*² which are surrounded by a cup-shaped screen *k*₁ of light diffusing material. The supports *i* for the screen *k*₁ are embedded at their upper ends in the stem *b*' of the lamp.

Figure 3 shows a tungsten arc lamp comprising a spherical bulb *a*, filled with inert gas and having a stem *b*, with the sealed-in leads or conductors *c* and *d*. An arc is formed between a spherical anode *l* and a hemispherical cathode *m*, which, in the idle position, lies against the anode; the support rod *n* which carries this cathode is formed in part of a bimetallic strip *o*, which withdraws the cathode *m* from the anode *l*, whenever current is applied, thereby starting the arc. The two electrodes *l*, *m*, of the lamp are surrounded in this case by a cup-shaped screen *k*₂, which consists of light-diffusing material.

The new lamps with the enclosed light-diffusing screen are not only suitable for beacons but can be used anywhere to advantage where a large luminous surface is desired with an even luminous flux.

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

1. An electric lamp comprising a sealed bulb, a light source in said bulb, and a translucent screen mounted in said bulb to partially enclose said light source.

2. An electric lamp comprising a sealed bulb, a stem extending into said bulb, a light source on said stem, and a translucent screen mounted on said stem to intercept the light from said source.

3. An electric lamp comprising a sealed bulb, a stem extending into said bulb, a mass of metal mounted on said stem to translate electrical energy into light, and a translucent screen mounted in said bulb adjacent

said mass of metal to intercept the light from said metal.

4. An electric lamp comprising a sealed bulb, a filament in said bulb, means for supplying current to said filament to render it incandescent, and a translucent screen substantially enclosing said filament to diffuse the light and become an extended light source of substantially uniform brilliancy.

5. An electric lamp comprising a sealed bulb containing an inert gas, an electrode in said bulb through which current flows to produce light at a predetermined point in said bulb, and a translucent screen mounted in said bulb adjacent said point to intercept the light from said point and thereby become an extended light source of substantially uniform brilliancy.

6. An electric lamp comprising a sealed bulb containing an inert gas, an electrode in said bulb through which current flows to produce light at a predetermined point in said bulb, and a screen of translucent vitreous material mounted in said bulb to substantially enclose said electrode.

In witness whereof I have hereunto set my hand this 16th day of April, 1929.

EUGEN HURWITZ.