

No. 776,079.

PATENTED NOV. 29, 1904.

O. A. MYGATT.
REFLECTOR OF PRISMED GLASS.

APPLICATION FILED NOV. 28, 1902.

NO MODEL.

FIG. 1.

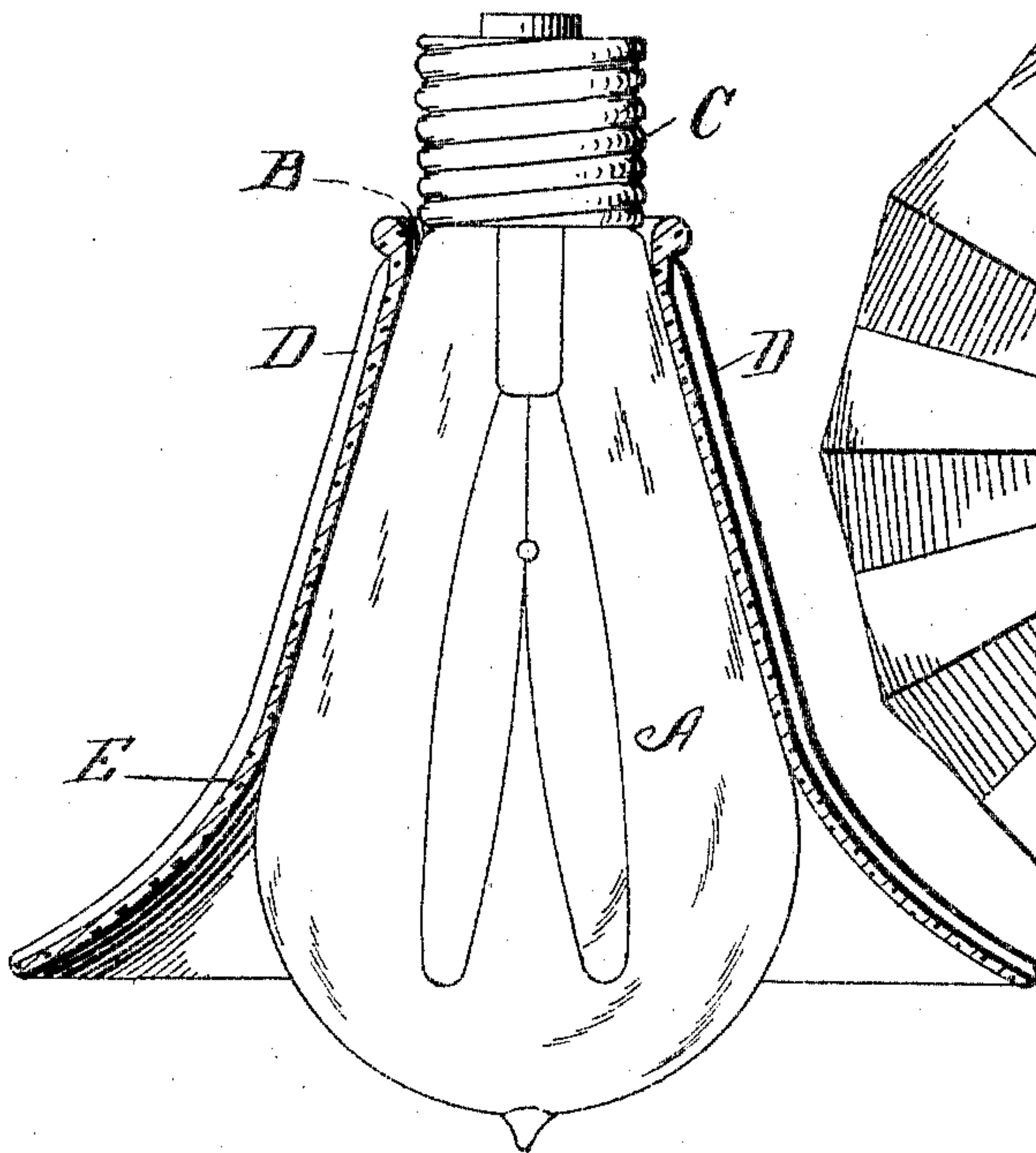


FIG. 2.

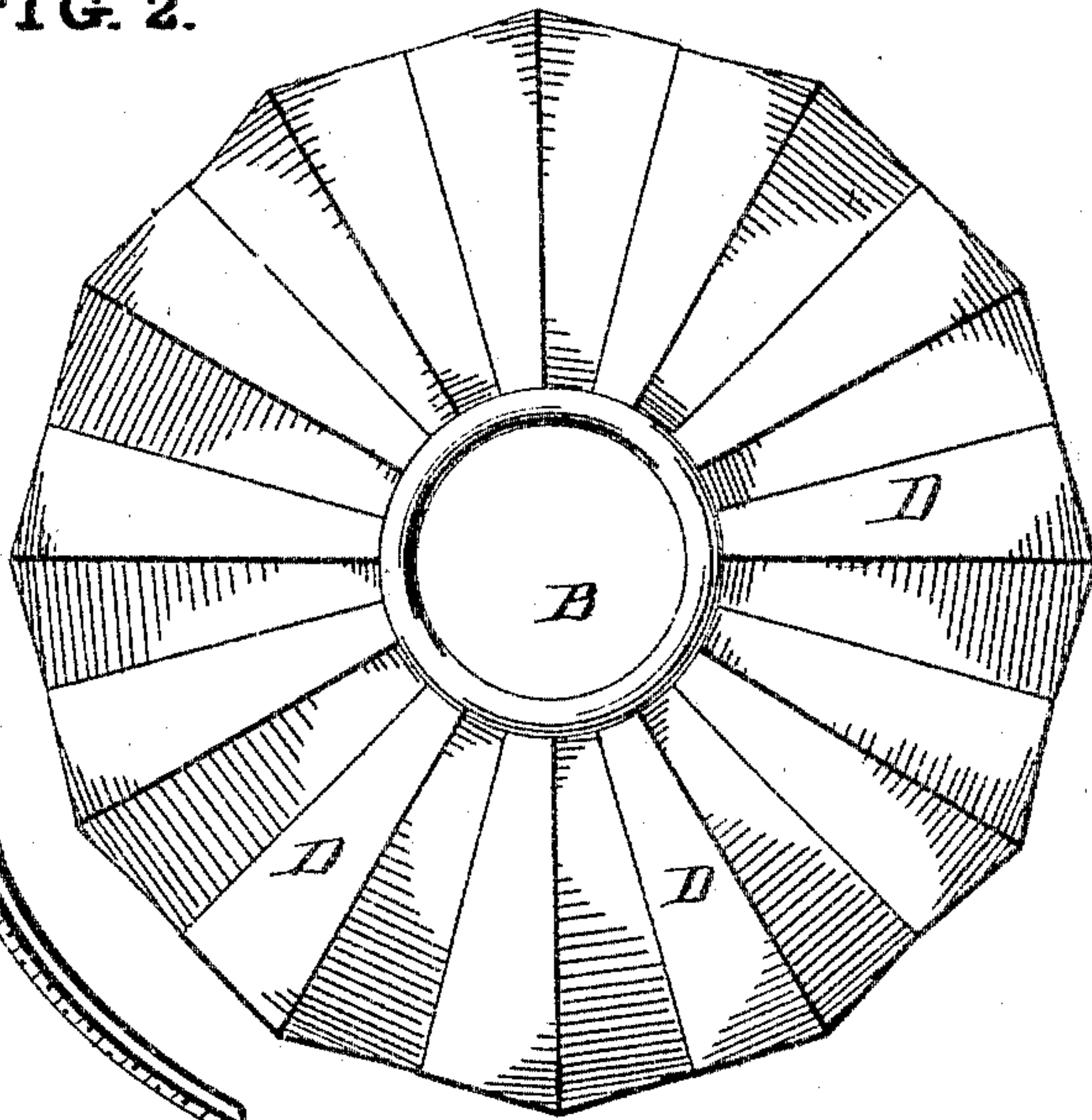


FIG. 3.

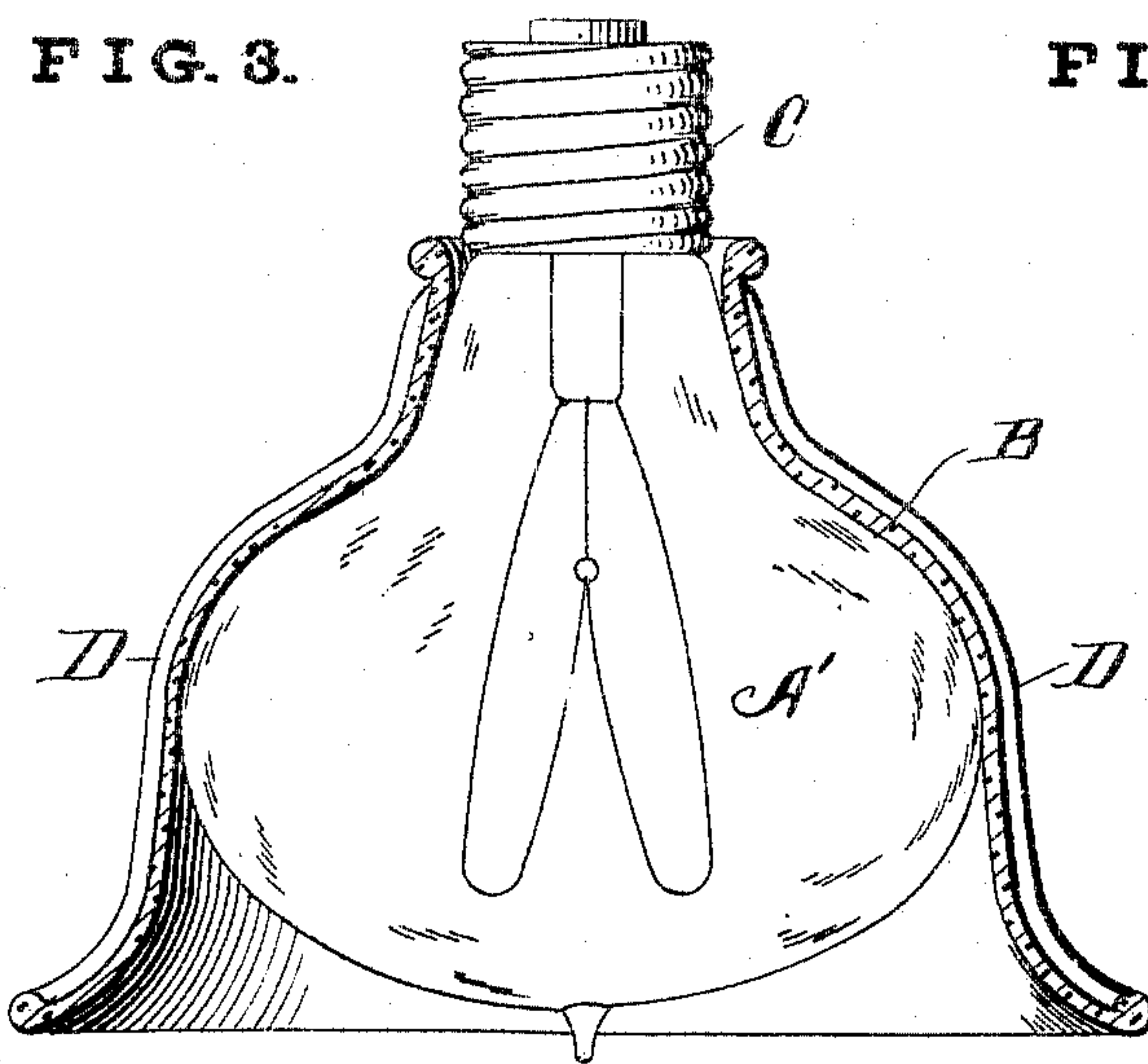
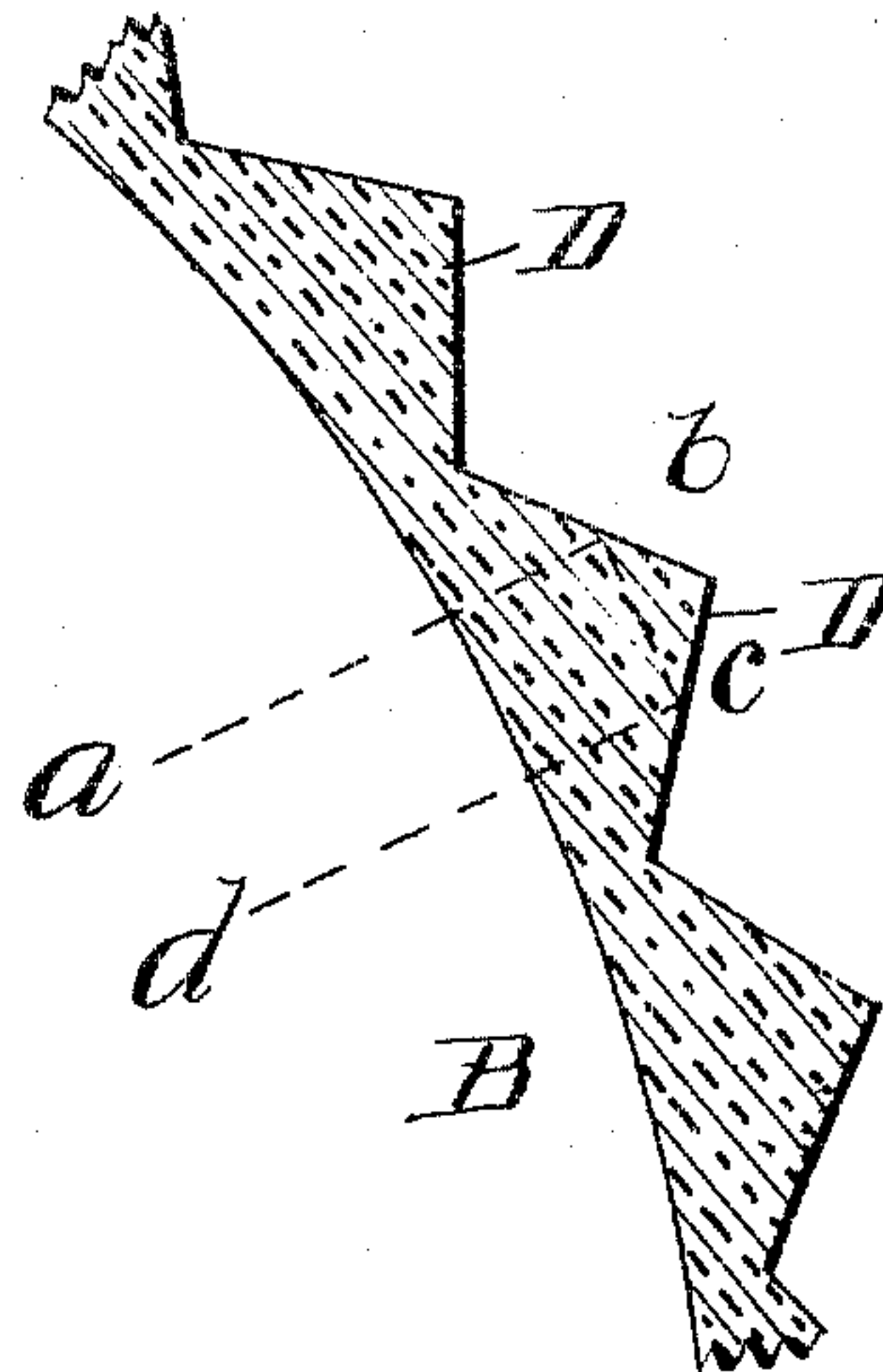


FIG. 4.



WITNESSES:

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OTIS A. MYGATT, OF NEW YORK, N. Y.

REFLECTOR OF PRISMED GLASS.

SPECIFICATION forming part of Letters Patent No. 776,079, dated November 29, 1904.

Application filed November 28, 1902. Serial No. 133,000. (No model.)

To all whom it may concern:

Be it known that I, OTIS A. MYGATT, residing at New York, in the county of New York and State of New York, have invented certain
5 new and useful Improvements in Reflectors of Prism-Glass, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to reflectors for incandescent electric lamps.

The object of the invention is to produce a reflector composed of prism-glass which shall fit closely to an electric-lamp bulb of common construction and shall reflect a large proportion of the light in the direction of the large
15 end of the bulb, while permitting the passage of some light, so that the lamp shall not appear absolutely dark at the sides.

The effect of prisms as reflectors is well
20 known. It is not so generally known, however, that the amount of light reflected by prismatic glass depends largely on the angle of incidence of the light-ray and that the most effective reflecting-surfaces are not the
25 first contact-surfaces, but are the surfaces of the prism on the face of the glass opposite that at which the light enters. Availing myself of these known laws of transmission and reflection of light, I construct my reflectors so
30 as to secure as complete contact of the reflectors with the bulbs as practicable in order to get uniform expansion and contraction of parts from the effect of heat.

Figure 1 is a side elevation of a lamp-bulb
35 and a prismatic reflector shown in section applied thereto. Fig. 2 is a plan of the prismatic reflector. Fig. 3 is a view similar to Fig. 1, showing modified form of bulb and reflector. Fig. 4 is a sectional view of part
40 of prismatic reflector enlarged.

Let A or A' represent electric-lamp bulbs of the incandescent variety. As these are made in numerous forms and sizes, it will be understood that my invention contemplates
45 the construction of reflectors to fit all of the more common varieties.

Let B indicate a reflector of glass, generally what is called "transparent" or "slightly-tinted" glass. The inside of this reflector is

preferably smooth and of a form to fit the
50 bulb for a large part of the surface of the bulb. The opening in the top of the reflector will be such as just to pass the metallic cap or neck C of the bulb. The outside of the reflector is covered with prisms D. To get
55 the most complete reflection, these prisms should present their faces at about forty-five degrees to the line of light. Thus the light-ray *a*, Fig. 4, enters the glass along the line
60 *a b*, is deflected at *b* along the line *b c* at an angle of ninety degrees, is again deflected at *c* at an angle of ninety degrees, and thence moves in the direction *c d*. It is not asserted that all of the light is thus reflected. A part
65 will be radiated. This is one of the advantages of the prismatic-glass reflector that the prisms may be so constructed as to reflect more or less of the light-rays; and the rays not reflected pass through the reflector and are radiated therefrom.

In Fig. 1 the bulb A is of the balloon shape, best known in commercial use. The shade B serves as a cover or petticoat and is in contact with the surface of the bulb for, say, two-thirds of the length of the bulb. Below the
75 line E the reflector flares and is continued for a greater or lesser distance, according to the requirements of the case.

The prisms D on the outer surface of the reflectors B are shown as extending in the general direction of the length of the reflector—that is, radiating from the small end of the reflector to the large end or from the inner rim to the outer edge of the reflector. This is not an essential idea, as my invention contemplates the employment of any of the numerous forms of reflecting-prisms on the outer surface of a glass reflector the inner surface of which comes in contact with the lamp-bulb for a large part of its surface; but longitudinal prisms increasing in width from the smaller to the larger end of my reflector conform to the general form of the body of the reflector, are a very excellent form of reflecting-prisms, and probably the most efficient for
90 the purpose, since the prismatic surfaces of each prism are as large as is practicable with relation to the form and thickness of the

lamp. Furthermore, prisms of this character can be readily molded and are easily kept clean.

5 The reflectors B are of pressed glass made in molds of the proper form to correspond with the form of the electric-lamp bulbs. The angles and reflecting-faces of the prisms will conform to the requirements of the particular circumstances of the case.

10 Electric-lamp bulbs are usually quite thin, at least in the body portion. As the reflector B substantially envelops the body portion, the conditions are such that there is small danger of fracture from unequal expansion, like conditions prevailing over the surface covered. 15 The uncovered end of the bulb is of such form that it can expand and contract sufficiently to compensate for the changes of temperature due to lighting the lamp.

20 In my Patent No. 732,211, dated June 30, 1903, I show and describe a prism-glass reflector for electric lights in which the prism rests on and is supported by the rounded or globular portion of an upright electric lamp. 25 The present invention is a species of the same genus, but differs therefrom in the fact that in the present invention the reflector has a central opening through which the stem of the electric lamp passes, and the reflector is constructed to rest on the smaller part or neck of 30 a suspended lamp rather than on the globular portion of an upright lamp.

What I claim is—

1. A reflector, for an electric lamp, com-

posed of a single piece of glass, having a cen- 35 tral opening to surround the neck of an electric-lamp bulb, the inside of said reflector being smooth and conforming generally to the smaller part of the lamp-bulb for a distance, then flaring outwardly, the outer surface of 40 said reflector being substantially covered with integral prisms calculated to reflect the light-rays back into the reflector and out at the open mouth thereof.

2. A reflector for an electric lamp, composed 45 of a single piece of glass, having a central opening to surround the base of the electric-lamp bulb, said reflector conforming generally to the part of the lamp-bulb adjacent to said base, the outer surface of said reflector being 50 substantially covered with integral prisms calculated to reflect the light-rays back into the reflector and out at the open mouth thereof.

3. A reflector for an electric lamp, composed of glass, having a central opening to surround 55 the base of an electric-lamp bulb, said reflector conforming generally to the part of the lamp-bulb adjacent to said base, the outer surface of said reflector being substantially covered with prisms calculated to reflect the light- 60 rays back into the reflector and out at the open mouth thereof.

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

OTIS A. MYGATT.

Witnesses:

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W. A. DOREY.