

(No Model.)

C. A. BACKSTROM.  
INCANDESCENT LAMP.

No. 406,498.

Patented July 9, 1889.

Fig. 1.

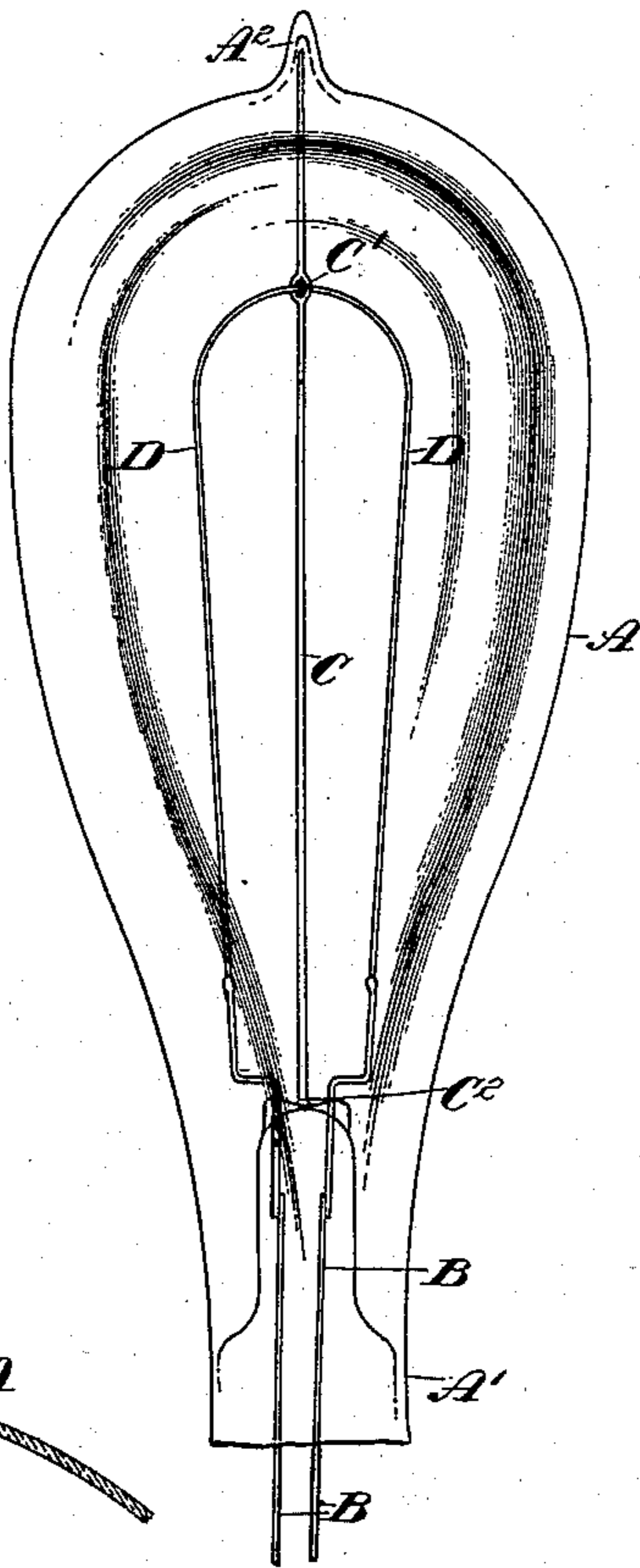


Fig. 2.

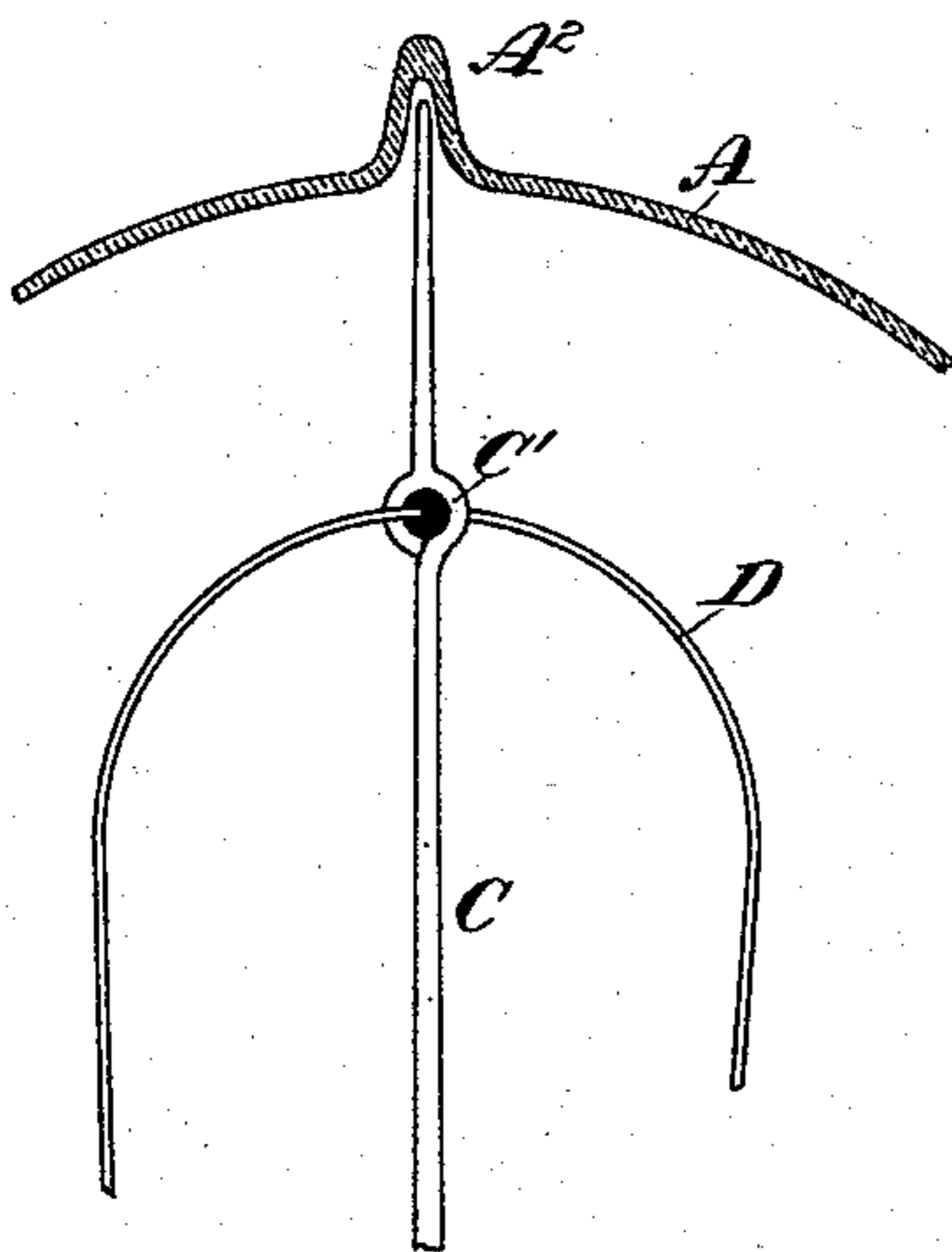
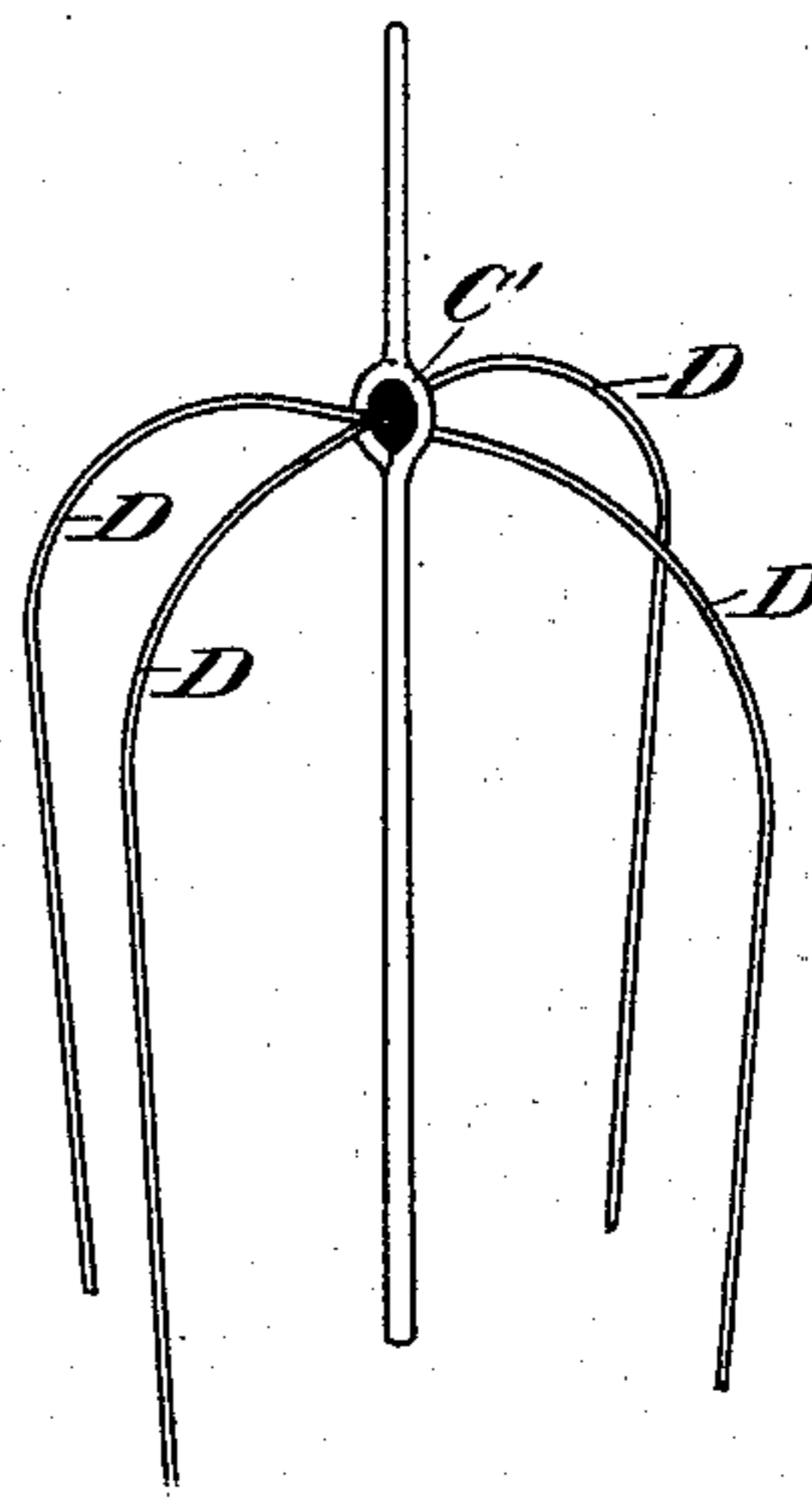


Fig. 3.



Witnesses:

L. C. Hills  
Harold MacKay

Inventor:

C. Axel Backstrom.  
E. B. Stocking  
Att'y.

# UNITED STATES PATENT OFFICE.

CHARLES A. BACKSTROM, OF NEW YORK, N. Y.

## INCANDESCENT LAMP.

SPECIFICATION forming part of Letters Patent No. 406,498, dated July 9, 1889.

Application filed March 26, 1889. Serial No. 304,782. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES A. BACKSTROM, a citizen of the United States, residing at New York, in the county of New York, State of New York, have invented certain new and useful Improvements in Incandescent Lamps, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to an improvement in the device for which I have made application for Letters Patent of this date, Serial No. 304,783, filed March 26, 1889.

The object of my invention is the provision of an auxiliary support for the filament of an incandescent electric light, which support shall be furnished with abutments at both ends thereof, and yet which shall not be subject to dangerous strains from the action of the expansion of the heat resulting from the lighting of the lamp.

To this end I have constructed my device in the manner described in the following specification, and with such novel features as are pointed out in the claims at the end of the same.

In the drawings, Figure 1 is a side elevation of the globe of an incandescent electric lamp, showing my preferred form of support. Fig. 2 is a side elevation of the outer end of one of my supports, on an enlarged scale, the globe of the lamp being shown in section. Fig. 3 is a perspective of the end of one of my supports, showing the use of two filaments therewith, and the device which I employ for the decrease of incandescence at the point of support.

It will, of course, be understood that my support can be used with any kind of filament known for the purpose of incandescence without departing from the spirit of my invention, and particularly with the fine carbon filaments which are mostly used at present.

A is the glass bulb of a lamp having its insertion into the ordinary socket at A', and being sealed in the ordinary way at its end A<sup>2</sup> after exhaustion.

My support is in the nature of a rib C, either spun from the body of the lamp or sealed thereto. B are the leading-in wires, to which are attached the filaments D in the ordinary

way. The rib C is preferably provided with a loop or aperture C', through which the filaments or filament is passed, as shown in Figs. 3 and 2, respectively. The rib C extends from the base of the lamp to the end thereof, where it is included between the sides of the pointed seal A<sup>2</sup>, as shown in Fig. 2. The sides of this seal have the effect of abutments, tending to support the end of the rib and to prevent the snapping of the same through the action of vibrations. The rib is made of such a length that, allowing for the greatest possible expansion due to heat, the end of the same will not touch the top of the lamp. This falling short is shown in Fig. 2.

I find it best to fill the loop or aperture C' with carbon-paste or some other conducting material for the purpose of lowering the resistance, and thus cause the lowering of temperature at this point and darkening of the filament here. Either one filament or several may be employed, and the mode of passing a plurality of these filaments through the loop is shown in Fig. 3.

The object of the rib C is the support of the filament, and the consequence of the use of the same is that much finer filaments can be used, and the same may be handled with less danger of breakage than ever before. Thus a greater light may be obtained with a given current of electricity, and there will be a greater number of filaments made from a given quantity of material. The filaments may be made of flat material, and thus the resistance of the same be adjusted in the finest way for various batteries and dynamos. The object of the carbon-paste at the loop is, of course, to so lower the temperature of the carbon at this point as to run no risk of the fracture of the glass rib when the light is turned on.

The danger of the use of the support fixed simply to the base of the lamp has been found to be that if the lamps are laid down at all roughly the inertia of the support itself is apt to break it off, and thus cause the rupture of the filament sooner than might have been the case had it been left to itself. The advantage of this form of support is that, although it may be made so slight, as shown, that there is little inertia to cause fracture, its being sup-

ported at both ends causes it to be safe from the effect of such inertia as is left. There is another cause of the fracture of these supports found in the vibration to which they are subjected when used in cars and on steamers, where the movement of the machinery sometimes causes regularly-recurring vibrations, which are particularly dangerous in this way. I have found that the form of support herein shown is scarcely affected by this or any vibration on account of the double abutment which it is provided with.

I do not wish to be understood as limiting myself to the exact construction shown and described, as there may be various modifications made by the exercise of mechanical skill without departing from the spirit of my invention.

What I claim is—

1. In combination with the filament of an electric lamp, an extraneous support for the same, said support being fast to the lamp at one end and abutting loosely against the lamp at the other, substantially as described.

2. In combination with the filament of an electric lamp, a fine rib fast at the base of the same and abutting loosely between the sides of the exhaust-seal, substantially as described.

3. In combination with the filament of an

incandescent electric lamp, a rib fastened to the base of said lamp and abutting loosely between the sides of the seal thereof, said rib being provided with an aperture through which said filament is adapted to pass, substantially as described.

4. In combination with the glass globe and filament of an incandescent lamp, a glass rib spun from the base of the globe and abutting loosely within the seal thereof, substantially as described.

5. In an incandescent electric lamp, a rib attached to the base thereof abutting between the sides of the seal of the same and provided with an aperture, in combination with a filament passing through said aperture, and a conducting material inserted in said aperture, substantially as described.

6. In an incandescent electric lamp, a support attached to the base thereof and provided with an aperture, in combination with a filament passing through said aperture, and a conducting material inserted into said aperture, substantially as described.

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

CHAS. A. BACKSTROM.

Witnesses:

HAROLD MACKAYE,  
HEATH SUTHERLAND.