

(No Model.)

G. D. BURTON.
ELECTRIC LAMP GLOBE.

No. 282,157.

Patented July 31, 1883.

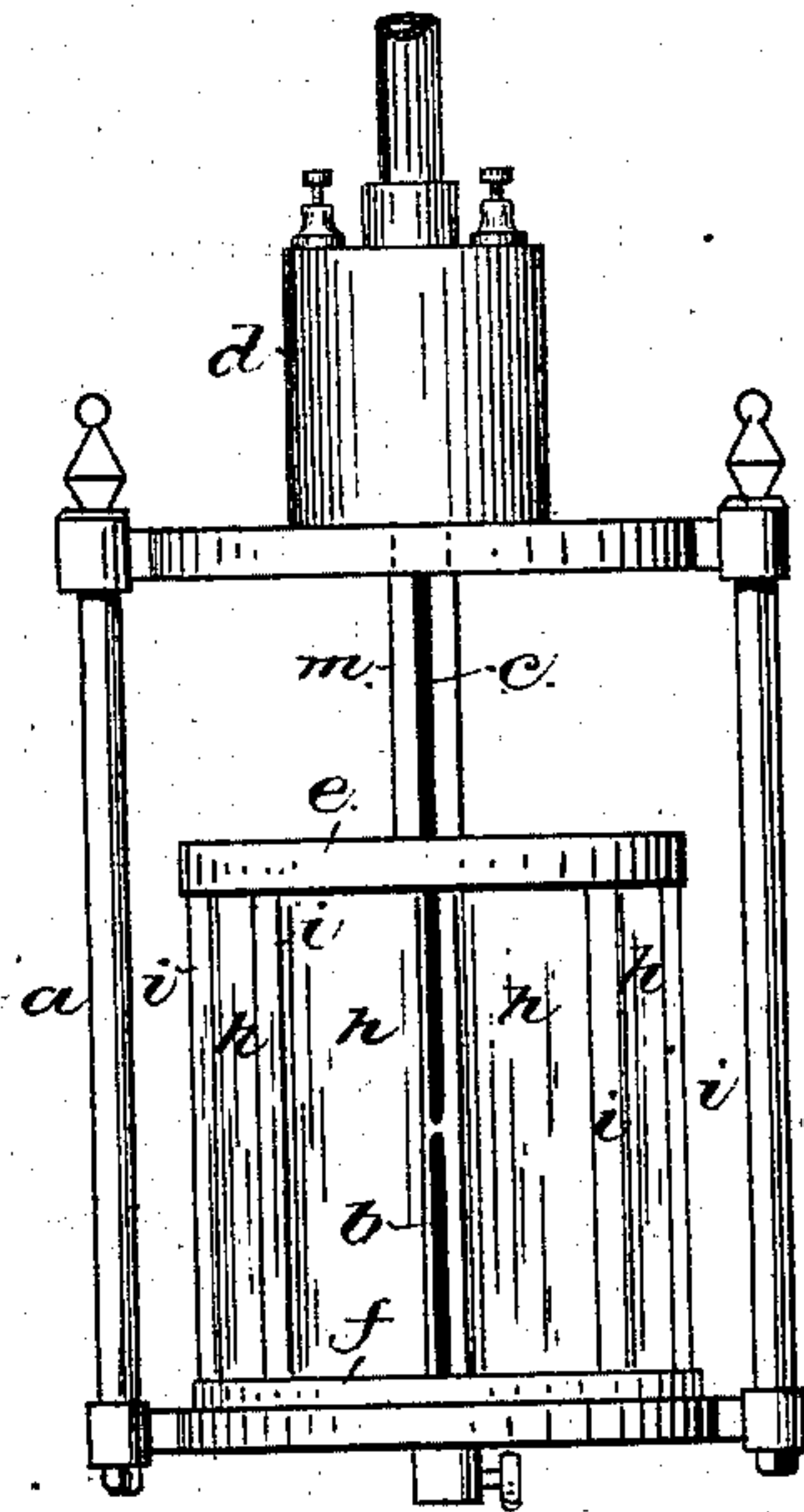


Fig. 1.

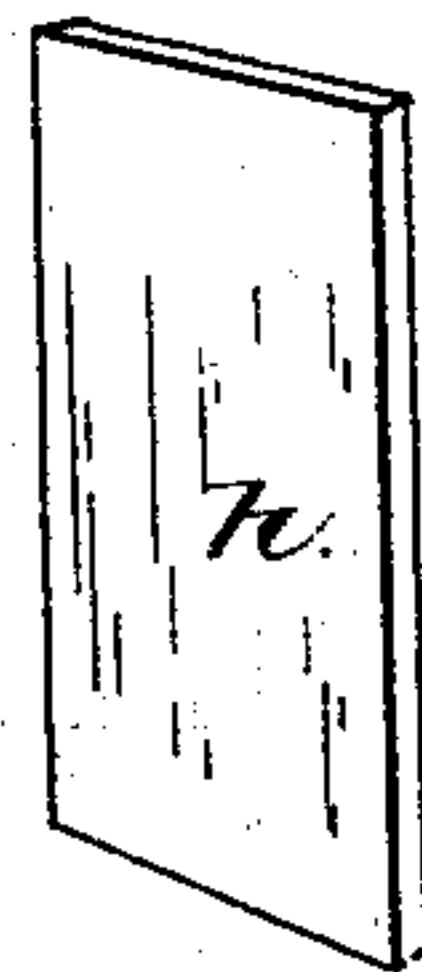


Fig. 4.

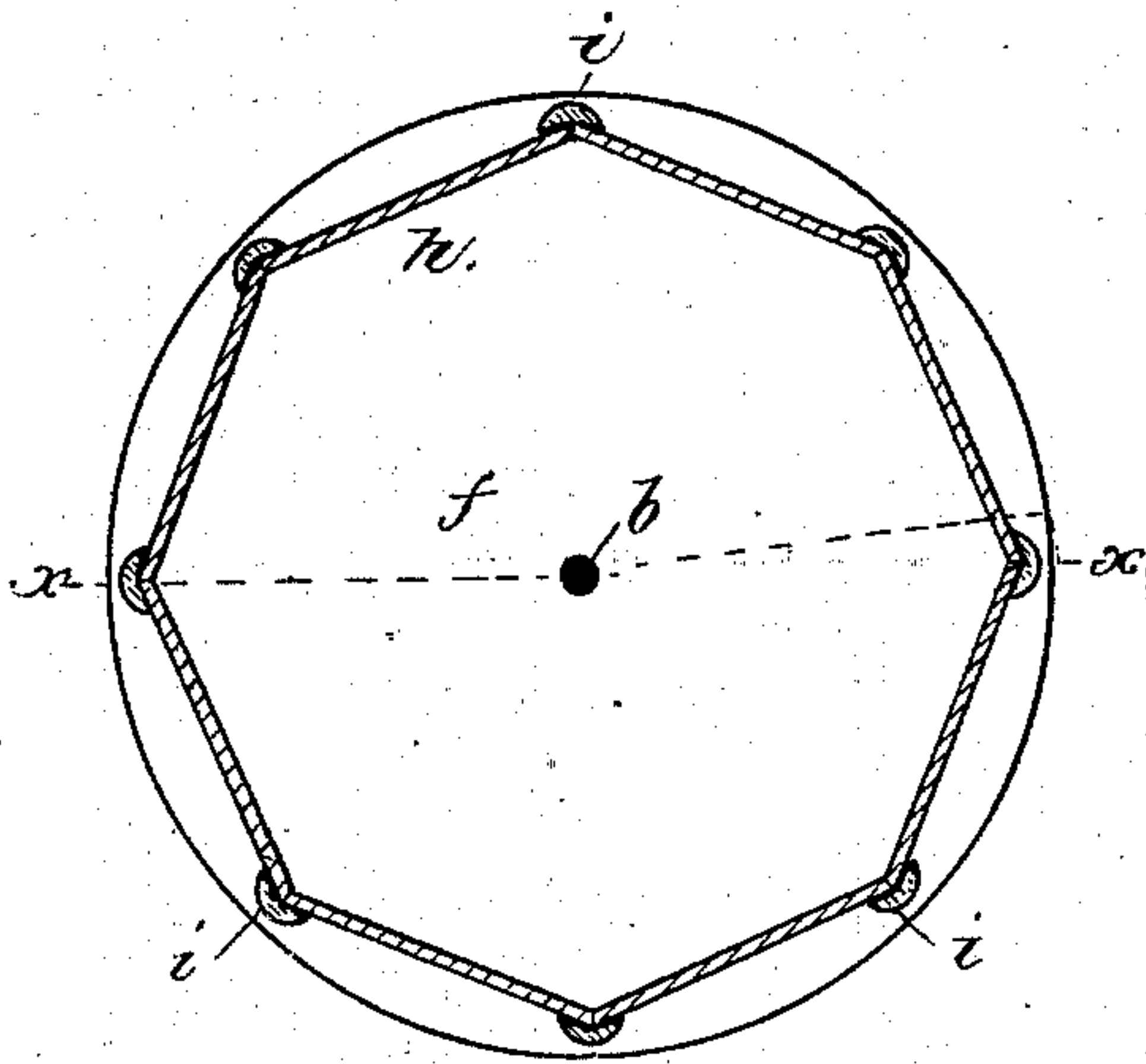


Fig. 2.

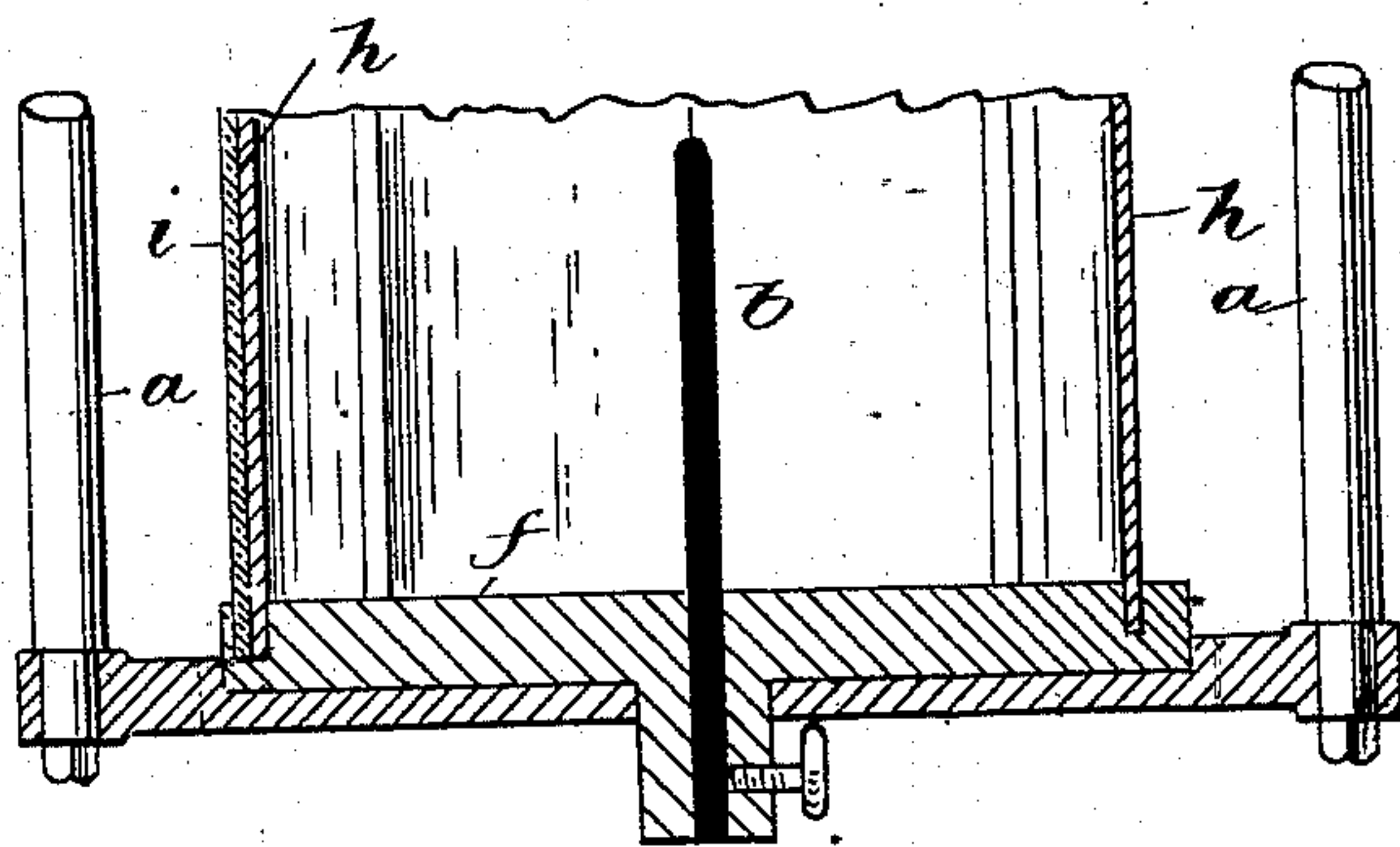


Fig. 3.

WITNESSES

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ELECTRIC-LAMP GLOBE.

SPECIFICATION forming part of Letters Patent No. 282,157, dated July 31, 1883.

Application filed February 13, 1883. (No model.)

To all whom it may concern:

Be it known that I, GEORGE D. BURTON, of New Ipswich, county of Hillsborough, State of New Hampshire, have invented an Improvement in Globes for Electric Lamps, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

My invention relates to a globe for inclosing a lamp, (shown in this instance as an electric-arc lamp,) having for its object the production of a strong durable globe capable of withstanding considerable pressure and not being injured by sudden changes in temperature. The globe consists, essentially, of plates of mica mounted in a suitable frame-work, glass being preferably employed for the frame-work on account of its transparency, and the said joints being made substantially air-tight. A globe of this character may be employed, in connection with an arc-lamp, to prevent a continuous supply of air from reaching the carbons, so that after they have once consumed the oxygen that is inclosed in the globe, or converted it to carbonic-acid gas, there will be very little, if any, further combustion of the carbon, and they will consequently last much longer than when burned in the ordinary open globes. The material of which the globe is composed will be capable of withstanding the high temperature to which the gases confined in it may be raised, and is not liable, as are the ordinary glass globes, to crack under sudden changes in temperature, or from a large difference between the temperature within and without it. If desired, the air may be exhausted, or the globe may be filled with nitrogen or other gas incapable of supporting combustion; but this will not be generally necessary, as the small amount of oxygen in the air filling the globe will be sufficient to consume only a slight amount of carbon, the essential point being that there is not contained a supply of oxygen to the carbons, as is the case when the usual open globes are employed, so that their combustion will be greatly impeded, if not wholly checked.

Figure 1 is a front elevation of an electric lamp provided with a globe embodying this invention; Fig. 2, a horizontal section thereof on a larger scale; Fig. 3, a vertical section on

dotted lines *x x*, Fig. 2; and Fig. 4, a perspective view of one of the mica plates.

The globe is shown in this instance as employed in connection with an electric lamp of ordinary construction, composed of frame-work *a*, having the lower or negative carbon, *b*, rigidly connected with the lower portion of the said frame-work, and the upper carbon, *c*, controlled by a regulator, of any usual construction, contained in the case *d*, mounted on the upper portion of the said frame-work *a*. The said globe is composed of top and bottom plates, *e f*, which may be of metal, and side plates, *h*, fitted in suitable grooves or sockets in the said plates *e* and *f*, as shown in Fig. 3, and fastened together where their side edges meet by vertical-framing or rods *i*, fastened at their ends to the said plates *e f*, the said vertical rods *i* being preferably of glass, so as not to obstruct the rays of light. The plates *e f h*, with the rods or framing *i*, thus constitute a chamber which may be essentially air-tight. The upper plate, *e*, is provided with an opening of sufficient size to admit of the free movement of the carbon *c* therethrough. The upper plate, *e*, is connected with the regulating-case *d* by tube *m*, so as to prevent the admission of air around the carbon *c*, the regulating-case itself being also made essentially air-tight. It will be seen that by employing an air-tight inclosing case or globe—such as herein described—the carbons do not receive the usual continuous supply of air or oxygen for producing rapid combustion, and that if the air is exhausted from the said globe, or if it is filled with nitrogen, or other gas incapable of combustion, or even when filled with air, the oxygen will very soon be consumed, so that in any case there will be no free combustion of the carbons, and their durability will consequently be greatly increased.

It is not essential, as in the case of an incandescent light, that the supply of oxygen should be entirely removed; but by preventing its free and continuous supply the rapidity of consumption of the carbons is greatly reduced. A globe composed of mica, and constructed as herein described, will be capable of withstanding the great variations in temperature and pressure to which it is exposed when unprotected upon the outside and containing a body of highly-heated gas upon its

inside. I do not broadly claim an air-tight globe for electric lamps, for I am aware that it is old to provide an electric lamp with carbons and carbon-holders and a globe or inclosure therefor, having one end closed and the other end provided with a contracted opening through which one of the carbons freely passes; neither do I claim a chimney or globe adapted for use on oil-lamps, and composed of mica sides, metal connecting-ribs therefor, (which are not air-tight and break up the diffusion of light,) a metal upper rim, and a metal base, such being public property.

I claim—

1. A globe for lamps composed of mica side

plates united by transparent air-tight joints, and suitable top and bottom plates, substantially as shown and described.

2. In a globe, the combination, with the top and bottom plates, of side plates composed of mica, and vertical transparent rods supporting the said side plates along their meeting edges, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GEO. D. BURTON.

Witnesses:

JOS. P. LIVERMORE,
W. H. SIGSTON.