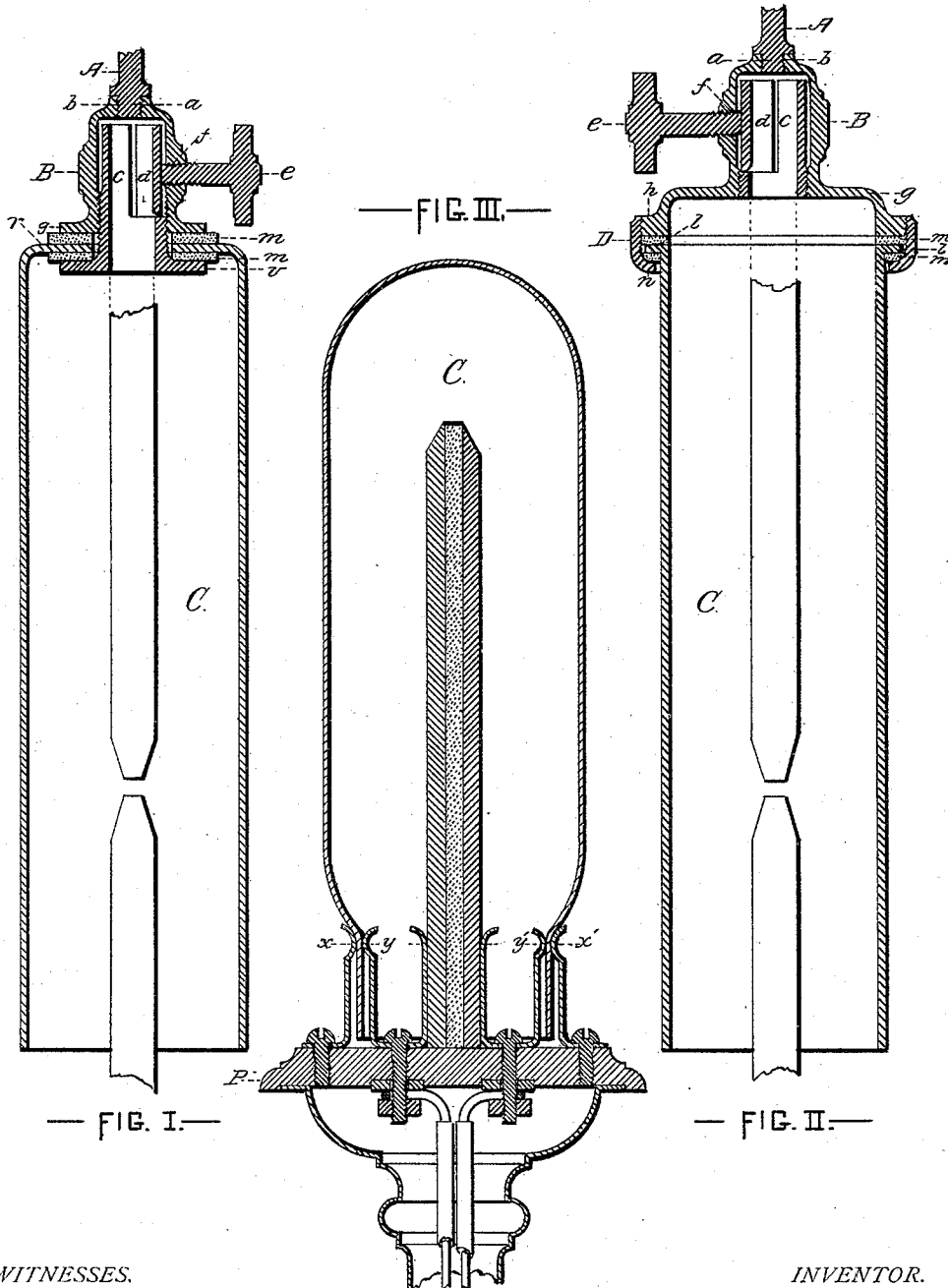


(No Model.)

W. JANDUS.
ELECTRIC ARC LAMP.

No. 463,154.

Patented Nov. 17, 1891.



WITNESSES.

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WILLIAM JANDUS, OF CLEVELAND, OHIO.

ELECTRIC-ARC LAMP.

SPECIFICATION forming part of Letters Patent No. 463,154, dated November 17, 1891.

Application filed December 4, 1886. Serial No. 220,638. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM JANDUS, a citizen of the United States, and a resident of Cleveland, county of Cuyahoga, and State of Ohio, have invented certain new and useful Improvements in Electric Lamps, of which the following is a specification, the principle of the invention being herein explained and the best mode in which I have contemplated applying that principle so as to distinguish it from other inventions.

The object of my invention is to adapt to the present open-air arc lamp a practical device designed to retard the waste of electrodes by oxidation.

The annexed drawings and the following description set forth in detail mechanical forms embodying my invention, such detail constructions being but examples of various mechanical forms in which the principle of the invention may be used.

In said drawings, Figure I represents a vertical section of one form of my improved device, showing a part of the upper carbon-holder and the two carbons; Fig. II, a similar section of another form, and Fig. III a section of the device applied to an electric candle.

In the drawings, the letter A indicates the upper carbon-holding rod having its lower end *a* reduced and screw-threaded. Said reduced and screw-threaded end *a* is screwed into a screw-threaded bore *b* in a metallic cap B, having the lower portion of its interior cavity screw-threaded. The carbon-holding rod and the cap are electrically connected, the cap forming a part of the carbon-holder. A carbon socket *c* is screwed into the cavity of the cap B and is cut away for a portion of its upper end, a clamping-block *d* fitting in said cut-away portion and having a set-screw *e* bearing against it, said screw passing through a screw-threaded opening *f* in the cap. The lower end of the cap has a flange *g*, and the lower end of the socket has a flange *v*, and the inwardly-bent flange *r* of a globe C of glass or other transparent or translucent refractory material is clamped between said flanges, having gaskets or packing-rings *m m*, of asbestos, interposed between said flanges and the flanges *g* and *v*. The globe is preferably of cylindrical shape, is open at the lower end, and has a hermetically-closed joint

at the upper end. The upper carbon is clamped in the socket *c* by means of the clamping-block *d* and the set-screw, and the lower carbon projects up through the lower open end of the globe.

In Fig. II the flange *g* of the socket is illustrated as having a screw-threaded edge *h*, upon which a collar D, having an inwardly-projecting flange *n* upon its lower edge, is screwed. Said collar clamps an outwardly-projecting flange *l* upon the upper edge of the globe. The other parts of the device are like the parts illustrated in Fig. I, the form illustrated in this figure, Fig. II, being simply to show the application of the device to a globe having an outwardly-projecting flange.

In Fig. III of the drawings the device is illustrated applied to an electric candle, the globe being in this case shown as formed integrally closed at its upper end and held with its open lower end upon the base P by means of suitable clamps *x y*. In this device I accomplish a desirable end, which has not to my knowledge been accomplished by other attachments for arc lamps. The combustion at the arc within the globe will rarefy the air within the latter and will consume the oxygen of the air contained within the globe, whereupon the carbonous gases thus produced will prevent air from passing up to the arc, with the exception of the small quantity which may gradually be admitted by the mingling of the surrounding air with the inclosed gases at the open bottom of the globe. There can be absolutely no circulation of air in the globe on account of the hermetic closing of the upper end of the same, and this latter point, the complete hermetic closing of the upper end of the globe, I consider and have found by practical experiments to be the essential point of advantage in my invention.

As the globe and holder for the same are rigidly connected to the carbon-holder, the point of the arc can never be brought near to the open lower end of the globe by consumption of the carbons, as would be liable to happen if the globe were separately supported from the carbon-holder. The carbons may be renewed and trimmed as easily as in any arc lamp now in use, and the device may be attached to any arc lamp, and will effect, as I have found by practice and experiments,

a saving of about eighty-five per cent. in the consumption of the carbons. While this item will not amount to any considerable sum as far as the cost of carbons is concerned, the saving will reside in the less amount of attention required by the lamps on account of the longer life of the carbons.

All cinders and particles of solid carbon may freely escape at the open lower end of the globe, and the globe will besides its other offices fill the office of the common open globes now used in protecting the arc from atmospheric disturbances.

The foregoing description and the accompanying drawings, set forth in detail, are mechanisms embodying my invention. Changes may be made in the same, provided the principles respectively recited in the following claims are employed.

I therefore particularly point out and distinctly claim as my invention—

1. In an arc lamp, an arc-inclosing chamber hermetically closed at all points excepting at its lower end, substantially as set forth.

2. In an arc lamp, the combination, with a carbon-holder, of an arc-inclosing globe open at its lower end and hermetically closed at all other points and hermetically joined at its upper end to the lower end of said carbon-holder, substantially as set forth.

3. In an arc lamp, the combination of a carbon-holding rod, a carbon-clamp at the lower end of said rod, and an arc-inclosing globe open at its lower end and hermetically joined to said rod and clamp at its upper end, substantially as set forth.

4. In an arc lamp, the combination of a carbon-holding rod, a hermetically-closed cap at the lower end of said rod, a carbon-clamp within said cap, and an arc-inclosing globe open at its lower end and hermetically joined to the lower edge of said cap, substantially as set forth.

5. In an arc lamp, the combination of a

carbon-holding rod, a hermetically-closed cap at the lower end of said rod, having a flange at its lower edge, a carbon-clamp within said cap, and an arc-inclosing globe open at its lower end and provided with a flange at its upper end hermetically clamped against the flange of said cap, substantially as set forth.

6. In an arc lamp, the combination, with a carbon-clamp inclosed in a cap closed at the top and a depending arc-inclosing globe more or less open at its lower part and having an annular flange at its connecting portion, of two asbestos packing-rings respectively located on opposite sides of said flange, and a clamping device which fastens together said cap, flange, and asbestos rings, substantially as set forth.

7. In an arc lamp, the combination of a cap, an arc-inclosing globe open at its lower end and hermetically joined at its upper end to said cap, a carbon-holding socket screwed into said cap and having a cut-away portion, a clamping-block in said cut-away portion, and a set-screw inserted through said cap to bear against said clamping-block, substantially as set forth.

8. In an arc lamp, the combination, with a closed cap B, having an annular flange, and a depending arc-inclosing globe open at its lower part and formed with an annular flange at its upper portion, of packing and a clamp which secures together said cap-flange, said globe-flange, and said packing, together with the carbon-socket c, inclosed within said cap, adjustable clamping-block d, and set-screw e, substantially as described.

In testimony that I claim the foregoing to be my invention I have hereunto set my hand this 11th day of November, A. D. 1886.

WILLIAM JANDUS.

Witnesses:

T. B. HALL,

W. D. PUDNEY.