

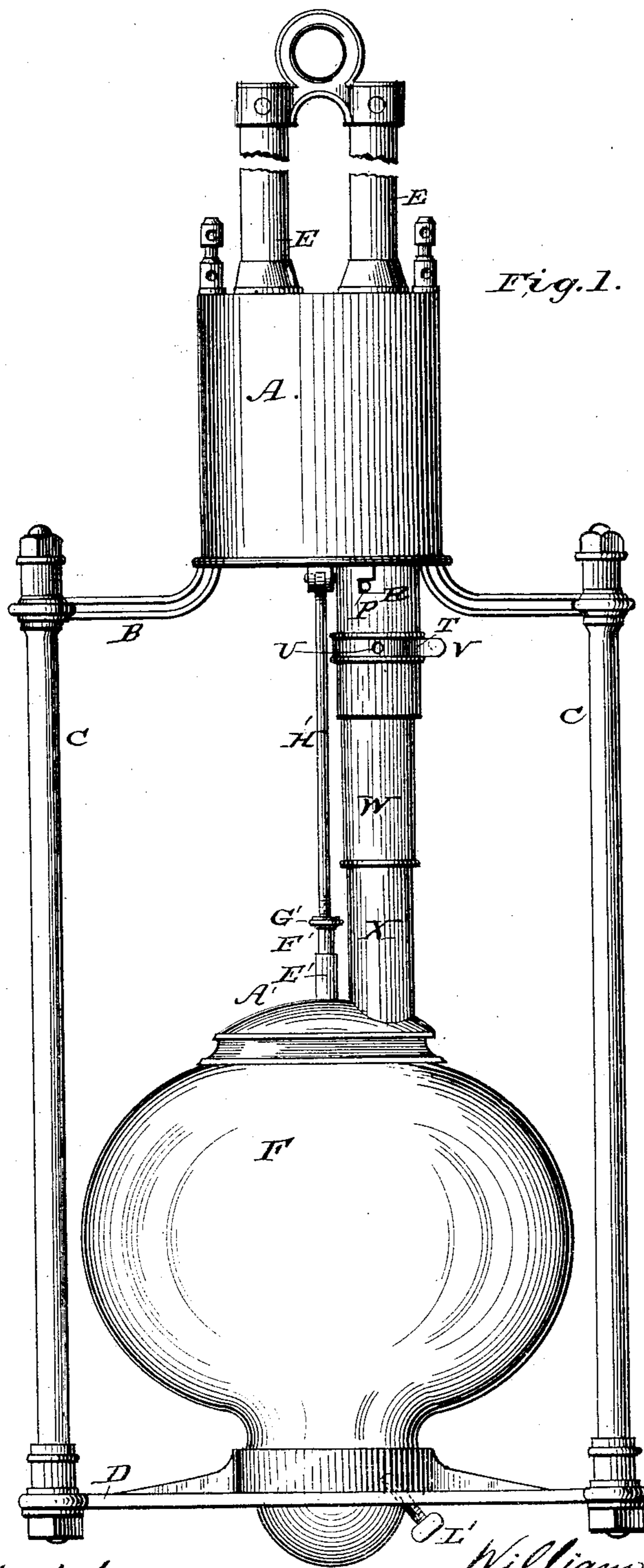
(No Model.)

3 Sheets—Sheet 1.

W. P. PATTON.  
VOLTAIC ARC LAMP.

No. 311,142.

Patented Jan. 20, 1885.



WITNESSES:

*Ad. L. Dietrich,*  
*Wm. Bagges*

INVENTOR.

*William P. Patton,*  
*by Louis Bagges & Co.*  
ATTORNEYS.

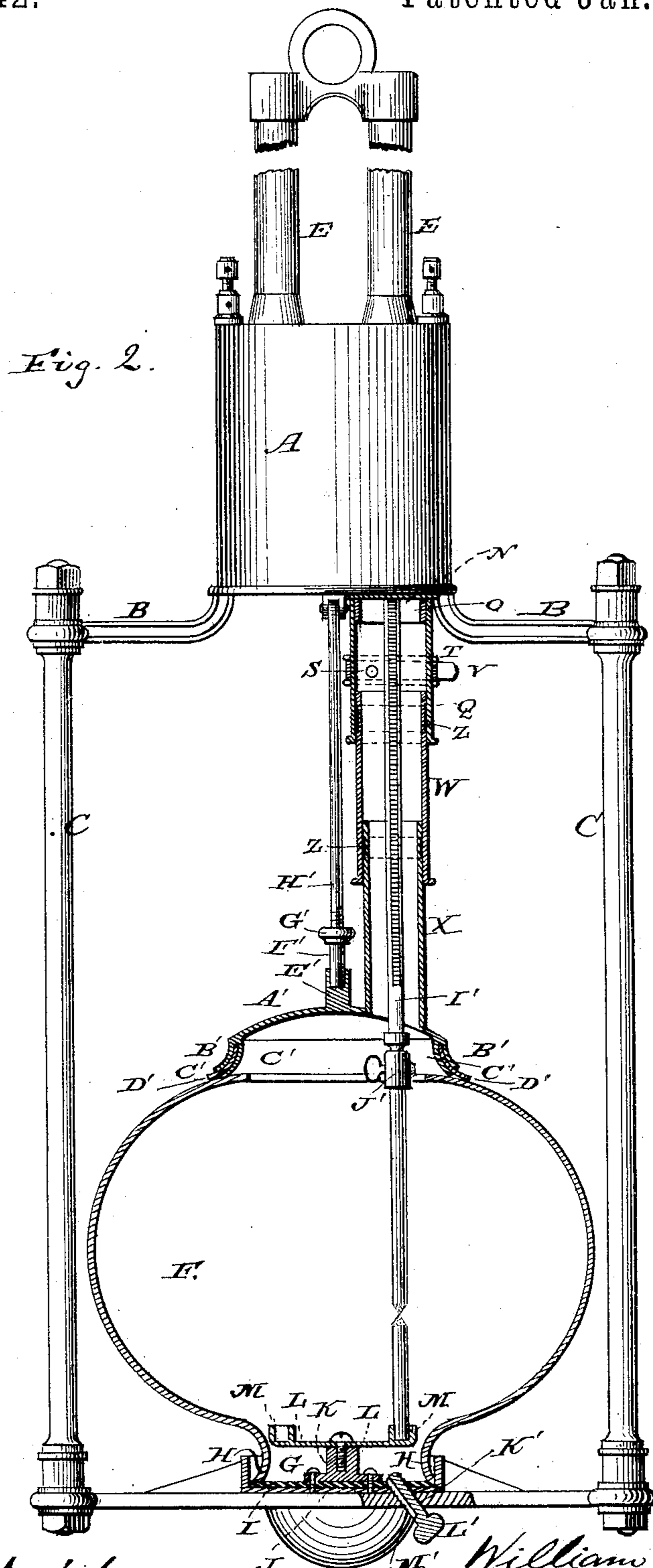
(No Model.)

3 Sheets—Sheet 2.

W. P. PATTON.  
VOLTAIC ARC LAMP.

No. 311,142.

Patented Jan. 20, 1885.



WITNESSES:

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(No Model.)

3 Sheets—Sheet 3.

W. P. PATTON.  
VOLTAIC ARC LAMP.

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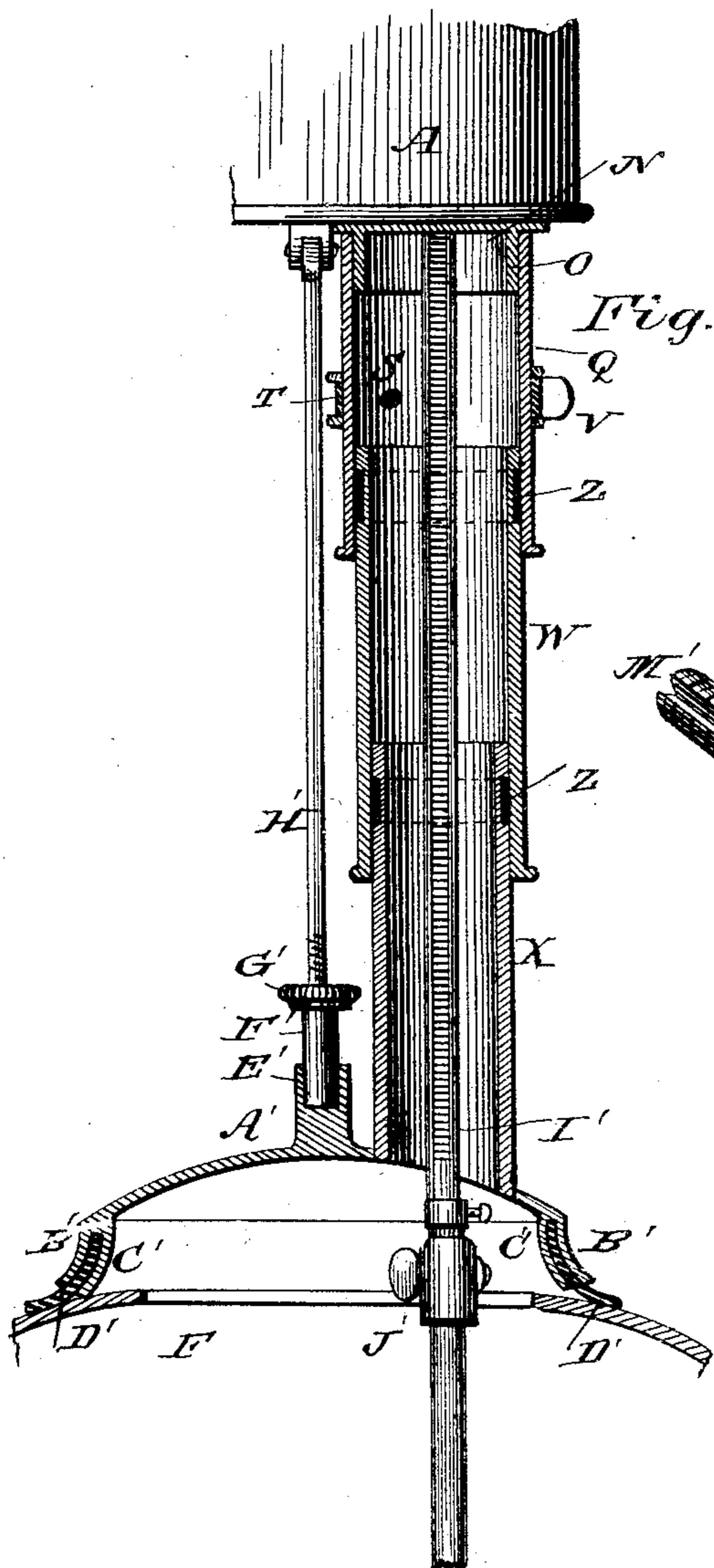


Fig. 3.

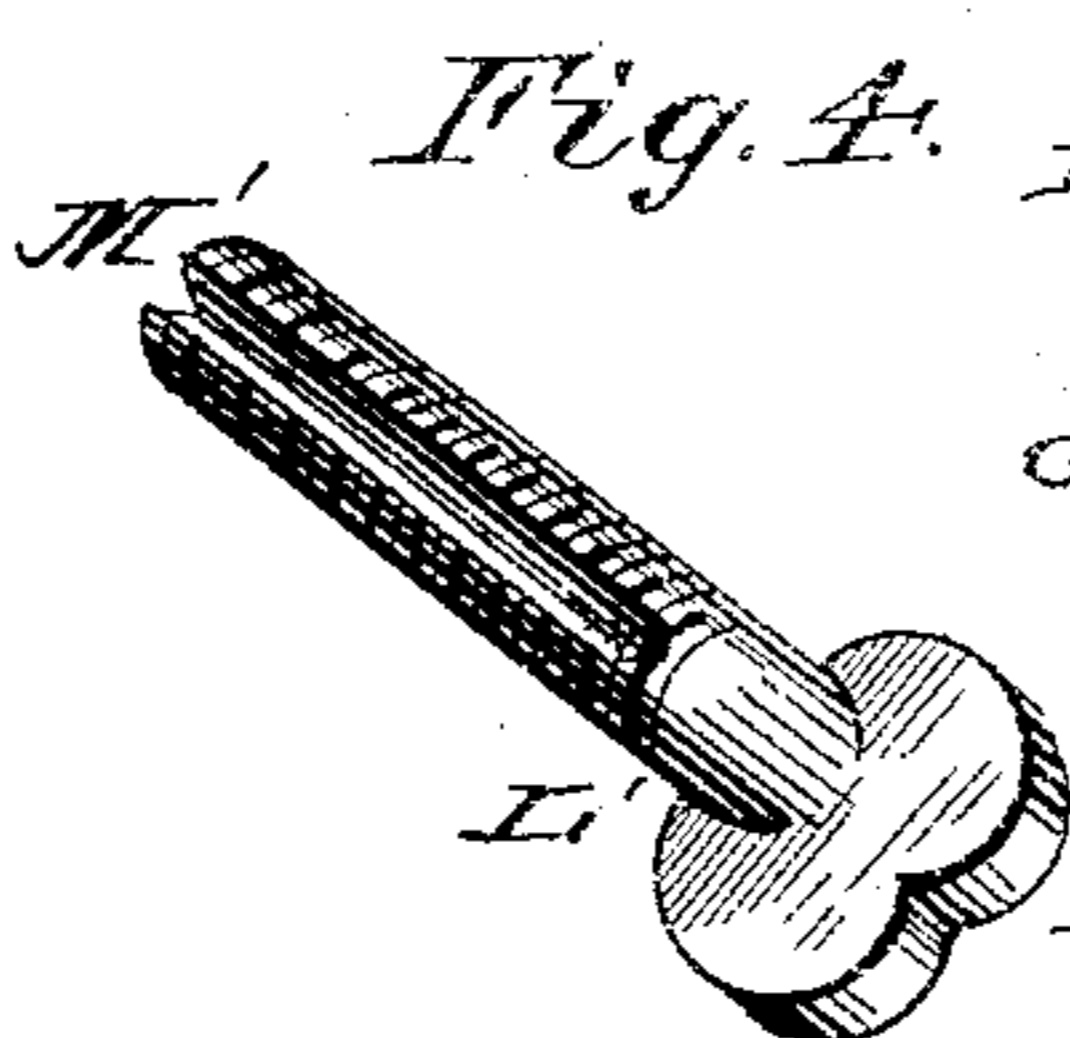


Fig. 4.

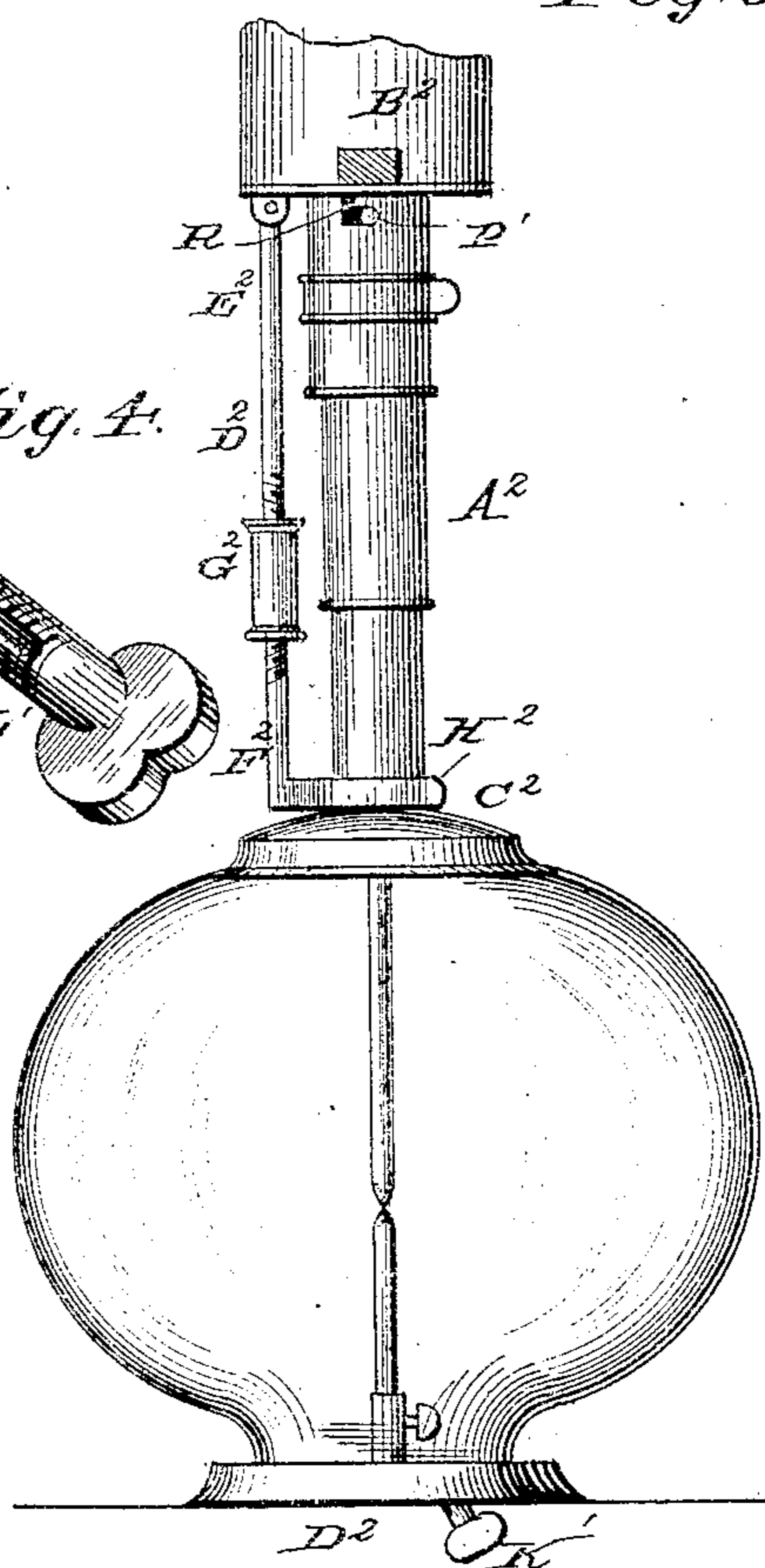


Fig. 5.

WITNESSES:

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ATTORNEYS.

# UNITED STATES PATENT OFFICE.

WILLIAM P. PATTON, OF HARRISBURG, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO W. E. MACHLIN, OF SAME PLACE.

## VOLTAIC-ARC LAMP.

SPECIFICATION forming part of Letters Patent No. 311,142, dated January 20, 1885.

Application filed May 19, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM P. PATTON, a citizen of the United States, and a resident of Harrisburg, in the county of Dauphin and State of Pennsylvania, have invented certain new and useful Improvements in Voltaic-Arc Lamps; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a side view of an electrical-arc lamp embodying my improvements. Fig. 2 is a similar view illustrating the parts comprising my improvements in section. Fig. 3 is a detail view of the feed-cylinder. Fig. 4 is a detail view of the feed-screw through which air is admitted to the lower end of the globe, and Fig. 5 is a side view illustrating a modification.

The same letters refer to the same parts in all the figures.

My invention has relation to that class of arc-lamps in which the globe is closed air-tight at both ends and provided with a closed casing for the passage of the carbon and its holder from the feed-case; and it consists in the improved construction and combination of parts of the same, as hereinafter more fully described and claimed.

In the drawings hereto annexed, A designates the feed-case of an ordinary arc-lamp. B is the upper frame-bar. C C are the side frame-bars, and D is the bottom bar of the frame which supports the globe. Tubes E E for the carbon-holders extend upwardly from the feed-case A.

F designates the globe, which is preferably of a spherical shape, or nearly so, and which is provided at its lower end with an opening, G, having a flange, H, which rests upon the bottom bar, D, of the frame, between which and the said flange a sheet, I, of rubber or other suitable flexible material, is interposed in order to form an air-tight joint.

Upon the horizontal plate J, which is mounted upon the base-bar D, and which serves to support the globe, is secured a stand-

ard, K, having arms L, provided with sockets M, one of which serves to support the lower carbon point. In the drawings two sockets are shown, but only one set of carbons is used, the other socket serving simply as a reserve socket in the case of an accident.

The under side of the feed-case A is provided with an opening, N, surrounded by a flange or ferrule, O. The latter is provided with a pin, P, by means of which a tube or cylinder, Q, may be detachably connected to the same, the said tube having an L-shaped notch, R, at its upper end, forming what is commonly termed a "bayonet-joint," whereby the said tube may be detachably connected to the said flange. Tube Q is provided about midway of its length with an opening, S, located between two annular flanges, which latter serve as guides or bearings for a revolving ring, T, having an opening, U, which may be made to register with the perforation S, and through which admission of air into the cylinder or tube may be regulated, or, if desired, entirely stopped by simply turning the ring T, which is for this purpose provided with a handle, V.

W and X are tubular sections telescoping within each other and within the upper section, T. These sections are provided at their upper edges with annular grooves or recesses, in which packing Z, of any suitable material, is placed.

For packing I prefer to use soft asbestos, for the reason that this material is not affected by heat, while it will readily retain oil, tal- low, or other lubricating material, which is necessary in order to cause the telescopic sections to work freely within each other. The lower section, X, is rigidly connected to the top or cover A' of the globe F. The said cover is concavo-convex in shape, and is provided at its outer edge with two concentric annular flanges, B' and C', between which a ring or washer, D', of rubber or other suitable material, is interposed, the said washer projecting beyond the lower edges of the said flanges, as clearly shown in Fig. 2 of the drawings. It will thus be seen that when the cover is lowered upon the lamp the washer D' will serve to form a joint which is absolutely air-

tight. The cover A' is provided with a centrally-located socket, E', adapted to receive the shank F' of a nut, G', adjustable upon the lower end of a rod, H', which is pivotally connected to the under side or bottom of the feed-  
 5 case A. It will be seen that by this arrangement, when the holding-nut G' is screwed in an upward direction, so as to release it from the socket upon the lamp-cover, it may be  
 10 swung out of the way, so as to enable the said cover to be raised or lifted, this being made possible by the telescopic joints or tubes heretofore described. If access to the carbon-holder is desired, (the carbon-holder, which is  
 15 indicated by letter I', is clearly shown in Fig. 2 of the drawings, and it will be seen that it is provided at its lower end with a carbon-clamp, J', of ordinary construction,) it may be  
 20 had by detaching the upper telescopic tube from the flange of the feed-box to which it is attached, and this may be done by simply turning the said upper tube so as to release its  
 25 L-shaped notch from the pin of the holding-flange. The lower frame-bar, B, is provided with an inclined screw-threaded perforation, K', in which is fitted a screw, L', one side of  
 30 which is flattened or provided with a V-shaped recess, M', as clearly shown in Fig. 2 of the drawings. This screw extends through the rubber washer I, and by it the admission of  
 air to the lower end of the globe may be thoroughly regulated.

From the foregoing description, taken in connection with the drawings hereto annexed, the operation and advantages of my invention  
 35 will be readily understood.

When it is desired to renew the carbon points in the lamp, this may be done by first releasing the nut G' from the cover and swing-  
 40 ing the rod carrying the said nut backward and out of the way. The cover of the lamp may then be raised by the hereinbefore-described arrangement of the tubular and telescoping sections, thus affording free access to  
 45 the interior of the globe and to the upper-carbon holder.

When it is desired to clean the upper-carbon holder, which is frequently necessary in order to cause its uninterrupted operation, this may be easily done by removing the tele-  
 50 scopic tube, which may be accomplished by simply turning its upper section so as to release it from the pin P. The packing I, interposed between the lower support of the lamp-globe and the flange H of the same, serves to  
 55 take up any expansion of the globe, so as to prevent breakage of the latter. The admission of air to the globe will be regulated not only by the band or rim S upon the upper  
 60 section of the telescopic cylinder, but also by the feed-screw L' at the bottom of the globe. I thus establish a through current of air without providing an excess of oxygen, so that excessive consumption of the carbon points may  
 65 be absolutely prevented simply by properly adjusting the air entrance and exit. It will

also be seen that it is utterly impossible for insects or other causes of obstruction to enter the globe.

My invention, as above described, has been shown applied only to a lamp originally constructed to use two sets of carbons; but it is obvious that the invention may be equally well and successfully applied to a single arc lamp by simply making trifling modifications in the construction of details. One way of  
 doing this I have illustrated in Fig. 5 of the drawings hereto annexed, by reference to which it will be seen that the telescopic tube, which is here designated by letter A<sup>2</sup>, is con-  
 8 nected centrally instead of eccentrically to the feed-case B<sup>2</sup> and globe-cover C<sup>2</sup>. D<sup>2</sup> is a rod hinged eccentrically to the under side of the feed-case, and composed of sections B<sup>2</sup> F<sup>2</sup>,  
 9 connected by a right and left hand nut, G<sup>2</sup>, by means of which the lower section may be forced down against the globe-cover, so as to retain the latter securely in position. The  
 said lower section, F<sup>2</sup>, is provided with a horizontal fork, H<sup>2</sup>, straddling or embracing the  
 9 telescopic tube so as to bear or press squarely upon the globe-cover. The operation of this modification is obvious when reference is had to the foregoing description.

I would have it understood that in many re-  
 9 spects this invention may be changed or modified without departing from the principle involved, and that I reserve to myself the right to all such changes and modifications as may be made without departing from the spirit of  
 1 the invention.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

1. In an electric lamp, the combination of  
 1 a feed-case, a supporting-frame suitably connected to the same, a globe suitably mounted in the said supporting-frame, an air-tight cover for the said globe provided with a socket upon  
 its upper convex side, a rod pivoted to the  
 1 under side of the feed-case and having at its lower end a nut, the shank of which is adapted to work or slide in the socket of the air-tight cover, and a telescopic tube connecting the  
 said air-tight cover with a flange upon the un-  
 1 der side of the feed-box, substantially as set forth.

2. In an electric lamp, the combination, with a feed-case, the supporting-frame attached thereto, and a globe mounted in the said sup-  
 1 porting-frame, of an air-tight cover for the said globe, a telescopic tube connecting the said air-tight cover with a flange upon the un-  
 der side of the feed-case, the upper section of the said cylinder or telescopic jointed tube be-  
 1 ing provided with a perforation, as shown, an adjustable gate for the said perforation, and means for admitting regulated quantities of  
 air into the bottom of the globe, substantially  
 as set forth.

3. In an electric lamp, the combination, with a feed-case, of a frame attached to the

same and supporting a globe, an air-tight cover for the latter, a central pivoted rod attached to the under side of the feed-case and connected detachably with the center of the air-tight cover of the globe, and an eccentrically-arranged telescopic tube connecting the said air-tight cover with the under side of the feed-case, substantially as set forth.

4. In an electric lamp, the combination, with the feed-case having an eccentrically-arranged downwardly-projecting flange or collar, of a tube mounted detachably upon the said collar and provided with an air-admission opening and a regulating-gate, additional tubes telescoping within the said detachable tube, a globe-cover connected permanently and eccentrically to the lowermost tube, and a suitably-arranged globe, substantially as herein set forth.

5. In an electric lamp, the combination of a suitable feed-case, the frame attached to the same, a flanged disk arranged upon the lower frame-bar, a flexible packing-disk arranged

upon the said plate, a grooved or flattened feed-screw extending through the said plate and packing-disk, a flanged globe mounted upon the latter, an air-tight cover for the said globe, a central rod pivoted to the under side of the feed-case, and having a nut whereby the said cover may be tightened against the upper side of the globe, and a telescopic tube connected detachably to the under side of the feed-case, and having its lower section connected eccentrically to the air-tight cover of the globe, the upper section of the said telescopic tube being provided with an air-inlet and mechanism for regulating the admission of air, substantially as herein described, for the purpose set forth.

In testimony that I claim the foregoing as my own invention I have hereunto affixed my signature in presence of two witnesses.

WILLIAM P. PATTON.

Witnesses:

ANTHONY KING,  
WM. H. CLECKNER.