

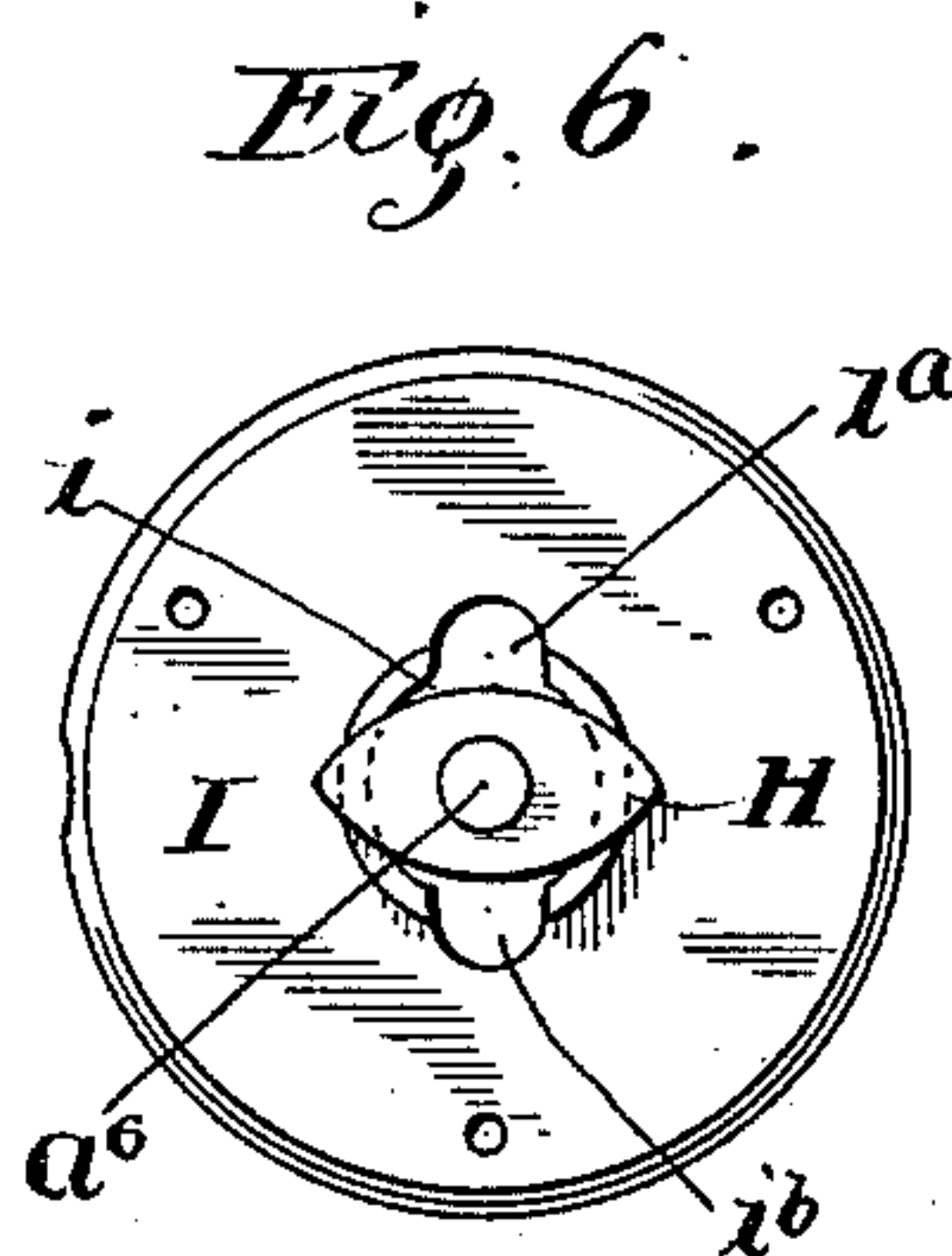
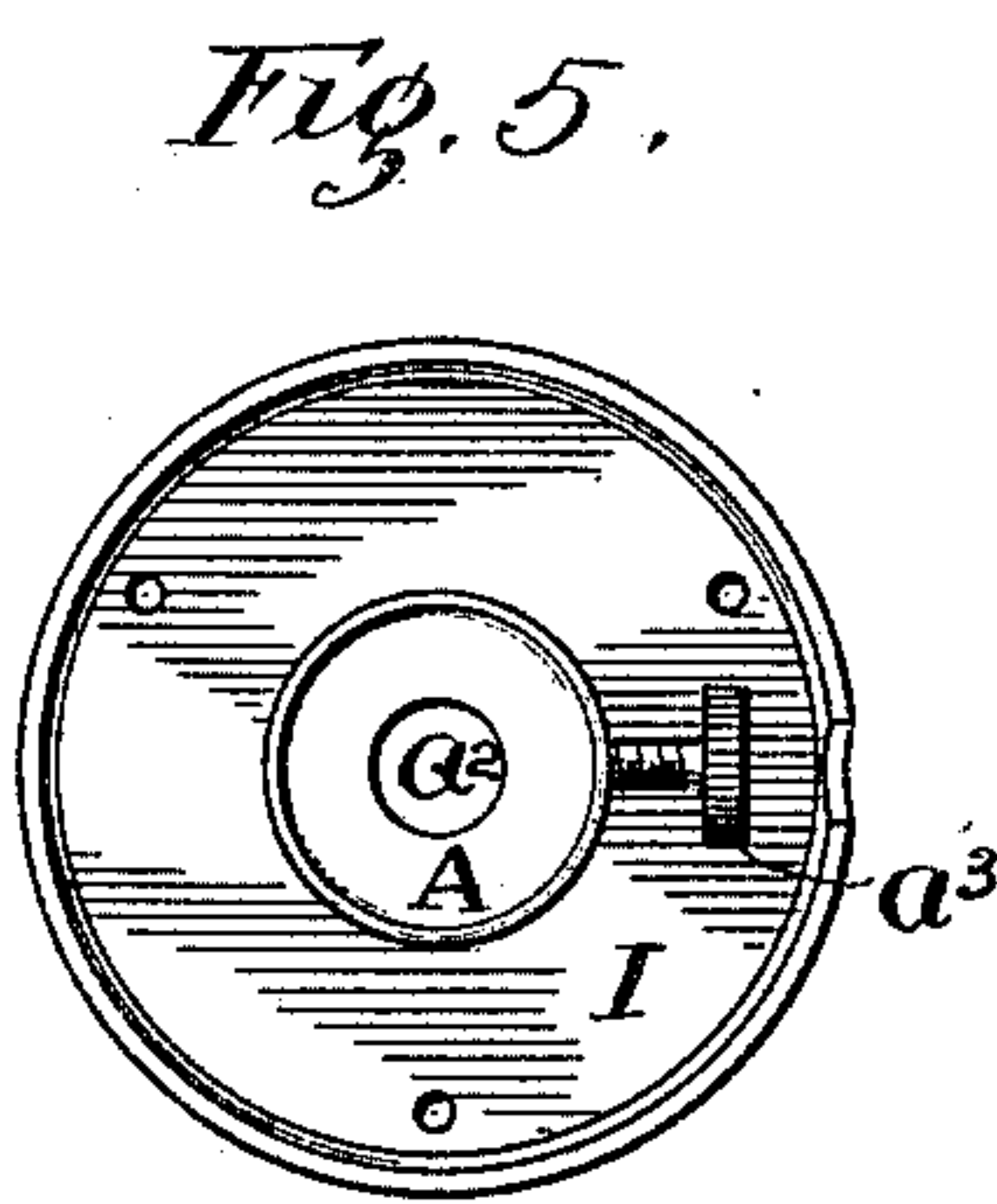
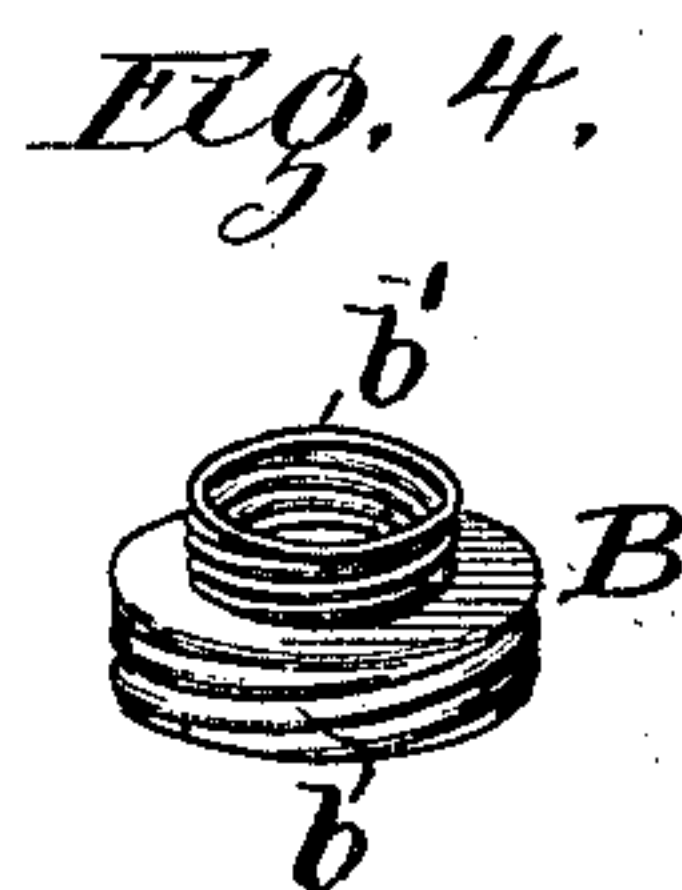
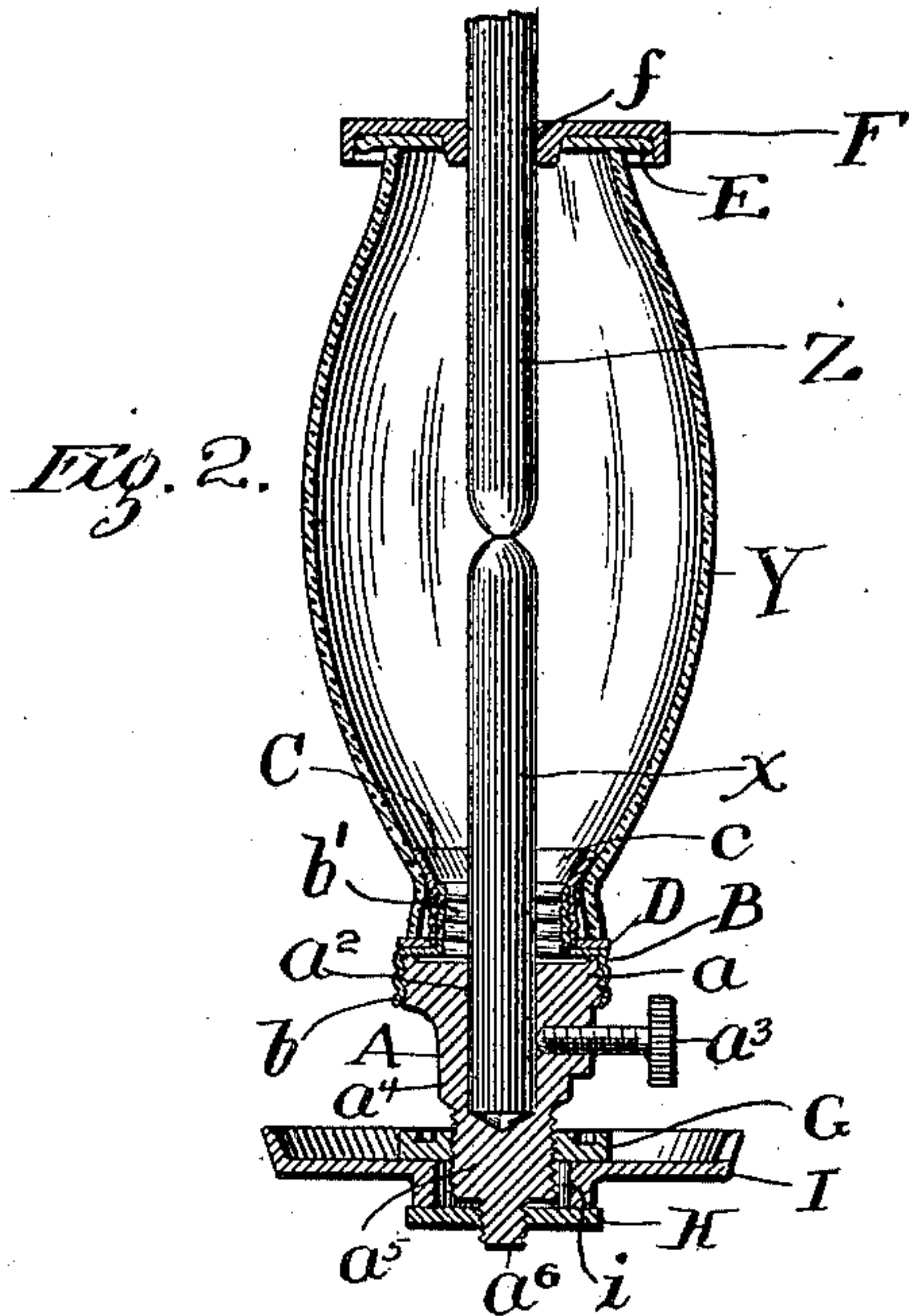
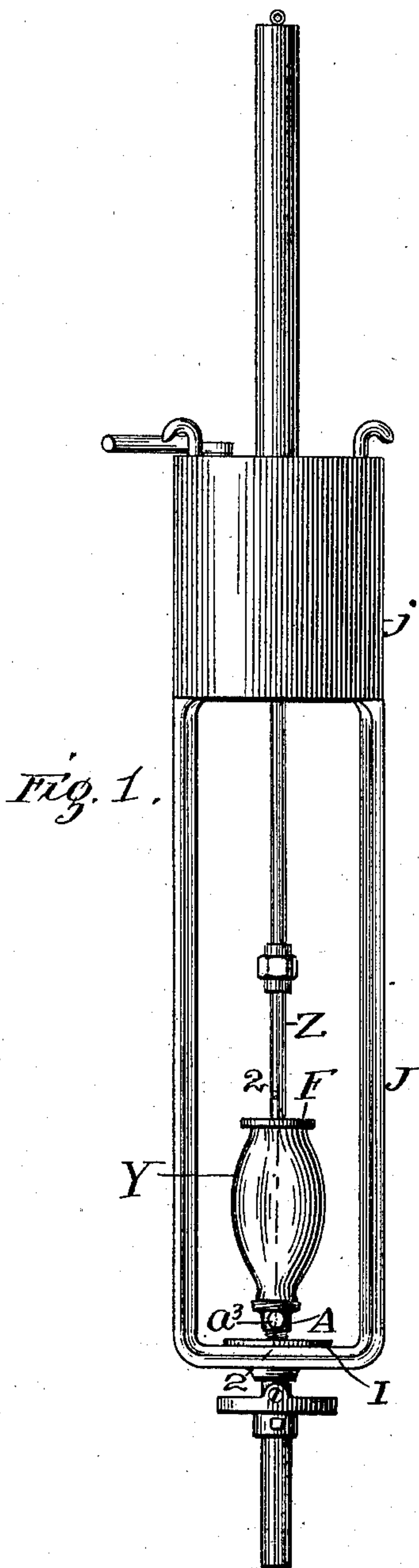
**No. 668,345.**

**Patented Feb. 19, 1901.**

**T. F. BARRETT.**  
**ELECTRIC ARC LAMP.**  
(Application filed Oct. 15, 1900.)

(No Model.)

**2 Sheets—Sheet 1.**



Witnesses:  
Chas. O. Shervey  
S. Bliss

Inventor:  
Thomas J. Barratt  
by Messrs. Mann & Bitner,  
Attys.

No. 668,345.

Patented Feb. 19, 1901.

T. F. BARRETT.  
ELECTRIC ARC LAMP.

(Application filed Oct. 15, 1900.)

(No Model.)

2 Sheets—Sheet 2.

Fig. 7.

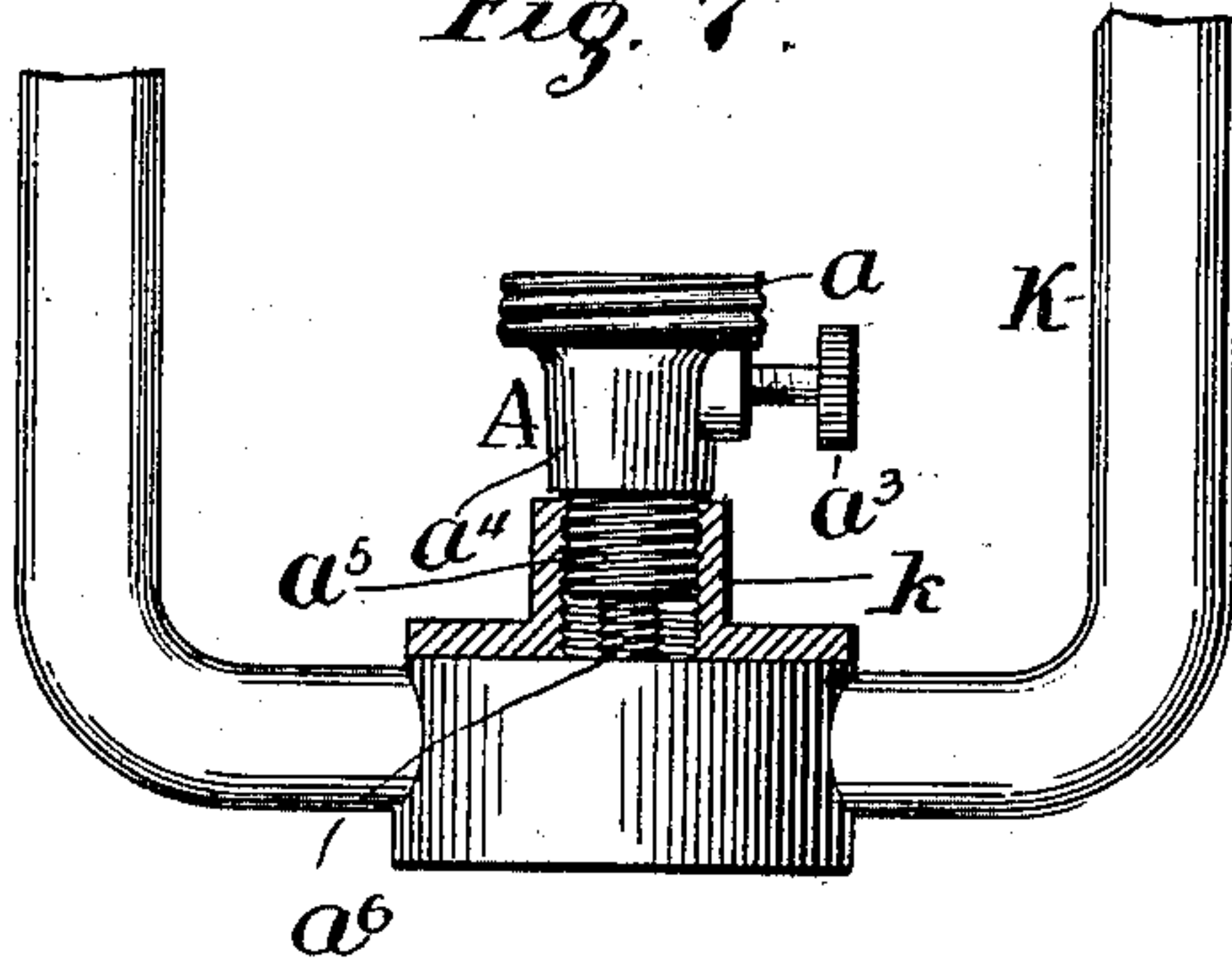


Fig. 8.

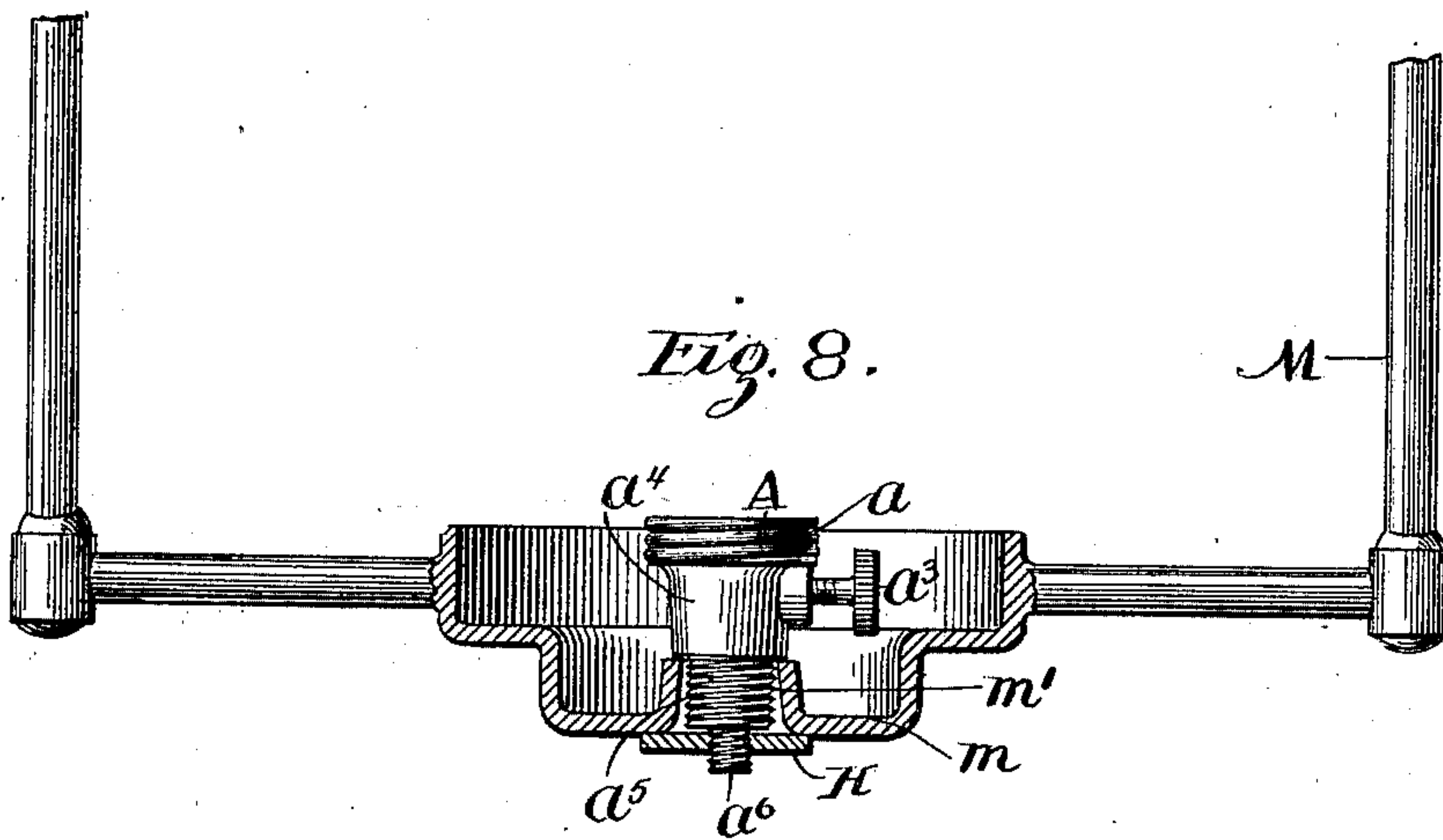
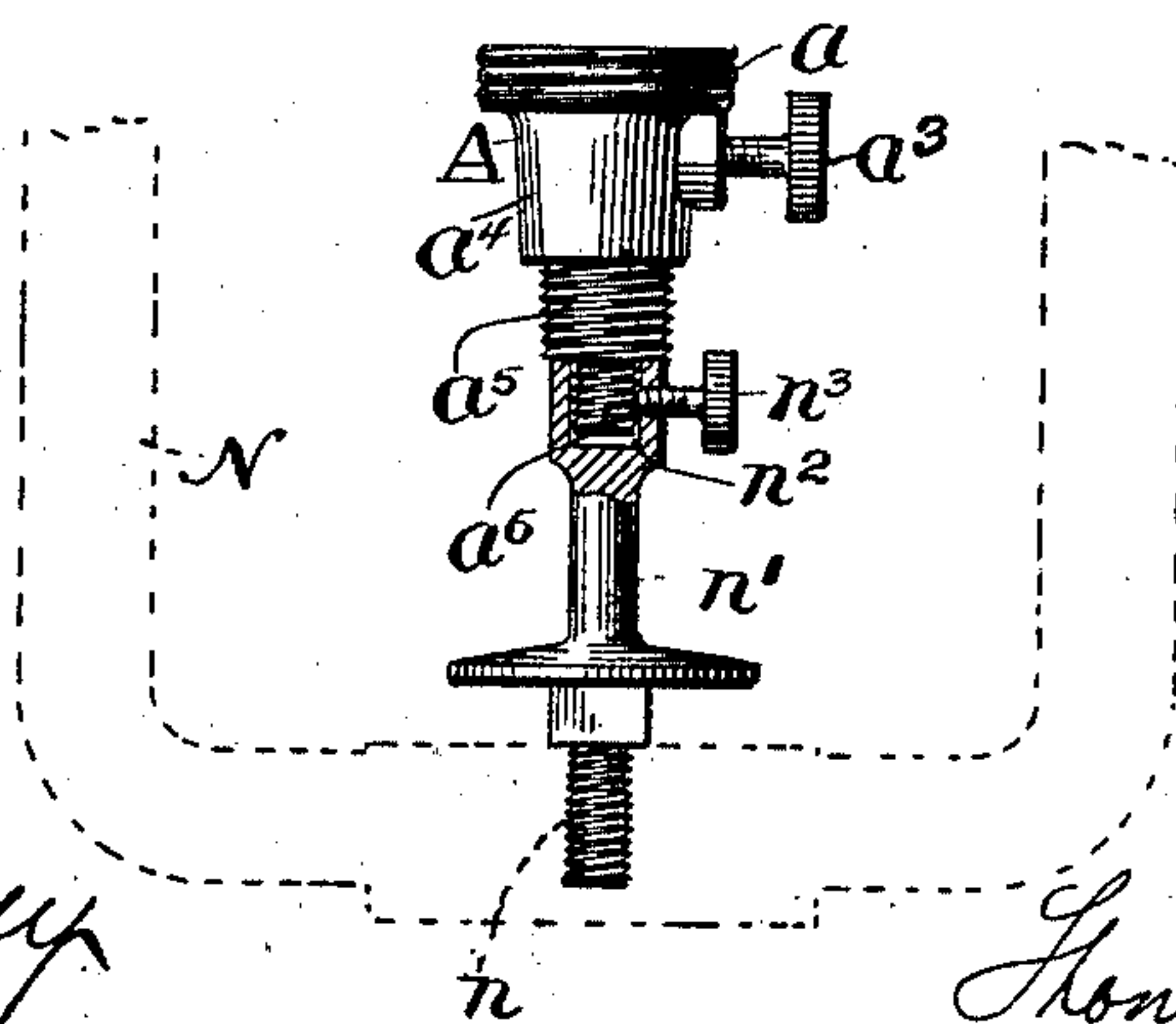


Fig. 9.



Witnesses:  
Chas. O. Shurway  
S. Bliss.

Inventor:  
Thomas F. Barrett  
by Miles M. & S. C. Turner  
Attys.



# UNITED STATES PATENT OFFICE.

THOMAS F. BARRETT, OF CHICAGO, ILLINOIS, ASSIGNOR OF TWO-THIRDS  
TO JAMES P. BARRETT AND FRED C. JONES, OF SAME PLACE.

## ELECTRIC-ARC LAMP.

SPECIFICATION forming part of Letters Patent No. 668,345, dated February 19, 1901.

Application filed October 15, 1900. Serial No. 33,032. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS F. BARRETT, a citizen of the United States of America, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Interchangeable Sockets for Arc-Lights, of which the following is a specification.

My invention relates to a certain novel and improved interchangeable socket designed for use in connection with a number of the ordinary arc-lights, the socket being so constructed as to be readily attachable to any one of the frames used in said arc-lights and also so as to greatly increase the life of the carbons.

The invention consists in certain novel characteristics exemplified in the socket described below and defined in the claims at the end of this specification.

In the drawings, Figure 1 is an elevation of one form of arc-light, ordinarily called the "Thomson-Houston." Fig. 2 is a vertical diametrical section of the lamp shown in Fig. 1. Fig. 3 is a perspective of a screw-threaded bushing which is placed within the lower portion of the chimney. Fig. 4 is a perspective of a collar screw-threaded at one end to fit within the bushing and at the other to fit over the socket. Fig. 5 is a detail plan of a portion of Fig. 1 with the chimney and collar removed. Fig. 6 is an under plan of the parts seen in Fig. 5. Fig. 7 is a detail elevation, partly in vertical diametrical section, of a part of an ordinary electric-light frame, such as is used in the lamp known as the "Standard." Fig. 8 is a similar view of the same portion of a frame used in the lamp known as the "Western;" and Fig. 9 is a similar view, partly in dotted lines, of a lamp known as the "Wood."

The portions of the various arc-lights shown in the drawings are used merely to illustrate the advantages of the invention, and for that reason it is thought unnecessary to enter into a detail description or illustration of the same.

Taking up first the socket which forms the subject of this application and referring to Fig. 2, A is a preferably circular block having a portion *a* at the top externally screw-threaded and provided with a vertical hole *a*<sup>2</sup> in its upper surface to receive the lower carbon X of the lamp.

A set-screw *a*<sup>3</sup> provides means for securing the carbon in place. Below the portion *a* of the block is a portion *a*<sup>4</sup>, preferably somewhat reduced for the sake of appearance, and below the portion *a*<sup>4</sup> is an externally-screw-threaded reduced portion *a*<sup>5</sup>, below which is a still further reduced externally-screw-threaded portion *a*<sup>6</sup>. A collar B, Fig. 4, has a lower portion *b*, threaded to the part *a* of the block, and an upper reduced portion *b'*, threaded to the interior of a bushing C, Fig. 3, said bushing being provided with a flaring rim *c*, adapted to conform to the inside of the chimney, which is shown at Y in Fig. 2. A washer D, preferably of asbestos, is desirable between the chimney and the collar B, and a second washer E rests upon the top of the chimney and is held down by an ordinary cap F, perforated at *f* to receive the upper carbon Z. By screwing the collar B tightly to the bushing C an approximately air-tight closure with the chimney is produced, and a similar closure is effected by the cap and bushing at the top. The collar B, with the chimney secured to it, is screwed upon the block A, closing the interior of the collar. Upon the portion *a*<sup>5</sup> of the block is threaded a nut G, and upon the portion *a*<sup>6</sup> is threaded a nut H. The latter is preferably elongated, as seen in Fig. 6. Said Fig. 6 also shows at I the ordinary Thomson-Houston cup, which contains a central perforation *i*. This perforation I preferably cut away at *i*<sup>a</sup> *i*<sup>b</sup>, so that by turning the nut H to register with these notches the same may be withdrawn from the bottom of the cup without entire removal from the block. The socket is secured to the cup I by clamping the latter firmly between the nuts G H.

In Fig. 1 the frame J of the ordinary Thomson-Houston lamp is shown, the cup I (seen in Fig. 6) being secured to the lower portion thereof and the upper carbons Z being supported from the upper part *j* of the frame in the ordinary manner.

Inasmuch as the details of the frame and the working parts of the lamp form no part of this invention, it is unnecessary to describe or illustrate the same.

Turning to Fig. 7, the frame K of the "Standard" lamp is shown containing at its



lower portion an internally-screw-threaded socket  $k$ , to which the externally-screw-threaded portion  $a^5$  of the block A is fitted.

Fig. 8 shows the ordinary "Western" frame M, the lower portion of which contains a cup-shaped portion  $m$ , centrally perforated at  $m'$ , and the intermediate portion  $a^4$  of the block is so proportioned as to rest upon the margin of this perforation, to which it is tightly clamped by means of the nut H.

In Fig. 9 the frame N of the Wood lamp is shown, and said frame contains a screw-threaded socket  $n$ , in which is secured a post  $n'$ , on the top of which is a socket  $n^2$ , provided with a set-screw  $n^3$ , and the lower portion  $a^6$  of the block is so proportioned as to fit within this socket and be tightly secured therein by means of the set-screw  $n^3$ .

It will be noticed that the socket as adapted to the Thomson-Houston lamp in Figs. 1 to 6, respectively, is so constructed as to be also adapted to the other three lamps, (shown in Figs. 7, 8, and 9,) it being desirable for the sake of appearance only that the nut G be removed in applying the socket to said three other lamps and that the nut H also be removed in applying the socket to the lamps shown in Figs. 7 and 9.

The comparatively air-tight closure effected at the top and bottom of the chimney confines the gases within the chimney, preventing a supply of fresh oxygen and greatly increasing the life of the carbons.

I do not limit myself to the specific details

above described except as clearly set forth in the following claims.

I claim as new and desire to secure by Letters Patent—

1. In a socket for arc-lamps, the combination with a socket-block, A, provided at the top with means of support for the chimney and the lower carbon respectively, and below the same provided with the externally-screw-threaded portion,  $a^5$ , and at the bottom with the reduced screw-threaded portion,  $a^6$ , of the nut, G, threaded to the portion,  $a^5$ , and the nut, H, threaded to the portion,  $a^6$ ; substantially as described.

2. In an electric lamp, the combination with the cup, I, having the central perforation,  $i$ , containing the marginal notches,  $i^a$ ,  $i^b$ , of the socket-block, A, having means for supporting the lower carbons and the chimney at the top, and provided below the same with the screw-threaded portion,  $a^5$ , and the reduced screw-threaded portion,  $a^6$ , the nut, G, threaded to the portion,  $a^5$ , and the elongated nut, H, threaded to the portion,  $a^6$ , and adapted to pass through the notches in the cup; substantially as described.

In witness whereof I have hereunto set my hand at Chicago, in the county of Cook and State of Illinois, this 27th day of September, A. D. 1900.

THOMAS F. BARRETT.

Witnesses:

JOHN NANGLE,

CHAS. O. SHERVEY.