

(No Model.)

D. WILLIAMSON.

CARBON HOLDER FOR ARC LAMPS.

No. 347,218.

Patented Aug. 10, 1886.

Fig. 1

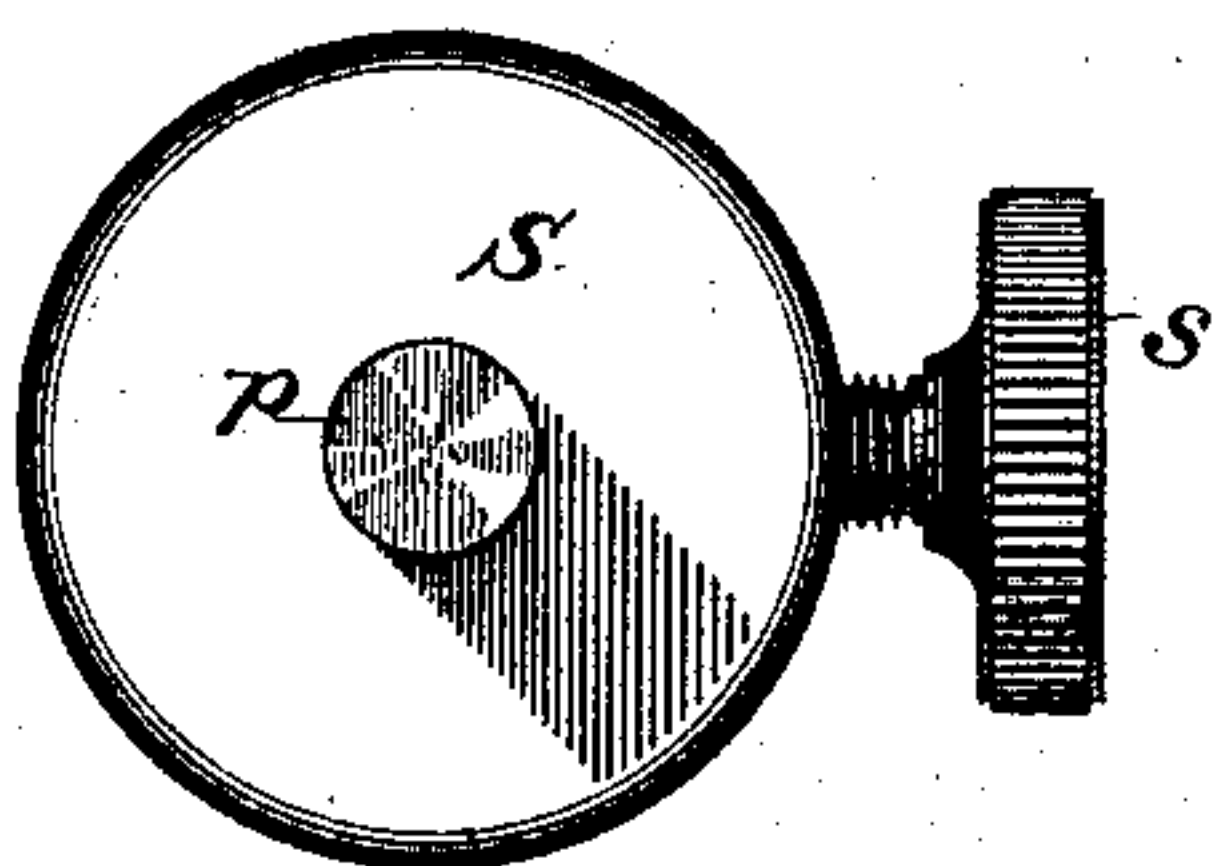


Fig. 3

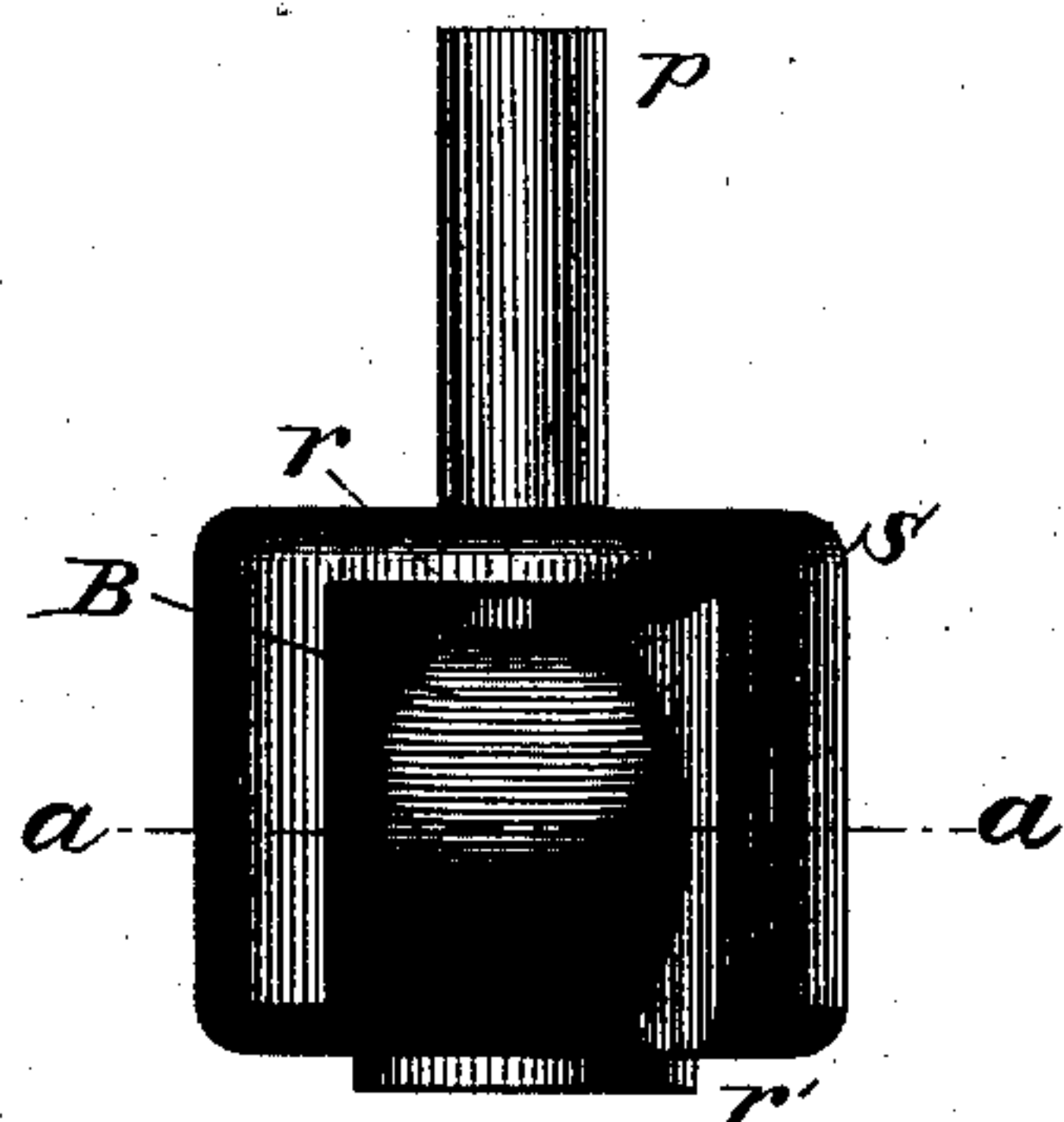


Fig. 2

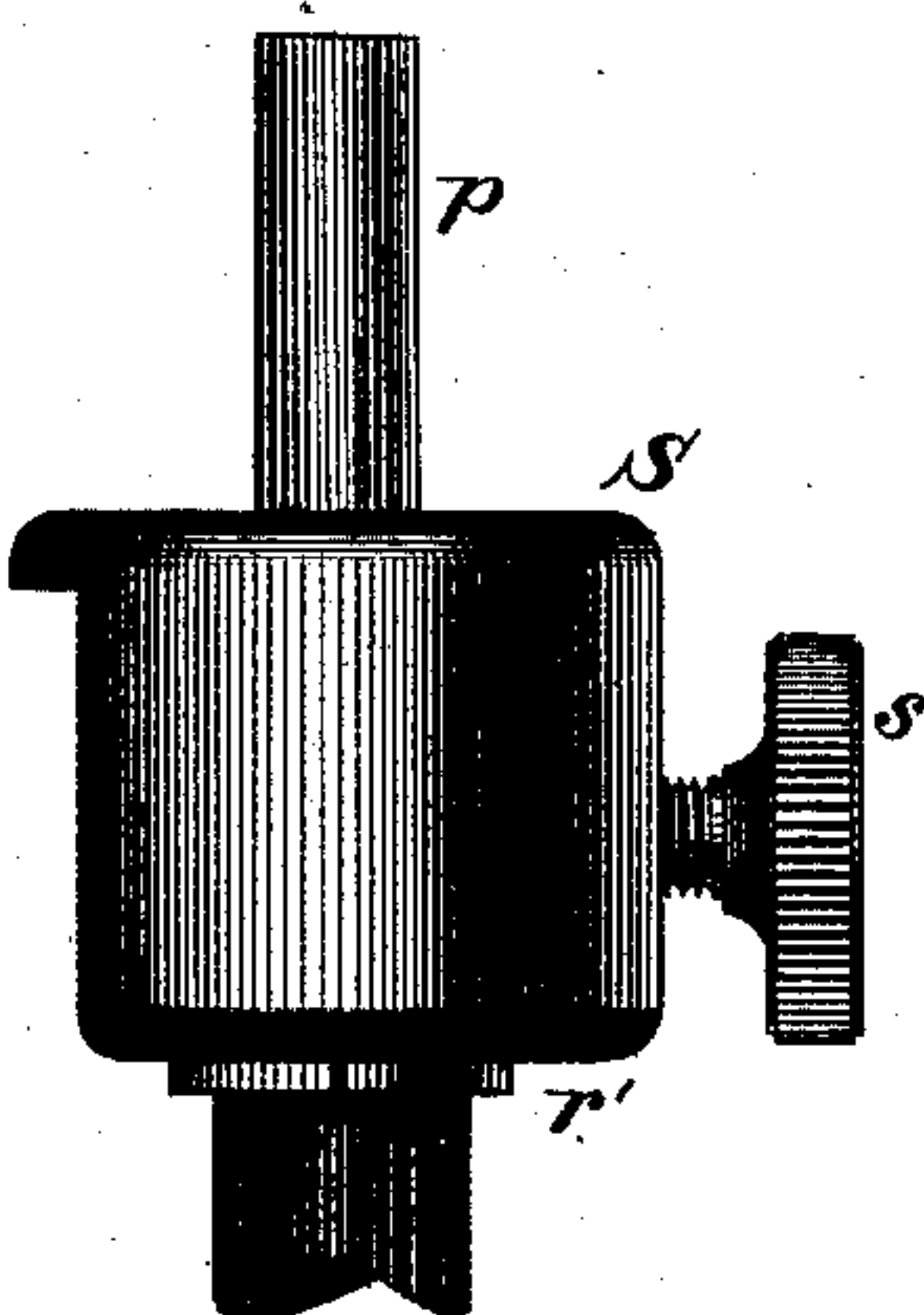


Fig. 4

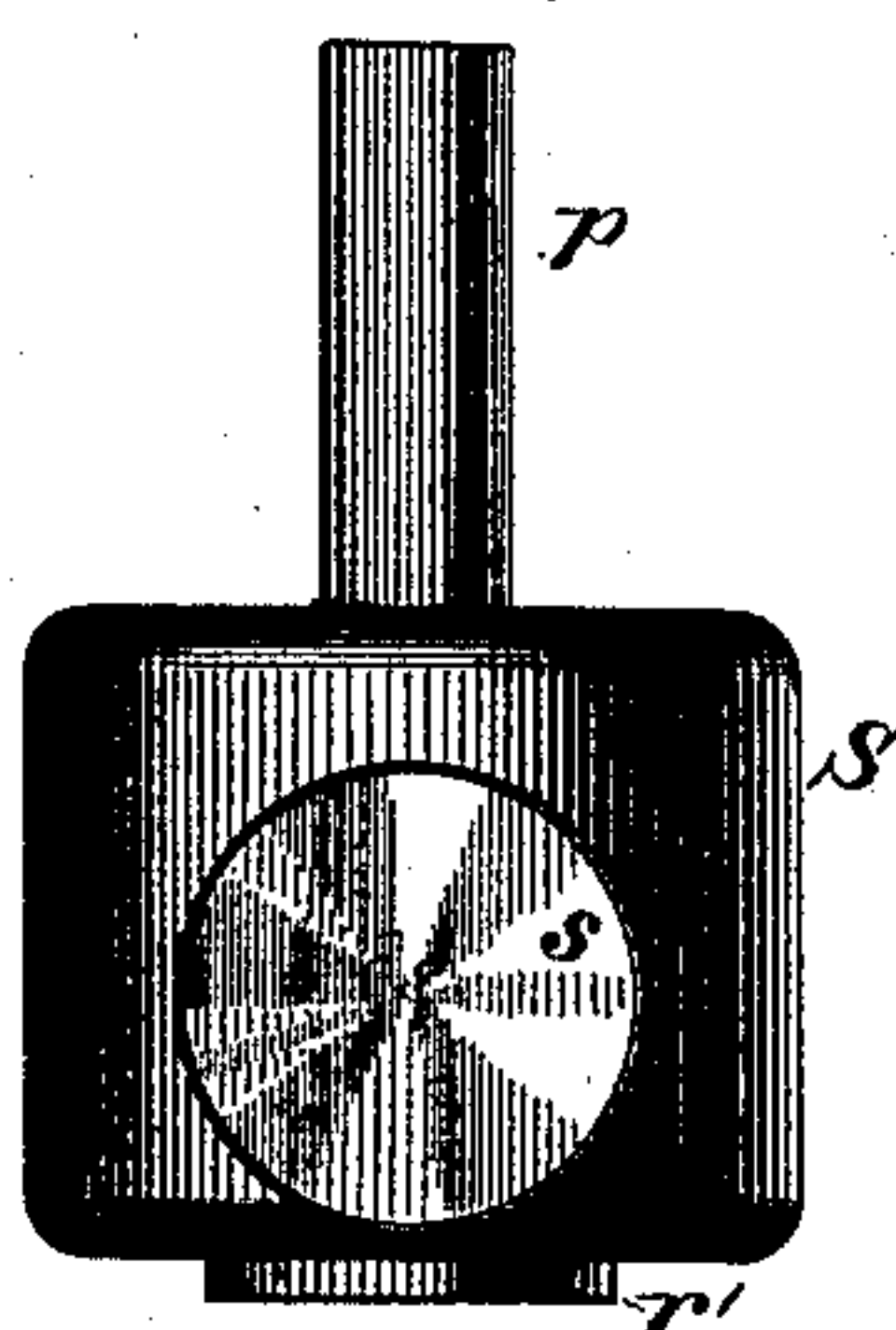


Fig. 5

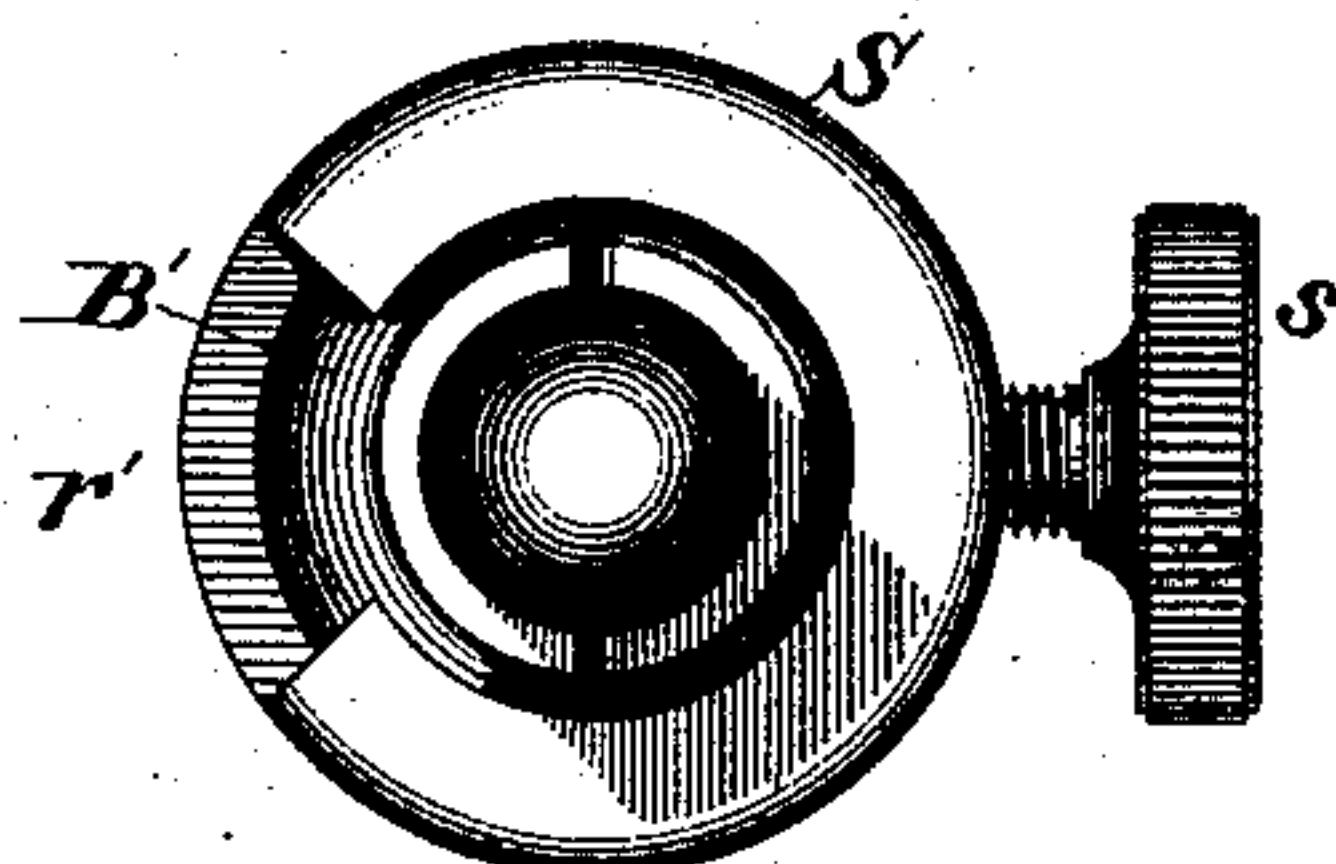


Fig. 6

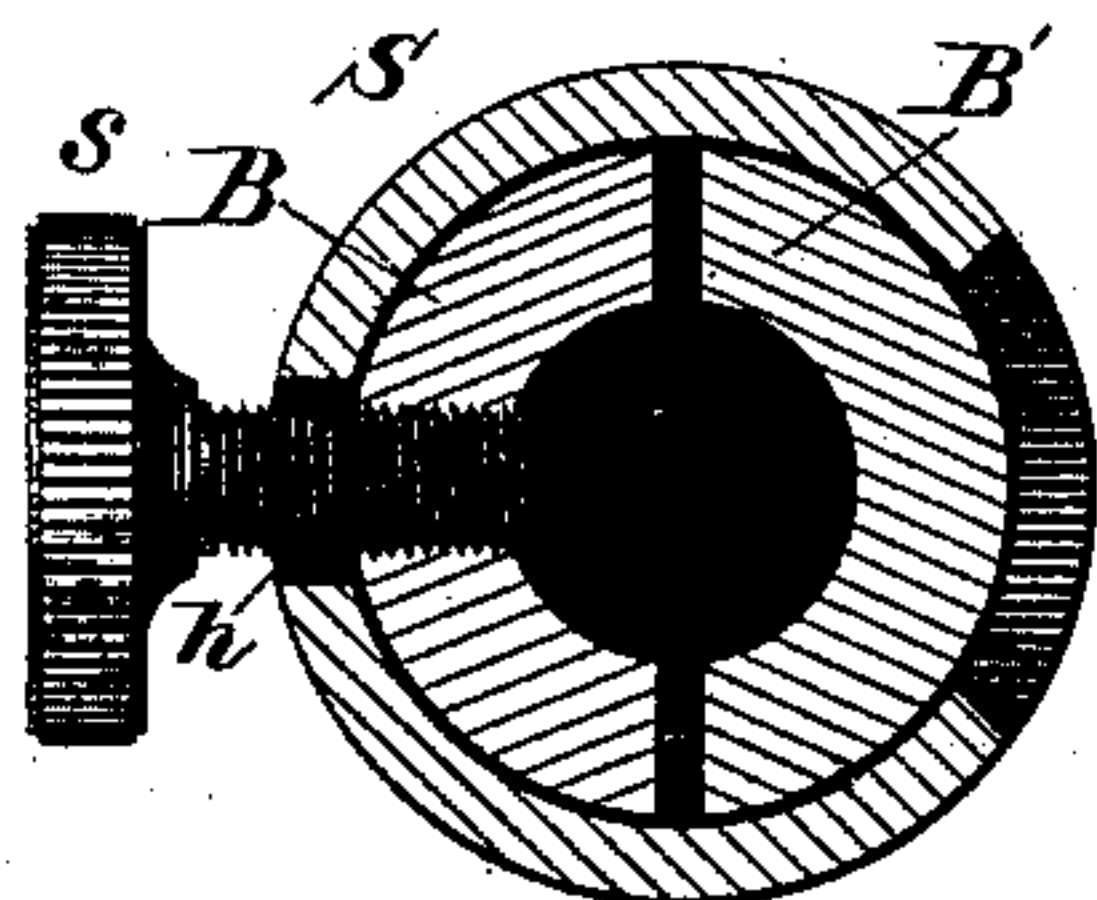


Fig. 7

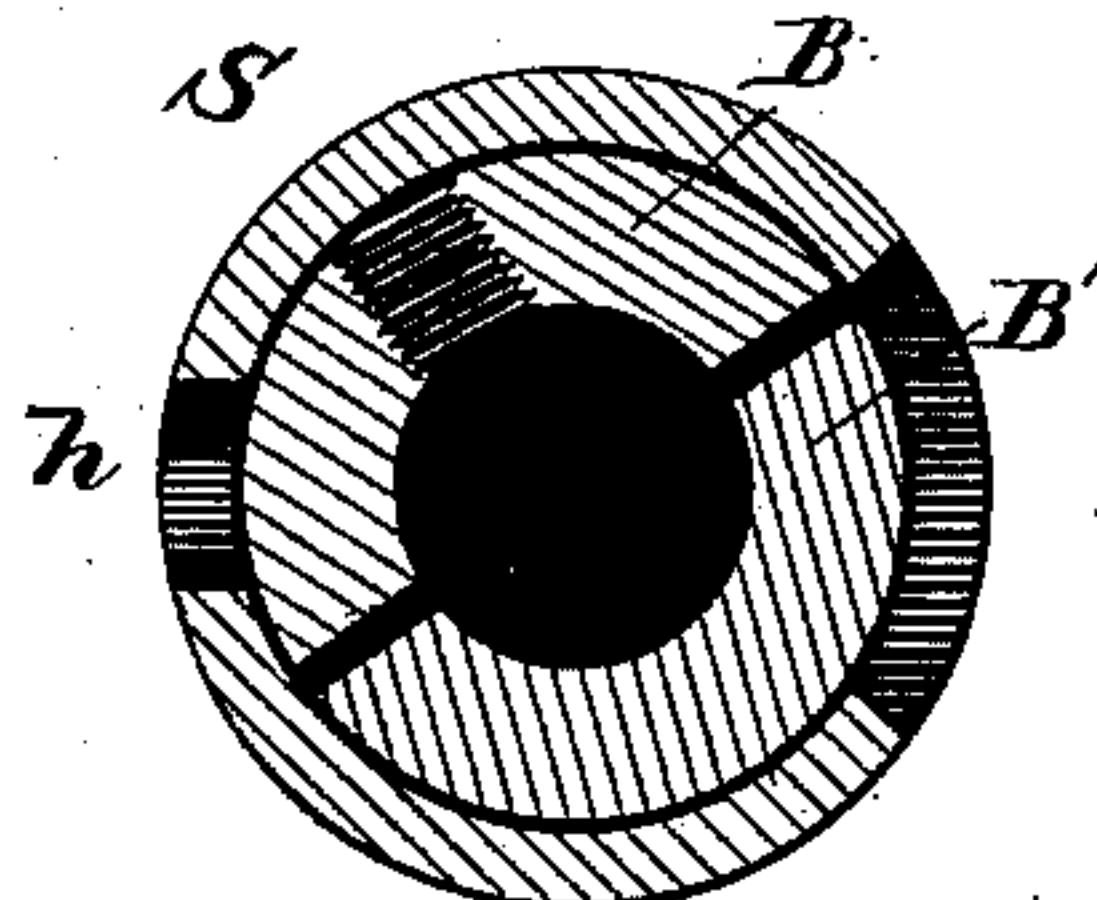
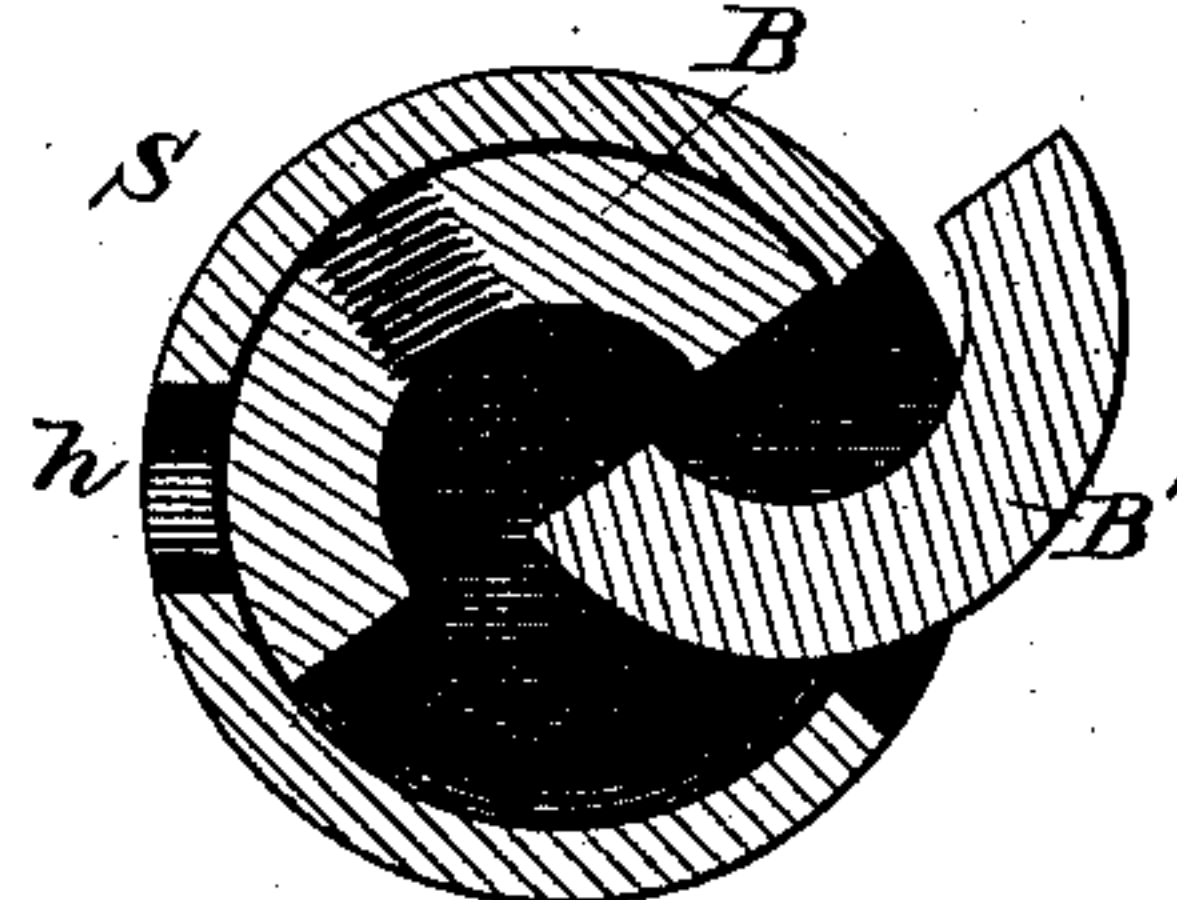


Fig. 8



Witnesses:

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UNITED STATES PATENT OFFICE.

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CARBON-HOLDER FOR ARC-LAMPS.

SPECIFICATION forming part of Letters Patent No. 347,218, dated August 10, 1886.

Application filed January 23, 1886. Serial No. 189,454. (No model.)

To all whom it may concern:

Be it known that I, DAVID WILLIAMSON, a citizen of the United States, residing in the city and county of Hartford, in the State of Connecticut, have invented certain new and useful Improvements in Carbon-Holders for Electric-Arc Lamps, of which the following is a specification, reference being had to the accompanying drawings.

My invention is a device for adjusting the carbons, and particularly the upper carbons, of electric-arc lamps, and for holding any such carbon in its proper position relatively to its rod or other support, and to any other carbon of the same set or pair. My device for the accomplishment of this object is an adjustable ball-and-socket joint between the carbon and the carbon rod or other support of such carbon-holder.

I proceed to point out the best mode of constructing and applying my invention.

As already intimated, this invention is particularly adapted for holding and adjusting an upper carbon, yet may be applied to a lower carbon, if desired.

In the accompanying drawings, Figure 1 is a top view of my improved carbon-holder, regarded as a holder for an upper carbon. Fig. 2 is a front view of the same. Figs. 3 and 4 are side views of the same. Fig. 5 is a bottom view of the same. Fig. 6 is a sectional view of the same on the line *a a* in Fig. 3. Fig. 7 is the same without a set-screw. Fig. 8 is the same as Fig. 7, but with one segment of the ball displaced.

In the drawings, B and B' are two like segments of a ball, B B', which is externally of a general spherical form, and has a central cylindrical hole, which lies lengthwise of said segments, partly in each, and is of proper size to admit the carbon which is to be held. Around the edges of this hole, at opposite ends of the same, are like projecting annular ridges *r r'*. A set-screw, *s*, is fitted radially through one segment of the ball B B', at right angles to the before-mentioned hole which receives the carbon. This ball is surrounded by a socket-piece, S, containing a socket, which is of suitable size and shape to receive and retain said ball, and to allow the latter to operate within the socket in the manner herein-

after explained. This socket-piece is externally of general cylindrical form, and internally presents the general form of a hollow sphere. The top of the socket-piece S is provided with a radial pencil, *p*, or other suitable means whereby the socket-piece may be conveniently embraced by or attached to the carbon rod or other support of the carbon-holder. The bottom of the socket is partly open, so as to allow the carbon to enter the ball, and so as to allow one of the annular ridges *r r'* to reach through, or partly through, such opening. The other of said annular ridges encounters the top of the socket, the latter being made internally flat in that part. On one side (obverse in Fig. 3) the socket-piece is cut away, so as to admit the ball B B', allowing the segments B and B' to be moved into or out of the socket, one at a time, in the manner illustrated in Fig. 8. On the other side the socket-piece is perforated radially by a hole, *h*, which is of suitable size and position to allow the set-screw *s* to pass through into the ball B B' when the parts are in position, and to allow a moderate degree of play of said screw in every direction in said hole *h*. The latter is so located in the socket-piece S that when the parts of the holder are put together, as shown in Fig. 6, neither of the segments B and B' can escape from the socket.

All parts of this carbon-holder are of brass or other electrically-conductive material.

Such being the construction of my improved carbon-holder, the mode of its operation is as follows: One end of the carbon stick or pencil which is to be held is inserted in the holder, being pushed into and through the length of the cylindrical hole in the ball B B'. By the use of the ball-and-socket joint so created between the carbon and the socket-piece S, the carbon is then turned slightly and so much as necessary in any desired direction, and made to assume any desired position relatively to the socket-piece. At the same time the set-screw *s* is turned in upon the carbon. By this operation the carbon is clamped within the two segments of the ball B B' at the same time that the latter is set in the assumed or desired position within the socket, as shown in Fig. 2.

I claim as my invention and desire to secure by Letters Patent—

1. In an electric-arc lamp, a ball consisting of two separable segments, and having a central perforation in or between said segments, in combination with a socket-piece containing said ball, and with a set-screw threaded through one of said segments and passing loosely through the wall of said socket-piece, substantially in the manner and for the purpose specified.
- 10 2. A socket-piece having an internal socket of general spherical form, in combination with a hollow ball composed of two hemispherical segments, which are separately introduced into said socket through an aperture in the socket-piece, and are held therein by a set-screw, which 15 is threaded through one of said segments and passes loosely through the wall of said socket-piece, substantially in the manner and for the purpose specified.
- In witness whereof I have hereunto set my 20 hand in the presence of two witnesses.
- DAVID WILLIAMSON.
- Witnesses:
WILLARD EDDY,
RICHARD H. MATHER.