No. 677,377. Patented July 2, 1901.

G. E. STEVENS.

GLOBE HOLDER FOR ARC LAMPS.

(Application filed July 28, 1899.)

(No Model.)

Fig. 1.

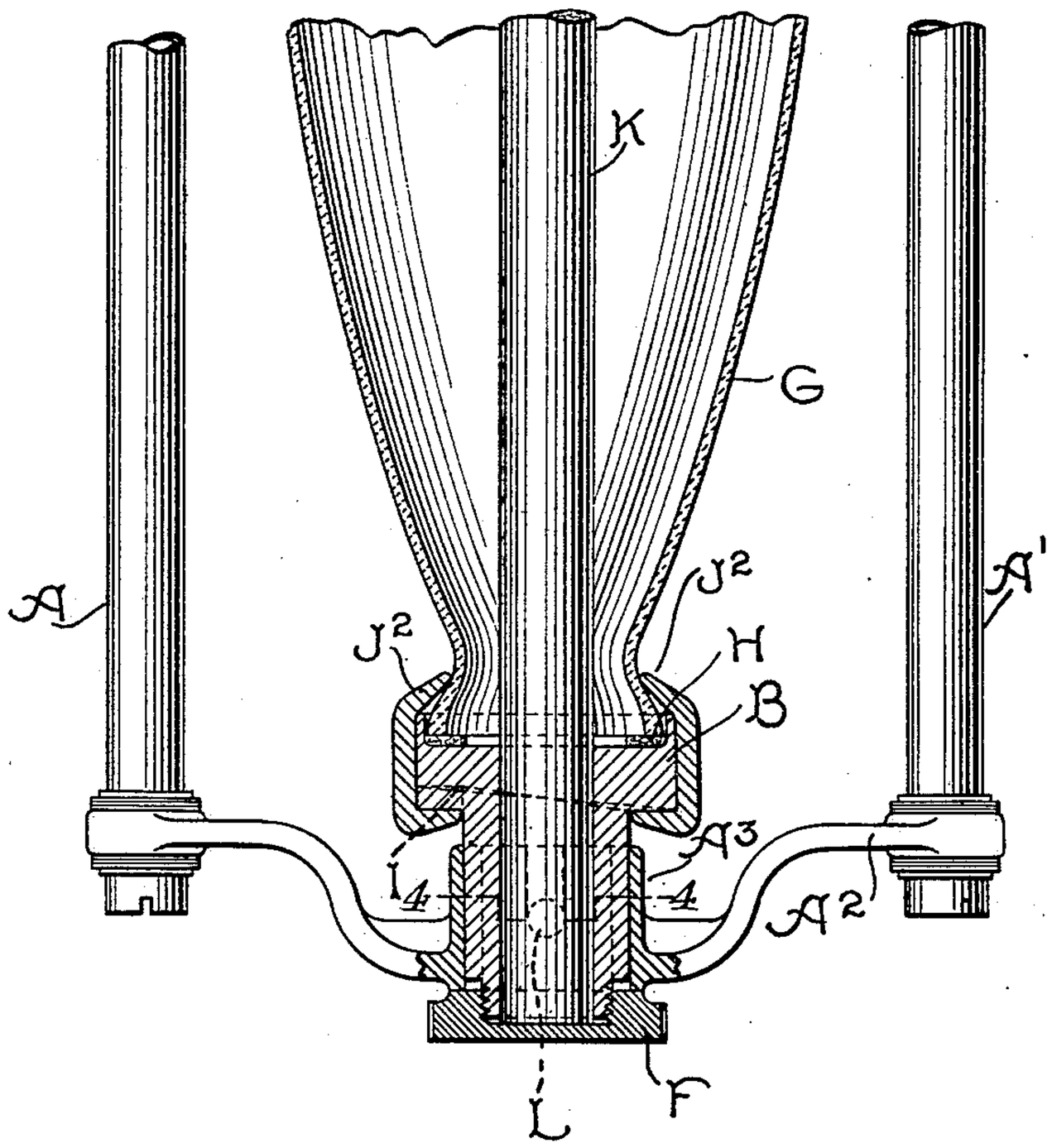


Fig. 2.

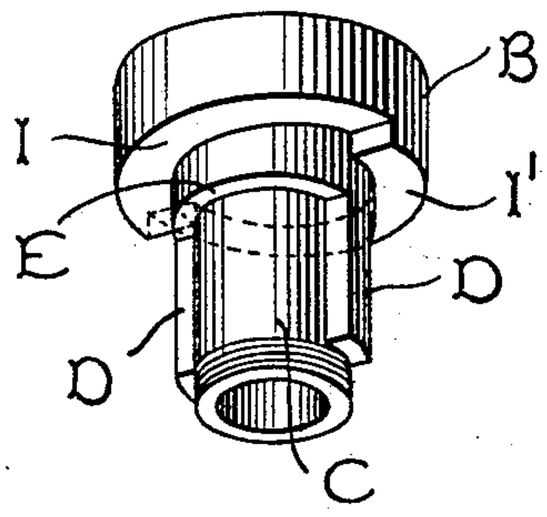


Fig. 3.

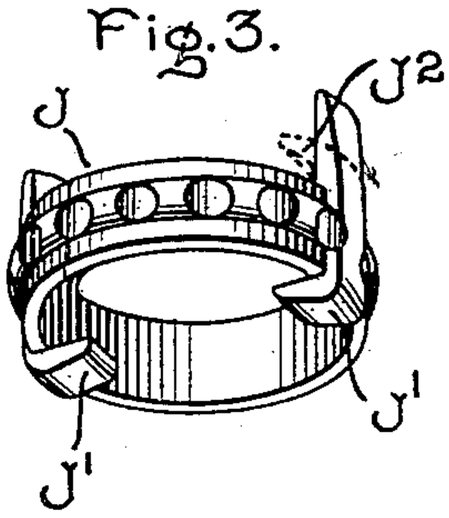
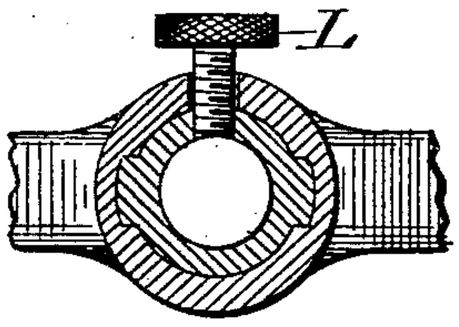


Fig. 4.



Witnesses.

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UNITED STATES PATENT OFFICE.

GEORGE E. STEVENS, OF LYNN, MASSACHUSETTS, ASSIGNOR TO THE GENERAL ELECTRIC COMPANY, OF NEW YORK.

GLOBE-HOLDER FOR ARC-LAMPS.

SPECIFICATION forming part of Letters Patent No. 677,377, dated July 2, 1901.

Application filed July 28, 1899. Serial No. 725,343. (No model.)

To all whom it may concern:

Be it known that I, GEORGE E. STEVENS, a citizen of the United States, residing at Lynn, in the county of Essex, State of Massachusetts, have invented certain new and useful Improvements in Globe-Holders for Arc-Lamps, (Case No. 1,260,) of which the following is a specification.

The present invention relates to globe-holders, and more particularly to those employed for supporting and retaining the inner globes of inclosed-arc lamps.

My invention has for its object to provide a simple holder by which the inner globe may be securely seated in place and the lower end of said globe made air-tight, or substantially so. My improved device may also serve as a combined globe and carbon holder.

In the accompanying drawings, which show an embodiment of my invention, Figure 1 is an elevation of the lower portion of an arc-lamp with the globe-holder and immediate parts in section. Fig. 2 is a perspective view of the combined globe and carbon holder. Fig. 3 is a perspective view of the globe-clamping nut or ring; and Fig. 4 is a sectional detail taken on line 4 4 of Fig. 1, showing the carbon-clamping means.

The side rods A A′ of the lamp are connected by the yoke A^2, which yoke is provided with a central boss or hub having an opening for receiving the combined globe and carbon holder B.

The holder (best shown in Fig. 2) consists of a cylindrical tubular shank C, having bosses D, which resemble keys. These keys or bosses fit into corresponding openings in the hub A^3 of the yoke and prevent the holder from turning. A shoulder E is so arranged that when the holder is mounted in position on the lamp this shoulder engages with the upper edge of the hub and limits its downward movement.

The lower end of the holder is screw-threaded, and a nut F is mounted thereon and serves to retain the holder in place.

The upper end of the holder is expanded or enlarged to form a head, which head is bored out to form a seat for the globe G. Between the end of the globe and the seat is located an elastic ring H, preferably of asbestos or other heat-resisting material. This ring assists in rendering the globe air-tight, or substantially so, at the bottom end, and also decreases the liability of breakage resulting from careless handling on the part of the operator at the time the globe is mounted in place. The under side of the enlarged head is provided with two cam-surfaces I and I′, with which the lugs J′ on the clamping-ring J, Fig. 3, engage. It will be seen that the cam-surfaces I and I′ are long and have a gradual slope or taper from one end to the other. This arrangement of parts is such that the globe will be positively gripped and held, the friction between the lugs J′ and the cam-surfaces preventing the nut from accidentally releasing the globe. The long taper of the cam-surfaces also presents another feature of advantage—namely, that it compensates for slight irregularities in the size and shape of the lower end of the globe.

The clamping ring or nut is preferably made of some malleable metal, with the lugs or fingers J^2 formed integral therewith. On the lower end of the ring are lugs J′, arranged to engage with the cam-surfaces I and I′, above mentioned, for the purpose of moving the clamping-ring into and out of operative relation with the globe. At the time the ring is constructed the lugs J^2 on the upper end are straight. This is to permit of the nut being slipped over the holder, and after the clamping-ring has been mounted in place the lugs J^2 may be bent inward, as shown. The lugs are shown as being located diametrically opposite, and when the nut is moved so as to relieve the pressure on the globe the latter may readily be removed by a slight sidewise movement.

The globe-holder is bored centrally and furnishes a support for the lower carbon K. The nut F serves in addition to securing the holder to close the bottom end of the carbon-receptacle and prevent the entrance of any substantial amount of air at that point. The carbon may be held in place within the holder by a screw or spring L, as shown in dotted lines in Fig. 1 and in full lines in Fig. 4.

In assembling the parts the globe is slipped into the holder by a sidewise movement. Then the clamping ring or nut is given a portion of a turn, which causes the lugs J^2 to grip the

enlargement on the lower end of the globe and clamp it in place. After this the carbon is inserted in place and the holder is mounted in position on the lamp. It is not necessary to remove the holder from the lamp when inserting a new or a clean cylinder, but it is the preferred practice.

What I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In an electric-arc lamp, the combination of a globe, a support therefor, a ring-clamp surrounding the support, means fixed on the clamp for gripping the globe, and lugs on the clamp for moving it into and out of operative position, and means for preventing the support from turning.

2. In an electric-arc lamp, the combination of a removable globe having a flaring end, a seat or support therefor, a number of rigidly-united fingers or lugs between which the globe may be removed sidewise, and means integral with the fingers for forcing them into engagement with the globe, whereby the latter is seated, the said support and means always being secured together.

3. In a globe-holding device, the combination of a support, a removable globe having a flaring end, a seat therefor, a clamping-ring having fingers or lugs between which the globe may be removed sidewise, a cam-surface, and lugs on the ring which engage with the cam-surface and force the fingers on the clamping-ring against the flange on the globe and thereby seat it, and means for securing the seat to the support.

4. In a combined carbon and globe holder, the combination of a seat for the globe, a support for the carbon, two tapered cam-surfaces on the holder, a clamping-ring, projections formed integral with the ring for gripping the globe, and other projections on the under side of the ring which engage with the cam-surfaces and act to force the globe against its seat.

5. In an arc-lamp, the combination of a yoke, a globe-holder having a tubular shank which is mounted in the yoke, a lug or key on the shank for preventing the holder from turning, and a nut for retaining the holder in place.

6. In an arc-lamp, the combination of a yoke, a globe-holder comprising a tubular shank and an expanded head, a cam-surface formed on the head, a key or projection formed on the tubular shank, and means for retaining the holder in place.

7. As an article of manufacture, a combined carbon and globe holder, consisting of a tubular shank having keys thereon, and an expanded head for receiving the globe, a shoulder on the shank for engaging with the yoke of the lamp, and a nut for securing the holder in place.

8. In an electric-arc lamp, the combination of a yoke, a globe-holder mounted in the yoke, a receptacle formed in the yoke, in which is located an elastic washer forming a seat for the globe, means for preventing the holder from turning, a clamping-ring having lugs which engage with the globe, and other lugs which engage with the holder, and means for retaining the holder in place.

9. In an electric-arc lamp, the combination of a frame, a removable globe-holder arranged to be mounted in the frame, said holder comprising a shank having an enlarged head forming a seat for the globe, and a clamping-ring having projections engaging with the under side of the seat, and other projections for engaging with the globe and forcing it against the seat, the projections being placed around the head in a manner to prevent the removal of the ring.

In witness whereof I have hereunto set my hand this 25th day of July, 1899.

GEORGE E. STEVENS.

Witnesses:
DUGALD MCKILLOP,
JOHN MCMANUS.