

No. 710,659.

Patented Oct. 7, 1902.

E. H. BELDEN.  
GAS CAP FOR ARC LAMPS.

(Application filed Oct. 7, 1901.)

(No Model.)

Fig. 1.

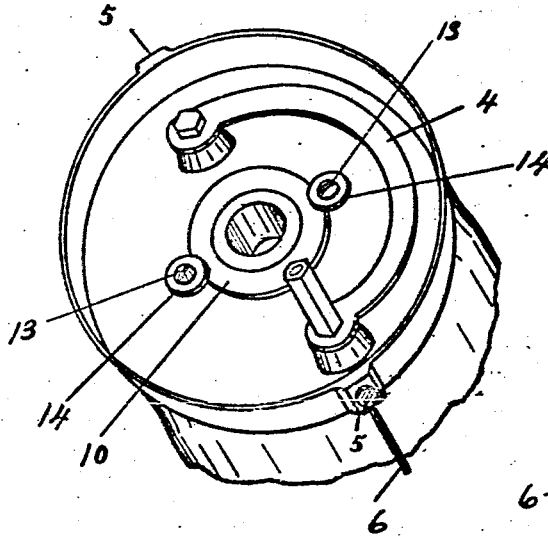


Fig. 2.

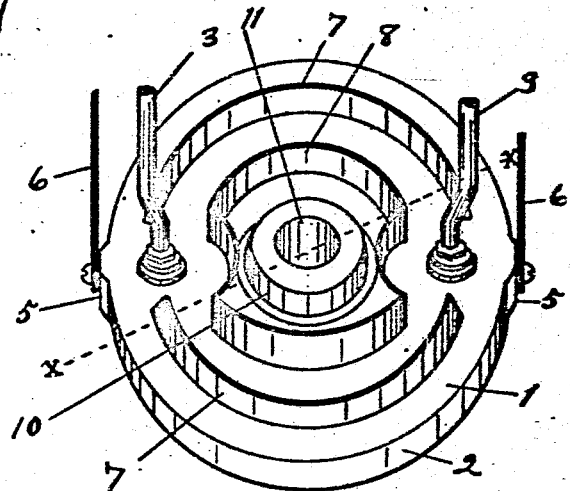


Fig. 3.

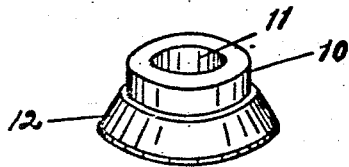
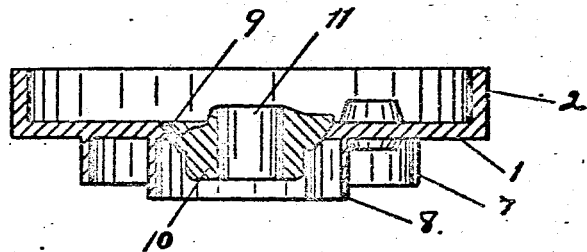


Fig. 4.



WITNESSES: •

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# UNITED STATES PATENT OFFICE.

EDWARD H. BELDEN, OF DAYTON, OHIO.

## GAS-CAP FOR ARC-LAMPS.

SPECIFICATION forming part of Letters Patent No. 710,659, dated October 7, 1902.

Application filed October 7, 1901. Serial No. 77,810. (No model.)

To all whom it may concern:

Be it known that I, EDWARD H. BELDEN, a citizen of the United States, residing at Dayton, in the State of Ohio, have invented certain new and useful Improvements in Gas-Caps for 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 part of this specification.

My invention relates to improvements in gas-caps for electric-arc lamps.

The object of my present invention is to provide an improved gas-cap for closing the top of the arc-chamber of an arc-lamp having an improved means for insulating the movable carbon and its containing-tube from the said cap through which it passes and adapted to admit of such expansion and contraction as is incident to service without the usual liability of breakage and so mounted in said cap as to be readily removed or replaced when desired.

My invention consists of a circular metallic plate having an upright annular flange adapted to embrace the lower open end of the clutch-chamber casting in a well-understood manner, having upon its lower face the usual pendent concentric flanges adapted to collect and retain the insoluble products of combustion of the arc-chamber, and having a centrally-arranged and loosely-seated insulating-plug having a central opening for the movable carbon.

The novel feature of my improvement resides in the removable and loosely-mounted means for insulating the movable carbon from the gas-cap through which it passes.

Similar reference-numerals in the accompanying drawings indicate like parts throughout the several views, in which—

Figure 1 is a perspective plan of my improved cap in position on the inner globe of the lamp broken away and showing the removable insulating-plug in position and showing the means for securing the same. Fig. 2 is a bottom plan of the same with the inner globe omitted, showing the lower protruding face of the said plug. Fig. 3 is a perspective detail of the said insulating-plug,

showing the beveled annular face on which it rests when seated in position. Fig. 4 is a cross-section of the cap, taken on the line *x* of Fig. 2, with the carbon-bracket omitted and with the said insulating-plug broken away in part to show the beveled seat on which the said plug rests.

My improved gas-cap 1, of suitable metal, has an upright peripheral flange 2, adapted to snugly fit over the bottom of the clutch-chamber casting of the lamp, (not shown,) and has two opposite insulated openings, in which the upper ends of the carbon-bracket 3 are rigidly secured. These bracket ends are electrically connected by means of the curved plate 4. At diametric points on the outer face of the said flange 2 are arranged proper ears or lugs 5, to which the upper ends of the inner globe-bracket 6 are pivotally secured. The lower face of said cap 1 has a plurality, preferably two, of pendent concentric flanges 7 and 8, adapted to receive, collect, and retain the insoluble products of combustion in the arc-chamber in a well-understood manner. This gas-cap is also provided with a central opening having a beveled or inclined face 9, Fig. 4, adapted to support the said insulating-plug. In this central opening is loosely mounted my improved insulating device or plug 10, of porcelain, lava, or other proper insulating material, and adapted to be loosely mounted in said central opening, having a central vertical opening 11, in which the movable carbon (not shown) is loosely arranged, and provided with a beveled face 12, adapted to rest upon the said beveled seat 9 of the cap 1. This insulating-plug is of one solid piece and is therefore not liable to be cracked and broken by the heat of the lamp, has a sufficient length or thickness to properly guide the movable carbon, and is secured in position by means of the holding-screws 13 and the metallic washers 14, whose inner and overlapping edges form a binding engagement with the adjacent face of the said plug.

It is obvious that my improved insulating-plug 10 thus mounted in position secures a perfect insulation of the movable carbon and its containing-tube from the said gas-cap, that as it is loosely mounted on its tapering seat it will admit of such expansion

or contraction as is incident to use without any strain thereon and without danger of breaking, and that as the said plug is secured in position only by its tapering seat and the two overlapping washers 14 it can readily and conveniently be removed or replaced at pleasure by the simple removal of the two holding-screws 13.

Having thus described my invention and the manner of employing the same, what I desire to secure by Letters Patent is—

A gas-cap for the arc-chamber of an arc-lamp consisting of a disk having an upright peripheral flange and one or more pendent flanges for the purposes specified, and hav-

ing a central vertical opening provided with a conical or spherically concave seat for an insulating-plug, in combination with a plug or block of porcelain or other insulating material seated in said opening and provided with a central opening for the said insulating device; and means for securing the said device in position.

Signed by me at Dayton, Montgomery county, State of Ohio, this 30th day of August, A. D. 1901.

EDWARD H. BELDEN.

Witnesses:

EDWIN O. WAYMIRE,

JOHN FOWLER.