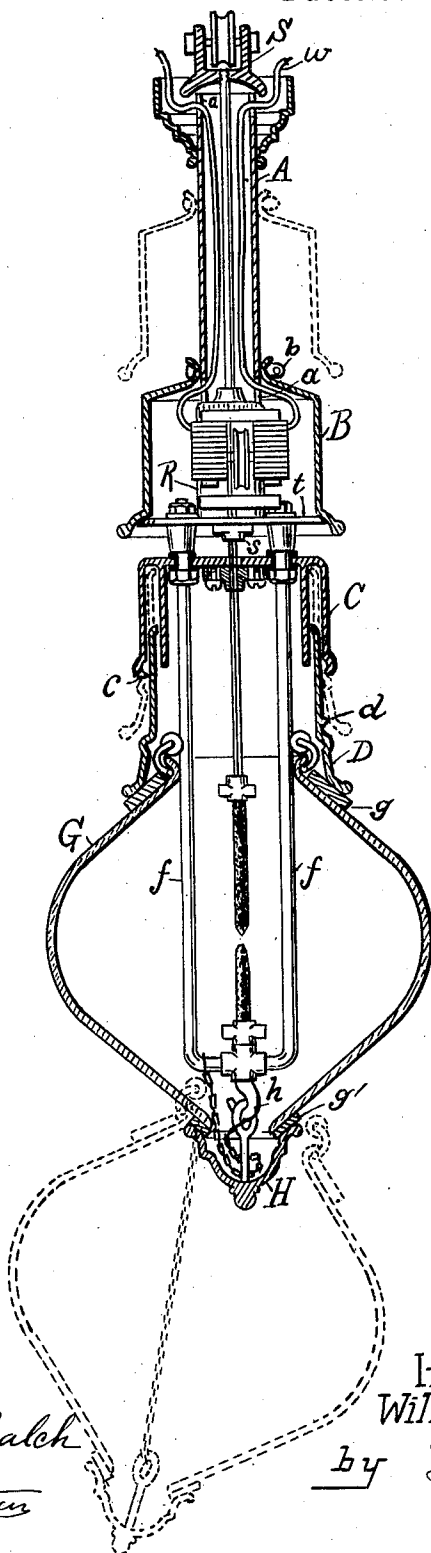


(No Model.)

W. C. ARMSTRONG.
ELECTRIC ARC LAMP.

No. 564,772.

Patented July 28, 1896.



Witnesses:

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UNITED STATES PATENT OFFICE.

WILLIAM C. ARMSTRONG, OF NEW YORK, N. Y.

ELECTRIC-ARC LAMP.

SPECIFICATION forming part of Letters Patent No. 564,772, dated July 28, 1896.

Application filed August 29, 1895. Serial No. 560,906. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM C. ARMSTRONG, a citizen of the United States of America, residing in the city, county, and State of New York, have invented certain new and useful Improvements in Electric-Lamp Covers and Spark-Arresters, of which the following is a specification.

My invention is applicable to any style of lamp, but as compared with the invention shown in my other application, filed of even date herewith, I prefer to apply this to direct-current lamps. It is arranged to reduce the renewal of air within the lamp and to dampen the noise of the lamp and to prevent sparks from getting out of the carbon-chamber.

It consists of two main features, one a cover for the works of the lamp, by which I mean the feeding apparatus, and the other a telescope-jointed cover for the upper part of the lower frame of the lamp to seal the large opening of the globe; and it further consists in the combination of these features. The particular object is to arrange the cover in such a way that the works and the carbons shall be readily exposed for inspection and trimming. The construction shown is also such as makes it possible to introduce a damping-washer wherever there is a contact at which there is apt to be rattling; and my invention further consists in other combinations and details hereinafter described and claimed.

In the accompanying drawing, which forms a part of this specification, the figure is an elevation of an electric-arc lamp with the covers and globe shown in section in full lines in the position in which they should be when the lamp is burning and in dotted lines in the positions occupied with the globe dropped out of place and the upper cover pushed up to expose the works of the lamp.

Referring now to the drawing, the chimney is shown extending above the works and inclosing a rack. The tubular chimney-cover A is mounted upon the supporting-rod attached at its upper end to the hanger-nut S. This chimney-cover is notched at top and bottom, as shown at *a*, to admit of the passage of the wires *w*. The sliding cover B is provided with a clamping-collar *b* and is

mounted mouth downward upon the chimney-cover A, so that it can slide up and down and be clamped at any point along the chimney-cover. The chimney-cover permits the sliding cover to be slid up and down along the chimney without injuring the wires. Within the cover B, when it is in the position shown in full lines, is inclosed the works of the lamp R, resting upon the base-plate *t*, herein called the "base." The cover B is flared outward at the bottom, so that it shall fit down over the edge of the base *t* and thus inclose the works of the lamp. Below the base is attached the lower frame *f* of the lamp. Attached at the upper end of the lower frame and separated from the base *t* by washers, so as to give about an inch of space, is section C of the spark-arrester. There is a guide for the upper carbon-rod on the bottom of the base *t* and one on the top of section C. Section C is mounted so as to be adjustable to aline these guides. It is closed at its upper end and open at its lower end, has a double wall, and is provided with an outwardly-bowed flare around its lower edge to engage with a projection from the side of the lower sliding section D of the spark-arrester.

The section D slides up between the walls of the section C. The joint between these sections admits of adjustment to any sized globe. On the cover is a small notch *c*, at which point the projection *d* can enter the flare, so that the lower section and the spark-arrester may be slipped up and hooked into the upper section C with a bayonet-joint. However, a plain hook may be used for the bayonet-joint.

The part D is open at its bottom and top and is flared at its lower mouth, where the face of the mouth rests upon a washer *g*, which encircles the upper or large opening of the globe G. The washer encircles the neck of the globe and is thus held in place. Around this neck is hooked a bent wire E, which lies in under the neck upon the outside of the globe at all points except two diametrically opposite points where the wire is bent upward and inward to form springy extensions, upon which guide-rollers of porcelain, rubber, or other suitable

insulating material are mounted. This part, which is a spring-clamp, forms the upper globe-holder and guide and is sufficiently springy to dampen any vibrations and allow for expansion of the globe. The globe is by it positioned with respect to, and held securely to, the lower frame of the lamp. At the lower end of the lower frame is attached a lower globe-holding cap H, provided with an eye projecting upward within the cap. This eye engages with a hook h at the bottom of the lower frame and holds the globe in place. A chain is hooked to the lower part of the lower frame f and linked into the eye in the globe-holding cap.

Between the cap and the globe I may insert a washer g', similar to the one between the cover-section D and the globe, except as to size. These washers are both made, preferably, of wool felt which is treated with non-flammable substance. They may be made, however, of suitably-treated rubber, cork, asbestos, or other suitable non-flammable and non-vibrating substance.

It will be seen that the carbon-chamber of the lamp is entirely inclosed, there being no opening in the whole globe or spark-arrester. The works of the lamp are covered with an entirely distinct cover, and between the base and the section C, which forms a part of the spark-arrester, there is a space for the free passage of air to prevent heating the works and to provide easy access to the switches or to bring wires to binding-posts at this point, if desired.

When it is desired to get at the works, the cover B is slipped up along the chimney. It is usually clamped tightly enough to the chimney-cover A to stay wherever it is set.

When it is desired to trim the lamp, the lower section of the spark-arrester is pushed up and caught in the upper section, the cap is unhooked from the lower frame, and the globe allowed to drop to the position of the dotted lines. The chain can then be unhooked from the lower frame.

The cast-iron hanger-nut S may rest upon a rubber or asbestos washer and be provided with a roller of rubber instead of porcelain and the lamp may be suspended by an asbestos rope.

I do not claim herein a cover provided with the clamping-collar on its upper end and a flaring mouth at its lower end, nor a cover provided with a mouthpiece shaped to rest upon the globe, so as to encircle and thus seal the upper opening of the globe, and separated from the globe by a washer of non-vibrating material, whether combined with other elements or not, nor an arc-lamp provided with a cover fitted to slide up and down along the chimney of the lamp and to inclose the works thereof, whether with or without a clamping-collar, nor the spring-clamp globe-holder in any form or in any combination, nor the combination of a globe and covers which seal the

openings of the globe, the globe being supported from the lower frame. These are claimed in my other application, Serial No. 560,905, (A,) for improvements in electric-lamp covers, filed August 29, 1895.

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

1. An electric lamp provided with works, a chimney above the works, a base to support the works and a cover which incloses the works and is closed at its lower end by the base on which the works rest and is free to slide up and down the chimney, substantially as described.

2. An electric-arc lamp provided with works, a chimney extending above the works, a chimney-cover provided with wireways, a base to support the works, a cover which incloses the works and is closed at its lower end by the base on which the works rest and is free to slide up and down the chimney, substantially as described.

3. In an electric-arc lamp, the combination of a lower frame, a globe inclosing the lower portion of the lower frame, a lower globe-holder supported on the lower frame, a spring-clamp to position the globe with respect to the lower frame, a sectional cover for the globe, the upper section of the cover being attached to the lower frame, and the lower section of the cover sealing the upper opening of the globe and being free to slip up and down with respect to the upper section and the lower frame, the sectional cover inclosing a portion of the lower frame, substantially as described.

4. In an electric-arc lamp the combination of a lower frame, a globe which incloses the lower portion of the lower frame, a sectional cover for the globe, the upper section of the cover being attached to the lower frame, and the lower section of the cover sealing the upper opening of the globe and being free to slip up and down with respect to the upper section and the lower frame, the sectional cover inclosing a portion of the lower frame, and a globe-holding cap for sealing the lower opening of the globe, the said cap supporting the globe from the lower frame, substantially as described.

5. In an electric lamp the combination of works, a base upon which the works rest, a chimney extending above the works, a cover for the works which is free to slide up and down the chimney, and rests at its lower end upon the base, and a cover which seals the upper opening of the globe, there being an open space between the base and the top of the latter cover, substantially as described.

6. In an electric-arc lamp the combination of works, a base upon which the works rest, a chimney extending above the works, a cover for the works closed at its lower end by the base and free to slide up and down the chimney, and a telescope-jointed cover which seals the upper opening of the globe, the top of the

latter cover being separated from the base by an open space, substantially as described.

7. An electric lamp provided with a cover for the works closed at its lower end by the
5 base, and a cover which seals up the upper opening of the globe, the top of the latter cover and the base being provided with guides and separated by an open space, and means

for positioning the guides to bring them into alinement, substantially as described. 10

Signed by me, in New York city, this 12th day of August, 1895.

WILLIAM C. ARMSTRONG.

Witnesses:

SAMUEL W. BALCH,
CHARLES KLAUSE.