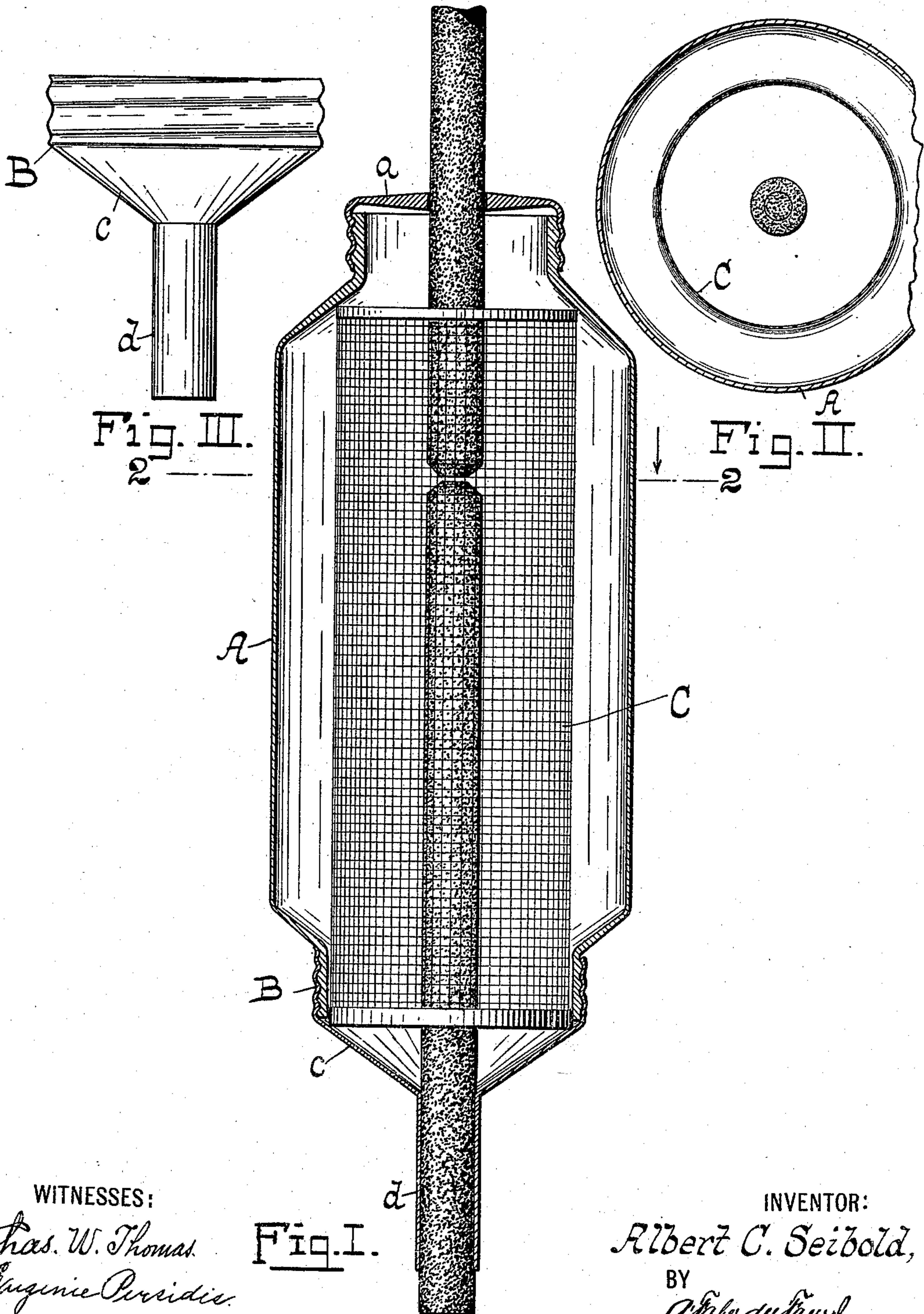


(No Model.)

A. C. SEIBOLD.
ARC LAMP.

No. 542,505.

Patented July 9, 1895.



WITNESSES:

Chas. W. Thomas
Engineer

Fig. I.

INVENTOR:

Albert C. Seibold,

BY

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UNITED STATES PATENT OFFICE.

ALBERT C. SEIBOLD, OF MOUNT VERNON, ASSIGNOR OF ONE-THIRD TO EDGAR O. CLARK AND WILLIAM SOWDON, OF NEW YORK, N. Y.

ARC LAMP.

SPECIFICATION forming part of Letters Patent No. 542,505, dated July 9, 1895.

Application filed January 7, 1895. Serial No. 534,034. (No model.)

To all whom it may concern:

Be it known that I, ALBERT C. SEIBOLD, a citizen of the United States of America, residing at Mount Vernon, in the county of Westchester and State of New York, have invented certain new and useful Improvements in Arc Lamps, of which the following is a specification.

My invention has reference to improvements in arc lamps, and especially to that class in which a small globe closed at its top and bottom is made use of. While lamps embodying such globes give a steadier light than those in which the ordinary large globes are used and are considerably more economical, they have the objectionable feature that after a short use the light is obstructed by the carbon dust settling on the sides of the globes, and in consequence thereof their illuminating-power is considerably decreased.

The objects of my present invention are, first, to remove this objectionable feature by the use of a device adapted to direct and to confine the aggregation of the carbon dust to the lower part of the globe, and, secondly, to provide means for the ready removal of the carbon dust so collected.

With these objects in view my invention consists, first, in the combination, with the globe, of a foraminous guard located in the globe and surrounding the arc, and, secondly, in the combination, with said elements, of a conical cap closing the bottom of the globe and provided with a discharge-opening for the carbon dust.

The nature of my said invention will best be understood when described in connection with the accompanying drawings, in which—

Figure 1 represents a sectional elevation of the globe of an arc lamp embodying my invention. Fig. 2 is a horizontal section on the line 2 2, Fig. 1. Fig. 3 is a side elevation of the cap closing the bottom of the globe.

Similar letters of reference designate corresponding parts.

Referring now to the drawings, the letter A designates a globe closed at its top by a metallic screw-cap *a*, containing a central orifice for the passage of the upper positive carbon or electrode. The bottom of said globe is closed by a metallic screw-cap B, having a

conical collecting-chamber *c*, terminating in a downwardly-projecting tubular portion or sleeve *d*, through which the lower negative carbon or electrode is passed. The upper electrode is supported and fed in the usual manner. The lower electrode fits tightly in the sleeve *d*, which latter is secured in the clamp of the arc lamp for the support of the globe.

In the interior of the globe A is located a guard C, which is placed in a position to surround the arc and to direct the carbon dust downwardly. In the present example I have shown this guard cylindrical in shape and made of a foraminous material, such as wire-gauze. It extends throughout the length of the globe and is held in position by the cap B and by the upper head or portion of the globe. I have found that this cylinder acts to direct the carbon constantly falling from the incandescent electrodes downwardly into the collecting-chamber *c* of the cap B and that none of the same settles upon the sides of the globe. Although this waste carbon is in the form of an impalpable dust, it is not essential or necessary that the mesh of the wire gauze should be very small. In fact, I have found that a gauze of No. 12 mesh answers the purpose very well. The openings in a gauze of this mesh, it may here be observed, will permit the passage of the particles of carbon if thrown against the gauze at right angles; but under the usual conditions the particles fly from the heated ends of the carbon electrodes in downwardly-slanting directions. It may be assumed, therefore, that owing to this slanting direction of the particles they are not liable to pass through the meshes of the gauze, but are deflected and then fall along the wall of the guard. In connection with this theory of the stoppage of the particles it may also be assumed that a current of gases flowing upwardly along the inner wall of the guard acts to arrest in a measure the motion of the particles.

The guard itself has no apparent derogatory effect on the luminosity of the arc and reduces the danger of breakage of the globe by absorbing and more evenly distributing the heat to the surrounding glass when the arc is started. The carbon dust collecting in

the cap B is discharged through the sleeve *d* on the removal of the lower electrode, thus rendering it unnecessary to remove the said cap.

- 5 I wish it to be distinctly understood that the foraminous guard need not be made of wire, as herein described, since it can be made of asbestos or other refractory material, provided in all cases that the guard is suitably
10 perforated. Of course any other suitable form besides the cylindrical may be used, if required, and the configuration of the openings may be varied.

What I claim as new is—

- 15 1. An arc lamp comprising in its construction a closed globe, and an internal foraminous guard surrounding the arc and extending throughout the length of the globe, substantially as and for the purpose set forth.
20 2. The combination with the globe of an arc lamp, of a cap attached to the bottom thereof

containing a conical collecting chamber and a tubular discharge through which the lower electrode passes, an internal foraminous guard surrounding the arc and extending through- 25 out the length of the globe, and a cap closing the top of the globe and provided with an orifice for the passage of the upper electrode, substantially as and for the purpose set forth.

3. The combination with the closed globe of 30 an arc lamp, of an internal foraminous guard surrounding the arc, and adapted to direct the carbon dust downwardly, substantially as and for the purpose set forth.

In testimony that I claim the foregoing as 35 my invention I have hereunto set my hand, this 5th day of January, 1895, in the presence of the subscribing witnesses.

ALBERT C. SEIBOLD.

Witnesses:

A. FABER DU FAUR, Jr.,
CHAS. W. THOMAS.