(No Model.)

E. M. FOX & L. K. BŐHM.

ELECTRIC LAMP.

No. 248,156. Patented Oct. 11, 1881.

Fig. 1

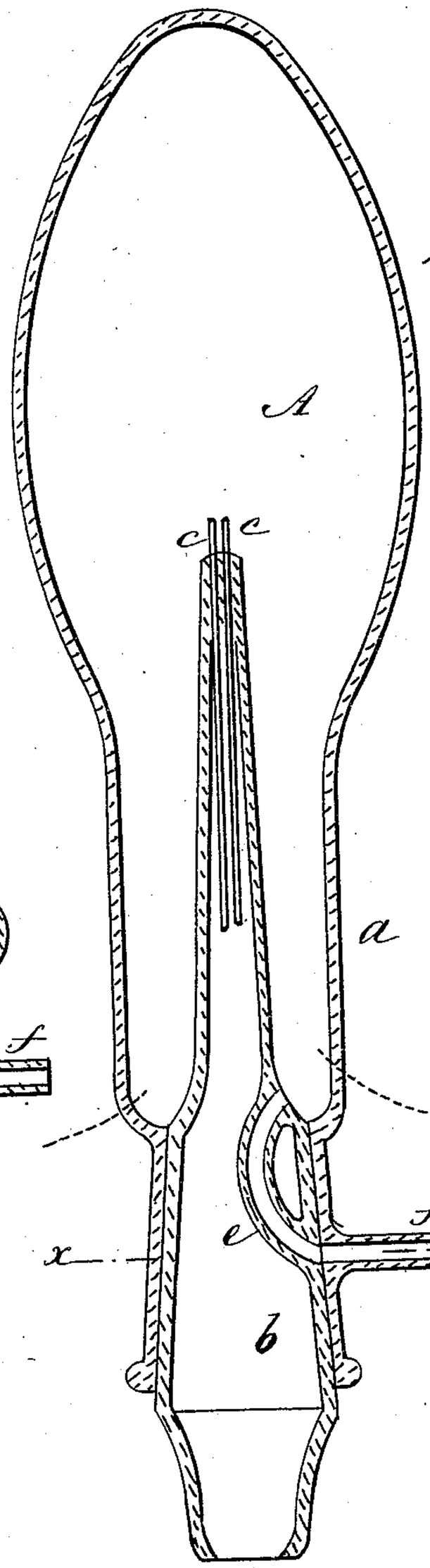


Fig. 3

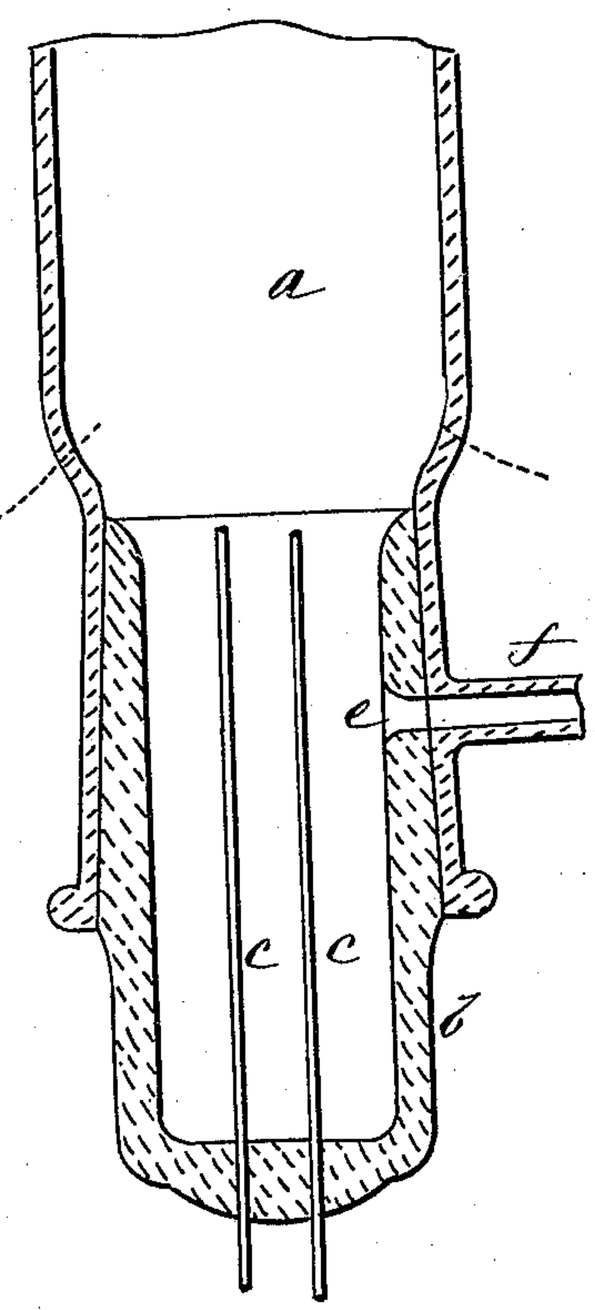


Fig. 4

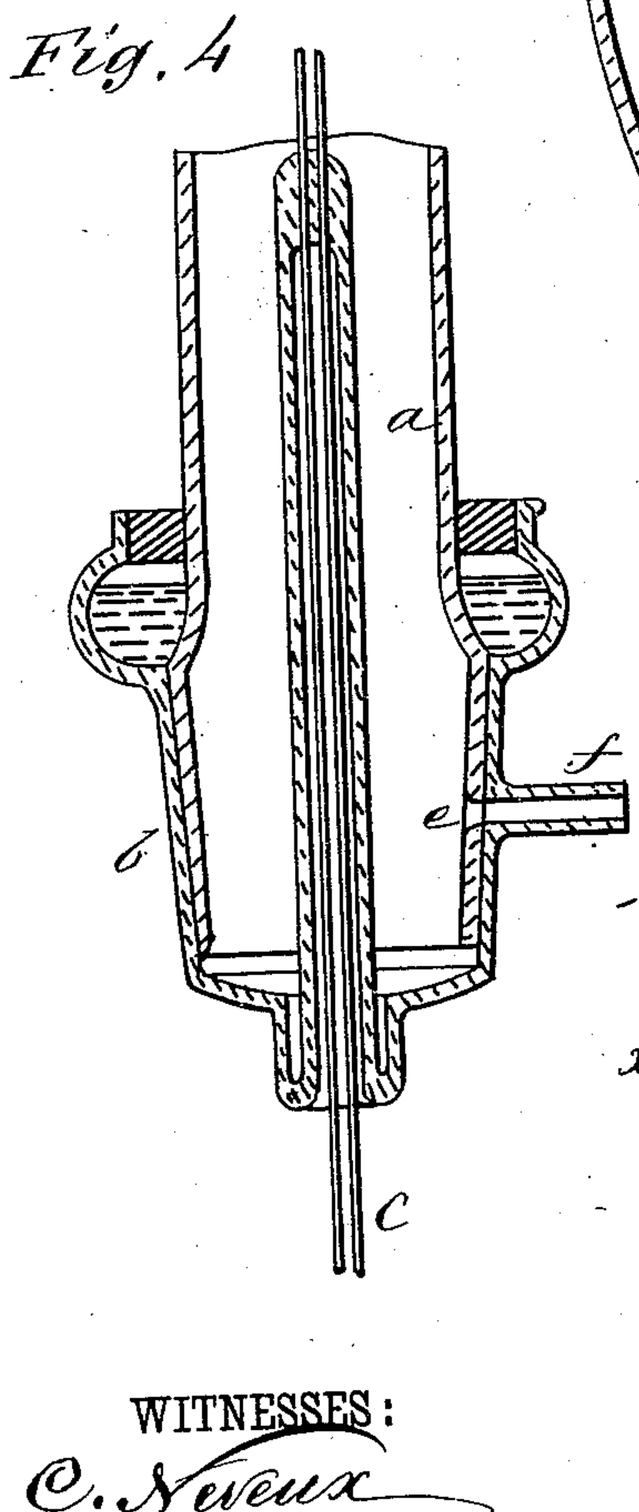
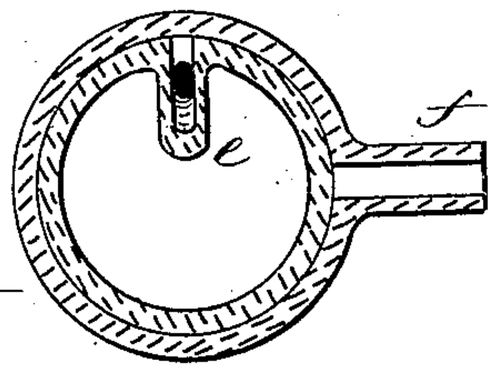


Fig. 2



WITNESSES:

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UNITED STATES PATENT OFFICE.

EDWIN M. FOX AND LUDWIG K. BÖHM, OF NEW YORK, N. Y., ASSIGNORS TO THE AMERICAN ELECTRIC LIGHT COMPANY, OF SAME PLACE.

ELECTRIC LAMP.

SPECIFICATION forming part of Letters Patent No. 248,156, dated October 11, 1881.

Application filed July 6, 1881. (No model.)

To all whom it may concern:

Be it known that we, EDWIN M. FOX and LUDWIG K. BÖHM, of the city, county, and State of New York, have invented a certain new and useful Improvement in Electric Lamps, of which the following is a specification.

Our improvements relate to electric lamps for which vacuum-chambers are employed, and have for their object to facilitate the insertion and removal of the carbon, as well as the operation of drawing the vacuum, and to dispense with the usual operation of sealing the drawing-nipple by melting.

Our invention consists in the combination of a vacuum-chamber formed with a neck and a sealing plug or stopper, having its longitudinal axis coincident with the longitudinal axis of the neck, and bearing the conducting-wires, both the stopper and the neck being formed with openings arranged to be turned into or out of registration, to permit the lamp to be first exhausted and then sealed, as hereinafter fully described.

In the accompanying drawings, Figure 1 is a sectional elevation of a lamp embodying our invention. Fig. 2 is a cross-section on line *x x* of Fig. 1. The other figures show certain modifications, referred to hereinafter.

Similar letters of reference indicate corresponding parts.

A is the globe, which may be of any usual or desired form, and is formed with the tubular neck portion *a*. The end of neck *a* is closed either by a tapering pin or plug, or by a socket-piece into which the tube enters to form an air-tight but separable joint. In Fig. 1 the end of the tube *a* is closed by a tapering glass plug, *b*, and the contact-surfaces of the plug and tube are ground to form a perfect joint. The wires *c c* pass through the plug *b* lengthwise of the same, the glass being sealed tightly around the wires. The plug *b* is formed with a passage, *e*, which opens at the inner end of the tube, and also at one side on the ground portion, forming the joint. The tube *b* is formed with a stem or nipple, *f*, at one side, in such position that it can be made to coincide with the end of passage *e*. By these means an opening from the outside to the interior of the chamber can be had by turning the plug or the lamp, and such opening cut off in the same manner.

To exhaust the chamber the plug, having the wires and carbon attached, is first put in place, with the aperture *e* coinciding with the nipple. The pump is then attached to the nipple and the air drawn, after which, by a partial turn of the plug or the globe, the passage is closed, and the exhausted globe thus hermetically sealed. The same operation is repeated in case the plug is removed for renewal of the carbon.

In Fig. 3 the plug *b* is cup-shaped, and in that case the side is simply apertured at *e* to coincide with the nipple *f* of the neck. In Fig. 4 the plug is made hollow, or as a tapering socket, that receives the end of neck *a*, and in that case the drawing-nipple *f* is formed on the socket, and the neck *a* is apertured at *e*. The adjacent edges of this socket-shaped stopple and the neck are suitably ground, and to insure a tight joint the upper edge of the stopple is enlarged to form an annular trough, which receives a sealing liquid—such as mercury—which trough is closed by a packing-ring interposed between the neck of the lamp and the edge of the stopple. In any of these forms the plug may be fitted in a suitable stand, and thus support the lamp, or the lamp may be supported or suspended in any suitable manner.

In defining more clearly the limits of our invention as claimed in this patent, we would state that we only here claim the apertured stopper in combination with the vacuum-chamber when said apertured stopper bears the conducting-wires and sustains the carbon or its equivalent.

We are aware that a broader claim might be predicated on our device, in which the supporting of the wires upon the stopper might be dispensed with, and the wires introduced as shown in dotted lines in Figs. 1 and 3. We do not make this claim in this patent, however. We are aware also that specific claims might be made on the peculiar form of cup-shaped

and apertured stopper shown in Fig. 4, but do not make such claims in this patent. Both these features we regard as patentable portions of our invention, and we reserve the right to cover these hereafter in a separate application.

Having thus fully described our invention, we claim as new and desire to secure by Letters Patent—

1. In an electric lamp, the combination of the vacuum-chamber formed with a neck and a sealing plug or stopper, having its longitudinal axis coincident with the longitudinal axis of the neck, and bearing the conducting-wires, both the stopper and the neck being formed with openings, as described, arranged to be turned into or out of registration, to permit the lamp to be first exhausted and then sealed, as and for the purpose set forth.

2. The combination, with the vacuum-chamber A, having tubular neck *a*, provided with drawing or exhaust tube *f*, of sealing-plug *b*, formed with aperture *e* and carrying the conducting-wires and carbon, substantially as and for the purposes set forth.

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Witnesses:
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