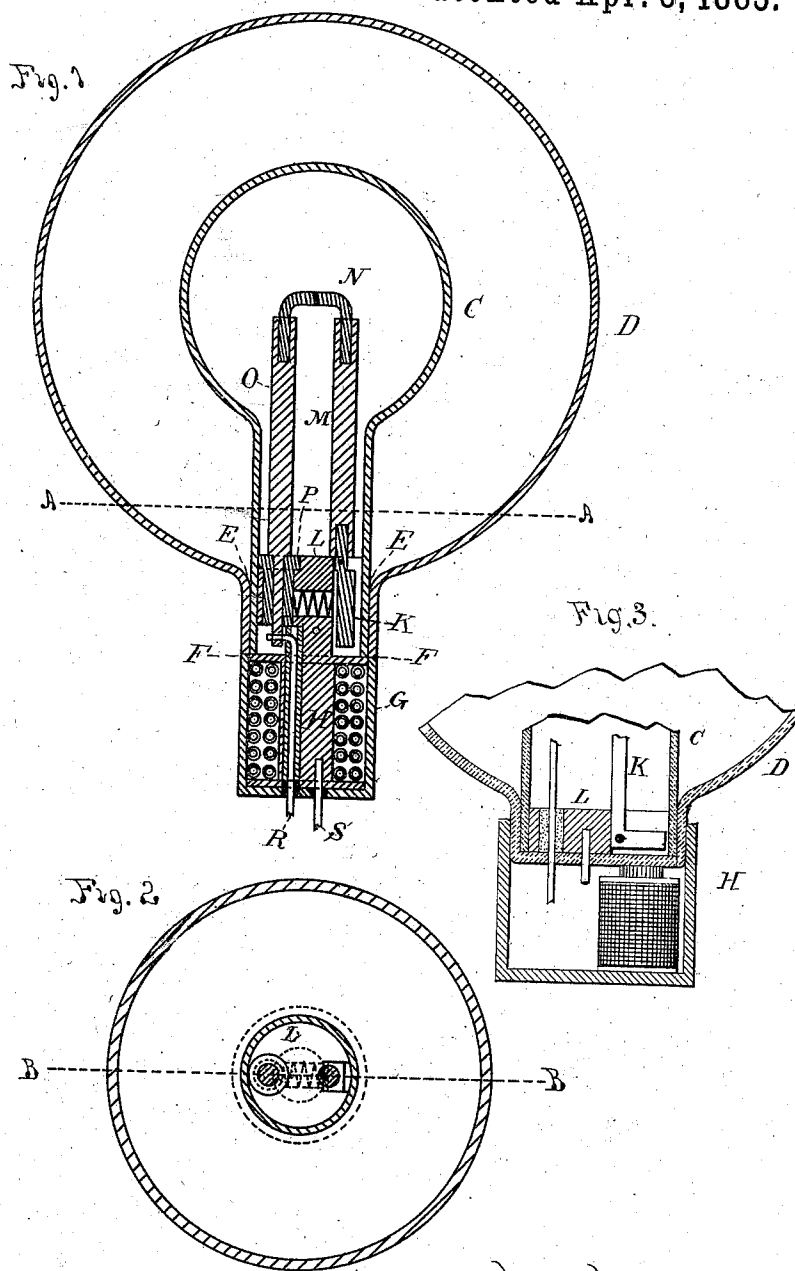


(No Model.)

S. F. VAN CHOATE.
ELECTRIC ARC LAMP.

No. 274,997.

Patented Apr. 3, 1883.



Witnesses
Wm. D. Brown
Wm. P. Richards

Inventor
S. F. Van Choate
by *H. C. Townsend*
Att'y.

UNITED STATES PATENT OFFICE.

SILVANUS F. VAN CHOATE, OF NEW YORK, N. Y.

ELECTRIC-ARC LAMP.

SPECIFICATION forming part of Letters Patent No. 274,997, dated April 3, 1883.

Application filed June 12, 1882. (No model.)

To all whom it may concern:

Be it known that I, SILVANUS F. VAN CHOATE, a citizen of the United States, and a resident of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Electric Lamps, of which the following is a specification.

My invention relates to sealed electric lamps, and more particularly to lamps in which an electric arc is the source of light, said arc being formed by separating the two electrodes.

My invention consists in certain combinations that will be specified in the claims.

In the accompanying drawings, Figure 1 is a vertical central section on the line B B, Fig. 2, of one form of lamp constructed according to my invention. Fig. 2 is a horizontal section on the line A A of Fig. 1.

C is the globe or casing for the light-giving portion of the lamp, and D is an exterior translucent casing, the neck of which is tightly fitted about the neck of the interior globe at E, and may be hermetically sealed at that point, if desired.

In order to make the description of my invention more intelligible, and that its nature may be more clearly understood, I will first state that F F represent the division or sealing line between the bounds of the sealed case or globe and the other mechanisms, fixtures, and supports of the lamp and said case or globe. Whatever shapes or forms said case or globe and the said mechanisms and supports may assume, there will necessarily be a similar division-line between them. Everything on one side of this line is to be considered as within said case or globe and everything on the other side of said line is to be considered as outside of said case or globe.

G represents a cup or holder, of brass or other suitable material, supporting the lamp and inclosing the spool of the magnet.

H represents the magnet, the pole of which extends beyond the line F F into the interior of the casing C, into proximity with an armature, K, which is pivoted in a block or stopper, L, secured to the head of the magnet-spool, and filling the neck of the globe C, so as to close it hermetically. The stopper L may

be formed integral with the core of the magnet or with the head of the spool.

Connected to or forming a portion of the armature is a conducting-rod or holder, M, for one of the electrodes N, while the metallic holder or support O, carrying the other electrode, is mounted in an insulating-plug seated in a hole bored in the block or stopper L. A coiled spring, seated in a transverse groove in the block L, as shown, bears against the armature and tends to bring the electrodes into contact. When the electric current passes, the armature is attracted and separates the electrodes, thus forming the arc, which continues to burn so long as the current flows and the electrodes endure.

The magnet H is bored longitudinally at one side to receive the insulated conducting-wire R, which is connected to the end of the support O. The other conducting-wire, S, is connected directly to the magnet H, from which the current passes to the support M through the plug L, which, in the arrangement of the connections here shown, is made of a conducting material, preferably brass, because its ratio of expansion and contraction by heat is more nearly like that of glass than most other conductors. The coils of the magnet are placed in circuit with the wires R S and the electrodes N in a well-known manner.

The armature and the other parts within the globe C may be mounted and supported in other ways without departing from the spirit of my invention, and any suitable means for sealing said globe may be employed.

I generally prefer to seal the exterior globe, D, air-tight, although this is not absolutely necessary, and it might even be made with openings, and might simply form a hood, the idea being to prevent free circulation of the envelope of air which is in contact with the interior globe, so that said globe shall not suddenly cool when the light is put out, and to also protect it from the direct action of exterior currents of cold air when the lamp is burning.

It is obvious that the magnet might act upon the armature through the wall or other portion of the casing, instead of extending into the interior thereof. Such a modification is

shown in Fig. 3, the various parts being indicated by the same letters as in Figs. 1 and 2.

What I claim as my invention is—

1. The combination, with the lamp having
5 a sealed casing, of a magnet the pole of which projects into the lamp-casing, said magnet being bored longitudinally to form a passage-way for an insulated conducting-wire connected with the interior portions of the lamp.
- 10 2. The combination, with the lamp globe or casing, of the plug L, the armature-lever mounted in said plug and carrying one of the electrodes, and the standard O, also mounted in the plug and carrying the other electrode.
- 15 3. The combination, with the pivoted electrode-holder M, mounted on armature K, so as to be movable from the opposite electrode to form the arc, of a sealed casing surrounding said holder and armature, and an exterior magnetizing-coil for the electro-magnet which acts upon
20 said armature.
4. The combination of the sealed casing C, the plug L, the fixed electrode-holder O, the pivoted armature K, the holder M, mounted

on the same so as to rock to and from the opposite holder, and the electro-magnet H, arranged in the manner described, to act upon the armature in the sealed casing and cause the separation of the electrodes.

5. The combination, with an electric light,
30 of a sealed casing, C, and an exterior casing, D, within whose neck the neck of casing C is fitted, substantially as described.

6. The combination of the casing C, the plug L, fitting into the inside of the neck of said
35 casing, and attached to the magnet H, the armature K, pivoted in the plug, and the coiled spring let into the plug and acting to force the armature laterally away from the pole of the magnet.

Signed at New York, in the county of New York and State of New York, this 10th day of June, A. D. 1882.

SILVANUS F. VAN CHOATE.

Witnesses:

H. C. TOWNSEND,
THOS. TOOMEY.