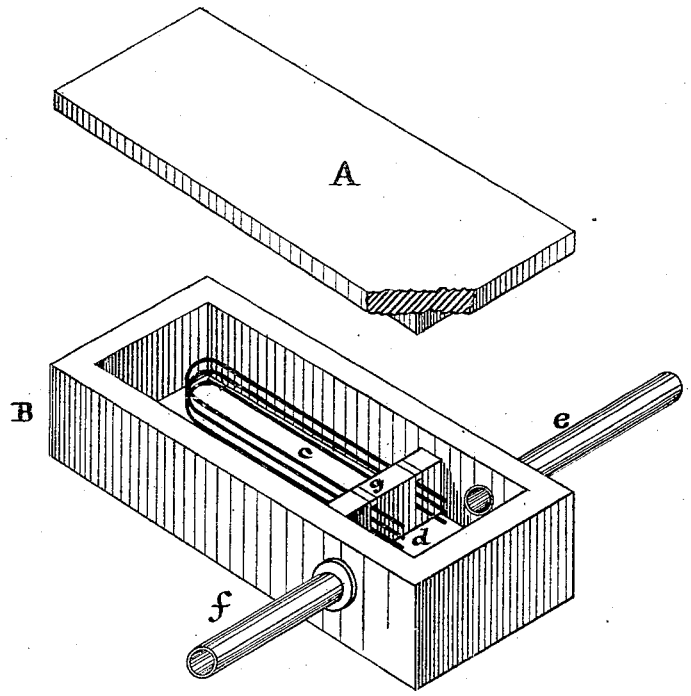
(No Model.)

T. A. EDISON.

APPARATUS FOR TREATING CARBONS FOR ELECTRIC LAMPS.

No. 248,427. Patented Oct. 18, 1881.



Attest:

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UNITED STATES PATENT OFFICE.

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APPARATUS FOR TREATING CARBONS FOR ELECTRIC LAMPS.

SPECIFICATION forming part of Letters Patent No. 248,427, dated October 18, 1881.

Application filed January 11, 1881. (No model.)

To all whom it may concern:

Be it known that I, THOMAS A. EDISON, of Menlo Park, in the county of Middlesex and State of New Jersey, have invented a new and useful Improvement in the Manufacture of Carbons for Electric Lamps; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawing, and to the letters of reference marked thereon.

A now ordinary form of electric lamp, as shown in several patents hitherto granted me, consists of a carbon filament secured to conductors and hermetically inclosed in an exhausted glass globe or containing-chamber. In order that reliable and perfect electrical contact between the ends of the carbon filament and the conductors leading and secured thereto may be had, it is necessary that the ends of the filament be enlarged somewhat, so as to furnish a larger bearing and contact surface. When the nature of the material used admitted of it these enlarged clamping ends have been formed integral with the filament. In some cases, however, fibers are used for the carbon filament of such size that they have not the mass of material necessary for the clamping ends to be formed integral therewith, when such ends must be formed or made thereon out of other carbon.

My invention consists in a method and apparatus for this purpose, the latter being shown in the accompanying drawing.

B is an iron flask or vessel, having a cover, A, which fits tightly thereon. The flask is divided by the partition *g* into two compartments, *c* and *d*. A number of carbon loops are placed in the flask, as shown, the larger part of each being in the compartment *c*, while the ends pass through slits in the partition *g* and project into the compartment *d*. The cover is then placed on the flask, and the part of the flask comprising the compartment *d* is heated to a high temperature in any suitable manner, which may be, for instance, by placing the whole flask in a furnace, the compartment *c* of the flask being filled with finely-powdered charcoal or carbon, which protects the portions of the carbons therein sufficiently to prevent their destruction or injury, at the same time preventing such diffusion of gas from the compartment *d* as would make any sensible deposit on the portions in *c*. Then, while the carbons are still very hot, the carbon vapor is forced into the pipe *f*, and passes across the compartment *d* and out of the pipe *e*. During its passage across the ends of the heated carbons it will be decomposed, and will deposit other carbon thereon, which will become a part thereof, thus enlarging the ends without increasing the size of the rest of the loop.

What I claim as my invention is—

1. The method of forming enlarged or clamping ends upon carbon filaments and increasing the conductivity thereof, consisting in confining the ends of the filaments in a closed flask or vessel, heating such ends of the filaments to a high heat while carbon vapor is passed through the chamber, the part of the filaments not to be enlarged being suitably supported and protected, substantially as set forth.

2. A flask or vessel divided by a partition into two parts, one of which is provided with inlet and outlet pipes for the passage of hydrocarbon vapor, substantially as and for the purpose described.

This specification signed and witnessed this 21st day of December, 1880.

THOS. A. EDISON.

Witnesses:

H. W. SEELY,

ERNEST J. BERGGREN.