(Model.)

T. A. EDISON.

CARBONIZER.

No. 248,423. Patented Oct. 18, 1881.

Fig. 1.

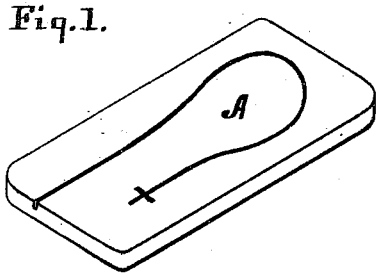


Fig. 2.

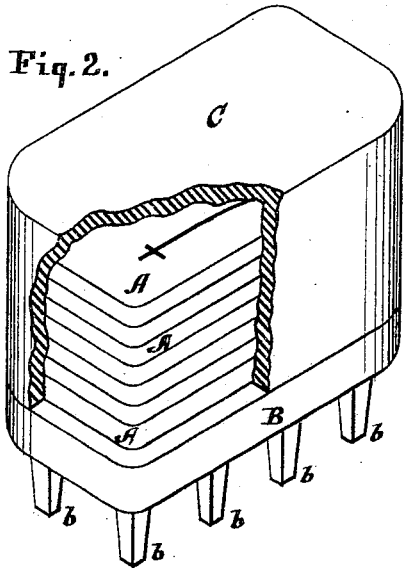
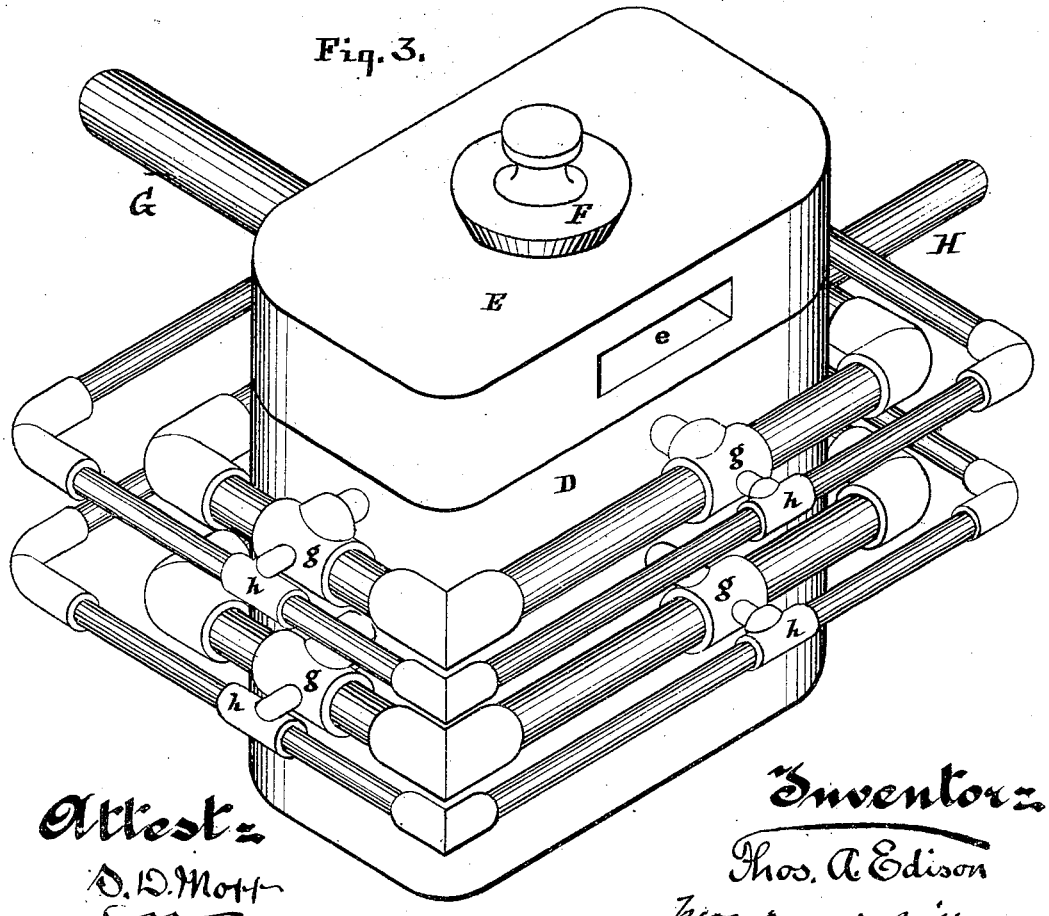


Fig. 3.



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UNITED STATES PATENT OFFICE.

THOMAS A. EDISON, OF MENLO PARK, NEW JERSEY, ASSIGNOR TO THE EDISON ELECTRIC LIGHT COMPANY, OF NEW YORK, N. Y.

CARBONIZER.

SPECIFICATION forming part of Letters Patent No. 248,423, dated October 18, 1881.

Application filed August 11, 1880. (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 Carbonizer for Electric-Light Carbons; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

As explained in patents granted me and in prior applications for patents by me made, the carbon used in my electric lamps is a simple filament of carbon bent into the form usually designated "horseshoe." As also before explained, it is essential that the carbon should be uniform in size to insure equality of resistance and radiating-surface, and that they should be carbonized equally and evenly throughout their mass, and in such way as to preserve their shape free from warping or twisting.

In applications of even date herewith means and methods are shown for forming the slips or filaments for carbonization of uniform size, and carbonizing-plates in which the proper shape may be preserved during carbonization without warping or twisting.

The object of this invention is to furnish means for carbonization which will insure convenience of operation, economy, and equal carbonization.

To this end it consists in the device more particularly hereinafter described and claimed.

In the drawings, Figure 1 is a view of a carbonizing-plate grooved to receive a filament. Fig. 2 is a perspective view of a series of the plates in the carbonizing-flask. Fig. 3 is a perspective view of the carbonizing-oven.

A is a carbonizing-plate, grooved to receive a filament and to have it secured therein, as more fully described in an application therefor of even date herewith. The carbonizing-flask is composed of two portions, B and C.

B is a base, provided with numerous legs, *b b b*, in order to raise it above the bottom of the oven to permit free passage of heat around the flask. Upon B is arranged a series of the plates A, each containing a filament, and over the series is placed the cover C, securing them all upon the base and within the flask. The flask so filled is placed within the oven D, provided with the cover E, an exit, *e*, for the escape of products of combustion being provided.

A peep-hole may be provided, which is closed by cover F, through which the condition of the flask may be observed.

A pipe, G, connected to a source of supply of any gaseous fuel, passes around the oven in several branches, inlet-branches *g g* therefrom conveying the gas in as many places as necessary to the interior of the oven for consumption.

H is a pipe or tube connected to a suitable air-blast, and passing around the oven in the same manner as G, and from which lead branch pipes *h h h*, one passing into each branch inlet *g*, so that air under pressure is mingled with the gas at the point of combustion, furnishing a supply of air for proper combustion and insuring the necessary high degree of heat. Both G and H are provided with ordinary stop cocks or valves, by which the supply of either air or gas, absolutely or relatively to each other, may be regulated. The oven D is of such size that when the flask is placed in position therein there is a space on every side between the flask and the oven. The flask, filled with plates and filaments, is placed in the oven and the fires kindled by lighting the gas.

By means of the valves before mentioned, the supply of fuel may be so regulated that at first the flask is subjected to a moderate heat, which may be gradually brought up to the required point. The blast insures a high degree of heat directed immediately upon the flask and evenly distributed thereover. When heated for a sufficient time, the gas is turned off, and the flask may be allowed to cool down in the oven.

During the process of carbonization there is danger that the material under treatment may be oxidized to such an extent as to interfere with proper carbonization. This oxidation is due to the oxygen in the air present in the flask and to the oxygen eliminated from the wood itself at the commencement of the process. To prevent this an auxiliary tube is used,

passing into the flask C, and through it is introduced therein, prior to firing and during the burning, an atmosphere of hydrogen of some hydrocarbon, or of some other element which will take up the oxygen and prevent its action upon the filaments. This feature I do not claim herein, as such will form the subject of a separate application.

What I claim is—

The carbonizing-oven consisting of a case adapted to contain a carbonizing-flask and a system of fuel and air supply pipes, combined as described, encircling the oven and arranged to heat the carbonizing-flask upon all its sides, substantially as shown and set forth.

This specification signed and witnessed this 30th day of July, 1880.

THOS. A. EDISON.

Witnesses:
WM. CARMAN,
S. L. GRIFFIN.