

(No Model.)

T. A. EDISON.

Manufacture of Carbons for Incandescent Electric Lamps.

No. 238,868.

Patented March 15, 1881.



Fig. 1.

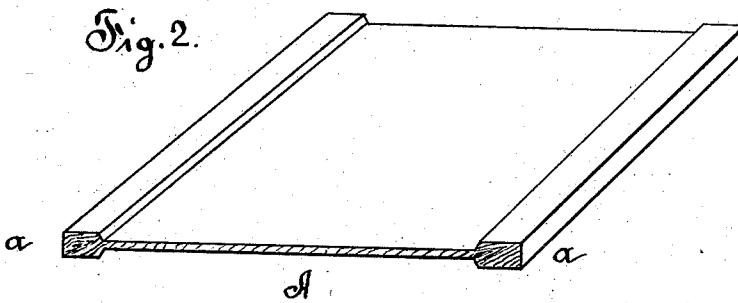
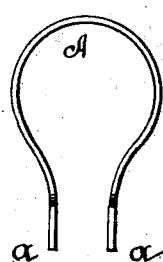


Fig. 2.

Fig. 3.



Attest=

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# UNITED STATES PATENT OFFICE.

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## MANUFACTURE OF CARBONS FOR INCANDESCENT ELECTRIC LAMPS.

SPECIFICATION forming part of Letters Patent No. 238,868, dated March 15, 1881.

Application filed May 24, 1880. (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 Method of Manufacturing 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 drawings, and to the letters of reference marked thereon.

In other applications for patents by me made has been set out the necessity, in electric lamps lighting by incandescence, of carbons of high resistance in small bulk, and of little or no tendency to disintegration upon being highly heated; and, further, that simple wood carbons of unchanged structural condition possess these qualities.

The invention in the present case relates to a method of manufacturing such carbons.

As is well known, I ordinarily use in my lamps an incandescent material of very small cross-section, often a mere filament. This necessitates a broadening or thickening at the ends, in order to afford good contact with the clamps used. A block of wood is taken and cut or formed so that its center shall be a web, bounded at the sides by thicker portions. The grain of the wood is from side to side, and the thickness of the web is about the desired breadth of the carbon. From the block so fashioned pieces whose width approximates the desired thickness of the carbon are split, shaved, or cut off. These pieces are then sufficiently softened by moisture and heat so as to be bent into a circular or horseshoe or oval form, and they are retained in such shape in a proper carbonizing-flask and carbonized.

In the drawings, Figure 2 represents a block formed as before described; Fig. 1, a piece

split, cut, or shaved therefrom; and Fig. 3, the same after carbonization.

A is the web of the block, the center of the block being reduced in thickness, while the ends *a a* are left broad or thickened for fastening to the clamps. This block is split, cut, or shaved into pieces, like Fig. 2, which are then bent into shape shown in Fig. 3, or into any other desirable shape, and then carbonized while in such forms. The result is a carbon with broadened ends for clamping, unitary with itself, and which is porous, structurally unaltered, of high resistance, and with a minimum tendency to disintegration under high heat.

It is evident that the block shown in Fig. 2 could be made of disintegrated fiber, paper-pulp, papier-maché, &c., by powerful pressure, and the individual carbons then cut off from such block; but in practice I so far prefer to make the block and resultant carbons of wood.

What I claim is—

1. The method of forming carbons for electric lamps, which consists in shaping a block of wood as described, then cutting, splitting, or shaving into straight pieces, adapted for simple carbons, then bending such pieces into the desired form and carbonizing in such form, substantially as described.

2. The block for the manufacture of carbons for electric lamps, consisting of the central web and thickened or broadened ends, substantially as described.

This specification signed and witnessed this 25th day of April, 1880.

THOMAS A. EDISON.

Witnesses:

W.M. CARMAN,  
Z. F. WILBER.