(No Model.)

T. A. EDISON.

CARBON FOR ELECTRIC LAMPS.

No. 251,540. Patented Dec. 27, 1881.

Fig. 1.

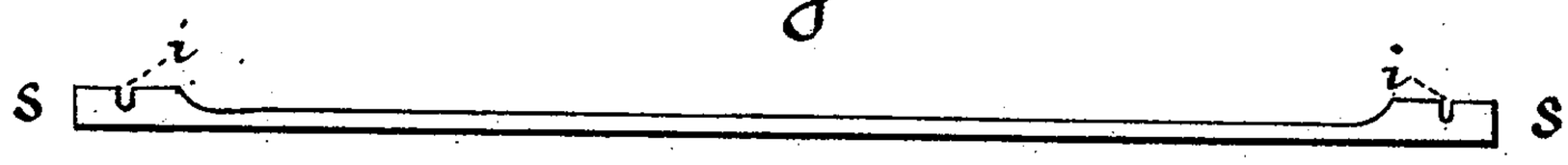
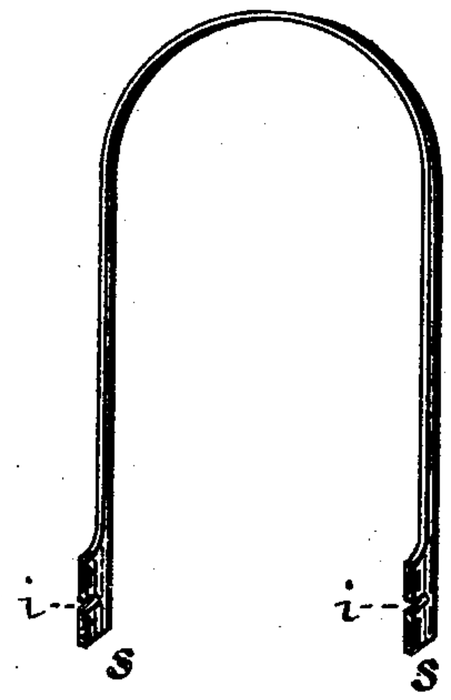


Fig. 2.



WITNESSES:

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CARBON FOR ELECTRIC LAMPS.

SPECIFICATION forming part of Letters Patent No. 251,540, dated December 27, 1881.

Application filed August 6, 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 Improvement in 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 incandescent electric lighting I prefer to use for the incandescing conductor a small slip or filament of carbon bent into a curve, now generally designated the "horseshoe" carbon. Great success has attended the use of such carbons made from a naturally fibrous material capable of carbonization—for instance, wood formed into proper shape and then carbonized. I have found, however, that the best results are attained with the use of those materials which are fibrous, and wherein the fibers making up the mass of material lie naturally parallel, so that the individual fibers extend from end to end, increasing its strength and obviating danger of breakage from cross or oblique grain.

To produce the best results in giving light it is essential that the carbons should be of uniform size throughout the portion that is rendered incandescent, in order that radiating-surface and resistance be regular and uniform, insuring even heating and incandescence.

The object of this invention, therefore, is to produce a small slip or filament for the carbon having parallel fibers and of uniform size; and to this end it consists in a carbon made of the materials and in the way more particularly hereinafter described and claimed.

I have found that for the purposes of the carbon filament cane bamboo is eminently suited, it having long parallel fibers, and with a minimum of cementing or other foreign matters. The cane bamboo is cut into strips, from which the hard glossy or silicious exterior and the pithy interior have been before removed, or from which they are now removed. Each strip is then cut or shaved by proper devices or machinery until its body, or part intended for light-giving, is reduced to the desired form and size, the ends being formed into enlargements, affording a good bearing or surface for uniting the finished carbons to metallic conductors. It is preferable that these enlargements of the ends be formed entirely upon side of the finished slip which forms the blank for carbonization, instead of upon both sides. This construction enables the blank, when placed on edge in the carbonizer, to more readily move therein as it is contracted in the process of carbonization. As the material shrinks in the process of carbonization, the finished carbon being smaller than the blank, allowance is to be made therefor in preparing the blanks, and they should be made proportionately larger than the size desired for the finished carbon. One or a number of blanks thus prepared are then placed in a suitable carbonizing oven or flask and thoroughly carbonized.

In the drawings, Figure 1 represents a blank made from cane bamboo, ready for carbonization, having enlarged or clamping ends *s s* formed on one edge only, while in these enlarged or clamping ends are the slots *i i*, by which the slips may be secured in the carbonizer, and which also may form the holes through which pass the screws or clamps, if clamps be used for securing the finished carbon to leading-in wires. Fig. 2 shows in perspective a finished carbon made from the blank shown in Fig. 1.

What I claim is—

1. A slip or filament for forming on carbonization the incandescing conductor of an electric light, made of bamboo or similar fiber, substantially as set forth.

2. An incandescing carbon conductor for electric lights, made from cane bamboo or similar fiber, substantially as set forth.

This specification signed and witnessed this 28th day of July, 1880.

THOS. A. EDISON.

Witnesses:

CHAS. BATCHELOR,

G. E. GOURAND.