

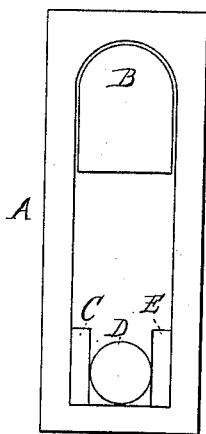
(No Model.)

T. A. EDISON.  
MOLD FOR CARBONIZING.

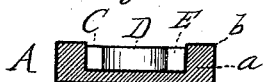
No. 334,853.

Patented Jan. 26, 1886.

*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



WITNESSES:

*E. C. Rowland*  
*W. Seely*

INVENTOR:

*Thomas A. Edison,*  
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*Att'y.*

# UNITED STATES PATENT OFFICE.

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EDISON ELECTRIC LIGHT COMPANY, OF NEW YORK, N. Y.

## MOLD FOR CARBONIZING.

SPECIFICATION forming part of Letters Patent No. 334,853, dated January 26, 1886.

Application filed August 14, 1882. Serial No. 69,262. (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 Molds for Carbonizing; 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.

The object of the present invention is to produce molds for carbonizing filaments for incandescing conductors for electric lamps, having weights to hold the filaments under strain and permitting contraction, which will be cheaper in construction than the nickel molds heretofore employed, will not be liable to be destroyed by the excessive heat to which the molds are occasionally subjected in carbonizing, and will be efficient in operation, in that they will not absorb gases to a detrimental extent or change in any respect the nature of the carbon filaments.

The object is accomplished by forming the mold of hard carbon—such as gas-retort carbon—which is powdered and mixed with tar or other cementing or binding carbonaceous or carbonizable material. The molds are then formed from this mixture by means of heavy pressure, and are then baked in a suitable oven or retort. Large quantities of the shaped molds are then put into a chamber and heated, and the vapor of a decomposable carbon compound is passed over them, forming a deposit of hard steel-like carbon. This coating of deposited carbon is exceedingly hard and compact, and does not readily absorb gases. It prevents the body of the mold from so doing to any detrimental extent, and reduces and makes even the friction on the surface of the mold, permitting the weights which hold the filament under strain to draw up evenly. The weights used within the mold to hold the filament under strain are preferably constructed with a core of nickel or other heavy element or compound fusible at high temperature only, which core is covered with the mixture of hard carbon and a binding carbonaceous or carbonizable material and baked, after which a coating of hard steel-like carbon may be deposited upon it or not, as desired.

The foregoing will be better understood by

reference to the drawings, in which Figure 1 is a top view of the mold; Fig. 2, a cross-section of the same, the weights being shown in elevation; and Fig. 3, a sectional view of one of the weights.

A is the mold, which is shaped like the molds heretofore used by me for holding filaments while being carbonized, it being recessed on one side to receive the filament.

B C D E are the weights for retaining the filament in position and holding it under strain while carbonizing, which weights are also preferably of the shape heretofore employed by me.

The mold is made of a mixture, *a*, composed of powdered hard carbon—such as gas-retort carbon—and a cementing or binding carbonaceous or carbonizable material, for which purpose tar may be used. The mold is formed from this mixture under heavy pressure and then baked, after which it is provided with a coating, *b*, of hard steel-like carbon, which is produced by heating the mold in a suitable chamber and passing over it the vapor of a decomposable compound of carbon.

The weights are constructed with cores, *c*, of nickel or other heavy element or compound fusible only at high temperatures, the cores being covered with a coating, *d*, composed of a mixture of powdered hard carbon and a binding carbonaceous or carbonizable material, after which hard steel-like carbon may be deposited upon the coating *d*; or the weights may be used without such extra coating.

What I claim is—

1. A carbon mold for carbonizing, provided with a deposited coating of hard steel-like carbon, substantially as set forth.

2. The weights for a carbonizing-mold, each constructed with an external carbon covering and a core of heavier material, substantially as set forth.

3. The combination, with a carbonizing-mold constructed of carbon, of carbon-covered weights, substantially as set forth.

This specification signed and witnessed this 7th day of July, 1882.

THOMAS A. EDISON.

Witnesses:

RICHD. N. DYER,  
EDWARD H. PYATT.