(No. Model.)

L. H. LATIMER.

PROCESS OF MANUFACTURING CARBONS.

No. 252,386. Patented Jan. 17, 1882.

Fig. 1.

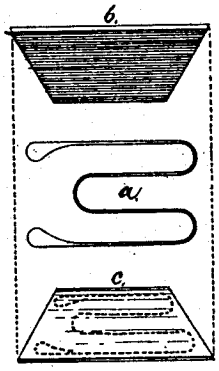


Fig. 2.

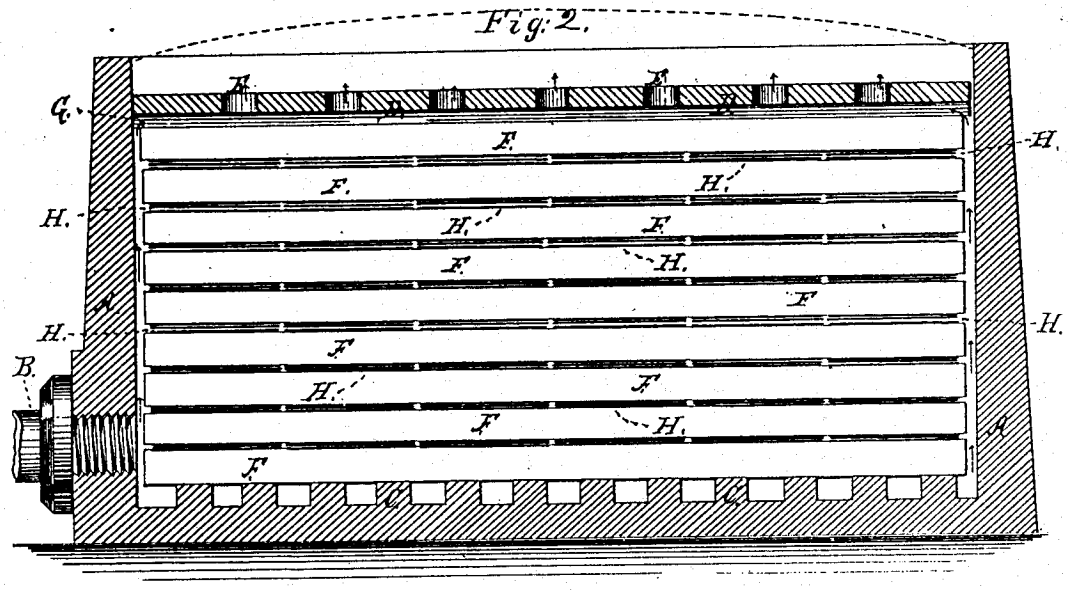
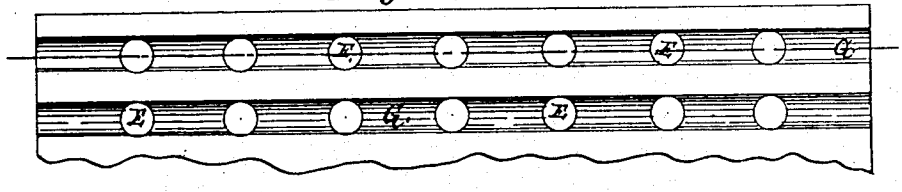


Fig. 3.



Witnesses.
Edw. Bulger
A. P. Ransom

Inventor.
Lewis H. Latimer
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UNITED STATES PATENT OFFICE.

LEWIS H. LATIMER, OF NEW YORK, N. Y., ASSIGNOR TO THE UNITED STATES ELECTRIC LIGHTING COMPANY, OF SAME PLACE.

PROCESS OF MANUFACTURING CARBONS.

SPECIFICATION forming part of Letters Patent No. 252,386, dated January 17, 1882.

Application filed February 19, 1881. (No model.)

To all whom it may concern:

Be it known that I, LEWIS H. LATIMER, of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in the Manufacture of Carbons for Electric Lamps, of which the following is a specification, reference being had to the drawings accompanying and forming a part thereof.

My invention relates more particularly to carbonizing the conductors for incandescent lamps, though it is equally applicable to the manufacture of delicate sheets or strips of dense and tough carbon designed for any purpose whatever; and it consists in carbonizing blanks and forms of textile, fibrous, or other carbonizable material in protecting-envelopes of a material whose rate of contraction, when exposed to a high temperature and under conditions which preclude the admission of air, is the same, or approximately the same, as their own.

In the methods of carbonizing employed previous to my invention the blanks cut from fibrous or textile materials were confined in grooves or laid between plates of metal or carbon and charred in a suitable closed muffle. To prevent the strips from adhering to the plates they were coated with graphite or laid between strips of thin tissue-paper. When heated the confining-plates expand, while the blanks between them contract very considerably under the intense heat of the furnace, so that many of them are broken and distorted in consequence of their extremely-delicate structure and their tendency to shift their position between the plates. This I avoid by the method I propose, and which is illustrated in the accompanying drawings, in which—

Figure 1 illustrates the method of inclosing the blanks in the protective envelopes; Fig. 2, sectional view of the carbonizer, and Fig 3 a plan view of a portion of the cover for use therewith.

The blanks *a*, of fibrous material, usually such as paper, strips of wood, or the like, are inclosed in small envelopes composed of sheets of card-board *b c*, which are sufficiently strong to prevent cracking or crumbling when carbonized.

The blanks are prevented from sticking to the envelopes by coating them or the inner faces of the envelopes with graphite, lamp-black, or similar non-adhesive substance, or by interposing between the two strips of tissue-paper.

A is a retort or muffle for carbonizing the blanks. It is composed of a box of refractory material with handle B and a corrugated bottom, C, upon which is placed a block or plate, F, of fire-clay, metal, or other refractory material. Upon this plate F are spread a number of the envelopes H, inclosing the blanks to be carbonized. Over these another plate, of similar character, is laid, then other enveloped blanks and plates until the box is nearly full. The whole is covered by a perforated plate, D, on which is placed a layer of sand, some raw cotton being spread over the perforations E in the cover to prevent the sand from filtering through into the carbonizer. This also prevents the access of air into the box, while allowing the gas driven off by the heat to escape. The plates F are somewhat smaller than the interior of the box A, so that the gases which are driven off by the heat, or which may be introduced in the process of carbonization, have free passage for their escape, as shown by the arrows in Fig. 2. The weight of the superposed cover and sand exerts a continuous pressure on the layers of blanks between the plates, thus lessening their tendency to buckle or warp, and confining their only injurious movement to a horizontal contraction. By the use of the paper sheets or envelopes inclosing the delicate blanks, the latter are protected from attrition with the plates when the latter are expanded by the heat.

The sheets *b c* must be of reasonably stout card-board, or of a substance of such tenacity of fiber that it will not easily crack or break when carbonized.

I would also state that instead of an envelope for each blank several blanks may be inclosed in each envelope; but the arrangement shown is the one preferred by me, as in practice I have found it the most practicable and productive of the best results.

I am aware that blanks of the kind described have been carbonized in a closed muffle or flask

and between plates of iron, carbon, or other refractory material. I am also aware that for preventing the blanks from adhering to the said plates, strips of tissue-paper have been laid between them, and this I have described in conjunction with my present invention, but do not desire to lay claim herein to the same, broadly; but,

Having now described my invention, what I claim is—

1. The process of carbonizing shapes or blanks of carbonizable material, substantially as described, which consists in subjecting the same to a high temperature while inclosed in envelopes or between sheets of card-board or equivalent material whose rate of expansion and contraction is the same, or approximately the same, as their own.

2. The process of carbonizing shapes or blanks of fibrous or textile material under pressure and between sheets or envelopes of card-board or equivalent material whose rate of expansion and contraction when exposed to heat is the same, or approximately the same, as their own.

In testimony whereof I have hereunto set my hand this 18th day of February, 1881.

L. H. LATIMER.

Witnesses:
EDWARD P. ROBERTS,
JOSEPH V. NICHOLS.