L. H. LATIMER.
PROCESS OF MANUFACTURING CARBONS.
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 hereof.

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 pur-
pose whatever; and it consists in carbonizing
blanks and forms of textile, fibrous, or other
carbonizable material in protecting-vehicles
of a material whose rate of contraction, when
exposed to a high temperature and under con-
ditions which preclude the admission of air, is
the same, or approximately the same, as their
own.

In the methods of carbonizing employed pre-
vious to my invention the blanks cut from
fibrous or textile materials were confined in
grooves or laid between plates of metal or car-
bon 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 be-
tween 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, of fibrous material, usually
such as paper, strips of wood, or the like, are
inclosed in small envelopes composed of sheets
of card-board, which are sufficiently strong
to prevent cracking or crumbling when carbon-
ized.

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 bot-
tom, C, upon which is placed a block or plate, 60
F, of fire-clay, metal, or other refractory mate-
rial. Upon this plate F are spread a number
of the envelopes H, inclosing the blanks to be
inclosed in the cover to prevent the sand from filtering
through into the carbonizer. This also pre-
vents the access of air into the box, while al-
lowing 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 in-
roduced 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 pa-
per 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
cord-board, or of a substance of such tenacity
c of fiber that it will not easily crack or break
when carbonized.

I would also state that instead of an envel-
lope for each blank several blanks may be in-
closed in each envelope; but the arrange-
ment shown is the one preferred by me, as in prac-
tice 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.