

No. 653,468.

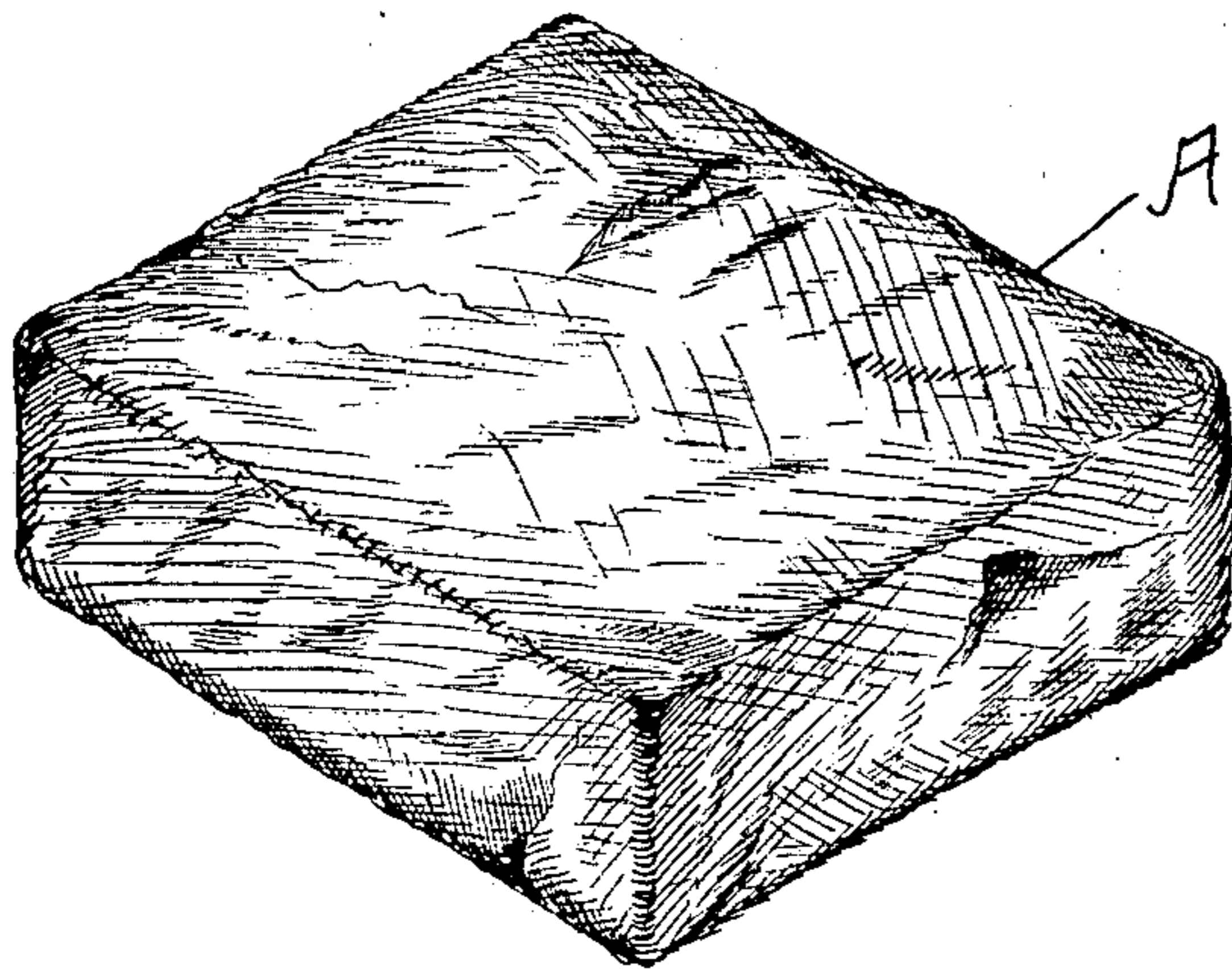
Patented July 10, 1900.

W. J. BURKE.

METHOD OF RENDERING ANTHRACITE COAL CONDUCTIVE, &c.

(Application filed Apr. 27, 1900.)

(No Model.)



Witnesses
J. L. Curran
Geo M. Coppenhafer,

Inventor
Wm J. Burke
by *Geo H. Evans*
Attorney

UNITED STATES PATENT OFFICE.

WILLIAM J. BURKE, OF SCRANTON, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO HENRY A. KAUFHOLD, OF SAME PLACE.

METHOD OF RENDERING ANTHRACITE COAL CONDUCTIVE, &c.

SPECIFICATION forming part of Letters Patent No. 653,468, dated July 10, 1900.

Application filed April 27, 1900. Serial No. 14,622. (No specimens.)

To all whom it may concern:

Be it known that I, WILLIAM J. BURKE, a citizen of the United States, residing at Scranton, Laekawanna county, Pennsylvania, have
5 invented a certain new and useful Method of Rendering Anthracite Coal Conductive and the Article Produced Thereby, of which the following is a specification.

My invention relates to the production of
10 a conductive material for use in electrical and metallurgical apparatuses.

The object of my invention is to so treat anthracite or hard coal in a retort closed to external air as to drive off all impurities in
15 the form of gases until practically-pure commercial carbon is produced, the article so produced being a good conductor of electricity.

The invention will first be described and then specifically pointed out in the claims.

20 The drawing shows in perspective an electric brush or conductor formed of a single piece of my new conducting material.

In carrying out my improved process I take anthracite or hard coal of any size and place
25 it in a suitable retort. This retort I fill to within a short distance of the top and then place a sheet of paper or other suitable material upon the coal, after which I seal the top with clay, upon which I place a covering of
30 fine coal dust or ashes to prevent air from entering the retort. Heat will now be applied to the exterior of the retort sufficient to drive off the impurities contained in the coal, and these impurities issue from the sealed top of
35 the retort in the form of gases, which ignite and are consumed. This heating is kept up for several hours, or until the gases from the retort cease to burn. I have produced a good conductor of electricity by this method in
40 about two hours; but a longer time may be taken without injury to the product and according to the use to which the product may be employed. It is best to allow the material thus treated to cool gradually in the retort
45 without exposure to the atmosphere.

The anthracite or hard coal treated by my method, where electric pencils, brushes, electrodes, or contacts are to be formed, is in lumps or blocks, and after treatment the pen-

cils or other forms of conductors may be made
50 by turning them out in a lathe or other machine, or, if preferred, these pencils, &c., may be first formed by suitable machinery from lumps or blocks of coal and then placed in the retort. Where a granular conductor is
55 to be formed—such, for instance, as that employed as a core between the electrodes of an electrical metallurgical furnace—I take granular anthracite or hard coal and subject it to the foregoing process, after which it is ready
60 for use. In the drawing the brush A shown was first formed from a lump of anthracite coal and then subjected to my above-described process or method of treatment. The carbon thus produced may also be finely ground and
65 employed as a “facing” for molds in foundry-work instead of the graphite and other expensive facings now employed to keep the sand from adhering to the molded articles. My new conducting material may also be em-
70 ployed for heating by electricity.

In my present process I do not add to the coal any oleaginous material and also dispense with several steps and cheapen the product claimed in my allowed application,
75 Serial No. 740,573, filed December 16, 1899.

What I claim as new, and desire to secure by Letters Patent, is—

1. The herein-described method of rendering anthracite or hard coal electrically con-
80 ductive, or of transforming it into a conductor, which consists in heating the same in its natural condition of solidity, in a retort closed to external influences until the impurities are
85 driven off.

2. The herein-described method of rendering anthracite or hard coal electrically conductive, or of transforming it into a conductor, which consists in placing the same in a
90 retort, then covering the coal with a layer of suitable fabric, then applying a layer of clay and finally a layer of coal dust or ashes, then heating the retort to drive out the objectionable elements in the form of gases and to convert the coal to commercially-pure carbon,
95 and continuing the heat till the escaping gases cease to burn.

3. As a new article of manufacture, con-

ducting-carbon formed from anthracite or
hard coal by freeing it from its volatile non-
conducting elements or constituents.

4. As a new article of manufacture, a car-
5 bon formed from a piece of anthracite coal
freed from its volatile non-conducting ele-
ments or constituents and cut to shape.

In testimony whereof I affix my signature
in presence of two witnesses.

WILLIAM J. BURKE.

Witnesses:

GRACE P. BRERETON,
GEO. H. EVANS.