

UNITED STATES PATENT OFFICE.

GEORGE LANDER, OF IRWIN, PENNSYLVANIA.

IMPROVEMENT IN MODES OF COKING FOSSIL COAL.

Specification forming part of Letters Patent No. 124,689, dated March 19, 1872.

To all whom it may concern:

Be it known that I, GEORGE LANDER, of Irwin, in the State of Pennsylvania, have invented or discovered a new and useful Improvement in utilizing slack of certain kinds of coal not having sufficient bitumen to admit of its being coked by any known process.

The nature of my invention or discovery consists in the method, hereinafter described, for converting into coke the slack of that kind of coal found deposited near Sharon, in the county of Mercer, in the State of Pennsylvania, and also found in many other parts of the United States, which coal, not having a full or adequate supply of bitumen, its slack has not been considered available and useful for making coke.

To enable others skilled in the art to which it is most nearly connected to use my invention or discovery, I will proceed to describe my method of converting the kind of slack above referred to into a good article of coke.

I use any of the known forms of "coke ovens," but, prior to charging the oven with the kind of slack hereinbefore described, I heat the oven to a high degree of heat; I then charge the oven with the slack, and allow it to "sweat" until the bitumen in the particles of the slack comes to their surface, so that they become attached to each other, become coagulated, and form one mass or a series of masses. At this point I ignite the mass or masses of slack, and let it or them burn in the same manner that "coke burners" do lump coal, or slack of such coal as that ordinarily used for making coke, after which it is removed from the oven in the usual manner, and by the means commonly used for that purpose. I then charge the oven with a second lot of the slack, and allow its particles to sweat and coagulate, and burn it as in the first instance. I have described the slack of coal as not hav-

ing sufficient bitumen to admit of its being coked by any known process, and have given one locality where such coal and slack may be found, for the reason that such description of the kind of slack which I utilize would be better understood than by trying to specify such slack or coal by any of the names given by mineralogists, who divide the various kinds of fossil coal into three species—viz: anthracite or glance coal, black or bituminous coal, and brown coal or lignite—under which are included many varieties, such as cannel coal, bovey coal, jet coal, &c.

By coking the slack in the manner hereinbefore described, I am enabled to form a good and merchantable coke, deprived of bitumen, sulphur, or other extraneous or volatile matter, and thereby utilize the slack which hitherto, in the locality hereinbefore stated, has been considered worthless. The importance and value of my invention or discovery will be more apparent by stating the fact that in the said locality and adjacent country there are many large and important blast-furnaces and iron works, and the utilizing of the large quantities of slack formed from the coal found in the said locality will tend greatly to the development of the iron interests in that part of the country, as well as in other parts where such coal and slack may be found.

Having thus described my invention or discovery, what I claim as new, is—

Utilizing the slack of that species of coal not having sufficient bitumen to admit of its being coked by any known process, by subjecting such slack to the treatment hereinbefore described, whereby a new article of manufacture is obtained.

GEO. LANDER.

Witnesses:

JAMES J. JOHNSTON,
WM. W. S. DYRE.