

UNITED STATES PATENT OFFICE.

HORATIO M. SMITH, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF HIS RIGHT TO NELSON C. GRIDLEY AND FRANCIS F. WARNER, OF SAME PLACE.

IMPROVEMENT IN THE MANUFACTURE OF FUEL FROM COAL DUST OR SLACK.

Specification forming part of Letters Patent No. **131,794**, dated October 1, 1872.

To all whom it may concern:

Be it known that I, HORATIO M. SMITH, of the city of Chicago, county of Cook and State of Illinois, have discovered a new, useful, and Improved Process for Rendering Coal Dust and Slack useful and merchantable as a Fuel for general purposes; and I do hereby declare the following to be a full, clear, and exact description thereof, which will enable others skilled in the art to which my invention appertains to use the same.

I am aware that coal dust and slack have been rendered useful as a fuel by concreting its particles into masses of various sizes, and this has been done by rendering the particles adhesive by mixing suitable substances with them. The masses so formed are at first plastic, and then allowed to set or harden naturally, or are hardened by artificial means. Some of the objectionable features in said process are, that the plastic masses cannot be compactly laid together during the process of hardening without danger of amalgamation, and the completed product of the process is too readily disintegrable during transportation.

My invention relates to the process above referred to, without regard to those details which may be varied without eliminating the plastic and cohesive conditions essential to my discovery; and it consists in permanently incasing a concreted and plastic mass of coal dust and slack, either or both, in a readily combustible case or covering.

In my improved process I first prepare coal dust and slack, either or both, in a concreted and plastic mass, by any suitable and known means, and then firmly and permanently pack the same within cases, preferably cylindrical in form and open at both ends, and of various

dimensions, made of any suitable and readily combustible fabric, or other suitable and combustible material, with or without being impervious to water, and preferably of paper, paste-board, or tar-board.

By this means I am enabled to render the concreted and plastic coal dust and slack, either or both, capable of being compactly arranged together during the hardening process with less danger of the masses amalgamating with each other; preventing it from disintegration during transportation, and thereby rendering it useful and merchantable as a fuel for general purposes. Additional advantages of my improved process are, that the casing tends to prevent amalgamation of the masses during combustion, renders it useful for domestic purposes, assists in kindling the coal, and admits of being handled with greater cleanliness.

Having thus described the nature and object of my discovery or invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The process of rendering coal dust and slack, either or both, useful and merchantable as a fuel by packing and permanently incasing concreted and plastic particles thereof in readily combustible cases, substantially as and for the purposes described.

2. As a new article of manufacture, concreted particles of coal dust and slack, either or both, incased in readily combustible cases, substantially as described.

HORATIO M. SMITH.

Witnesses:

N. C. GRIDLEY,
F. F. WARNER.