

UNITED STATES PATENT OFFICE.

F. C. PAYNE, OF NEW YORK, N. Y.

IMPROVED ARTIFICIAL FUEL.

Specification forming part of Letters Patent No. **15,935**, dated January 17, 1865.

To all whom it may concern:

Be it known that I, FREDERICK C. PAYNE, of No. 181 Canal street, in the city, county, and State of New York, have invented a new and useful Fuel; and I do hereby declare that the following is a full, clear, and exact description of the component parts of and mode of manufacturing the same.

The object aimed at in my invention is the utilization of the fine coal, known as "screenings," which accumulates at the coal-mines in such enormous quantities, and which has hitherto been worse than worthless, all attempts at its utilization in any quantity having failed, and it being necessary to cart it away from the place where the screening operation is performed.

My invention consists in mixing with the coal-screenings a small quantity of hydraulic lime, or, as it is sometimes termed, "hydraulic cement," or of hydraulic lime and plaster-of-paris, which, by the addition of a suitable quantity of water, produces the adhesion of the particles of coal and enables the conglomerate thus produced to be broken, up when dry, into lumps of a suitable size for use in stoves, grates, or furnaces.

When hydraulic lime alone is used as a means of producing the adhesion of the particles of coal I consider the proper quantity to be about five (5) parts, by weight, for every hundred (100) parts of coal; but when hydraulic lime and plaster-of-paris are both used I prefer to use about three (3) parts, by weight,

of hydraulic lime and two (2) parts, by weight, of plaster-of-paris. The hydraulic lime is preferable on account of its cheapness; but by mixing with it a suitable proportion of plaster-of-paris it is prevented from giving the fuel too hard and stony a character, and the fuel is made to burn more freely.

The hydraulic lime, or hydraulic lime and plaster-of-paris, is mixed with the coal-screenings in a dry state, and sufficient water is added to bind the whole together in a mass resembling stiff mortar in consistency. This mass is then spread in a layer of thickness according to the size of the lumps desired over a floor or flat surface and allowed to dry, and, when dry, is taken up by shovels or other means and broken into lumps of suitable size for use.

The screenings of either anthracite or other coal may be used for the manufacture of this fuel.

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

1. A fuel composed of conglomerate of coal-screenings, or small particles of coal, and hydraulic lime, substantially as herein described.

2. The use of plaster-of-paris with hydraulic lime, substantially as herein described, in cementing together coal-screenings or small particles of coal, to render the latter serviceable as fuel.

F. C. PAYNE.

Witnesses:

THOS. I. GRIFFIN,
J. W. COOMBS.