

# UNITED STATES PATENT OFFICE.

JOSEPH SIMONS, OF NEW YORK, N. Y.

## FUEL BRIQUET.

SPECIFICATION forming part of Letters Patent No. 713,512, dated November 11, 1902.

Application filed February 25, 1902. Serial No. 95,621. (No specimens.)

*To all whom it may concern:*

Be it known that I, JOSEPH SIMONS, a subject of the German Emperor, and a resident of the borough of Manhattan, in the city, county, and State of New York, have invented certain new and useful Improvements in Fuel Briquets, of which the following is a specification.

This invention relates to the class of fuel made up from comminuted combustible material—such, for example, as culm from coal-mines made into briquets, blocks, or pieces with the aid of a binder and pressure in suitable molds.

The invention relates, mainly, to the composition of the binder employed for tying together the particles of fuel or combustible material; but it resides also in the briquet or block produced as well.

In carrying out my invention I mix together a saccharine substance in aqueous solution, plaster-of-paris, and comminuted combustible material. From this mass the blocks or briquets are formed, usually by molding under pressure. These briquets are allowed a sufficient time for the plaster-of-paris to set or harden and the briquets to dry, when they may be used as fuel.

If the briquets are to be exposed to moisture before use, they will be subjected to heat after molding above the point where the saccharine substance turns wholly or in part into caramel, and I find that this baking enables the briquets to absolutely resist moisture, while it hardens them in a manner to enable them to withstand any ordinary rough usage without breaking or crumbling.

In carrying out my invention in its preferred form I take about eighty parts, by weight, of culm, either of anthracite or bituminous coal, coke-brise, or a mixture thereof, and mix this with about twenty parts, by weight, of the binder. This binder consists of about fifteen parts, by weight, of fresh plaster-of-paris and an aqueous solution containing about five parts of molasses or the refuse from sugar-mills. The amount of water used should be sufficient to render the mass plastic and

cause the plaster to set. From this mass the briquets are molded, preferably in a briquet-machine. If allowed to dry in the air, it will require about twenty-four hours for the plaster to set and the briquets to become hard.

For general use where the briquets are liable to be exposed to dampness, moisture, or rain I bake them in a suitable oven or kiln, using heat enough to convert the saccharine substance into burnt caramel either wholly or superficially, when they become absolutely resistant to water.

As before stated, any comminuted combustible material may be employed in the briquets, but culm from the coal-mines or coke-brise will usually be employed. The saccharine substance to be employed in the binder will be by preference the cheaper, though impure, molasses from the beet-sugar mills; but any saccharine material may be employed, as glucose, cane-molasses, and the like.

The briquet made as above described will resist disintegration by water, will resist breaking from rough handling, and will not crumble when subjected to heat in the furnace or fire-box.

I do not restrict myself to the proportions of the ingredients of the briquet given above, as the quantities of the ingredients may be varied.

Having thus described my invention, I claim—

1. A fuel briquet containing fuel, plaster-of-paris, and saccharine matter, and which has been heated above the point where the saccharine matter turns into caramel wholly or in part.

2. A fuel briquet containing fuel, plaster-of-paris, and molasses, and which has been heated above the point where the molasses is converted into caramel wholly or in part.

In witness whereof I have hereunto signed my name, this 21st day of February, 1902, in the presence of two subscribing witnesses.

JOSEPH SIMONS.

Witnesses:

PETER A. ROSS,  
N. A. CONNETT.