

UNITED STATES PATENT OFFICE.

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FUEL BLOCK OR BRIQUET.

SPECIFICATION forming part of Letters Patent No. 711,242, dated October 14, 1902.

Application filed April 3, 1901. Renewed March 18, 1902. Serial No. 98,720. (No model.)

To all whom it may concern:

Be it known that I, FRANÇOIS CHAILLY, a citizen of the French Republic, and a resident of the borough of the Bronx, in the county of Westchester and city and State of New York, have invented certain Improvements in Fuel Blocks or Briquets, of which the following is a specification.

My invention relates to briquets or blocks composed of some form of comminuted combustible material formed into a hard mass with the aid of a binder.

In order to better understand my invention, it will be well to state that the conditions requisite in a fuel block or briquet are, first, the material used as a binder must be reasonably cheap and accessible at any place required and of such a character that only a small percentage need be used; second, it should be nearly or quite incombustible, so as to prevent the briquet from disintegrating or falling to pieces while burning; third, it should be of such a nature as to produce a lump or briquet which will not disintegrate under the action of water and one which shall be hard enough to bear rough handling with little or no chipping off or crumbling; fourth, it should be of such a character as to permit of the briquets being handled as soon as they leave the press or mold in which they are formed.

In carrying out my invention in its preferred form the dry comminuted fuel or combustible material is mixed with anhydrous gypsum or plaster-of-paris and dextrine in powder, preferably in about the following proportions, by weight: comminuted fuel, ninety parts; plaster-of-paris, eight parts; dextrine, two parts. When these are thoroughly mixed together, a little water is sprinkled over and mixed with the mass in quantity sufficient to hydrate the gypsum and dissolve the dextrine. The mass is then molded or pressed into briquets or blocks of suitable size for use.

As comminuted fuel I may use culm from the coal-mines—such as anthracite, lignite, bituminous coal of the various kinds, the form of combustible carbon known as “graphite,” and in general the refuse from coal-mines either obtained from screening lump

coal or when directly mined as culm—or I may utilize peat, sawdust, or any form of comminuted wood or vegetable matter, and these fuel materials may be used each by itself, or any two or more of them may be mixed together in any desired proportion.

The proportions of the ingredients may be varied without departing from my invention; but those given above will produce good results and especially when the fuel used is anthracite culm.

The plaster used must be anhydrous, so that it will set when mixed with water; but otherwise it need not be of the higher grades.

Under the phrase “dextrine” as herein used I mean to include heated starch of the same chemical composition as dextrine, although not so readily soluble in cold water as commercial dextrine. Hot water may of course be employed in making up the mass for shaping, molding, or pressing. The dextrine may be mixed dry with the plaster or it may be dissolved in water and mixed with the water used for hydrating the plaster.

The dextrine performs several important functions in the compound. It retards the setting of the plaster, so as to allow time for the mass to be molded, pressed, or formed before setting, it serves to produce a hard block or briquet which will resist rough handling, and it maintains the block or briquet intact during the combustion of the fuel, combining with the plaster in such a manner as to measurably resist both heat and moisture.

I do not restrict myself to any special kind of fuel material nor to any particular shape or size of the pieces, lumps, blocks, or briquets made from the composition described, as the fuel may vary in this respect according to the uses for which it is intended. In some cases it may be best to press the composition into briquets of uniform size and shape, while in other cases this will not be necessary.

I am well aware that briquets or blocks of artificial fuel have been before proposed and that the culm from coal-mines has been formed thus into blocks or masses with binders of various kinds; but so far as I am aware none of these has employed a binder of the

kind described, nor have they produced fuel blocks capable of properly resisting heat, water, and rough usage.

Having thus described my invention, I
5 claim—

1. A fuel block or briquet composed of comminuted fuel and a binder of plaster-of-paris and dextrine, substantially as set forth.

2. A fuel block or briquet composed of comminuted fuel and a binder of plaster-of-paris
10 and dextrine, in substantially the proportion,

by weight, of fuel ninety parts, plaster-of-paris eight parts, and dextrine two parts, substantially as set forth.

In witness whereof I have hereunto signed
15 my name, this 2d day of April, 1901, in the presence of two subscribing witnesses.

FRANÇOIS CHAILLY.

Witnesses:

HENRY CONNETT,
JOSEPH SIMONS.