

UNITED STATES PATENT OFFICE.

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COMPOUND FUEL.

No. 914,523.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ABRAHAM D. SHEPARD, citizen of the United States, residing in the city and county of San Francisco and State of California, have invented new and useful Improvements in Compound Fuel, of which the following is a specification.

My invention relates to a fuel, and it consists of a fuel-briquet consisting of a mixture of normally non-briquetable coal and a low grade briquetable coal containing an inherent binder which is liberated and made effective by pressure to unite the two coals.

In my invention I form a mixture of a low grade brown lignite, and a higher grade bituminous or anthracite coal, and I subject this mixture to pressure to cause the bituminous, resinous or other cohesive matter which the brown coal, or lignite, normally contains to become effective and to serve as the binder for the two coals, the resulting article being a briquet which possesses high value as a fuel and which is formed of a combination of two coals, one of which, the higher grade is normally of a non-briquetable character and is only capable of being formed into a briquet by the use of a separate binder.

It is recognized in the art that the higher grades of coal, such as anthracite, cannot be made into briquets without mixing therewith a coal tar, or some equivalent binder or cement, more or less expensive, and in many cases not readily combustible, and therefore loading the fuel with a certain proportion of matter useless for fuel purposes.

In carrying out my invention, I proceed substantially as follows: I take the cheap brown lignite which normally contains a relatively high proportion of resinous or other cohesive substance which can be started or made effective by subjecting the lignite to

heavy pressure, and I add to this brown lignite the normally non-briquetable anthracite or higher grade coals, after which I subject the combined materials to pressure with the result that the cohesive substance before mentioned and which is inherent in the brown lignite, becomes at once effective and by its union with the non-briquetable coals forms an effective binder for the two coals mentioned.

The coals which I use may be either waste in the form of coal dust or culm, or they may be pulverized to the degree of fineness required.

The coal dust or culm which results from the mining of the higher grade coals, is obtainable in large quantities, and is of little value in that condition, but when mixed with a brown lignite which in itself has a certain heating capacity, and also normally contains in itself the necessary bituminous, resinous, or cohesive substance to bind the whole into a solid briquet or block, suitable for fuel, I am enabled to produce a superior fuel briquet, without the addition of any non-combustible or other separate binder.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is:—

A fuel briquet consisting of a mixture of normally non-briquetable coal and a low grade briquetable coal containing an inherent binder which is liberated by pressure to unite the two coals.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

ABRAHAM D. SHEPARD.

Witnesses:

J. E. POLHEMN,
L. TASHEIRA.