UNITED STATES PATENT OFFICE.

JULIUS J. CZEPULL, OF LANCASTER, PENNSYLVANIA, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO CARBON-RAY COAL COMPANY, A CORPORATION OF PENNSYLVANIA.

ARTIFICIAL FUEL.

No. 845,336. Specification of Letters Patent. Patented Feb. 26, 1907.

Application filed June 23, 1906. Serial No. 323,176.

To all whom it may concern:

Be it known that I, JULIUS J. CZEPULL, a subject of the Emperor of Germany, residing at Lancaster, Pennsylvania, have invented certain new and useful Improvements in Artificial Fuel, of which the following is a specification.

It is the object of my invention to provide an effective binder for use in the making of briquets from anthracite-coal dust, commonly called "culm" or "slush," but constituting the fine carbon particles which up to the present time is absolute waste and has never been utilized. Many attempts have been made to secure a binder for this material; but so far as I am aware no binder has been produced which has been found to be sufficiently cheap in purpose or which would withstand exposure to the elements without disintegration or which would withstand the effect of combustion without falling to pieces.

It is the aim of my invention to produce a binder which shall first be economical and which will enable me to manufacture briquets from this waste product at a cost which will make it very much cheaper than the expense of mining the coal; secondly, the binder I have produced is not affected by water and may therefore be exposed to the elements without detriment or any danger of disintegration, and, finally, the briquet made of the particles of coal-dust secured together by my binder will burn without falling apart and until every particle of the briquet has been consumed. The importance of an efficient binder for the purpose described cannot be overestimated in view of the fact that millions of tons of this waste coal-dust is now to be found in the coal regions, and this waste is being added to out of every ton of coal mined.

In carrying out my present invention I take eight pounds of flour and reduce it to a pasty condition by the addition of hot water. I then dissolve three pounds of glue and add it to the paste, boiling the two together. I then take ten pounds of plaster-of-paris or gypsum and add to the mixture very slowly. Finally I take a pint of shellac and thoroughly incorporate this with the other ingredients. The amount of the binding material as described is just sufficient to mix up one ton of the coal-dust, and this is done very thoroughly, after which the coal-dust, with its binder, is pressed into briquet form in a suitable press. The briquets may be used as soon as they are made; but I prefer to let them season for a day or two.

What I claim is—

1. A binder for coal-dust consisting of flour, glue, plaster-of-paris and shellac in substantially the proportions specified, substantially as described.

2. A coal-briquet consisting of culm or coal-dust, the particles of which are bound together by a binder composed of flour, glue, plaster-of-paris, and shellac in substantially the proportions specified.

In testimony whereof I affix my signature in presence of two witnesses.

JULIUS J. CZEPULL.

Witnesses:

D. F. MAGEE,

EDW. R. HEITSHU.