

UNITED STATES PATENT OFFICE.

JULIUS J. CZEPULL, OF LANCASTER, PENNSYLVANIA, ASSIGNOR, BY
DIRECT AND MESNE ASSIGNMENTS, TO CARBON-RAY COAL COM-
PANY, 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, com-
monly called "culm" or "slush," but con-
stituting 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 mate-
rial; 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 bri-
quets 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 effi-
cient 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 wa-
ter. I then dissolve three pounds of glue
and add it to the paste, boiling the two to-
gether. 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 bind-
ing 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 pre-
fer 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.