

# United States Patent Office.

WILLIAM HAINSWORTH, OF ALLEGHENY, PENNSYLVANIA.

Letters Patent No. 109,894, dated December 6, 1870.

## IMPROVEMENT IN MOLDS AND CORES FOR METALLIC CASTINGS.

The Schedule referred to in these Letters Patent and making part of the same.

### *To all whom it may concern:*

Be it known that I, WILLIAM HAINSWORTH, of Allegheny, in the county of Allegheny and State of Pennsylvania, have invented a new and improved Method of Constructing Molds and Cores for Metallic Castings; and I do hereby declare the following to be a full, clear, and exact description of the same.

This invention consists in the use of pulverized coke dampened with sour beer, fire-clay water, or other similar and suitable fluid, as a substitute for sand in the construction of molds or cores for casting metal.

The quantity of such fluid that is commingled with pulverized coke should be sufficient, after suitable stirring and working, to reduce the mass to about the consistency of putty.

The mold or core is formed of this putty material in the same manner as from sand.

When steel is to be cast the coke and beer-molds or cores should be baked in an oven at the same temperature and for the same length of time as dry-sand molds or cores are baked.

For iron castings the dampened-coke molds or cores need no baking, and are at once ready for use.

In constructing cores for some of the finer kinds of castings manufacturers have heretofore been in the habit of mixing flour with the sand.

Pulverized coke, treated as above described, will answer for all kinds of castings without admixture with flour, although flour, charcoal, or other suitable material may be added to the coke without detriment.

The advantages to be derived from my invention are that castings made in molds or around cores constructed of pulverized coke, treated as herein specified, are solid, free from pores, perfectly smooth, true to the pattern, and ready for immediate use.

Having thus described my invention,

What I claim as new, and desire to secure by Letters Patent, is—

Pulverized coke, treated with sour beer, fire-clay water, or other similar fluid, as a material for molds or cores for casting metals, as specified.

WILLIAM HAINSWORTH.

Witnesses:

GEO. BAILEY,  
THOMAS DAVY.