UNITED STATES PATENT OFFICE.

LEVI HAAS, OF CHESTER, PENNSYLVANIA.

FUEL COMPOUND.

SPECIFICATION forming part of Letters Patent No. 394,486, dated December 11, 1888.

Application filed February 13, 1888. Serial No. 263,879. (No specimens.)

To all whom it may concern:

Be it known that I, LEVI HAAS, a citizen of the United States of America, residing at Chester, in the county of Delaware and State of Pennsylvania, have invented certain new and useful Improvements in Fuel Compounds, of which the following is a specification.

My invention pertains to an improved fuel compound designed as an auxiliary for producing more thorough combustion of coal and coke and a higher degree of heat than is ordinarily obtainable therefrom, and which is alike applicable either for domestic purposes, for the treatment of metallic ores as smelting, for the improvement of metal under process treatment, and for the prevention of hanging or scaffolding in the chimneys of furnaces. These results are thought to be produced by gases evolved from the materials comprising the compound, which gases, being inflammable and blended as emitted, produce in combustion a higher degree of heat than otherwise ordinarily obtainable.

In the preparation of my fuel compound I take about forty per cent. of the slag of furnaces, forty per cent. of coal, and twenty per cent. of lime or oyster-shells, the quantities being varied to suit the varying quality of said materials, and these I thoroughly intermingle in a dry state, after first pulverizing the same into at least a granulated condition. The compound thus produced I spread upon and mingle with the ore or metal designed to be employed in connection with any of the purposes aforesaid, and the quantity thus employed to each ton of metal in blast or other iron furnaces I vary to suit the more or less refractory character and quality of the ore—as a rule the higher-grade ores being found in practice to need a less quantity thereof than those of lower degree or grade, the quantity per ton requisite being in inverse proportion to the quality.

My compound also serves as an excellent fluxing material, and prevents what is called "hanging" or "scaffolding" of the ores on the walls of furnaces, which usually happens just above the fluxing-point, and which is not only detrimental as to the quality of the metal, but requires a considerable period to remove in placing the furnace in good working condition.

For domestic purposes I spread my fuel compound over the coal or coke, and it is ready for use for any or all heating purposes, as it may also be thus applied in the furnaces aforesaid.

I have found in practice that the inefficiency of ordinary fuel compounds is chiefly due to their solid or compact character, which prevents escape of the gaseous products of combustion, and thus largely prevents combustion, and hence the purpose and function of the porous slag aforesaid are to admit passage therethrough of gases as evolved, which it does most effectually, whereby a most superior and inexpensive fuel is produced.

Having fully described my invention, what I claim is—

A fuel compound composed of coal or coke, lime, and the slag of furnaces, prepared in the manner and in about the quantities substantially as specified.

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

LEVI HAAS.

Witnesses:
P. M. WASHABAUGH,
F. G. SWEENEY.