

# UNITED STATES PATENT OFFICE.

JAMES S. MCINTYRE, OF CLARINDA, IOWA.

## COMPOUND FOR INCREASING COMBUSTION OF COAL, &c.

SPECIFICATION forming part of Letters Patent No. 346,765, dated August 3, 1886.

Application filed January 16, 1886. Serial No. 188,777. (No specimens.)

*To all whom it may concern:*

Be it known that I, JAMES S. MCINTYRE, a citizen of the United States, residing at Clarinda, in the county of Page and State of Iowa, have invented new and useful Improvements in a Compound for Increasing Combustion of Coal, &c., of which the following is a specification.

This invention relates to a coal-saving powder or composition of matter for increasing the heating quality of coal and obviating accumulation of scale and soot in furnace and boiler flues.

My composition consists of the following ingredients, combined in about the proportions stated, namely: common fine salt, twenty-eight pounds; sulphate of soda, eighteen pounds; bicarbonate of soda, fourteen pounds; saltpeter, twelve pounds; carbonate of ammonia, five pounds; sulphate of zinc, four pounds; borax, five pounds; crushed rosin, seven pounds; ground charcoal, seven pounds. These ingredients are thoroughly mingled in a powdered state.

In using the above-described powder or composition I dissolve three pounds of said powder in a gallon of warm water, and then add thereto seven gallons of cold water. This quantity of the mixture, or eight gallons, is sprinkled evenly over one ton of coal, preferably while the coal is somewhat spread about, so as to permit an even distribution of the liquid.

By means of this composition the coal to

which it is applied is made capable of being burned with more economy than would otherwise result. The heating quality of the coal is greatly increased by the hydrogen liberated from the added composition, and the gaseous products of combustion are thoroughly consumed.

By using this composition in the manner described the furnace or boiler flues will also be kept clear from accumulations of soot, the formation of scale will be prevented, and previous deposits of soot and scale will be removed. The formation of clinkers is also prevented.

This composition permits a saving of from twenty to thirty per cent. of fuel, and when used in boiler-heating, effects the making of steam in a much shorter time and with less expense than usual.

What I claim as my invention is—

The herein-described composition of matter to be used for increasing the heating quality of coal, consisting of common salt, sulphate of soda, bicarbonate of soda, saltpeter, carbonate of ammonia, sulphate of zinc, borax, rosin, and charcoal, in about the proportions specified.

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

JAMES S. MCINTYRE.

Witnesses:

WARREN F. THUMMEL,  
JOSEPH LORANZ.