

UNITED STATES PATENT OFFICE.

JAMES JOWETT, OF BOLTON-LE-SANDS, ENGLAND.

FUEL.

964,523.

Specification of Letters Patent. Patented July 19, 1910.

No Drawing.

Application filed September 25, 1907. Serial No. 394,554.

To all whom it may concern:

Be it known that I, JAMES JOWETT, a subject of the King of Great Britain and Ireland, whose postal address is Chestnut Cottage, Bolton-le-Sands, in the county of Lancaster, England, have invented certain new and useful Improvements in and Relating to Fuel, of which the following is a specification.

10 This invention relates to improvements in fuel, and has for its object a process for the manufacture of a fuel in the nature of coke from any quality of coal worthy of the name. No special plant is needed for carrying out the process, same being conducted generally in ordinary retorts as used in gas manufacture, or in coke ovens. The said process consists in treating coal, "engine slack," or coke with certain chemicals in 20 certain proportions. With regard to the treatment of coal with a view to producing a fuel in the nature of coke, it has been found that certain qualities of coal which have hitherto been useless for coking, may 25 be treated, and turned into coke.

In order to produce the improved fuel from coal, for one charge of a retort, say in gas making, such charge usually being 3 cwt. a solution with say 2 gallons of water, 30 of 3 oz. of chlorate of potash, $1\frac{1}{2}$ oz. of saltpeter, and $\frac{1}{2}$ -1 dram of permanganate of potash, 1 oz. of chlorid of lime, and a small percentage of ordinary lime may be used, the total weight of chemicals for an average 35 coal being about 6 oz. to 3 cwt. of coal. The solution is sprayed over and into the coal, and the coal then placed in the retort and treated as in the ordinary process of gas manufacture. When it is desired to make 40 coke in coke ovens, the same process is carried out, the treated coal being placed in the ovens in the ordinary manner. These

processes give the best result, but a fuel of a freely burning and practically smokeless nature may result from treating or spraying 45 coke as made in any ordinary process.

The resultant fuel may be used in ordinary household grates, and with great advantage in blacksmiths' hearths, as clean welds may be made, and the metal will be 50 found not to warp during heating.

The fuel does not readily clinker, and the percentage of ash remaining from a fire of the fuel will be found to be exceedingly small, and the deleterious gases given off 55 from ordinary coke will be practically non-existent.

The addition of the chemicals to a burning fire has rather a tendency to extinguish same. I find the best result is obtained by 60 treating the coal before carbonization as hereinbefore described.

It will be understood that with varying qualities of coal, the quantities of chemicals will vary somewhat, those quantities given 65 being for an average coal.

What I claim as my invention is:—

The improved process of treating coal in gas manufacture which consists in adding thereto before heat is applied chlorate of 70 potash, permanganate of potash, chlorid of lime, and saltpeter, substantially in the proportions of 3 oz. of chlorate of potash, $1\frac{1}{2}$ oz. of saltpeter, $\frac{1}{2}$ -1 dram of permanganate of potash, 1 oz. chlorid of lime to 3 cwt. of 75 coal, and finally heating the mixture in a closed retort so that the gases may be acted upon by the chemicals.

In witness whereof, I have hereunto set my hand, in the presence of two witnesses. 80
JAMES JOWETT.

Witnesses:

LEWE WAUGH,
J. J. BOTTENLL.