

UNITED STATES PATENT OFFICE.

ISIDORE C. BANDMAN, OF ATLANTA, GEORGIA.

ARTIFICIAL FUEL.

SPECIFICATION forming part of Letters Patent No. 446,845, dated February 24, 1891.

Application filed June 21, 1890. Serial No. 356,252. (No specimens.)

To all whom it may concern:

Be it known that I, ISIDORE C. BANDMAN, of Atlanta, in the county of Fulton and State of Georgia, have invented certain new and useful Improvements in Fire-Kindlers; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification.

This invention relates to improvements in that class of artificial fuel composed of fragments of coal or other similar combustible material, in conjunction with a more inflammable material surrounding the coal, the inflammable surrounding material being of such nature as to cement the particles of coal into a mass and to be readily ignited, initially, to furnish the heat necessary to kindle the coal, as more fully hereinafter explained, and specifically pointed out in the claim.

The object of my invention is to provide a fuel of the nature above mentioned in which the carbon or fuel will be wholly consumed, so as to generate little or no smoke, which gives rise to the deposits of lamp-black or carbon incident to imperfect combustion.

In practicing my invention I take fragments of coal or other similar fuel and combine with the same a compound of rosin, sawdust, and black or peroxide of manganese. The rosin is first rendered fluid by means of heat and the sawdust and oxide of manganese combined therewith, and the whole thoroughly commingled, when the mass is ready to be combined with the coal and formed into blocks in suitable molds. The proportions of the ingredients may be varied materially without departing from my invention; but in practice I have found the following to answer well: rosin, pulverized, three pounds; sawdust, ten

pounds; black oxide of manganese, one pound; coal in fragments, a sufficient quantity to form with the other ingredients blocks of suitable hardness to stand the handling to which they may be subjected. These ingredients when thoroughly commingled form a compound which is sufficiently inflammable to be quickly ignited, which will generate in burning a quantity of oxygen necessary to insure complete combustion, so as to effect the thorough consumption of the fuel and obviate the formation of smoke and the escape of free carbon and the attendant deposits of carbon.

For convenience in transportation and handling I prefer to make the blocks of fuel of such size as to average from twenty to twenty-five to a pound; but it is evident that they may be made larger or smaller, if desired.

The black oxide of manganese, forming part of my improved compound fuel, besides furnishing oxygen thereto while burning, will give the compound sufficient body to withstand vigorous drafts when the fuel is used in furnaces and also to retain the heat of the fuel, which would otherwise, owing to the nature of the material, be quickly carried off through the chimney or smoke-stack.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

An artificial fuel composed of fragments of coal or other similar solid fuel cemented into a block by means of an inflammable compound composed of rosin, sawdust, and black or peroxide of manganese, as set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

ISIDORE C. BANDMAN.

Witnesses:

O. E. DUFFY.

C. M. WERLE.