

# UNITED STATES PATENT OFFICE.

ISIDORE C. BANDMAN, OF ATLANTA, GEORGIA.

## ARTIFICIAL FUEL.

SPECIFICATION forming part of Letters Patent No. 405,865, dated June 25, 1889.

Application filed August 30, 1888. Serial No. 284,191. (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  
5 useful Improvements in Artificial Fuel; 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.

10 My invention relates to an improvement in artificial fuel, and the object and nature of the invention will be fully set forth hereinafter, and particularly pointed out in the claim.

The invention consists of a new article of  
15 manufacture in the form of a hardened cake of artificial fuel composed of coarse lump coal surrounded by a mixture of rosin, sawdust, and pine needles, preferably mixed and prepared in the following manner, viz: A desired  
20 quantity of rosin is first melted. A proportionate quantity of sawdust, pine needles or cones, and, if desired, a quantity of shavings or splinters of wood, are then added to the melted rosin, and when the mixture is sufficiently thick a proportionate quantity of finely-powdered coal or coal-dust is added to the mixture, which is thoroughly stirred to evenly distribute the ingredients. The mixture can then be poured into suitable molds containing  
30 one or more lumps of coarse coal, so that when hardened the lump coal will be surrounded, or the lump coal can be stirred in with the mixture and evenly distributed throughout the same, the composition being then prepared for market by forming the same into  
35 hardened cakes of suitable sizes for commercial purposes, and with the lump coal in the cake surrounded by other ingredients. The rosin and pine-needles firmly unite and weave  
40 the mass together and around the lump coal, and thereby prevent the coal from dropping out and the cakes from crumbling and breaking.

45 In some instances heretofore fuel has been composed of sawdust, coal or coke, and tar,

pitch, or rosin, coarse sawdust, paraffine, and anthracite coal, or a combination of stick wood and pine-burrs united by rosin and kerosine poured over the same when liquified; but these are different from my invention, as  
50 my composition is far more effective and produces a better result and is composed of different ingredients arranged in a different manner to co-operate to a greater advantage.

My fuel can be easily and quickly ignited  
55 and will burn readily, although not too quickly, and the heat generated is exceedingly steady and intense in proportion to the amount of fuel. The article is very useful where it is desired to produce a hot fire on a very short  
60 notice, such as for boiling water, &c., in case of sickness, &c. When being consumed, the rosin, sawdust, and pine-needles first ignite and serve to ignite the powdered coal, which generates sufficient heat, in conjunction with  
65 the other burning ingredients, around the coarse lump coal to ignite the same, which will burn for a great length of time, giving out intense heat.

What I claim is—

70 As a new article of manufacture, a hardened cake of fuel composed of a core or interior of one or more large lumps of coal and a surrounding igniting composition consisting, essentially, of a mixture of rosin, sawdust, pine-  
75 needles, and powdered coal, the pine-needles and rosin firmly uniting the composition surrounding the coal and preventing the cake from crumbling and breaking, the surrounding composition first igniting and generating  
80 sufficient heat to ignite the lump coal.

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

ISIDORE C. BANDMAN.

Witnesses:

E. C. DUFFY,  
C. M. WERLE.