

UNITED STATES PATENT OFFICE.

JOHN MILNE DAVIDSON, OF BEAUMONT, TEXAS.

PROCESS OF PRODUCING BRIQUETS.

SPECIFICATION forming part of Letters Patent No. 756,593, dated April 5, 1904.

Application filed March 20, 1903. Serial No. 148,770. (No model.)

To all whom it may concern:

Be it known that I, JOHN MILNE DAVIDSON, a citizen of the United States, residing at Beaumont, in the county of Jefferson and State of Texas, have invented certain new and useful Improvements in Processes of Producing Briquets; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to the production of artificial fuel, frequently termed "briquets," and the invention consists of the admixture of charcoal, pitch, and lime mixed in the proper proportions and treated, as will be hereinafter set forth, and formed into briquets of any suitable size and shape.

The invention also consists of a composition composed of charcoal, pitch, lime, and mineral matter, all as will be hereinafter described and specifically claimed.

The uncertain condition of our coal-supply, which was made manifest by the late coal strike, and the immense natural resources of this country from which to secure materials which I have found can be used in producing at a comparatively small cost a commercial briquet has induced me to experiment along this line and has resulted in the production of the invention which constitutes the subject-matter of this application.

In this country there are enormous quantities of materials—such as sawdust, slabs, &c.—being destroyed daily at sawmills, although such materials contain valuable products, such as pyroligneous acid, a crude commercial form of acetic acid, pine-tar, &c. I found by removing the water and a certain amount of light oil from the tar by distillation that a tar could be obtained equal in quality to "Stockholm tar" and that the charcoal left after distillation pulverized and mixed with a pitch of a certain consistency derived from the distillation of the tar in the proportion of about eighty-seven per cent. charcoal and ten per cent. pitch, with the addition of two to three per cent., by weight, of dry slaked lime for neutralizing purposes, produces a fine

burning fuel. These ingredients after being pressed in a suitable machine, while hot, enables me to produce a homogeneous briquet of excellent burning and heat-giving qualities. The mixing of the ingredients can be readily accomplished in any well-known apparatus; but the best results can be secured by specially-constructed steam-jacketed cylinders having mechanical mixers contained therein and driven by steam or other power. The pulverizing can be effected by any approved type of crusher constructed for such purposes, and the shape can be given to the material to form it into briquets of any suitable size or shape by means of a press designed for that purpose.

By my process of manufacturing briquets there is an absence of moisture, owing to the materials or ingredients being mixed and formed while at a temperature of from 250° to 300° Fahrenheit. The briquets will be found to be practically waterproof and do not disintegrate on exposure.

As is well known, ordinary bituminous coal contains from ten to twenty-five per cent. of water, which does not contribute to the actual amount of heat produced, but must be evaporated at the expense of the heat developed by the combustion of carbon. By constructing the briquet in the manner I have described a practically pure carbon is produced which is capable of evaporating as much water, pound for pound, as any other fuel, including petroleum, which is superior by twenty-five per cent. to all other fuels, (if free from moisture.)

While the best results are obtained from using pitch of a certain consistency derived from the distillation of the tar taken from the pine by distillation and mixed with the charcoal remaining after the first distillation, I do not wish to limit my invention to the use of pitch and charcoal distilled from the same material, as the ingredients selected from different sources, if properly brought together and properly treated, may be employed to advantage.

In some instances I contemplate adding a suitable mineral, as powdered or crushed coal

or culm, in the formation of the briquet; but this would not be necessary except under certain conditions.

Having now described my invention, what
5 I claim as new, and desire to secure by Letters Patent, is—

1. The process of producing briquets consisting in mixing pulverized charcoal with pitch of a high melting-point and adding a
10 neutralizing alkali while the materials are maintained at a high temperature.

2. The process of producing briquets consisting in the production of charcoal by distilling pine-wood and producing tar from the

same distillation after which pitch of a high 15
melting-point is distilled from said tar, then pulverizing the charcoal and mixing it with the pitch thus obtained and adding slaked lime and mixing the mass at a temperature of 250° to 300° Fahrenheit, and then molding the ma- 20
terial into blocks.

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

JOHN MILNE DAVIDSON.

Witnesses:

W. D. BETTIS,
LILLIAN BALL.