

UNITED STATES PATENT OFFICE.

ROBERT ILLING, OF CHICAGO, ILLINOIS.

COMPOSITION OF MATTER FOR ARTIFICIAL FUEL.

SPECIFICATION forming part of Letters Patent No. 594,880, dated December 7, 1897.

Application filed December 22, 1896. Serial No. 616,656. (No specimens.)

To all whom it may concern:

Be it known that I, ROBERT ILLING, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Composition of Matter to be Used as an Artificial Fuel and Fire-Kindler, (Case No. 1,) of which the following is a specification.

The fuel compound for which I desire to secure Letters Patent is designed to be used either for the purpose of readily igniting other combustibles or for providing for stoves, grates, steam-boilers, and the like a compact cleanly fuel possessing the qualities of quickly producing a comparatively intense heat and a lasting combustion.

My composition consists of the following ingredients, combined substantially in the proportions, by weight, below stated, viz: resin, forty-five parts; tar, 4.75 parts; sawdust, twenty-five parts; tanbark, twenty-five parts, and saltpeter .25 parts.

I preferably employ in this compound a cheaper grade of resin, commercially known as "brewers' pitch," and it is obvious that in a composition of matter for the general purposes above stated the quality and purity of the ingredients forming the same are not of great importance.

The resinous fuel compounds which have previously been placed upon the market are objectionable by reason of the fact that the particles are not sufficiently united and the body of combustible material breaks or shales off. This difficulty I have overcome partly by adding a small percentage of tar, which firmly unites the ingredients and prevents the compound from becoming brittle in character, thus making it clean to handle and use, and partly by strongly compressing the mass while warm. I preferably use pine-tar in my composition for this purpose.

When sawdust alone is employed as a body in compositions of matter to be used for similar purposes, the said compositions are readily ignited and produce an intense heat, qualities which it is desirable to retain in this class of artificial fuels. It is important, however, that such compositions furnish a lasting heat which is not secured by the use of sawdust, and I have found that by using a slowly-con-

sumed material, such as tanbark, in connection with the sawdust, as set forth in my formula, this additional result is secured. A small percentage of saltpeter is used, which serves to supply oxygen to the flames and thereby furthers the combustion.

In preparing my compound the resin and tar are first heated sufficiently to render the same fluid, after which the remaining ingredients are added, the mass then being thoroughly mixed by continued agitation in the presence of heat, so that the composition is rendered practically uniform throughout. This being accomplished the mass preferably is strongly compressed while warm either in molds or otherwise.

I usually form the composition in large slabs or flat blocks, which, being subjected to heavy pressure, are when cold extremely coherent and solid. The said blocks are then readily sawed to any convenient size, depending upon the use for which the composition is particularly designed.

The artificial fuel as above set forth possesses distinct advantages over any similar article previously manufactured.

I am well aware that each of the ingredients of my fuel compound has previously been employed in similar compositions, and I do not desire to be understood as in any wise broadly claiming the same, my invention consisting in an improvement upon fuel compounds which consists merely in the combination of the materials named substantially in the proportions stated, whereby the desired qualities in said compound are attained.

I therefore claim—

The herein-described composition of matter for an artificial fuel or fire-kindler, consisting of approximately equal parts of sawdust and tanbark, a large proportion of resin, and small percentages of tar and saltpeter, substantially in the proportions set forth in the above specification.

In witness whereof I hereunto subscribe my name this 19th day of December, A. D. 1896.

ROBERT ILLING.

Witnesses:

JOHN W. SINCLAIR,
A. L. LAWRENCE.