

UNITED STATES PATENT OFFICE.

ERNEST NIENSTAEDT, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF TO
LEO GOLDMARK, OF SAME PLACE.

COMPOSITION OF MATTER FOR ARTIFICIAL FUEL.

SPECIFICATION forming part of Letters Patent No. 523,368, dated July 24, 1894.

Application filed June 23, 1893. Serial No. 478,628. (No specimens.)

To all whom it may concern:

Be it known that I, ERNEST NIENSTAEDT, a citizen of the United States, and a resident of New York, in the county and State of New York, have invented certain new and useful Improvements in Composition of Matter for Artificial Fuel, of which the following is a specification.

My invention has reference to improvements in artificial fuel and consists of a new composition of matter for the purpose of burning and heating.

It is a well known fact that very few of the artificial fuel compositions for burning and heating now in the market fully answer the purpose they are to be used for, as they generally do not stand moisture and become, when exposed to the same, pasty and sticky. The compositions mostly contain pitch, tar, or other resinous matters as binding materials which melt when burned and are then converted into a compact mass, upon which the air draft, necessary for the combustion, loses its influence. The melting binding materials generate much smoke and disagreeable smell. These disadvantages are dispensed with by my artificial fuel, which is made in the following manner.

One hundred pounds of coal-dust, coke-dust, remainders of peat or brown-coal are intimately mixed with three to six pounds of pulverized calcined magnesite, or some or all of the aforesaid combustible materials are mixed with each other, and then the necessary quantity of the pulverized calcined magnesite is added to the mixture in the said manner. Then chloride of magnesium is dissolved in water to a solution which contains thirty to eighty per cent. of dry chloride of magnesium, according to the quantity of calcined magnesite and to the physical conditions of the combustible materials used for my fuel composition, and a glutinous binding material, as starch, dextrine, glue, or flour, is dissolved in this solution in the proportion of five per cent., but these binding materials

are not absolutely necessary and may be dispensed with. If starch or glue is used, the solution is heated to a boiling point and gets thereby a certain pasty consistency. When cooled, the solution is added to the combustible material with the calcined magnesite in the proportion of three to six pounds to one hundred pounds and thoroughly mingled therewith by agitation, so that the said materials become moist and somewhat sticky. To the mass thus obtained one to five per cent. nitrate of potassium, or one to five per cent. nitrate of sodium, or both materials together in the said proportions are intimately mixed therewith.

The composition may be molded and pressed in a press of any suitable construction where it is formed into bricks of any desired shape, which, when hardened, are of a firm consistency and can be handled in the same manner as coal.

My artificial fuel bricks are entirely impervious against moisture and rain, do not smoke or smell and will not clink, when burned.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The herein described composition of matter for burning and heating, consisting of coal-dust, coke-dust, or remainders of peat or brown-coal, calcined magnesite, water, chloride of magnesium, nitrate of potassium, and nitrate of sodium, in the proportions set forth.

2. The herein described composition of matter for burning and heating, consisting of coal-dust, coke-dust, or remainders of peat or brown-coal, calcined magnesite, water, chloride of magnesium, a glutinous binding material, nitrate of potassium, and nitrate of sodium, in the proportions set forth.

Signed at New York, in the county and State of New York, the 19th day of June, 1893.

ERNEST NIENSTAEDT.

Witnesses:

CHARLES KARP,
ARTHUR BLUMENTHAL.