

## UNITED STATES PATENT OFFICE.

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## PROCESS OF MANUFACTURING FUEL BLOCKS OR BRIQUETS.

SPECIFICATION forming part of Letters Patent No. 746,366, dated December 8, 1903.

Application filed April 15, 1903. Serial No. 152,784. (No specimens.)

*To all whom it may concern:*

Be it known that I, OTTO NEUGEBAUER, a subject of His Majesty the Emperor of Germany, residing at Hanover, in the Empire of Germany, have invented new and useful Improvements in Processes for the Manufacture of Fuel Blocks or Briquets, of which the following is a specification.

In the production of briquets from coal-dust the use of water-glass as a binding medium is known. As, however, it is difficult to thoroughly mix the water-glass with the coal-dust, the binding, even under great pressure, is exceedingly slow and, moreover, unreliable, and consequently the briquets do not possess the requisite firmness. Attempts have already been made to diminish the adhesive and not easily-fusible nature of the water-glass by suitable additions, and thereby render it more suitable for mixing, but hitherto without the desired result. With the addition of liquid substances proper binding was not effected, while when solid hygroscopic substances, whether of organic or inorganic origin, were added the binding power of the water-glass was used up by these additional substances.

According to the present process the object sought through these experiments is actually attained not by making the water-glass suitable for mixing with the coal-dust, but by leaving it unaltered and making the coal-dust more suitable for taking up the water-glass, so that the water-glass fully retains its binding power. To this end the coal-dust is moistened with viscous loam-water or clay-water and thoroughly mixed therewith. This mixture is left to dry, the drying process being in certain cases accelerated by the addition of a hygroscopic substance, such as cellulose, turf-dust, or their equivalents. When the

mass is fairly dry, it is thoroughly moistened with water-glass and is then ready for the briquet-making process.

The production of the briquets can be effected either in the following manner by the mass being placed in molds under slight pressure and left to dry therein, or, if suitably-high pressure be employed, the mass can at once be taken out of the mold and be allowed to dry in the air, as the thorough mixing effected by the previous treatment of the coal-dust insures the immediate firm cohesion of the mass and in a short time renders it also thoroughly hard. The briquets made in this manner are much stronger and far more weatherproof than the pressed briquets made in the manner already known, and their production is much cheaper.

What I claim as my invention, and desire to secure by Letters Patent, is—

The process of manufacturing artificial fuel blocks or briquets in which water-glass as a known binding medium is used, consisting in first subjecting the coal-dust to a saturation with loam or clay water, and adding to the mass so treated a suitable hygroscopic substance, such as cellulose or turf-dust, and then subsequently adding the water-glass when the mass is approximately dry, the briquets being molded under pressure, which is regulated according as said briquets are to be allowed to dry in or out of the molds, substantially as specified.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

OTTO NEUGEBAUER.

Witnesses:

LEONORE KASCH,  
MAX WILRITH.