

UNITED STATES PATENT OFFICE.

HENRY AUGUST MUELLER, OF STOCKHOLM, SWEDEN.

METHOD OF BRIQUETTING SAWDUST, PEAT, COAL DUST, AND SIMILAR PULVEROUS SUBSTANCES.

No Drawing.

Application filed June 25, 1920. Serial No. 391,786.

To all whom it may concern:

Be it known that I, HENRY AUGUST MUELLER, a citizen of the Kingdom of Sweden, residing at Stockholm, Sweden, have invented new and useful Improved Method of Briquetting Sawdust, Peat, Coal Dust, and Similar Pulverous Substances, for which I have filed application in Sweden, Feb. 16, 1918; Norway, March 17, 1920; Denmark, March 16, 1920; Finland, March 10, 1920; and of which the following is a specification.

Briquettes as hitherto manufactured from saw-dust, peat, and similar substances have generally the drawback of not being sufficiently resistant against the influence of the moisture of the atmosphere. They are more or less destroyed if they are stored in the open air and may under some circumstances be completely broken up. This depends essentially on the fact that according to the briquetting methods hitherto used in the air which is contained in the pulverous mass to be briquetted is to a great extent enclosed in the briquettes and thus prevents the particles from coming into a sufficiently intimate contact with each other.

This invention relates to a method of briquetting saw-dust, peat, and similar substances by which very resistant briquettes are obtained.

The invention consists, chiefly, in carrying out the briquetting operation in such manner that the air contained in the pulverous mass to be briquetted is expelled by means of superheated steam as completely as possible immediately before the mass is briquetted. As the vapors thus substituted for the air in the mass on account of the high pressure applied to the mass in the briquetting operation are condensed all particles come into an intimate contact with each other and very compact and hard briquettes are obtained. A briquette manufactured in this

manner takes up water on the surface only when exposed to damp air or to rain while briquettes manufactured in usual way from saw-dust and the like rapidly take up water in their whole mass and will shortly be destroyed. In briquettes of the last-mentioned kind the surface is softened by the water, and then the air enclosed in the briquette by the high pressure which was applied during its manufacture expands and causes the briquette to swell up until it falls into pieces.

Briquettes manufactured according to the present method obtain a higher specific weight than briquettes manufactured according to other known methods from the same materials. This fact shows that the particles must be brought nearer to each other by the pressure applied in the briquetting operation as compared with the usual briquetting operation without a foregoing expulsion of the air in the raw mass.

The materials to be briquetted should suitably be dried to the same degree as when briquetting such materials in the usual way and they should, furthermore, suitably be preheated to such degree that the vapors used for expelling the air are not condensed before the briquetting pressure is applied.

Having now described my invention I declare that what I claim is:—

The method of briquetting saw-dust, coal-dust, air-dried peat and similar pulverous substances, which comprises supplying superheated steam to the pulverous mass until the air contained therein is essentially expelled, and then while the mass still contains condensable vapors only applying pressure until the steam is condensed and the particles of the mass are brought into intimate contact with each other.

In testimony whereof I have signed my name.

HENRY AUGUST MUELLER.