

Title (en)
SUSPENSION FIRING OF HOG FUEL, OTHER BIOMASS OR PEAT.

Title (de)
FEUERUNG VON HOLZPULVER, SONSTIGER BIOMASSE ODER TORF, DIE IN DEN SCHWEBENDEN ZUSTAND VERSETZT SIND.

Title (fr)
ALLUMAGE EN SUSPENSION D'UN COMBUSTIBLE A BASE DE DECHETS DE BOIS OU AUTRES MATERIAUX TELS QUE LA BIOMASSE OU LA TOURBE.

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Application
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Priority
US 8501371 W 19850718

Abstract (en)
[origin: WO8700604A1] A method for preparing hog fuel, other biomass, or peat for efficient burning and heat recovery in a water-wall boiler (20). The process requires drying the fuel to less than a 30% moisture content. The fuel is then pulverized to an upper particle size such that there are substantially no particles which will not burn in air suspension within the confines of the combustion zone (21). Additionally, the pulverizing step is adjusted such that a fines portion of fuel is created of such size and in such amount that the fines portion readily ignites upon flame initiation. The fines provide sufficient ignition energy so that the entire flow of fuel burns without the necessity of the conventional fossil fuel support or pilot. The fuel is sized to burn in air suspension by injection into the boiler (20) through a swirl stabilized-type burner (18). For one burner, not particularly optimized for burning wood, a suitable particle size range was found to comprise 65-100% less than 1000 microns and 15-85% less than 150 microns. Pulverizing is carried out preferably at low air flows so that the resulting air and pulverized fuel mixture of about 1-2 kilograms air per kilogram fuel may be directly injected by the swirl stabilized air suspension type burner into the furnace along with secondary air (19). Combustion in the furnace requires no supplemental or pilot fuel to maintain stability. The process has good load following characteristics having at least a 2.5:1 turndown ratio.

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