

NEW PATENTS

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4489561

SYSTEM FOR PRODUCING STEAM AND MECHANICAL ENERGY FROM A HYDROTHERMAL FLOW

Jerome Spevack

A two-phase hydrothermal flow, e.g. from a geothermal source, is separated and provides steam at a desired pressure for production of power both from the steam phase and from thermal energy contained in the hot water phase. The separated hot water phase is processed in a heat conversion system which extracts sensible heat and produces from a portion thereof auxiliary steam at least at the vapor pressure of the hot water, and this auxiliary steam may be utilized either separately or together with said separated steam phase in a prime mover and condenser system for production of power. Where a geothermal hydrothermal flow contains noxious noncondensable gases which contaminate the steam phase, after condensation of the steam such gases may be withdrawn from the condenser and dissolved in the cooled hot water phase and reinjected underground to avoid environmental pollution.

4490077

APPARATUS FOR CONTINUOUSLY MEASURING FLOW RATE OF FINE MATERIAL FLOWING THROUGH TRANSPORT PIPE

Katsuhik Shimada, Koji Nakayama, Tatsuo Sato, Kazuo Saito, Yokohama, Japan assigned to Nippon Kokan Kabushiki Kaisha; Sankyo Dengyo Kabushiki Kais

An apparatus for continuously measuring the flow rate of a fine material flowing through a transport pipe, which comprises: an integrator for integrating calculated values of the flow rate of a fine material flowing through a transport pipe, obtained by a flow rate calculating means; a correction controller, said correction controller being adapted to calculate the total weight of the fine material fed during a prescribed period of time while the fine material in a hopper is only decreasing in amount from said hopper into said transport pipe, on the basis of a measured value of the weight of the fine material in said hopper, and to actuate said integrator during said prescribed period of time; a divider for calculating the correction coefficient k , i.e., the ratio (W/S) of a calculated value (W) obtained by said correction controller to an integrated value (S) obtained by said integrator; and a multiplier for calculating a corrected value of the flow rate of the fine material flowing through said transport pipe, by multiplying said calculated value obtained by said flow rate calculating means with said correction coefficient k

4490134

DUAL PHASE BLOOD FLOW SYSTEM AND METHOD OF OPERATION

Vernon Troutner assigned to Extracorporeal Medical Specialties Inc

A blood flow system for processing blood has two phases of operation, an arterial phase and a venous phase. During the arterial phase, the system is filled with blood through operation of an arterial blood pump. When a predetermined blood pressure level in the system has been at-

tained, the arterial blood pump is inactivated and a venous blood pump removes blood from the system for a given number of pump turns.

4490157

**INDIRECTLY HEATED
FLUIDIZED BED GASIFIER**

John Fernandes assigned to Combustion Engineering Inc

A fluidized bed gasifier (10) for gasifying a first fuel (50) receives heat indirectly from a combusting fluidized bed (24) disposed at least partially within the gasifier fluidized bed (12). Fuel for the combusting bed (24) may be provided by removing a portion of the fluidized first fuel from the gasifier bed (12) and transporting (30,34) this removed portion into the combusting bed (12). Heat is transferred across the conductive walls of the combustor vessel (26). Product gas heating value is increased by separately removing (28) the products of combustion from the gasifier (10) and by recycling a portion of the product fuel gas (74) as the fluidizing gas (54) for the gasifier fluidized bed

(12). A radiation shield (18) is also provided to reduce heat loss from the gasifier bed (12) and to remove elutriated material from the product fuel gas.

4490832

**TECHNIQUE AND APPARATUS
FOR TWO-PHASE SYSTEMS
ANALYSIS DIRECTLY IN A FLOW**

Emil A Ab, Jerusalem, Israel assigned to Middle East Trade Alliance Inc

Method and apparatus for X-ray spectrum analysis of flowing material, and particularly where the material has two phases such as a suspension. A flow of gas or floats are used to separate the flowing material from an X-ray window in a casing containing an X-ray source and detector, which casing is located directly in the stream of flowing material. The gas flow provides a protective curtain across the window. An electrode structure is moveably mounted adjacent to the window and enables the solid state phase to be deposited for separate analysis of the solid and liquid phases of the flowing material.

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