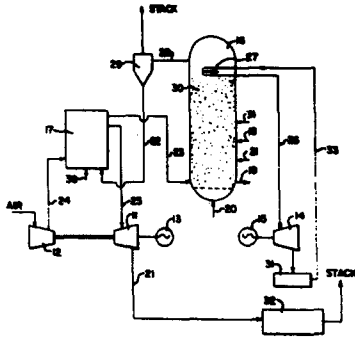


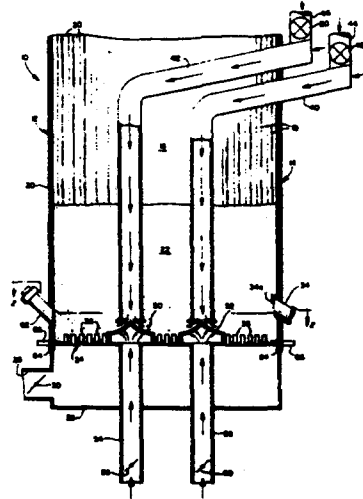
4404755

FLUIDIZED BED HEAT EXCHANGER UTILIZING INDUCED DIFFUSION AND CIRCULATION

Robert Stewart, Robert Gamble assigned to Foster Wheeler Energy Corporation



compressor is passed through the heat exchanger unit around the outside of the tubular channels, so receiving heat through them from the hot solids circulating therethrough, and is expanded in a gas turbine. The flow of hot solids through the tubular channels is controlled independently of the operation of the combustor so as to accommodate varying loads on the generating units. Steam for a other uses is generated by a conventional boiler and superheater in the combustor.



A fluidized bed heat exchanger in which a perforated plate is disposed within a housing for supporting a bed of particulate material. Air is passed through the plate to fluidize the particulate material and a mixture of air and additional particulate material is introduced to said bed and deflected into said bed in a manner to induce diffusion and circulation of the bed materials in the bed.

4405561

DRAIN AND SAMPLING VALVE ASSEMBLY FOR A FLUIDIZED BED REACTOR

Thomas J Neale, Frederick C Alverson, John S Karg assigned to Foster Wheeler Energy Corporation

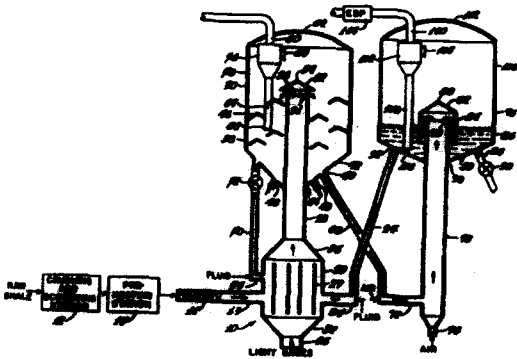
A drain and sampling valve assembly for a fluidized bed reactor in which a pipe extends from the fluidized bed supporting structure to a location externally of said reactor. A valve seat is supported by said supporting structure and a valve stem is disposed in the pipe and extends for the length of the pipe and has a valve head mounted at one end of the stem for cooperating with the valve seat. A mechanical actuator assembly is provided externally of said reactor for selectively moving the stem relative to the pipe and the movement of the valve head relative to the valve seat to control the flow of material from the fluidized bed into the pipe. A discharge pipe and a sampling valve cooperate with the other end of the first mentioned pipe for selectively controlling the discharge of material from said latter pipe for permitting samples to be taken.

4404083

FLUID BED RETORTING PROCESS AND SYSTEM

Iacovos Vasalos assigned to Standard Oil Company(Indiana)

A fluid bed process and system for retorting hydrocarbon-containing material, such as oil shale, coal and tar sand, in which hydrocarbon-containing material and heat carrier material are fed into a mixing chamber, mixed and rapidly transported upwardly by a lift gas through a lift pipe into a solids-containing vessel to retort the hydrocarbon-containing material with minimal

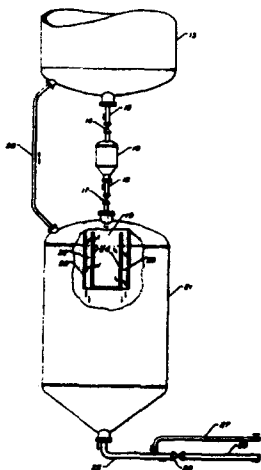


thermal cracking of the liberated hydrocarbons to increase the recovery of condensable hydrocarbons. The retorted material can be conveyed to a dilute phase lift pipe and combustor vessel where carbon residue in the retorted material is combusted leaving hot spent material that can be fed into the mixing chamber as heat carrier material.

4403909

METHOD FOR DISCHARGING CATALYST PARTICLES FROM A MOVING BED SYSTEM AT A SUBSTANTIALLY STEADY FLOW RATE

Arthur R Greenwood assigned to UOP Inc

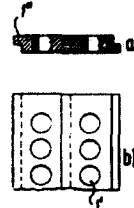


A method for discharging a periodic flow of a measured volume of hot regenerated catalyst particles from a moving bed regeneration system into a catalyst hopper at a substantially steady particle flow rate thus eliminating pressure surges in the hopper.

4402143

BOTTOM FOR FLUIDIZED BED

Peter Schulz, Knut Vaupel, Jurgen Klein, Essen, Federal Republic Of Germany assigned to Bergwerksverband GmbH

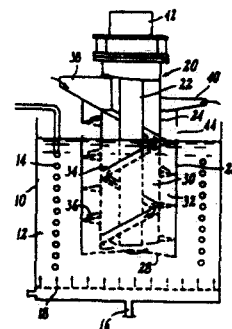


A bottom for a fluidized bed conveyor is composed of a plurality of members provided with openings and located in contact with each other so that their points of contact are gas impermeable at least during operation of a fluidized bed. The openings may be formed as circumferentially closed holes and/or as laterally open recesses. The members may laterally abut against each other, or may be provided with interengaging lateral projections. The members may be located so that at cold temperatures small intermediate spaces remain therebetween, which spaces are closed during operation as a result of thermal expansion of the members under the action of high working temperatures. Bracing element or elements may be provided which urge the members toward one another.

4399984

AUTOMATIC INSTALLATION FOR THE HEAT TREATMENT OF WORKPIECES IN FLUIDIZED BEDS

Jean-Claude Bouchon, Poissy, France assigned to Midland-Ross Corporation



Workpieces are heat treated in a fluidized bed contained within a vessel having a central well surrounded by helical ramps along which the