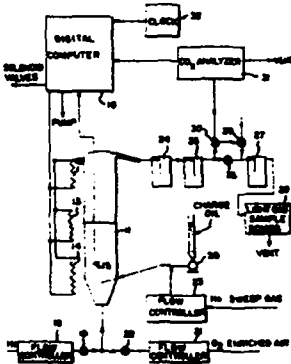


clean gas from the induced draft fan outlet boosted by a small auxiliary fan. The fluidized fine particles can be reinjected into the fluidized combustor bed by either dense phase transport or by dilute phase transport.

4419328

### CONTROLLED FLUIDIZED BED REACTOR FOR TESTING CATALYSTS

Dennis E Walsh assigned to Mobil Oil Corporation



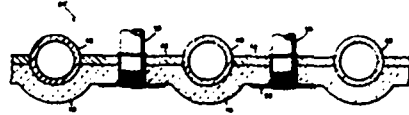
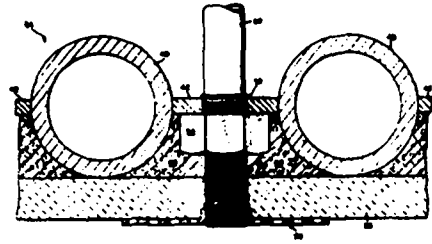
Apparatus for investigating the performance of a catalyst used in a catalytic cracking process includes a single fluidized bed reactor charged with the catalyst to be investigated and a digital computer which controls the supply of hydrocarbon feed stock and regenerating air in successive and repeated catalytic cracking intervals and catalyst regeneration intervals.

4418650

### FLUIDIZED BED HEAT EXCHANGER HAVING AN INSULATED FLUID COOLED AIR DISTRIBUTOR PLATE ASSEMBLY

Richard C Johnson, Venkatraman Seshamani, Leigh B Egbert assigned to Foster Wheeler Energy Corporation

A fluidized bed heat exchanger in which an air distributor plate assembly is disposed within an enclosure for supporting a bed of particulate

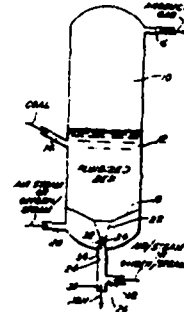


material. The plate assembly includes a plurality of horizontal, spaced tubes through which water is passed to cool the assembly. Air is passed from an air plenum through openings formed in the plate assembly to fluidize the particulate material. Insulation is disposed on the lower surface of the plate assembly to insulate the latter from the heat of the fluidizing air, and the upper surface of the plate assembly is insulated from the high temperatures occurring in the bed.

4416857

### FLUIDIZED BED GASIFIER OR SIMILAR DEVICE FOR SIMULTANEOUS CLASSIFICATION OF ASH AND UNREACTED COAL

Karl Vorres assigned to Institute of Gas Technology



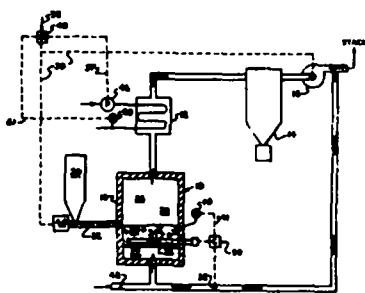
An apparatus for withdrawing agglomerated solids, e.g. ash, from a fluidized bed of finely divided solid hydrocarbonaceous material, e.g. coal, is described. Agglomeration is effected by a high temperature reaction between the inorganic

constituents of the hydrocarbonaceous material in the fluidized bed environment. A venturi is utilized to serve as a passage for withdrawing the agglomerated solids from the fluidized bed. Spiral or other descending ridges are positioned on the interior surface of the constricted cylindrical opening of the venturi. A tube, through which reaction gases pass, is centrally disposed within the constricted cylindrical opening to permit variable and increased rates of agglomerate discharge with improved separation and classification of the solid materials.

4416418

### FLUIDIZED BED RESIDENTIAL HEATING SYSTEM

Stephen L Goodstine, Brian C Jones

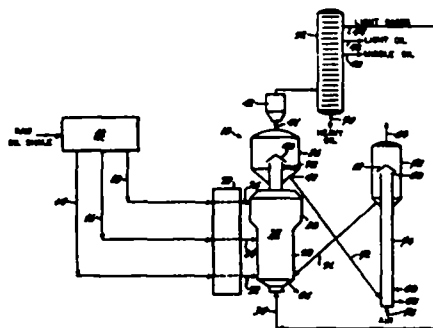


A fluidized bed combustion system particularly suitable for use in a residential heating system comprising a fluidized bed combustor housing a combustion chamber wherein crushed fuel is burned to generate hot flue gas, a heat exchanger disposed outside of the combustor in the flow path of the flue gas, a particulate collector for removing fine particles entrained in the flue gas before the flue gas is vented to the atmosphere, and an induced draft fan for venting the flue gas to the atmosphere and drawing fluidizing air and recirculated flue gas through the combustion chamber. The combustor is uncooled and heavily insulated so as to provide a substantially adiabatic combustion chamber therein in order to minimize heat loss therefrom. Electric heating means are disposed within the fluidizing region of the combustion chamber to provide the capability of heating the slumped bed during shut-down to maintain bed temperature above the ignition point. The operating temperature of the bed is maintained below the ash softening temperature of the coal by selectively controlling the amount of flue gas recycled.

4415433

### FLUID BED RETORTING PROCESS WITH MULTIPLE FEED LINES

Gerald B Hoekstra assigned to Standard Oil Company (Indiana)



Solid hydrocarbon-containing material, such as oil shale, coal or tar sand, is fed into a retort through a multiplicity of feed lines to enhance retorting efficiency, throughput and product yield. In the preferred form, larger particles of hydrocarbon-containing material gravitate downwardly through the retort in countercurrent relationship to an upward fluidized stream of smaller particles of hydrocarbon-containing material. This arrangement is especially useful to retort larger particles of hydrocarbon-containing material. One or more streams of intermediate size particles of hydrocarbon-containing material can also be fed into the retort.

4414905

### METHOD AND EQUIPMENT FOR TREATMENT OF FUEL FOR FLUIDIZED BED COMBUSTION

Jaroslav Beranek, Jan Germak, Jarosl Dobrozemsky, Vratislav Fibinger, Prague, Czechoslovakia assigned to Ceskoslovenska akademie ved

The invention relates to the method and equipment for treatment of fuel for fluidized bed combustion, which includes drying, classification and crushing of the fuel. The method for treatment of fuel comprises mixing the fuel with hot