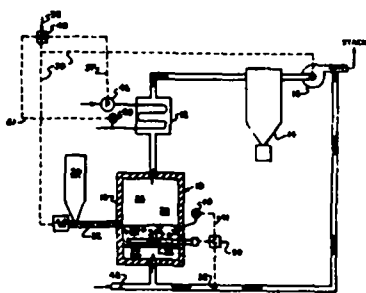


constituents of the hydrocarbonaceous material in the fluidized bed environment. A venturi is utilized to serve as a passage for withdrawing the agglomerated solids from the fluidized bed. Spiral or other descending ridges are positioned on the interior surface of the constricted cylindrical opening 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

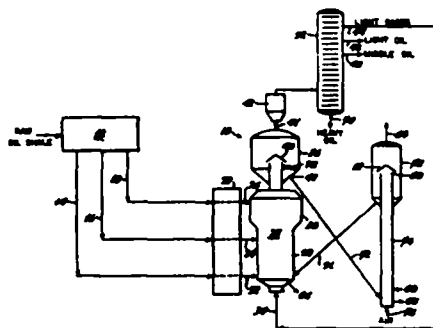


A fluidized bed combustion system particularly suitable for use in a residential heating system comprising a fluidized bed combustor housing a combustion chamber wherein crushed fuel is burned to generate hot flue gas, a heat exchanger disposed outside of the combustor in the flow path of the flue gas, 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)



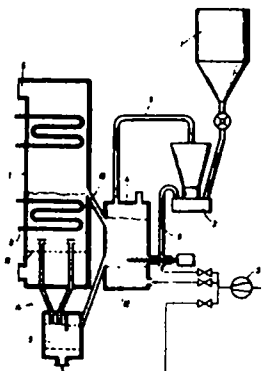
Solid hydrocarbon-containing material, such as oil shale, coal or tar sand, is fed into a retort through a multiplicity of feed lines to enhance retorting efficiency, throughput and product yield. In the preferred form, larger particles of hydrocarbon-containing material gravitate downwardly through 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



ash removed from the fluidized bed combustor and drying said mixture in a fluidized bed dryer in which the velocity of the fluidization fluid equals or is lower than the minimum fluidization velocity of particles in the fluidized bed combustor. The equipment for treatment of fuel comprises a bunker, crusher and dryer, comprising a fluidized bed dryer provided with appropriate piping for interconnection of the fluidized bed dryer, fluidized bed combustor, fuel bunker and crusher.

4413064

FLUID BED CATALYST FOR SYNTHESIS GAS CONVERSION AND UTILIZATION THEREOF FOR PREPARATION OF DIESEL FUEL

Harold Beuther, Charles L Kibby, T P Kobylnski, Richard B Pannell assigned to Gulf Research & Development Company

A catalyst useful in the conversion of synthesis gas to diesel fuel in a fluidized bed is prepared by contacting finely divided alumina with an aqueous impregnation solution of a cobalt salt, drying the impregnated support and thereafter contacting the support with a nonaqueous, organic impregnation solution of salts of ruthenium and a Group IIIB or IVB metal.

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