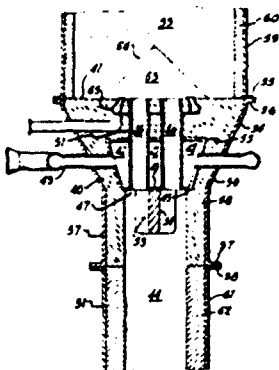


Improved method and apparatus are disclosed for regenerating wet spent carbon containing volatile impurities wherein the wet spent carbon is dried in a drying zone utilizing incinerated reactivation zone gaseous effluent. The improvement of the invention provides that the portion of reactivation zone gaseous effluent used to dry the wet spent carbon in the drying zone is continuously recycled to the reactivation zone for incineration to remove any volatile impurities which may have been removed from the wet spent carbon during drying. The balance of the reactivation zone gaseous effluent may be discharged into the atmosphere without further incineration.

4338187

SOLIDS FEEDING DEVICE AND SYSTEM

Robert Gartside; Herman Wuebcke; assigned to Stone & Webster Engineering Corporation

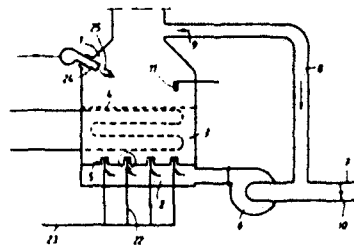


An apparatus and process for delivering fluidization gas to a bed of particulate solids to selectively locally fluidize the solids above a delivery conduit in communication with a reaction chamber. Also an apparatus and process for intimately mixing hydrocarbon feed with the particulate solids at the end of the delivery conduit in the reaction chamber.

4338074

FLUIDIZED BED COMBUSTION CHAMBERS

Lars-Goran Johansson; assigned to Stal-Laval Turbin AB

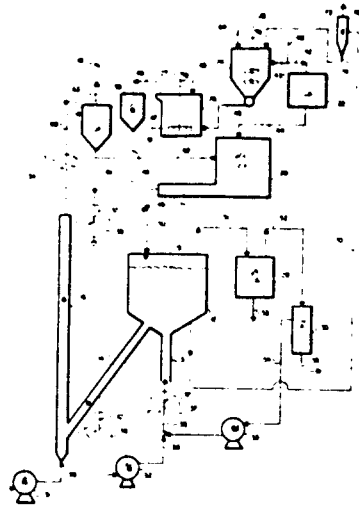


An assembly and method for heating a fluidized bed combustion chamber to ignition temperature, wherein a heated gas flows through heat exchange tubes extending into the fluidized bed to provide sufficient heat for raising the temperature of the bed material and the combustion air to allow for ignition of the combustion fuel. A conduit system is provided for selectively recycling combustion air through the combustion chamber during the ignition process.

4337143

PROCESS FOR OBTAINING PRODUCTS FROM TAR SAND

Francis V. Hanson; Jan Miller; Ales Oblad; assigned to University of Utah



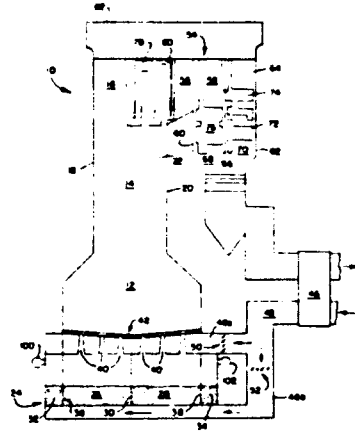
A novel thermal process for recovering hydrocarbon and other products from tar sand. The process includes blending tar sand with a bitumen-rich concentrate while heating the same with a hot, burnt sand. The products are recovered by passing the combined feed through a fluidized bed and selectively controlling the temperature and residence times to obtain predetermined ratios of products. Coked sand residue from the fluidized bed is burned to produce the hot, burnt sand, a portion of which may be recycled to provide heat to the fluidized bed. Coked sand may also be recycled into a known, hot-water, caustic separation process where it synergistically improves the separation efficiency of the hot-water, caustic separation process.

4336769

INTEGRAL VAPOR GENERATOR/GASIFIER SYSTEM

Ernest L. Daman; assigned to Foster Wheeler Energy Corporation

An integral generator/gasifier system in which a vapor generator is provided that includes an upright furnace section and a plurality of nozzles, each having one end registering with the interior of the furnace section. A gasifier extends adjacent to the furnace section and supports a bed of adsorbent material for the sulfur generated

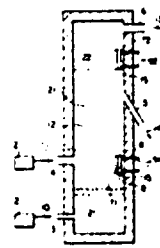


as a result of the gasification of fuel introduced to the gasifier. Air is passed through the bed of adsorbent material to fluidize said material so that, upon gasification of the fuel, a substantially sulfur-free product gas is produced. The other ends of the nozzles communicate with the gasifier so that the product gas passes from the gasifier through the nozzles and into the furnace section for combustion.

4336227

FLUIDIZED BED REACTOR

Shuntaro Koyama; Tomohik Miyamoto; Mizuho Hirato; assigned to The Agency of Industrial Science and Technology



In a fluidized bed reactor having a reactor vessel, two detector vessels are mounted in the reactor vessel near the inside surface of the reactor vessel near the inside surface of the reactor vessel in the fluidized bed and in the gas outlet region. Each detector vessel contains larger detecting particles and passes the gas in the reactor vessel. Pressure drop across the detecting