

NEW PATENTS

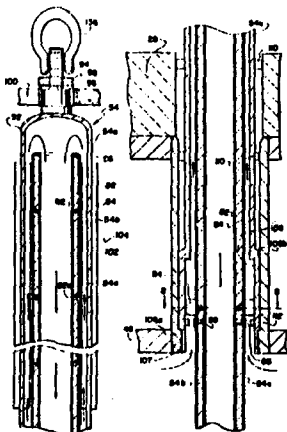
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4460037

TUBE CONSTRUCTION FOR FLUIDIZED BED COMBUSTOR

Angelo De Feo, William Hosek assigned to Curtiss-Wright Corporation



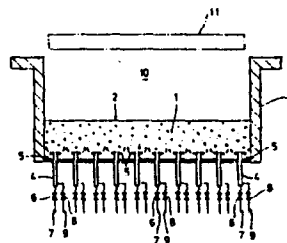
A fluidized bed combustor comprises a reactor or a housing which has a windbox distributor plate adjacent the lower end thereof which contains a multiplicity of hole and air discharge nozzles for discharging air and coal into a fluidized bed which is maintained above the distributor plate and below a take-off connection or flue to a cyclone separator in which some of the products of combustion are treated to remove the dust which is returned into the fluidized bed. A windbox is spaced below the fluidized bed and it has a plurality of tubes passing therethrough with the passage of combustion air and fluidizing air which passes through an air space so that fluidizing air is discharged into the reaction chamber fluidized bed at the bottom thereof to maintain the bed in a fluidized condition. A fluid, such as air, is passed through the tubes which extend through the windbox and provide

a preheating of the combustion air and into an annular space between telescoped inner and outer tubes which comprise heat exchanger tubes or cooling tubes which extend upwardly through the distributor plate into the fluidized bed. The heat exchanger tubes are advantageously arranged so that they may be exposed in groups within the reactor in a cluster which is arranged within holding rings.

4460330

FLUIDIZED-BED COMBUSTION SYSTEM

Minoru Asai, Kiyoshi Aoki, Osam Takeuchi, Kamagaya, Japan assigned to Ishikawajima-Harima Jukogyo Kabushiki Kaisha



A fluidized-bed combustion system for a boiler, a heating furnace for heating steels or the like, in which a plurality of gas distribution pipes are disposed at the bottom of the combustion chamber. The lower end of each gas distribution pipe is communicated with an air supply line with an air flow rate control valve and a fuel supply line with a fuel flow rate control valve and the air and fuel admitted into the gas distribution pipe are mixed within the same and the air and fuel mixture is injected or sprayed into the fluidized bed through injection ports of the gas distribution pipe which are positioned adjacent to the bottom of the fluidized bed, whereby the complete com-

bustion within the fluidized bed can be ensured and the combustion can be controlled over a wide range and optimized depending upon a load.

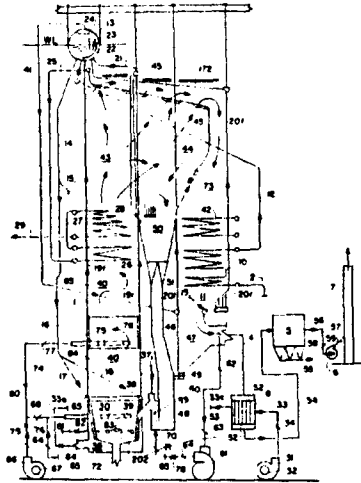
4462341

**CIRCULATING FLUIDIZED BED
COMBUSTION SYSTEM FOR A
STEAM GENERATOR WITH
PROVISION FOR STAGED FIRING**

Charles Strohmeyer

The invention comprises a steam generator having a circulating fluidized bed combustion system whereby there is provision to admit air flow incrementally along the gas path to control combustion rate and firing temperature in a manner to maintain differential temperatures along the gas path. The initial portion of the gas path where combustion is initiated can be held in

one temperature range as 1550 degrees F. which is optimum for sulphur retention and the final portion of the combustion zone can be elevated in temperature as to 1800 degrees F. to produce a greater degree of heat transfer through the gas to fluid heat exchange surface downstream of the combustion zone.



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