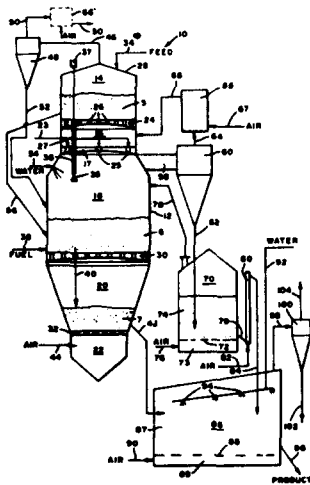


tor and, consequently, the amount of heat liberated in the regeneration zone upon combustion of the coke contained in the partially deactivated catalyst. A reactor bed level is attained where the resulting coke laydown on the catalyst is sufficient to maintain the desired temperature in the fluidized dense catalyst phase. Also, as a part of this improved method, the amount of oxygen-containing regeneration gas supplied to the regeneration zone is adjusted to provide sufficient oxygen to effect substantially complete combustion of the coke to carbon dioxide and to maintain the oxygen content of the flue gas at a desired level within the range of from about 1 to about 10 mol %. Maintaining the oxygen content of the flue gas within this range provides a flue gas having a carbon monoxide content of from 0 to 500 ppm. The residence time of catalyst in the regeneration zone fluidized dense catalyst phase is adjusted to provide a regenerated catalyst with a low level of residual carbon-on-regenerated-catalyst.

US 4304754.

FLUID BED CALCINING APPARATUS.

Walfred W. Jukkola, Westport CT. assigned to Dorr-Oliver Incorporated.



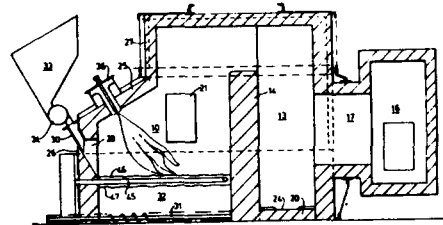
In order to increase or maintain the capacity of fluid bed calciners in the calcination of phosphate rock containing large amounts of organic matter ("hot rocks"), the calciner is modified to permit a pyrolysis reaction to occur in the freeboard zone of the calciner.

The hydrocarbons and carbon monoxide gas produced by the pyrolysis reaction are removed from the calciner and burned in an afterburner unit. Dust and fines entrained in the exhaust from the calciner are sent to a dust oxidation chamber outside the calciner for oxidation by addition of air.

US 4306854.

FLUID BED FURNACES.

Harry Dawson, Rochdale United Kingdom - England. assigned to G. P. Worsley and Company Limited.



A fluid-bed furnace has at least one combustion chamber, preferably two side-by-side, housing a bed of incombustible particulate material to be fluidized when burning fuel fed thereto. Bed fluidization is by forced release in the incombustible material of combustion promoting gas, normally air, from a plenum chamber arrangement externally of the bed proper at a side or end thereof to save overall height. Other features include the return of used exhaust gas to the bed for additional fluidizing and heating purposes; release within the bed of such returned exhaust gas at a position higher than normal combustion promoting gas; an auxiliary burner within the combustion chamber to consume fine fuel material lifted from the bed in operation; insulation of at least the normal combustion promoting gas plenum chamber externally by incombustible bed material and/or internally by refractory lining; end tapering of bed traversing gas feed pipes to reduce expansion resistance; and a removable end plug in the latter pipes to ease cleaning thereof.