

This invention relates in general to fluidized bed reactors or combustion chambers with particle return, which have pulse particle traps. The fluidized bed reactor with particle return has reactor lining restricted with walls, with the upper and the bottom sections, outlet opening placed in the upper section of the lining of the reactor, main pulse particle trap placed in the upper section of the lining of the reactor and intended for particle taken by gas flow passing in the lining of the reactor from the bottom section to the upper one, cavity for reception of trapped particles and means for particle return connected to that cavity.