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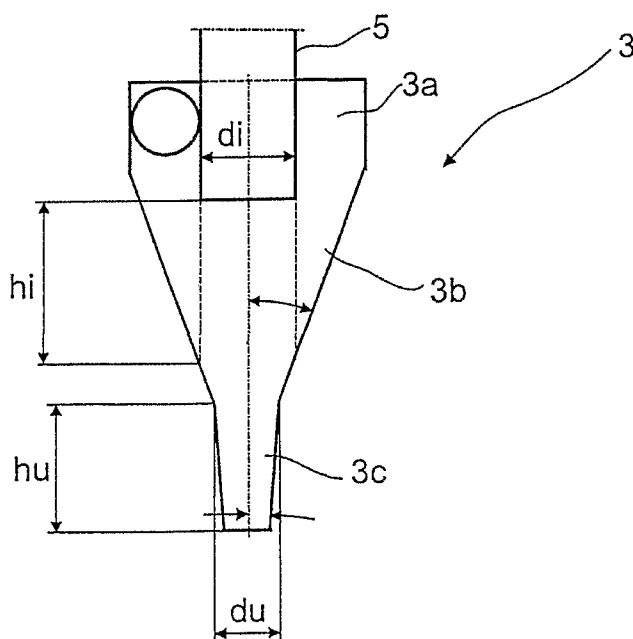
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(54) Title: APPARATUS FOR THE GAS-PHASE POLYMERIZATION OF OLEFINS, IN PARTICULAR ETHYLENE



(57) Abstract: An apparatus for the polymerization of olefins, in particular ethylene, comprising a gas-phase fluidized-bed reactor (1), a recycle gas line (2) connected to the reactor for discharging and recirculating the recycle gas stream comprising the unpolymerized olefin and a cyclone (3) located in the recycle gas line for the reduction and precipitation of the solid particles entrained in the recycle gas from the reactor, with the cyclone comprising an upper section (3a) which has an essentially vertical central axis, whose wall extends along a rotationally symmetric body and which is provided with a cyclone inlet (4) arranged eccentrically relative to the central axis, a middle section (3b) which adjoins the upper section (3a) and whose wall extends along a rotationally symmetric body which tapers in a downward direction, a lower section (3c) for discharging the solid particles precipitated from the recycle gas which adjoins the middle section (3b) and whose wall extends along a rotationally symmetric body and a tube (5) extending essentially axially symmetrically down into the upper section and, if appropriate, the middle section for discharging the recycle gas which has been freed of the particles. According to the invention the ratio H ; of the distance h ; from the lower end of the tube (5) extending downward into the cyclone to the intersection (6) of an

imaginary extension of the wall of the downwardextending tube (5) with the wall of the middle section (3b) to the diameter d ; of the downwardextending tube (5) is from 3 to 8, in particular from 4 to 7.



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