

83-700740/27 H09 HRII-21.12.81
 HRI INC *DE 3245-494-A
 21.12.81-US-332433 (30.06.83) C10g-01/06
 Coal hydrogenation in upflow reactor - with deflector to retain coarse solids

H(9-A)

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solid particles.

EMBODIMENT

The reactor may be in the form of a conventional ebullated-bed reactor having a recycle cup (26) and dipleg (27) for internal recycle from the dilute phase to the dense phase. The deflector may be an inclined or conical baffle plate (38) attached to the outlet pipe (32) by 3 or more support bars (33). 27pp367Dwg.No2/4.

C83-062146 Coal hydrogenation is effected by slurrying coal in oil, passing the slurry and H₂ upwards through a reactor contg. particulate solids at 750-950°F and an H₂ partial pressure of 1000-4000 psig so that the solids are maintained in statistical motion in the upflowing liq. phase, and withdrawing a gas/liq. effluent while deflecting unconverted coal particles away from the effluent stream, thereby increasing the concn. and residence time of the larger coal particles in the reactor to provide improved conversion, so that the effluent contains only fine solids. The effluent is then sepd. into gaseous and liq. fractions and a coal liq. fraction is recovered.

Also claimed is a reactor for treating a liq. with a gas while contg. a bed of finely divided solids. The reactor comprises a pressure vessel with inlets for liq., gas and solids, an outlet pipe extending within the upper part of the vessel, and a deflector device protecting the intake end of the outlet pipe to reduce selectively the ingress of larger

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