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TEXACO DEV CORP

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Synthesis gas mfr. partial oxidn. burner - maintains velocity of reaction components at burner exit at optimum value over wide range of gasifier throughputs

(67, 71) located upstream from the face of the burner. A water-cooled flat face-plate (8) is provided with separate passages for discharging air or soot-flowing or de-slagging media at the face of the burner.

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D/S:- DE FR GB IT NL SE

High turndown dislagging burner simultaneously introduces one or two mixed pairs of reactant feedstreams into a free-flow non-catalytic partial oxidation gas generator for the production of synthesis gas, fuel gas or reducing gas by way of the central and/or annular sections of the burner. Each pair of feedstreams has a stream of free-oxygen containing gas with or without a temperature moderator and a pumpable liquid slurry stream of solid carbonaceous fuel, such as a coal-water slurry. Other carbonaceous fuels may be used.

The burner has four coaxial conduits (4, 5, 6, 7) that are radially spaced to provide coaxial concentric annular passages (51, 53, 56, 59). All of the conduits and annular passages are closed at the upstream ends and open at the downstream ends. Each pair of feedstreams is separately mixed together in a central or annular pre-mix chamber

ADVANTAGES

The velocity of the reaction components at the exit of the burner can be maintained at near optimum value over a wide range of gasifier throughput. Also, axial symmetry for the reactant flow pattern is achieved, and building of soot or slag on the face of the burner is prevented.

EMBODIMENT

The four concentric coaxial conduits are cylindrical with a downstream end that gradually develops into a converging long radius frusto-conical shaped nozzle at the downstream end of the burner. Central and annular pre-mix zones are provided by retracting the downstream tips of the central and third conduits upstream from the face of the burner. The downstream ends of the second and outer conduits terminate at the face of the burner. Alternate pairs of feedstreams of free-oxygen containing gas and carbonaceous fuel slurries or hydrocarbonaceous fuel are

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introduced respectively into the upstream ends of the four conduits. A pair of feedstreams is mixed together in the central or annular pre-mix chamber. (29pp1345RHDwgNo 2/2)

(E)ISR:- No Search Report.

