88-057952/09 E36 H09 SHEL 29.08.86
SHELL INT RES MIJ BV *EP -257-722-A
29.08.86-GB-020993 (02.03.88) C01b-03/32 C10j-03/46

**Producing gas mixt. of hydrogen and carbon mon:oxide - by partial combustion of carbon fuel with oxygen- contg. gas in reactor where prod. is quenched and gas sepd. from waste**

C88-025794 R(DE GB IT NL)

A process for producing a gas mixt. contg $H_2$ and CO by partially combusting carbon-contg. fuel with an $O_2$-contg. gas includes supplying the fuel and gas to a gasifier at a temp. and pressure suitable to cause partial combustion. The combustion prod. is quenched in a quench zone near the gasifier outlet. Ash and slag are sepd. from the gas mixt. and discharged to a slag bath. The gas mixt. is passed through a waste heat boiler positioned vertically below the gasifier and quench zone such that ash and slag are discharged vertically inside the waste heat boiler.

USE

To produce $H_2$ and CO gas from coal, wood or liq. fuel.

ADVANTAGE

The gasification is immediately followed by quenching for instantaneous removal of the major amt. of ash and slag.

E(31-A1) H(9-C)

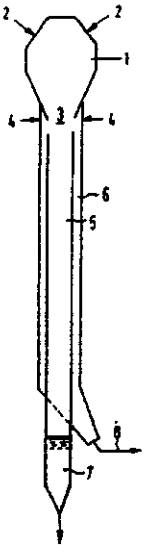
APPARATUS

The gasifier (1) includes a supply means (2) in the top and carbon contg. fuel, oxygen contg. gas and preferably a moderator are injected into the gasifier. Partial combustion under appropriate conditions produces a gas mixture contg. hydrogen and carbon monoxide plus ash and slag, which leave the gasifier at the outlet in the base.

The product gas is quenched by a cooling medium which enters the quench zone through the inlets (4) and the major part of cooled ash and slag fall into slag discharge means (5) surrounded by outer shell of waste heat boiler (6) and discharged into slag bath (7) which can be a water bath. The waste heat boiler includes cooling coils or panels and from the slag bath (7) slag is discharged into a slag rock hopper and the gas mixt. which may contain ash and slag contaminants is cooled in the waste heat boiler (6) and exits via outlet (8) to undergo further removal of the contaminants.

The slag discharge means (5) can be positioned immediately below gasifier outlet with the upper end in the quench zone. Pressures in the gasifier, waste heat boiler and slag discharge means ensure all product gas is passed into the

waste heat boiler and is prevented from discharging into the slag discharge means.(4pp1784RKMHDwgNo.1/1).
(E) ISR:- No Search Report

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