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**Appts. for holding catalyst in prodn. of synthesis gas in auto-thermal - contained in number of tubes arranged in parallel**

**C89-140383 R(BE DE ES FR GB IT NL)**

An arrangement is claimed for holding the catalysts, in particular a primary and a secondary catalyst, in the production of synthesis gas in an autothermal reformer. The primary catalyst is contained in a number of tubes arranged in parallel.

Each tube (11) for the primary catalyst (12) narrows into a guide tube (11a) that penetrates, lance-fashion, through the corresp. secondary catalyst (13).

#### ADVANTAGE

The arrangement allows a compact form of construction, and provides and maintains optimum flow and expansion conditions in, on the whole, exothermal reactions.

#### CONSTRUCTION

The simplified form of reactor shown contains double-wall reformer tubes having an outer tube (10) and, over

E(31-A1) H(9-C) N(6)

part of their length, an inner tube (11) which surrounds the primary catalyst (12) and then narrows into the lower part, the lance (11a).

The lance passes through the secondary catalyst (13), which is enclosed by the lower part of the outer tube (10), and then projects down into the oxidation chamber (4), from which gas passes up through the openings (14).

The catalyst carrier (15), in the form of a grid, bars the primary catalyst (12). There is also a grid plate (16) which forms the upper closure of the secondary catalyst (13), so that the gas going through this catalyst (13) can flow into the annular space (17) and reach the dome (8).

There are entry connections (5) for steam containing hydrocarbons, which passes through the passages in the plate (6) to reach the individual arrangements at (1). There are also inlets (7) for further media such as oxidising agents or more gases containing hydrocarbons. The outlet for the synthesis gas is at the connection (9).  
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(G) ISR: No Search Report.

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