

Title (en)

APPARATUS FOR STEAM PRODUCTION BY COMBINING OXYGEN AND HYDROGEN

Publication

EP 0452839 B1 19930901 (DE)

Application

EP 91105943 A 19910413

Priority

DE 4012431 A 19900419

Abstract (en)

[origin: EP0452672A1] The invention relates to an apparatus for generating steam by combining hydrogen and oxygen. It comprises a combustion chamber for combining hydrogen and oxygen and a downstream injection cooler, in which the steam generated in the combustion chamber and having a very high temperature is brought by injection of feedwater to the parameters suitable for feeding into the steam turbine, with a simultaneous increase in the steam mass flow. To provide an apparatus which allows in a technically simple manner the high temperatures of 3000 DEG C arising as a result of the oxidation of hydrogen, to be controlled and the resulting steam to be changed with respect to its parameters, especially temperature and pressure, in such a way that it can be fed to a downstream steam turbine, the injection cooler is formed by a double-walled cylinder (1), on whose inside wall (2) a lining of a helically extending tube bundle is located. The feedwater is fed to the tubes (7) of the tube bundle at the end facing the combustion chamber, the other end of the tubes (7) being connected to the annular space (6) of the double-walled cylinder (1). In a part- region, the tubes (7) of the tube bundle form unlined surfaces (11) as a result of an alteration of their pitch angle, in which surfaces injection orifices (12) for the feedwater are located in the inside wall (2) of the cylinder (1). <IMAGE>

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