Title (en)

WATER TUBE BOILER

Publication

EP 0169256 B1 19890510 (EN)

Application

EP 84108703 A 19840724

Priority

EP 84108703 A 19840724

Abstract (en)

[origin: EP0169256A1] In a water tube boiler comprising a housing (20) enclosing tubes (36,38) bent to form vertical chambers (40a-40e) successively traversed by rising hot combustion gases, the tubes being connected at the bottom to a cold water manifold (24) and at the top to a steam manifold (26), the manifolds project beyond the housing with a downcomer outside the housing connecting the top of the lower manifold and the lowest part of the upper manifold, thereby permitting the boiler to operate with a shallow level of water in the upper manifold, speeding up circulation of water and its heating, and permitting substantially dry steam to be discharged from the upper manifold. The chambers may include baffles (46) which are angled so that the hot gas hits them at an angle less than 90 DEG so as to be deflected thereby in the direction of its advance, thereby avoiding hot spots. Advantageously successive chambers from bottom to top are reduced in volume to make up for the reduction in volume as the hot gas cools, thereby keeping the gas velocity high and maintaining turbulence which helps heat exchange. For efficient fuel utilization, notwithstanding fluctuations in demand, the operator can monitor the oxygen content of the exiting combustion gas and adjust the baffling to maintain it substantially constant.

IPC 1-7

F22B 21/22; F22B 37/40; F24H 1/40

IPC 8 full level

F22B 21/22 (2006.01); **F22B 37/40** (2006.01); **F24H 1/40** (2006.01)

CPC (source: EP)

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