

Group of inventions relates to steam boilers, in particular to boilers with circulating quasi-liquefied layer. Boiler has reaction zone and heating surfaces. First zone of reaction chamber is zone of quick re-circulation of layer of quasi-liquefied particles. Second zone is formed with case of boiling quasi-liquefied layer placed on bottom of reaction chamber. Control of air or gas supply to the first and the second zones of the chamber is performed separately by means of respective pipelines. Milled fuel is supplied to the first zone. Solid particles are kept in quasi-liquefied state. At that overflow of particles from second zone of reaction chamber to the first zone takes place and separation of part of those from reaction chamber or recirculation through it. Variants of the boiler differ with placement of heating surfaces and case of the second zone. Heating surfaces can be steam overheater, intermediate steam overheater, evaporator or economizer. The inventions promote increase of effectiveness of the boiler and decrease of dimensions of its reaction chamber.