

Water-heating boiler includes firebox with upper, front, rear, and side screens made of pipes, all housed within casing; additionally, intermediate screens are installed between the side screens and the casing, with their pipes offset relative to pipes of corresponding side screens and equipped with fins connecting them to one another. Fins of upper screen are made in the form of a curved surface convex towards housing; odd-numbered pipes of upper screen are connected to each other by fins that wrap around even-numbered pipes. Adjacent pipes of intermediate screens are equipped with additional fins connecting them to each other to form convective gas passages. Fins connecting adjacent tubes of front and rear screens, as well as additional fins connecting adjacent tubes of intermediate screens, are designed as a curved surface convex towards housing. Fins of tubes of upper, front, and rear screens, as well as additional fins of intermediate screen tubes, are designed as gas-tight, self-compensating fins and are positioned relative to casing surface to form an air gap into which atmospheric air enters via pipe above the upper screen to facilitate circulation and heating of air, which then flows into furnace for fuel combustion. Paired pipes of upper screen are made without fins; gas-tight, self-compensating fins connecting adjacent pipes of intermediate screens are made in the form of part of cylindrical shell, with convex side facing the casing. Fin tubes of intermediate screens are designed as gas-tight, self-compensating fins in the form of a section of cylindrical shell, with convex side facing the furnace. Vertical isolated convective gas ducts of intermediate screens are framed by adjacent tubes; fins and additional fins of adjacent tubes are connected at the top to furnace volume beneath the upper screen, and at the bottom to lower exhaust gas ducts.