CLAIMS

1. Heat exchanger for boiler consists of

Heat sustaining materials (11)

A hollow frame (21) made of heat resistant materials having a solid surface bounded by at least three plains or a circular surface which can elongated along a certain part of boiler wherein said surface is configured to support the installation of a plurality of heat sustaining material and be attached with ventilation controlling means

characterized in that said heat sustaining materials are porous and are substantially positioned adjacent to each other on the surface of the frame (21), which can be installed in the boiler.

2. Heat exchanger for the boiler as recited in Claim 1 wherein the apparatus comprises supporting bases for installation of the apparatus with the boiler.

3. Heat exchanger as recited in any of the above Claims wherein porous heat sustaining materials are varied in term of sizes and configured to have different porosities.

4. Heat exchanger as recited in any of the above Claims wherein the porous heat sustaining materials are principally made of ceramic, and is in form of square or curved plate.

5. Heat exchanger as recited in any of the above Claims wherein the plurality of surfaces of the hollow frame are used support the installation of a plurality of heat sustaining materials thereby forming more than one layer of surfaces which are spaced apart from each other and the boiler.

6. Heat exchanger for boiler as recited in Claim 5 wherein the porosity of the porous heat sustaining materials being located at the layer closest to the boiler is greater than those of the outer layer.

7. Heat exchanger as recited in Claim 1 wherein the frame comprises a plurality of frames which can be disassembled.

8. Heat exchanger as recited in any of the above Claims wherein the apparatus further comprised a plate located at one end of the frame for controlling the direction of flame.

9. Heat exchanger as recited in any of the above Claims wherein the apparatus can be used with a horizontal or vertical boiler.

10. Heat exchanger as recited in any of the above Claims wherein heat sustaining materials can be manufactured as a part of the surface of the frame.

CLAIMS

1. Heat exchanger for boiler consists of

Heat sustaining materials (11)

A hollow frame (21) made of heat resistant materials having a plurality of solid surfaces, each bounded by at least three plains or a circular surface elongated along a certain part of boiler and used to support the installation of a plurality of heat sustaining materials wherein the said plurality of surfaces of the hollow frame form at least one inner layer and one outer layer which are spaced apart from each other and the boiler

characterized in that said heat sustaining materials are porous and the level of porosity of heat resistant materials installed on the outer layer is at least 80 percent of the level of porosity of heat resistant materials installed on the inner layer next to the said outer layer.

2. Heat exchanger for the boiler as recited in Claim 1 wherein the apparatus comprises supporting bases for installation of the apparatus with the boiler.

3. Heat exchanger as recited in any of the above Claims wherein porous heat sustaining materials are varied in term of sizes and configured to have different porosities.

4. Heat exchanger as recited in any of the above Claims wherein the porous heat sustaining materials are principally made of ceramic, and is in form of square or curved plate.

5. Heat exchanger as recited in Claim 1 wherein the frame comprises a plurality of frames which can be disassembled.

6. Heat exchanger as recited in any of the above Claims wherein the apparatus further comprised a plate located at one end of the frame for controlling the direction of flame.

7. Heat exchanger as recited in any of the above Claims wherein the apparatus can be used with a horizontal or vertical boiler.

8. Heat exchanger as recited in any of the above Claims wherein heat sustaining materials can be manufactured as a part of the surface of the frame.