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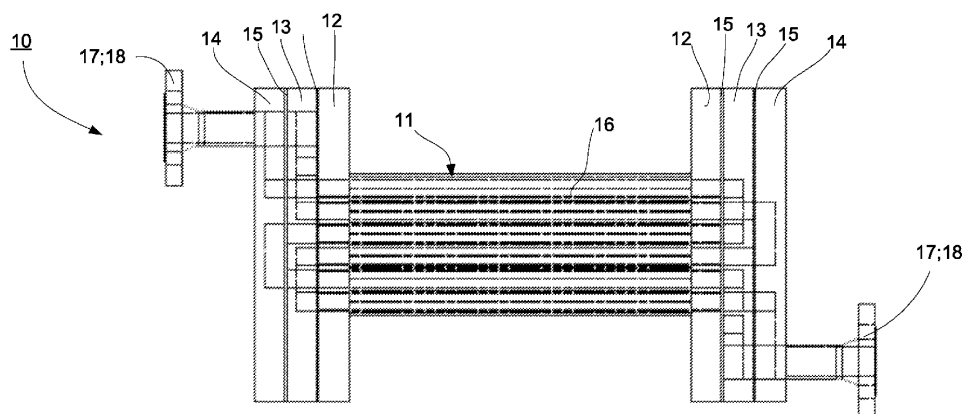


Fig. 1A

(57) Abstract: The invention relates to a heat exchanger, comprising heat delivery surface tubes (16) arranged in at least one bank of tubes (16) and end elements. The heat exchanger (10) comprises a casing (11) around the bank of the tubes (16). The tubes (16) are straight. In the heat exchanger (10) the substance to be heated or cooled is configured to be flow in the tubes (16) and a stationary heat transfer medium (20; 21) is located in volumes (19) inside the casing (11) between the tubes (16) and each end of the tubes (16) is attached releasably to the end element. The invention relates also to a system for treatment of organic waste for treatment of organic waste by means of hydrothermal carbonization under given process conditions, which system comprises at least one source organic waste, at least one wet organic waste tank, at least one thermal reactor for the hydrothermal carbonization, a heat exchanger (10). The at least one wet organic waste tank and the at least one thermal reactor are in flow-connection with the heat exchanger (10) and the heat exchanger (10) is configured to heat the organic waste to be treated in the thermal reactors by means of hydrothermal carbonization and configured to cool biochar sludge received from the thermal reactors as a result of the hydrothermal carbonization.

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