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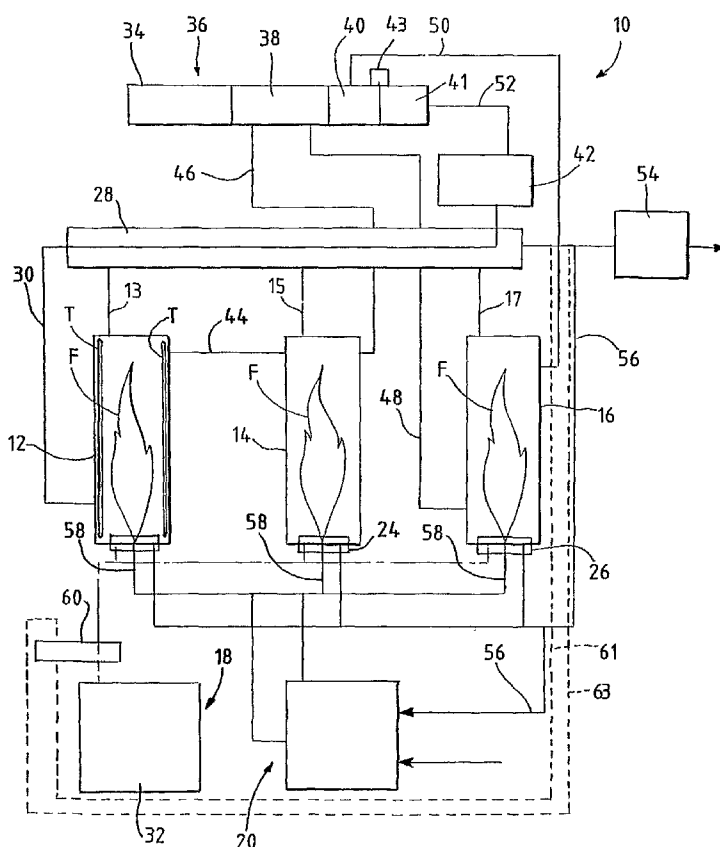
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(54) Title: MODULE-BASED OXY-FUEL BOILER



(57) Abstract: A boiler system for producing steam from water includes a plurality of serially arranged oxy fuel boilers. Each boiler has an inlet in flow communication with a plurality of tubes. The tubes of each boiler form at least one water wall. Each of the boilers is configured to substantially prevent the introduction of air. Each boiler includes an oxy fuel combustion system including an oxygen supply for supplying oxygen having a purity of greater than 21 percent, a carbon based fuel supply for supplying a carbon based fuel and at least one oxy-fuel burner system for feeding the oxygen and the carbon based fuel into its respective boiler in a near stoichiometric proportion. The oxy fuel system is configured to limit an excess of either the oxygen or the carbon based fuel to a predetermined tolerance. The boiler tubes of each boiler are configured for direct, radiant energy exposure for energy transfer. Each of the boilers is independent of each of the other boilers.



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