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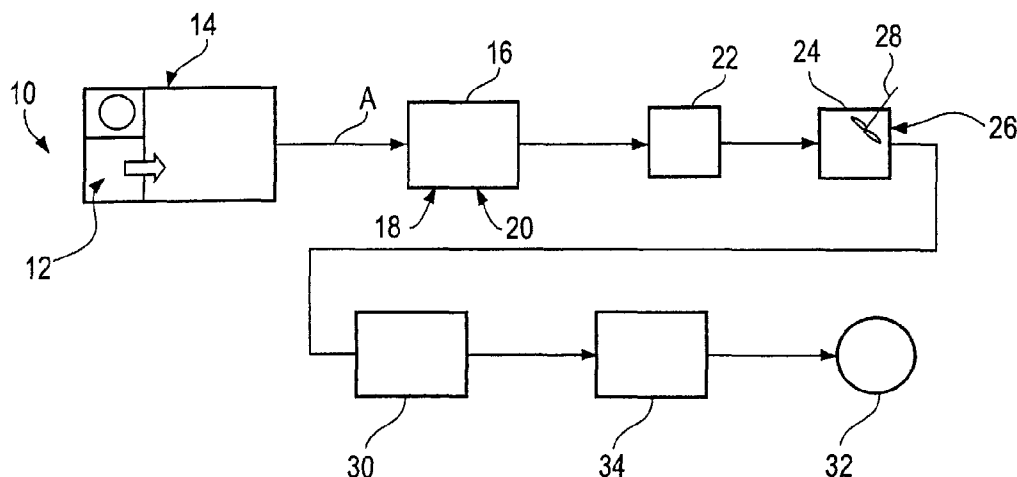
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(54) Title: OXY-FUEL COMBUSTION SYSTEM AND USES THEREFOR



(57) **Abstract:** An oxygen fueled combustion system includes a furnace (14) having at least one burner, an oxygen supply for supplying oxygen having a predetermined purity, and a carbon based fuel supply for supplying a carbon based fuel. The oxygen and the carbon based fuel are fed into the furnace (14) in a stoichiometric proportion to one another to limit an excess of either the oxygen or the carbon based fuel to less than 5 percent over the stoichiometric proportion. The combustion of the carbon based fuel provides a flame temperature in excess of 4500°F. The exhaust gas stream from the furnace (14) has substantially zero nitrogen-containing combustion produced gaseous compounds from the oxidizing agent and reduced green-house gases. Substantially less carbon based fuel is required than conventional combustion systems without a loss of energy output.



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