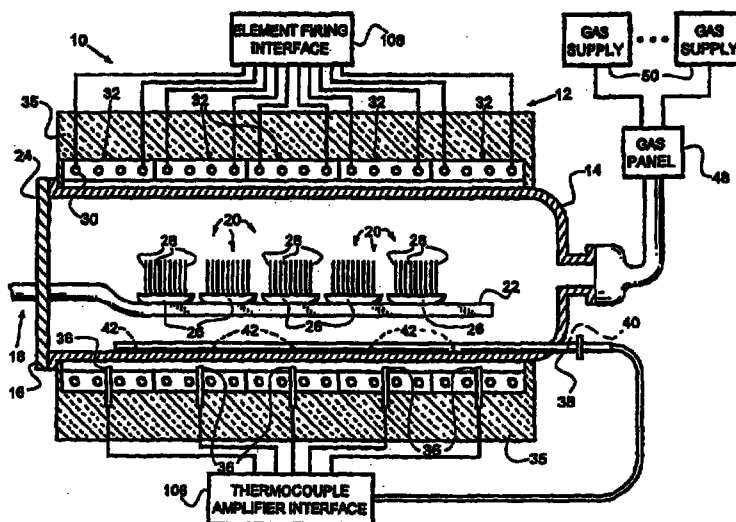


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(54) Title: TEMPERATURE CONTROL SYSTEM FOR A THERMAL REACTOR



(57) Abstract

A temperature control system for a thermal reactor (10) includes multiple temperature controllers each employing one or more dynamic models optimized for a given temperature range, each temperature range exclusive of the temperature ranges of the other controllers. Additionally, the control system employs enhanced ramp trajectory logic and a virtual temperature sensor in the event of hardware failure of the corresponding non-virtual temperature sensor (36, 42). Upon detecting a temperature sensor failure, the control system automatically substitutes a virtual temperature sensor in place of the actual temperature sensor (36, 42). Additionally, control logic is provided which detects failure of the heating elements (30) and switches the control mode accordingly.