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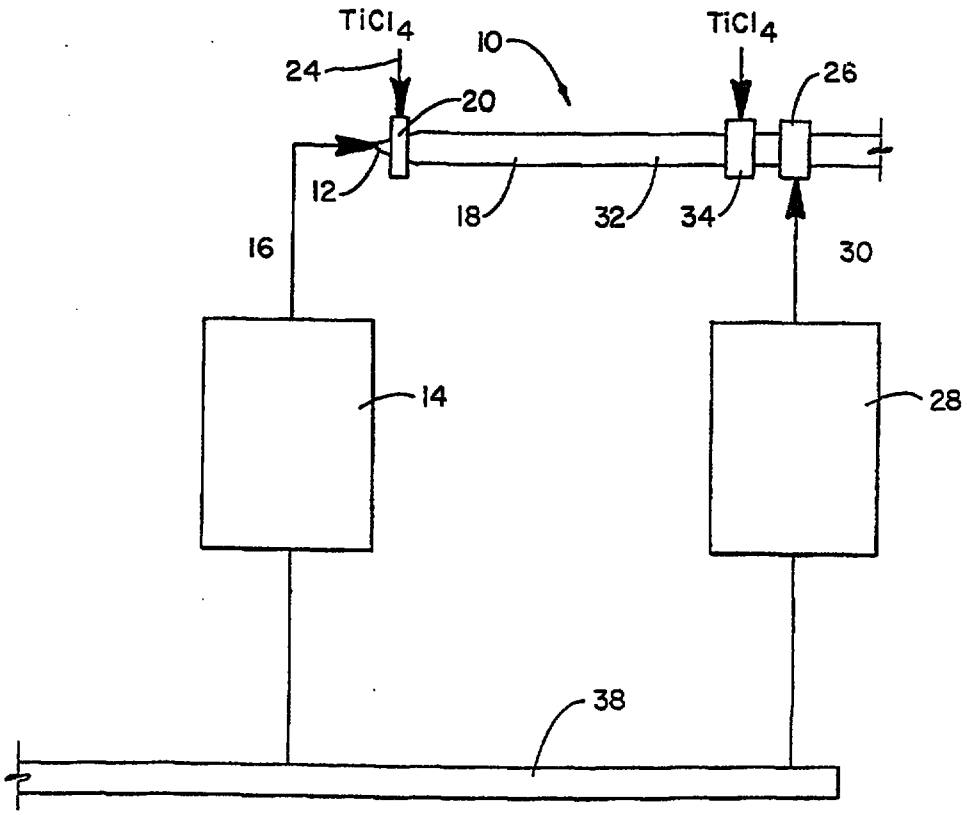
(54) Title: METHOD AND APPARATUS FOR PRODUCING TITANIUM DIOXIDE

(57) Abstract

A process and reactor (10) for reacting titanium tetrachloride vapors with oxygen to produce titanium dioxide wherein the oxygen is introduced into the reactor in at least two points, a first oxidizing gas introduction assembly (12) and a second oxidizing gas introduction assembly (26). The temperature of the oxygen introduced to the reactor at the second oxidizing gas introduction assembly (26) is above, below, or at the same temperature of the oxygen introduced at the first oxidizing gas introduction assembly (12). The second oxidizing gas introduction assembly (26) can be located before or after all the titanium tetrachloride has been introduced into the reactor (10). The titanium tetrachloride is introduced into the reactor (10) at a relatively low temperature, below about 427 °C through a first titanium tetrachloride introduction assembly (20). The reaction temperature in the reactor (10) is at least about 700 °C. Optionally, a second addition of titanium tetrachloride may be introduced into the reactor (10) through a second titanium tetrachloride introduction assembly (34).



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