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(54) **PURIFICATION METHOD BY HYDROGEN ADSORBTION WITH COGENERATION OF CO_2 STREAM PRESSURE**

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(58) **Field of Classification Search** 95/45, 55, 95/90, 95, 96, 97
See application file for complete search history.

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(57) **ABSTRACT**

The present invention relates to a method of producing hydrogen of very high purity from a feed predominantly containing said hydrogen and a minor part of impurities mainly consisting of carbon dioxide, carbon monoxide, methane and heavier hydrocarbons. The purification method by hydrogen adsorption using a desorption stage at a lower pressure than the pressure of the feed, such as a PSA method for example, allows to produce the desorption stream and notably to recover the carbon dioxide under pressure and high-purity hydrogen, with a high yield. These performances are obtained by combining the successive stages of the method according to the invention with the use of a new family of adsorbent whose dynamic capacity at a high desorption pressure is greater than that of conventional adsorbents.

23 Claims, 3 Drawing Sheets