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(54) **HIGH EFFICIENCY GAS CONCENTRATING APPARATUS AND METHOD OF CONTROLLING HIGH EFFICIENCY GAS CONCENTRATING APPARATUS**

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(58) **Field of Classification Search** 95/96, 105, 95/128, 148; 96/130, 143; 128/205.12, 205.27
See application file for complete search history.

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(57) **ABSTRACT**

A high efficiency gas concentrating apparatus includes an air compressor for supplying high pressure air, first and second adsorption towers that are disposed above the air compressor and communicating with the air compressor to adsorb nitrogen and concentrate oxygen as the high pressure air is alternately supplied thereto, first and second concentrating passages that are disposed above the respective first and second adsorption towers to discharge the concentrated oxygen, and a cleaning tank that is disposed between the first and second concentrating passages to receive a portion of the concentrated oxygen from one of the first and second adsorption towers, temporarily store the received concentrated oxygen therein, and alternately remove adsorbed nitrogen by supplying the temporarily concentrated oxygen to the other of the first and second adsorption towers.

21 Claims, 14 Drawing Sheets

