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(54) **LUNG SIMULATOR FOR AN INTEGRATED HUMAN PATIENT SIMULATOR**

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204.26; 623/9; 73/28.04; 446/24

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(57) **ABSTRACT**

A simulated lung for use in real time simulated medical procedures comprising a positive pressure source of a gas, a vacuum pressure source, a fixed interior volume vessel having an inlet, an outlet, and a breath passage port, the inlet in communication with the positive pressure source, and the outlet in communication with the vacuum pressure source, a first flow valve intermediate the positive pressure source and the inlet, a second flow valve intermediate the vacuum pressure source and the outlet, a pressure sensor in communication with the interior volume of the vessel, and means for continuously evaluating a pressure signal generated by the pressure sensor to a desired pressure level within the vessel during the breathing cycle such that a flow of gas entering and exiting the breath passage port of the vessel is synchronized with a predetermined desired flow rate of breathing during the breathing cycle. The desired pressure level depends upon any one of i) a time and event based script, ii) a computer model, iii) or a combination of a time and event based script and a computer model based on a physiological state of a simulated patient.

22 Claims, 6 Drawing Sheets

