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Dhont et al.

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[54] **APPARATUS FOR STIMULATING RESPIRATORY CONDITIONS ESPECIALLY PATHOLOGICAL RESPIRATORY CONDITIONS**

4,797,104 1/1989 Laerdal et al. 434/265
4,915,635 4/1990 Ingenito et al. 434/265 X

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[57] ABSTRACT

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Apparatus for teaching respiratory auscultation semiology includes a manikin, a stethoscope simulator having a head and earpieces connected to a receiver and a control device connected to the manikin. The manikin has an envelope animated by a drive system and proximity sensors responsive to the head. The control device includes a control unit, a memory for groups of sound data associated with a respiratory condition connected to it to supply the data to it, and a transmitter connected to it to receive a sound data signal derived from this data. The control unit is connected to the manikin to receive signals from the sensors and, according to their source, to produce the sound data signal and a motor control signal derived from the sound data.

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[51] Int. Cl.⁶ **G09B 19/00**

[52] U.S. Cl. **434/262; 434/265**

[58] Field of Search 434/262, 265-267, 434/270, 428, 219; 128/668; 364/413.01-413.04

[56] References Cited

U.S. PATENT DOCUMENTS

4,360,345 11/1982 Hon 434/265 X

10 Claims, 3 Drawing Sheets

