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# United States Patent [19]

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Gravenstein et al.

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[54] **TRANSTRACHEAL ENERGY APPLICATION AND SENSING SYSTEM FOR INTUBATION: METHOD AND APPARATUS**

|           |         |                       |            |
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[75] Inventors: **Dietrich Gravenstein**, Salt Lake City, Utah; **Nikolaus Gravenstein**, Gainesville, Fla.; **Richard J. Melker**, Gainesville, Fla.; **Samsun Lampotang**, Gainesville, Fla.; **Anwer Sultan**, Gainesville, Fla.

*Primary Examiner*—Aaron J. Lewis  
*Attorney, Agent, or Firm*—Kerkam, Stowell, Kondracki & Clarke; Dennis P. Clarke

[73] Assignee: **University of Florida**, Gainesville, Fla.

## [57] ABSTRACT

[21] Appl. No.: **319,543**

An intubation scope assembly adapted to facilitate the positioning of an endotracheal tube in a patient comprising an electromagnetic or sound energy source which enters the vocal cords exteriorly of the neck of the patient with energy having a direction, wavelength and intensity capable of entering the trachea, substantially avoiding encompassing the entire pharynx and capable of being transmitted cephalad substantially between and/or around the vocal cords. A suitable sensor for the energy emitted by such source comprises a stylet assembly, the distal end of which can detect or collect the energy transmitted between and/or around the vocal cords and the proximal end of which can monitor the detected or collected energy to thereby locate the vocal cords for positioning an endotracheal tube therebetween. A system and method of intubating a patient with the foregoing assembly are also disclosed.

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[51] Int. Cl.<sup>6</sup> ..... **A61M 16/04**

[52] U.S. Cl. .... **128/200.26; 128/205.23; 128/207.14; 128/207.15**

[58] Field of Search ..... **128/200.26, 205.23, 128/207.14, 207.15**

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**16 Claims, 4 Drawing Sheets**

