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(71) Applicant: **BIOSENSE DIAGNOSTICS PTE LTD**
[SG/SG]; 50B Faber Heights #03-13, Singapore 129196 (SG).

(72) Inventors: **CHEE, Johnny**; 50B Faber Heights #03-13, Singapore 129196 (SG). **GOH, Puay Hian**; 50B Faber

Heights #03-13, Singapore 129196 (SG). **SONG, Xuezheng**; 50B Faber Heights #03-13, Singapore 129196 (SG).

(74) Agent: **ALLEN & GLEDHILL LLP**; One Marina Boulevard #28-00, Singapore 018989 (SG).

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(54) Title: APPARATUS AND METHOD FOR DETERMINING LOCATION OF A DISTAL END OF A TUBE INSERTED INTO A BODY CAVITY

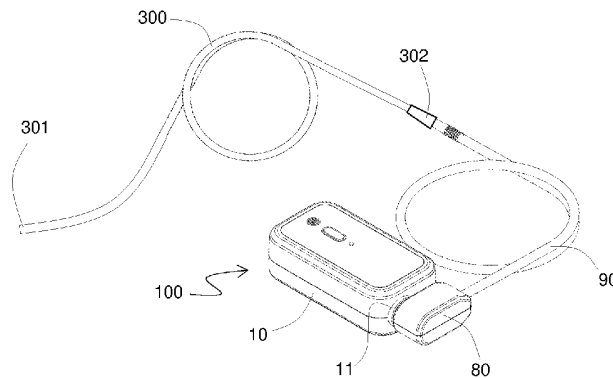


FIG. 1

(57) Abstract: An apparatus for determining location of a distal end of a tube inserted into a body cavity, the apparatus comprising: a sensing unit having a fluid outlet provided to form a fluid communication with a proximal end of the tube; a fluid chamber provided in the sensing unit in fluid communication with the fluid outlet; a fluid bolus valve provided in fluid communication between the fluid chamber and the fluid outlet, wherein upon activation of the fluid bolus valve when the proximal end of the tube is in fluid communication with the fluid outlet and the distal end of the tube is inserted into a body cavity, the fluid bolus valve is opened for a predefined period of time to release a fluid bolus having a predefined pressure and a predefined volume that travels from the fluid chamber through the tube into the body cavity; a backpressure sensor provided in fluid communication with the fluid outlet to measure, over a predetermined period of time, backpressure that arises as the fluid bolus is released from the distal end of the tube into the body cavity; a microcontroller provided in communication with the backpressure sensor and configured to generate a backpressure profile from the measured backpressure, the microcontroller further configured to obtain characteristics of the generated backpressure profile and to determine the location of the distal end of the tube according to the obtained characteristics; a first switch provided on the sensing unit and activatable by a user to activate the fluid bolus valve; and a first indicator provided on the sensing unit to indicate that the distal end of the tube is at a first predefined body cavity if so determined by the microcontroller.

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