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[54] INSTRUMENT FOR INSERTION OF AN ENDOTRACHEAL TUBE

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[52] U.S. Cl. **600/120; 600/144; 600/146; 600/188**

[58] Field of Search 600/146, 153, 600/156-159, 179, 185, 187-188, 199, 120, 157, 144, 143

[56] References Cited

U.S. PATENT DOCUMENTS

3,593,706	7/1971	Schubert .	
3,766,909	10/1973	Ozbey	600/199 X
3,799,150	3/1974	Bennet .	
3,881,468	5/1975	Foltz .	
4,037,588	7/1977	Heckele .	
4,063,796	12/1977	Hiltebrandt	350/70
4,146,019	3/1979	Bass et al.	600/156 X
4,254,762	3/1981	Yoon	600/114
4,335,713	6/1982	Komiya	128/9
4,593,682	6/1986	Heckele	128/6
4,667,656	5/1987	Yabe	600/157 X
4,737,142	4/1988	Heckele	604/95
4,830,458	5/1989	Hiltebrandt	350/96.22
4,846,153	7/1989	Berci	600/156 X
4,941,457	7/1990	Hasegawa	128/6
5,016,614	5/1991	MacAllister	600/156 X
5,025,778	6/1991	Silverstein et al.	600/104
5,046,816	9/1991	Lehmann et al. .	
5,203,320	4/1993	Augustine	600/187
5,275,151	1/1994	Shockey et al.	600/146 X
5,327,881	7/1994	Greene	600/120
5,347,992	9/1994	Pearlman et al.	600/159 X
5,394,865	3/1995	Salerno .	
5,431,152	7/1995	Flam et al.	600/156 X

FOREIGN PATENT DOCUMENTS

9112044	8/1991	WIPO	600/120
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OTHER PUBLICATIONS

Advertisement from technical journal for "Fiber Optic Laryngoscope" (prior art, date unknown).

Anesthesiology Product News, vol. 1, No. 1, pp. 3-4, 11-12 (prior art, date unknown).

Jonathan L. Benumof, M.D., "Management of the Difficult Airway: The ASA Algorithm", pp. 1-7 with 2 drawing pages, 45th Annual Refresher Course Lectures and Clinical Update Program, Annual Meeting of the American Society of Anesthesiologists, Oct. 1994.

Jonathan L. Benumof, M.D., "Management of the Difficult Adult Airway", Medical Intelligence Article, *Anesthesiology*, V 75, No. 6, Dec. 1991, pp. 1087-1109.

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[57] ABSTRACT

An endotracheal tube insertion system includes a formable shaft having sufficient stiffness to hold a formed shape and having a plurality of longitudinally extending passageways defined therethrough. The instrument further includes a housing connected to the first end of the formable shaft. An image guide cable is disposed in a first longitudinally extending passageway and is optically connected to an eyepiece which is affixed to the first end of the housing. A light source is attached to the second end of the formable shaft proximate the second end of the image guide cable. A baffle member is attached to the second end of the formable shaft proximate to a second longitudinally extending passageway and has an opening directed toward the first longitudinally extending passageway. A fluid port is in fluid communication with the second passageway. A suction port is also provided in fluid communication with a third longitudinally extending passageway. A control line, having one end affixed to the second end of the formable shaft, is slidably disposed in a fourth longitudinally extending passageway for controlling the curvature of the formable shaft.

16 Claims, 2 Drawing Sheets

