



United States Patent [19]

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Fowler, Jr.

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[54] **ISOLATOR FOR USE IN SURGERY OR AS A CLEAN ROOM AND METHOD OF USING THE SAME**

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[52] U.S. Cl. **600/21**

[58] Field of Search **600/21, 22; 312/1, 312/3-6**

American Journal of Surgery, 104: 891-899 (1962), "A Plastic Isolator for Operating in a Sterile Environment", Levenson, S. M., et al.

British Medical Journal, 1: 322-324 (1974) "New Inventions: The Surgical Isolator", McLauchlan, J., et al.

Journal of the American Medical Association, vol. 259, No. 8, pp. 1199-1202, "Papillomavirus in the Vapor of Carbon Dioxide Laser-Treated Verrucae", Garden, J. M., et al.

Roche Medical Image, vol. 3 No. 3 Autumn 1961, "Clinical Vistas for Germ-free Research".

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[56] **References Cited**

U.S. PATENT DOCUMENTS

2,473,033	6/1949	Letac .	
3,265,059	8/1966	Matthews .	
3,272,199	9/1966	Matthews .	
3,763,857	10/1973	Schradling .	
3,850,172	11/1974	Cazalis .	
4,026,286	5/1977	Trexler .	
4,161,172	7/1979	Pickering .	
4,275,719	6/1981	Mayer .	
4,304,224	12/1981	Fortney	600/21
4,328,793	5/1982	Martin .	
4,367,728	1/1983	Mutke .	
4,485,806	12/1984	Akers	600/21
4,550,713	11/1985	Hyman .	
4,581,538	4/1986	Lenhart .	
4,612,916	9/1986	Akers et al.	600/21
4,865,049	9/1989	Gatti .	
4,867,177	9/1989	Urheim .	
4,950,222	8/1990	Scott et al. .	
5,047,072	9/1991	Wertz et al.	604/20 X
5,342,121	8/1994	Koria	600/21 X

OTHER PUBLICATIONS

Lasers in Surgery and Medicine, 8: 248-253 (1988) "Protection of the Rat Lung from the Harmful Effects of Laser Smoke", Baggish, M. S., et al.

[57] **ABSTRACT**

An isolator and method of using same for providing an atmosphere free of contamination from external sources and for containing and evacuating contaminants generated during the course of a surgical procedure, particularly laser procedures that are performed within the isolator. The isolator includes a double chambered structure made of a flexible material on a rigid frame. Filtered air is provided to the outer chamber and enters the inner chamber through various openings in the inner enclosure walls. The inner chamber is under negative pressure and the mix of filtered air and any air borne contaminants generated by the procedure are evacuated to an air handling unit where contaminants are neutralized and removed from the air. A portion of the top side of the bag is made of a relatively stiff, optically transparent, material through which the surgeon or the assembly worker can view the work area. A plurality of open-ended sleeves are attached to the bag through which the hands are arms of the surgeon and his assistants or the worker can extend into the work space.

20 Claims, 3 Drawing Sheets

