

[54] CONTROLLED ENVIRONMENT
INCUBATOR FOR LIGHT MICROSCOPY

[76] Inventors: Fraser L. Baker, 6227 Orange St.,
Los Angeles, Calif. 90048; John H.
Baumann, 836 Wartman Ave.,
Kingston, Ontario, K7M4M5,
Canada

[21] Appl. No.: 137,274

[22] Filed: Apr. 4, 1980

[51] Int. Cl.³ C12M 1/38

[52] U.S. Cl. 435/290; 119/37;
435/298; 435/809

[58] Field of Search 119/37, 15; 435/290,
435/297, 298, 809

[56] References Cited

U.S. PATENT DOCUMENTS

1,893,918	1/1933	Wilson	119/37
2,296,930	9/1942	Ihler	119/37
2,364,722	12/1944	Kazantzzeff	119/37
3,562,114	2/1971	Steidel et al.	435/809 X
3,618,734	11/1971	Khan	435/809 X
3,854,452	12/1974	Bardet	119/37
3,886,047	5/1975	Billups, Jr.	435/298
3,926,738	12/1975	Nyiri et al.	435/290
4,090,921	5/1978	Sawamura et al.	435/290 X
4,162,196	7/1979	Folsom et al.	435/809 X
4,204,037	5/1980	Dill et al.	435/290 X

Primary Examiner—Robert J. Warden

[57] ABSTRACT

A miniature, biological incubator for continuous light microscopic observation of cells in cell cultures under environmentally controlled conditions for use in conjunction with petri dishes or similar types of culture dishes, in which different covers are provided to accommodate different types of microscopes and magnification, the incubator being small enough to fit on a microscope stage and to have a sufficiently small internal volume to facilitate maintenance of a controlled atmosphere having stable temperature, humidity and mixture of gases therein and to permit rapid restoration of controlled environment lost during replacement of dishes or during changing of covers to suit particular microscopic observation. The chamber contains a means for humidifying the gases contained therein by evaporation from water-saturated absorbent pads of large surface area, plus a means for humidifying particular gaseous mixtures used to purge the chamber, utilizing at least one hollow fiber tube in intimate contact with water-saturated absorbent pads through which the purging gases are passed, the hollow fiber tube presenting to the purging gases a large wetted surface area resulting in efficient humidification of the purging gases.

8 Claims, 6 Drawing Figures

