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(54) **CELL ANALYSIS AND SORTING APPARATUS FOR MANIPULATION OF CELLS**

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(52) **U.S. Cl.** **435/288.4**; 435/288.5; 204/403.01; 204/403.13; 204/409; 204/450

(58) **Field of Search** 204/450, 400, 204/409, 403.01, 403.13, 412; 435/288.4, 288.5

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(57) **ABSTRACT**

A cell analysis and sorting apparatus is capable of monitoring over time the behavior of each cell in a large population of cells. The cell analysis and sorting apparatus contains individually addressable cell locations. Each location is capable of capturing and holding a single cell, and selectively releasing that cell from that particular location. In one aspect of the invention, the cells are captured and held in wells, and released using vapor bubbles as a means of cell actuation. In another aspect of the invention, the cells are captured, held and released using electric field traps.

34 Claims, 27 Drawing Sheets

