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**United States Patent****4,806,316****Johnson, et. al.****Feb. 21, 1989****Disposable device for use in chemical, immunochemical and microorganism analysis**

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**422/100; 422/ 58; 422/ 61; 436/164; 436/165; 435/33; 435/ 40; 435/293; 435/301; 435/810**

**Current U.S. Class:**

**422/100**

**Field of Search:**

**422/58, 61, 100; 436/164, 165; 435/33, 34, 40, 287, 291, 293, 299, 300, 301, 810**

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**Abstract**

A substantially rigid, multi-well, self-pipetting device for use in chemical, immunochemical and microorganism analysis is provided. It includes a frame and a plurality of test wells disposed within the frame. A filling manifold communicates with each of the test wells through a filling passageway. A docking port on the periphery of the device receives a reservoir holding a fluid specimen. The docking port communicates with the filling manifold through a filling port and a filling channel. A vent control system also communicates with the test wells and is comprised of one or more vent manifolds, and/or valves to a vent manifold, and/or one or more vent holes to the ambient atmosphere. Any vent holes present are temporarily closed. With the device in its operational position, the test wells, filling channel, filling manifold and filling port are located at a level lower than the surface of the fluid in the reservoir,

and the vent manifold and/or vent holes are positioned higher than the surface of the fluid in the reservoir. The test wells are connected to the filling manifold and the vent control system according to the filling sequence. The reservoir is also connected to the vent control system through a vent port and a vent channel. In use, the fluid specimen in the reservoir flows to the filling manifold and fills the test wells vented to the reservoir or to the ambient atmosphere.

**23 Claims, 9 Drawing Figures**

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