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[54] **APPARATUS FOR FABRICATING SELF-ASSEMBLING MICROSTRUCTURES**

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Related U.S. Application Data

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[51] **Int. Cl.**[6] **H01L 21/00**

[52] **U.S. Cl.** **438/455**; 216/41; 216/95; 216/96; 216/99; 216/108; 438/800

[58] **Field of Search** 437/208, 226, 437/249; 29/25.01; 438/455, 800

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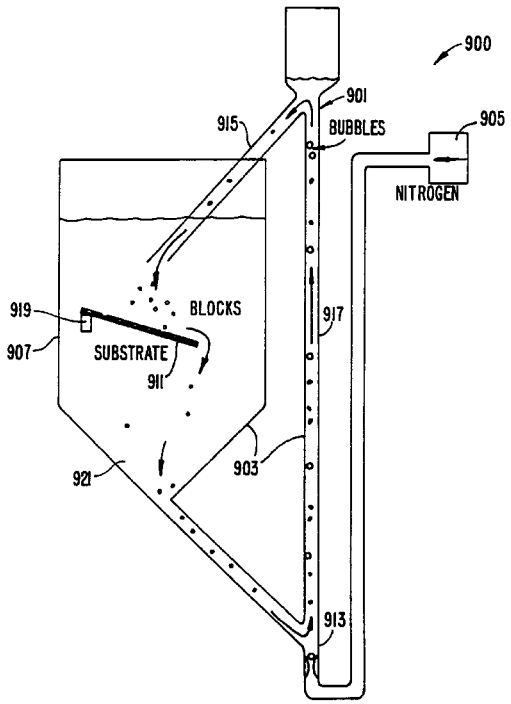
[57] **ABSTRACT**

Apparatus for assembling microstructures onto a substrate through fluid transport. The apparatus includes a vessel that contains the substrate, a fluid, and microstructures. The substrate has at least one recessed region thereon. The microstructures being shaped blocks self-align into the recessed regions located on the substrate such that the microstructure becomes integral with the substrate. The apparatus also includes a pump that circulates the microstructures within the vessel at a rate where at least one of the microstructures is disposed into the recessed region.

17 Claims, 12 Drawing Sheets