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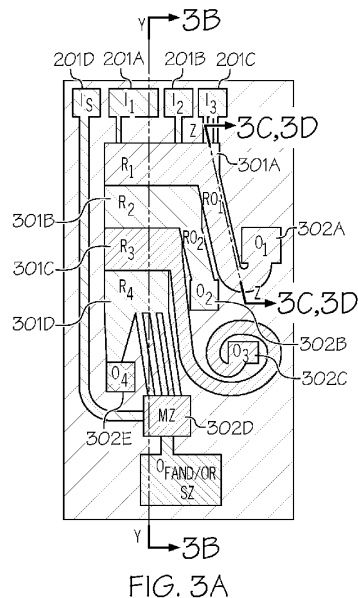
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(54) Title: NANOFABRICATION OF DETERMINISTIC DIAGNOSTIC DEVICES

(57) Abstract: A diagnostic chip for detecting biomarkers and trace amounts of nanoparticles in chemical mixtures or in water. The diagnostic chip includes one or more inputs, where a sample containing differently sized particles is introduced into at least one of these inputs. Furthermore, the diagnostic chip includes multiple separation regions, where the sample is pressurized as it passes through the separation regions. Each separation region includes a deterministic lateral displacement array, where the deterministic lateral displacement array in two or more of these separation regions has a different etch depth profile. In this manner, the diagnostic chip effectively detects biomarkers and trace amounts of nanoparticles in chemical mixtures or in water.



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