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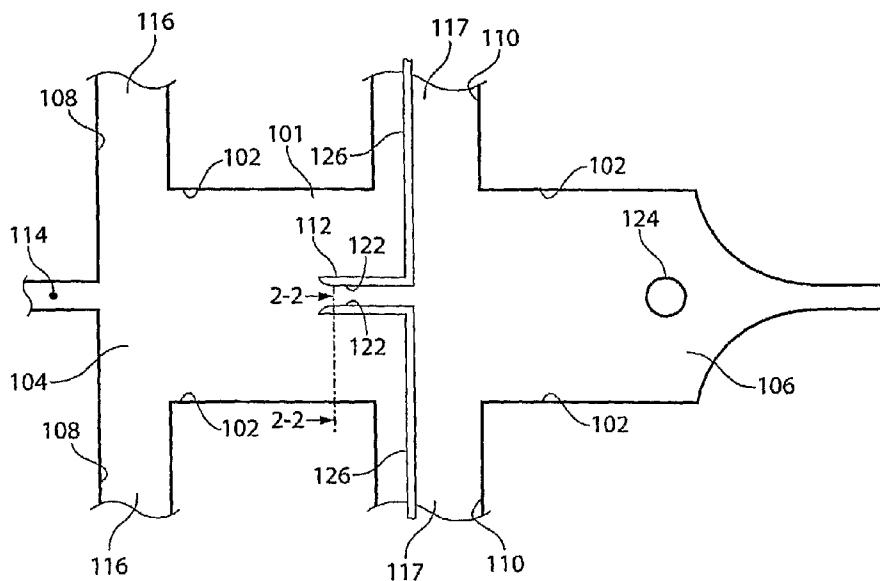
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[Continued on next page]

(54) **Title:** MICROFLUIDIC METHODS AND APPARATUSES FOR SAMPLE PREPARATION AND ANALYSIS



(57) **Abstract:** Microfluidic channels are constructed for use in preparing and/or analyzing samples. In one embodiment, a microfluidic channel receives a carrier fluid having both non-targets and targets. The non-targets are moved from the carrier fluid by diffusion and into sheathing fluids also present in the channel before contents of the carrier fluid are analyzed. In another embodiment, a microchannel delivers multiple fluid samples from an upstream portion to a downstream portion of the channel where each of the fluid samples are separated from one another by a sheathing fluid that also travels toward the downstream portion. In another embodiment, a microchannel is constructed to create multiple elongational flows in series that can align polymers from a coiled state.

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B. FIELDS SEARCHED

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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

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C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 6,790,671 B1 (AUSTIN et al.) 14 SEPTMEBER 2004.	1-131
A	US 6,355,420 B1 (CHAN) 12 MARCH 2002.	1-131
A	US 4,793,705 A (SHERA) 27 DECEMBER 1988.	1-131
A	US 5,274,240 A (MATHIES et al.) 28 DECEMBER 1993.	1-131
A	US 5,356,776 A (KAMBARA et al.) 18 OCTOBER 1994.	1-131
A	US 5,674,743 A (ULMER) 7 OCTOBER 1997.	1-131
A,P	US 7,1 18,910 B2 (UNOER et al.) 10 OCTOBER 2006.	1-131

 Further documents are listed in the continuation of Box C.

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C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 6,818,395 B1 (QUAKE et al.) 16 v p VEMBER 2004.	1-131
A	US 6,911,345 B2 (QUAKE et al.) 28 JUNE 2005.	1-131