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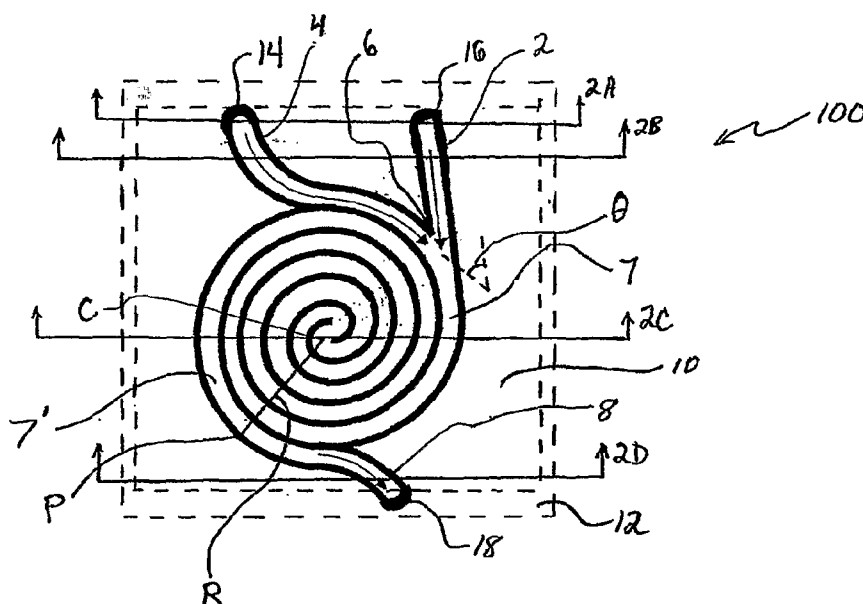
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(54) Title: MICROMIXER APPARATUS AND METHODS OF USING SAME



(57) Abstract: Microfluidics mixing apparatus and methods of using same are disclosed for mixing fluids using increasing centrifugal force as the fluids being mixed traverse a mixing channel. One inventive apparatus comprises a generally planar substrate having a top major surface and a bottom major surface generally parallel to the top major surface, and a cover plate over the top major surface. The substrate has at least one inlet port that routes fluid to the top major surface, and at least one outlet port for mixed fluid. The substrate comprises a mixing channel having a depth measured from the top surface and a width, the mixing channel adapted to route fluids to be mixed therein in laminar flow and in a substantially spiral flow pattern that is parallel to the top surface. Apparatus of the invention can mix fluids flowing serially, or two or more fluids entering the device from different feed channels.

WO 2004/108261 A1



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