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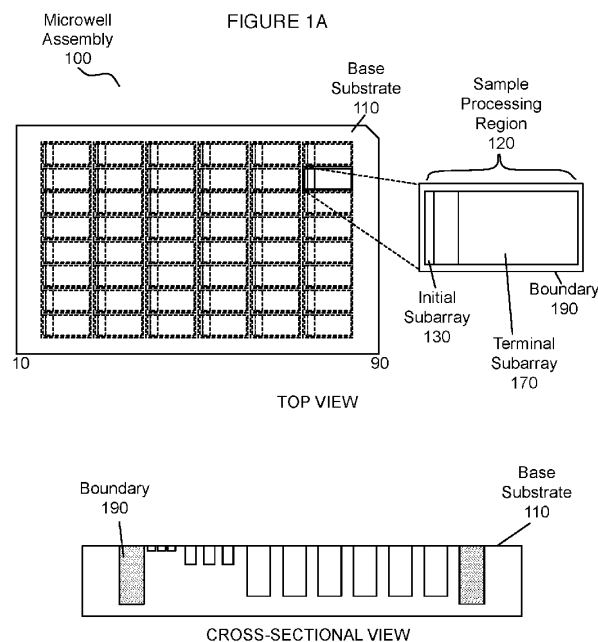
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(54) Title: SYSTEM AND METHOD FOR RAPID MULTIPLEXED SAMPLE PROCESSING WITH APPLICATIONS FOR NUCLEIC ACID AMPLIFICATION ASSAYS



(57) Abstract: The invention(s) cover systems and methods for target detection in a multiplexed and rapid manner. Embodiments of the system can include: a base substrate; and an array of sample processing regions defined at a broad surface of the base substrate, wherein each of the array of sample processing regions includes: a set of microwell subarrays arranged in a gradient by volumetric capacity between an upstream end and a downstream end of each respective sample processing region, and a boundary separating each respective sample processing region from adjacent sample processing regions. The system can support methods, with example implementation by an automated platform, for returning preliminary results from a subset of microwells of the samples processing regions, as well as results pertaining to specific and non-specific amplification, for multiple targets of a sample.

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