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(54) **Title:** AUTOMATED BACTERIAL CELL COUNTING DEVICES, SYSTEMS AND METHODS THEREOF

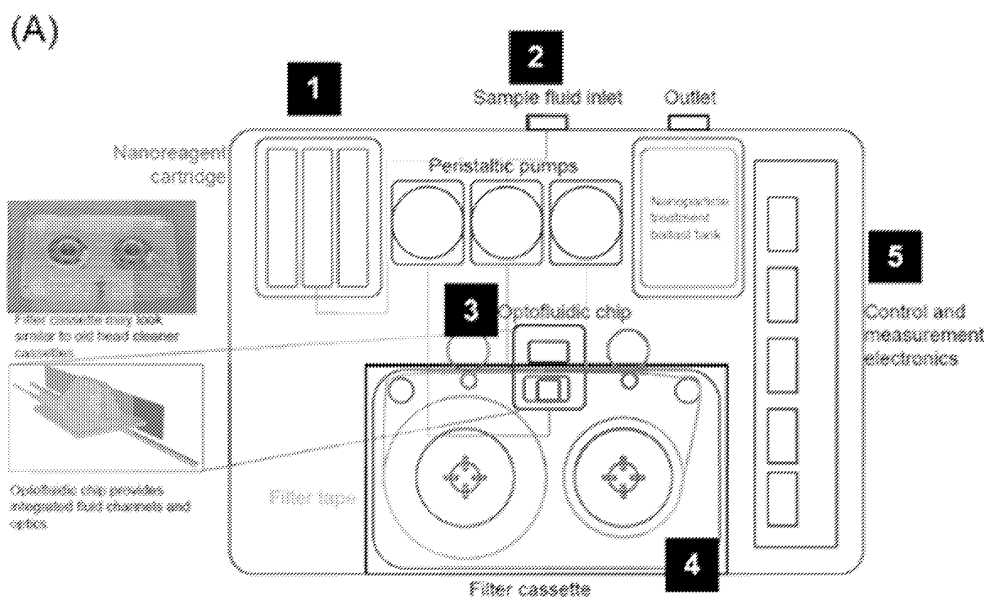


Figure 1A

(57) **Abstract:** The disclosure concerns bacterial cell counting devices, systems and methods thereof. The bacterial cell counting device comprises at least one cartridge for containing reagents; an inlet for introducing a sample containing bacterial cells into the device; an optofluidic chip separately in fluid communication with the cartridge and the inlet; a filter strip passing through the optofluidic chip and in fluid communication with the cartridge and the inlet, the filter strip for trapping or retaining bacterial cells on its surface such that the bacterial cells can interact with the reagents as they flow through the filter strip; and a controller for controlling a sequential flow of reagents and sample to the filter strip via the optofluidic chip. The optofluidic chip is capable of detecting a colorimetric and/or fluorescence output emitted from the bacterial cells modified by the reagents in order for the bacterial cells to be quantified relative to a control.

[Continued on next page]

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