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(54) Title: A PORTABLE DEVICE FOR DETECTING AND/OR QUANTIFYING A TARGET MOLECULE AND METHOD OF USE THEREOF

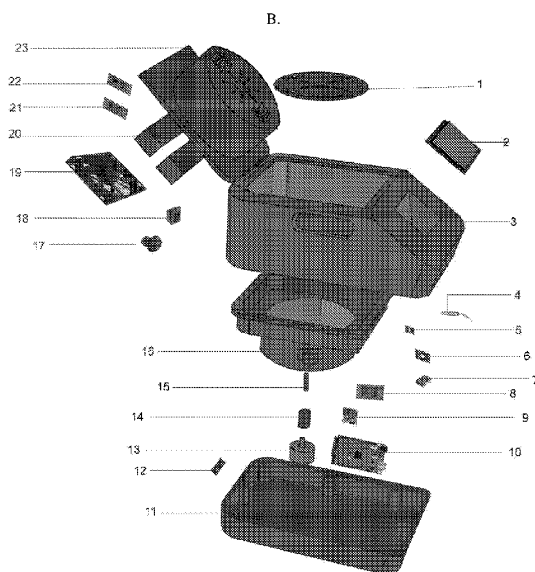


Figure 1

(57) Abstract: Disclosed is a portable device for multiplexed detection and/or quantification of target molecules in a sample, the device comprising: a sample chamber comprising an outer shell and a rotor for receiving the sample comprising the target molecule; a plurality of red, green, blue (RGB) LEDs for generating illumination and inducing an optical signal of the target molecule; a plurality of RGB sensors for detecting the optical signal of the target molecule; and a microcontroller communicatively coupled to the RGB sensors, for connecting to an external device and transferring data; wherein integrated LED of the RGB sensor has been removed. Also disclosed is a method of multiplexed detection and/or quantification of target molecules in a sample, using the device as disclosed herein. Also disclosed is a method of monitoring viral or bacterial disease outbreaks and/or evolution, comprising performing a method as disclosed herein.

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