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(54) Title: A PHOTONIC METHOD AND APPARATUS FOR DETECTING COMPOUNDS AND PATHOGENS IN A RESPIRATORY SAMPLE

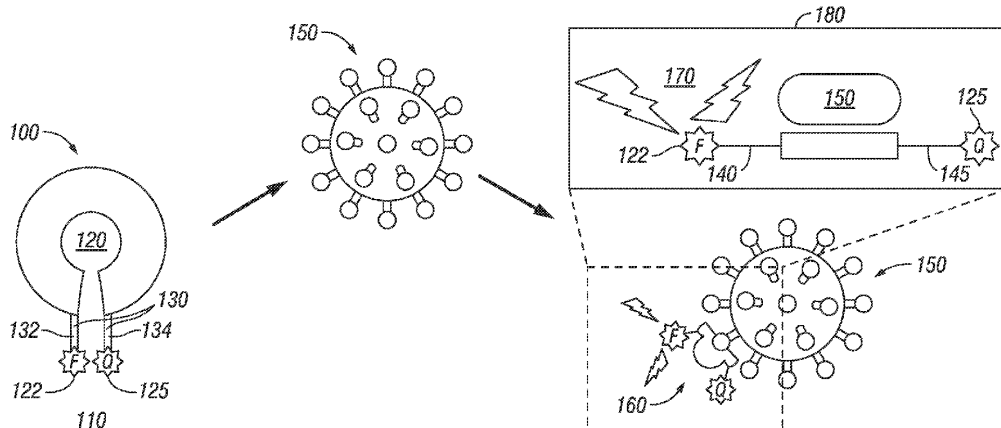


FIG. 1

(57) Abstract: The present invention relates generally to a means of detecting a target molecule, compound or substance through the attractive forces occurring between said target and a target-specific molecular probe whereby said molecular probe expresses a selective high affinity for target and is capable of fluorescent luminescence at a definitive frequency and in a determinable light wave range. Specifically, said molecular probe offers target-specific binding where a resultant duplex molecule fluoresces upon hybridization to a target's unique molecule nucleotide sequence. Said hybridization allows for optical detection of said duplex via a directed, filtered and focused light source which makes said duplex both quantifiable and quantifiable via luminescence (i.e., light wave excitation) and subsequent photo detection utilizing ellipsoidal reflection to amplify detection and measurement improving both sensitivity and specificity.

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