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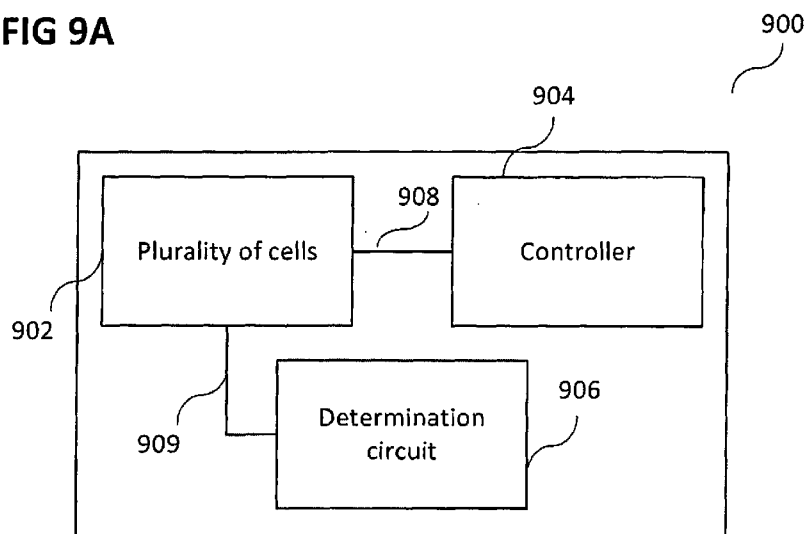
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FIG 9A



(57) Abstract: According to various embodiments, a testing apparatus may be provided. The testing apparatus may include: a plural-
ity of cells, each cell of the plurality of cells including a plurality of terminals, the plurality of cells configured to define a string,
wherein each cell of the plurality of cells includes a first terminal; a controller configured to control voltages to the respective first
terminals of the plurality of terminals of each cell of the plurality of cells based on a query pattern, wherein a state of each cell of the
plurality of cells is defined by the voltage supplied to the first terminal of the cell; and a determination circuit configured to deter-
mine whether the string corresponds to the query pattern based on the states of the plurality of cells.

