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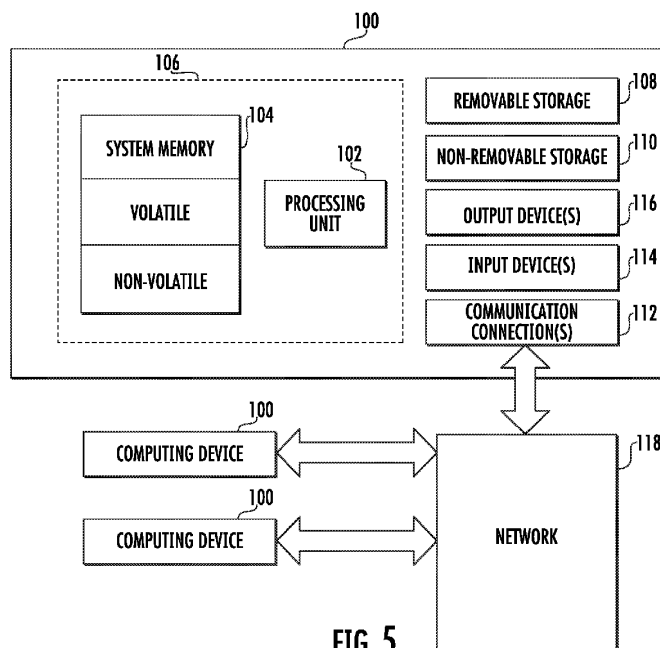


FIG. 5

(57) **Abstract:** Systems and methods for remote monitoring of refrigeration systems to detect leaks of refrigerant include a local monitoring station, having at least one sensor configured to be in communication with a refrigeration system having refrigerant, the sensor measuring at least one parameter of the refrigeration system. At least one server is in communication with the local monitoring station and accessible by at least one user communication device. Software residing at least partially on the local monitoring station and/or the server: records data from the sensor periodically to generate recorded sensor data; collects the recorded sensor data over time to generate collected sensor data; determines via at least one algorithm, using the collected sensor data, whether a refrigerant leak is occurring in the refrigeration system being monitored to thereby generate a state of the refrigeration system; and communicates the state of the refrigeration system to the at least one server.

[Continued on next page]

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