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(54) **Title:** SYSTEMS AND METHODS FOR MONITORING AND DIAGNOSING INDUSTRIAL EQUIPMENT

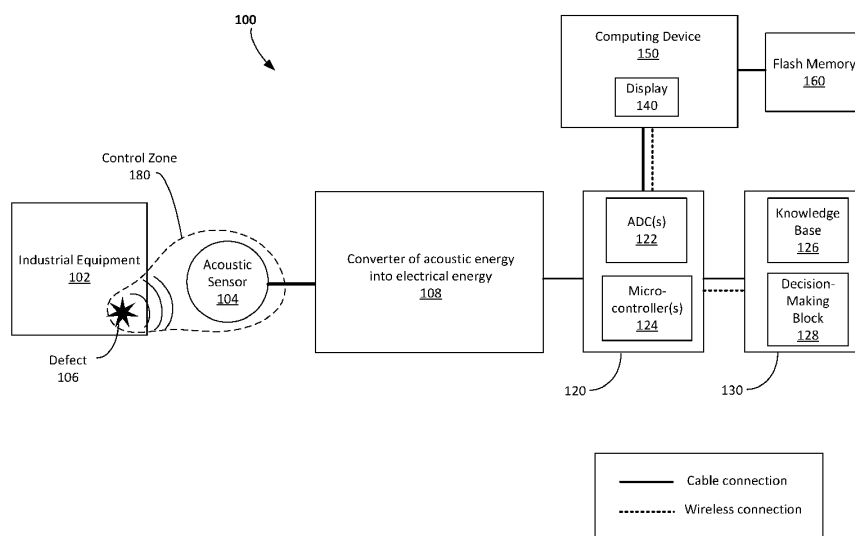


FIG. 1

(57) **Abstract:** A system for monitoring and diagnosing industrial equipment based on the analysis of vibroacoustic signals and noise is described. The system includes a data acquisition unit comprising at least one fiber-optic sensor (FOS) connected (i) via one or more daisy-chained microcontrollers and ADCs to a computer with flash memory, and (ii) via a wireless, mobile network, satellite, Bluetooth, and/or wired cable communication device to one or more servers (e.g., one or more cloud servers). The system also includes a model unit that simulates the industrial equipment and an analysis unit that analyzes a state of the industrial equipment based on data received from the data acquisition unit and the model(s) of the industrial equipment.

[Continued on next page]

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