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Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))

[Continued on next page]

(54) Title: SYSTEMS, METHODS, AND APPARATUS FOR CALIBRATING, CONTROLLING, AND OPERATING A QUANTUM PROCESSOR

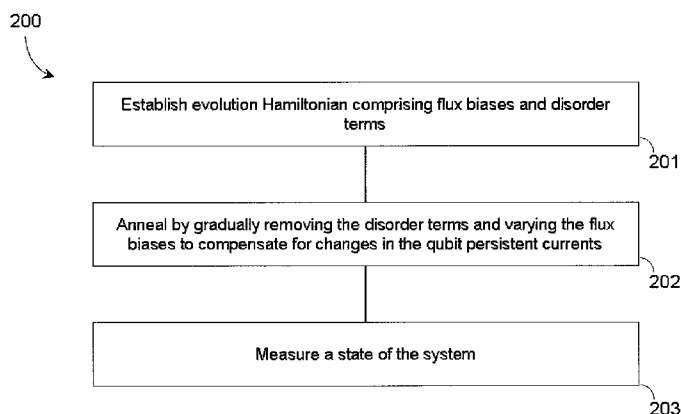


Figure 2

(57) Abstract: Quantum annealing may include applying and gradually removing disorder terms to qubits of a quantum processor, for example superconducting flux qubits of a superconducting quantum processor. A problem Hamiltonian may be established by applying control signals to the qubits, an evolution Hamiltonian established by applying disorder terms, and annealing by gradually removing the disorder terms. Change in persistent current in the qubits may be compensated. Multipliers may mediate coupling between various qubits and a global signal line, for example by applying respective scaling factors. Two global signal lines may be arranged in an interdigitated pattern to couple to respective qubits of a communicatively coupled pair of qubits. Pairs of qubits may be communicatively isolated and used to measure a response of one another to defined signals.



— *of inventorship (Rule 4.17(iv))*

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