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(71) Applicant: **INTERNATIONAL BUSINESS MACHINES CORPORATION** [US/US]; New Orchard Road, Armonk, New York 10504 (US).

(71) Applicant (for MG only): **IBM DEUTSCHLAND GMBH** [DE/DE]; IBM-Allee 1, 71139 Ehningen (DE).

(72) Inventors: **STEHLIK, Jiri**; c/o IBM Thomas J Watson Research Center, 1101 Kitchawan Road, P.O. Box 218, Yorktown Heights, New York 10598 (US). **UNDERWOOD, Devin**; c/o IBM Thomas J Watson Research Center, 1101 Kitchawan Road, P.O. Box 218, Yorktown Heights, New York 10598 (US). **ZAJAC, David**; c/o IBM Thomas J Watson Research Center, 1101 Kitchawan Road, P.O. Box 218, Yorktown Heights, New York 10598 (US). **STEFFEN, Matthias**; c/o IBM Thomas J Watson Research Center, 1101 Kitchawan Road, P.O. Box 218, Yorktown Heights, New York 10598 (US).

(74) Agent: **FERARA, Nina**; c/o IBM Deutschland GmbH, Patentwesen und Urheberrecht, IBM-Allee 1, 71139 Ehningen (DE).

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(54) Title: TUNABLE QUANTUM COUPLER FACILITATING A QUANTUM GATE BETWEEN QUBITS

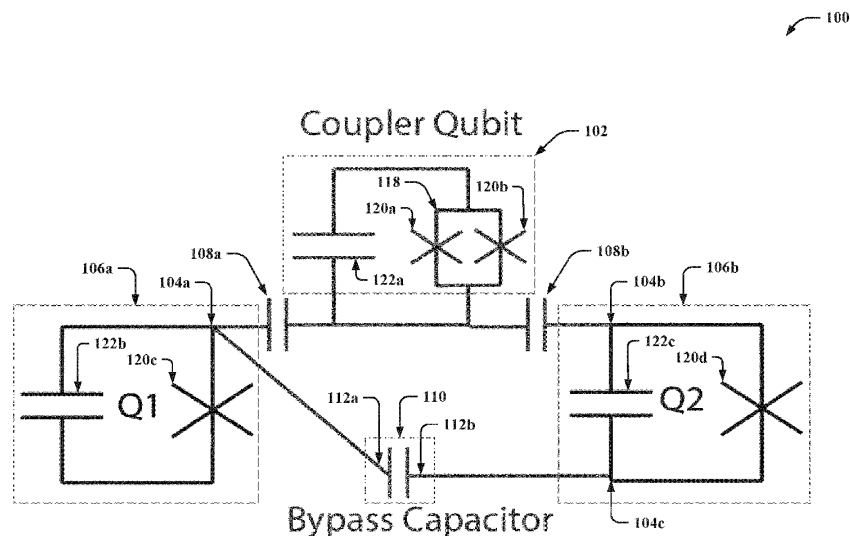


FIG. 1

(57) Abstract: Devices and/or computer-implemented methods to facilitate a quantum gate between qubits using a tunable coupler and a capacitor device are provided. According to an embodiment, a quantum coupler device can comprise a tunable coupler coupled between terminals of a same polarity of a first qubit and a second qubit, the tunable coupler configured to control a first coupling between the first qubit and the second qubit. The quantum coupler device can further comprise a capacitor device coupled to terminals of an opposite polarity of the first qubit and the second qubit, the capacitor device configured to provide a second coupling that is opposite in sign relative to the first coupling.

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