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(54) Title: APPARATUSES, COMPUTER-IMPLEMENTED METHODS, AND COMPUTER PROGRAM PRODUCTS FOR QUBIT REUSE IN A QUANTUM COMPUTING ENVIRONMENT

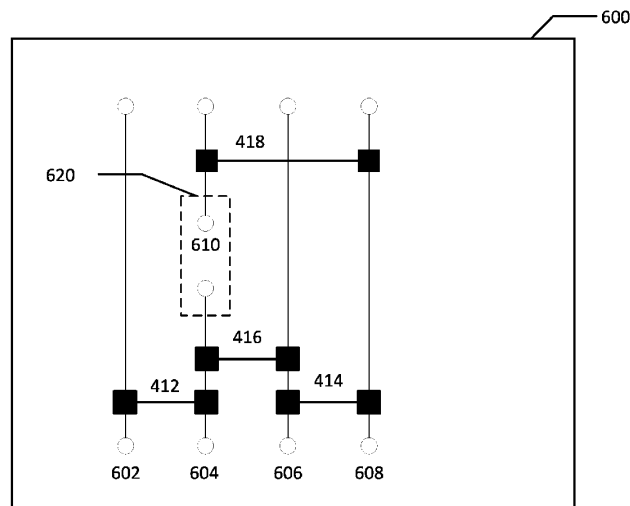


FIG. 6

(57) Abstract: Embodiments of the present disclosure provide for qubit reuse within a quantum computing environment for a quantum program in a quantum computing environment. In this regard, embodiments generate an optimized quantum program based on an initial quantum program. In some embodiments, the optimized quantum program may utilize fewer computing resources, such as qubits, than the initial quantum program. In some embodiments, the optimized quantum program may be compiled and executed in the quantum computing environment.

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