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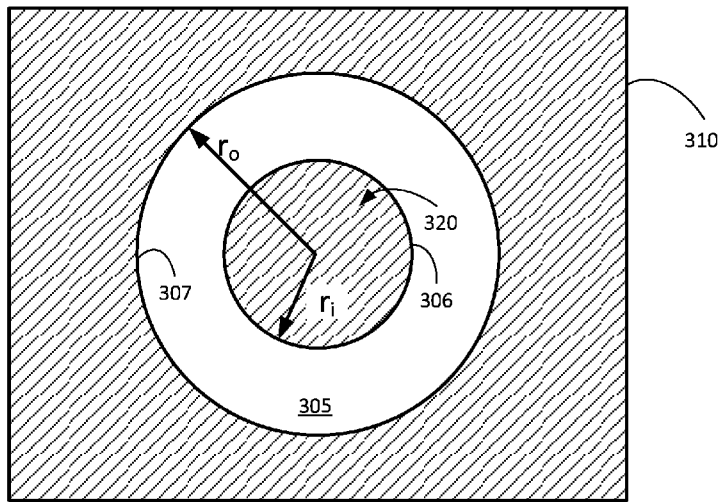


FIG. 3A  
(Top view)

(57) Abstract: According to some aspects, a quantum mechanical system is provided, comprising a resonator having a plurality of superconducting surfaces and configured to support at least one electromagnetic oscillation mode within a three-dimensional region, wherein the plurality of superconducting surfaces include a first superconducting surface that defines a first plane, and a physical qubit comprising at least one planar component that is planar within the first plane and borders the three-dimensional region.

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