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(54) **DEVICE FOR CONTROLLING TRAPPED IONS**

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(57) **ABSTRACT**

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A device for trapping ions includes: a substrate having a metal layer structure; and at least one ion trap configured to trap ions in a space over the substrate. The metal layer structure is a multi-layer metal structure that includes: a top metal layer having one or more electrodes forming part of the at least one ion trap; a redistribution metal layer having wiring for connecting the one or more electrodes; a first insulating layer arranged between the top metal layer and the redistribution layer and having one or more voids; and one or more connection elements arranged in the one or more voids that connect the wiring from the redistribution metal layer with the one or more electrodes in the top metal layer.

(30) **Foreign Application Priority Data**

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