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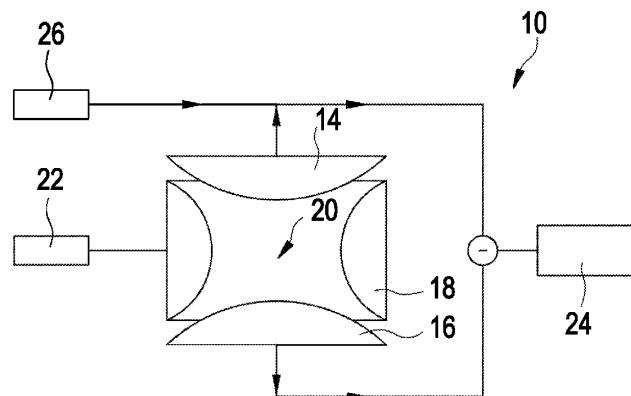


Fig. 1

(57) Abstract: A method and ion trap for detecting ions in the ion trap. The method comprises: Providing ionized ions to the ion trap; Creating an RF storage field by applying a RF storage signal to a first electrode of the ion trap, wherein the storage voltage V_{RF} and/or the storage frequency Ω_{RF} of the RF storage signal is modified; Applying an excitation signal to the ions in the ion trap; Detecting an image current signal induced to a second electrode, a third electrode or differentially between the second and third electrodes by oscillation of the ions excited by the excitation signal; and Applying an FFT to the detected image current signal to detect the ion oscillation while recovering the modified signal correctly.

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