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(54) **Title:** TIME OF FLIGHT MASS SPECTROMETER

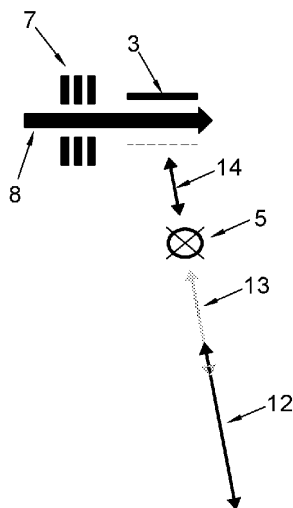


FIG. 3B

(57) **Abstract:** A Time of Flight mass analyser comprising: an ion detector; a pusher (3) configured to perform a sequence of pushes for pushing packets of ions towards the ion detector; and an ion attenuator (5) configured to alternate between a high transmission mode in which it allows ions to reach the ion detector and a low transmission mode in which it prevents ions from reaching the ion detector. The mass analyser is configured to synchronise the operation of the ion attenuator (5) in the high and low transmission modes with the timings of the pushes such that a first plurality of the pushes result in ions being received at the ion detector and a second different plurality of the pushes do not result in ions being received at the detector.

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