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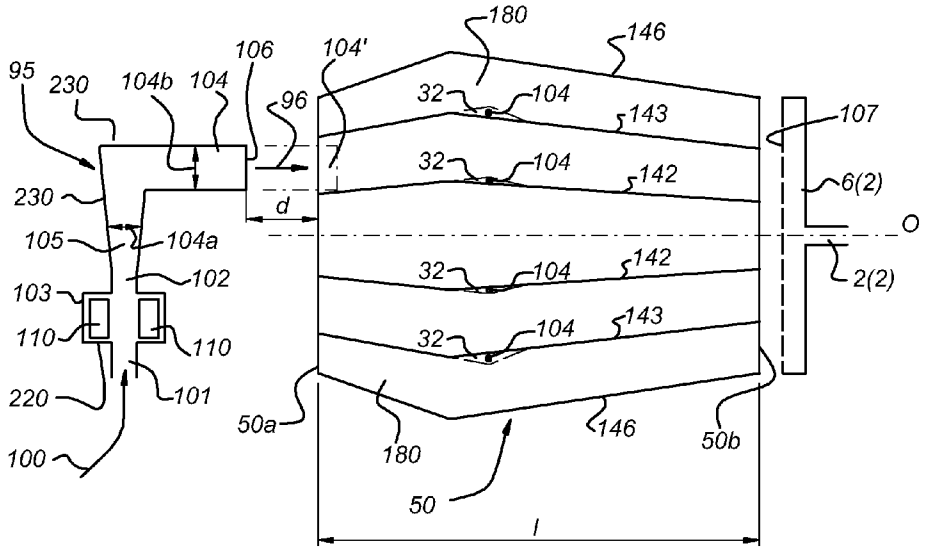
(54) Title: LITHOGRAPHIC APPARATUS INCLUDING A CLEANING DEVICE AND METHOD FOR CLEANING AN OPTICAL ELEMENT



(57) Abstract: An EUV lithographic apparatus includes an EUV radiation source, an optical element (50) and a cleaning device (95) . The cleaning device (95) includes a hydrogen radical source (103) and a flow tube (104) in communication with the hydrogen radical source (103) . The cleaning device (95) is configured to provide a flow of hydrogen radicals (96) and the flow tube (104) is arranged to provide a hydrogen radical flow (96) at a predetermined position within the lithographic apparatus, for example for cleaning a collector mirror (50) .

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