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(54) Title: HDD PATTERN IMPLANT SYSTEM

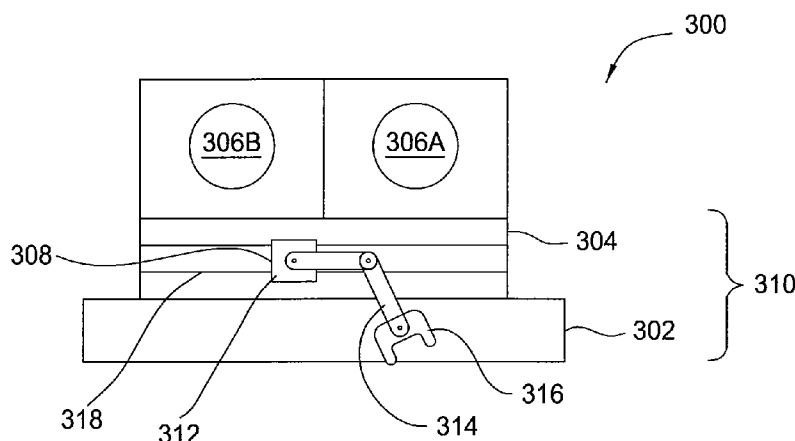


FIG. 3A

(57) Abstract: Methods and apparatus for forming substrates having magnetically patterned surfaces is provided. A magnetic layer comprising one or more materials having magnetic properties is formed on a substrate. The magnetic layer is subjected to a patterning process in which selected portions of the surface of the magnetic layer are altered such that the altered portions have different magnetic properties from the non-altered portions without changing the topography of the substrate. A protective layer and a lubricant layer are deposited over the patterned magnetic layer. The patterning is accomplished through a number of processes that expose substrates to energy of varying forms. Apparatus and methods disclosed herein enable processing of two major surfaces of a substrate simultaneously, or sequentially by flipping. In some embodiments, magnetic properties of the substrate surface may be uniformly altered by plasma exposure and then selectively restored by exposure to patterned energy.



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