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(71) Applicant: **APPLIED MATERIALS, INC.** [US/US];
3050 Bowers Avenue, Santa Clara, California 95054 (US).

(72) Inventors: **DECENA, Michael Prestoza**; c/o Applied Materials, Inc., Law Dept., M/S 1269, 3050 Bowers Avenue, Santa Clara, California 95054 (US). **YANG, Tsu-Hui**; c/o Applied Materials Taiwan, Ltd.; No. 12, Nanke 7th Road; Southern Taiwan Science Park, Tainan, 74144 (TW). **K. N., Sridhar**; c/o Applied Materials, 3rd Floor, Explorer Bldg., ITPL Whitefield Rd., Bangalore 560066 (IN). **BALAKRISHNAN, Parthiban**; c/o Applied Materials India, Units 4A, 4B, 5, 6 and 9, 3rd Floor Explorer Bldg,

Intl Tech Park Sadarmangala-Pattandur, Bangalore 560066 (IN). **LING, Yuan**; c/o Applied Materials Taiwan, Ltd., No.32, R&D Road II, Hsinchu Science Park, Hsinchu City, 30076 (TW). **SUN, Sylvia**; c/o Applied Materials Taiwan, Ltd., No.32, R&D Road II, Hsinchu Science Park, Hsinchu City, 30076 (TW). **WEN, Simpson**; c/o Applied Materials Taiwan, Ltd., No.32, R&D Road II, Hsinchu Science Park, Hsinchu City, 30076 (TW). **CHANG, Chih An**; c/o Applied Materials South East Asia Pte. Ltd., 2F., No.361, Fuxing 1st Rd, Taoyuan City, 33375 (TW). **WANG, Tk**; c/o Applied Materials Taiwan, Ltd., No.32, R&D Road II, Hsinchu Science Park, Hsinchu City, 30076 (TW). **HUANG, Chao-Jian**; c/o Applied Materials Taiwan, Ltd.; No. 12, Nanke 7th Road; Southern Taiwan Science Park, Tainan, 74144 (TW).

(74) Agent: **STEVENS, Joseph J.** et al.; PATTERSON + SHERIDAN LLP, 24 GREENWAY PLAZA, SUITE 1600, HOUSTON, Texas 77046 (US).

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(54) Title: IMPROVEMENT DESIGN OF CMP INNER RING IN SMART HEAD

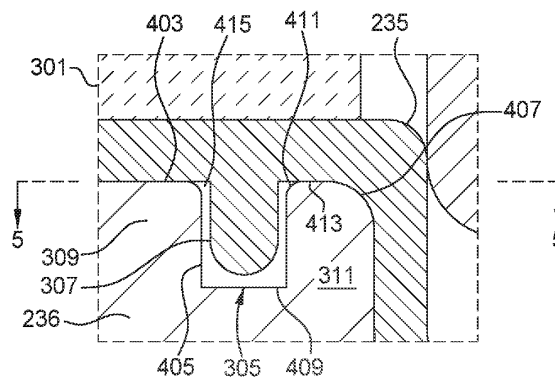


FIG. 4

(57) Abstract: The disclosure provides an apparatus for substrate polishing, the apparatus includes a housing member, a carrier member, and a distal force assembly. The carrier member is coupled to and disposed radially outward of the housing member. The distal force assembly is disposed radially inward of an exterior portion of the carrier member and radially outward of the housing member. The distal force assembly includes a bladder seal, a seal ring in contact with the bladder seal. The seal ring has a seal ring face and one or more grooves disposed therein. The grooves include a plateau radius and a ridge radius disposed opposite the plateau radius at an intersection between the seal ring face and the grooves, wherein the plateau radius and the ridge radius are between about 0.012 to about 0.018 inches. The distal force assembly also includes a transfer ring coupled to the seal ring opposite the bladder.

[Continued on next page]

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