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(71) Applicant: **INTERNATIONAL BUSINESS MACHINES CORPORATION** [US/US]; New Orchard Road, Armonk, New York, 10504 (US).

(71) Applicants (for MG only): **IBM UNITED KINGDOM LIMITED** [GB/GB]; PO Box 41, North Harbour, Portsmouth Hampshire PO6 3AU (GB). **IBM (CHINA) INVESTMENT COMPANY LIMITED** [CN/CN]; 25/F, Pangu Plaza, No 27, Central North 4th Ring Road, Chaoyang District, Beijing 100101 (CN).

(72) Inventors: **LI, Ning**; IBM Corporation, 1101 Kitchawan Road, Yorktown Heights, New York 10598 (US). **KIM, Wanki**; IBM Corporation, 1101 Kitchawan Road, Yorktown Heights, New York 10598 (US). **SADANA, Devendra**; IBM Corporation, Intellectual Property Law, Po Box 218, 1101 Kitchawan Road, Route 134, Yorktown Heights, New York 10598 (US).

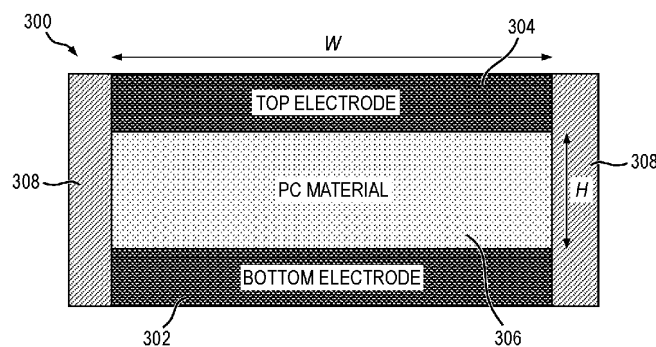
(74) Agent: **GRAHAM, Timothy**; IBM United Kingdom Limited, Intellectual Property Law, Hursley Park, Hursley, Winchester Hampshire SO21 2JN (GB).

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(54) Title: PHASE CHANGE MEMORY HAVING GRADUAL RESET

FIG. 3A



(57) Abstract: A phase change memory (PCM) structure configured for performing a gradual reset operation includes first and second electrodes and a phase change material layer disposed between the first and second electrodes. The PCM structure further includes a thermal insulation layer disposed on at least sidewalls of the first and second electrodes and phase change material layer. The thermal insulation layer is configured to provide non-uniform heating of the phase change material layer. Optionally, the thermal insulation layer may be formed as an air gap. The PCM structure may be configured having the first and second electrodes aligned in a vertical or a lateral arrangement.

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