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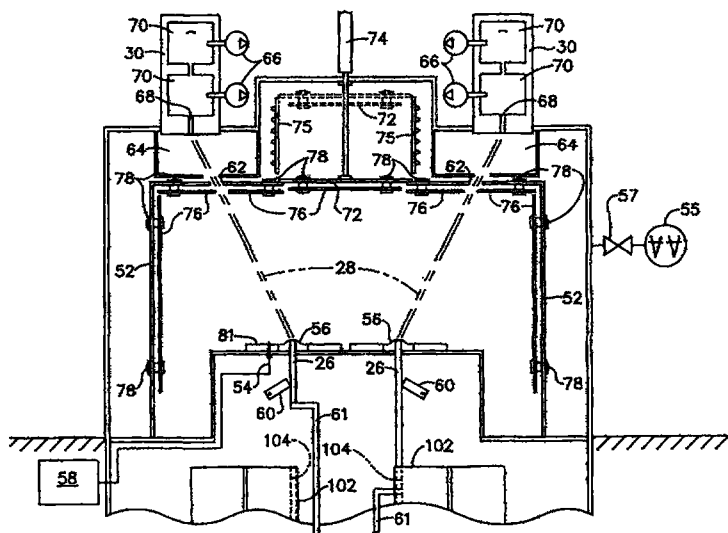
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(54) Title: **ELECTRON BEAM PHYSICAL VAPOR DEPOSITION APPARATUS AND METHOD**



(57) Abstract: An electron beam physical vapor deposition (EBPVD) apparatus (10) and a method for using the apparatus (10) to produce a coating (e.g., a ceramic thermal barrier coating) on an article (20). The EBPVD apparatus (10) generally includes a coating chamber (12) that is operable at elevated temperatures and subatmospheric pressures. An electron beam gun (30) projects an electron beam (28) into the coating chamber (12) and onto a coating material (26) within the chamber (12), causing the coating material (26) to melt and evaporate. An article (20) is supported within the coating chamber (12) so that vapors of the coating material (26) deposit on the article (20). The operation of the EBPVD apparatus (10) is enhanced by the inclusion or adaptation of one or more mechanical and/or process modifications, including those necessary or beneficial when operating the apparatus (10) at coating pressures above 0.010 mbar.

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