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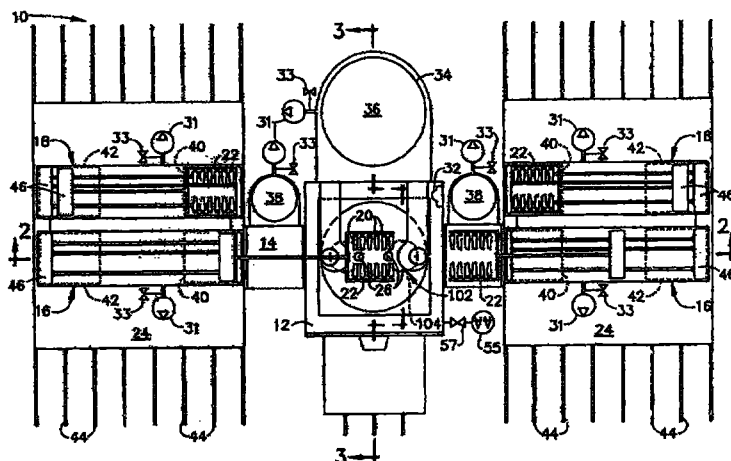
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(54) Title: ELECTRON BEAM PHYSICAL VAPOR DEPOSITION APPARATUS



(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 of a crucible (56) that supports the coating material (26) and is configured to be efficiently cooled so as to reduce the rate at which the process temperature increases within the coating chamber (12).

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