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(71) Applicant (for all designated States except US): **H.C. STARCK INC.**; 45 Industrial Place, Newton, MA 02461 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **DAILY, James** [US/US]; 844 N. Wooded Lane, Marshall, MI 49068 (US). **LEMON, Brad** [US/US]; 15635 13 Mile Road, Battle Creek, MI 49014 (US). **HIRT, Joseph** [US/US]; 11 Parsons Court, Coldwater, MI 49036 (US). **KUMAR, Prabhat** [US/US]; 31 Pinewood Drive, Framingham, MA 01701 (US). **GILLE, Gerhard** [DE/DE]; Am Stollen 3, 38640 Goslar (DE).

(74) Agents: **AKORLI, Godfried, R.** et al.; Bayer Chemicals Corporation, Patent Department, 100 Bayer Road, Pittsburgh, PA 15205-9741 (US).

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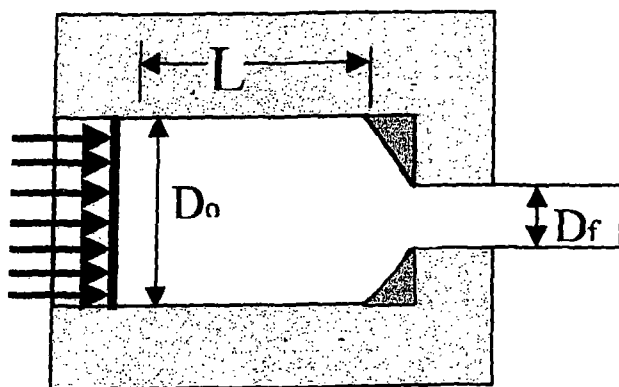
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(54) Title: MOLYBDENUM ALLOY X-RAY TARGETS HAVING UNIFORM GRAIN STRUCTURE



(57) Abstract: The invention relates to a process for making a cross-directionally worked molybdenum plate, the process comprising: (a) reducing ammonium molybdate and forming molybdenum metal powder; (b) consolidating a molybdenum component comprised of molybdenum metal powder and an alloying element to a first workpiece, the alloying element being selected from the group consisting of titanium, zirconium, hafnium, carbon, lanthanum oxide, and combinations thereof; (c) thermally treating the first workpiece and subjecting the workpiece to thermo-mechanical forces in a first direction, and thereby forming a second workpiece; (d) thermally treating the second workpiece and subjecting the second workpiece to thermo-mechanical forces in a second direction that

is different from the first direction; (e) subjecting the thermomechanically treated second workpiece to a recrystallization heat treatment step, and thereby forming a heat-treated cross-directionally worked workpiece; and (f) subjecting the heat-treated, cross-directionally worked workpiece to a slicing step or a machining step, and thereby forming the crossdirectionally worked molybdenum plate. The invention also relates to X-ray targets made from the process.

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