



US007625421B2

(12) **United States Patent**
Kahn et al.

(10) **Patent No.:** **US 7,625,421 B2**
(45) **Date of Patent:** ***Dec. 1, 2009**

- (54) **MOLYBDENUM METAL POWDERS**
- (75) Inventors: **Mohamed H. Kahn**, Tucson, AZ (US);
Joel Taube, Donnellson, IA (US); **Loyal M. Johnson, Jr.**, Tucson, AZ (US)
- (73) Assignee: **Cyprus Amax Mineral Company**,
Phoenix, AZ (US)
- (*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 367 days.

3,264,098 A	8/1966	Heytmeijer	
3,865,573 A	2/1975	Neumann et al.	
4,045,216 A	8/1977	Meyer et al.	
4,216,034 A	8/1980	Miyake et al.	
4,331,544 A	5/1982	Takaya et al.	
4,515,763 A	5/1985	Boudart et al.	
4,547,220 A	10/1985	Carpenter et al.	
4,595,412 A *	6/1986	Brunelli et al.	75/363
4,851,206 A	7/1989	Boudart et al.	
5,330,557 A *	7/1994	May	75/623
5,403,375 A *	4/1995	Konig et al.	75/255
5,427,761 A	6/1995	Grindatto et al.	

This patent is subject to a terminal disclaimer.

(21) Appl. No.: **11/557,781**

(Continued)

(22) Filed: **Nov. 8, 2006**

FOREIGN PATENT DOCUMENTS

(65) **Prior Publication Data**
US 2008/0190243 A1 Aug. 14, 2008

DE 74082 A 6/1970

Related U.S. Application Data

(Continued)

(60) Division of application No. 10/719,234, filed on Nov. 20, 2003, now Pat. No. 7,192,467, which is a continuation-in-part of application No. 10/464,324, filed on Jun. 18, 2003, now Pat. No. 7,132,005, which is a division of application No. 10/045,637, filed on Nov. 6, 2001, now Pat. No. 6,626,976.

OTHER PUBLICATIONS

European Patent Office, European Search Report, Application No. EP 02 02 2649, Jan. 21, 2003.

(Continued)

(51) **Int. Cl.**
B22F 1/00 (2006.01)

Primary Examiner—Scott Kastler
(74) *Attorney, Agent, or Firm*—Fennemore Craig, P.C.

(52) **U.S. Cl.** **75/255; 75/369**

(58) **Field of Classification Search** **75/255; 75/369, 363**

(57) **ABSTRACT**

See application file for complete search history.

Novel forms of molybdenum metal. Novel forms of molybdenum metal are characterized by a surface area of substantially about 2.1 m²/g to substantially about 4.1 m²/g. Novel forms of molybdenum metal are also characterized by a relatively uniform size.

(56) **References Cited**
U.S. PATENT DOCUMENTS

2,398,114 A	4/1946	Rennie
2,402,084 A	6/1946	Rennie
3,077,385 A	2/1963	Robb

6 Claims, 5 Drawing Sheets

