

[54] DISPERSION STRENGTHENED EXTRUDED METAL PRODUCTS SUBSTANTIALLY FREE OF TEXTURE

4,376,660 3/1983 Amin 148/11.5 P

[75] Inventor: Michael J. Luton, Englewood, N.J.

OTHER PUBLICATIONS

[73] Assignee: Exxon Research and Engineering Co., Florham Park, N.J.

Powder Metallurgy of Superalloys, G. H. Gessinger. "Superplasticity: Prerequisites and Phenomenology" by Wadsworth, Oyama and Sherby, Interamerican Conference on Materials Technology, Aug. 12-15 (1980).

[21] Appl. No.: 524,028

Primary Examiner—John Kight
Assistant Examiner—M. L. Moore
Attorney, Agent, or Firm—Henry E. Naylor

[22] Filed: Aug. 17, 1983

[51] Int. Cl.⁴ C22C 19/00

[57] ABSTRACT

[52] U.S. Cl. 419/4; 419/20; 419/19; 419/12; 419/13; 75/231; 75/234; 75/233

Disclosed are extruded dispersion strengthened metallic materials which are substantially free of texture as well as a method for producing such materials. The method comprises extruding a billet of dispersion strengthened metallic powder material comprised of one or more metals and one or more refractory compounds said powder material having a mean grain size less than about 5 microns and whose grain size is substantially stable at the extrusion conditions, through a die having an internal contour such that the material is subjected to a natural strain rate which is substantially constant as it pass through the die.

[58] Field of Search 419/4, 20, 19; 75/231, 75/234, 233; 419/12, 13

[56] References Cited

U.S. PATENT DOCUMENTS

2,750,034	6/1956	Gersman	72/273
3,178,925	4/1965	Nolan et al.	72/364
3,382,535	5/1968	Ferrari	425/461
3,433,049	3/1969	Naeser et al.	72/167
3,743,548	7/1973	Baranow et al.	419/20
3,874,938	4/1975	Benjamin et al.	419/32
4,375,994	3/1983	Amin	148/11.5 P

38 Claims, 14 Drawing Figures

