11) Publication number:

**0 255 939** A3

(12)

## **EUROPEAN PATENT APPLICATION**

(21) Application number: **87111257.9** 

22 Date of filing: 04.08.87

(51) Int. Cl.4: H01F 1/04 , H01F 1/08 , H01F 1/06

Priority: 04.08.86 JP 182998/86 29.08.86 US 901736

Date of publication of application:
 17.02.88 Bulletin 88/07

Designated Contracting States:
AT BE CH DE FR GB IT LI NL SE

Date of deferred publication of the search report: 31.05.89 Bulletin 89/22 Applicant: SUMITOMO SPECIAL METALS CO., LTD.
 22, Kitahama 5-chome Higashi-ku
 Osaka-shi Osaka 541(JP)

Inventor: Fujimura, Setsuo Sumitomo Special Metals Co.,Ltd.

Yamazaki Works 2-15-17 Egawa Shimamoto-cho Mishima-gun Osaka-fu(JP) Inventor: Sagawa, Masato Sumitomo Special Metals Co.,Ltd.

Yamazaki Works 2-15-17 Egawa Shimamoto-cho Mishima-gun Osaka-fu(JP) Inventor: Yamamoto, Hitoshi Sumitomo Special Metals Co.,Ltd Yamazaki Works 2-15-17 Egawa Shimamoto-cho Mishima-gun Osaka-fu(JP)

Inventor: Hirosawa, Satoshi Sumitomo
Special Metals Co.,Ltd
Yamazaki Works 2-15-17 Egawa

Shimamoto-cho Mishima-gun Osaka-fu(JP)

Representative: Diehl, Hermann, Dr. Dipl.-Phys. et al Diehl, Glaeser, Hiltl & Partner

Flüggenstrasse 13 D-8000 München 19(DE)

Rare earth magnet and rare earth magnet alloy powder having high corrosion resistance.

An (Fe,Co)-B-R tetragonal type magnet and magnet alloy powder having a high corrosion resistance, which have a boundary phase stabilized by Co and Al against corrosion, and which consist essentially of:

**N**0.2 - 3.0 at% Dy and 12 - 17 at% of the sum of Nd and Dy;

5 - 10 at% B;

0.5 - 13 at% Co;

0.5 - 4 at% Al; and

the balance being at least 65 at% Fe.

0.1 - 1.0 at% of Ti and/or Nb may be present. The alloy powders can be stabilized.



## EUROPEAN SEARCH REPORT

EP 87 11 1257

Category	EP-A-0 134 304 (: METALS CO.) * Claims 2,5,9;	h indication, where appropriate, ant passages SUMITOMO SPECIAL	Relevant to claim	APPL		ION OF THE N (Int. CI 4)
A	METALS CO.) * Claims 2,5,9;	SUMITOMO SPECIAL				
	* Claims 2,5,9;			H 01		_,
	graph; page 24 & JP-A-60 34 005	page 16, last para- , table 3, no. 5 * (Cat. D)	1,2	Н 01 Н 01		1/08
P,X	EP-A-0 216 254 (1	- K.K. TOSHIBA)				
	* Claims 1,4,6;		1			
E	EP-A-0 237 416 (; CO. LTD)	SHIN-ETSU CHEMICAL				
	* Claims 1-4,6; examples 1,2 *	page 9, lines 18-19;	1,2,13			
A	PATENT ABSTRACTS no. 209 (E-421)(	OF JAPAN, vol. 10, 2265), July 22,		TEC	CHNICA	L FIELDS
	& JP-A-61 48 904 (HITACHI METALS LTD), 10-03-1986			SEA	RCHED	(int. Cl.4)
	* Abstract *	•	2,13	H 01	F	
_	The present search report has t	een drawn up for all claims	1		<del></del>	·
	Place of search THE HAGUE	Date of completion of the search $16-02-1989$		Examiner DECANNIERE		
Y : pa	CATEGORY OF CITED DOCK articularly relevant if taken alone articularly relevant if combined wo ocument of the same category chnological background	JMENTS T: theory or p E: earlier pati after the fil yith another D: document	ent document ling date	rlying the , but publi	nvent	ion



	CI A	IMS INCURRING FEES			
CEAIMS INCOMMA FEES					
		<u>.                                    </u>			
The	nrecent !	European patent application comprised at the time of filing more than ten claims.			
		All claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for all claims.			
[		Only part of the claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims and for those claims for which claims fees have been paid.			
		namely claims:			
[		No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims.			
-					
Х	LAC	CK OF UNITY OF INVENTION			
The:	l Search I	Division considers that the present European patent application does not comply with the requirement of unity of			
invention and relates to several inventions or groups of inventions.					
namely:					
1.	cla	ims 1 and 3-11 as far as depending form claim 1; ims 12 and 14-19 as far as depending form claim 12: net and magnet alloy powder of a first composition.			
2. Claims 2 and 3-11 as fart as depending form claim 2; claims 13 and 14-19 as far as depending from claim 13: Magnet and magnet alloy powder of a second composition.					
		·			
	XX	All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.			
		Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid,			
		namely claims:			
		None of the further search fees has been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims,			
1		namely claims:			