

(19)
(12)

(KR)
(A)

(51) 。 Int. Cl.⁷
C22C 9/02

(11)
(43)

10-2004-0015697
2004 02 19

(21)

10-2003-0056152

(22)

2003 08 13

(30)

10/217,949

2002 08 13

(US)

(71)

48170

49200

(72)

53213

7717

(74)

:

(54)

1.8% , 0.001% , 0.0005 0.04% , 0.001% , 0.0115% , 1.2

% , 0.05 0.07% , 1.2 1.5% , 0.05 0.0725% , 1.2

3a

, (hardness stability)

1 ,

2a , (hardness stability integral)

2b ,

Material	Condition	Direction	Value	Unit
Cast alloy (wrought)	(positive)	(12)	0.001%	%
		(14)	0.001%	%
	(negative)	(12)	0.005%	%
		(14)	0.005%	%
Cast alloy (stamped)	(positive)	(10)	0.0275%	%
		(16)	0.0275%	%
	(negative)	(10)	0.0275%	%
		(16)	0.0275%	%
Cast alloy (10)	(positive)	(12)	0.0725%	%
		(14)	0.0725%	%
	(negative)	(12)	0.0725%	%
		(14)	0.0725%	%
Cast alloy (12)	(positive)	(10)	0.05%	%
		(16)	0.05%	%
	(negative)	(10)	0.05%	%
		(16)	0.05%	%
Cast alloy (14)	(positive)	(12)	0.055%	%
		(14)	0.055%	%
	(negative)	(12)	0.055%	%
		(14)	0.055%	%
Cast alloy (16)	(positive)	(10)	0.075%	%
		(16)	0.075%	%
	(negative)	(10)	0.075%	%
		(16)	0.075%	%
Cast alloy (18)	(positive)	(12)	0.08%	%
		(14)	0.08%	%
	(negative)	(12)	0.08%	%
		(14)	0.08%	%
Cast alloy (20)	(positive)	(10)	0.055%	%
		(16)	0.055%	%
	(negative)	(10)	0.055%	%
		(16)	0.055%	%
Cast alloy (22)	(positive)	(12)	0.07%	%
		(14)	0.07%	%
	(negative)	(12)	0.07%	%
		(14)	0.07%	%
Cast alloy (24)	(positive)	(10)	0.075%	%
		(16)	0.075%	%
	(negative)	(10)	0.075%	%
		(16)	0.075%	%
Cast alloy (26)	(positive)	(12)	0.08%	%
		(14)	0.08%	%
	(negative)	(12)	0.08%	%
		(14)	0.08%	%
Cast alloy (28)	(positive)	(10)	0.055%	%
		(16)	0.055%	%
	(negative)	(10)	0.055%	%
		(16)	0.055%	%
Cast alloy (30)	(positive)	(12)	0.07%	%
		(14)	0.07%	%
	(negative)	(12)	0.07%	%
		(14)	0.07%	%
Cast alloy (32)	(positive)	(10)	0.075%	%
		(16)	0.075%	%
	(negative)	(10)	0.075%	%
		(16)	0.075%	%
Cast alloy (34)	(positive)	(12)	0.08%	%
		(14)	0.08%	%
	(negative)	(12)	0.08%	%
		(14)	0.08%	%
Cast alloy (36)	(positive)	(10)	0.055%	%
		(16)	0.055%	%
	(negative)	(10)	0.055%	%
		(16)	0.055%	%
Cast alloy (38)	(positive)	(12)	0.07%	%
		(14)	0.07%	%
	(negative)	(12)	0.07%	%
		(14)	0.07%	%
Cast alloy (40)	(positive)	(10)	0.075%	%
		(16)	0.075%	%
	(negative)	(10)	0.075%	%
		(16)	0.075%	%
Cast alloy (42)	(positive)	(12)	0.08%	%
		(14)	0.08%	%
	(negative)	(12)	0.08%	%
		(14)	0.08%	%
Cast alloy (44)	(positive)	(10)	0.055%	%
		(16)	0.055%	%
	(negative)	(10)	0.055%	%
		(16)	0.055%	%
Cast alloy (46)	(positive)	(12)	0.07%	%
		(14)	0.07%	%
	(negative)	(12)	0.07%	%
		(14)	0.07%	%
Cast alloy (48)	(positive)	(10)	0.075%	%
		(16)	0.075%	%
	(negative)	(10)	0.075%	%
		(16)	0.075%	%
Cast alloy (50)	(positive)	(12)	0.08%	%
		(14)	0.08%	%
	(negative)	(12)	0.08%	%
		(14)	0.08%	%
Cast alloy (52)	(positive)	(10)	0.055%	%
		(16)	0.055%	%
	(negative)	(10)	0.055%	%
		(16)	0.055%	%
Cast alloy (54)	(positive)	(12)	0.07%	%
		(14)	0.07%	%
	(negative)	(12)	0.07%	%
		(14)	0.07%	%
Cast alloy (56)	(positive)</			

0.0115 0.0165
0.0150%

(1) 0.0025% ; (2) 0.005% ; (3) 0.0025% ; (4) 0.005% ; 0.0025%

0.05 0.07% 1.2 1.5% 0.00
0.0275% 0.015% (0.0025%)

0.0005 0.0275% 0.065% 1.35% 0.0035%

0.0005 0.0236% 0.0652% 1.35% 0.0036%

1.2 1.8% 0.005 0.015%

1 6 A, B, C, D, E F

[1]

	A
	0.0645 wt. %
	1.39 wt. %
	0.0021 wt. %
	0.0005 wt. %

[2]

	B1	B2
	0.0652 wt. %	0.0672 wt. %
	1.4 wt. %	1.38 wt. %
	0.0038 wt. %	0.0038 wt. %
	0.0005 wt. %	0.0005 wt. %

B1 B2 B . B
% 0.005% . %(wt.%) 0.0021% . B

[3]

	C
	0.07 wt.%
	1.38 wt.%
	0.0035 wt.%
	0.0005 wt.%

[4]

	D
	0.069 wt.%
	1.35 wt.%
	0.0036 wt.%
	0.0126 wt.%

[5]

	E1	E2
	0.0684 wt.%	0.0645 wt.%
	1.37 wt.%	1.33 wt.%
	0.0037 wt.%	0.0032 wt.%
	0.0199 wt.%	0.0207 wt.%
	E2	E4
	0.0654 wt.%	0.644 wt.%
	1.33 wt.%	1.31 wt.%
	0.0036 wt.%	0.0034 wt.%
	0.0208 wt.%	0.0194 wt.%

E1, E2, E3 E4 E . E
% 0.0202% . % 0.0035% . E

[6]

	F
	0.0654 wt. %
	1.37 wt. %
	0.0037 wt. %
	0.0236 wt. %

-3 10% 42 × 10
 80 (grid pattern) 3
 dness)') (, 'DPH(diamond pyramid har
 F 15 200 가 A, B, C, D, E
 7

[7]

	%()	%()	(DPH*)
A	0.0005	0.0021	52.4
B	0.0005	0.0035	52.4
C	0.0005	0.0040	55
D	0.0126	0.0035	60.4
E	0.0202	0.0035	55.1
F	0.0236	0.0035	58.5

A, B, C, D, E	F	2a	가	2a	%	0.0005	0.
0236%			가		2b	7	
가	2b	.					

E2

10%
(grid pattern)

42 × 10⁻³
5

85

3a 1 3b 3a

75

22a 22b

24a 24b

가 . ,

가 , 가 ,

가 .

가 가 가

(57)

1. 0.05 0.0725% , 1.2 1.8% , 0.001% , 0.0005 0.04%

가 .

2. 1 , % 0.055 0.07%

3. 2 , % 0.06 0.07%

4. 1 , % 1.2 1.65%

5. 1 , 가 12 1 .

6. 1 , % 0.001 0.015%

7. 6 , % 0.001 0.01%

8. 7 , % 0.001 0.005%

9. 8 , % 0.0005 0.0275%

10. 9 , % 0.0005 0.0225%

11. 10 , % 0.001 0.0190%

12. 11 , % 0.0115%

13.

% , 0.05 0.07% , 1.2 1.5% , 0.001% , 0.0115%

,

가 .

14.

13 , % 0.001 0.015% .

15.

14 , % 0.001 0.01% .

16.

15 , % 0.001 0.005% .

17.

14 , % 0.0275%

18.

17 , % 0.0225%

19.

18 , % 0.019% .

20.

19 , % 0.015 0.0165

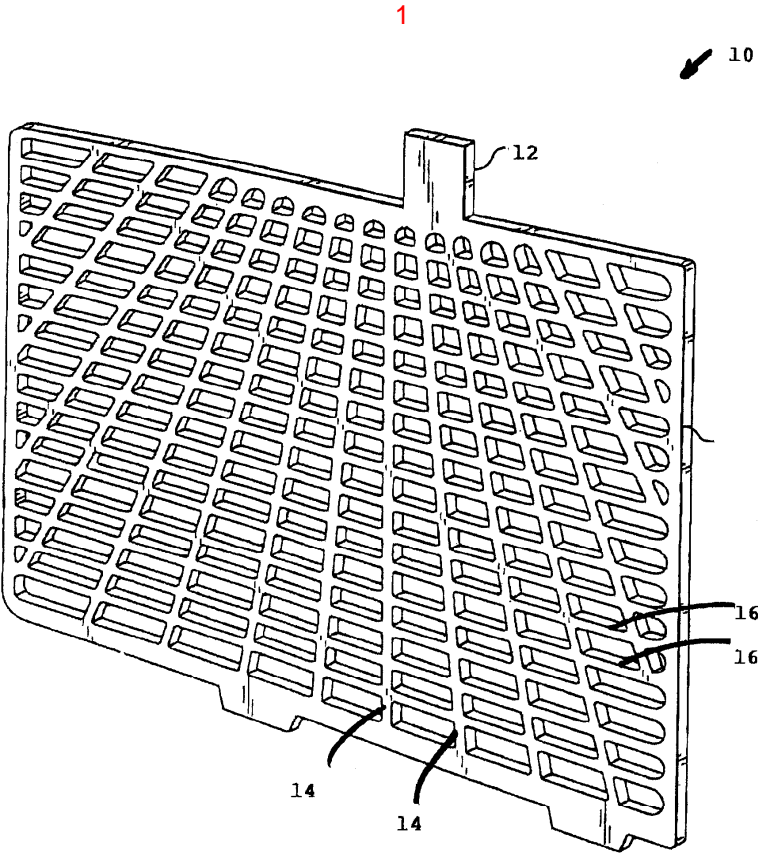
21.

,

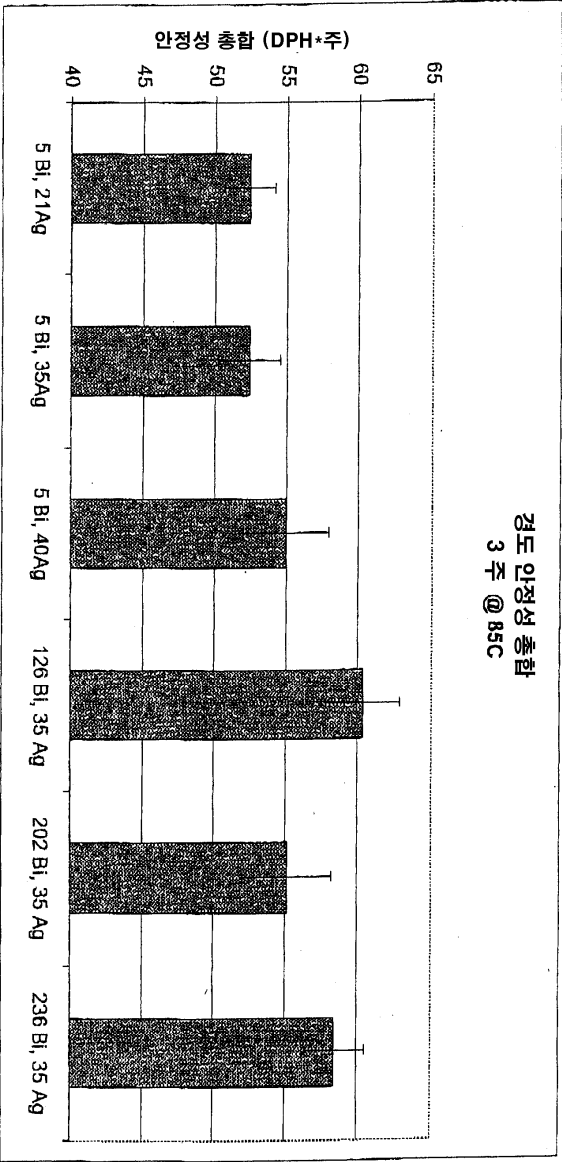
, ,

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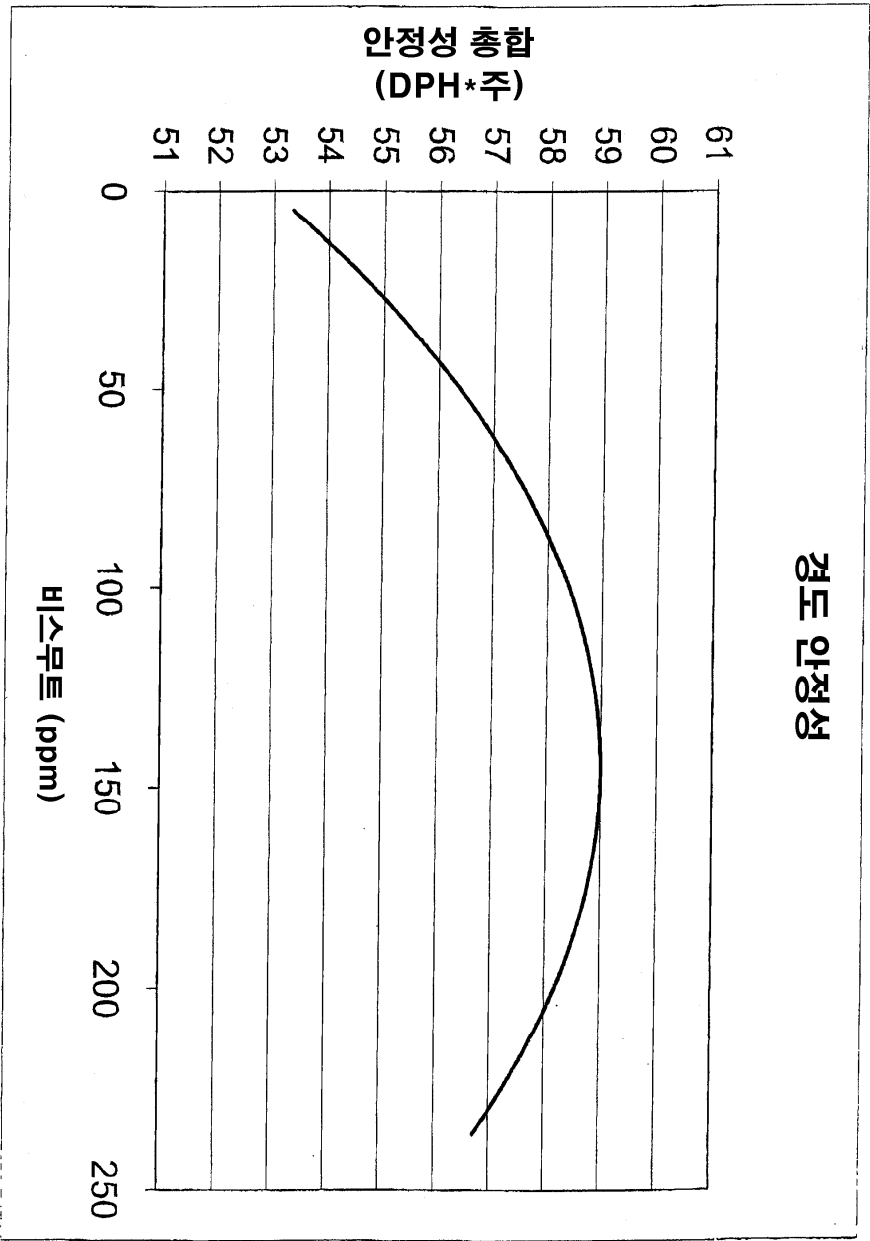
0005 , % , 0.05 0.0725% , 1.2 1.8% , 0.001% , 0.0275% , 가 .



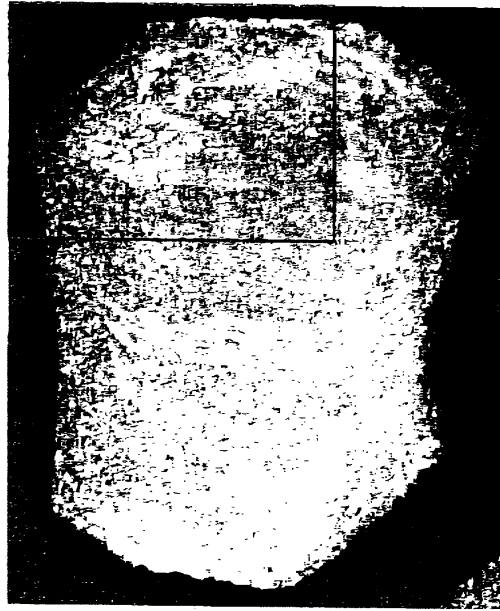
2a



2b



3a



3b

