

(19)
(12)

(KR)
(A)

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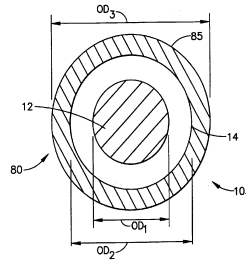
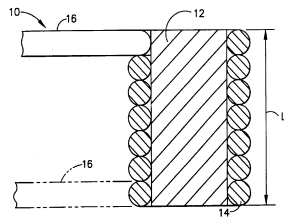
(71) ,
08933

(72) 34400 1

(74)

:

(54)



, , , , ,

1a

1b

1a

2

1a

1b

3a

3b

4

5

(Wiegand effect material)

*

*

10 : () 12 :

14 : 16 :

22 : 24 :

26 : 32, 34 :

48 : 80 :

(orientation)

가

5,558,091 , 가 5,391,199 5,443,489 , WO94/04938 WO96/05768

가

가

5,558,091 3 가

(galvanomagnetic film) 3 × 0.75 × 0.75mm

5,558,091 3

가

0.8mm

(drift) 가

WO96/05768

5,391,199 ,

, PCT PCT/GB93/01736 , WO94/04938 PCT PCT/IL97/00009

6mm,

가 0.8 × 0.8 × 0.8mm , 3 가 , 0.6mm

가 0.6 × 0.6 × 0. 가

()

가

PCT WO96/05768

3

3

6

3

/ 가

(calibration)

'768

6mm

1.3mm

6

가

6,203,493

가

가

가

VLSI

6,201,

387 B1

가

4

0.8mm

가

가

75
1mm

1mm

80

가

0.4mm

0.3mm

가

0.25mm
0.5mm

20

80%

52%

10%

25

38%

50%

2

20%

0.5mm

가

(CuNiFe)

0.5mm

가

가

가

AC

가 (field)

가

4kHz

3kHz

가

" " " " (position sensor)" " (location sensor)"
 가 /

1a 1b (12) (12)
 10) (10) 1b (8)
 0) (10) /

6) (10) 3.0 4.0mm (L) (L) (1)
 (14) (10) (16) (10)

1b (10) (12) 0.3mm (OD₁), 0.25mm
 (OD₁) (10) (OD₂) 0.5mm (80) 0.4mm
 (10) (85)
 (80) 0.67mm (2F) (OD₃) (10) (80)
 (80)
 (10) (80)

(10) (80) , 3
 10) (10) (10) (80) " " (10) (L) ,
 (10) (10) (OD₂) 2 3 (L) 가 , (L)
 (10) (OD₂) 6 , (10)
 , /OD ,
 (10) .

가 , (12)
 0.254mm(0.010in) 가
 (Vicalloy)(HID
) 가 (self - nucle
 ating), 600mV (Bar
 khausen jump) " , " , " , "

(10) (12) , (10) , 20% 80%
 2% , 20% , (10) ,
 , 25% 50% , (10)

(10) (12) , 52% , 10% 38%
 (12) 가 ,

twist and detwist) 가 가 () (

가 " " 가 (magnetic coercivity) 가 ,

" 가 가 , "

가 ,

(14) . 5 10 μ s

(10)

- 80 260 (10)

가 (10) (12) (CuNiFe)

(SPC) (ARNOKROME)TM

(12) CuNiFe (10) (1

2)

() (10) (80)

(10) (30)(4) ,

2000 7 20 09/620,316

1mm, 0.5mm

(10)

(30)(4)

(12) 1, 3a 3b

(10) 3a 1

(10) 3b 1

(30 80) (G_r)

30 80 (G_s)

20 (10) (12) ()

{ 20 (10) 8 (10) 1

10) } (10) (12) (

{ (10)} (10) 가 2 (24)

(water bath)(26) (10) (22) (22) ,

(36, 38) (10) (10)

3

2, 3, 1 (28, 30) 2
 (32, 34) 가
 3 3 (10) (10)
 3kHz (AC) (10)
 30 80 5 (30) (10) {S
 (T)} (G_r), (G_s), (a₀) 20
 (b₀) (10) (12)가
 4kHz 가 (10) (10) 4kHz (I) 가
 4kHz 4kHz (30) (10) { 4 (30)
 4kHz } (I) (10) (48)
 (30 80) (G_r) 3a 1 ()
 1 80 (T) (gradient value)(%),

1

$$G_r(\%) = \frac{|R(T) - R(80)|}{R(80)} \times 100$$

, G_r % (%), R(T) (T) , R(80) 80
 13% 3a (b₀)
 (10) 0.30%/degree (30) (b₀), 0.30(
) (48)
 가 , kHz V/가 (S)가 (10)
 (G_s)가 3b 2 80 (T) (S) (G_s)(
 %),

2

$$G_s(\%) = \frac{|V(T) - V(80)|}{V(80)} \times 100$$

, G_s % (%), V(T) (T) , V(80) 80
 (a₀) 0.025%/degree (30) (a₀), 0.25
 (48) 1.24%

(a₀) (30) (10) (b₀)
 (a₀, b₀) (30) 1 3a 3b (48)
 가 (S₀) (R₀) (10){ (80) } (10)
 EPROM 20 23 (48)

(10) (80) ((80)
) 가 AC (30) 4kHz
 (10) (I) (10) R(T)=V/I (48) {R
 (T)} (10) (T)가 3

3

$$T = \frac{R(T) - R_0}{b_0}$$

, R(T) (10) , R₀
 , b₀
 (T) 4 (10) {S(T)
 }

4

$$S(T) = S_0 + a_0 X T$$

, S₀ (10) , a₀ (S₀, a₀
), T
 , (30) () 5
 {S(T)}

5

$$B = \frac{V}{S(T)}$$

, B (10) , V (10) , S(T)
 (B) (10) (10)

(80) (30) 가 1mm, 0.5mm
(10)

4 (30) ()
(80)
(80) (80a)
(44) (80) (80a)
(80) 4mm (91) 100
(80, 80a) (junction box) (46)
(91) 가
(46) (80a) (80) ()
(48) RF (50)가 (80) (91) RF
(46) RF (52) (44) RF (50)

4 40cm ()
) 3
(91) RF 10 RF 70W
10 가 가
(10) (10) (80) (80) (48) (12) (12)
가 RF RF
RF () 2

열회귀 실험

	1		2		3		4		5		6		7		8																	
	감도	저항	감도	저항	감도	저항	감도	저항	감도	저항	감도	저항	감도	저항	감도	저항																
30	2.6290	1.39	176.30	12.59	2.3925	1.30	165.20	12.89	2.4537	1.31	171.60	13.17	2.8664	1.26	185.60	13.25	3.3480	1.00	235.7	12.18	2.4057	1.25	167.4	13.02	2.4290	1.32	160.30	20.27	2.5002	1.11	175.40	11.74
35	2.6327	1.25	178.90	10.99	2.3958	1.18	168.00	11.01	2.4567	1.18	174.30	11.42	2.8696	1.14	188.90	11.28	3.3506	0.92	239.3	10.49	2.4081	1.15	169.6	11.58	2.4319	1.20	161.70	19.23	2.5029	1.00	177.40	10.48
40	2.6356	1.13	181.80	9.19	2.3990	1.03	171.00	9.06	2.4598	1.06	177.20	9.59	2.8728	1.03	192.10	9.42	3.3533	0.84	242.6	8.90	2.4108	1.04	171.9	10.08	2.4356	1.05	166.30	15.94	2.5053	0.91	179.20	9.38
45	2.6390	1.00	184.40	7.65	2.4025	0.88	173.90	7.25	2.4632	0.92	179.90	7.95	2.8765	0.90	194.90	7.85	3.3568	0.74	246.7	7.17	2.4141	0.90	174.7	8.30	2.4387	0.92	171.00	12.75	2.5070	0.84	180.60	8.53
50	2.6419	0.89	187.40	5.92	2.4057	0.74	176.40	5.73	2.4870	0.76	182.60	6.35	2.8801	0.77	197.80	6.27	3.3605	0.62	250.9	5.38	2.4167	0.79	177.3	6.71	2.4428	0.75	174.10	10.74	2.5083	0.75	183.50	8.81
55	2.6457	0.75	190.40	4.25	2.4097	0.62	178.90	4.25	2.4705	0.62	185.30	4.80	2.8838	0.64	200.80	4.68	3.3642	0.51	254.4	3.93	2.4198	0.66	179.6	5.35	2.4462	0.61	172.90	11.51	2.5134	0.58	185.10	5.89
60	2.6489	0.63	192.80	2.98	2.4116	0.50	181.80	2.59	2.4744	0.46	188.20	3.19	2.8975	0.52	203.80	3.14	3.3674	0.42	258.7	2.20	2.4232	0.52	182.2	3.84	2.4494	0.48	183.90	4.84	2.5157	0.49	191.40	2.40
65	2.6519	0.51	195.80	1.38	2.4148	0.36	184.30	1.19	2.4774	0.34	191.80	1.25	2.8913	0.38	207.30	1.40	3.3708	0.32	261.7	1.03	2.4265	0.38	184.6	2.49	2.4516	0.39	190.20	1.37	2.5168	0.45	194.10	0.98
70	2.6557	0.37	198.50	0.00	2.4176	0.25	188.50	0.00	2.4799	0.24	194.20	0.00	2.8952	0.25	210.20	0.00	3.3749	0.20	264.4	0.00	2.4293	0.27	186.9	1.23	2.4548	0.26	192.80	0.00	2.5215	0.26	196.00	0.00
75	2.6599	0.21			2.4207	0.12			2.4833	0.10	196.40		2.8986	0.13	212.20		3.3780	0.10	267.9		2.4326	0.13	189.2	0.00	2.4580	0.13			2.5247	0.13		
80	2.6655	0.00			2.4236	0.00			2.4858	0.00			2.9024	0.00			3.3815	0.00			2.4358	0.00			2.4611	0.00			2.5280	0.00		
slope	-0.0266		-0.3165		-0.0259		-0.3233		-0.0289		-0.3305		-0.0254		-0.3279		-0.0205		-0.3124		-0.0253		-0.2934		-0.0266		-0.5271		-0.0219		-0.3069	

[1]

(mm) (3kHz V/가)

	(mm)	(V/가)
	5.9	3.0
	0.4	3.3
	0.5	7.0 8.0

2 , () (12) (10)
2 가 , 0.5mm 가

(10) , (10)가 7.0 8.0V/가 , (10) ,

80 , (10) 0.5mm , ,

(10) , 가 ,

(10) , 가 ,

(10) (30) (80) () (10)

() 가 , AC , (80) (30)

(30) (10) AC , 3kHz

Z , (10) 4kHz

(80)가 , (80) (80) (80)
 (80) (10) (30)
 (80) (10)
 , 4kHz 가 (10) (10) 가
 (48) (30) (1) (10)
 가 (48) (10)
 (48) ()
) (48) (b₀)() ,
 (48) (10)
 , (10) (80) , (80)
 () (30) 3kHz 1
 , 4kHz 2
 (I) (10)

(80)가 가 , (10) 가 (I)
 가 (48) , (48)
 (10) (10)
 , (30) 가 80 ,
 (10) ,
 가

(57)

1.

- 2.
- 1 , .
- 3.
- 2 , .
- 4.
- 1 , 가 .
- 5.
- 4 , 가 , .
- 6.
- 5 , AC .
- 7.
- 6 , 3kHz .
- 8.
- 7 , 4kHz .
- 9.
- 1 , .
- 10.

9 , .

11.

10 , .

12.

11 , .

13.

,

,

,

,

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14.

13 , .

15.

14 , .

16.

15 , .

17.

16 , .

18.

17 , .

19.

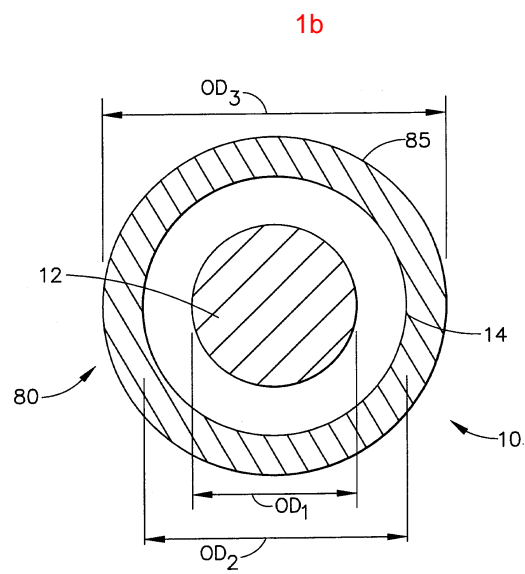
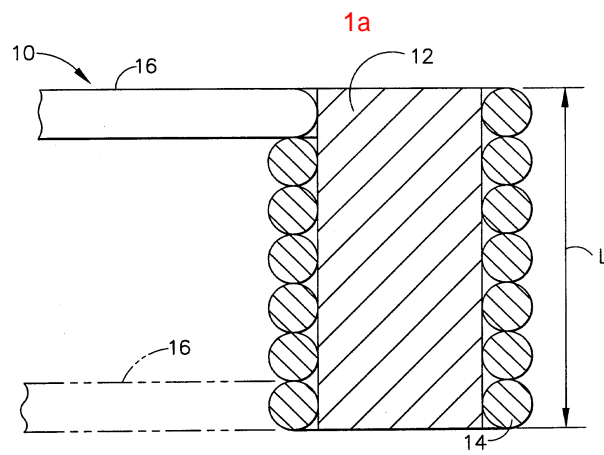
15

20.

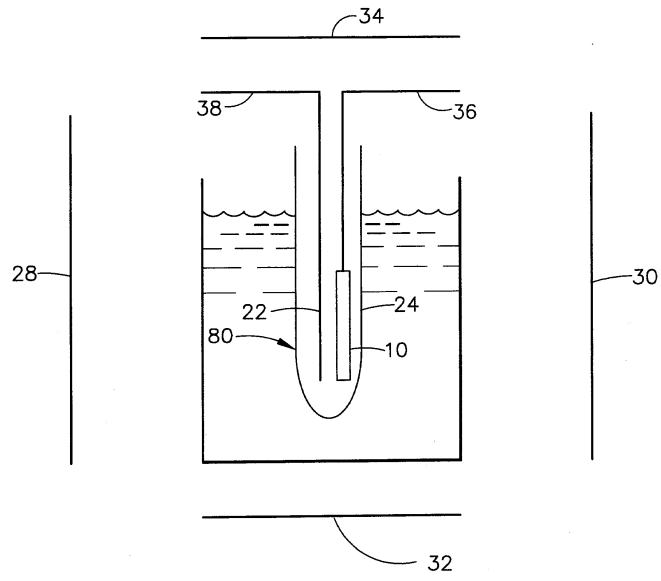
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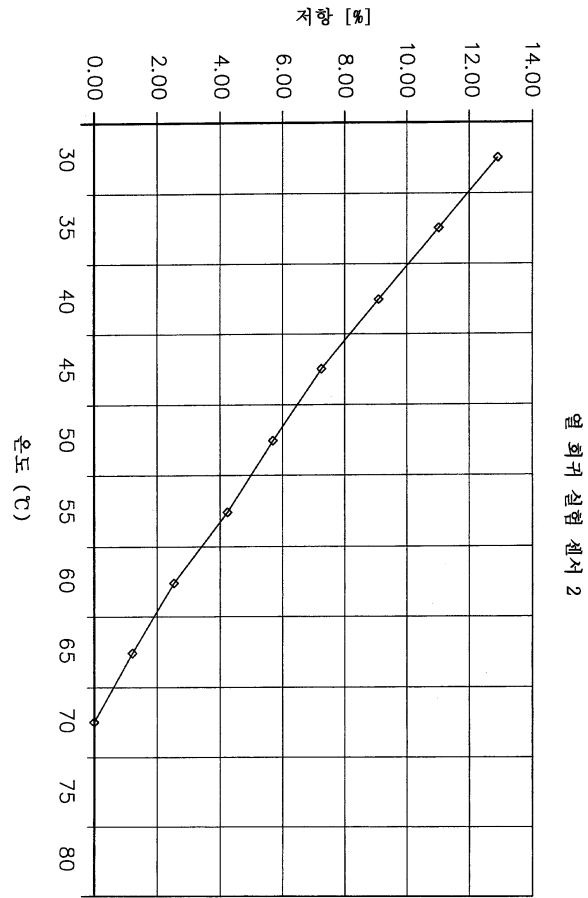
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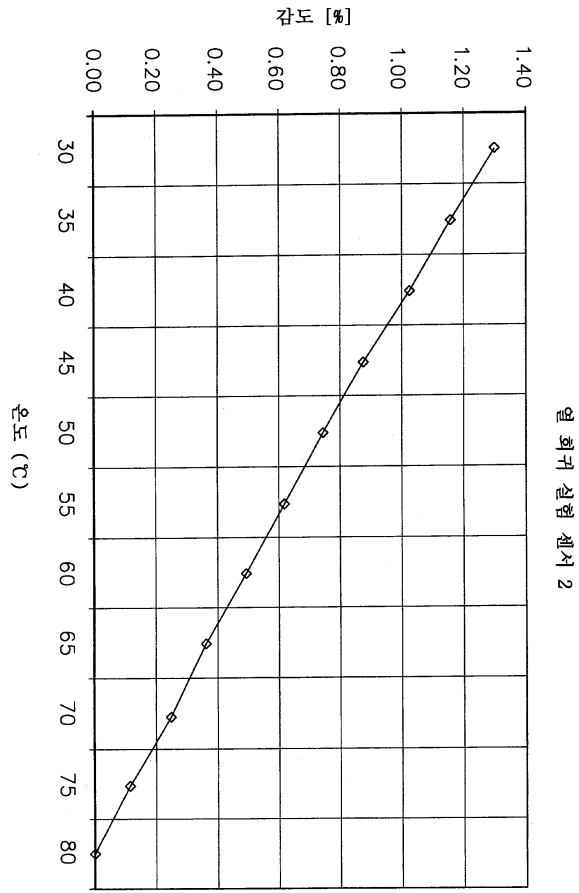
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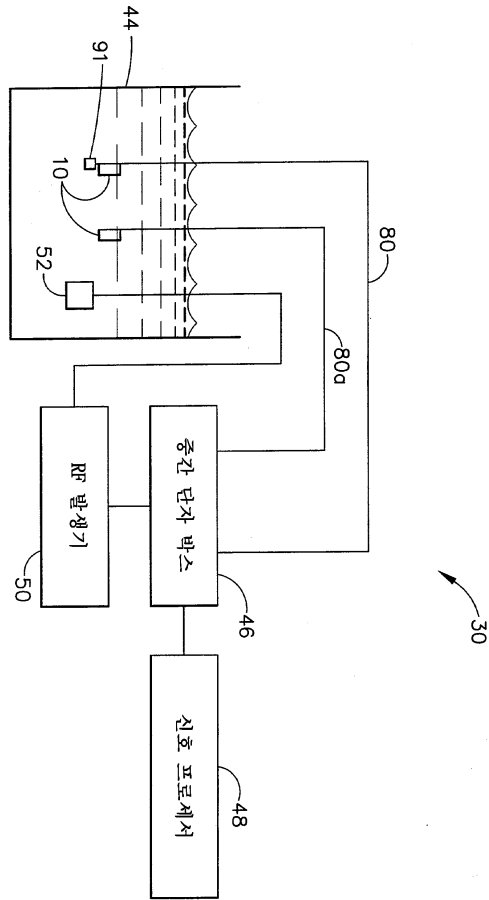
3a



3b



4



5

위갠드 모듈-펄스 출력

