

(19) (KR)
(12) (A)

(51) Int. Cl.⁷
G01P 9/04

(11)
(43)

10-2004-0031091
2004 04 09

(21) 10-2004-7003779

(22) 2004 03 12

2004 03 12

(86) PCT/GB2002/004056

(87)

WO 2003/025503

(86) 2002 09 06

(87)

2003 03 27

(30) 0122256.1 2001 09 14 (GB)

(71) 1 5 가 6

(72) 66

66

72

72

(74)
:

(54)

(5) $\cos^2 n$, (22), (5) (5),
(23), X y X y (24, 26), X y (25)
(9),
가 (9) (22) 가 (5)
(9) L (legs),
L L=2N/K, L L=N/K,
K, L>2 N.

4

, , , 2 , , , ,

2

2 B 2335273 GB 2318184 . G

ate pair) GB 2335273 $\cos N$ (N $\frac{\sin(N \pm 1)}{\cos(N \pm 1)}$) (degeneracy) $\frac{\sin(N \pm 1)}{\cos(N \pm 1)}$ (coupling) 가

GB 2318184 $\cos^2 N$ $\frac{\sin(N \pm 1)}{\cos N}$ $\frac{\sin(N \pm 1)}{\cos(N \pm 1)}$ 가

, 2 , Q 가 (stiffness) 가 Q (pick-offs)가

가 (degeneracy) $\frac{\sin N}{\cos N}$ N (point spring mass)

, L

$L=4 \times N$

, N $90^\circ / N$ 2

cosN sinN 가 GB-A-2335273 GB-A-2318184 CosN SinN 가

12 가 $\frac{\sin^2}{\cos^2}$, $\frac{\sin^4}{\cos^4}$ 8 가 16 가 $\frac{\sin^3}{\cos^3}$ 가

,
 , (projecting boss) (base) ,
 , 가
 , (stiffness) .
 , () 가 , () 가
 가 가 .
 ,
 .
 1 12 , .
 2 2 .
 3 2 .
 4 4 () .
 5a Cos2
 5b Sin2 .
 6a 6b Cos2 /Sin2 .
 7 3 .
 8 6 .
 9a 9b Cos3 /Sin3 .
 10a 10b Sin3 /Cos3 .
 11 4 .
 12 8 .
 13a 13b Sin4 /Cos4 .
 14a 14b Cos4 /Sin4 .
 2 2 , 가
 (5) , (outer rim)(7), (legs)(9) (central boss)(20) 가

ive) (pick-off) (5) (20) (insulating substrate layer)(10) (5) (dr
 (conductors)
 \cos^2 (5) (5) ((7) 0° 180° (22) , 90° 270° (23) , Cos
 2 (7) (electrostatic carrier drive elements)(22) 2 (7) (23)
 (23) (22) (5) (5)
 (anti-nodal points) (23) (5)

(rocking) x (24), y (26) x
 (24) y y (26) (7) y
 (27) (27) x (24) (7)
 0°, 90°, 180° 270°

x (25) y
 (7) x (24) (26) (27) (7) y
 (27) (21) (26) (tracking)(28) 3
 (conductive sites)가 가 (29) 2 ()

L , N L>2 가 . L 2 가
 N = LK/2 :
 , K K=1 K가 가 L

N = LK
 K=1 K 가
 SinN /CosN Sin(N±1) /Cos(N±1)
 CosN (compleme

ntary) SinN
 \cos^2 4 Sin3 /Cos3 (N+1=3) 4 Sin / 2
 Cos (N-1=1) 90°
 e) Sin2 /Cos2 (alignment) (nod 5a

(ring)

(hoop)

(planar vibratory resonator),

Cosn

(carrier mode drive means),

(carrier mode pic

k-off means),

X X ,
 X ,
 y y ,
 y ,

가

가

L (legs) ,

L L=2N/K , L L=N/K ,

K , L>2 N

2.

1 ,

가 L<4xN

3.

1 2 ,

(arcuate portion)

1 2

4.

1 3 ,

5.

1 4 ,

(projecting boss)

(base) ,

가

6.

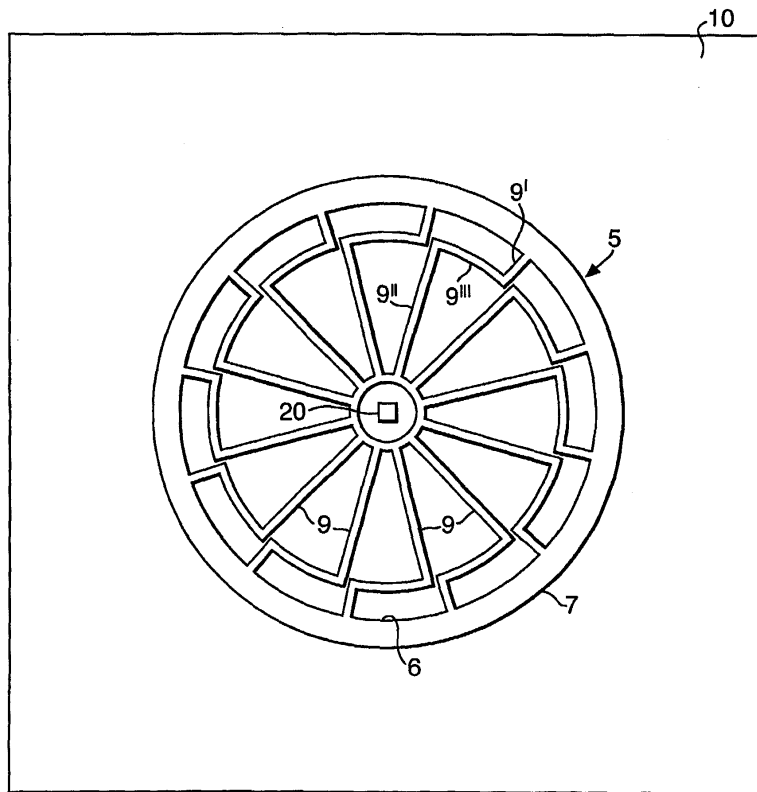
1 5 ,

(stiffness)

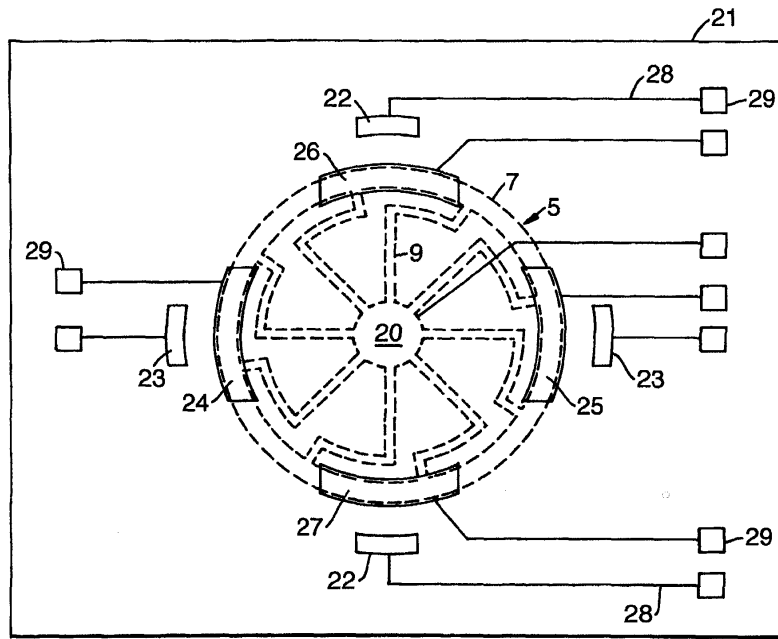
7.

2, 3, 4, 7, 8, 11 12 /

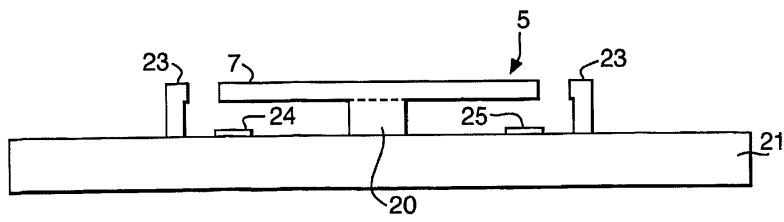
1



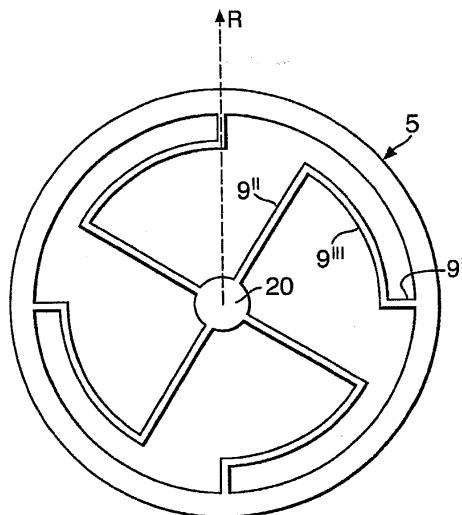
2



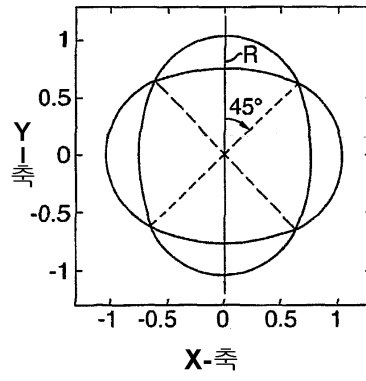
3



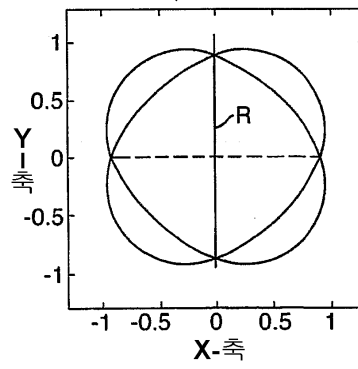
4



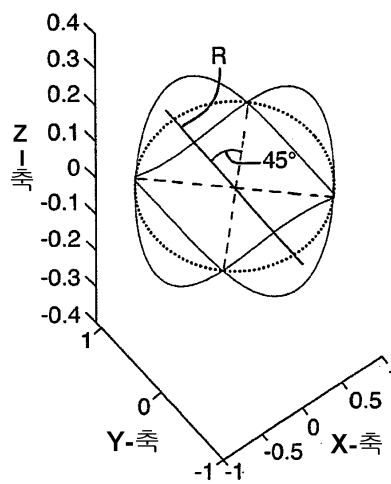
5a



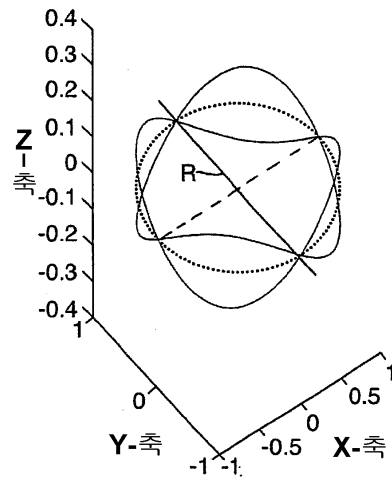
5b



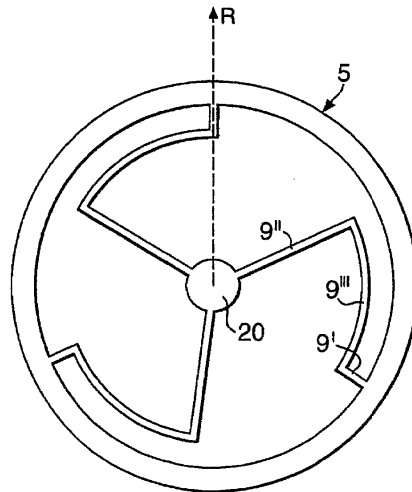
6a



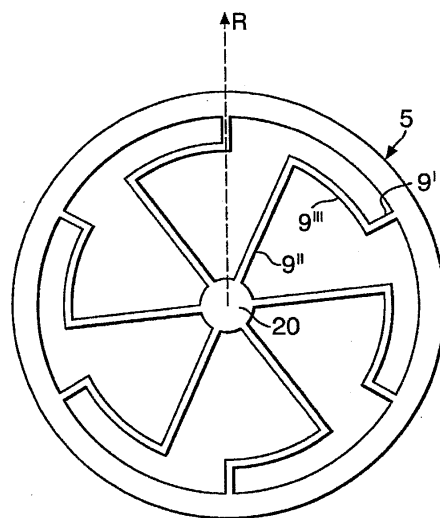
6b



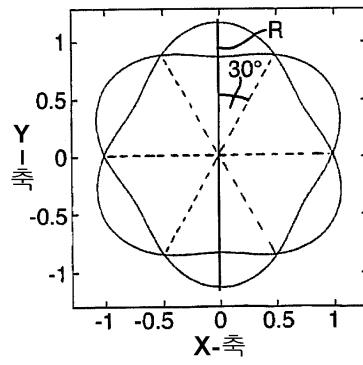
7



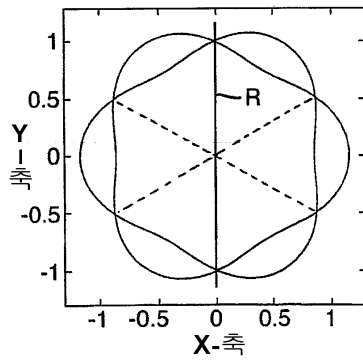
8



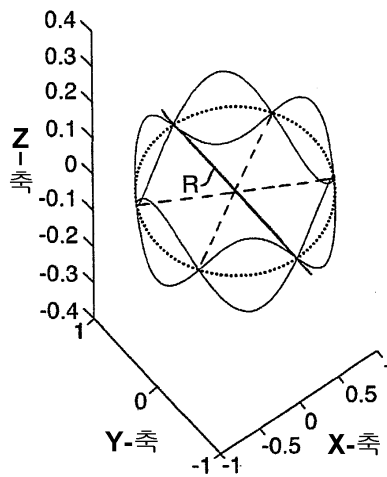
9a



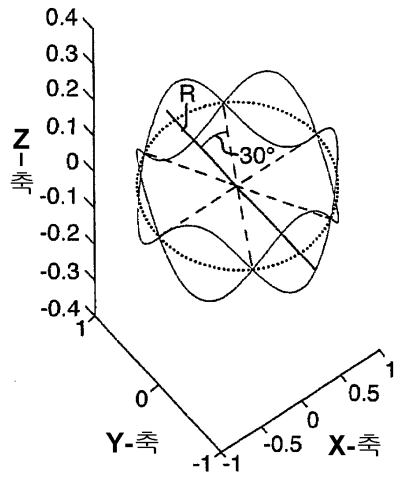
9b



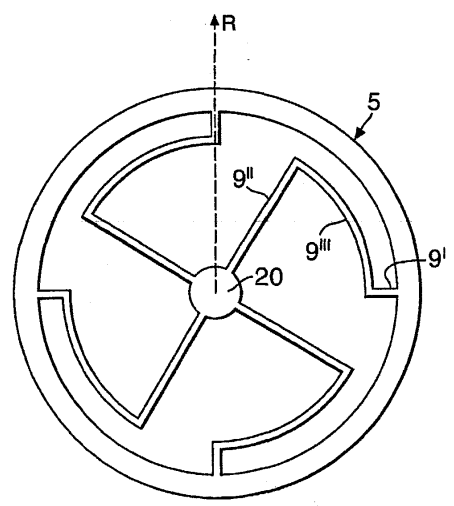
10a



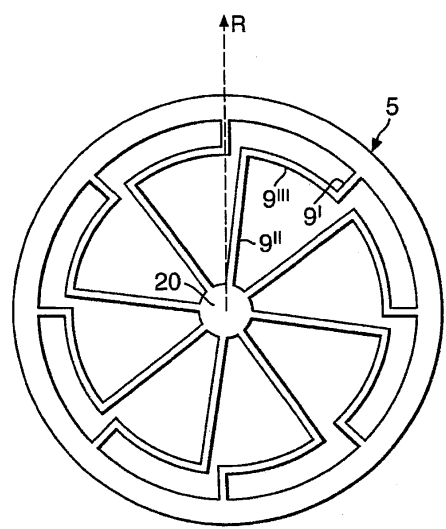
10b



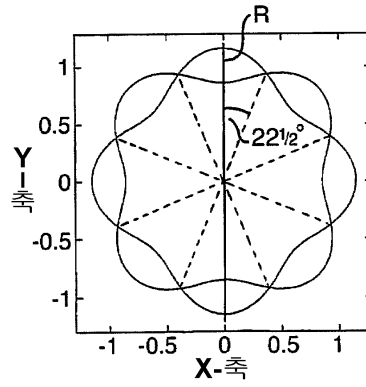
11



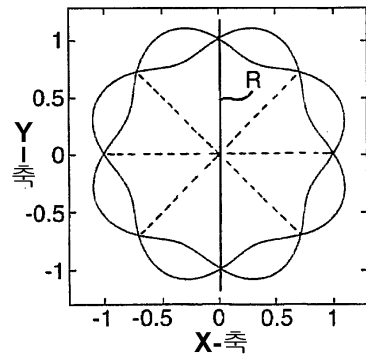
12



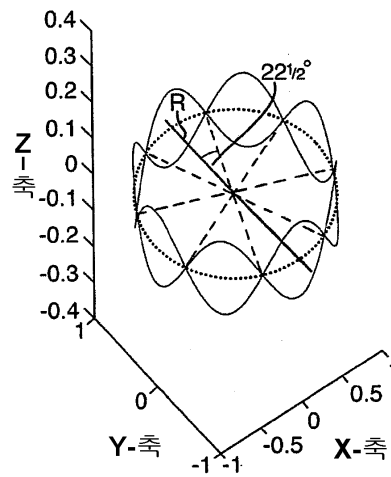
13a



13b



14a



14b

