

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

(51) 。 Int. Cl.7
A61B 6/00

(11)
(43)

10-2004-0054791
2004 06 25

(21) 10-2004-7007764

(22) 2004 05 21

2004 05 21

(86) PCT/US2002/035578

(87)

WO 2003/045242

(86) 2002 11 06

(87)

2003 06 05

(30) 60/332,516

2001 11 23

(US)

10/064,160

2002 06 17

(US)

(71)

53188

3000

(72)

84020

13102

84020

11850

84124

4421

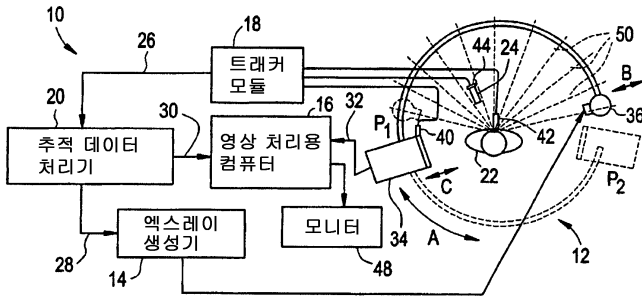
(74)

:

(54)

,

C (112) (123) , (124)
 . C (112) (123) (124) . C (112) 1 2 (124)
 (123) (124) C (133) (127, 131) (124)
 (123) (124) (123) (127, 131) , (22)
 C (112) (133) (123) (124) (124)
 가 (124) (32) , (250) (16)



3 (3D)

C

3D
erized tomography)

가 . . . CT (CT : comput

(fan)
가

가

(image intensifier)

(area-beam detector)가 3D

(dynamic event)

, CT

3D

3D

3D

C

가

(ROI : region of interest)

3D

가

/C /

가

C

C

C

가

C

3D

. 3D

C
(oblong)

(

) ROI

4

7

(312)

C

(300)

(312)

가

(

)

(304)

(306)

(306)

(304)

(304)

(306)

(304)

(306)

가

(306)

(304)

ROI

가

(304) (306) (308) (exit surface)

(304) (309)

4 5 C (300) 3D (302)

) . C (300) ROI가 (303) ISO

(304) (306) (312) 가

(304) (306)가 (306) (306)

[(306)가 (310) (308)] (302)

6 (306) (308) (314)

(304) (303)가 (306)가 (303)

(306) (314)가 가 가

(가 4 7)

가 (306) (308) (314)

3D , 2D

7 (316)가 (304) (306)

(306)가 가 (304)

3D

C

/ 가

osure) 가 3 (image processor) (exposure position) , 3 (image exp

- 1
- 2 C
- 3
- 4
- 5

6
7
8
9
10

1 (10) (14) C (12) ,
 (16) , (tracker module)(18) (18) (16) (trac
 king data processor)(20) (20)
 (14) (16) (48) (16)

C (12) , 가 (36) , 가
 (34) (34) , C (12)
 가 (orbital tracking direction)
 (wig-wag)' (34) (C)
 (A) 1 C , (34)
 36) 1 (P1) , 2 (P2) 1 C (C)
 (12), (34) (36) (34) (B, C)
 가 (36)

(18) (40 44) (22), (34),
 (22), (34) (24)() (18)
 (20) (24) (26) (20)
 (34), (22) (24) (20)가 (28)
) (14) (18) (14) (36) (34)
 (16) (28) (20) (30) (30)
 , C (26) (20)

, C (12) 가 1 (P1) 2 (P2)
 0° 190° (34) 0° 145°

(16) C (12) (34) (32)
 (34) (36)가 (14) (32)
 (16) (32) (30) 3 3
 (slice) (saggital), (coronal) / (axial) (16)

2 C (110) /
 (112), L (113) (114) (111) (110) (111), C
 , (110) (117) (111)
 (110) C (112) L (113) (111) (111) (118)

, (118) (119) (119) (120) (120) (119) (119) (119)
 18) (119) . C (112) L (113) (113) (120) (120)
 가 . L (113) 360° (120) L (113) , L (113) (113) C (112))
 C (112) C (123) , (125) (124)
) (129)가 가 (123) (124) (125) (125) 가 (130)
 (123) (127) (127) (124) (131) (124) (131)
 3)] (127) (133) (14) (123) (124) (124)가
 (123) (111) (123) CPU (124) (112) (B, C) (13
 127) (127) (131) (123) (124) (123) (B, C) (124)
) , C (112) (123) (124) (123) (124) (124)
 가 C (112) (111) (123) (133) (124) (124)
 4)가 C (112) (123) (12) (123) (12)
 , (127) (131) (127) (127) (13
 1) , C (132, 134) (123) C (124) (127) (127) (13
 (123) (124) (111) (124) (111) (133)
 (110) (110) (117) (125) (110)
 , C C (110) (110)
 3 C (200)
 230) C (210) (220) (225), (18) (18)
 2 (235) (111) (220) 1 (225) 235) (18)
 (225) 235) (210), (24)() (22) (22)
 (111) (225) 235) 2 C (22)
 (123) (124) (123) (124) (123)
 (124) (127) (131) (132, 134) (124) (127)
 (131) (240) (240) (210) (220)
 (225, 235) (250) (26) (240) (240) (frame grab
 ber)(260) () (26) (220) (245)
 () (210) (210)
 (280) (26) (270) (270)
 (26) 가 3D 10 3D

가 3D (290) (270)

(295) (290) (250)

(295) (24) (250)

(250) (295) 3D 3

(250) (24)

()

/

, C (capacitive sensing)' (124) (137) (124) (1)

23) / (124) (124) 3D , C 가 (124)

(137)가 / (137) /

(111) (111) / (C)

(131) (124) (111) (124) (131)

가 (111) (123) (124) (123)

(B) (127) (123)

(137) (124) LED

(124) LED /

() 가 가) 가) LE

D / () 가) (12)

3) LED / (131) (123)가

(124) 가 (124)가

(123) (124) (123)가

(124) (123)가

, C (angular position) (124) 가

, C

(137) LED / (124) (137) (111)

(131) (11) (124) 가 /

(124) LED /

(137)(2)

(124) (137) (123)

8 10 (400) (408 416)

(402) (404) (406) (420 431)

8 (400)가 (408) (420) (402) (40

6) (420) (400)가 (409) (409)

(402) (406) (409) (410)

) (402) (402) (406) (421) (422) (404)

(402)

9 (411 415) (423 427) (404)

(406) (402) (406) (400)가 (411)

(404) (406) (423) (400)가 (400)가

4) (412) , (402) (406) , (40
 414 415) , (402) (424) (413,
 10 (404) , (425, 426 427) ,
 (430) 2 , (404) , (431) 1 ,
 (404) / (435) , (404) (402) (402)
 가 , (404) (402)가 (406)
 , 가 , ,
 가 , ,

(57)

1.

(36) , (image exposure)(32)
 (34) C (12) 1 2
 (36) (34) , (133) C (12) ,
 (36) (34) C (12) (127) (420)
 (131) , C (12) (36) (34) (22) (133) (34)
 (36) (34) (127) (131) ,
 1 2 (36) (34)가 1 2 (34) (16)
 , (32) (30) (32) (30) (3D) ,
 (16) ,
 3D (250)

2.

1 ,
 (36) (34) 1 (408)
 (423) (423) (133) (111) , (36) (34)

3.

1 ,
 (34) (36) (133)
 (114)

4.

1 ,

5), (22), (34) (24) (133) (22)
 (220) (230) (235) (36) (34) 1 2
 (133)

1 5.
 (34) (308) (34) (137)

1 6.
 (34) (36) (133) (423)
 (111) (423) (32)

1 7.
 (309) (36)
 (127) 1 (132) (34) (308)
 (34) (111) (131) 2 (134) (111)
 (133) (36)

1 8.
 (34) (137) (308)
 (220) (220) (133)

9.
 (3D)
 (ROI : region of interest) (133) 1 2 (
 408, 409) (123) (124)
 1 (408) (123) (124) (133)
 1 (124) 2 (409) (123)
 1 2 (408, 409) 1 2
 1 2 (3D)

9 10. ,
 (133) , (124) (133) (308)

9 11. ,
 (123) (124) (133)
 2 (408, 409) (123) (124) 1

9 12. ,
 24) (24) (235) , (133) ¹ ² , (22), (1
 30) (225), (2)

9 13. ,
 24) (124) (308) , (133) (124) 1 (1
 (308)
 (124) 1 (133) (123) 2

9 14. ,
 (133) , (123) (124)

9 15. ,

(22), (124) (24) (133) ((225), (230) (235) (133) 1 (124) (124) (123) (123)

16.

(32) (3D) (123) (image exposure)(32) (124) C (112) (133) 가 (133) (123) C (112) (127) (131) C (124) (123) (22) (127) (124) (112) (133) (127) (131) (124), (123) (22) (133) (124) (123) (124)가 (16) (32) (32) (124) (245) (3D) (32) (1) 6) (3D) (250)

17.

16 (124) (308) (124) (137)

18.

16 (127) 1 (132) (123) (133) (131) 2 (134) (132) (134) 2 (124) (133) (134)

16 19. ,
(124)

(123)
(114)

(133)

16 20. ,
(131) (133)

(134)

(124)

(22)
,
(123)

(124)

(127)

(131)

1 21. ,

1 22. ,

1 23. ,

(isocenter)

1 24. ,

25.

1

2

C

C

C

가

1

2

1

2

(3D)

3D

26.

25

1 2

27.

25

28.

25

29.

(3D)

1 2

1
2

1
2

1 2

1 2

1 2

(3D)

30.

29

1 2

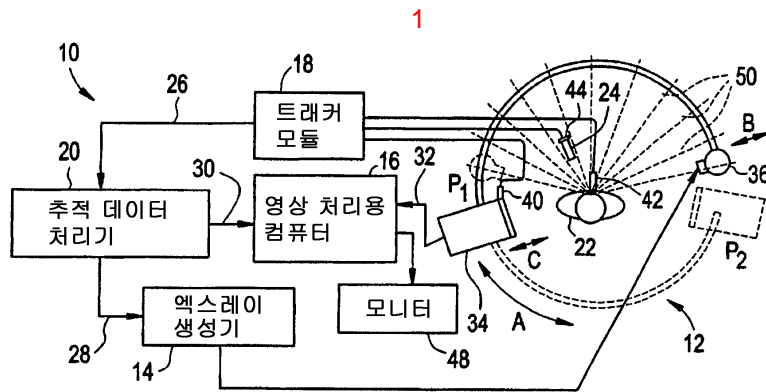
31.

29

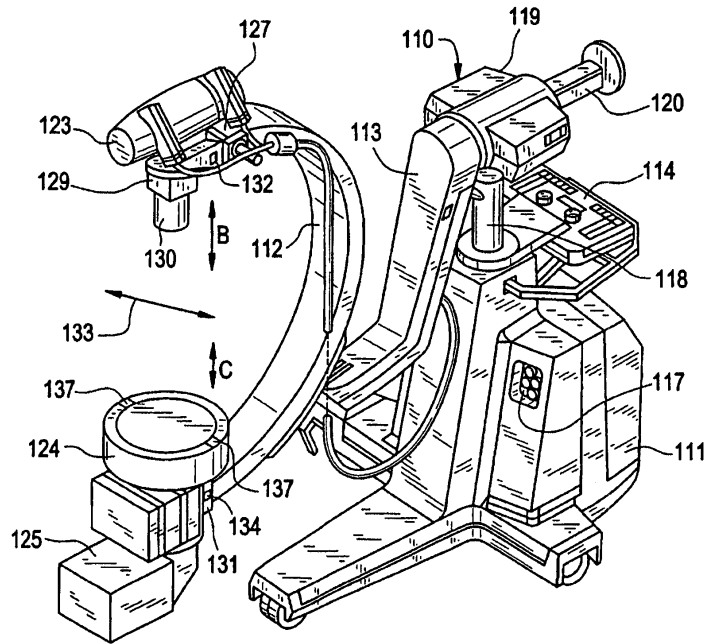
1

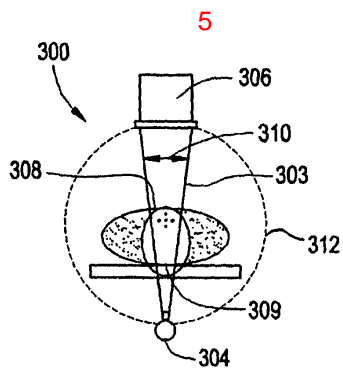
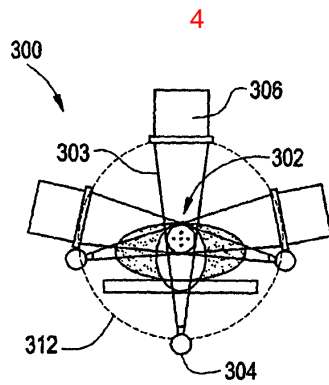
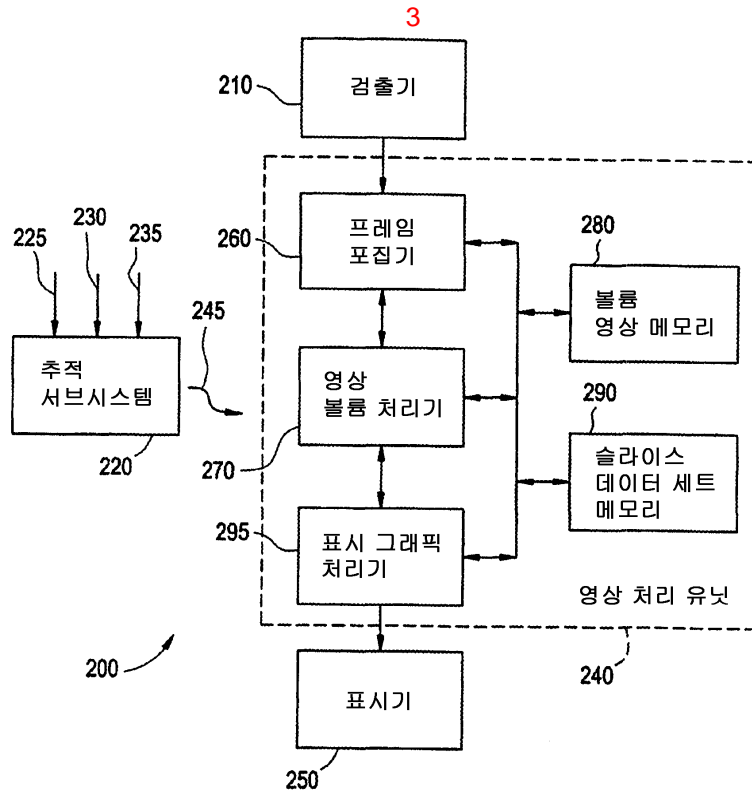
1

2

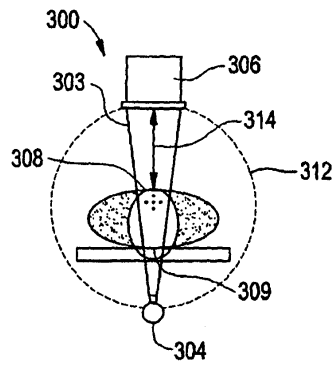


2

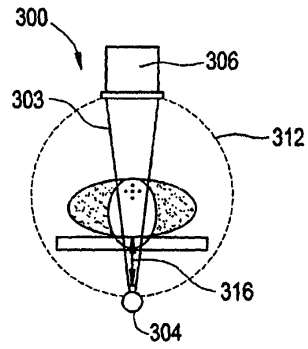




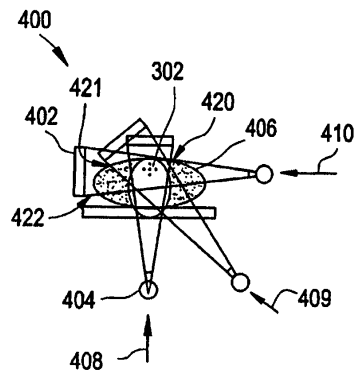
6



7



8



9

