

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

(51) . Int. Cl.⁷
 A61L 9/20
 B01D 46/10

(11) 10-2005-0008724
 (43) 2005 01 21

(21)	10-2004-7018779		
(22)	2004 11 19		
	2004 11 19		
(86)	PCT/US2003/015695	(87)	WO 2004/011041
(86)	2003 05 16	(87)	2004 02 05

(30)	60/382,126	2002 05 20	(US)
	10/434,041	2003 05 08	(US)

(71)	,	,	.	.	,	312
	,	14221,				

(72)	,	,	.	.	,	312
	,	14221,				

,	,	,	14219,	,	.	4099
---	---	---	--------	---	---	------

,	,	,	33040,	,	,	1604
---	---	---	--------	---	---	------

,	14226,	,	,	100
---	--------	---	---	-----

(74)

(54)

('UV')
 UV
 V - ,
 가

(irritants)

, /

('UV') (radiation)

('HEPA')

(irradiation)

가

2250 - 3020 Angstrom

('UVGI')

UVGI

UVGI 가

, UVGI

Pick ('Pick')

5,330,722 UV

가

UV

UV
UV

Pick

5,766,455

. Berman

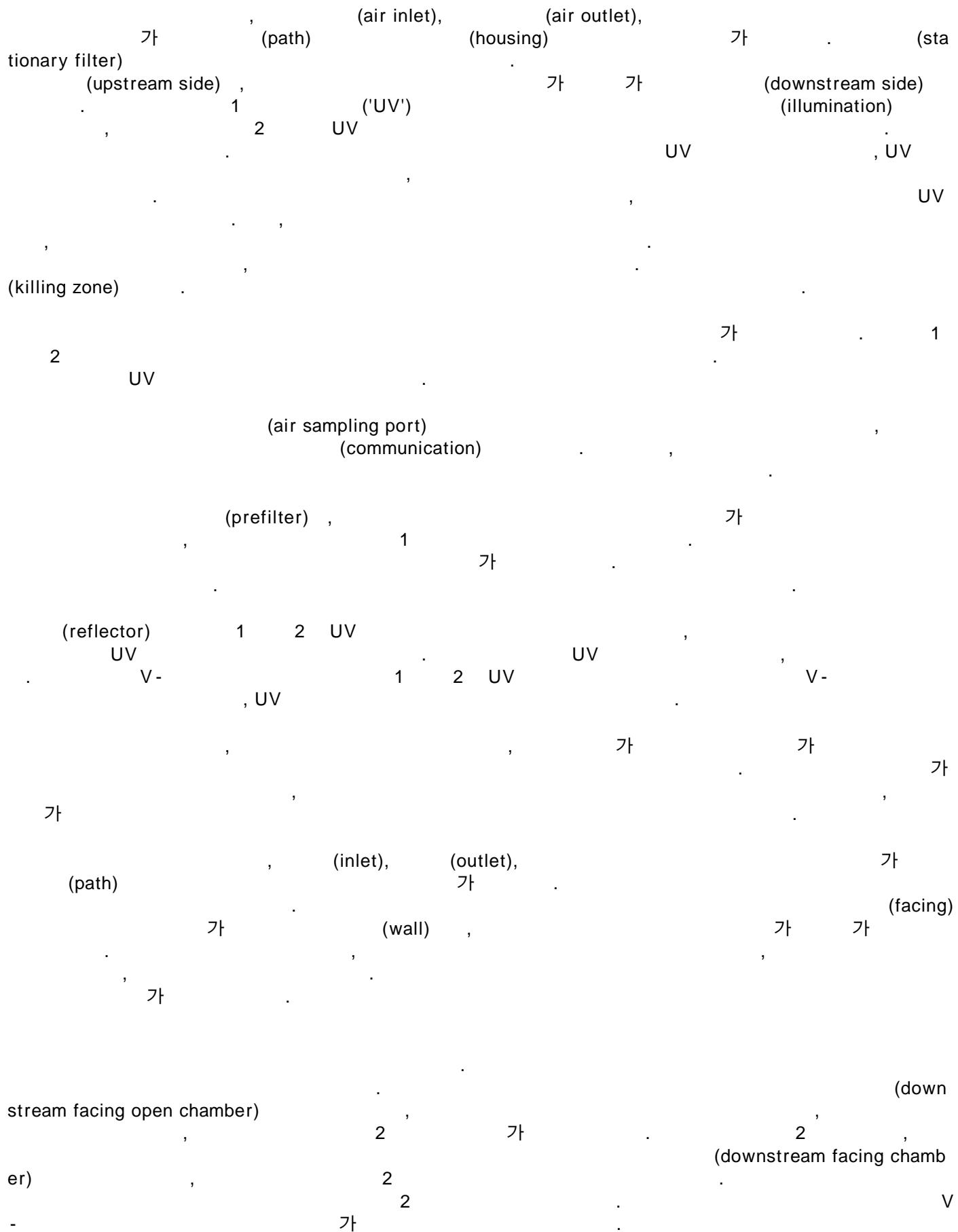
가
가

(isolation room)

가

가

가



1
 2 1
 3 1
 4 1 ,
 5 4
 6 4
 7 1
 8 가 (HEGA) 1
 9 1
 10 (duct) 1
 11 (positive) 가 1
 12 (negative) 가 1
 13
 14a 14b 1
 15
 16
 17 13-13 15 가
 18 가
 19

1 2 1
 (24), (10) (12) (10) (10) (16), (18), 2 (20, 22),
 / (26) (14) (10) (28) (air inlet)(28) (air outlet)(30)
 (14) , (24) (26) (26) (28)
 (30) (30)
 (28) (30), (air path)(A) (14)
 (28), (30), (14) (72)
 (14)
 가
 (28) , (32) (A) (14) (32)
 . (32) (30) (fan) (14)
 (32) , (fastener) (14)

가

V- , NJ, Riverdale Camfil Farr, inc. 가 Camfil Farr Filter 2000 (TM)
r 2000 (TM) . Camfil Farr Filter 2000 (TM)
, Camfil Farr, inc. Camfil Farr Filter 2000 (TM)
(micro-glass fiber)

, 가 700 CFM(19.82) (10) Camfil Farr Filter 2000
 (TM) Model No.FA 1565-01-01 , IEST Recommended Practice 가 , 0.3
 99.9% . (rated check airflow) 가 900 CFM(25.48)
 1.0 w.g . (media area) 174 (16.16)
 24 x 24 x 11.50 (x x)(, 0.61 x 0.61 x 0.29)

Camfil Farr Filter 2000 (TM) Model No.FA 1560-01-01 가 2000 CFM(56.6
 3) (10) . 가 2400 CFM(67.96
) . 900 CFM(25.48)
 Camfil Farr Filter 2000 (TM) Model No.FA 1565-01-01 . 431 (40.
 04) .

0.3 99.999% 0.1 99.99% ULPA Camfil Farr
 Filter 2000 (TM) Model Nos.FA 1565-02-01 FA 1560-01-01 가 .
 565-02-01 가 693 CFM(19.62) , FA 1565-01-01 FA 1
 19.82) (10) FA 1560-01-01 가 700 CFM(F
 A 1565-02-01 가 1848 CFM(52.33) 가 2000 CFM(
 56.63) (10) .

V- NY. Grand Island Total Filtration Solution Inc. 가 F
landers Model SF2K-5-G2-CG 가 .

ce), (12) UV (50, 54) (illuminating) (12) . (12a) UV (50, 54) (12b) 3 (mesh surfa
 (12) 가 (12c) . (56a, 56b) (12d, 12e) UV (50, 5
 4)

UV (50) 가 (12) . (48) (12) (58)
 zone), . , (odorant) 가 . , (12) UV U
 . (54)

SA. 01970 MA, Salem Perkin Elmer Optoelectronics PerkinElmer Model GX108T5L/ULTRA-V

,	UV	(50)	.	(corona wires)		
가	가	.	(59)	(12)	5	(12)
(36)		(10)	(14)	(12)	5	6

(12) (50, 54) UV (50) UV (50, 54) (50 /

59) UV

254 ('nm') UV (characteristic logarithmic decay equation)

$$\ln[S(t)] = -K_{UV} I_{UV} t$$

,

$$K_{UV} = \text{cm}^2 / \text{microW-s}$$

$$I_{UV} = \text{UV} \quad (\text{microW/cm}^2)$$

$$t = \text{sec}$$

(k)

1

			(microW/cm ²)	(sec)
		99%	25	0.02
A		99%	25	0.02
		99%	25	0.08
		99%	25	1.5
		99%	25	1.9
		99%	25	3.6

(characteristic logarithmic decay equation)

$$\ln[S(t)] = -K_{O_3} I_{O_3} t$$

,

$$K_{O_3} = \text{I/mg-s}$$

$$I_{O_3} = \text{mg/I}$$

$$t = \text{sec}$$

(k)

2

			(mg/I)	(sec)
		99.99%	0.3 - 0.4	180 - 240
29		99.99%	1	60
sp		99%	0.2	30
sp		99%	0.2	30

(54) , 가 (54) (18)
 (32) (12) (12) (turn over rate) CFM
 600 2000 CFM(16.99-67.96) .
 (12) (50, 59) UV (54) 'C (55) , 255
 3 (nanometer) 가 OSHA가 (0.1 ppm) (12) (30)
 , (room) (50) / (A) (59) 가 (10) (54) UV (54) UV (50)
 (on) , UV (54) UV (54), UV (54) (radiation)
 , (57) (57) (14) (10) (28) (10)
 (57) 7 (54) (shut off) OSHA가 0.1 ppm
 , (57) , , , , , 0.005 ppm
 , (57) (57) (54) / (59)
 California, Auburn Applied Ozone Systems 가 OS-1X Low Concentration Ozone Swi
 tch가
 (55) 3 7 (50 / 59) 가
 3 (10) (61) 7 (1)
 0) (62) (34, 63, 64, 65) (32), (10) (59), 7
 UV (50, 54) (54, 63, 64, 65) (66)
 (66) 가 , (67) (10) (61)
 (66) 가 , , UV (50) UV (54) (10) (61)
 UV (50) (54) (10) (61)
 7 (66) UV (50), UV (55) / (57) (32),
 (66) (54), (59), (73a, 73b, 73c, 73d, 73e) (59),
 (10) (66)
 ('rf') (69c) 가 (69b) (69a) (66) (10) (69b)
 가 (safe room) , (70) 가 (66) 가
 , , , (10) , , ,
 가 , (10) , , ,

/ 59) (10) 가 . (10) (32) (flooding) , (50)
 (A) (32), (50) / 59), UV (54)(UV (54) (50) / 59) (on) ,
 (32) (off) , UV (54) (off) (64a))

 (10) UV (50) (60) 가 . (14) (60) , (12))
 UV (50) (28) UV (50) (framing) (42) 1
 (60)

 , 가 NJ, Liberty Corner Fedders Corporation
 가 .

 가 (well defined) 3 , (ze
 olite) 가 (cavity)

 Air Filter(TM), , BioSponge, PurePleat 40, MicroSponge
 가 . 가 Flanders Precisionair, ST.Petersburg,
 Florida www.dustless.com 24 × 12 × 2 ((0.61 × 0.30 × 0.05)

 , High Efficiency Gas Absorber('HEGA') (71) 8
 가 (10) 가 . HEGA (71) , , (NBC)
 (71b) (scavenger) (71b) 가 . HEGA (28) (71) (71a)
 가 (71b) , (duct adapter)(68) (71) 가 . HEGA (32) (71a) (10)
 (10) (28) (71) , (71) , (71c) 가 . HEGA (10) (10)
 (68) HEGA (71) 2 (71b) (71) (68) HEGA (10) 가
 (86) 가 , , (30) , (10) ,
 가 .

 가 HEGA Texas, Houston Riley Equipment Co. 가 AZM/TEDA
 for Warfare/Nuclear Carbon RS 12가 . AZM/TEDA 가
 - (activated tetra-charcoal) , Riley Equipment Co.

 (72) 1 2 (10) (14)
 , 가 . 9 (14) ,
 (72) (74) (open end) (72) (78) / (72) (80) 가 9 (80),
 (72) 가 . (72) (72) (74) (72) (78)
 (80) , (85) , (72) ,

 , (72) (spaning) (10)

가 (80) (rotameter) 가 (80) 가
가 (80)
가 , (sampler) , Occupational Safety and
Health Administration(OSHA :), Environmental Protection Agency(EPA :),
National Institute for Occupational Safety and Health(NIOSH :) 가

가 10) (10) 11 가 (102)

) . , , 가 . , (118) (128)
 60) . , DC (, 12) AC(117 ,
 15 19
 600 CFM(16.99) (108) (12) (32) 가
 .
 가 (108) 175 (53. 34)

가

가

(57)

1.

,
 (path) (air inlet), (air outlet), 가
 (housing) ,
 y filter) , (upstream side) ,
 (downstream side) (stationar
 (illumination) 1 ,
 2 ,

2.

1 ,

가

3.

1 ,

1 2

4.

1 ,

2

5.

4 ,

2

2

6.

4

2

2

7.

1

2

2

8.

1

1

(prefilter)

가

9.

1

10.

1

,

(refle

ctor)

11.

10

,

1

,

2

2

12.

1

,

V -

V -

가

,

1

V -
(illuminating)

V -

2

13.

1 ,
1 , (communication)
(air sampling port)

14.

1 ,
1 , (intake duct adapter)

15.

1 ,
1 , (exhaust duct adapter)

16.

1 ,
1 , ≥ 0.3 (micron) 99.97

17.

16 ,
16 , ≥ 0.1 (micron) 99.99

18.

1 ,

19.

1 ,

20.

1 ,
2 , (radiation) (emitting)

21.

20 ,
20 ,

2 2

22.

21 ,

,

(on) , , , (off) , 2 UV 2 UV , (off)

23.

1 ,

,

24.

1 ,

가

25.

,

,

가

,

가

,

가

26.

25 ,

,

27.

25 ,

,

28.

(inlet), (outlet),

가

,

가

가

가

,

29.

28 ,

가

30.

28

,

,

31.

30

,

,

32.

28

,

,

33.

32

,

2

2

2

,

34.

33

,

2

2

,

35.

34

,

가

,

,

1

,

V-

,

,

V-

1

,

,

2

,

V-

,

V-

2

,

2

V-

36.

35

,

V -

37.

28

38.

28

39.

28

가† 0.3 (micron) 99.97

40.

28

41.

28

42.

28

(communication) 가†

43.

,

가†

44.

43

,

가†

45.

44

,

가†

46.

,

, ,

가

, ,

가 가

,

47.

46

,

가

48.

,

, ,

가

,

,

,

(communication) 가

,

49.

48

,

,

50.

49

,

51.

48

,

,

52.

51

,

,

53.

51

,

54.

48

,

가

55.

54

,

가

56.

48

,

57.

56

,

가

,

V-

,

V-

1

V-

V-

EJ

58.

,

,

,

,

59.

58

,

(communication)

,

,

60.

59

,

61.

59

,

62.

58

,

63.

(isolation device)

,

,

(space)

(barrier)

,

, ct unit)

(air condu

64.

63

,

가

65.

63

,

(deflecting)

(baffle)

66.

65

,

50%

75%

67.

63

,

가 가

, ,

가

68.
67 ,

2

69.
63 ,

가 (bed)

70.
63 ,

가

71.
(isolation wheelchair) ,

가

가 (seat) ,

(recycling vent)

72.
71 ,

가

73.
71 ,

74.
71 ,

50% 75%

75.

71

,

, 가

,

1

,

2

76.

71

,

77.

,

(romm)

,

가

,

78.

,

,

가

가

가

,

가

,

가

,

(negative)

,

(ducting)

79.

78

,

,

80.

,

,

가

가

가

,

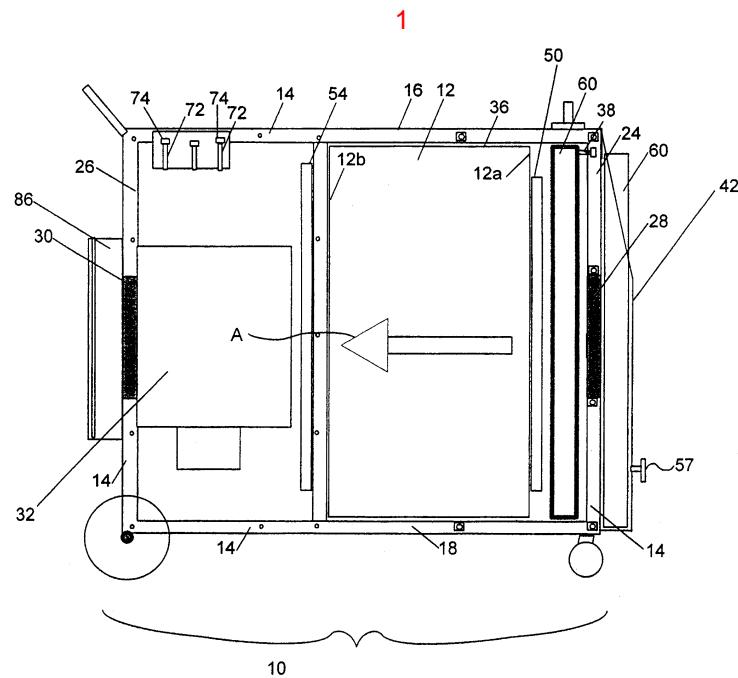
가

,

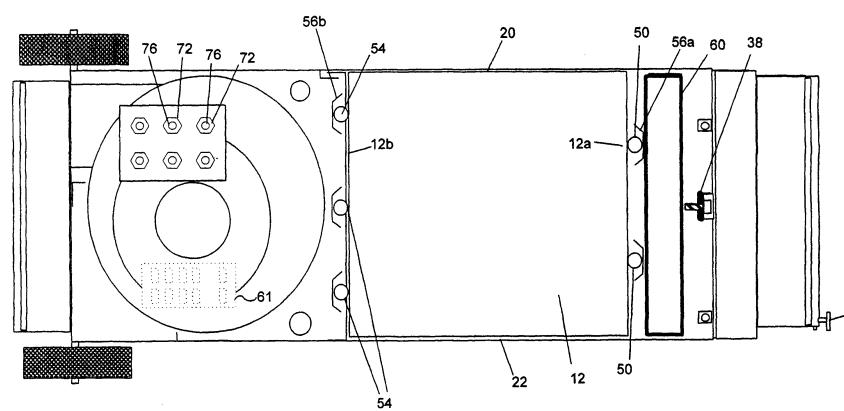
가

(negative)

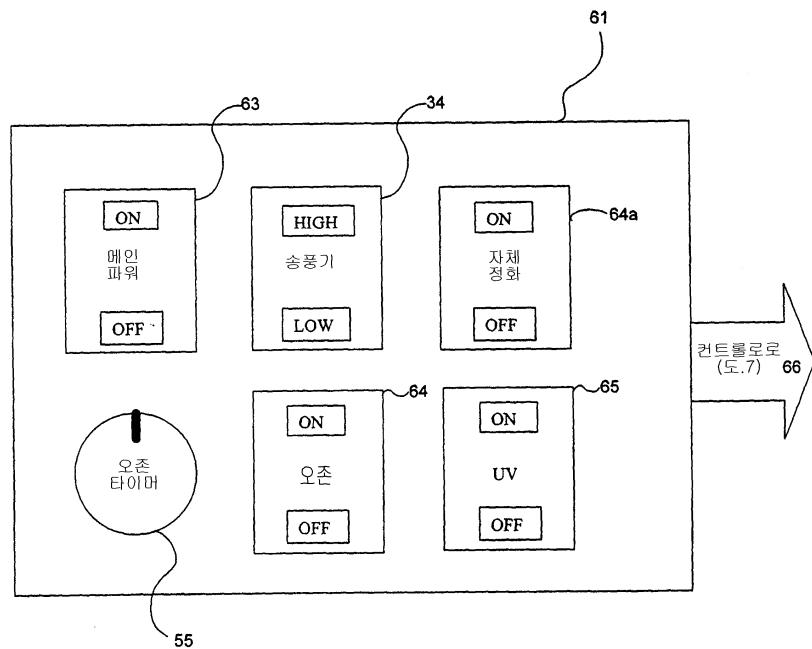
(ducting)



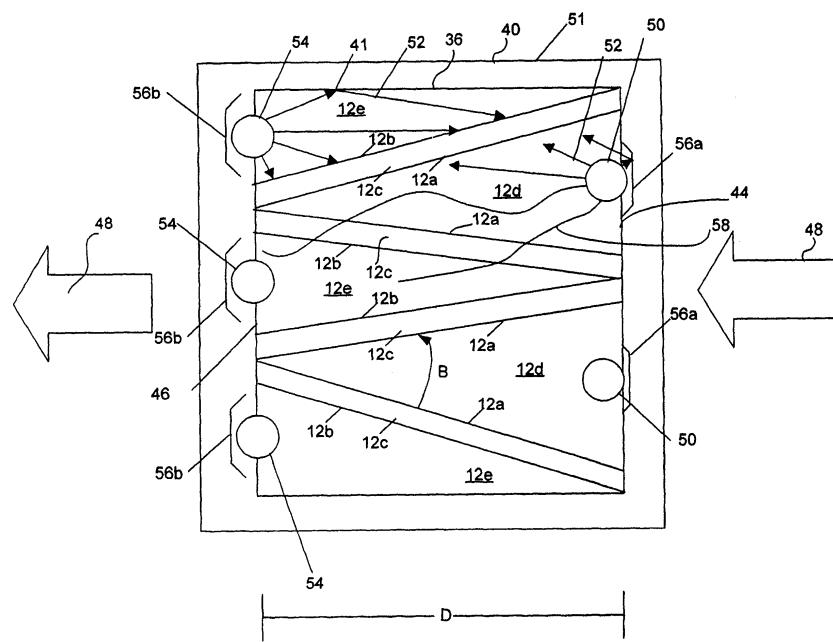
2

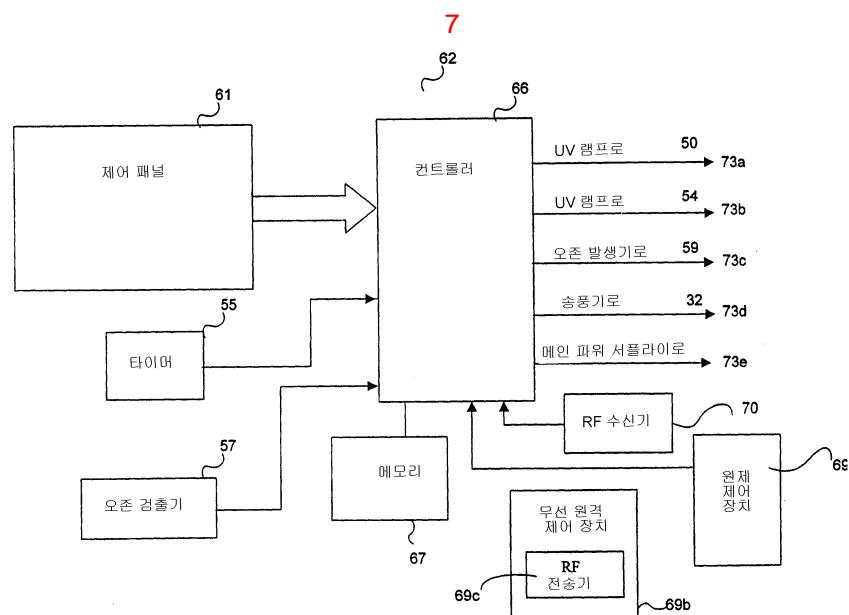
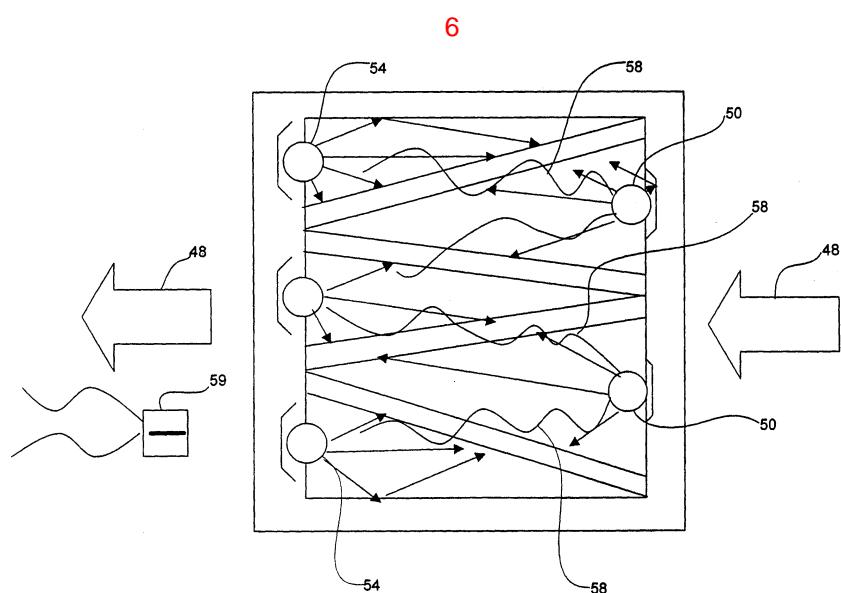
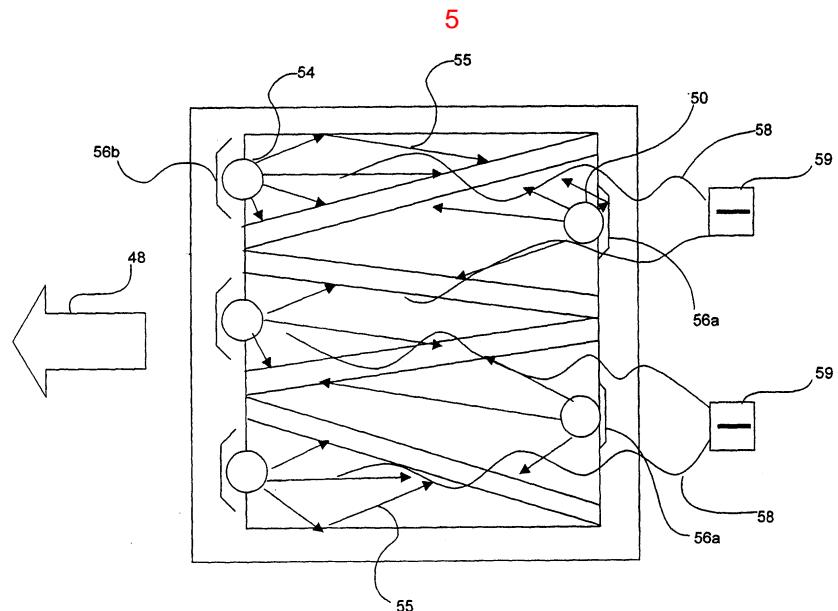


3

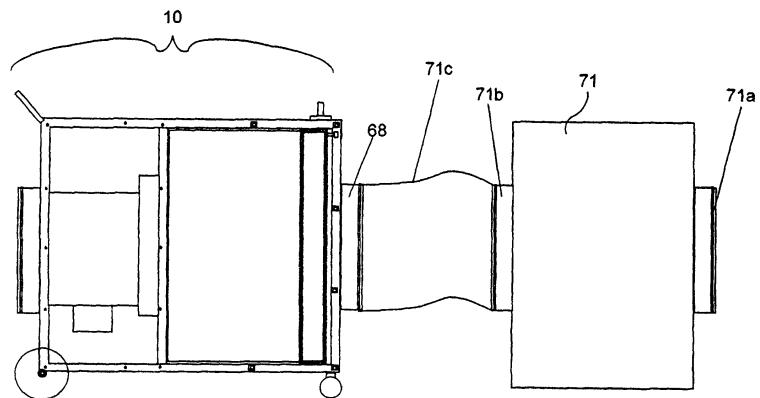


4

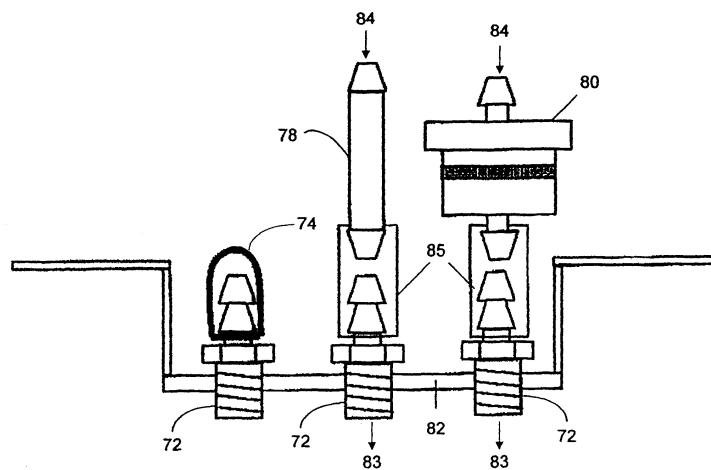




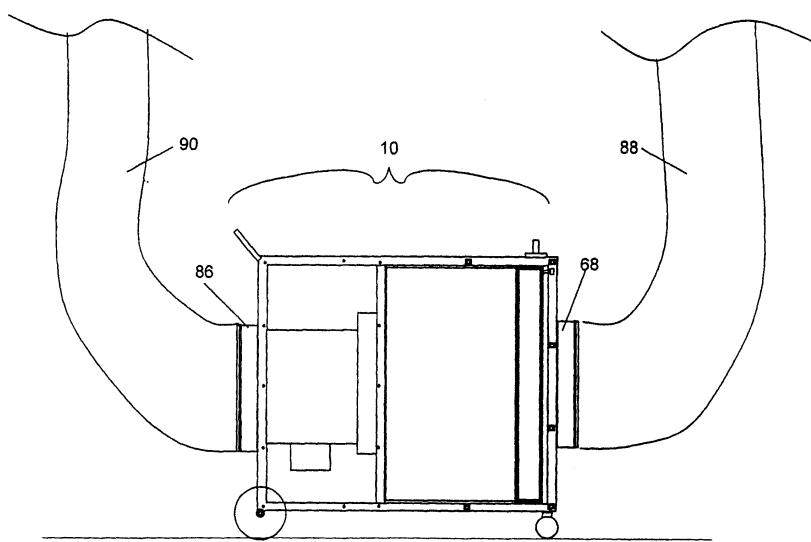
8



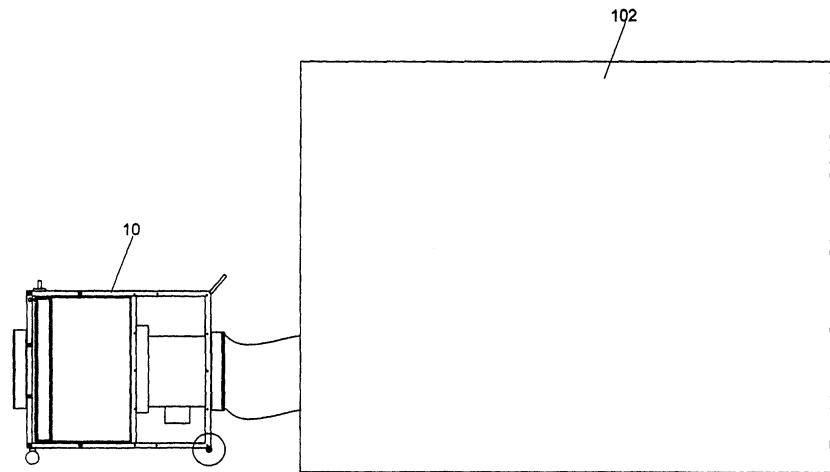
9



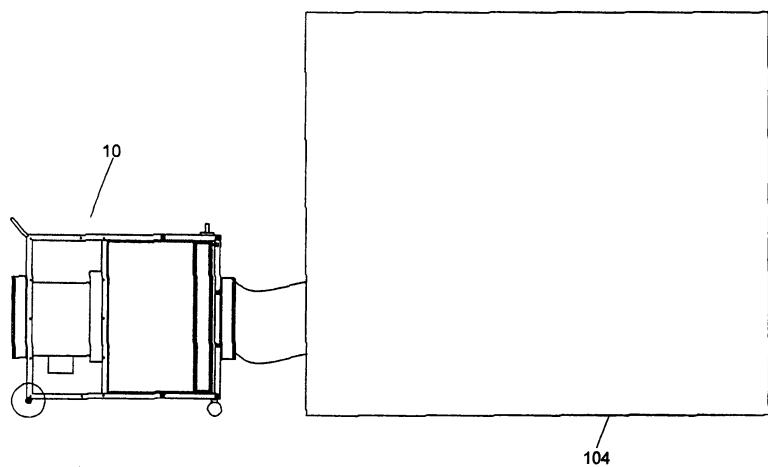
10



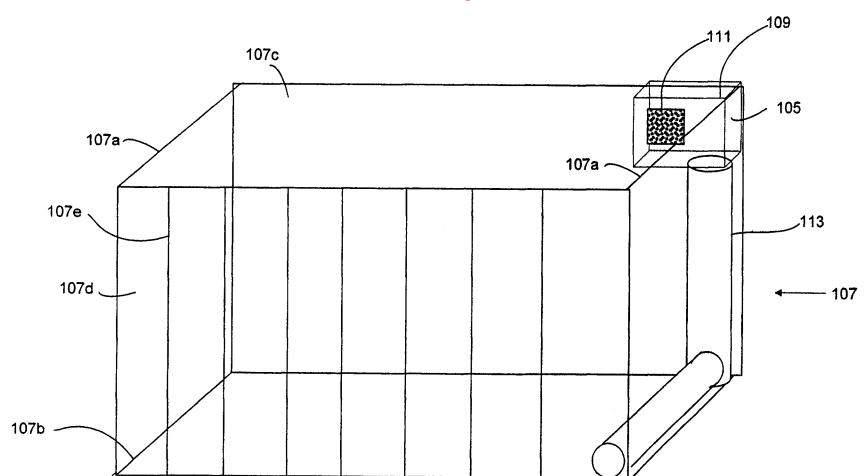
11



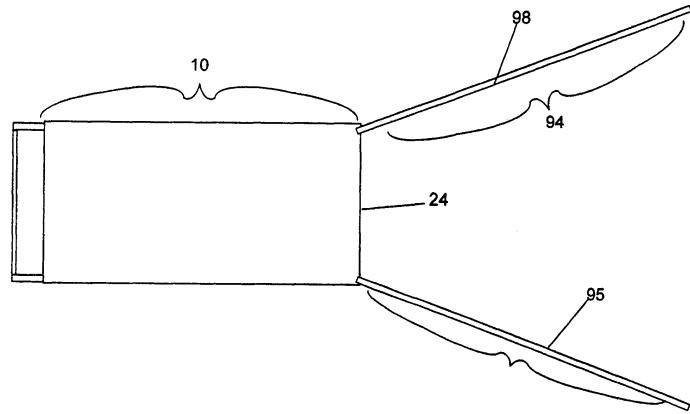
12



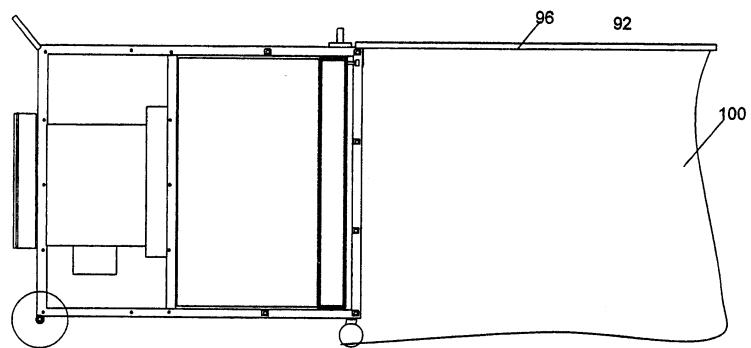
13



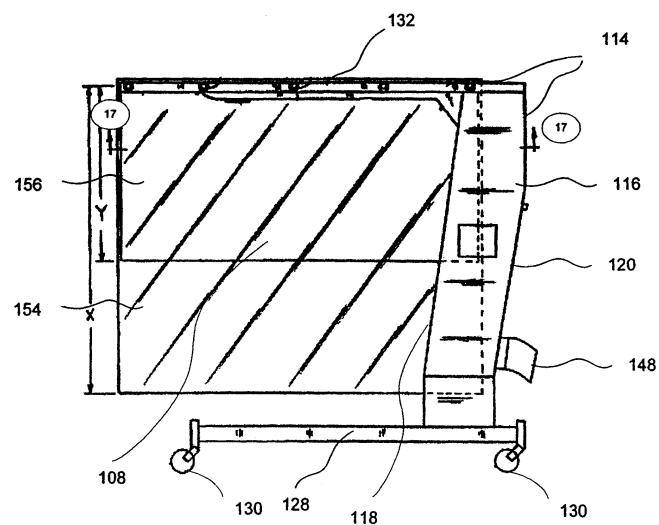
14A



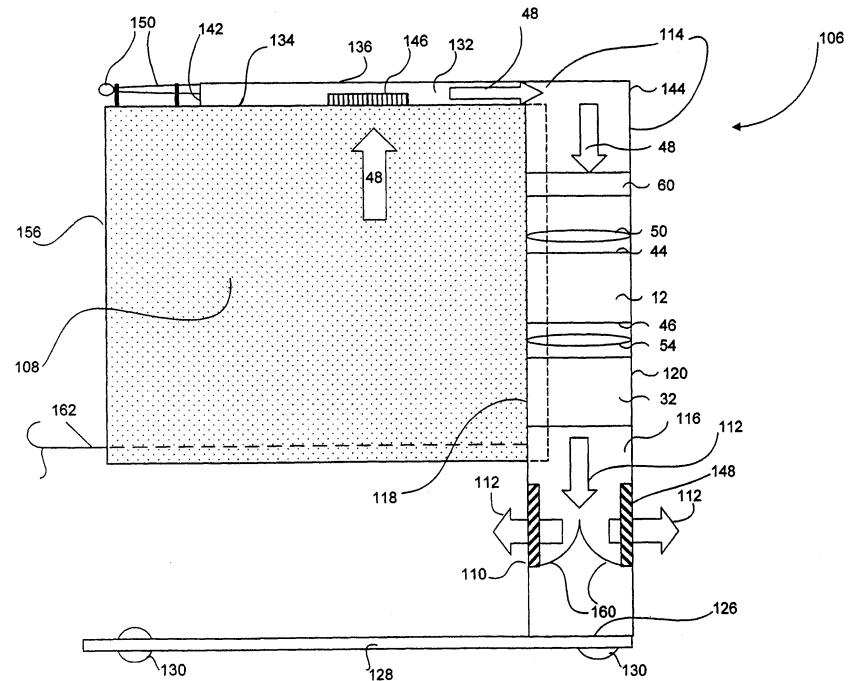
14B



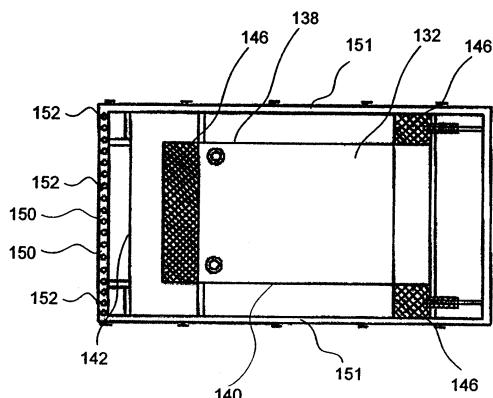
15



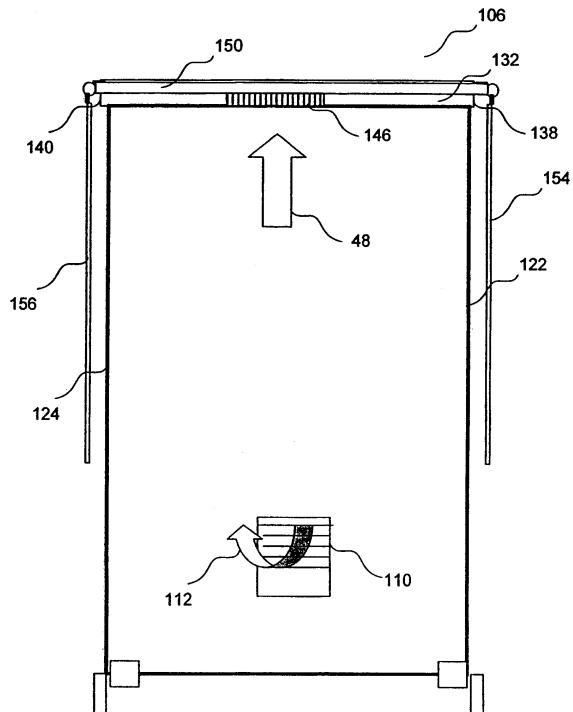
16



17



18



19

