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(87) 2001 05 17

(30) 09/437,867 1999 11 10 (US)

(71)

55440 - 1299 94 가 1400

(72)

, 55124, , 137 6205  
, ,  
, 55346, , 18830

(74)

(54)

1

, (pre - filter), , . , 가

가

, 가 , 가 , 가 , 가 , 가 , .

, , , 가 , ,  
1 가 1 가  
가 . , 1 가  
1 .  
1 .  
2 1 가 가 ,  
3 .  
3 가 가 , 2  
4 .  
4 2 3  
5 3 5 - 5 , 2 4  
6 .  
6 2 4  
7 1 가 가 , 2 4  
8 1 가 가 , 7  
9 7 8  
10 2 4 7 9  
11 2 4 7 9  
12 11  
13 11 12  
14 , , 2 4 7 9

15 14

16 2, 7 8 1 가

A. 1,

B.

C.1

2, 5 7 , 1 (30) 가 .  
 " , (40) (42) 가 (30)  
 , (40) (42) (42)  
 . 2 , (42) . , (42)  
 . , (42)

(30) 1 (44) , 2 2 (46) . 2 , 1 (44)  
 (40) , 2 (46) (42) , 1 (44)  
 2 (46) , 1 (44)

2 (46)

16 . 16 1 (30) 가  
16 , 가 (50) . , (50)

, (54) (56) 가 (波形) (52) . 16  
 (56A)(52) ) (56B)(52) )  
 . , (50) (56B) 가 (52)  
 (50) , (56B) 가 (52)  
 (52) (56) 가 (56A) . (56A)(56B) 가  
 (56)

(50) (58) (60) (62) . . . (6)

(60) , (16) ) . 16

, (64) , (66) 1

. (66) (52) 2 (56B) .

(68) . 2 (70) (64) .

(50) , , 가 (72)  
(64) . (64) (74) . (76) 2 (70)  
(64) (76) . , 가 ( )  
52) (56) . 가 (52) (56) ,  
가 . 가 (78) . (80)  
(50) 가 (66) . , 가 (52),  
(56A), (56B) (66) .

(50) , 7 , . (50) , . (50)  
 (coreless) 가 . 2, 7 8 , " (30) " " ( obround) " " (racetrack shaped) " , 가 ( , )

(50) 가 , 45 - 55 lbs./3000 ft<sup>2</sup> (84.7 g/m<sup>2</sup>), 48 - 54 lbs./3000 ft<sup>2</sup>  
 가 , 0.005 - 0.015 in, 0.010 in(0.25 mm) , 20 - 25 ft/min, 22 ft/min(6.7 m/min)  
 (frazier permeability), 55 - 65 , 62 ,  
 7 lbs./in, 8.5 lbs./in(3.9 kg/in) (wet tensile strength), 15 - 25 psi, 23 ps  
 i(159 kPa) 가 5 1

( )  
                  ,         5,423,892   , 32       , 48 - 60  
                  3,878,014   ,    3,676,242   ,    3,841,953   ,    3,849,241  
가                          ULTRA - WEB<sup>R</sup>

|    |       |           |        |   |
|----|-------|-----------|--------|---|
| 가  | 99.5% | SAE J726C | 99.98% | 9 |
| 0% |       |           |        | . |

가 가 5,820,646

D.

3 11 13 , (32) 가 , (32)  
 (92) (90) . (92)  
 , (32)

(96) , 가 (32) 가 , (94)  
 (96) (32) , (94)

, 15 (92), 80 (92),  
 (92) (90) (100) (92)  
 (98) . 가 (98) (98) , ,  
 . 가 (98) (比性質) , 2.7 - 3.3 oz./yd<sup>3</sup> (92 - 112 g/m<sup>3</sup>) , 0.25 - 0.40 in.  
 6.4 - 10.2 mm) ( , 0.002 psi ), 400 ft./min(122 m/min)  
 (dry laid filter medium)

(32) , (96) (102)  
 (102) 가 11 (expanded mesh) (102)  
 11 (96) (96) (102)  
 (102) 가  
 가

11 , (32) , (90) (32)  
 (104) 가 . , (104) (90) (90)  
 (106) 가 (106) (90) (90)

, (32) , (34) 가 (34)  
 (32) 가 , (34) (98) (108)  
 , (32) (34) (34)  
 (98) (108) , , , (34) (102)

120) , (120) 가 14 15 (120)  
 (124) (124) (122) (32) (32) (120) (126)  
 (124) . , (120) (128) (128)  
 (132) (120) , (130)

15 . 15 (132) (120) . (130) (134)  
. (136)(138) (140)(142) .  
, (132) (120) . (136)(138)

$$(120) \quad (132) \quad , \quad (120) \quad (132) \quad . \quad (120)가$$

E.

(24) 1 (30) (34)

$$(34) \quad , \quad (34) \quad (22) \quad 1 \quad (30)$$

7 9 , 1 (30) (34) 가 . 7 8  
 , (34) 1 . , 1  
 (30) 가 , , (34)  
 , 1 (30) 가 . , (34)  
 (30)

5 , (34) (152) (150) . (150) (153)  
      (154) (34) 1 (30) 2 (46) (42)  
    ) . (30) . , 30% 1 (30)  
30) 50% . , 가 , (34) 1 (30)  
          ( , 100%) . , (34) 10 , 15  
- 30 , , 50

(34) , 1 (30) , 1 (30)  
(36) . 3, 5, 7 9  
, (34) 가 (160) . (160)  
, (34) (150) . ,  
(160) (151) (150) , 1 (30)  
. 가 (160) (160) (36) (164)  
(162) (backstop) . , (160) (34)  
. (34) . (160) (162)  
(150) . , 0.1 , 0.25 - 2  
10

$$, \quad , \quad (160) \quad (34) \\ , \quad \quad \quad (34) \quad (160)$$

$$, \quad (160) \quad (150) \quad . \quad (160) \quad (150) \quad 1 \\ (30) \quad . \quad . \quad (166, 168) \quad , \quad (151)$$

10 . 10 (166, 168) (150) . (151) (166, 168) 가  
 가 , 1 (30) 가 (34) . , 1 (30) (30)  
 가 . , 가 (150) . , 1 (30) (150)  
 가 . 1 (30) (34) . (170)  
 (174) . (166) (168) 가 .  
 (34) (172) (174) ( ) , )  
 (172) (174) . , (172) , (172) (150) .  
 . , (172) (150) .

(172) (153) (154) (174)  
 (172) (153) (176) (154)  
 (176) (178) (180) (180) (160)  
 (182) 10 , (180) U (160)

6 (34) , (36) . . . 3, 5,  
     (36) 가 , (160) (200) (34) 가  
                 (200) 가 . 3 (36) , 4 (164)  
                 (200) (160) .  
 4 (200), 6 - 10 가 . , 4 (20)  
 0) 가 .

5        6                  5 ,                  (200)                  .                  (200)                  (202),                  (204),  
       (206)                  .                  (206)                  (200)                  (36)                  ,                  (212)  
       (208)(210)

(204) (160) 가 (36) (162)  
(202) (36) (204) . , (24)  
         (36) , (202) 가 (204) 가 (36)

가 (24) . . . (160)가 (204) , (36) , (200)가

F.

, (24) 가 . . . . (20) 가 . . . . (23) 가 . . . . (22) 가  
가 . . . . (32) 가 . . . . (94) , (126) , . . . . (96)  
. . . . (32) . . . . , . . . . (42) . . . . (30)  
가 . . . . (40) , . . . . (50) , . . . . (42) . . . . , . . . . (28)

$$1 \quad (30) \quad , \quad (32) \quad . \quad 0.4 - 1 \quad (32) \quad , \quad (24) \quad 0.6 - 1.6 \quad (30) \quad , \quad (32) \quad .$$

, (24) . (32) (120) 1 (30) ( )  
 )가 . (32)(120) , (32)(120) (9)  
 2)(124) (34) . (32)(120) (150)  
 . (32)(120)가 (32)(120) . , (32)  
 (32)(120)가 . (120) (132) . , (136) ( )  
 (32) (124) . (136) (138)  
 138) (132) . , (120) (32)(120)가 (34)  
 , (120) . (32)(120)가 (150) ( )  
 (108) . (20) (32)(120)  
 (32)(120)가 (34)

, 1 (30) 가 . , 3 - 4 . 1  
(30) , (34) 가 (36) . (160) (36)  
(164) . (164) , (204) 가 (36)  
, (200) (202) 가 가 . (34) (3)  
6) (38) (36)

1 (30) 2, (34) 가 . 1 (30) (34)  
 가 (36) (38) . (160) 가 (204) (36)  
       (200) . (200) 가 . (164)

(160)  
4)

(36)

(162)가

(32)(120)가

(3)

, ,

가

(57)

1.

(a) 1 2 , 1 2 , 가 1 ,

(i) 가 , 1 1 1 , 1 2 2

(A) 1 가 2 1 가 1 2 가 ,

(b) 1 가 1 30% 1

2.

1 ,

(c) 1 가 1 가

3.

2 ,

(a) 가

4.

2 3 ,

(a) 가

5.

2 3 ,

(a) 1 ,

(b) ,

(c) 가

6.

2 5

(a) 가 가

7.

<sup>6</sup> ,

(a) 가 1 2

(b) 1

8.

1 7

(a)

(i) 1 2

1 8

(a) 1 , 2 가

10.

9 ,

(a) 2 가

11.

1 10

(a) 20

12.

1 , 가 1 , 1 1 2 , 1 2 1 ,

1 2 2 가 , 1 가 2 가 1 , 1 2 가 , 1  
1 30% 1

(a) 가 ,

(b) 가 ,

(c)

(d) 가 ,

(e) 1

13.

12

(a) 가 .

14.

13

(a)

15.

12

a) 1 1

(a) 1 1 가 2 가

16.

15

(a) 2

17.

12

(a) ,

(b) 가

(c)

(d)

(e)

18.

가

(a)

(b)  $\geq$   $\geq$

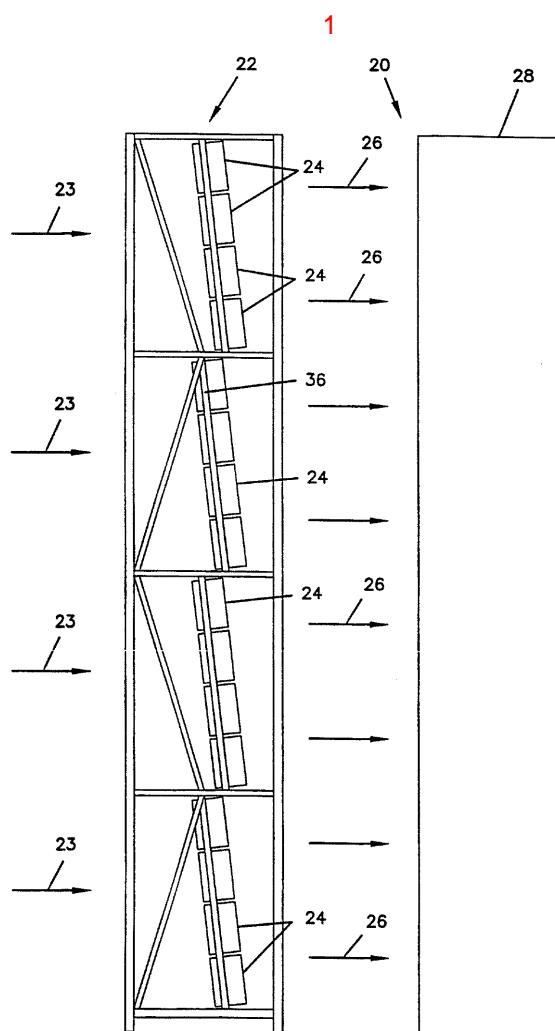
19.

18

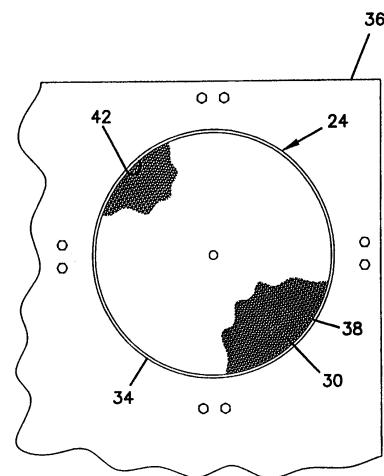
(a) ,  
(i) 2

30

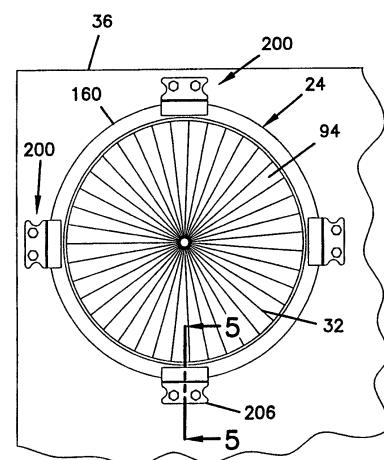
18            19            ,  
(a)            1            ,  
(i) 1            2            ,            1            ,            1  
               ,            1            가            ,            2            가



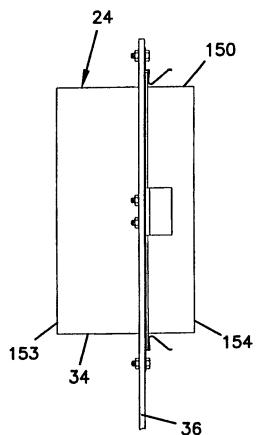
2



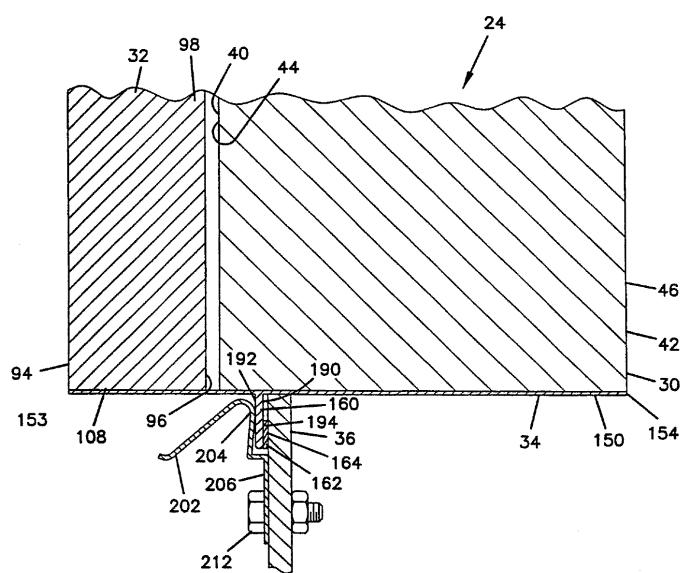
3



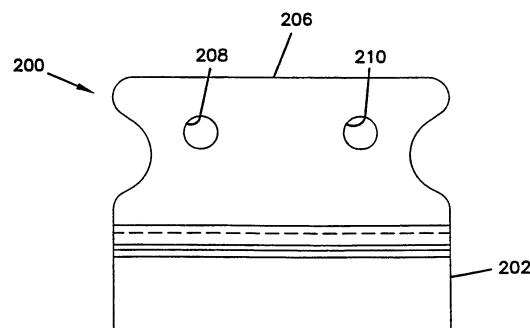
4



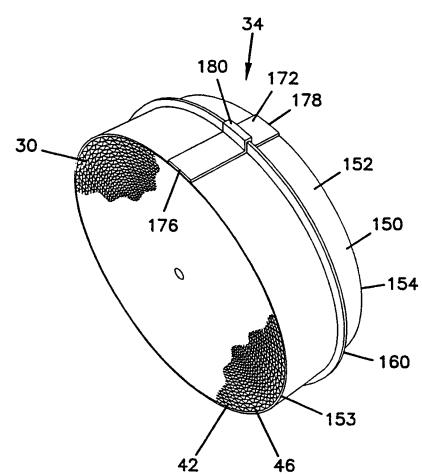
5



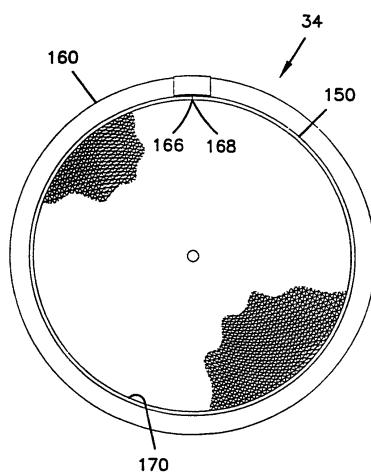
6



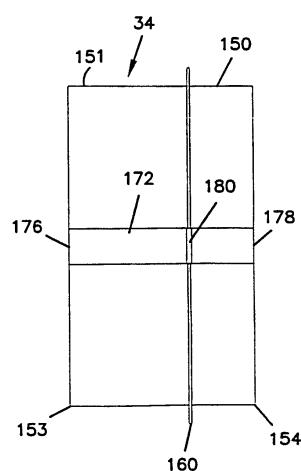
7



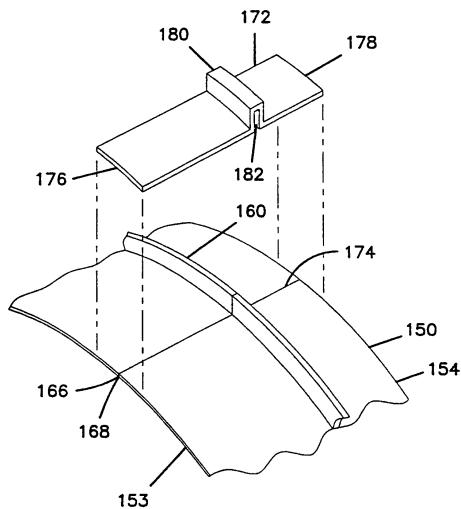
8



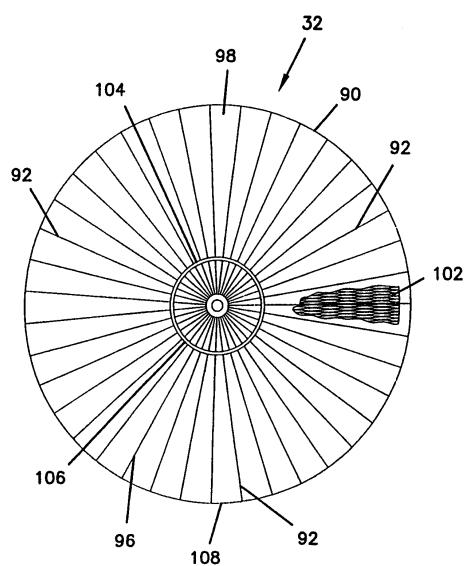
9



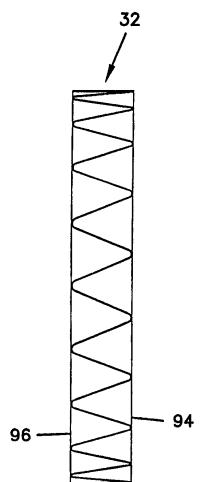
10



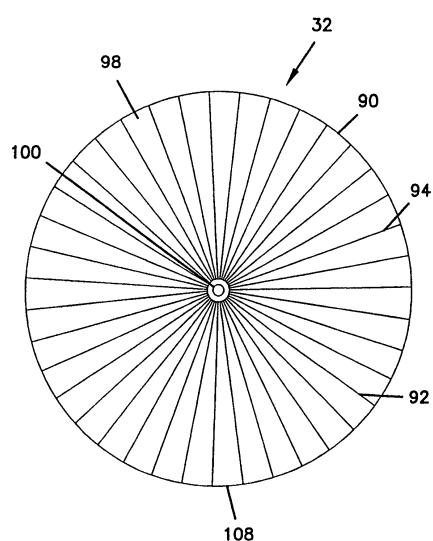
11



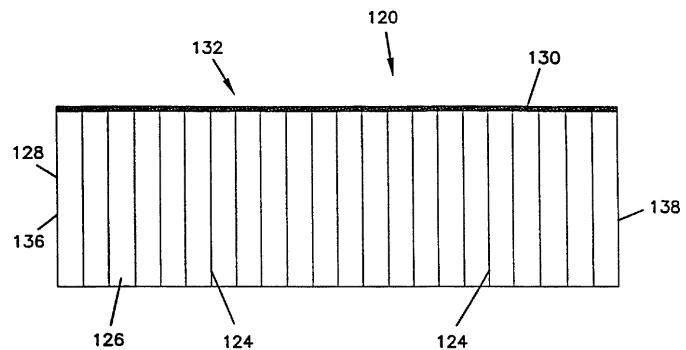
12



13



14



15

