

2002 - 0005689
2002 01 17

WO 2000/62596
2000 10 26

(74)

:

(54)

가

2

[illegible]

가

()

()

가

(

)

「

」

,

.

;

,

,

,

;

,

;

;

「

」

,

,

가

,

가

,

,

가

.

/

,

,

가

,

「 」

,

,

「

」

가

「

」

,

,

,

(),

,

,

가

.

1

2

3

4

5

6

7

8

9

12

10

.

「 」 「%」 , () .

()

(, 가 $1 \times 10^3 \text{g}/(\text{m}^2 \cdot 24)$) 「 」 .

¹ () ¹ (3) , ¹ (4) (2) (4) , 「 」 .

「 (3) (3a) (3b) (4) , (3) (3) , (4)가 () , (3) () , (4) 가 . (4) (3a) (3b) .

(. .)

(1) , , () , , (1) (2) , , (3) , , () , 가 . (3) , , .

()

(4) , 「 」 (4) 가 「 」 , 「 」 , 가 .

< >

가 , 「 」 30cm 「 」 , J IS LI092(B) , 50cm , 가 1m (, 2m) .

< >

「 」 , JIS Z0208(:) .

() JIS , 10nm
 (25 (40) , , 90%
 , (24 , 48 96)
 가 , 가가 5%
 , 10 ,

$$(g/m^2 \cdot 24) = (24Q \times m)/(t \cdot s)$$

s : (cm²)

t : (h,)

m : 가 (mg)

가 , , $1 \times 10^3 g/(m^2 \cdot 24)$, 가 $2 \times 10^3 g/(m^2 \cdot 24)$
 $5 \times 10^3 g/(m^2 \cdot 24)$, 가 $10 \times 10^3 g/(m^2 \cdot 24)$

()

「 」 「 」 , 가
 , ,

2

1 () , ,
 , 1 2

가 , 가
 , 가 가

2 () , , ,
 , 가

μm , 가 $10 \mu m$, $200 \mu m$ (0.01mm 0.2mm) , $1 \mu m$ 500

가 , ,

가 40% , 80% (, 20%) .

(4)

$$\begin{aligned}
 & \left(\frac{1}{2} \right)^2 = \frac{1}{4} \\
 & \left(\frac{1}{2} \right)^3 = \frac{1}{8} \\
 & \left(\frac{1}{2} \right)^4 = \frac{1}{16} \\
 & \left(\frac{1}{2} \right)^5 = \frac{1}{32} \\
 & \left(\frac{1}{2} \right)^6 = \frac{1}{64} \\
 & \left(\frac{1}{2} \right)^7 = \frac{1}{128} \\
 & \left(\frac{1}{2} \right)^8 = \frac{1}{256} \\
 & \left(\frac{1}{2} \right)^9 = \frac{1}{512} \\
 & \left(\frac{1}{2} \right)^{10} = \frac{1}{1024} \\
 & \left(\frac{1}{2} \right)^{11} = \frac{1}{2048} \\
 & \left(\frac{1}{2} \right)^{12} = \frac{1}{4096} \\
 & \left(\frac{1}{2} \right)^{13} = \frac{1}{8192} \\
 & \left(\frac{1}{2} \right)^{14} = \frac{1}{16384} \\
 & \left(\frac{1}{2} \right)^{15} = \frac{1}{32768} \\
 & \left(\frac{1}{2} \right)^{16} = \frac{1}{65536} \\
 & \left(\frac{1}{2} \right)^{17} = \frac{1}{131072} \\
 & \left(\frac{1}{2} \right)^{18} = \frac{1}{262144} \\
 & \left(\frac{1}{2} \right)^{19} = \frac{1}{524288} \\
 & \left(\frac{1}{2} \right)^{20} = \frac{1}{1048576} \\
 & \left(\frac{1}{2} \right)^{21} = \frac{1}{2097152} \\
 & \left(\frac{1}{2} \right)^{22} = \frac{1}{4194304} \\
 & \left(\frac{1}{2} \right)^{23} = \frac{1}{8388608} \\
 & \left(\frac{1}{2} \right)^{24} = \frac{1}{16777216} \\
 & \left(\frac{1}{2} \right)^{25} = \frac{1}{33554432} \\
 & \left(\frac{1}{2} \right)^{26} = \frac{1}{67108864} \\
 & \left(\frac{1}{2} \right)^{27} = \frac{1}{134217728} \\
 & \left(\frac{1}{2} \right)^{28} = \frac{1}{268435456} \\
 & \left(\frac{1}{2} \right)^{29} = \frac{1}{536870912} \\
 & \left(\frac{1}{2} \right)^{30} = \frac{1}{1073741824} \\
 & \left(\frac{1}{2} \right)^{31} = \frac{1}{2147483648} \\
 & \left(\frac{1}{2} \right)^{32} = \frac{1}{4294967296} \\
 & \left(\frac{1}{2} \right)^{33} = \frac{1}{8589934592} \\
 & \left(\frac{1}{2} \right)^{34} = \frac{1}{17179869184} \\
 & \left(\frac{1}{2} \right)^{35} = \frac{1}{34359738368} \\
 & \left(\frac{1}{2} \right)^{36} = \frac{1}{68719476736} \\
 & \left(\frac{1}{2} \right)^{37} = \frac{1}{137438953472} \\
 & \left(\frac{1}{2} \right)^{38} = \frac{1}{274877906944} \\
 & \left(\frac{1}{2} \right)^{39} = \frac{1}{549755813888} \\
 & \left(\frac{1}{2} \right)^{40} = \frac{1}{1099511627776} \\
 & \left(\frac{1}{2} \right)^{41} = \frac{1}{2199023255552} \\
 & \left(\frac{1}{2} \right)^{42} = \frac{1}{4398046511104} \\
 & \left(\frac{1}{2} \right)^{43} = \frac{1}{8796093022208} \\
 & \left(\frac{1}{2} \right)^{44} = \frac{1}{17592186044416} \\
 & \left(\frac{1}{2} \right)^{45} = \frac{1}{35184372088832} \\
 & \left(\frac{1}{2} \right)^{46} = \frac{1}{70368744177664} \\
 & \left(\frac{1}{2} \right)^{47} = \frac{1}{140737488355328} \\
 & \left(\frac{1}{2} \right)^{48} = \frac{1}{281474976710656} \\
 & \left(\frac{1}{2} \right)^{49} = \frac{1}{562949953421312} \\
 & \left(\frac{1}{2} \right)^{50} = \frac{1}{1125899906842624} \\
 & \left(\frac{1}{2} \right)^{51} = \frac{1}{2251799813685248} \\
 & \left(\frac{1}{2} \right)^{52} = \frac{1}{4503599627370496} \\
 & \left(\frac{1}{2} \right)^{53} = \frac{1}{9007199254740992} \\
 & \left(\frac{1}{2} \right)^{54} = \frac{1}{18014398509481984} \\
 & \left(\frac{1}{2} \right)^{55} = \frac{1}{36028797018963968} \\
 & \left(\frac{1}{2} \right)^{56} = \frac{1}{72057594037927936} \\
 & \left(\frac{1}{2} \right)^{57} = \frac{1}{144115188075855872} \\
 & \left(\frac{1}{2} \right)^{58} = \frac{1}{288230376151711744} \\
 & \left(\frac{1}{2} \right)^{59} = \frac{1}{576460752303423488} \\
 & \left(\frac{1}{2} \right)^{60} = \frac{1}{1152921504606846976} \\
 & \left(\frac{1}{2} \right)^{61} = \frac{1}{2305843009213693952} \\
 & \left(\frac{1}{2} \right)^{62} = \frac{1}{4611686018427387904} \\
 & \left(\frac{1}{2} \right)^{63} = \frac{1}{9223372036854775808} \\
 & \left(\frac{1}{2} \right)^{64} = \frac{1}{18446744073709551616} \\
 & \left(\frac{1}{2} \right)^{65} = \frac{1}{36893488147419103232} \\
 & \left(\frac{1}{2} \right)^{66} = \frac{1}{73786976294838206464} \\
 & \left(\frac{1}{2} \right)^{67} = \frac{1}{147573952589676412928} \\
 & \left(\frac{1}{2} \right)^{68} = \frac{1}{295147905179352825856} \\
 & \left(\frac{1}{2} \right)^{69} = \frac{1}{590295810358705651712} \\
 & \left(\frac{1}{2} \right)^{70} = \frac{1}{1180591620717411303424} \\
 & \left(\frac{1}{2} \right)^{71} = \frac{1}{2361183241434822606848} \\
 & \left(\frac{1}{2} \right)^{72} = \frac{1}{4722366482869645213696} \\
 & \left(\frac{1}{2} \right)^{73} = \frac{1}{9444732965739290427392} \\
 & \left(\frac{1}{2} \right)^{74} = \frac{1}{18889465931478580854784} \\
 & \left(\frac{1}{2} \right)^{75} = \frac{1}{37778931862957161709568} \\
 & \left(\frac{1}{2} \right)^{76} = \frac{1}{75557863725914323419136} \\
 & \left(\frac{1}{2} \right)^{77} = \frac{1}{151115727451828646838272} \\
 & \left(\frac{1}{2} \right)^{78} = \frac{1}{302231454903657293676544} \\
 & \left(\frac{1}{2} \right)^{79} = \frac{1}{604462909807314587353088} \\
 & \left(\frac{1}{2} \right)^{80} = \frac{1}{1208925819614629174706176} \\
 & \left(\frac{1}{2} \right)^{81} = \frac{1}{2417851639229258349412352} \\
 & \left(\frac{1}{2} \right)^{82} = \frac{1}{4835703278458516698824704} \\
 & \left(\frac{1}{2} \right)^{83} = \frac{1}{9671406556917033397649408} \\
 & \left(\frac{1}{2} \right)^{84} = \frac{1}{19342813113834066795298816} \\
 & \left(\frac{1}{2} \right)^{85} = \frac{1}{38685626227668133590597632} \\
 & \left(\frac{1}{2} \right)^{86} = \frac{1}{77371252455336267181195264} \\
 & \left(\frac{1}{2} \right)^{87} = \frac{1}{154742504910672534362390528} \\
 & \left(\frac{1}{2} \right)^{88} = \frac{1}{309485009821345068724781056} \\
 & \left(\frac{1}{2} \right)^{89} = \frac{1}{618970019642690137449562112} \\
 & \left(\frac{1}{2} \right)^{90} = \frac{1}{1237940039285380274899124224} \\
 & \left(\frac{1}{2} \right)^{91} = \frac{1}{2475880078570760549798248448} \\
 & \left(\frac{1}{2} \right)^{92} = \frac{1}{4951760157141521099596496896} \\
 & \left(\frac{1}{2} \right)^{93} = \frac{1}{9903520314283042199192993792} \\
 & \left(\frac{1}{2} \right)^{94} = \frac{1}{19807040628566084398385987584} \\
 & \left(\frac{1}{2} \right)^{$$

()

[illegible]

가 . , (4) .

()

()

가

()

(P/Po) 가 (ψ) 가 가 .

$$\Phi = R T / M \cdot \ln (P / P_0)$$

, R, T, M.

pF 가 , (Φ) . (Φ)

$$p_F = \log_{10} (- \Phi / [\text{cm H}_2\text{O}])$$

[illegible]

가 가 . 가

가 ()
()가

(pF 가 1.5) 가 , , 가 , ,

가
가

()

가 (, ,)

()

(, ,)

「 」 (, 1 |) 가 .

()

(,)

가 .

가 , 가

가

가 .

()

2 , 2 , 「 」

2 (1) , (5) (6)가

(1) , (7) (1) (4) (4)

(4) (7) 가 , (1) (7) (1)

(1)

2 (1) , 3

(「) , 「) (8) (7) (1)

4 5 , 2 3 (1) , 「
 」 (10) , 2 3 .
 ()
 가 , 1 , (4) (4)
 . , (1) , (4)
 .
 , (4) 1 , , (4) 2
 . , 6 , (1) (3a) (4) 2
 , , 7 , (1) (3b) (4) 2
 . (4) , , , ,
 (4)
 가 .

8 1 , (1) (3a)/ (3b) , (4) ,
 (1) , (4) , (3c) (/ (3b))
 (3b)) , (4) (3a) (/
 , (4)가 () 1
 「 」 가 가 .

1
 () , 가 8,500 g / (m² · 24) ()
 () ; 75 μ m) , (0.
 1mm, , 7mm, 31ml) ,
 () 25m1 , 4cm 3 .
 , 25 (3.5cm) ,
 , 3 4 , 가 .
 1
 1 , (가 400g/(m² · 24) , 5
 0 μ m) , 1 .
 , 4cm 3 , 가

3 1 , 3 | .

2

() , 가 8,500g / (m² · 24) ((sweet alyssum) 75 μ m, 5cm × 5cm, 5cm) , () 100ml (, 20 , 3cm .

15 , 25 , 4 × 10⁴ Lux(11 2) , .

3 . 1 1 , , .

2

2 (6cm × 6cm, 5cm, 0.75mm) , 2 1 . 1

3

12cm () , 75 μ m, 12cm × 12cm, 8cm) 가 8,500g/(m² · 24) (() , 20 8cm (, 15 , 25 , 40,000 Lux(11 2), , 「 」 , 25cm , 10% , .

「 」 , 3 , 가 . 1 , 「 」 .

3

3 (12cm × 12cm, 9.8cm) , , 25cm , 25cm 「 」 (25cm , , 「 」 . 2 .

4

ler) (PVA) (1.2 (40 μ , ()) 가 2,000g/(m² · 24) 460W (heat sea 8cm, 5.5cm 가 .

(A, ()) 190g 가 . 가 5.5cm .

(48 , 7 10) B(()) 가 16 28 , “ ” .

3.5 (가 () , 가 16 : 28) 190g ,

1 . , .

3.5 () 3.5 57ml(, 2 1) , , .

1.5 , , 가 , () , , () , .

5

4 , , (, 57ml) , (: DIK - 5050, ()) , 12 9 .

가 40 가 10 .

9 , 4

가

10
40

40%

가

6

4

()

(), 1

() “ ” 가 , “ ” 가

EC(), pH 1

57ml

()					, EC, pH											
					(%)				EC(mS/cm)				pH			
A()					74.0	80.8	51.4	35.0	0.38	0.06	0.25	0.6	6.5	7.1	6.8	6.3
									9							

	PO ₄	NO ₃
A()	1340 0 293 747	1711 0 0 21

	Na	NH ₄	K	Mg	Ca
A()	241 318 144 182	86 0 7 1 10	870 0 35 3 44	95 61 54 102	737 419 425 626

(57)

1.

2.

1

$$1 \times 10^3 \text{g}/(\text{m}^2 \cdot 24 \quad)$$

3.

1

() 20%

4.

1

가

5.

1

가

6.

1 ,

가

.

7.

6 ,

.

8.

,

,

9.

8 ,

.

10.

8 ,

.

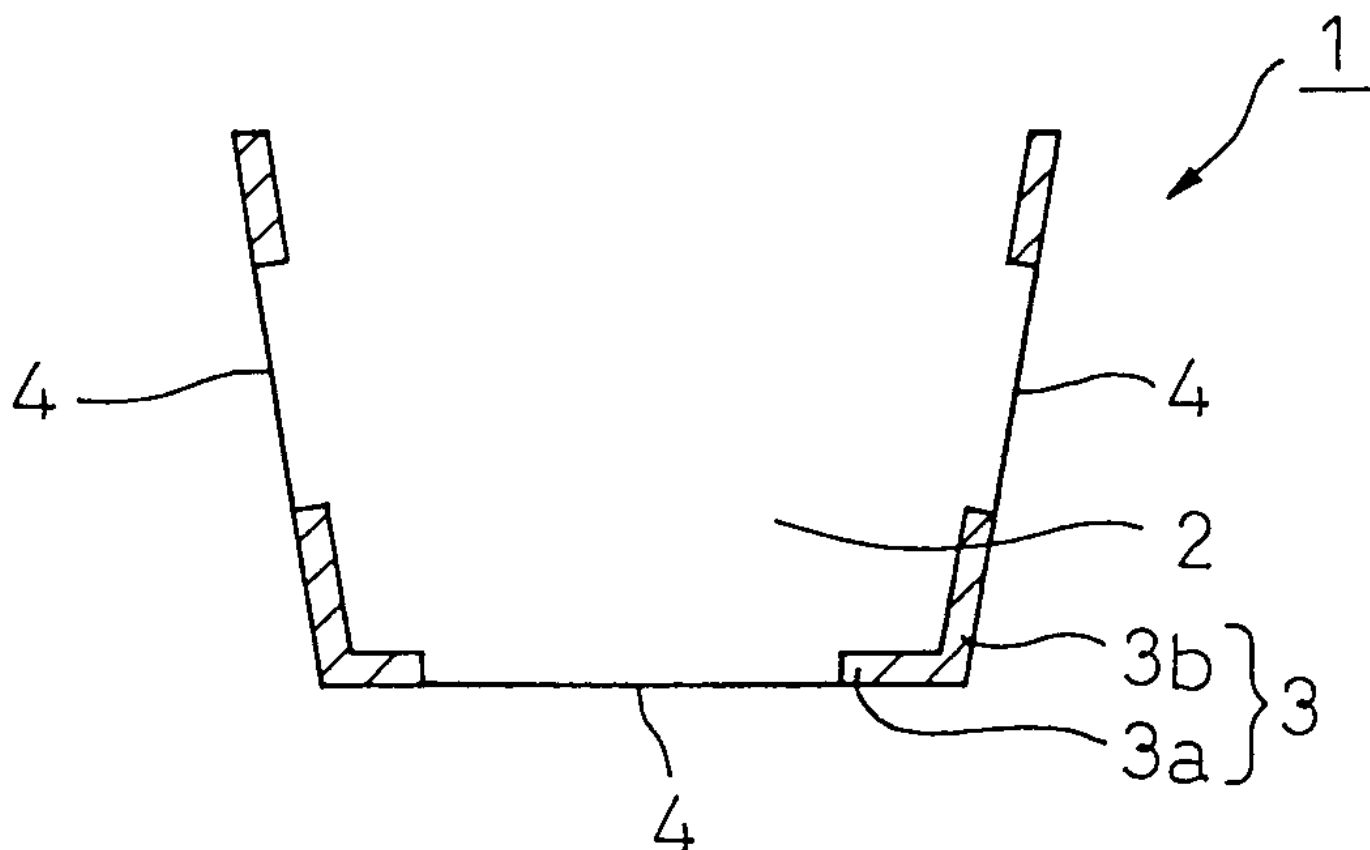
11.

10 ,

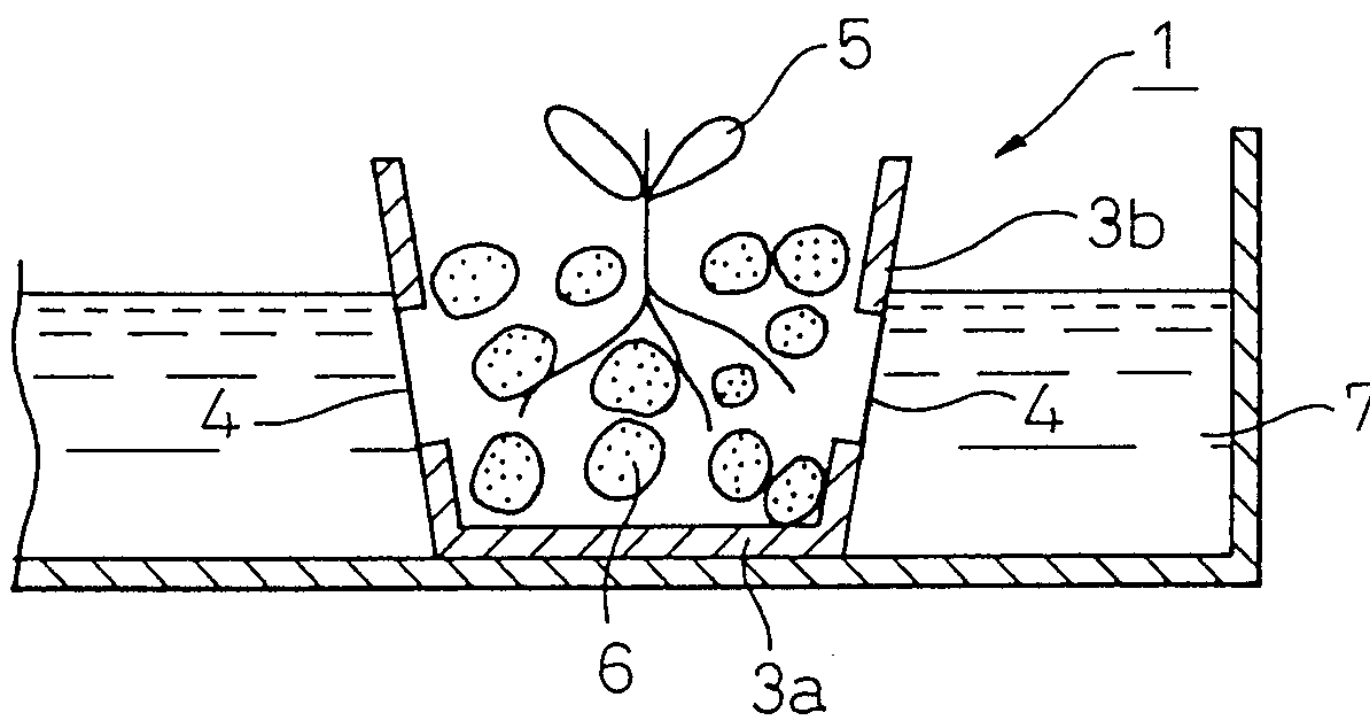
,

.

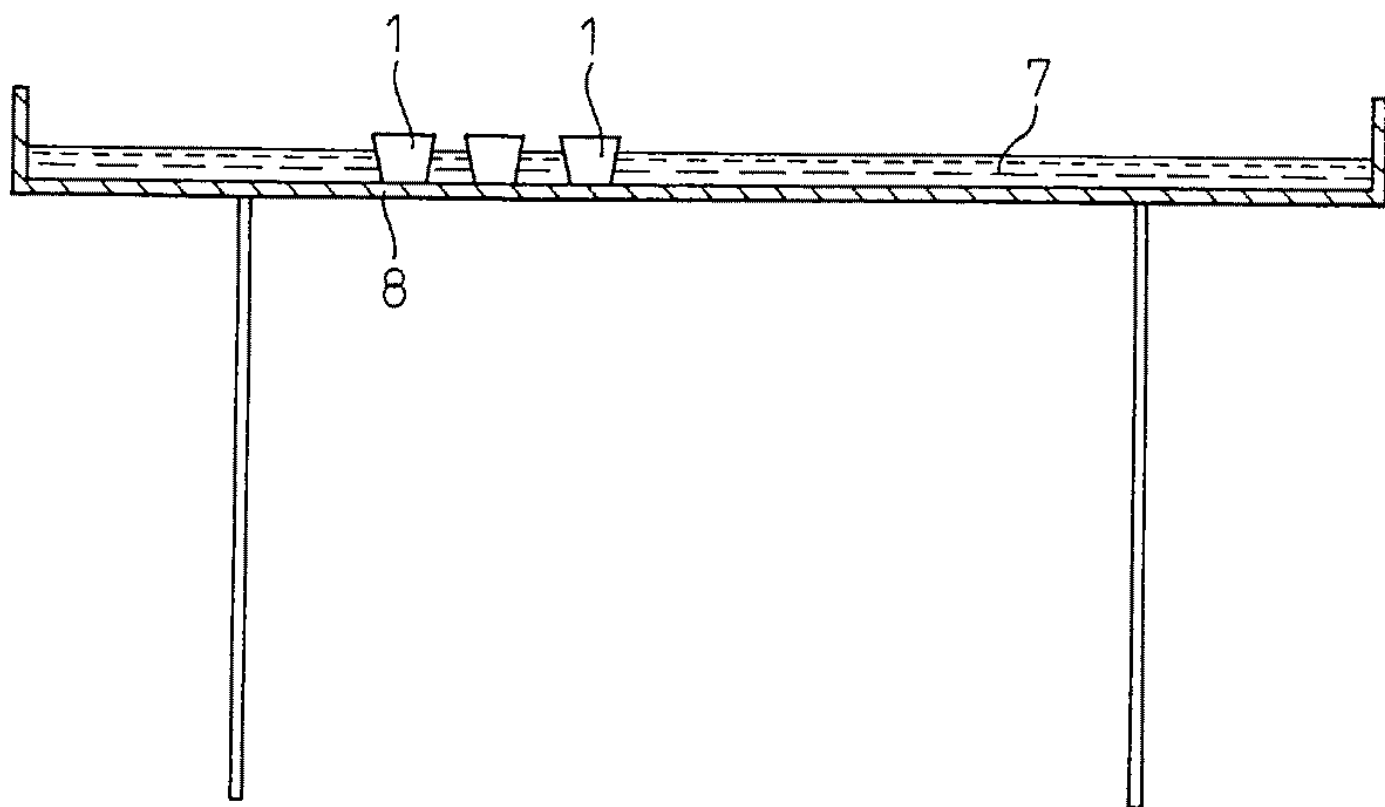
1



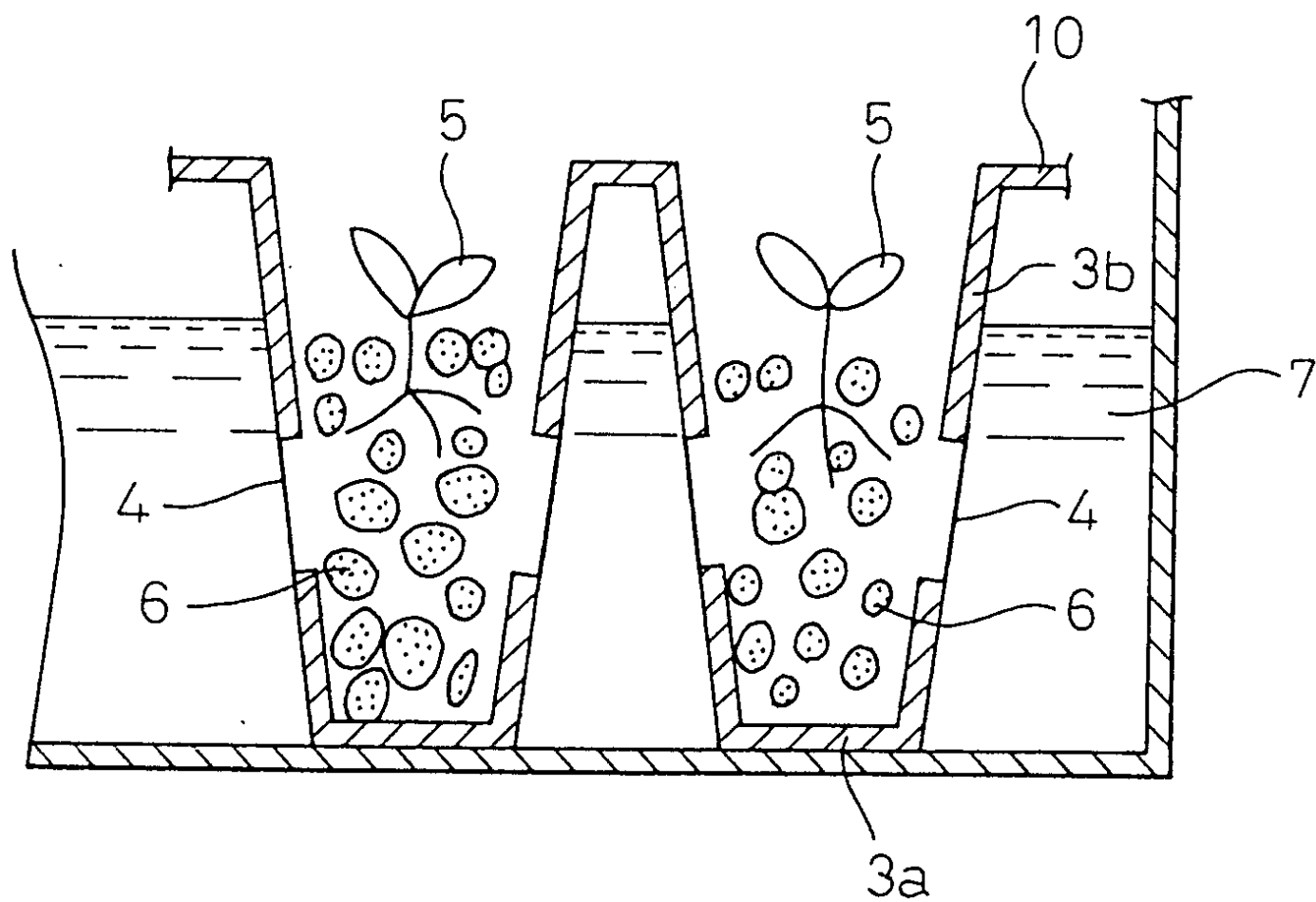
2



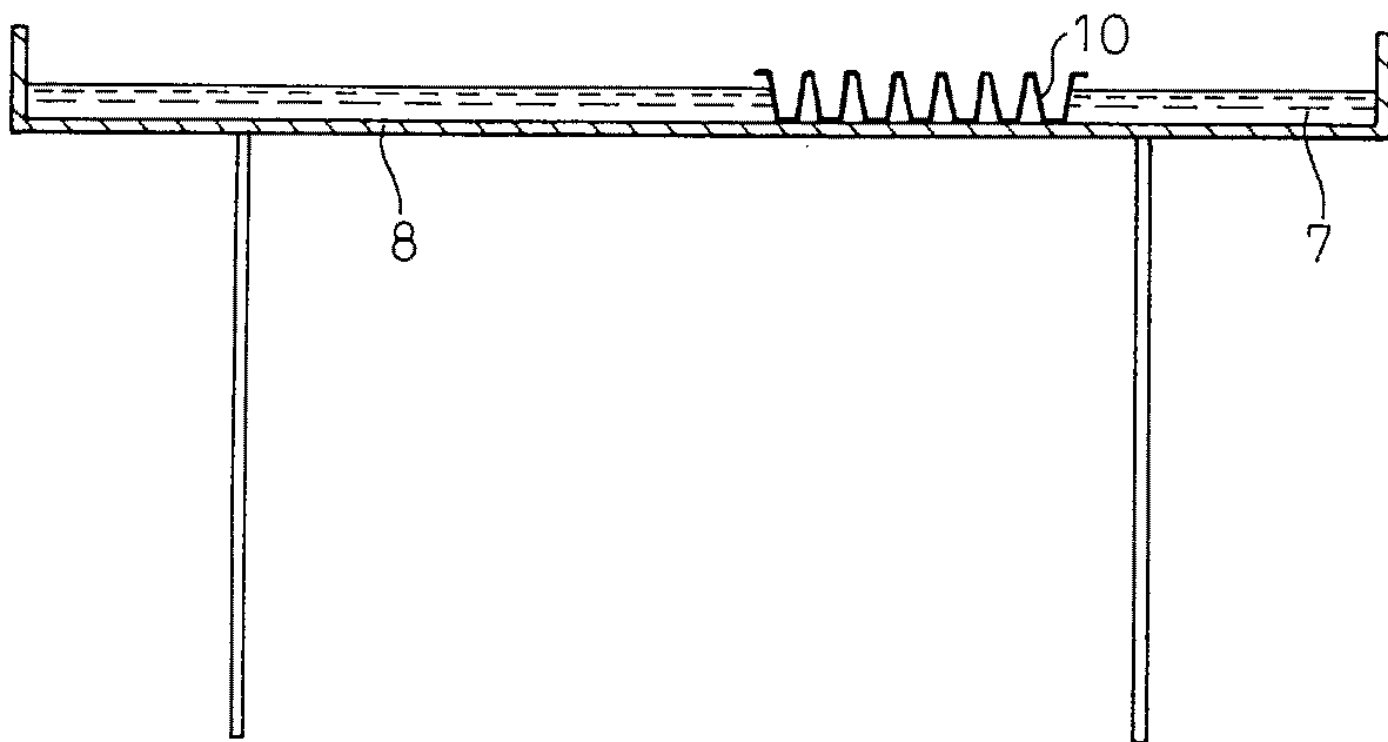
3



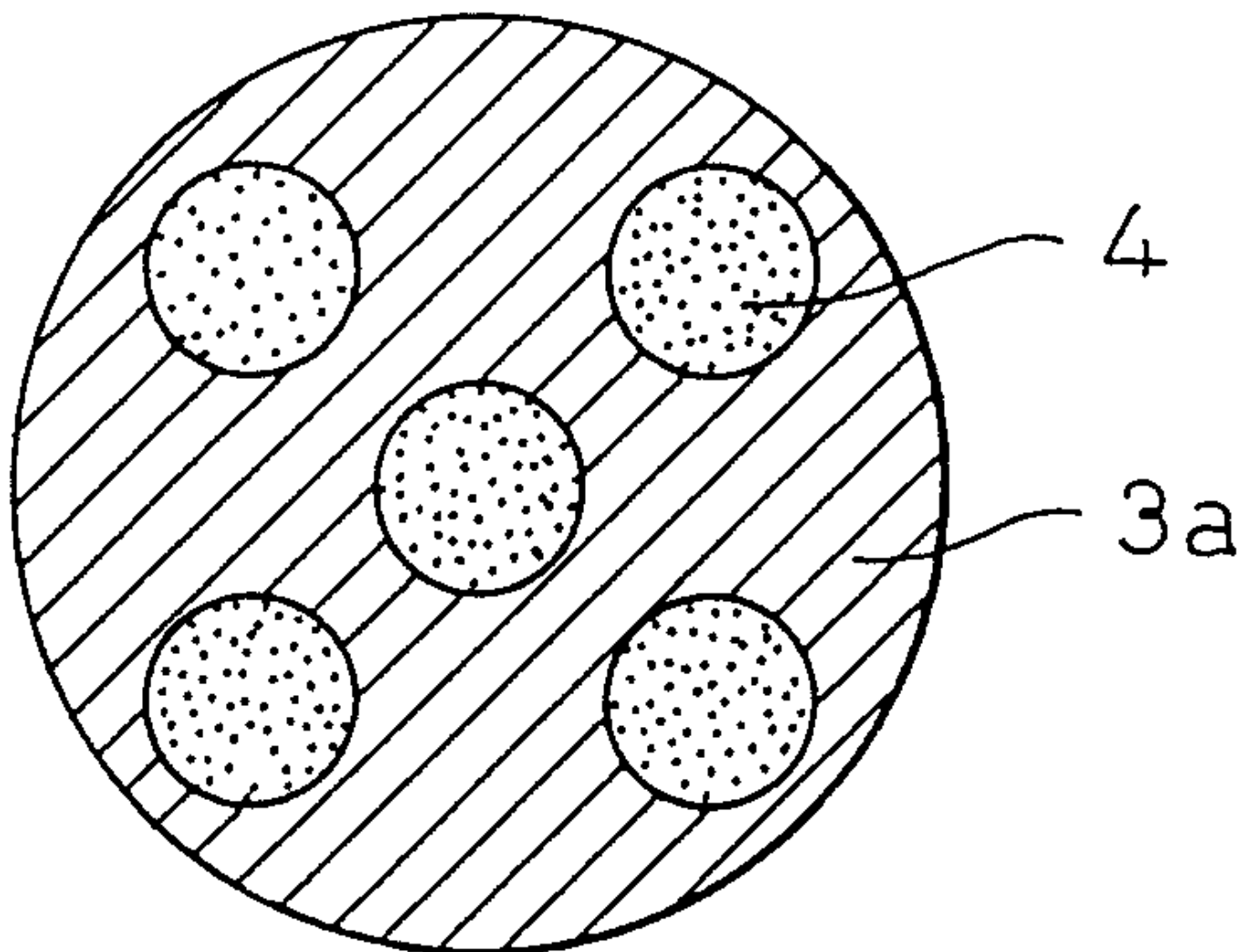
4



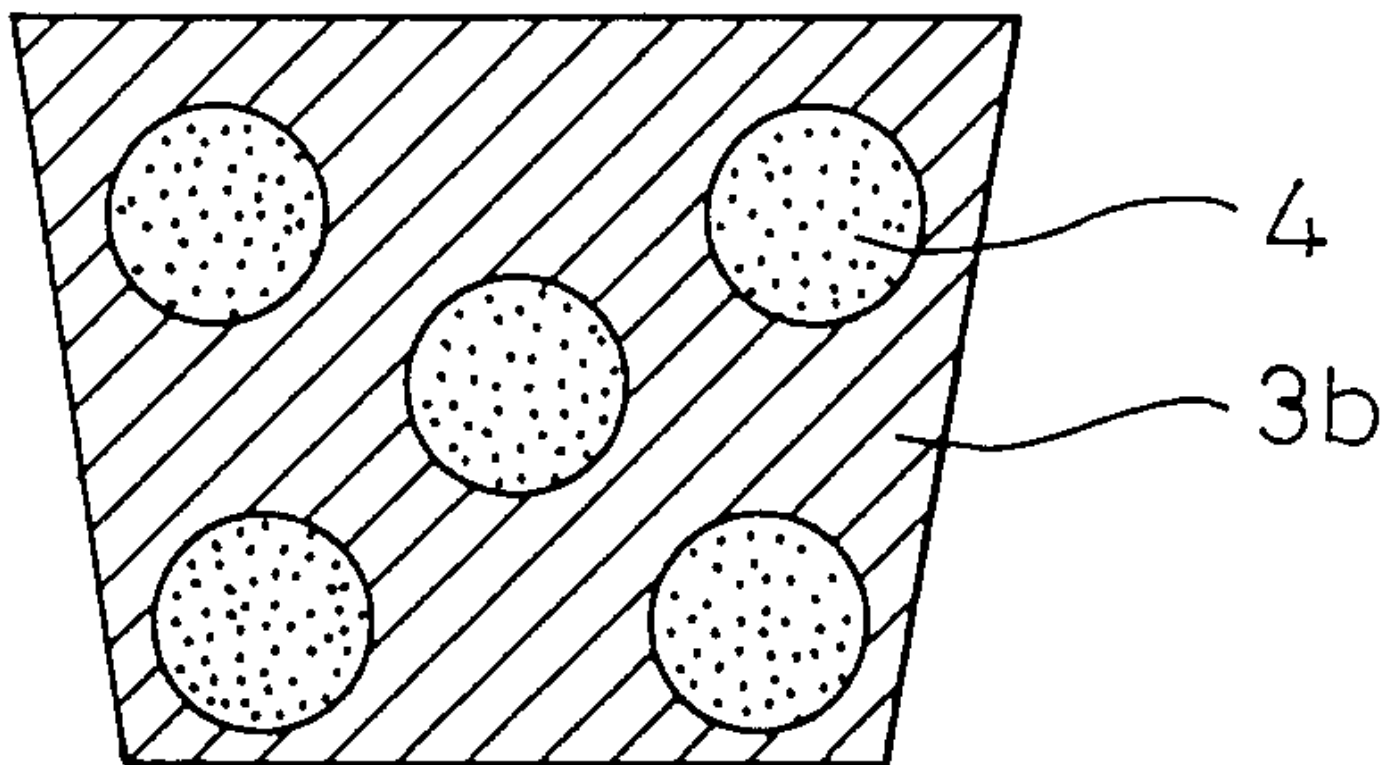
5



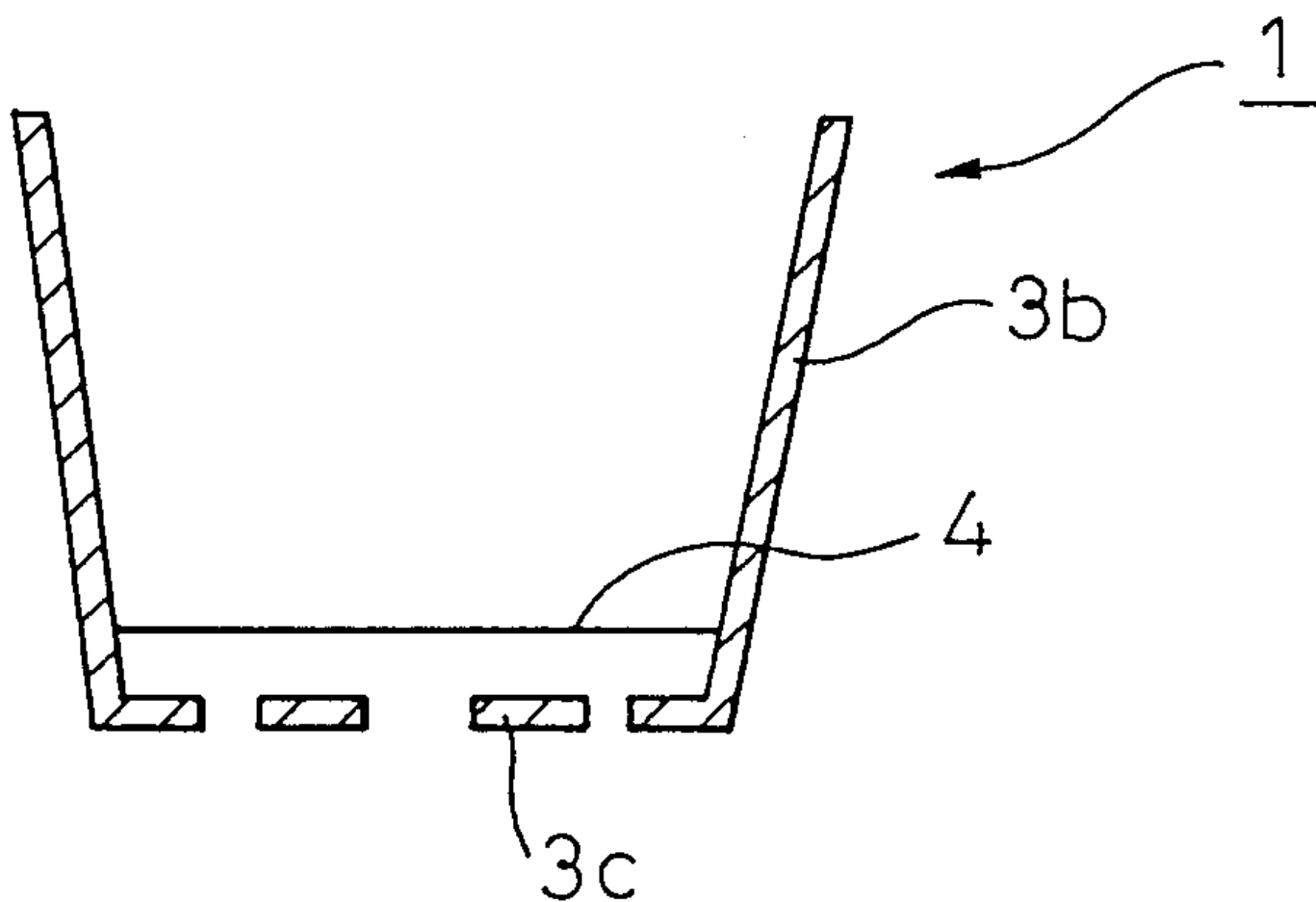
6



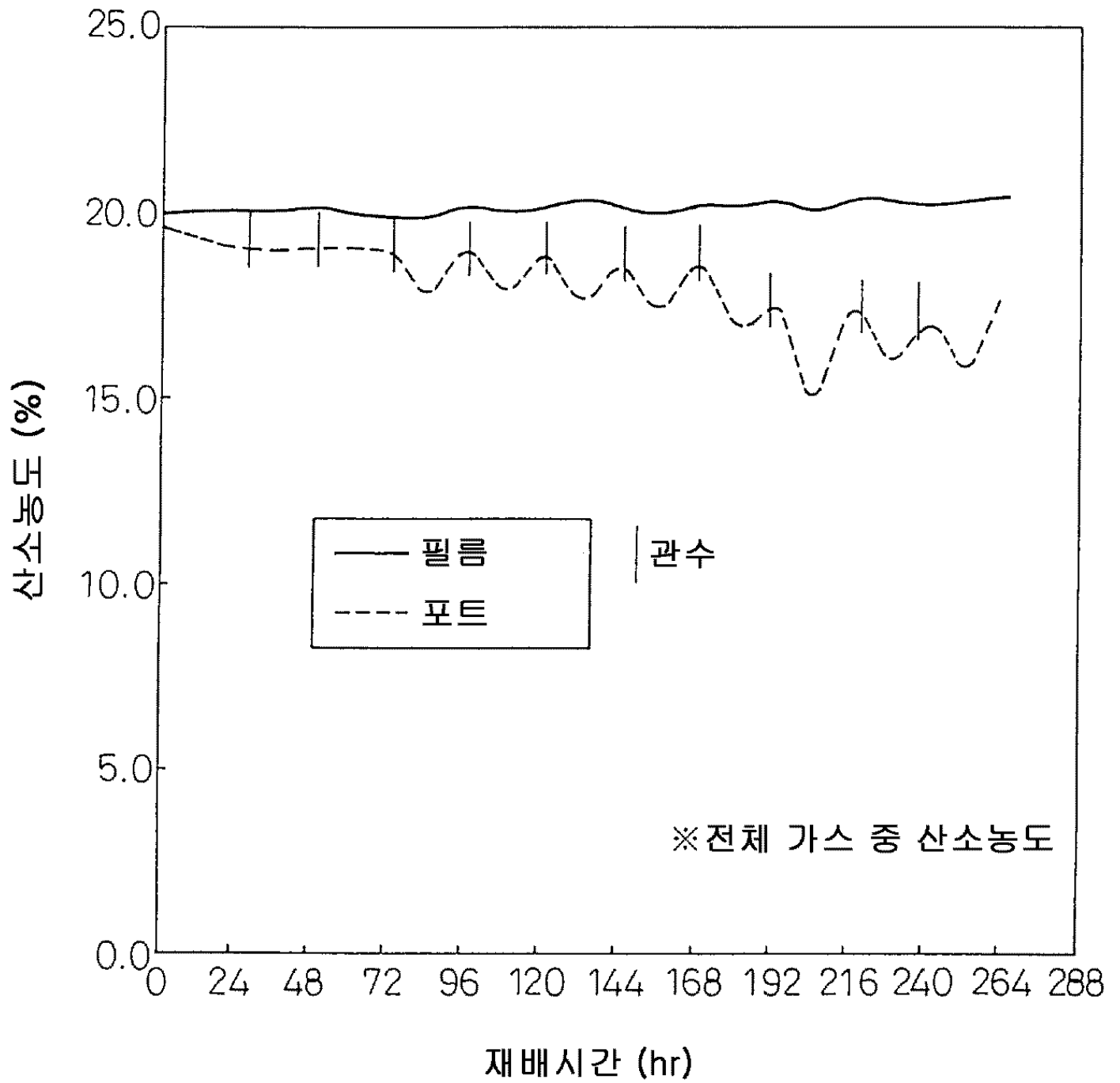
7



8



9



10

