

(19)
(12)

(KR)
(B1)

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(45)
(11)
(24)

2004 12 03
10-0458546
2004 11 16

(21)	10-2002-0008689	(65)	10-2002-0068281
(22)	2002 02 19	(43)	2002 08 27

(30)	JP-P-2001-00044195	2001 02 20	(JP)
	JP-P-2001-00294526	2001 09 26	(JP)

(73)	가 가	가 22 22
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(72)	2613-1-752
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3-3-9- 101

가 2-3-8- -103

(74)

:

(54)

. 2	1 2	2	가	. 1	1	1	가
	2	2		. 1	2	1	2
	1	2		1	2	2	
	1	2					

4a

, , , , ,

1					
2a					
2b					
2c					
3a	3b				
3c	3d				
4a	4b			1	
5a	1				
5b	5a	Vb-Vb			
5c	1				
5d	5c	Vd-Vd			
5e		가		1	
5f	5e	Vf-Vf			
6a	6b			2	
7a	6a	6b			
7b	7a				
8		3			
9		4			
10		5			
11				가	10
12				가	10
13			6		
14a,	14b	14c		7	
14a		2			
14b	2				
14c					
15a,	15b	15c	14a	14c	
15a		2			
15b	2				
15c					
16a,	16b	16c	7		
16a		2			
16b	2				
16c					
17a,	17b	17c	16a	16c	
17a		2			
17b	2				
17c					
18a			8		
	3				
18b					
19	8				
20	8			19	(a), (b), (e1)
, (e2)		(h)			
21	8				
22a	22b			9	
23a	23b			10	

<
 3, 85 :
 8, 84 :
 40, 60, 102 :
 >

50 :
72, 74, 80 :
90, 96, 98 :

가

2000-19490

11-7008

(visibility)가

(high-contras

t) 가

3 가

(80)가 1 (80) (83) (82) (81) (85) (81) (8)

(81, 82) (84) (87) (84) (8)

3) (83) (87) (81) (8)

6) (88) (89) (84) (81) (8)

4) (87, 89) 가 (80) (L1) (L2) (L1)

(L2)가 100 μ m

11-7008

5 μ m 가

가

가

가

가 2a 2c 3

2a 2c (S1, S2, S3) 가 2c 3 (90) (90) (S1, S2, S3) 6

(90) 2a (90) (가 x (가 x)

3

(94) (90) (92) (94)

11-7008 (90) (92) (94)

(90) 2a 2c

3
 , 가) 가 1mm 가 (2b L3
 , V , 2 , 90
 가 가 V
 , 2 가 100μm
 가

()
 3a 3d
 3a 3b (96) 3c 3d (98) 3b
 (96) (96) (B) (A) (96) 3a
 (B) 3 3d (96a) 가 (98) (98) (96)
 가 가 가 가
 (contrast ratio)가 가

가 가 가 100μm

(1)
 2 1 2 가 2 1 2 가 2
 1 2 가 1 2 1 2
 , 1 2 , 1 1 , 2 2
 , 1 2 , 1 2
 , 1 2 , 1 2

가

1
 4a 4b 1 가 (40) (40)
 , 3 가 4a 4b 가 가
 (40) (42) (44) (40) (42) 3 가 가
 가 50 μ m
 5a 5f 4a 4b (40) (50)
 (50) 5a 5b (50a) 5c 5d (50b) 5e f
 (50) (50) (1) (1)
 5a 5b 가 (50a) (52) (2) (2) (54)
 (52)가 (52) (2) (2)
 4a 4b (52) (40) (2) 가 (1) (embossing)
 (1.52) V300
 가 50 (2) (54) 50mW/cm²×60 (52) (3)
 (3) (3) 100nm
 (50b) (50b) (52) (50a) (4) (5) 가
 가 (50a) (50a) (2) (1) (52) (50b) (50b) (4) (5) 가
 (50) [, 5a 5f (50a)
] (3) (50b) (4) (52) (50b)
 (3) (50b) (4) (3) (52)가 (3) (4) (54)
 (3) (3) (50a, 50b) (52) (6) (2, 4)
 (6) (52) (6) (2) 5e 5f (50a, 50b)
 (50a) (54) [52, (50b)가 (6)]가 (50b) (54) (50a)
 (50b)가 (50a, 50b) [52, (52) (6)] (50)가 (1) (50a)
 (50a, 50b) (50a, 50b) 가
 05가 (50a, 50b) 0.9Kg/cm² 8mW/cm²×600 M
 (50a, 50b) (50)가 (50) , 5a (R1)
 5b (50a) (R1) 5c 5d (R1)
) (50b) (R2) 5e 5f (50a)
 (R3) (50b)

(50) (1) (2) (2) (2)
 (3) 가 , (2) (2)
 (6) (6) (6) (2) (6) (6)
 (,)가 , 가 ,
 (2) (2) (6) 가 ,
 (6) (50) 가 가 가
 (50) 가 가 가
 2 가 , 가 가 가
 2 2 1
 6a 6b 가 (62) (60) (60) 6a 6b
 , 가 , 가 50 μ m , (62) 3 가
 (60) , 7b , V
 7a , 7b  가 , 6a 6b 3 가
 가 , (60) (60) 가 6a 6b (60)
 가 , 1 , (60) 가 6b (hatchin
 g) 2 가 1 2 , 6b 6b
 1 1 , 2 , 가 , 1
 1 2 , 1 , 가 1 2
 3 , 1 , 1
 3 3 , 1 (50) (3)
 8 3 (64) , (1, 5) 3
 (2, 4) (64) 1 (50) (7) , 3
 , (2, 4) 4a 4b (40) 1 , (1, 5)
 , 가 (2, 4) 가 (,) HV1
 6) , 가 (2, 4) (2, 4) (2, 4) (n₁) 1.60 , (7)
 , 가 (7) (n₂) 1.41 , (7) JM5010
 (7) (7) 30mW/cm²×60 , 가 가
 (,) , (7) 가 가
 1.1 가 , (7) (7)
 , 가 (2, 4) 가 (7) (2, 4)
 , 가 가 가 (6)

, ITO() (10)
 (72a)
 (72b) (5) 가
 (4) (3) (10) (72b)
 (72a) (72a) (72b) (2, 4) (72a, 72b) (72a)
 가 10 μ m (72b) (72a, 72b) (3) (72a, 72b)
 (8)
 (72)가 (72) (8) (72a,
 72b) (R1, R2) (R1, R2) (R1, R2)
 (R1) (R2)
 (R1, R2)
 (S1, S2) (S0) 가 11 12 R(
 11 (S0) 11 (S1)
 (S0) 12 (S2)
 11 (S2)가 200 μ m (S)가 100 μ m 12 100 μ m
 (15) (14) (14)
 (16) (14) (14) (14)
 11 R (9) (14) (R) (9) (14) (15) (9)
 (15) (G) (9) (14) R (14)
 가
 가
 6 6 4 5
 13 6 (74) (74a) (74) 13 가 (74a)
) 5 (74) (72a) 가 (72a)
 (74b) (4) (8) (74)
 (11) (11) (8) 가 (74)
 (11) 5 (72b) (8) (3)
 (8) (74a, 74b)
 가 가
 7 7
 14a 14c 15a 15c
 2000-221497
 14a 15a (76) 14c 15c (76b) 14b 15b
 (76a)

가 (R6) 가 14b 15b (76a, 76b) (76a) (R4)
 (R5) 가 (R7) 14c 15c (76a, 76b) 14a (76b) 2 (R6, R7)
 (R4, R5) (76) (78)

16a 16c 17a 17c (78) 16a 17c (78)
 (78) (R21) (78a, 78b) (78a) (R22)
 (R14, R15, R16) (R11, R12, R13) (78b) 가

8 8

2 (7a), V 3 18a (D1) (D2)
 +60 (D3) 2 (D1) -60 18a
 10μm 3 70.5 18a
 0 (a) 3 2

19 (a) (104) (104) 가 (106)
 19 (b1) 가 가 (negative, 110) (102) (102)
 20 (b) 가 (110) (110)
 19 (c1) 가 가 (110) (112) ONNR
 -22) (112) 가 (110) 가 가

19 (b2) 가 (120) (102)
 20 (b) 가 (120) 3
 19 (c2) 가 가 (120) (122) ONNR-2
 2) (122) 가 (120) 가 가

가 (110, 120) 21 (210) (112, 122)
 (210) [212; 가 (110, 120)] [21
 4; (112, 122)] (215) (216)
 (212) (214) (212) (214) (212)
 가 (110, 120) (11

2, 122)가
 19 (d1) (d2) (112, 122) (114a, 114b)
 (114) (124a, 124b) (124)
 (114, 124) (114a, 124a) (114b, 124b) (112, 122)
 4a, 124b) 가 (114) (114a, 114b) (114a, 114b, 12
 24) (124a, 124b) (112, 122) 가 (114b, 124b) (1
 (112, 122) 19 (e1) (e2) (114, 124)
 (114b, 124b) (112, 122)

(116, 126) . 20 (e1) (e2)
 가 (110, 120)

(110) (116) (117)
 가 가) (acrylate
 monomer) (119) , 19 (f1) (118)

(210) 가 (120) , (128; 가 가 가
) [, 가 (126)]

(128) 가 1 μ m (128)

19 (g) , 19 (f1) 가 (110) 19 (f2) 가 (1
 20) , 가 (110, 120) 가 (110) (118)가 가 (1
 120) (126) (118) (126)가 (128) (115)

() 가
 19 (h) , 가 (110)가 , 가 (110) (118)
 20 (h) 가 (120) 가 (120) ,

가 (120) , ()

9 , 9 8 , 9 , {111}

22a (a) , {111} 2 (130)
 22a (b1) (b2) , 22a (b1') (b2') 22a (b1) (b2)
 (132, 134) 2 (130) (132, 134) 가 11.5 μ m {100}

(130) (132, 134) 22a (b1') (b2') ,
 (130) 가 180 , 22a (b1') (b2') , {100}

(130) (135) ,

(130) (50wt
 % HF: 30wt% H₂O₂ : H₂O = 1:1:4) 1 1
 5 22a (c1) (c2) 가 , {1

00} {111} , {100} (132, 134) ,
 22b (d1) (d2) (132, 134)가 22b (d1') (d2')

(136) , (138) (136)
 22b (e2) , 2 (136) (140) ,
 (140) (210)

가 21 (210)

22b (f) , 22b (e2) 22b (d1)
 , (140)가 (138)

(140, 138)가 2 , 22b (e2) (140)

22b (g) , 22b (g') ,
 (138) 22b (g') (140)

22b (d1), (d1'), (d2) (d2') (136) (138)

3

f) (g) 1 가 , 가 22b (e2), (130) , (130) () 10 10 {111} 23a (a) (a') {111} B (150) {111} 23a (b) (b') (152) 가 11.5μm {1 (150) 00} (152) (28wt% NH₄ OH: 30wt% H₂O₂: H₂O = 8:2:5) 17 2) (154) (150) (152) (150) {111} B (15 {100} {100} {100} {111} B) {111} 가 가 {100} (152) (152) 3 23a (c) (c') 9 (156) 23a (d) (d') d') 23b (e) (150) 20μm (160) (160) (150) 23a (d) (가 (160) 23b (f) (160) 23b (h) 8 (162) 23b (f) (160) [22b (d1)] 2 3b (g) 0 (160) (162)가 (130) (138) (160) (160) (138)가 (160) (160) (130) 23b (i) (i') (160) (160)

2 2 (diffused illuminator) 1 2가

1	(%)	(%)	
	30	1.9	15.8
	33	5.5	6.0

14.

3 3 1 2

15.

14

16.

14

17.

1 1 1 1 ,
2 2 2 2 ,
1 가 1 2 가 2 1 2

18.

a) 3 1 가
b) 3 2 가
c) 1 가 1 2 가 2 1
2 1 1 2 2

19.

18 1 3 2 3
2 1 2 1

20.

18 c) 가 1 1 1
c) 가 2

21.

a) 3
b) 3

22.

21 b)

23.

21 b)

24.

21 a) 3

25.

21 , a) {111}

26.
21 , a) 3
가
27.

3 , 3

28.
1 , 1 3 , 2
3 , 1
1 2 2 , 1

29.
1 , 1 2 , 1 2

30.
1 , 가 , 1 2

31.
1 , 1 2

32.
31 ,

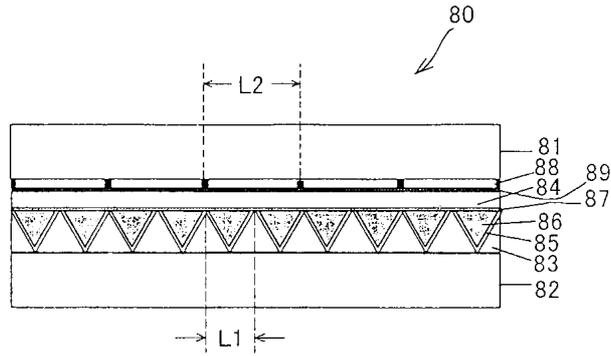
33.
17 , 1 2 가 1 2 가
2 1 2 가

34.
18 , 1 2 , 1 2 1 2
가 , 1 2

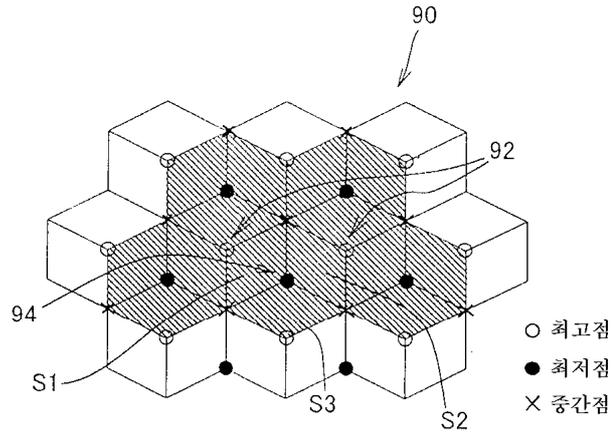
35.
18 , 1 2 가 ,

36.
18 , 1 2

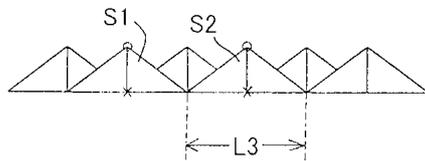
1



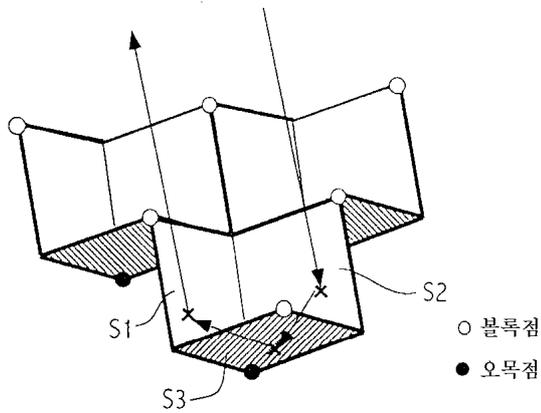
2a

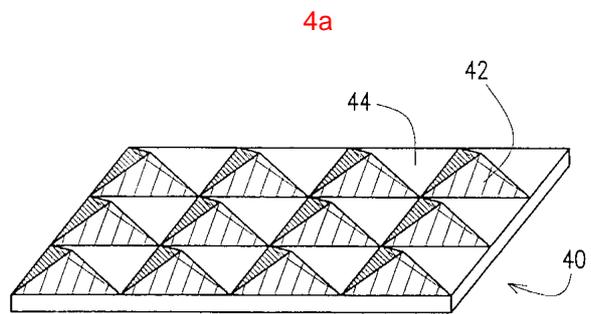
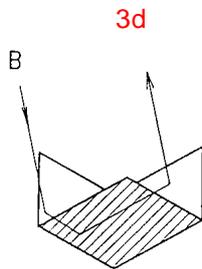
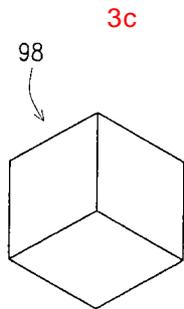
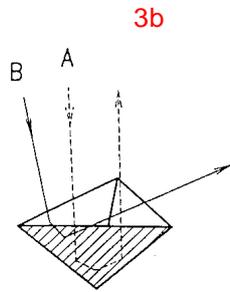
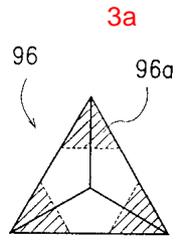


2b

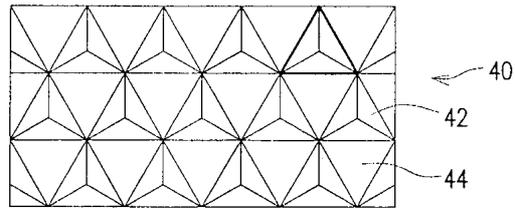


2c

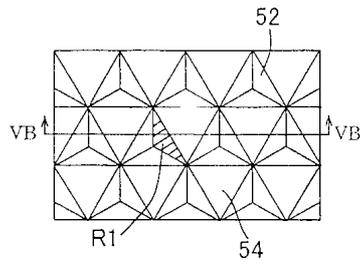




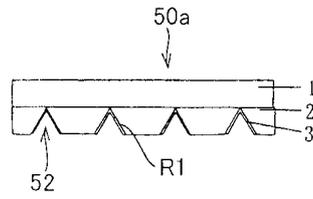
4b



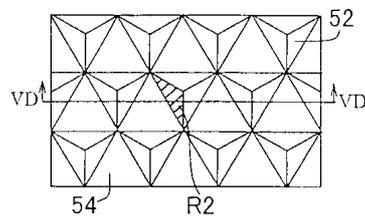
5a



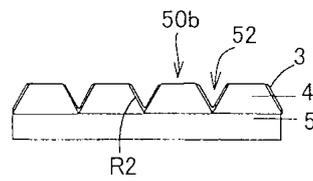
5b



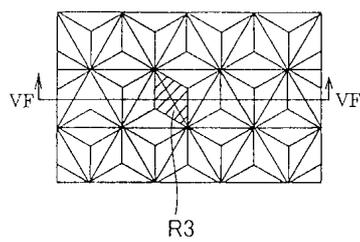
5c



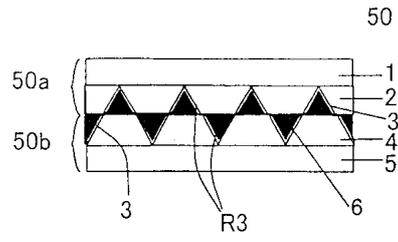
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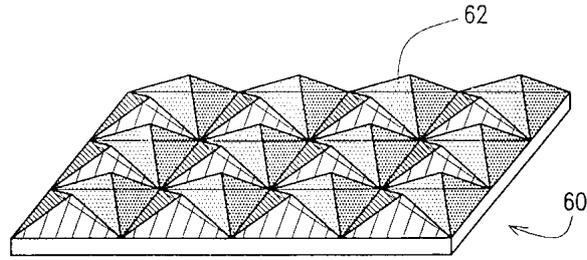
5e



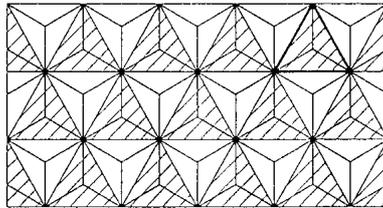
5f



6a



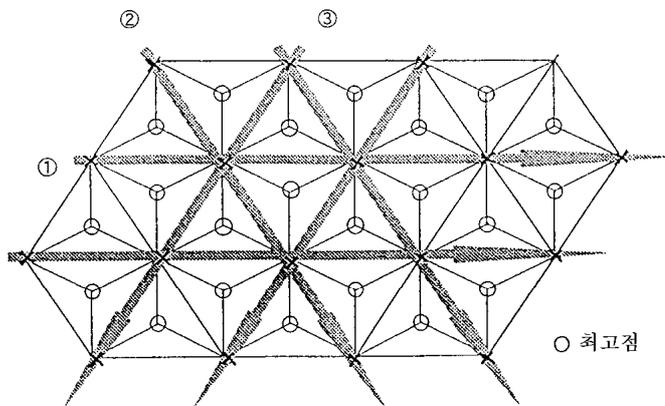
6b



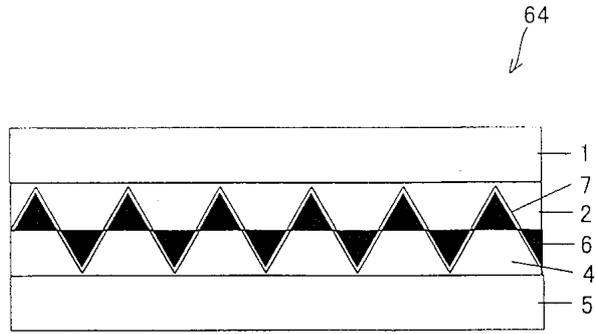
7a



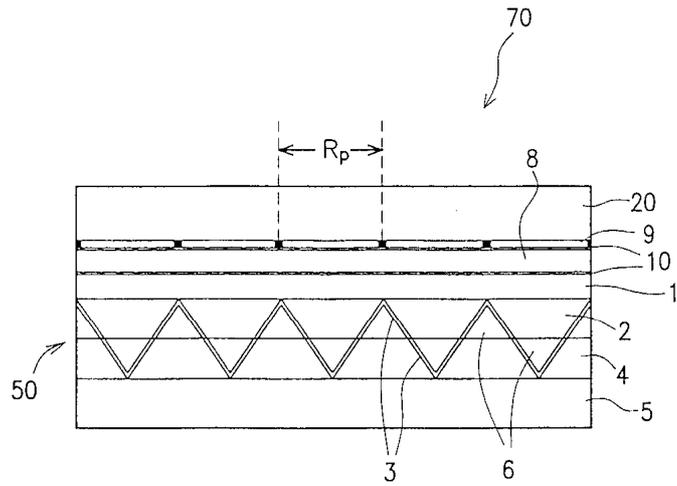
7b



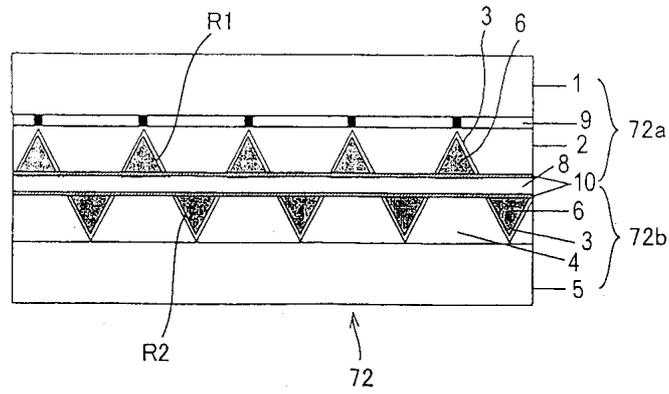
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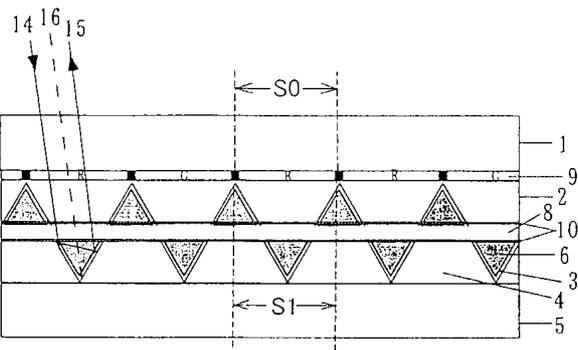
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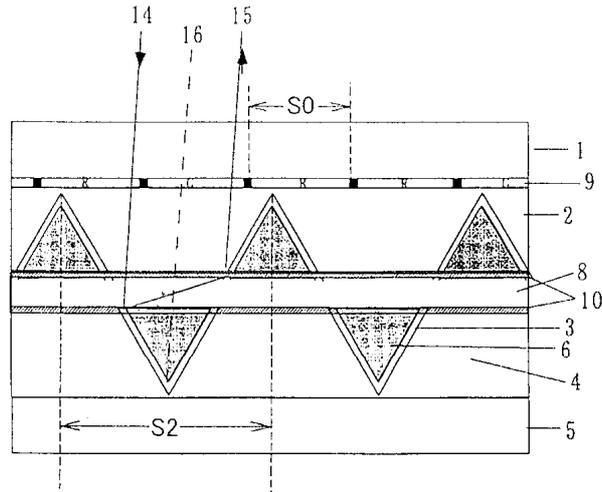
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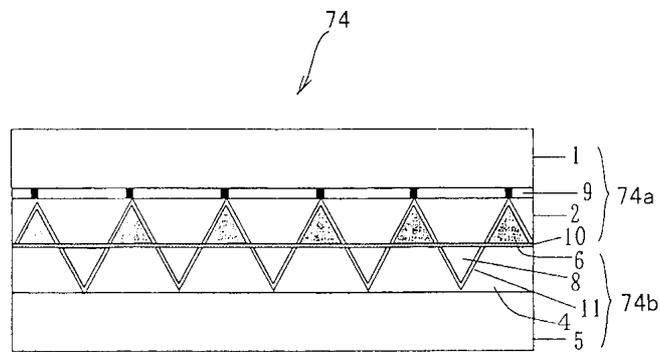
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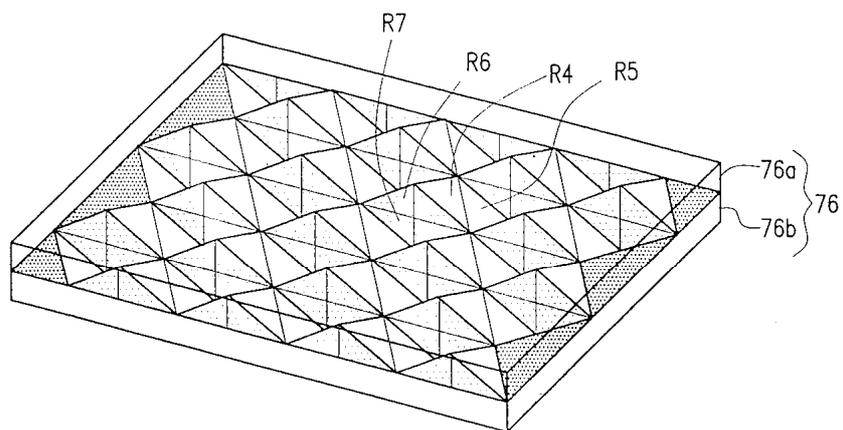
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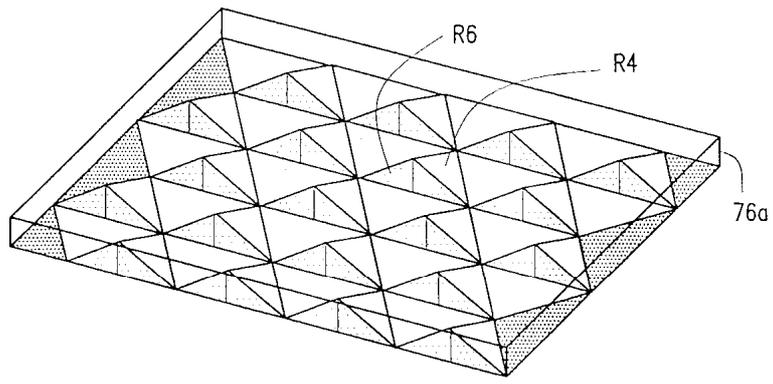
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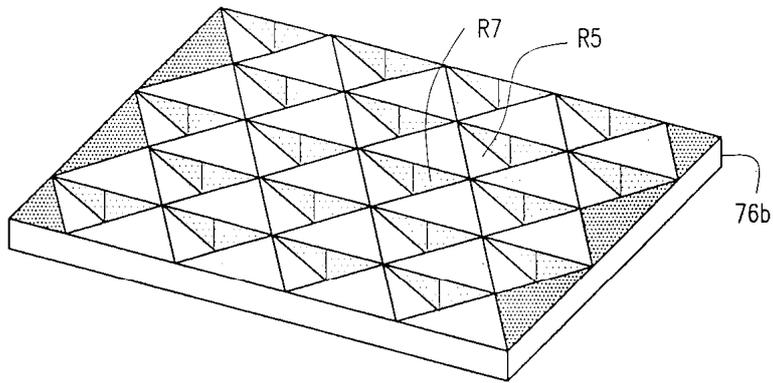
14a



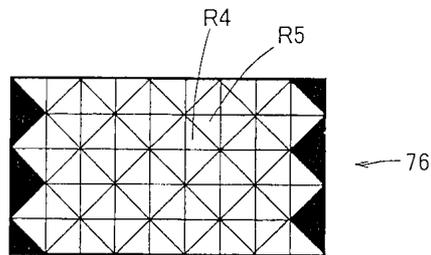
14b



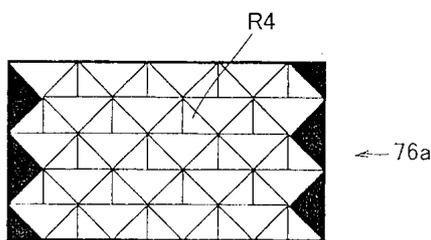
14c



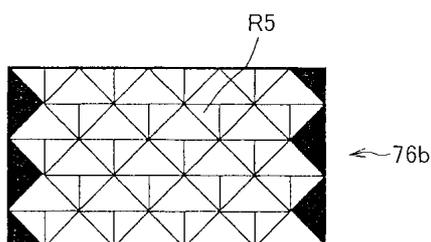
15a

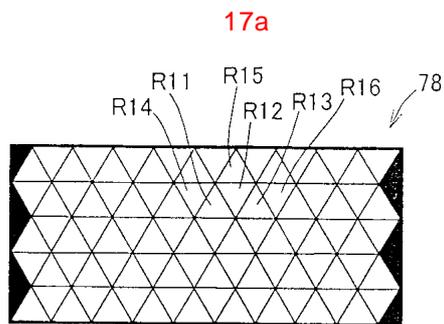
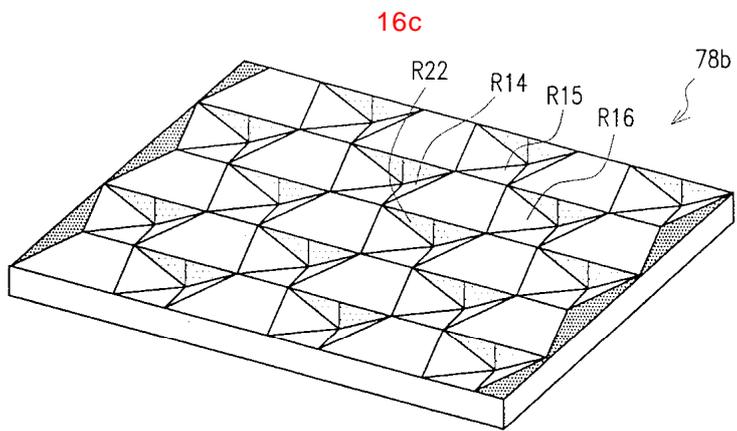
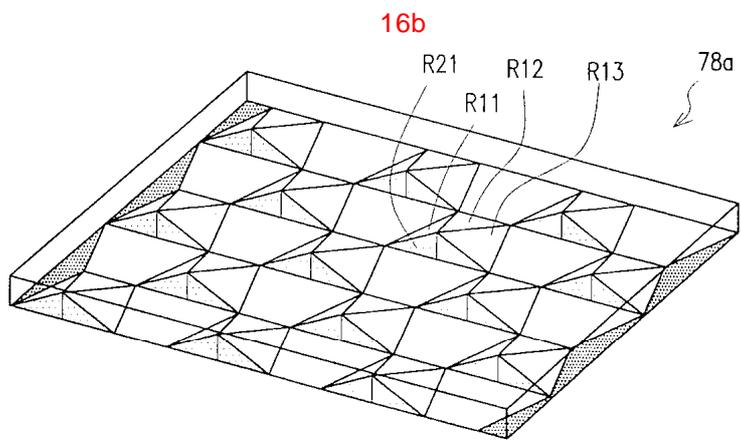
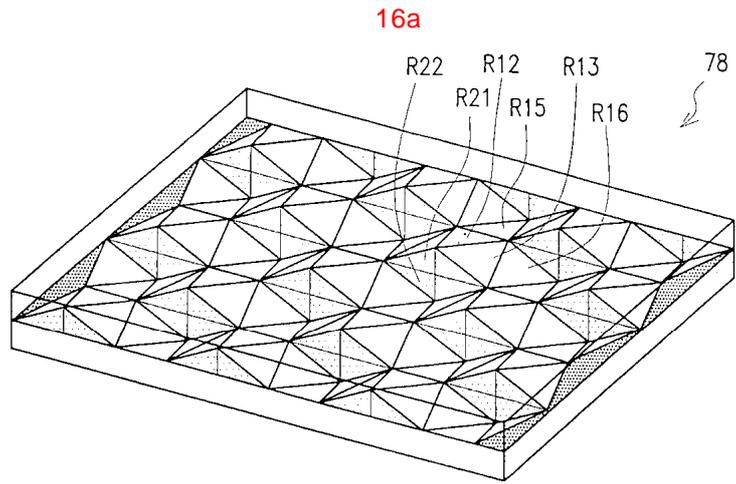


15b

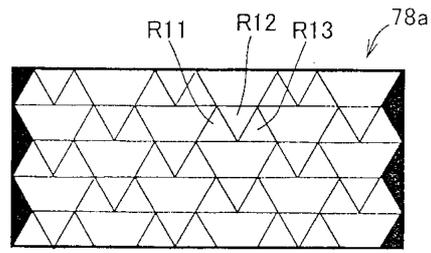


15c

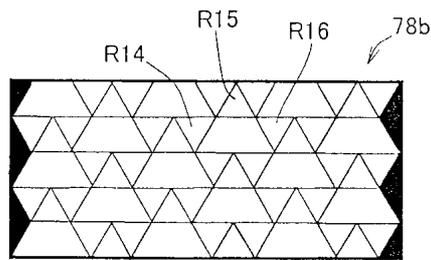




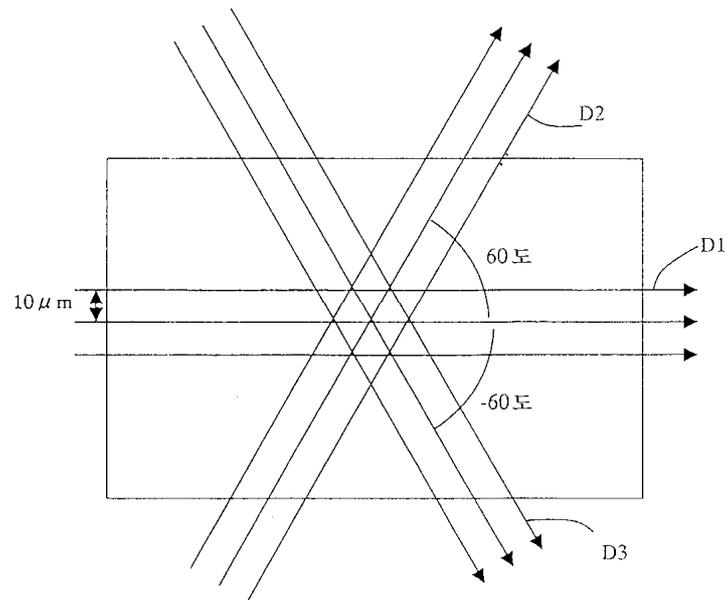
17b



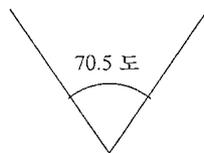
17c



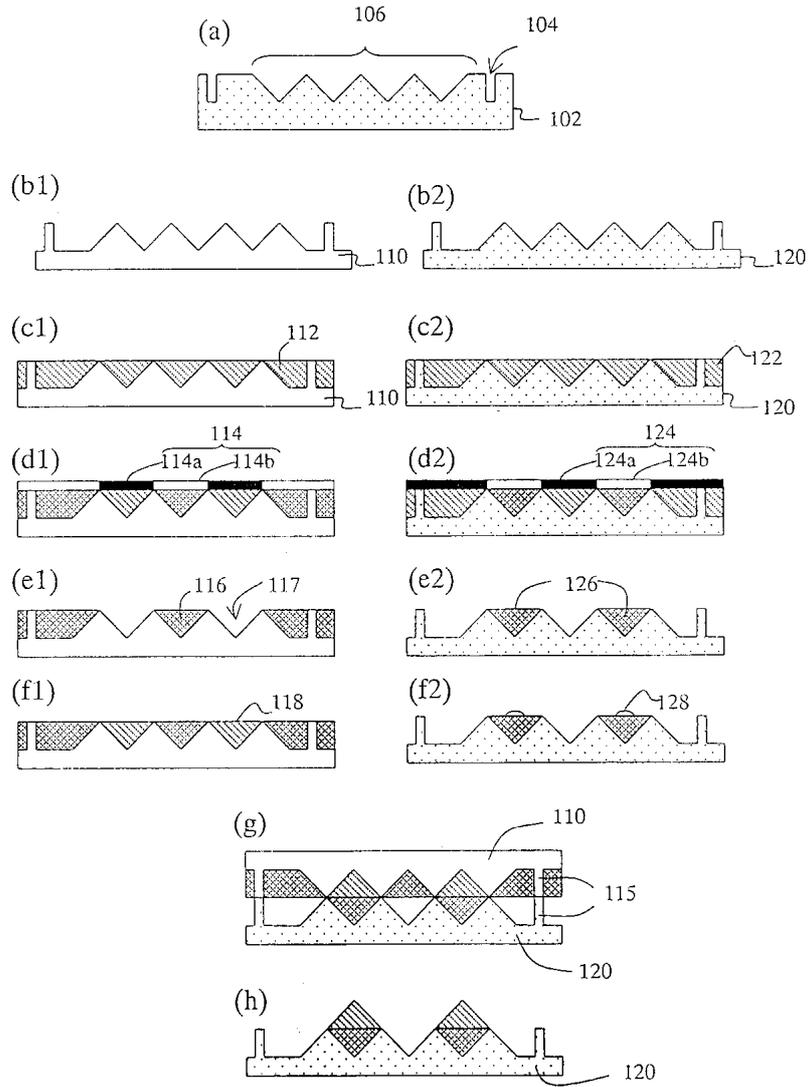
18a



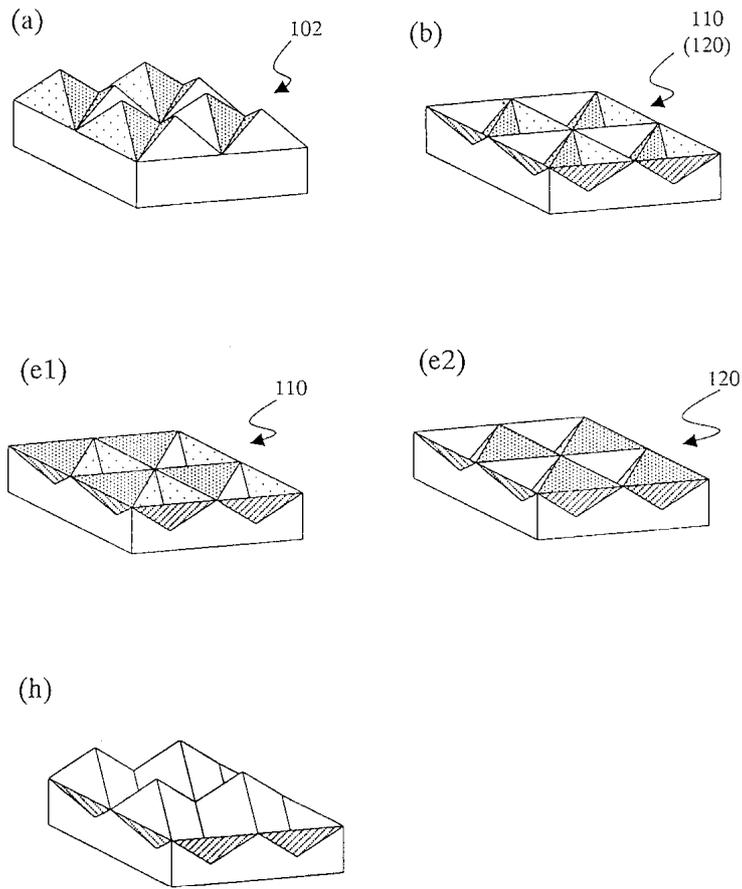
18b



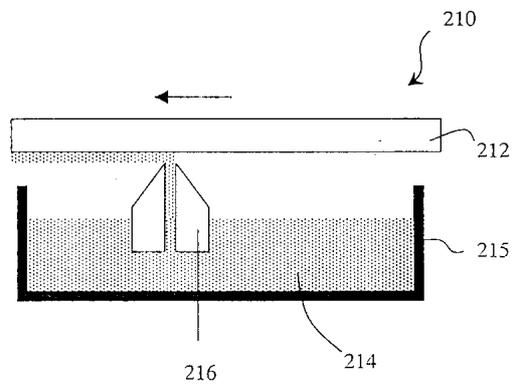
19



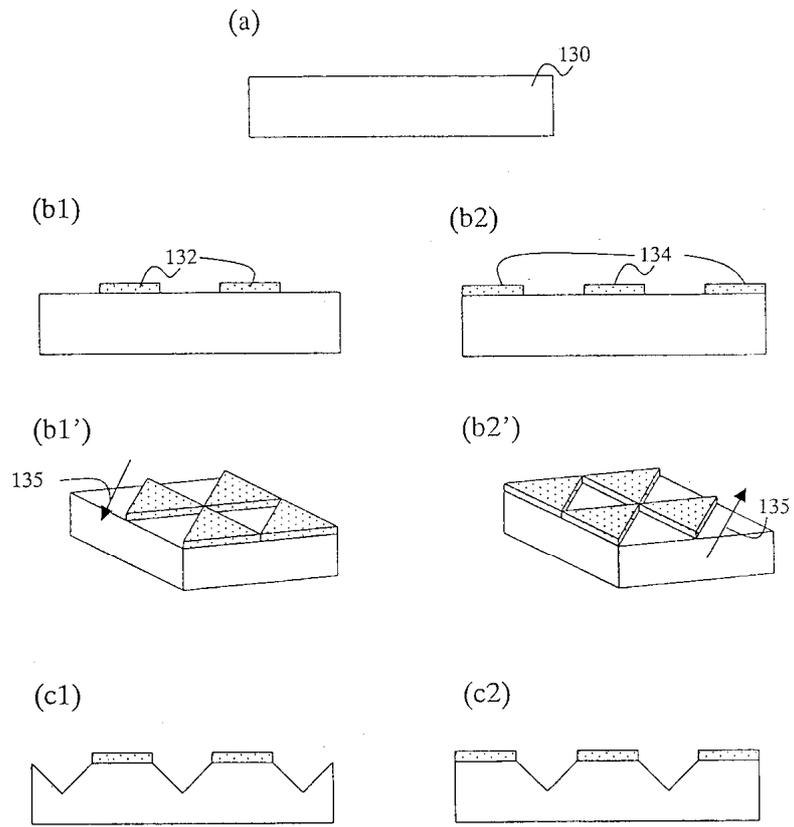
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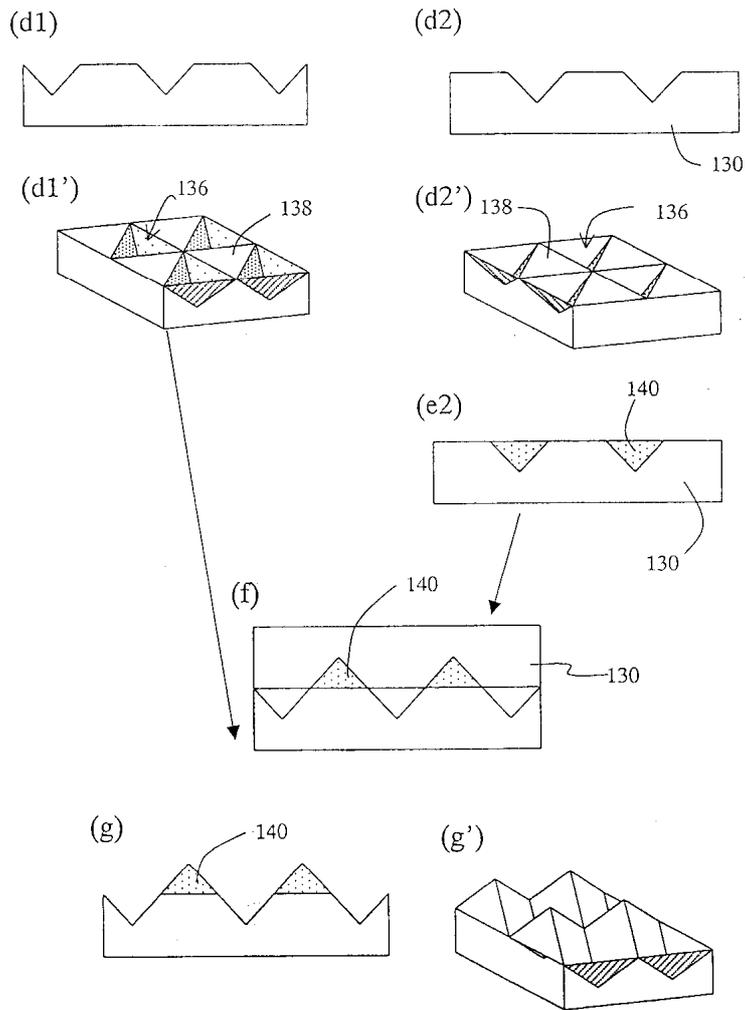
21



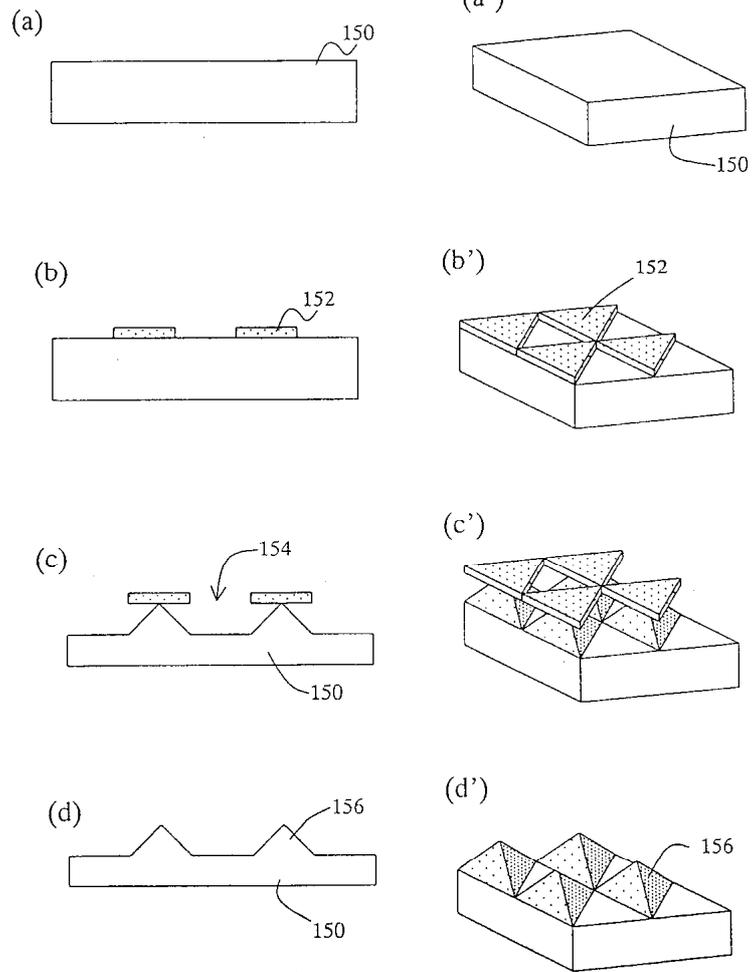
22a



22b



23a



23b

