

(19)
(12)(KR)
(A)(51) 。 Int. Cl. ⁷
G02F 1/1335(11)
(43)2001 - 0074545
2001 08 04(21) 10 - 2001 - 0003627
(22) 2001 01 22

(30) 2000 - 013216 2000 01 21 (JP)

(71) 가 가
가
5 7 1(72) 가
5 7 1 가 가
5 7 1 가 가
5 7 1 가 가
5 7 1 가 가

(74)

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(54)

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가

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가

1

2

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1 1 .

2 1 1 1 1 2 (B) 1 2
 .

3 2 , 3 (B) 2 2 , 3 (A) 2 1
 .

4 (A) 3 .

4 (B) 4 .

5 5 , 5 (B) 5 1 , 5 (C) 5 5 (A) 2
 .

6 6 .

7 1 , 7 (AB)
 7 (G) .

8 1 , 8 (H) 8 (L) .

9 1 , 9 (AB) 9 (H)
 .

10 1 , 10 (I)
 10 (LM) .

11 1 (protrusion pattern) .

12 1 .

13 2 , 13 (AB) 13 (G)
 .

14 2 , 14 (H)
 14 (KL) .

15 3 , 15 (AB) 15 (G)
 .

16 3 , 16 (H)

16 (L)

17 5

18 5

19

20a 20f

, 20 (A) 2

0 (F)

21 , 21 (G) 21 (J)

22

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1 :

7 :

44 :

45, 49 :

47 :

50 :

60 ;

61 :

581, 582 :

2000 1 21

2000 - 013216

가

가 (back - light)

istid Nematic) , GH(guest host) , PDLC(Polymer Dispersion) , (cholesteric) , TFT(TFT) / / (MIM)

, 19

(1) (2), (3), (4), (5), (6) , (7) (8), (18) TFT(9), (10), (10) 2 (11), TFT(9) (12) (13)

(1) (7) (14)

(16) (16) , (15) (2), (3), (4), (5), (6) (14) , (13)

(15)

(11)

(13)

(13)

, 20 (A) 21 (J)

TFT (21) (20) (20 (A)). , (22), (23), (24) (20 (B)). , (23) (24) (25)가 (20 (C)), (26) (27) (20 (D)). , (34)

가 (28) (20 (E)). , (20 (F)) (29)가 (30) (21 (G)). , (30) (31) (32) (21 (H)). , TFT (33)가 (21 (I)), (34) (21 (J)). 61 - 6390 SID (Tohru Koizumi and Tatsuo Uchida, Vol. 29, p. 157, 1988)

22 20f (29) , 22 (F)

(29) (29) , 1 20 μ m, 가 0.5 5.0 μ m , 가 , 가 (29) (29)가 가

가

(29)

(29)

TFT,

1, 1 ; 1 ; 2 ; 2

가

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가

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, 1 2 가 . 가
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 . 가 ,
 , 2 가 . ,
 , 2 , 1 1
 , 1 , - , 1
 1 , 2 1 ,
 2 , - 가, , 가
 , 가 , .
 가 , .
 1
 1 1 .
 1 , 1 1 (581),
 (581) (60), 2 (582), (582)
 (50)가 (44), (44) (50)
 (51), (581) (60) (582) (51) (61)
 . (44) (47) (depressions)
 1 (45) 1 (45) 2 (49)
 (47) . , (47) 가 ,
 (47) . ,
 1 , (61) (7) (1) . (7)
 (582) - (reverse stagger - structured) TFT, (51)
 (44), (44)
 .

TFT(40) , , , , (41), (42), (43)
 0) , , TFT(4
 (46) (47) . 1 (45) 1 (45)
 (46) (47) .
 2 (49) (46) (47) , .
 (50) , (51) .
 (51) (50) 가 , (51)
 , (50)
 . , , ,
 .
 (51) (44) (52) TFT(40) (53)
 , .
 1 .
 (61) , (1) (55) (56) ((57), (581), (59), (60), (61) , (51)
 , (61), (60), (59), (581),
 (57), (56) , (63) . (61)
 (1) (55) (51)
 , (56) . (63) / .
 1 .
 (51) (51) TFT(40) 1 (45) 2
 (49) (52) (top) 가 ,
 (51) , 가 .
 , (47) 가 . , (47)
 가 , (47)
 가, , .
 , 2 (49) 가 .
 , 가 ,
 가 .

Tokyo Applied Chemistry Industry Co., Ltd.
 Rubber Co., Ltd. " PC339"

" OFPR800" , Japan Synthetic

2 (A) 2 (B) , 1 1 (45)

2 (A) 1 , (471) (461)가
 . (461) 2 (B) 2 , (462)
 (462)가 , (462)
 (472) .

1 , (471 472) 가 ,
 .

2

3 (A) 3 (B) , 2
 .

2 - , RGB R
 GGB 3 4 . , - (65) 5

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

3

4 (A) 3 .

3 , 가 가 , (66)
 . , (51) , 가
 , , (66) 3 가
 , 가 .

4

4 (B) 4 .

1 (45) 2 (49) TFT(40), (67), (53), (54)
 . (52) TFT(40) (51) 2 (49)
 . 1 (45) 2 (49) TFT(40) , TFT(40)
 . , 1 (45) 2 (49) TFT(40) TFT

(SiN)

(SiO)

가

5

5 (A)

5 (C)

5

5 (A)

,

(51)

(67)

,

, 5 9B)

5

, 1

(45)

2

(49)

(67)(

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, 1

(45) /

2

(49)

(51)

(67)

,

1 5 μ m

,

(51)

(67)

,

, 5 (C)

,

(67)

(51)

,

(51)

가

,

1

(45)

2

(49)

, TFT

가

6

6

6

2 (81)

,

,

2

(81)

,

(51)

(80)

, TFT(40)

, TFT(40)

(light - OFF leakage)

,

,

2

(81)

,

TFT(40)

가

6

,

,

(51)

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"

", " CFPR" , " BK - 748S" , " BK - 430S"

가

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7

7

8

7

7

,

TFT가

7 TFT

A , (7 (AB));

B , (90) (7 (AB));

C , (91), (92), (93) (7 (C));

D , (94) (7 (D));

E , (7 (EF));

F , (95) (96) (7 (EF));

G , 1 (97) (7 (G));

H , (98) (8 (H));

I , (8 (I));

J , 2 (99) (8 (JK));

K , (100) (8 (JK));

L , (101) (8 (L))

가, H 1 (97)

(1) ;

(2) ;

(3) (80) ;

(4)

(80) (98) G 1 (97) , 0.4 - 5.
0 μm

I , (98) 150 - 300

(101) Al 가 , TFT, MIM
TFT 7

8

8

8 1 2 7 (AB) 8 (L)
7 .

8 1 (97) (9
8) 가 , 가, 8
2 (99) (100)
, 8 7 (AB) 8 (L) 7 ,

1

9 (AB) 10 (LM) 1 .

1 - TFT . 1

A , Cr 50nm (9 (AB));

B , () (200) (201) (9 (AB));

C , CVD() (202) 100nm , (203) 100nm ,
(204) 50nm (9 (C));

D , () (9 (DE));

E , CVD (204) 350nm (9 (DE));

F , Cr 50nm (9 (FG));

G , (207) (9 (FG));

H , 1 (208) 3 μ m (9 (H));

I , () (209) (10 (I));

J , 2 (210) 1 μ m (10 (JK));

K , () (211) (10 (JK));

L , 300nm (10 (LM));

M , () , (212) (10 (LM))

C, 1 (204), (203), (202)
 N, 가 가 가 CVD, 가 (/) 0.1 0.5, 200
 300, 133Pa, 200W, 가 가
 가, 가 (/) 0.1 0.8, 250, 133Pa,
 200W, 가 가 가, 가 (/)
 /) 0.25 2.0, 200 250, 133Pa, 50W, N
 200 250, 133Pa, 50W.

, D, (207)
 G, - Cr, 0.
 665 39.9Pa 100 300W 가 4 가
 , 0.665 39.9Pa 50 200W 가
 가

1 Cr Cr,
 , Ti, W, Mo, Ta, Cu, Al, Ag, ITO, ZnO, SnO

1, I J, .

H 1 (208), 2 μ m, (208)
 , (209), 11
 11, (215) (216)가

1 H 1 (208) (" RN - 812" Nissan Chemical
 Industry Co., Ltd.) . 1200rpm, 90, 10,
 250, 90, 1, 5, 1000rpm
 , 90, 90, 4 가, 0.665 39.9Pa, 100 300W
 ,

(211) K, (211)
 , 2 (210) (204)

, 가 1 (208) 2 (210), 가
 , 1 (208) 2 (210)

12) , 1 , TFT (2
60 가 , ,

(212) - () 1 μ m , TFT
ITO
, TFT

(212) (209) (flake - off)
(212)
, RGB 가

, 1 - (peak - bottom) ((209))
가 , 가
1 1 (208)
12

2

, 13 (AB) 14 (KL) 2
2 TFT

2

A , (230) 50nm Cr (13 (AB));

B , () (231) (13 (AB));

C , CVD 400nm (232), 100nm (233), 100nm
(234) (13 (C));

D , () (235) (13 (D));

E , 50nm Cr ITO (13 (EF));

F , () (236) (237) (13 (EF));

G , 3 μ m 1 (238) (13 (G));

H , () (239) (14 (H));

I , 1 μ m 2 (240) (14 (IJ));

J , () (241) (14 (IJ));

K , 300nm (14 (KL));

L , () (243) (14 (KL));

M , ()

.

2 (239) H . , 1 . 2
, 가 , 1 가 가 .

2 , (243) 86% . , TFT ITO
.

, TFT , - 가
. ,

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1 , 2 , 2 - ,

.

3

3 , 15 (AB) 16 (L)

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1 가 . 3 1
, 가 가
2 , 1 I 2 H
가 가 .

3 260 60 80 10 40 . ,
, (250) . 3 ,
8 .

.

, 1 2 1 μ m
. 가 가 , ,
. , (easy - to - see) ,
가 , 가 . ,
, .

3 , , .

4

4 가 . 4

(4)가

1 2 . , 4 1

H I, 2 G I .

가 , 1, 2 3 ,

4 , , .

4 , 가 . To

kyo Applied Chemistry Industry Co., Ltd " OFPR800" , Shipley Corporation " LC100" , Japan Synthetic Rubber Co., Ltd " Optomer Series" , Nissan Chemistry Industry Co., Ltd " Photosensitive Polyimide" 가 .

5

5 TFT . 5 가 1 15

2 (AB) 16 (L) , . 5

A , (230) 50nm Cr () (15 (AB))

B , (231) (15 (AB)),

C , CVD 400nm (232), 100nm (233), 10 Onm (234) (15 (C)),

D , (235) (15 (D)),

E , 50nm Cr ITO () (15 (EF)),

F , (236), (237), (1 5 (EF)),

G , 3 μ m (15 (G)),

H , (16 (H)),

I , - (16 (I))

J , (16 (JK))

K , - (241) (16 (JK)),

L , 300nm (16 (L)),

M ,

N ,

.

,

가 .

17 H (239) . 17 ,
1 2

18 ,
18 가 가 ,
17 18 (215), (216),
(260), (262)가 .

(239)가

(239) 가
(239) (flake - off)

, 1 (239)가

가 .
가 .

(57)

1.

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1 ;

1 ;

2 ;

2 가 ;

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1 2

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가 1 1

2

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2.

1 ,

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3.

1 , 1

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4.

1 ,

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5.

1 ,

가 2 ;

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6.

5 , 1 2

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7.

1 , 1 2

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8.

1 ,

가 2 ;

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9.

1 , 1
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10.

1 , 2
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11.

1 , 1 , 2 , 2 , 1
가 , 2 가 1 1
 , 2 ,

1 ;
 , 1 ;

1 ;

1 ;

1 ;

1 2

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12.

1 , 1 , 2 , 2 , 1
가 , 2 가 1 1
 , 2 ,

1 ;

1 ;

1 ;

1 ;

1 2

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13.

1 , 1 , 2 , 2
가 ,

2 , 1 2

,

가 1 1 2
,

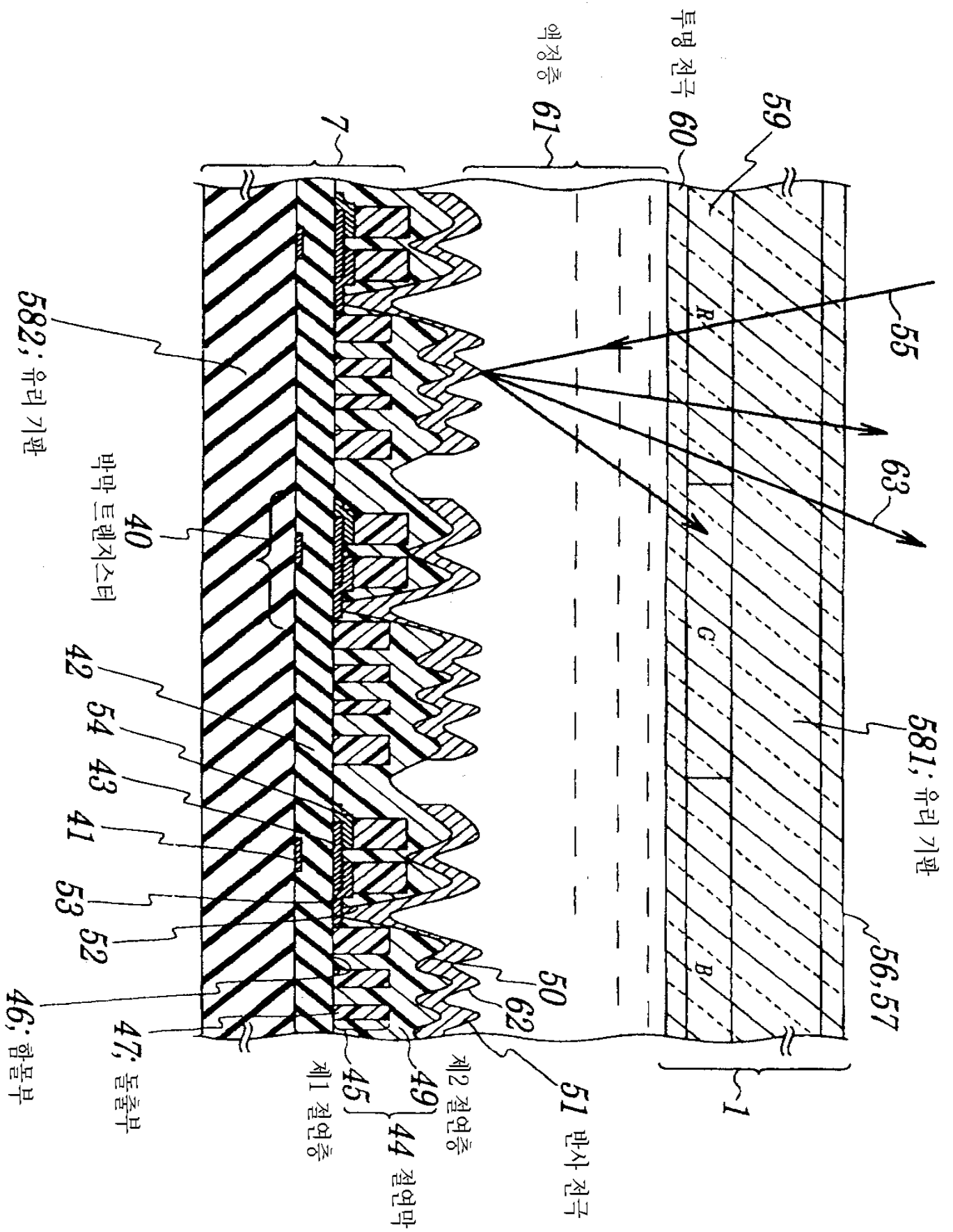
2 ;

2 ;

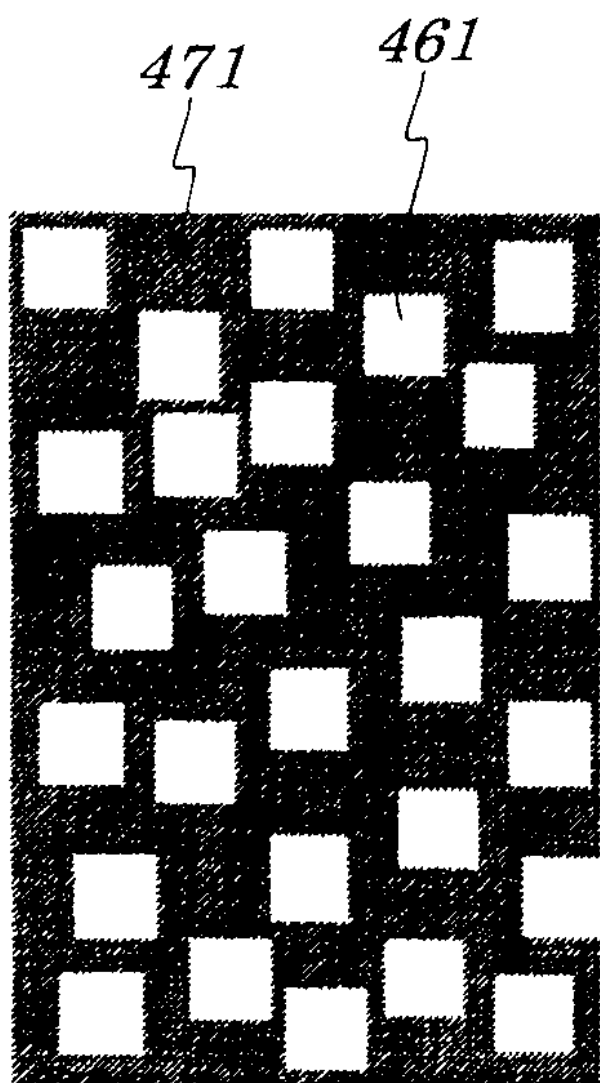
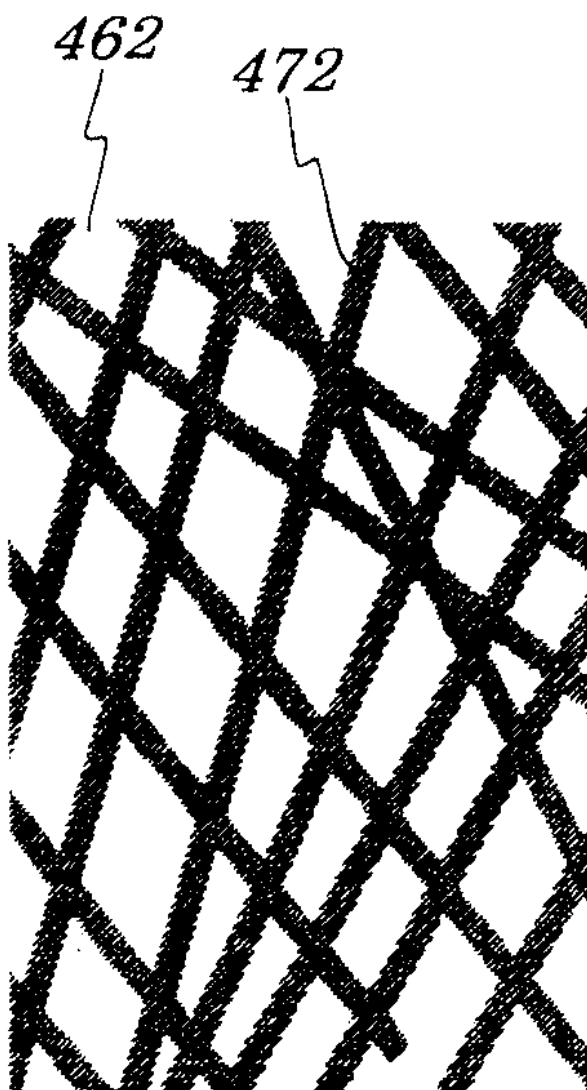
2

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1



2

A*B*

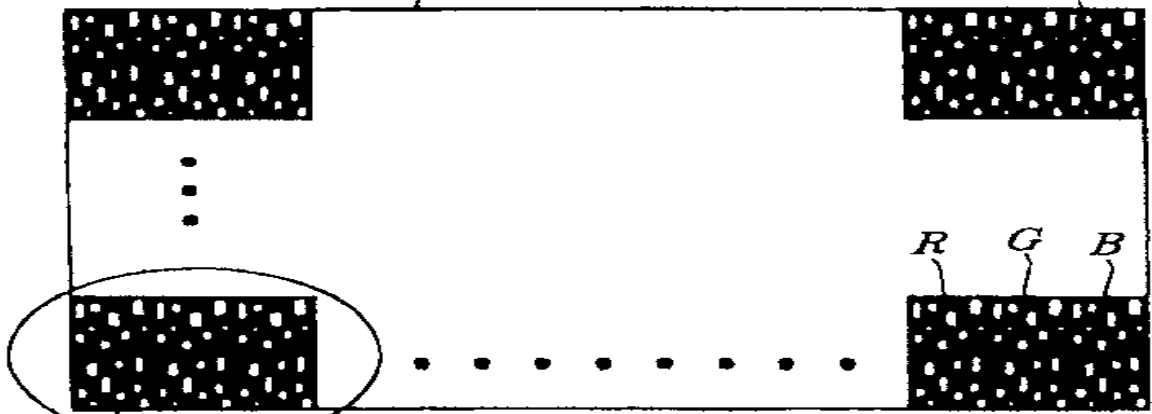
3

A

패널 표시 영역

M개

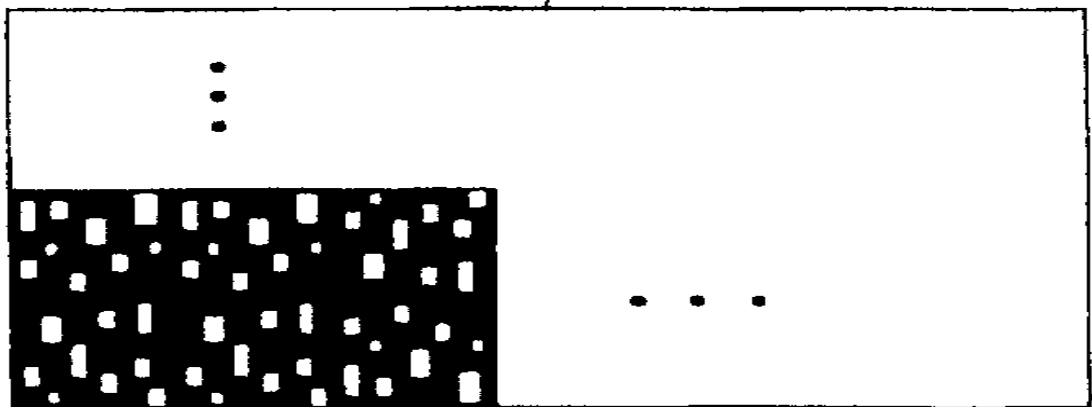
65



N개

하나의 픽셀내의
불균일 배열각 픽셀에 대해
동일 패턴이 반복됨**B**

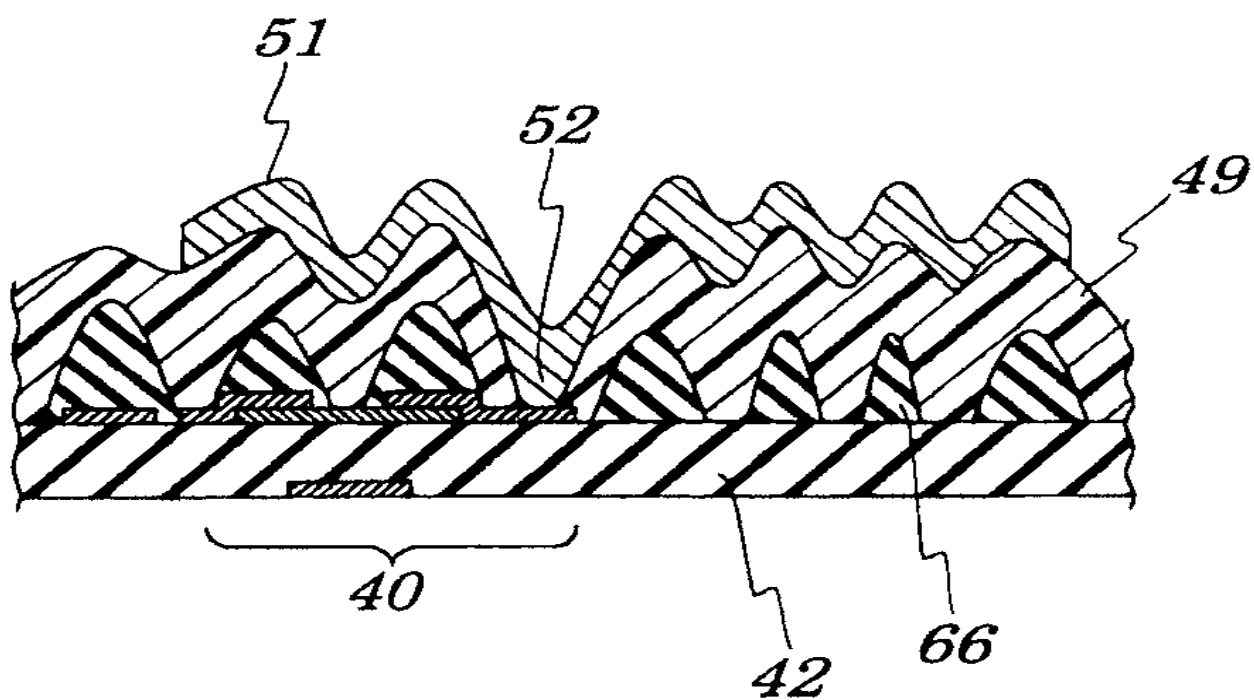
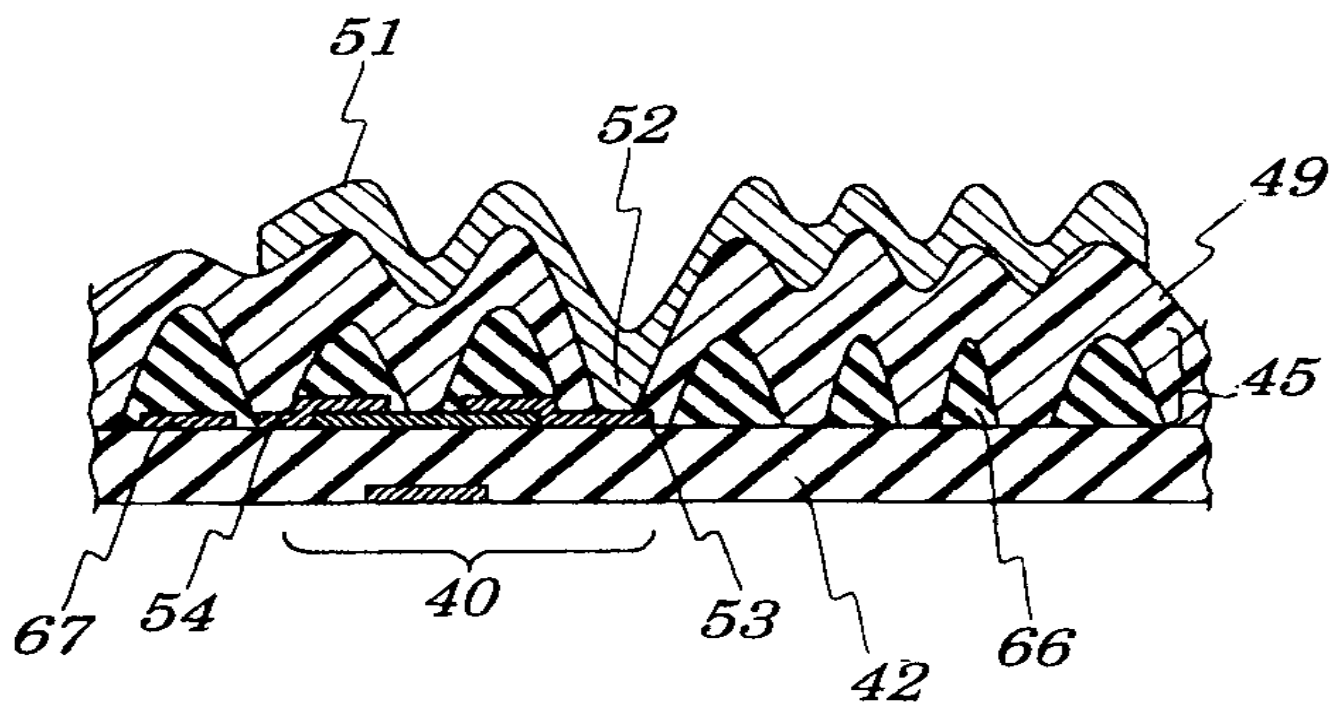
패널 표시 영역



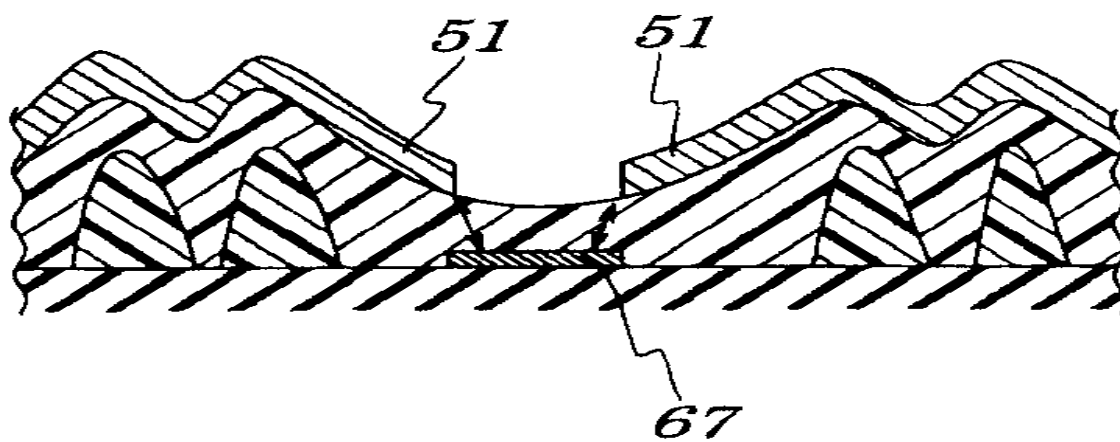
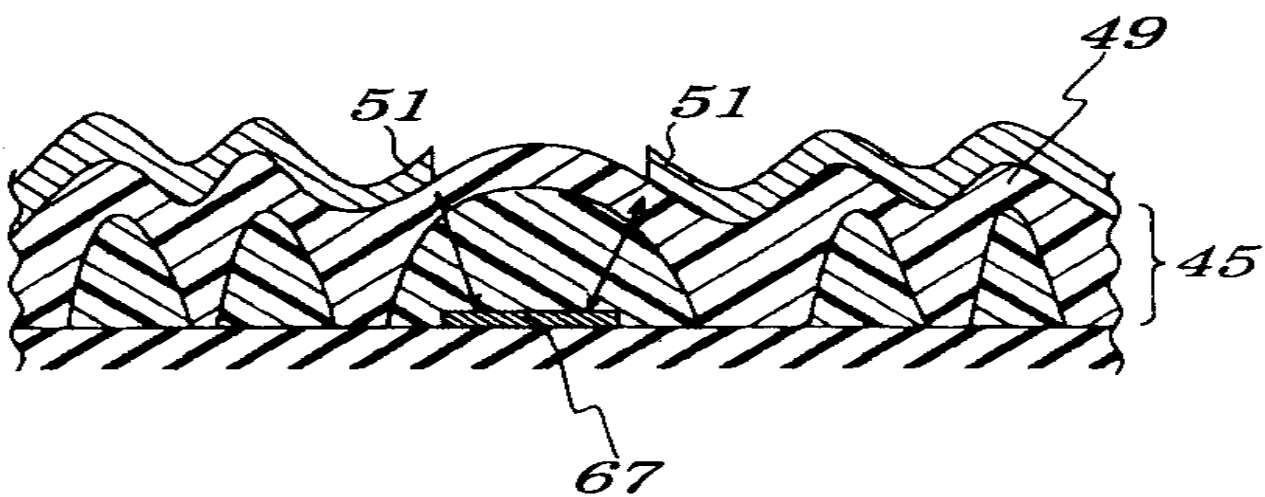
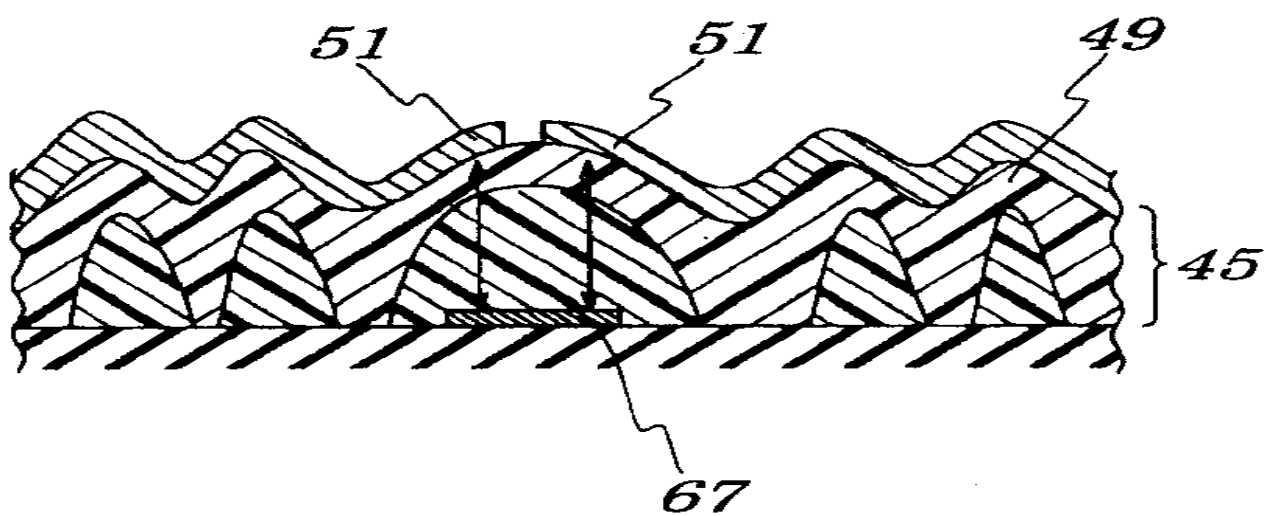
46

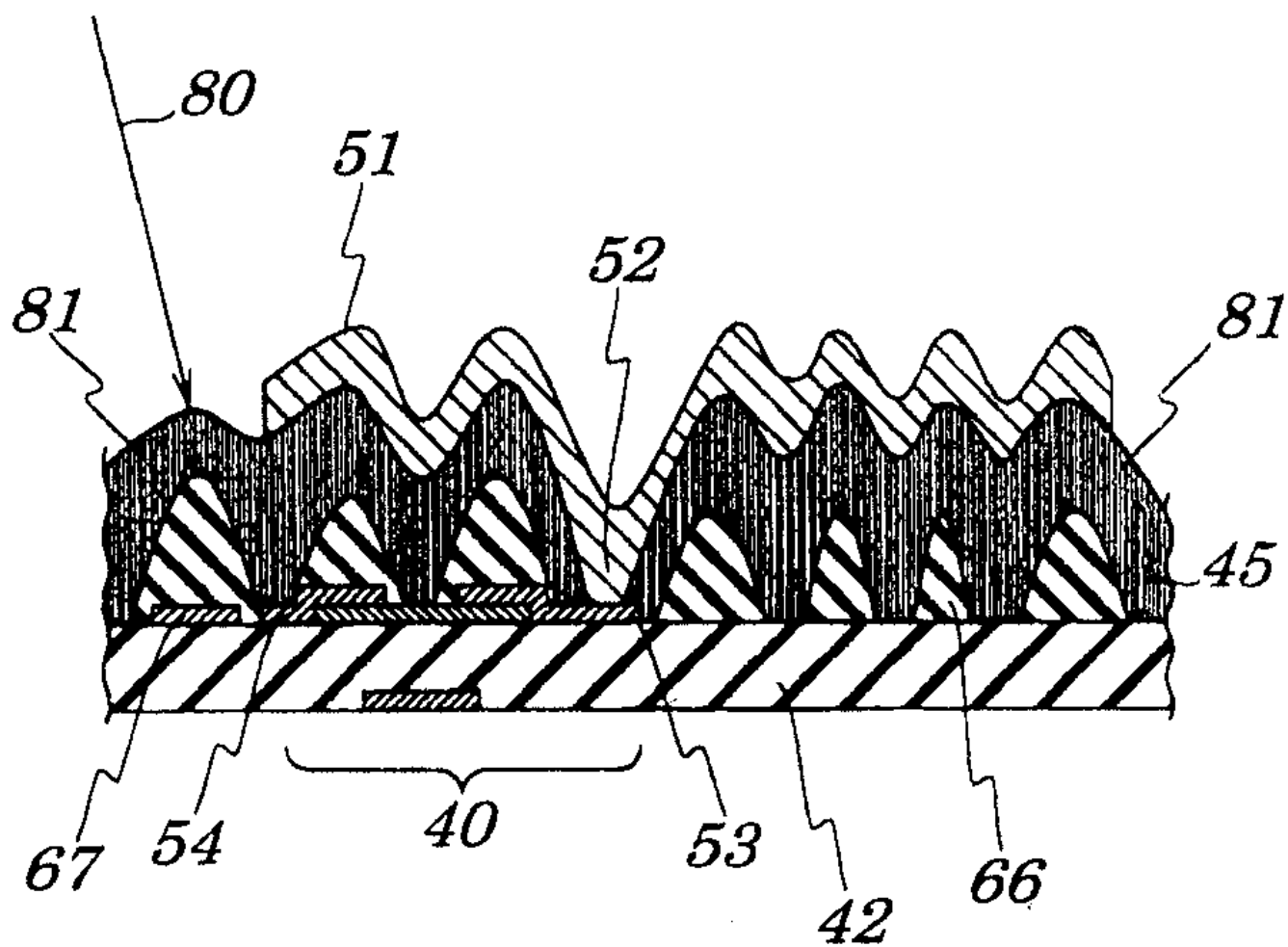
임의의 영역 범위 내에서의
불균일 배열

4

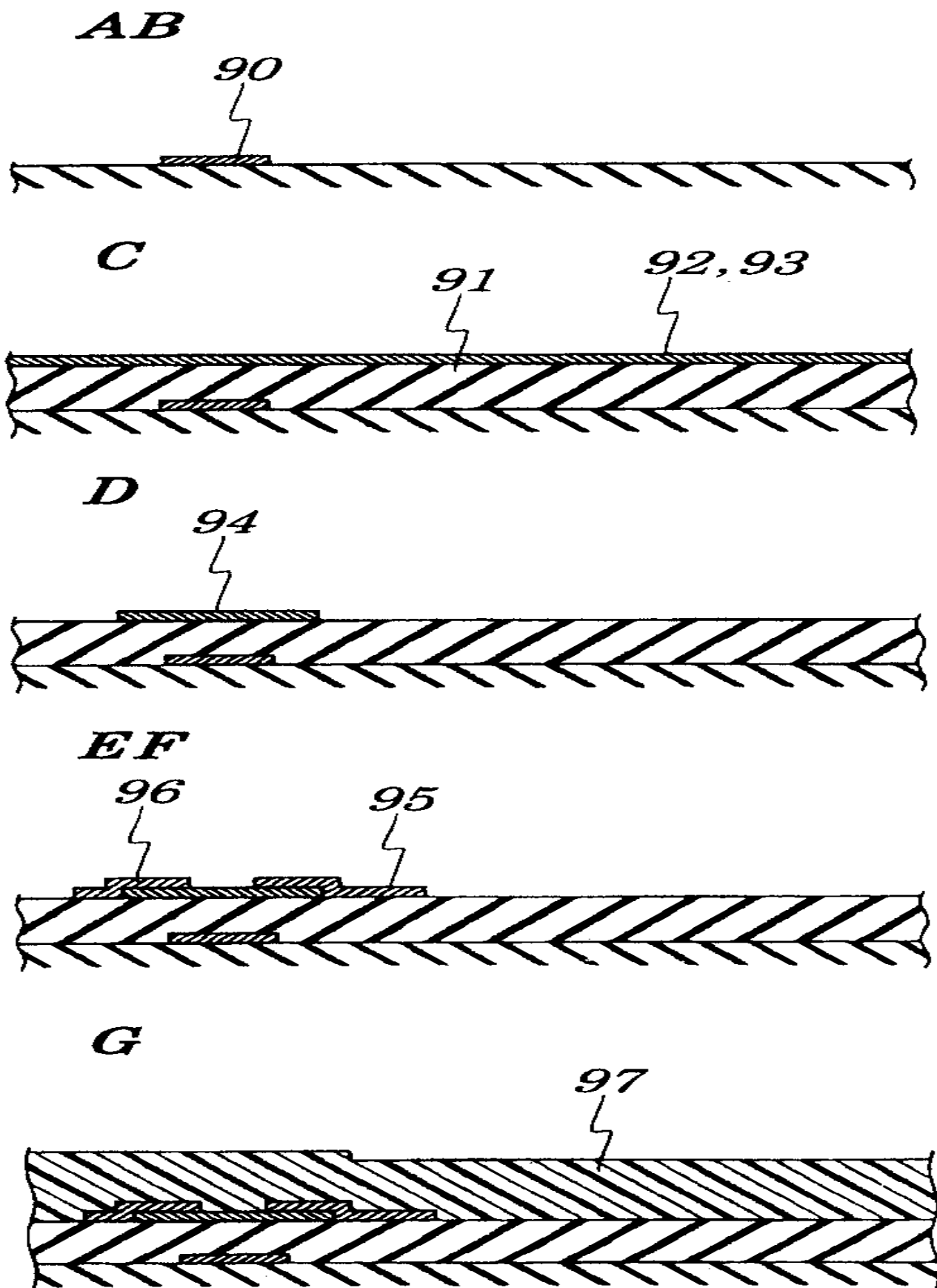
A**B**

5

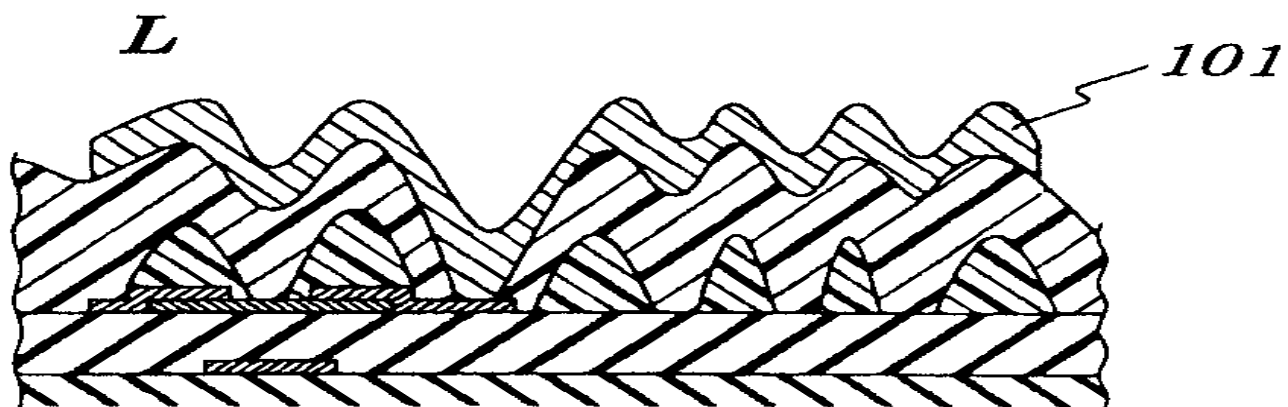
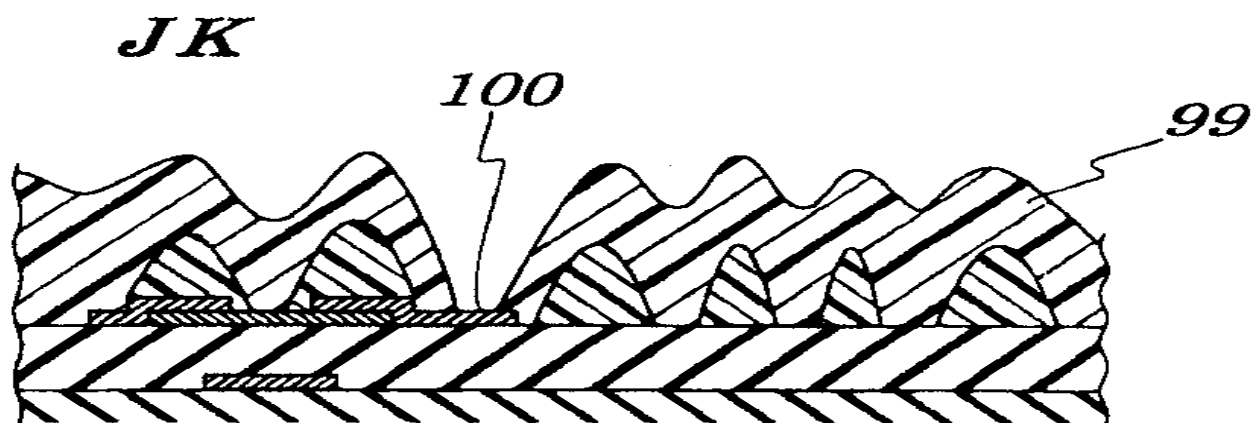
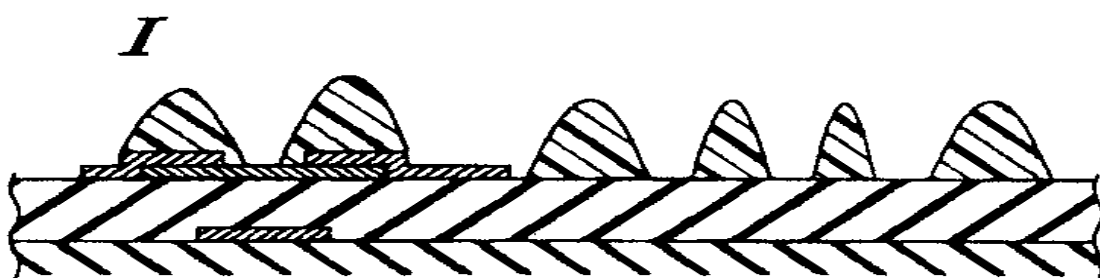
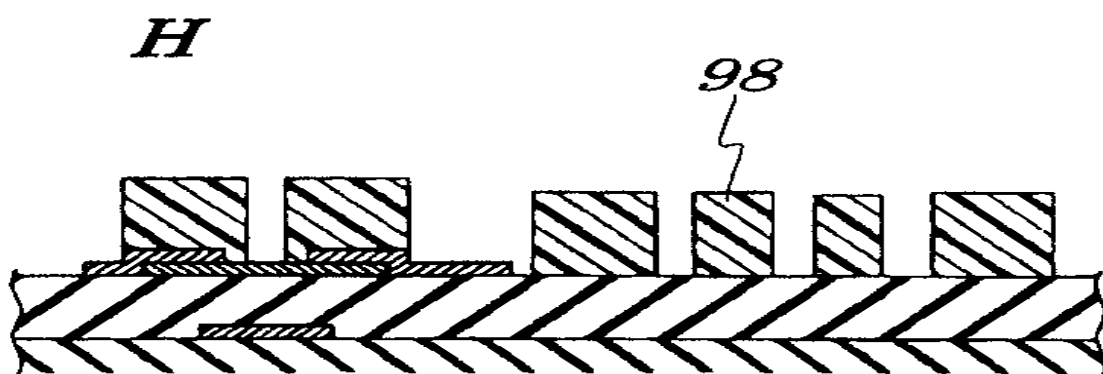
A**B****C**

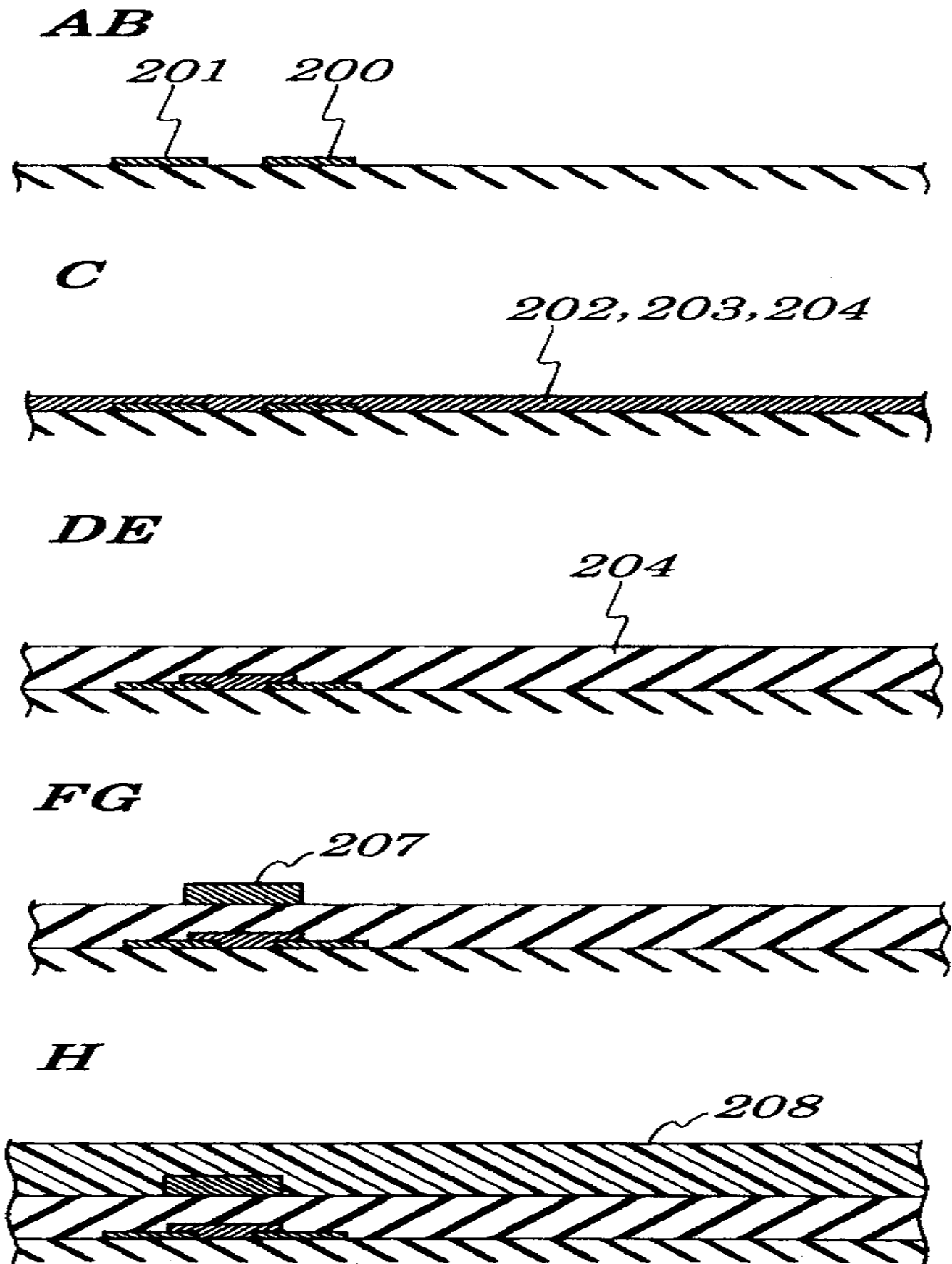


7

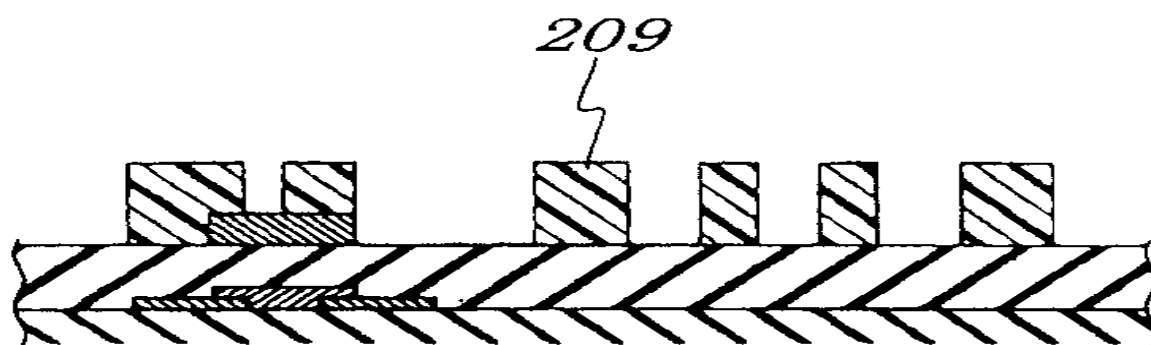
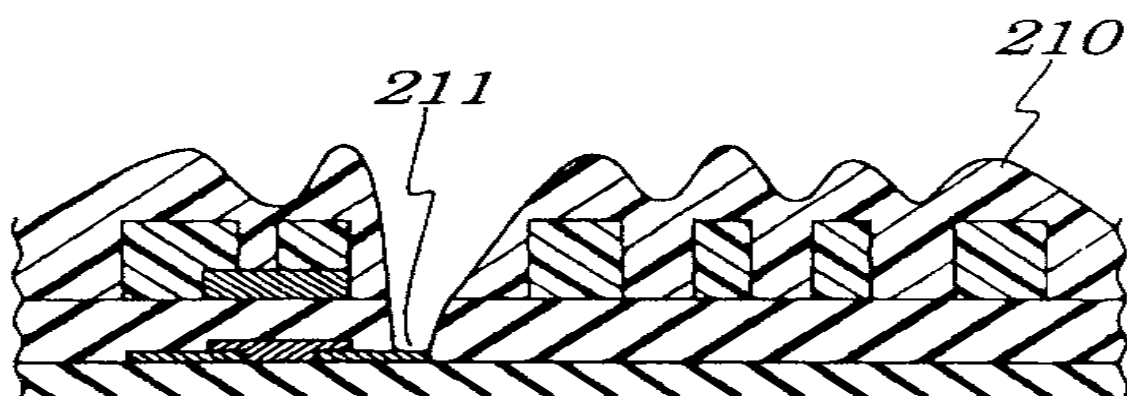
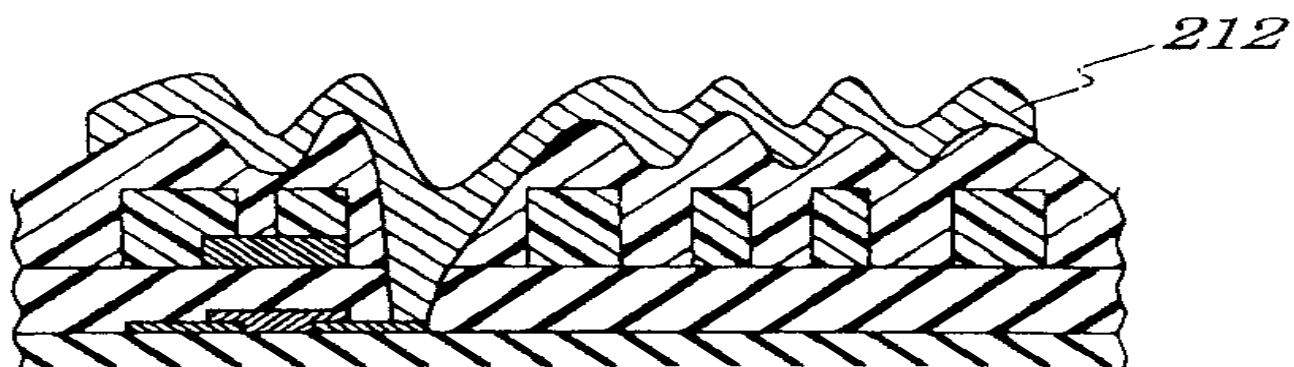


8



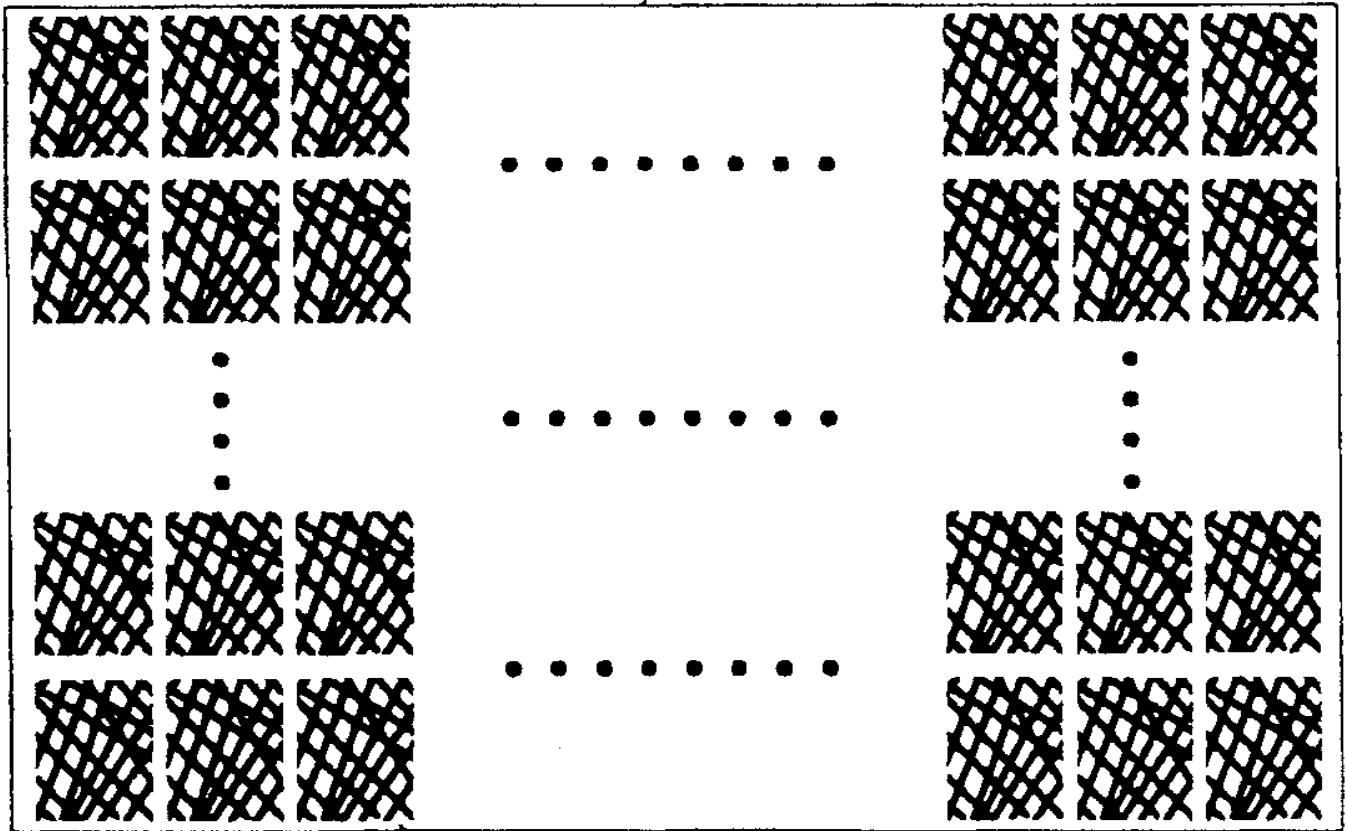


10

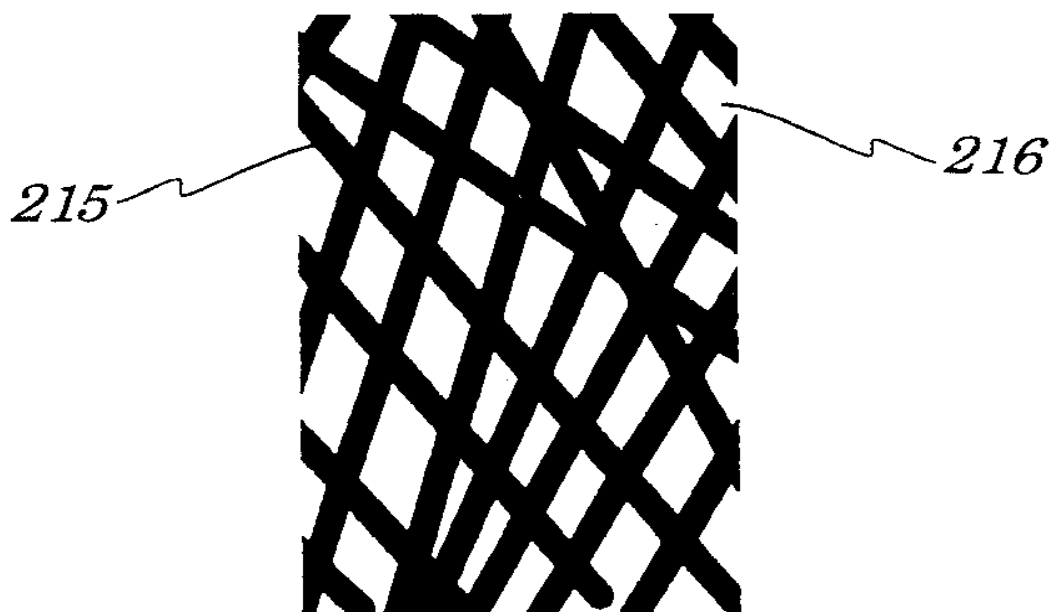
I*JK**LM*

11

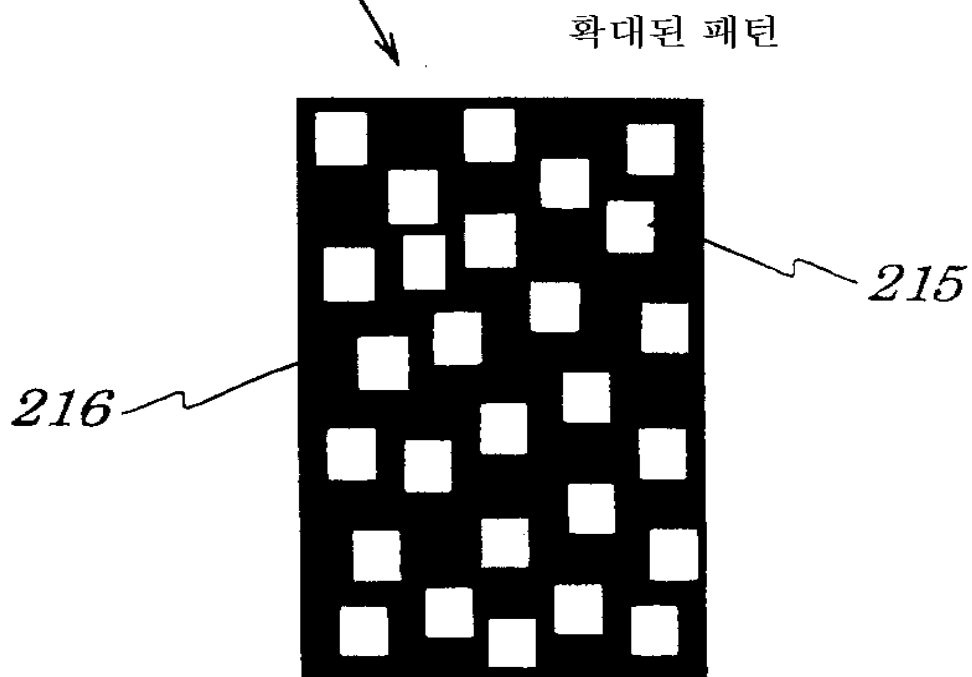
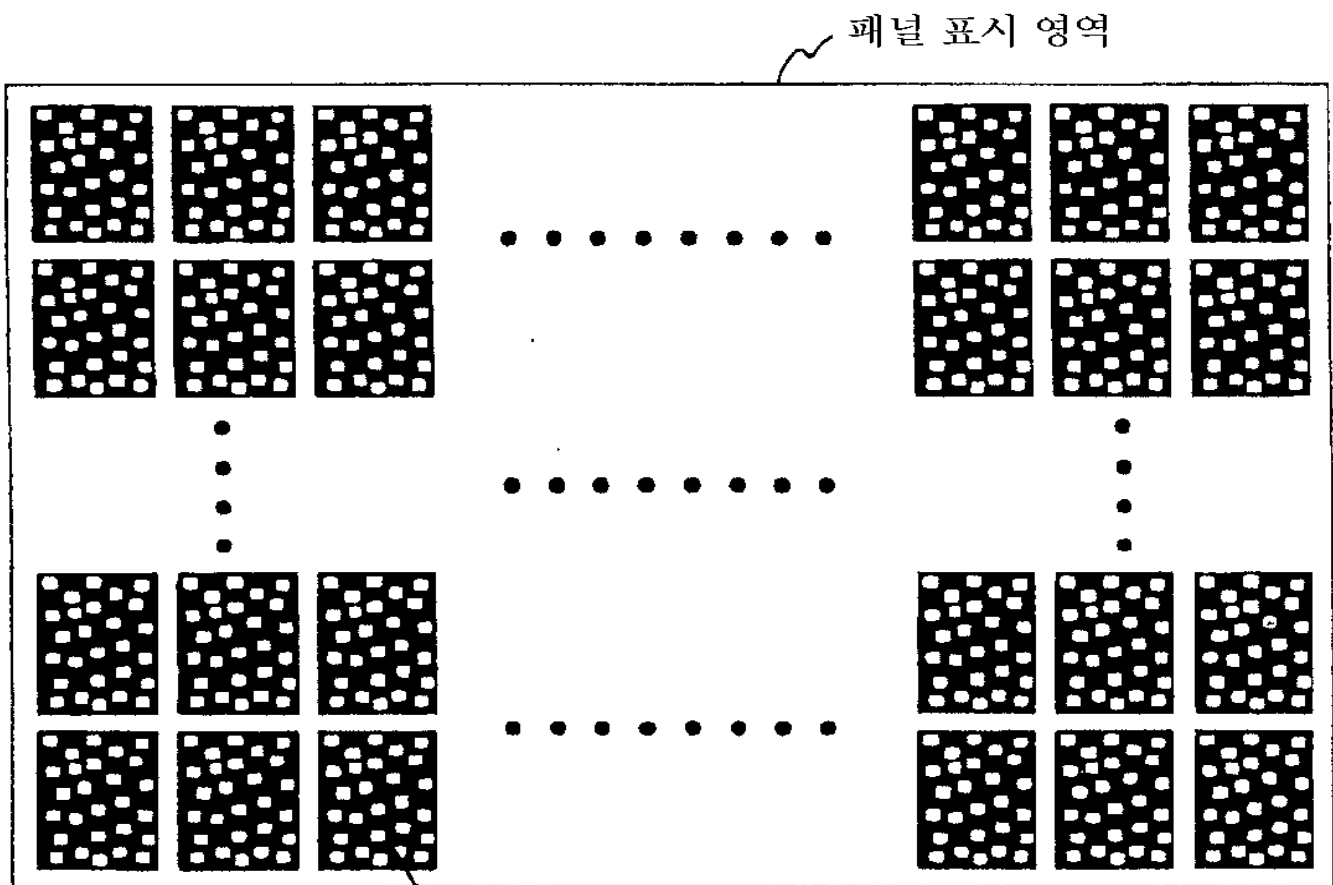
패널 표시 영역



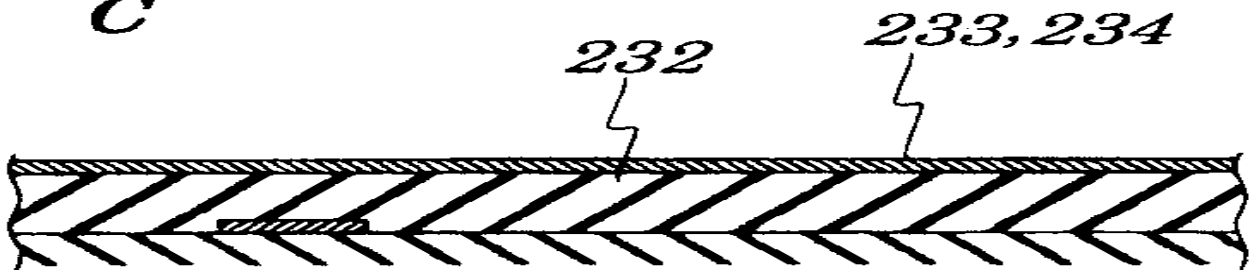
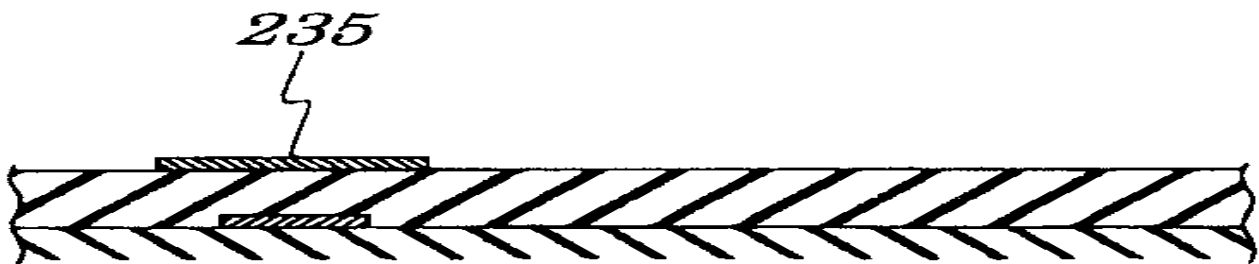
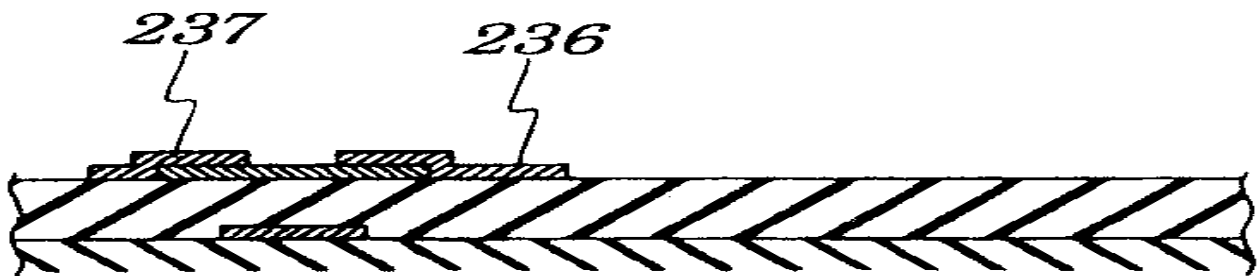
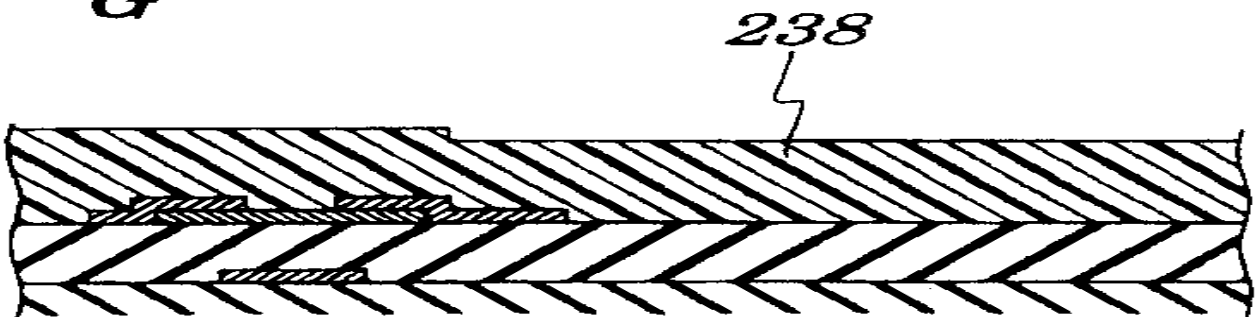
확대된 패턴



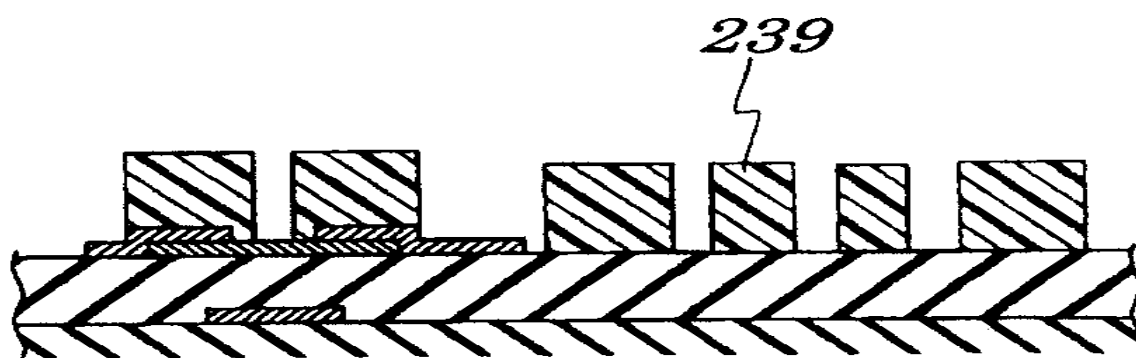
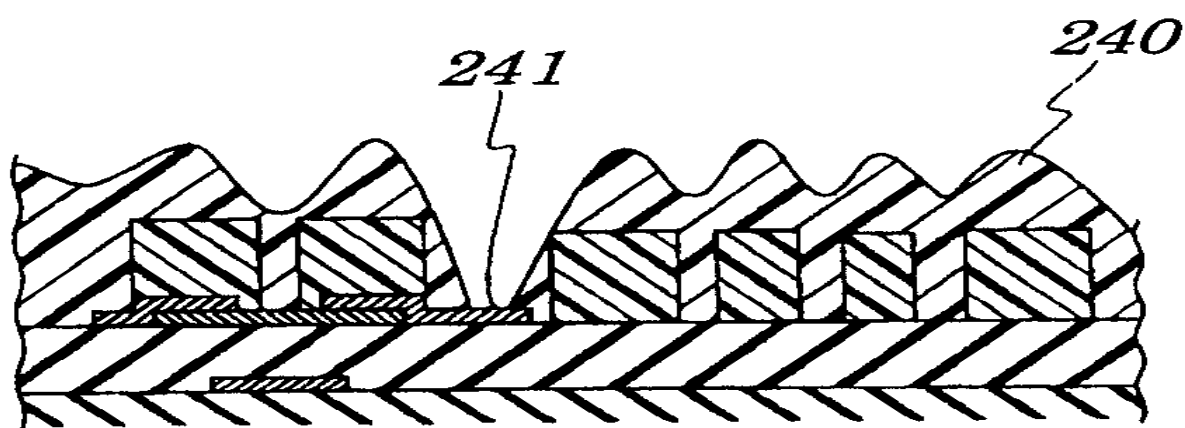
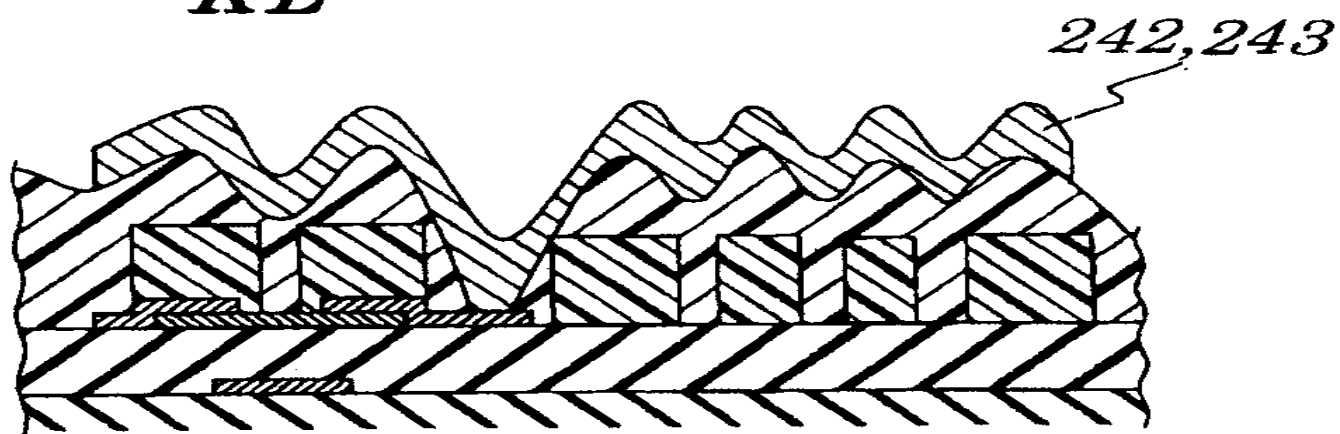
12



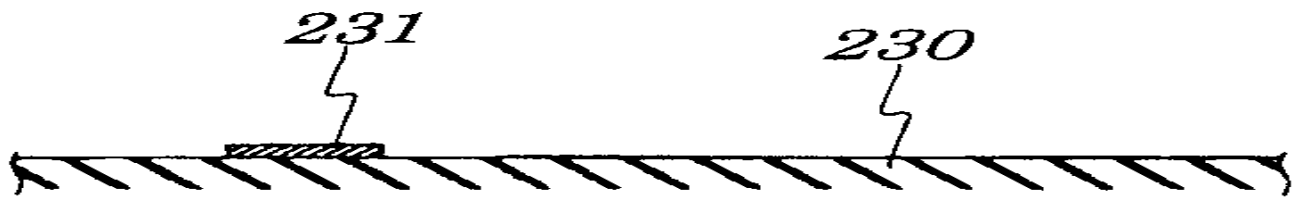
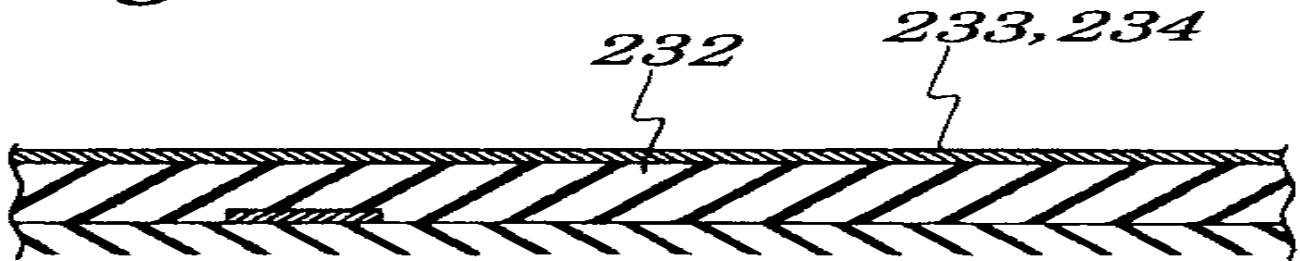
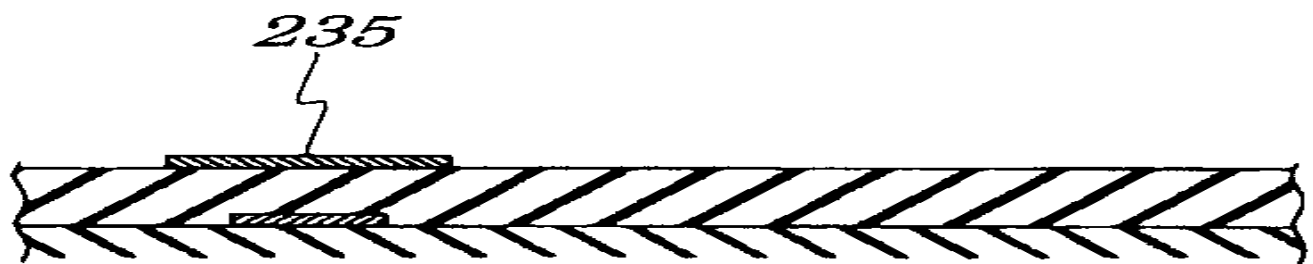
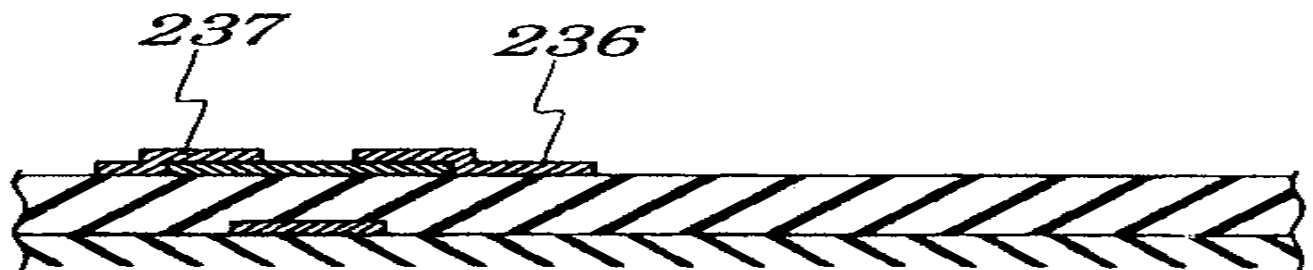
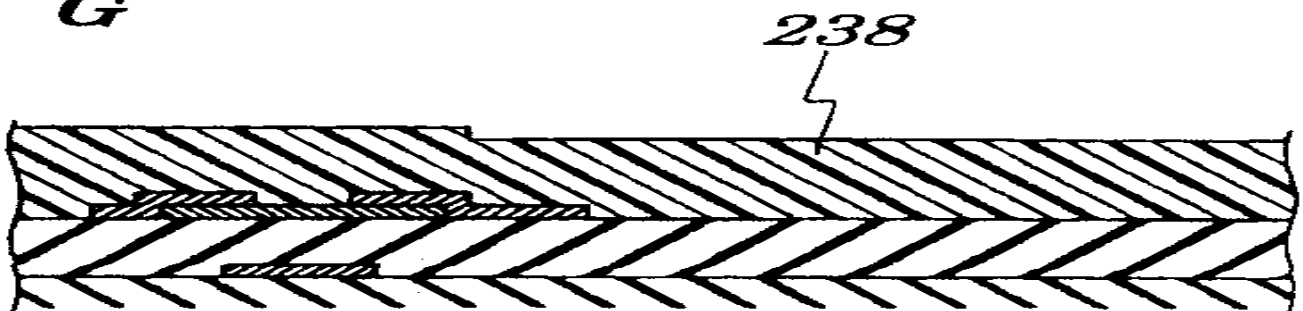
13

AB***C******D******EF******G***

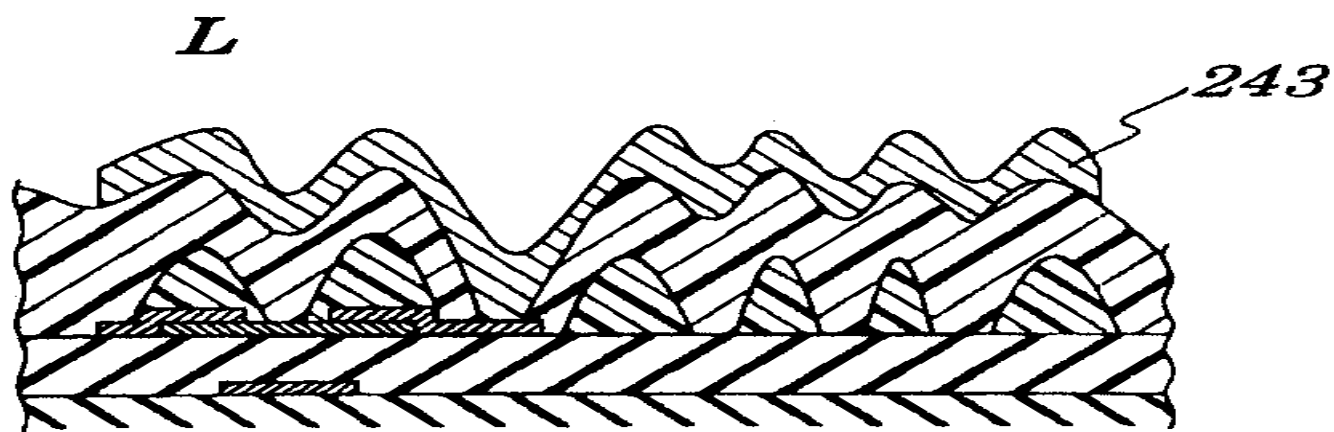
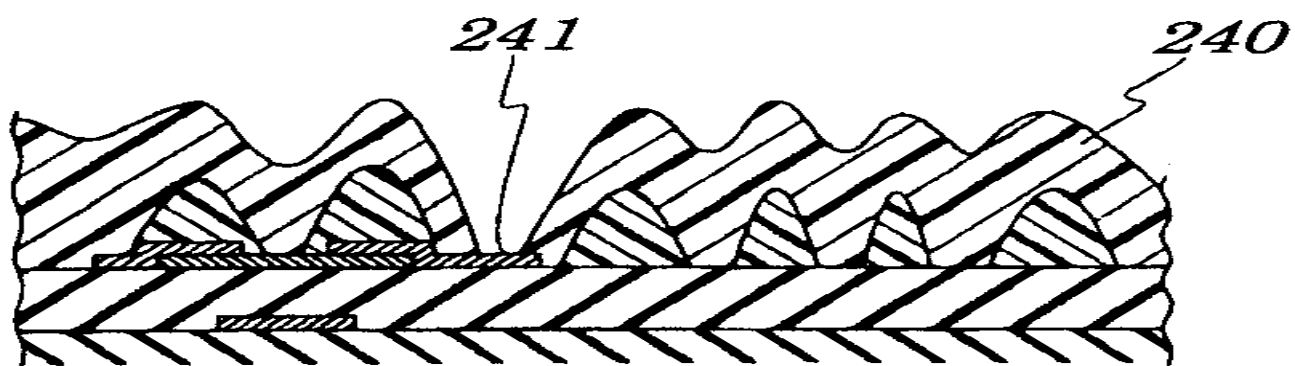
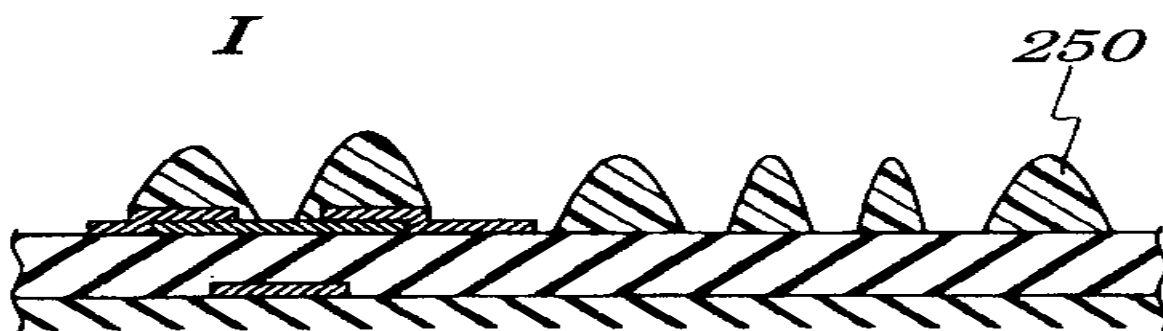
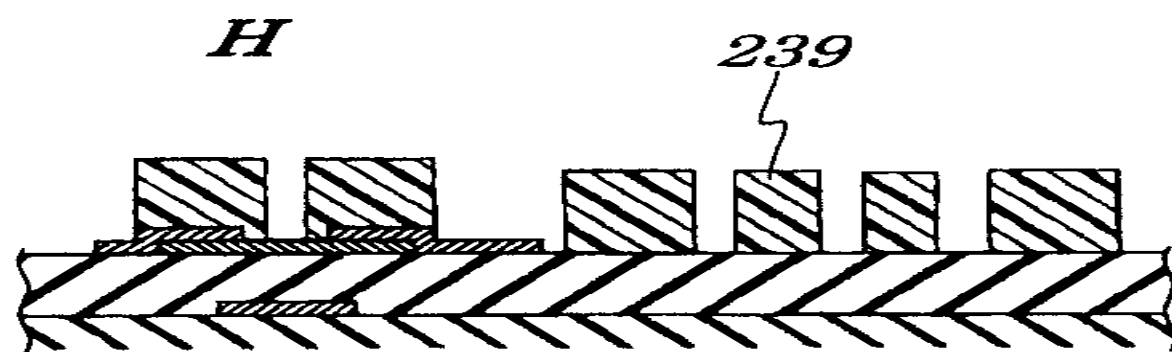
14

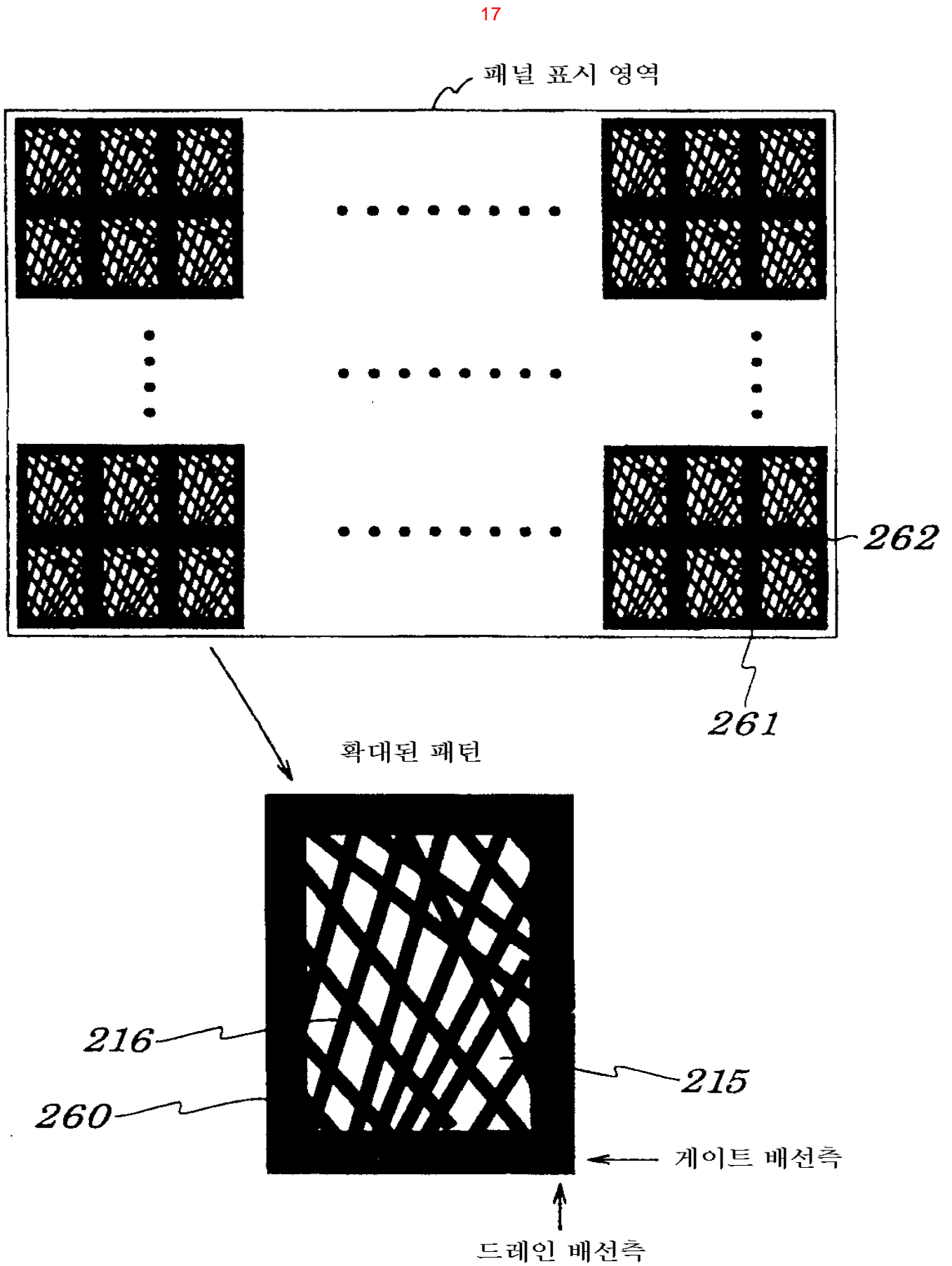
H*IJ**KL*

15

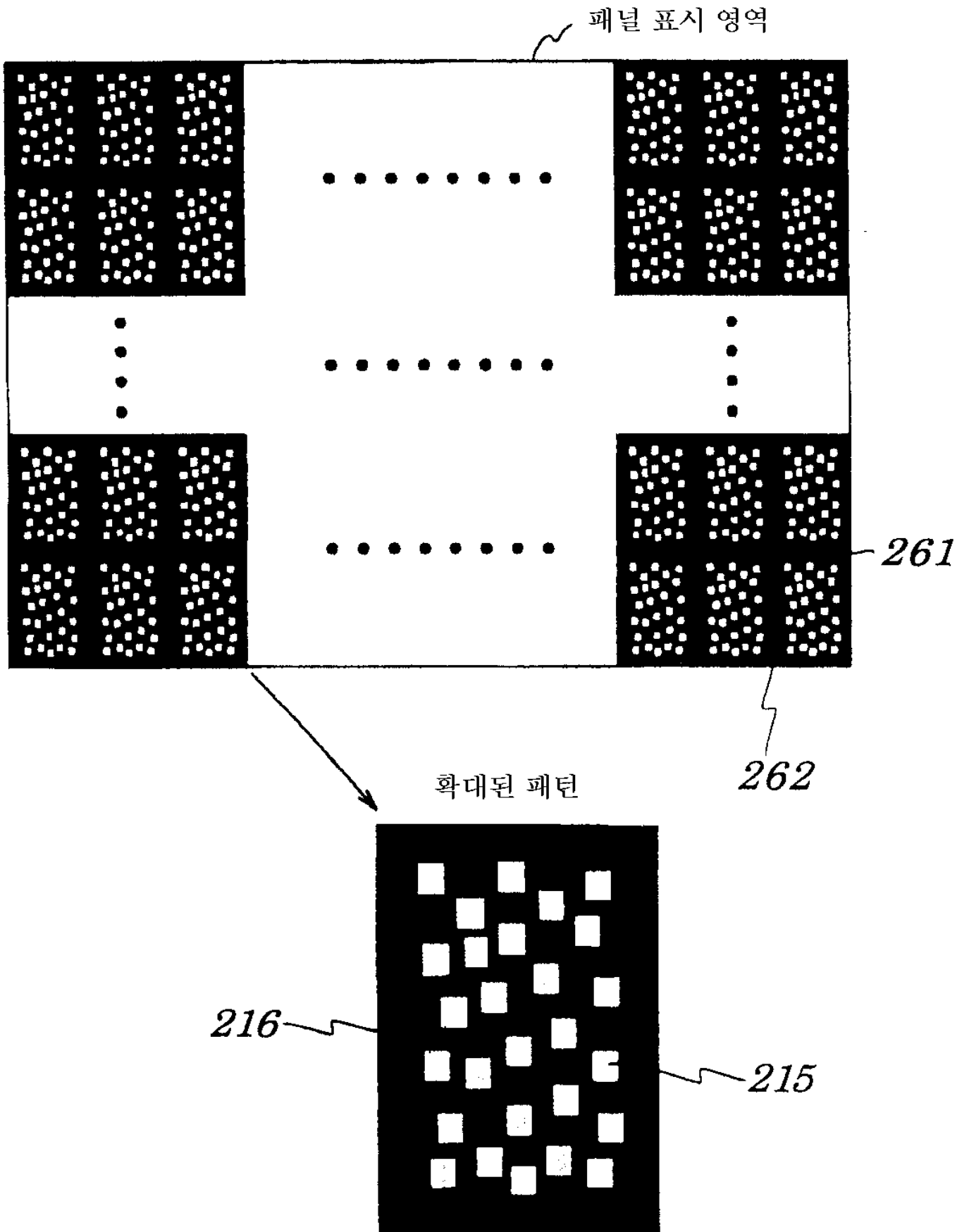
AB***C******D******EF******G***

16



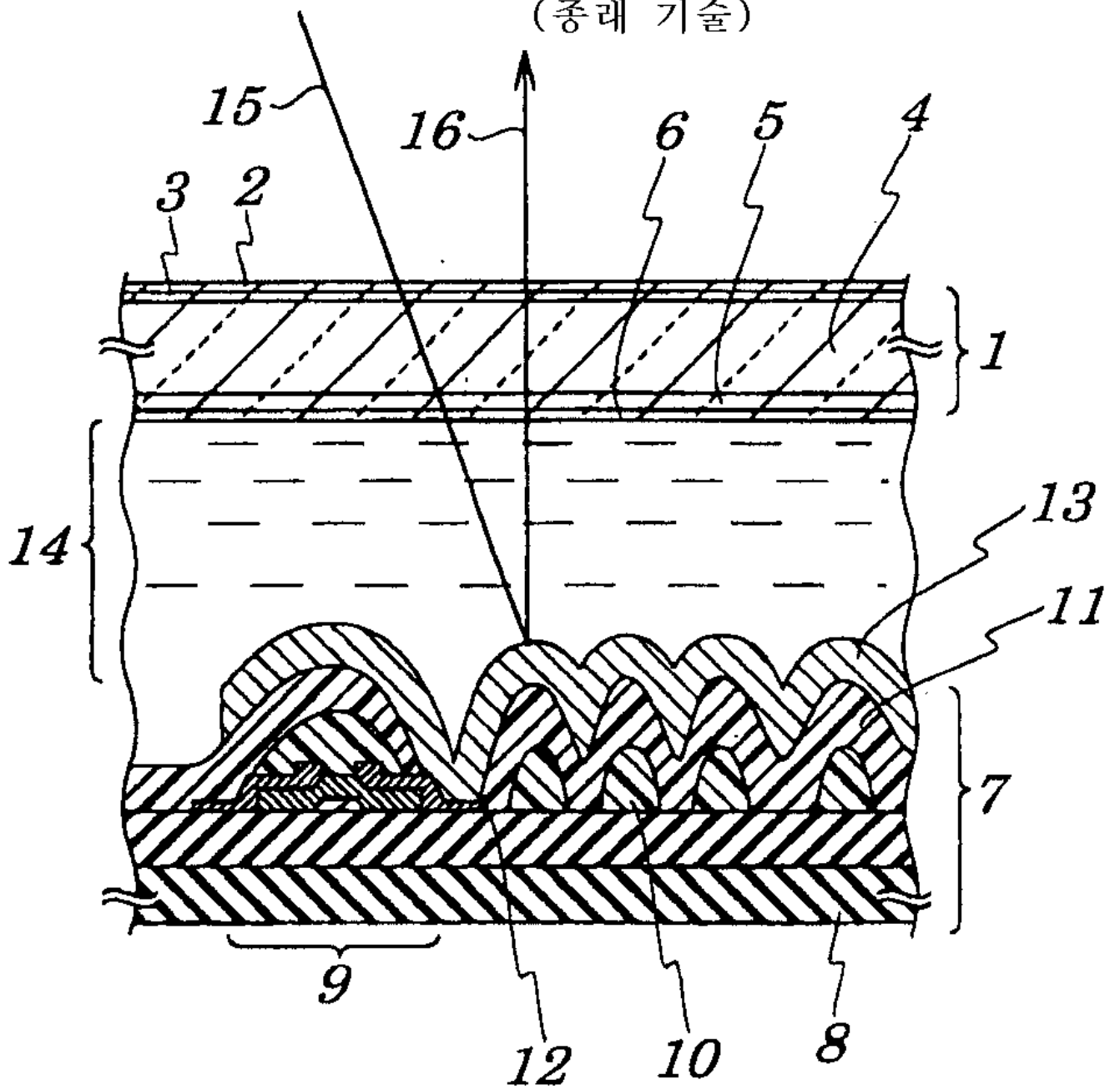


18



19

(종래 기술)

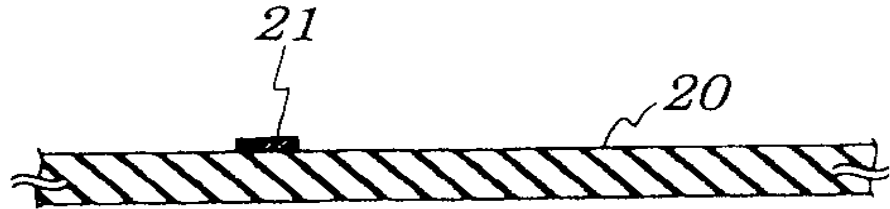
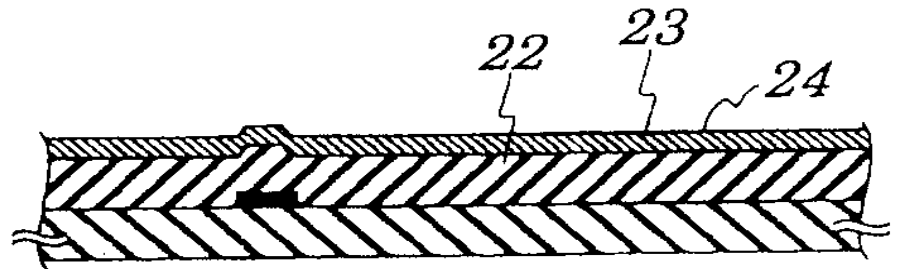


20

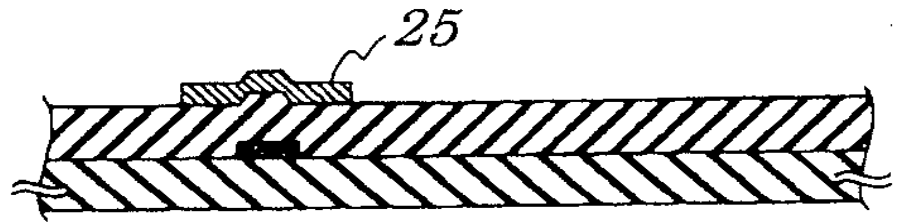
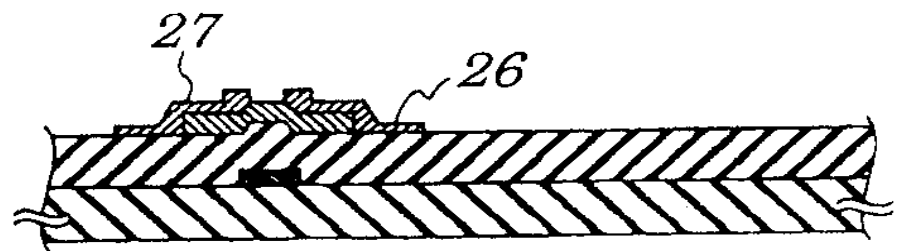
(종래 기술)

A

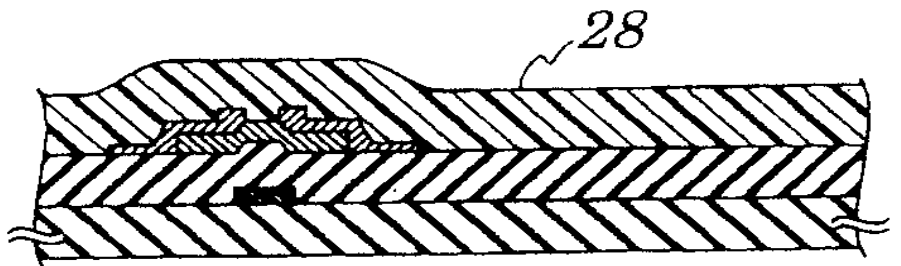
게이트 전극 형성

**B**절연막,
반도체막 형성**C**

반도체막 패턴 형성

**D**소스 전극,
드레인 전극 형성**E**

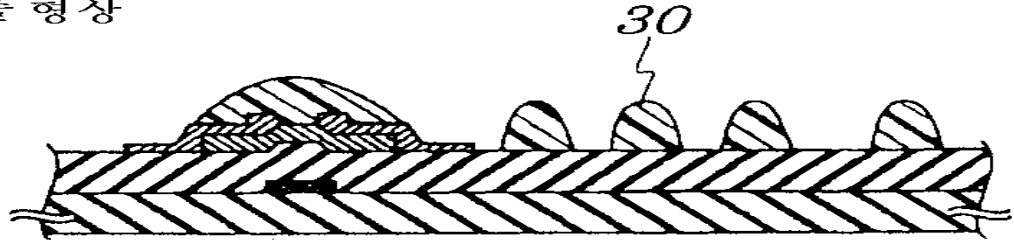
유기 절연층 형성



(종래 기술)

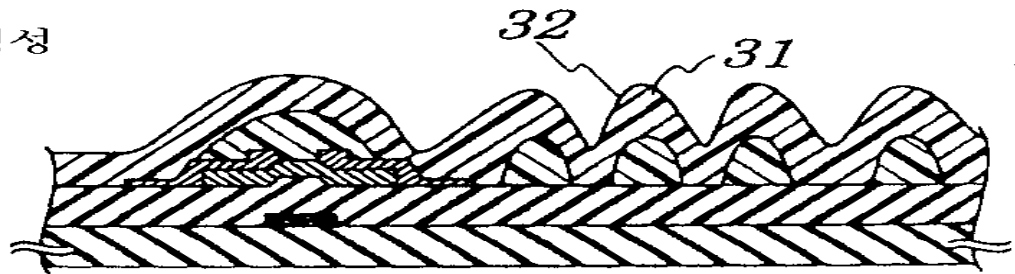
G

완만한 돌출 형상



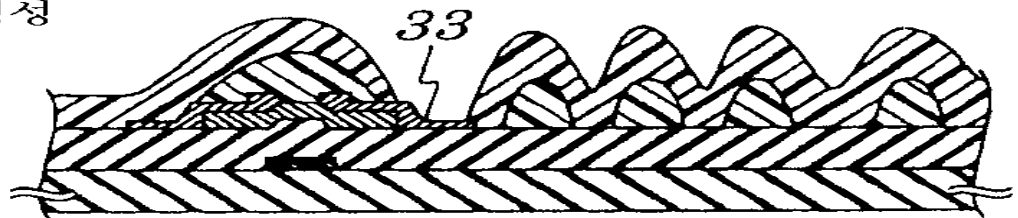
H

절연막 형성



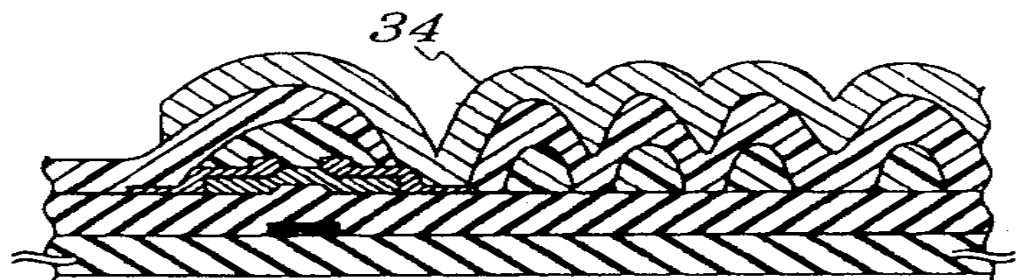
I

콘택트 영역 형성

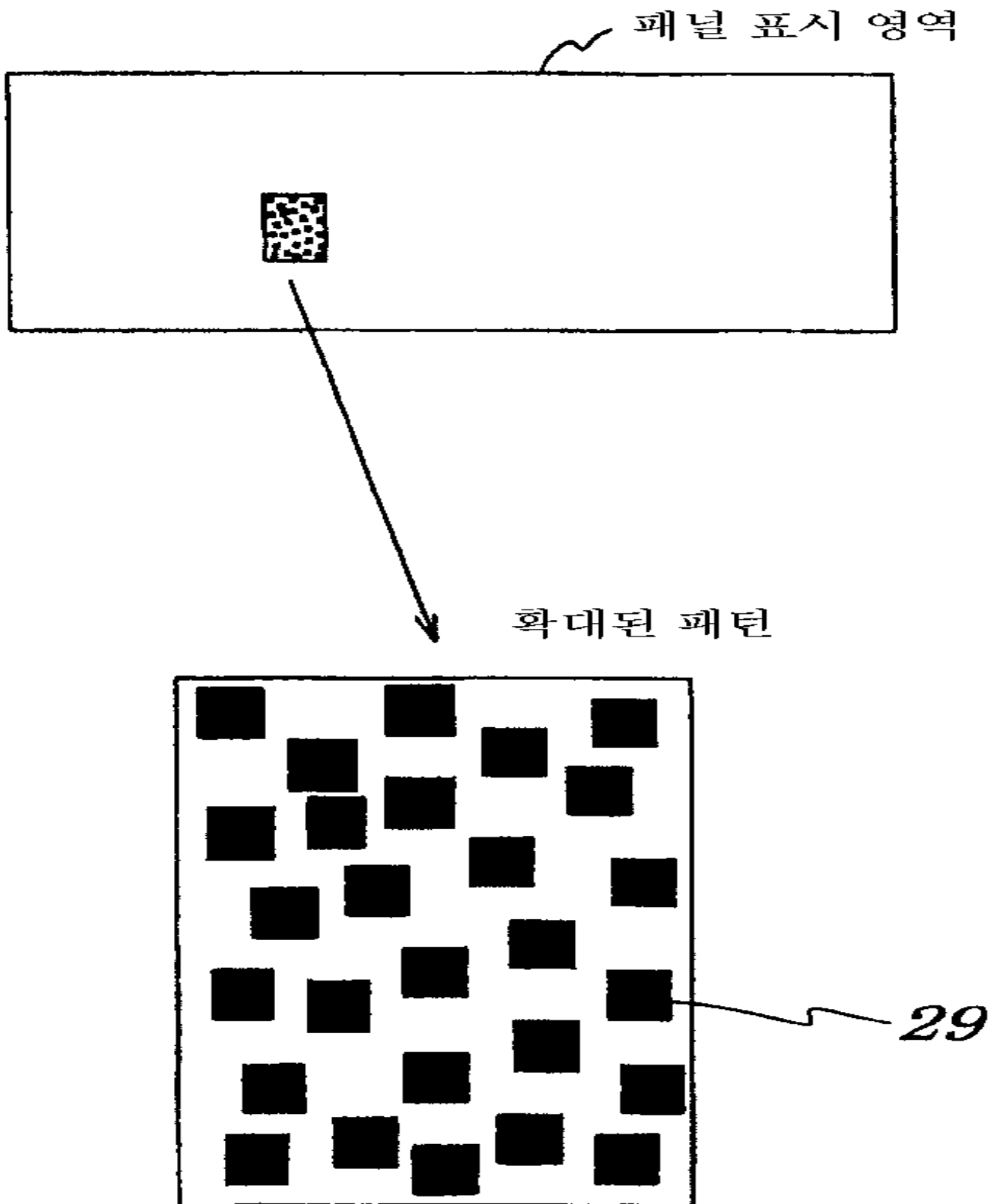


J

반사 픽셀 전극판
형성



(종래 기술)



专利名称(译)	反射型液晶显示装置及其制造方法		
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申请(专利权)人(译)	日元号技术可否让这个夏 日本电气有限公司sikki		
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发明人	가노우히로시 야마구찌유이찌 스즈끼테루아끼 기까와히로노리		
IPC分类号	G02F1/13 G02F1/1368 G09F G09F9/00 G02F1/1335 G02F G02F1/136		
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摘要(译)

根据本发明的反射型液晶显示器包括：透明电极，配备在2个玻璃基板上；以及一个玻璃基板，其中形成有凹凸结构的绝缘层，绝缘层的表面配备在另一个上。玻璃基板和配备在该绝缘层上的反射电极和配备在透明电极侧和反射电极侧面水果之间的液晶层。绝缘层包括第一绝缘层，其中由突出部分围绕并且分开的多个凹陷不规则地布置，并且第二绝缘层整体涂覆该绝缘层。突出部分一起连接到网上。因此，部分具有这些突出部分中的子层和弱粘合性。然而，相邻突出部分可以支持内聚性。反射型液晶显示器，凹凸结构，透明电极，反射电极，绝缘层。

