

(19)  
(12)

(KR)  
(B1)

(51) 。 Int. Cl. <sup>6</sup>  
H01L 21/76

(45)  
(11)  
(24)

2001 11 28  
10 - 0315452  
2001 11 09

(21) 10 - 1999 - 0010297  
(22) 1999 03 25

(65) 2000 - 0061337  
(43) 2000 10 16

(73)

154 - 17

(72)

2 437 - 3

202

(74)

( )

:

(54)

2d

1a      1d  
 2a      2f      1  
 3a      3f      2

LOCOS(local oxidation of silicon)  
 LOCOS 가 ,  
 , LOCOS 가  
 (bird's beak)가  
 LOCOS (STI ; shallow trench isolation)가 .

1a      1d  
 1a (CVD ; chemical vapor deposition) (1) (2) , (3)  
 (3) (4)  
 1b (1) (3) (2)  
 (1) (5) (liner) (5)  
 (5) (glue layer) (damage)

1c , (1) (6) 가 , (6)  
 , (annealing) (6) 가 , (6)  
 , (7) (6) (3) (7)  
 1d , (1) , (CMP ;  
 chemical mechanical polishing) (6) , (6)  
 (buffer layer) (11)

(stress) 가

가

2a 2f 1

2a (12) , (11) (12) , (11)  
 (12) , (11)

2b , (11) , (11)  
 (13)

2c (14) (13) (dielectric constant)  
 (14) (14) (15)

(16)

2d (16) (15)

2e (15) (11) (14)

2f (14)

3a 3f 2

3a (22) (21) (22) (21)

3b (21) (23) (21)

3c (24) (23) (24) (25) (26)

3d (26) (25)

3e (24) (IN - SITU) (26)

(25) 3f , (25)

(24)

6 , 2 3  
1 6  
25000  
가

8 (inch) 150  
(batch type)  
6  
208

(57)

1.

;

;

;

;

;

2.

1 , -

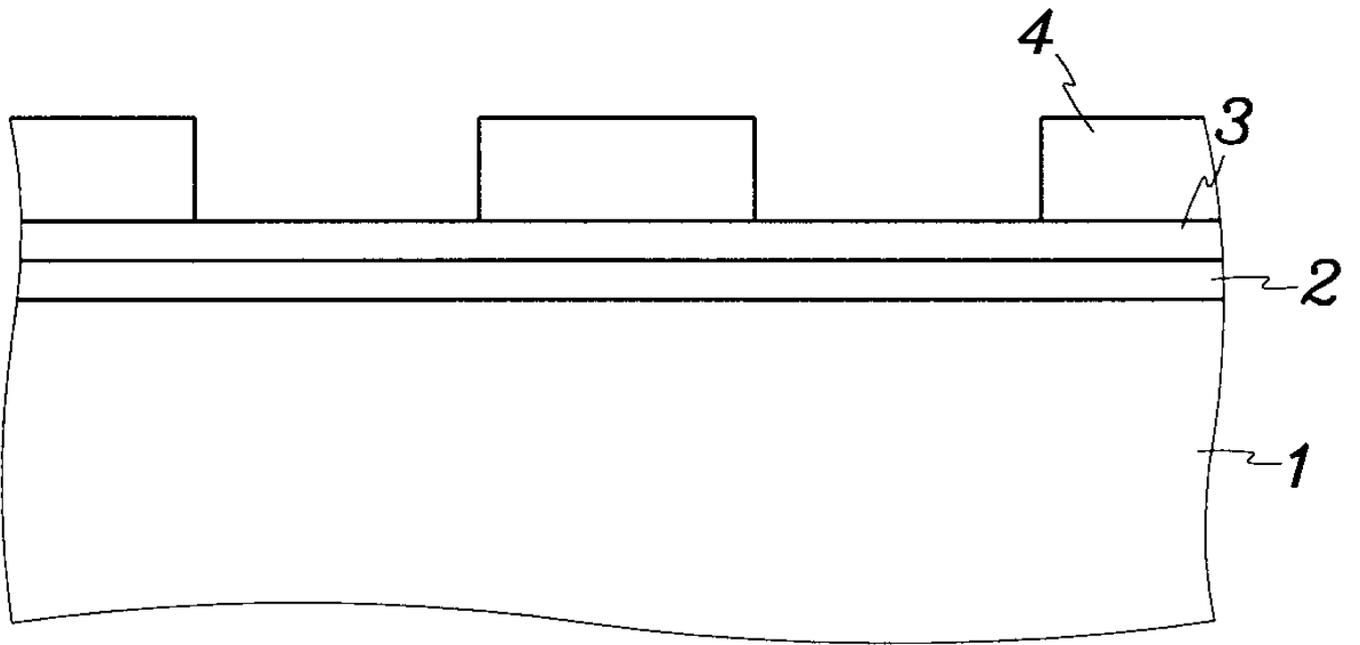
3.

1 2 ,

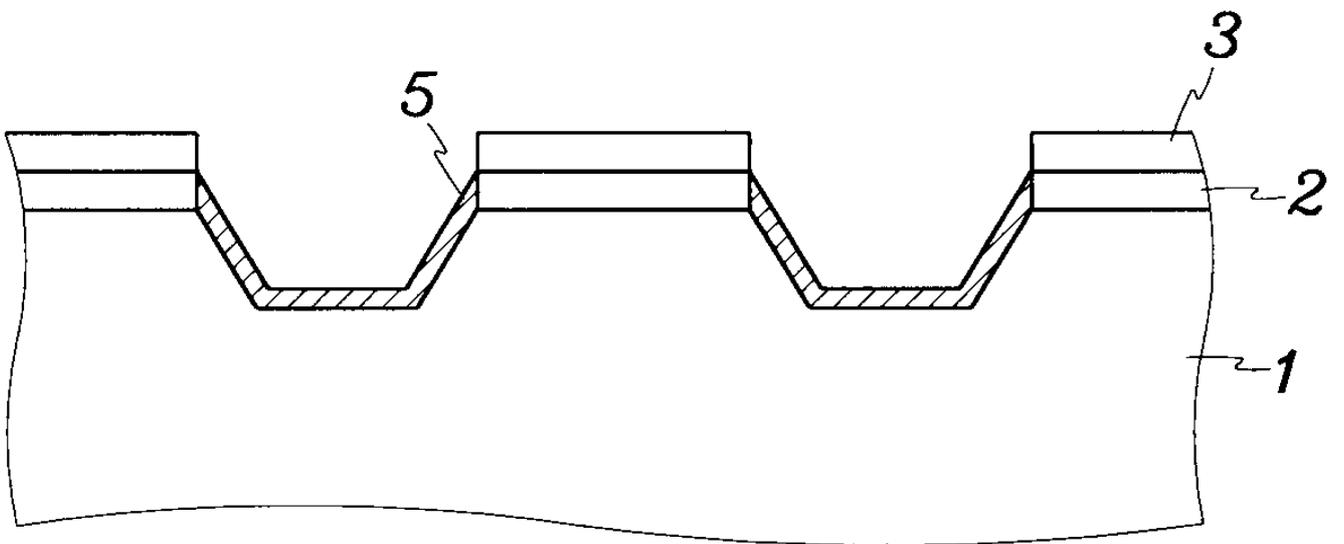
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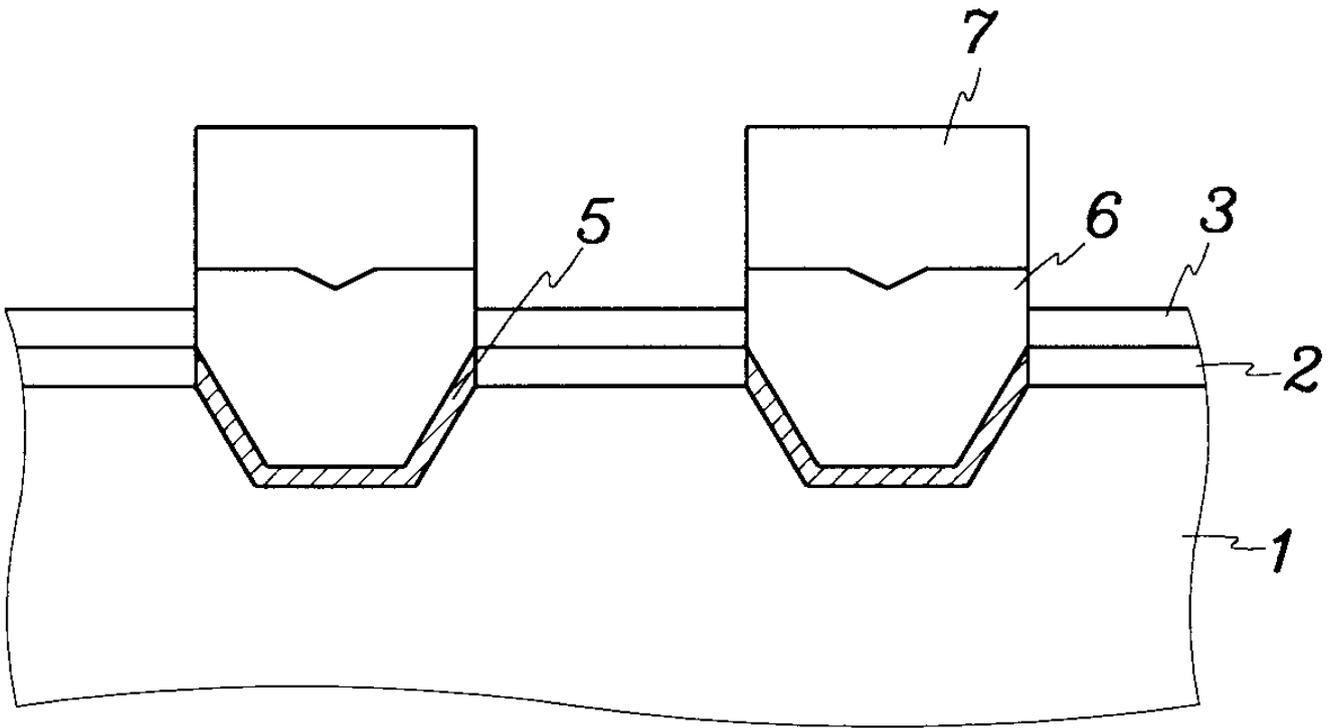
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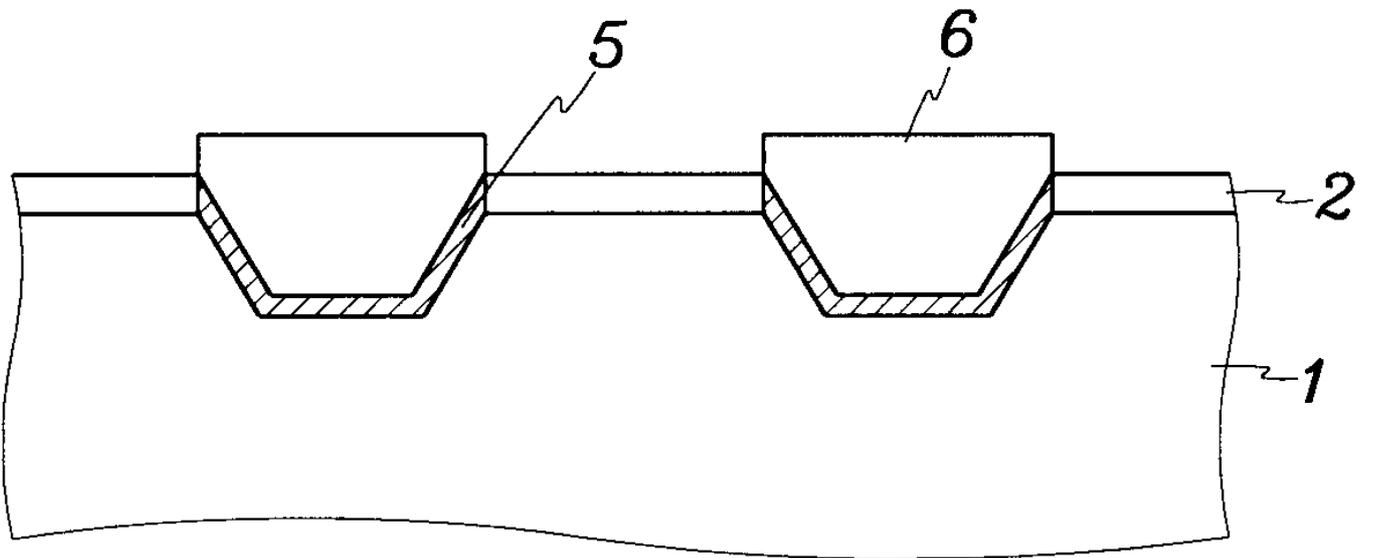
1b



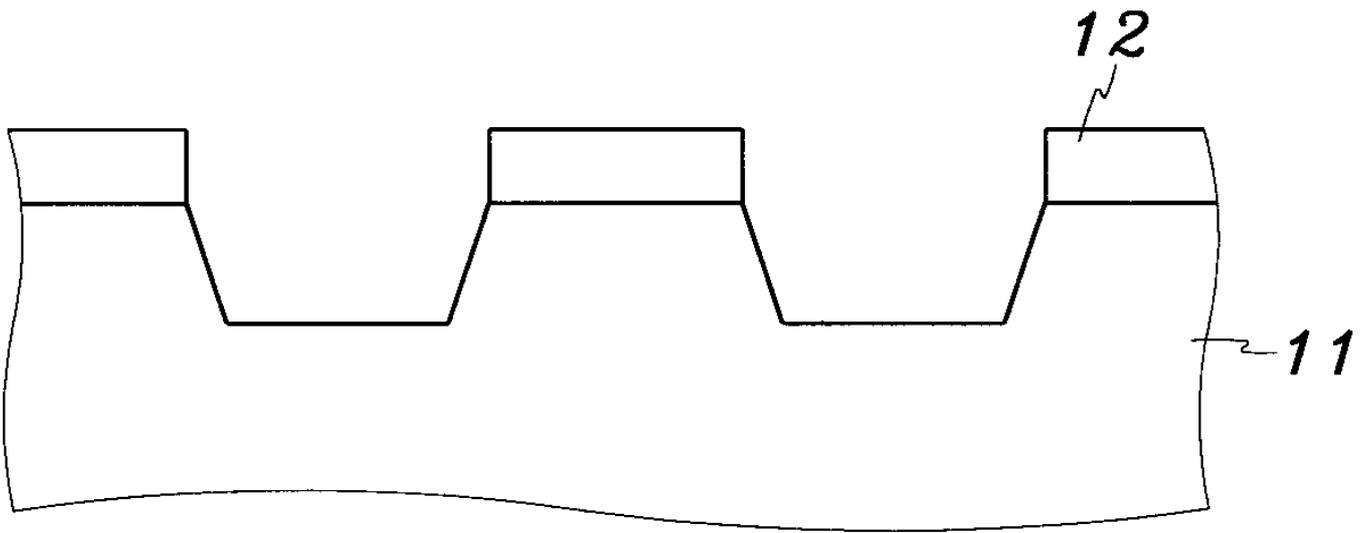
1c



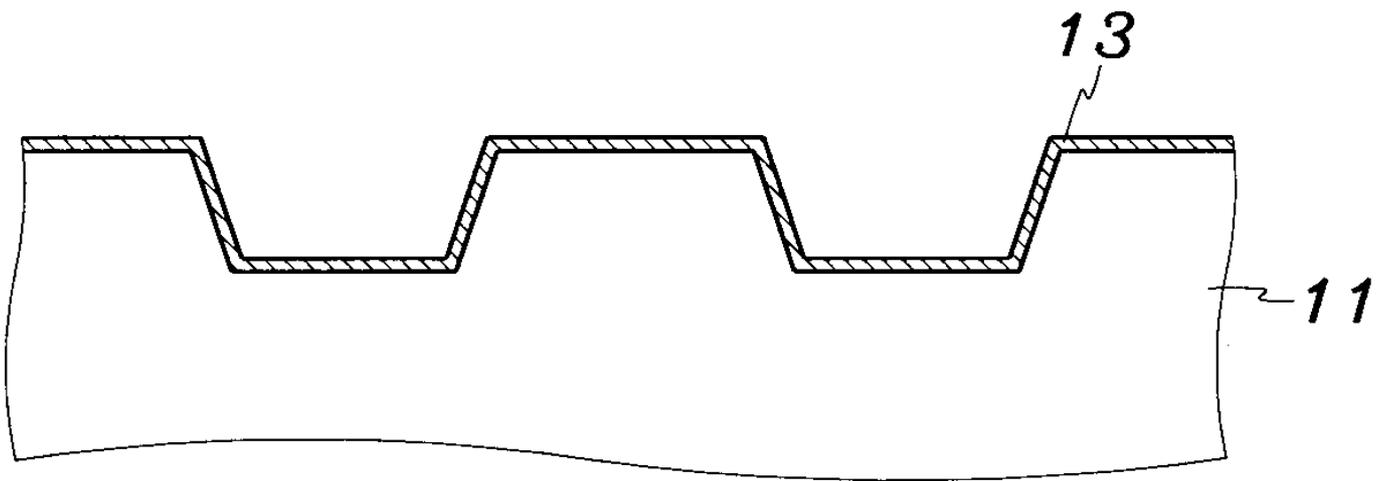
1d



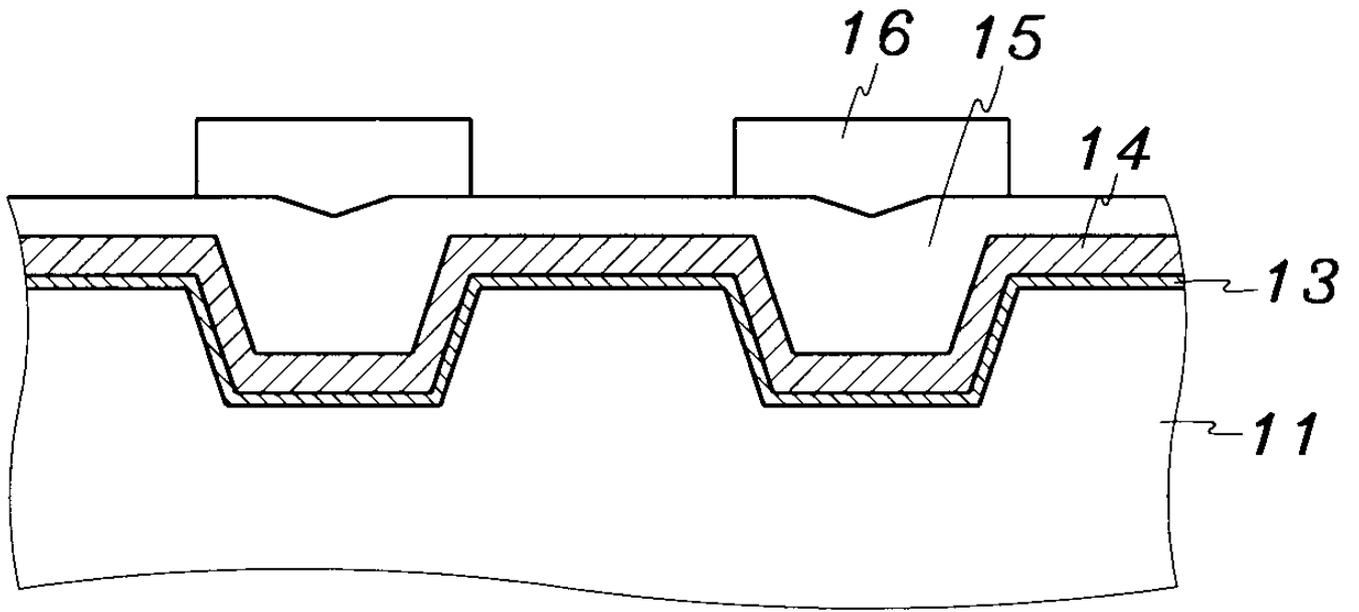
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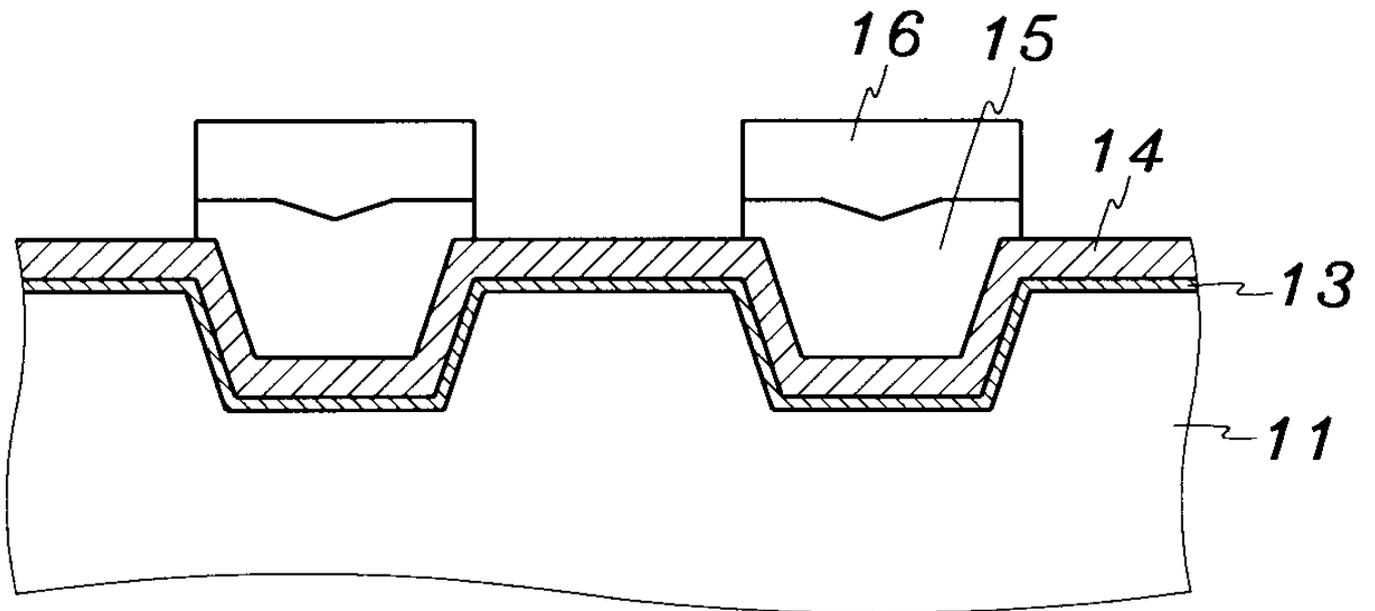
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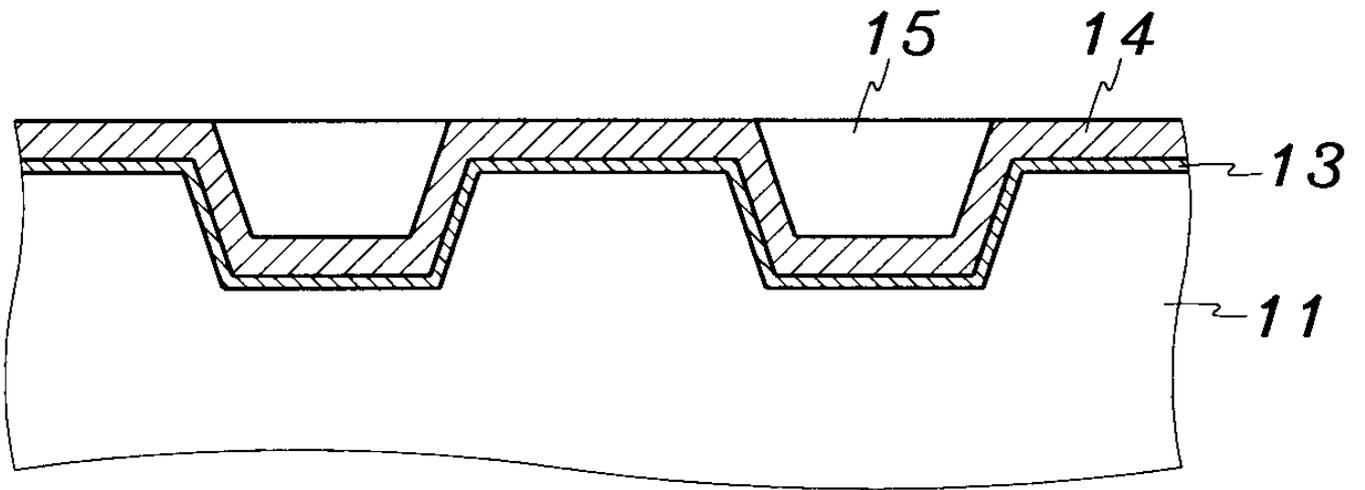
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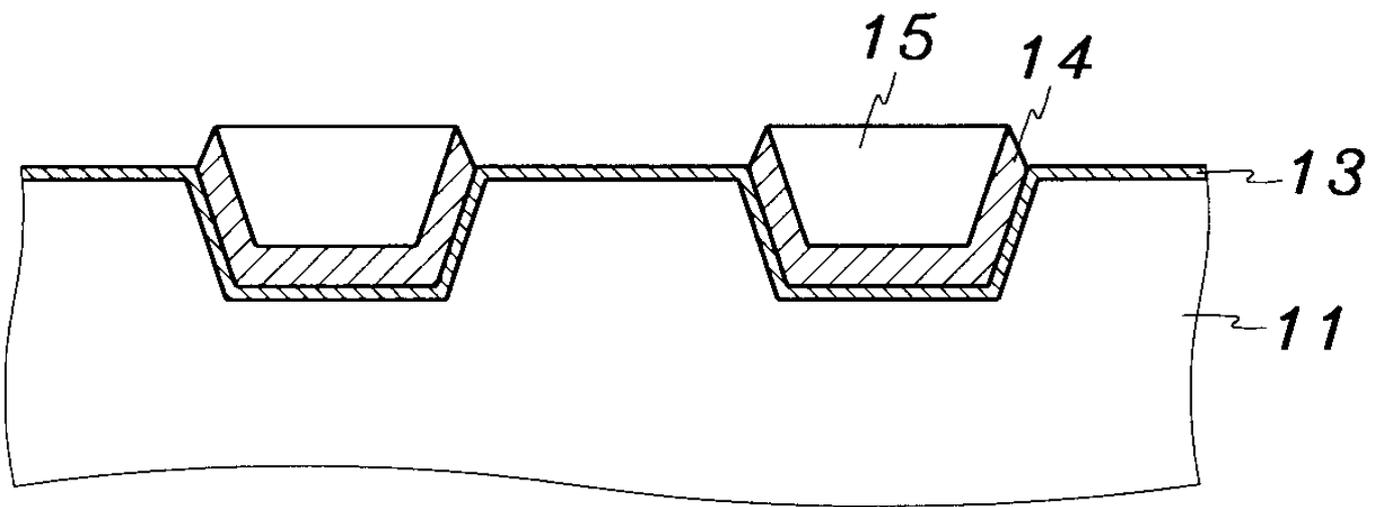
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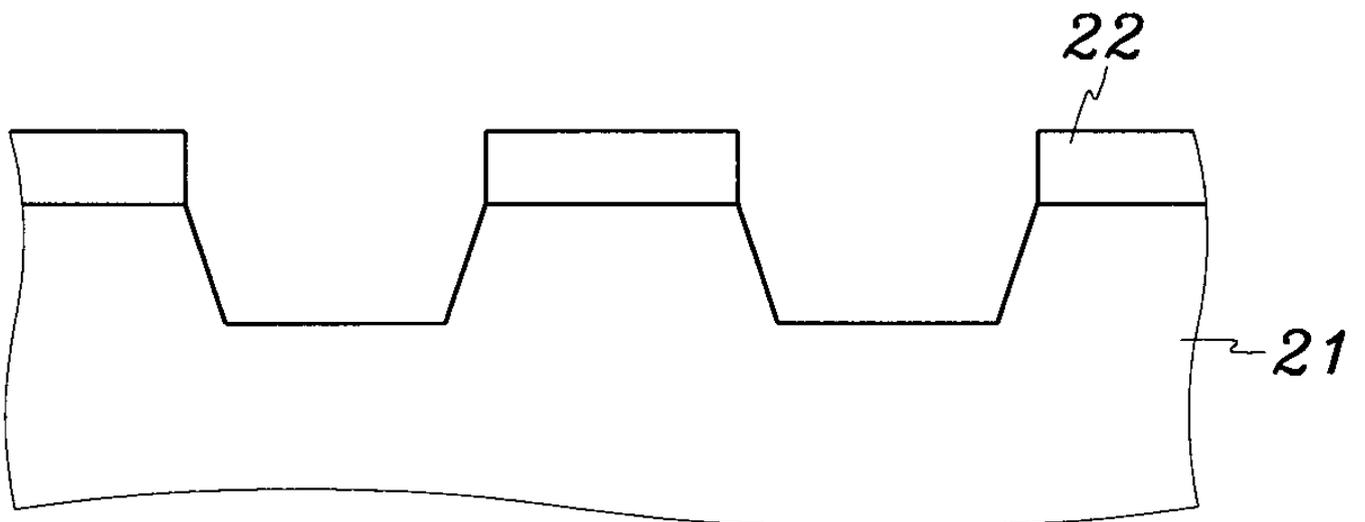
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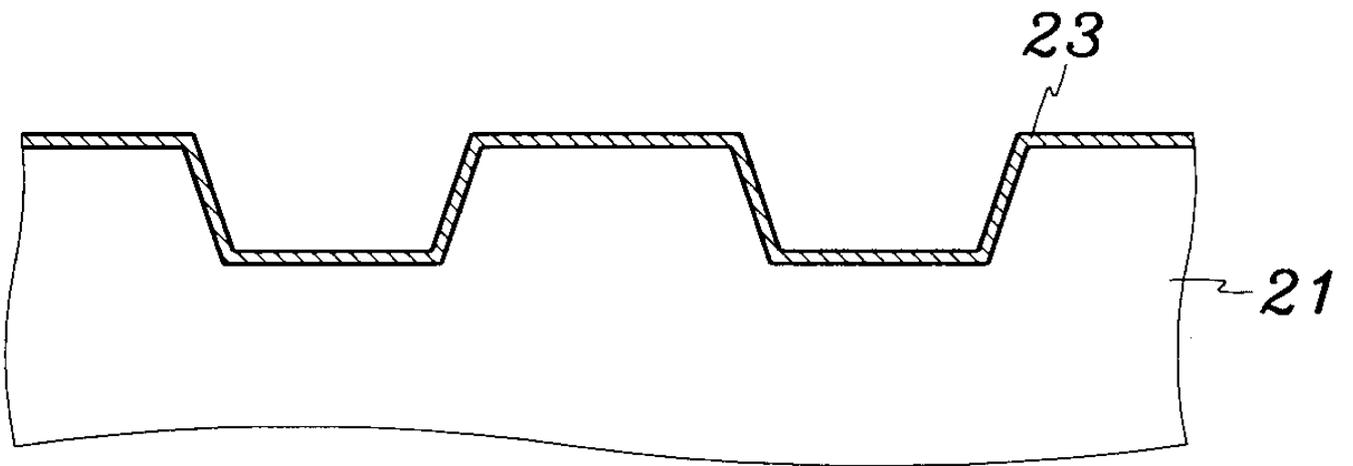
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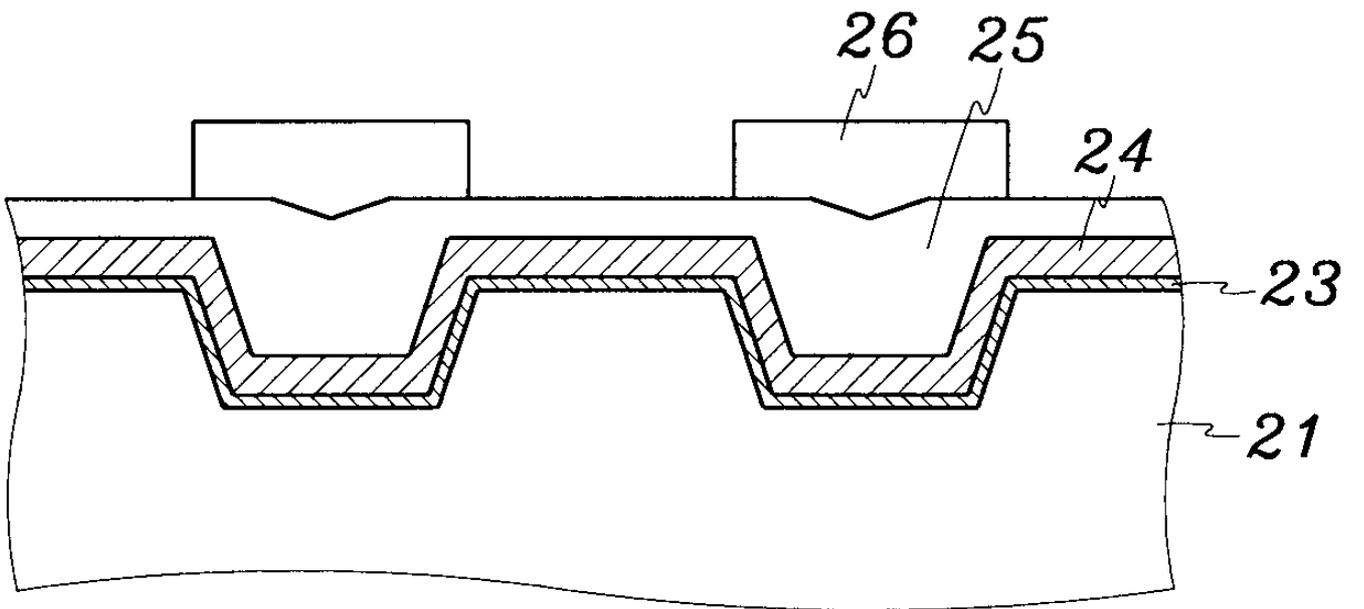
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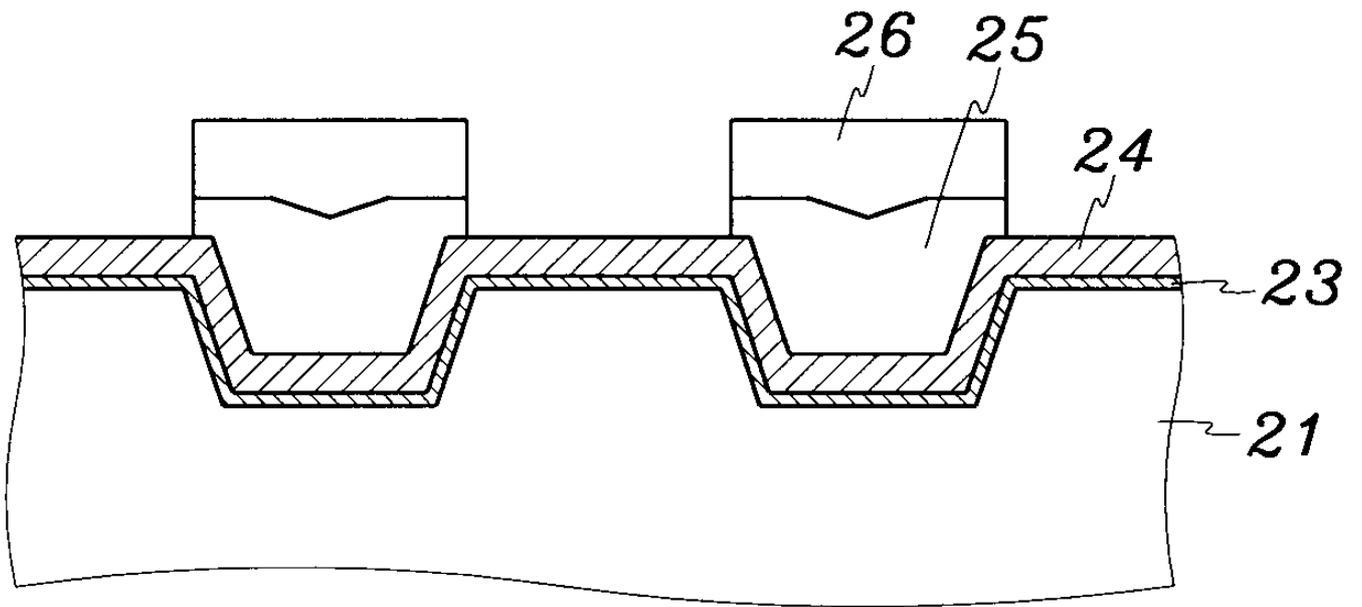
3b



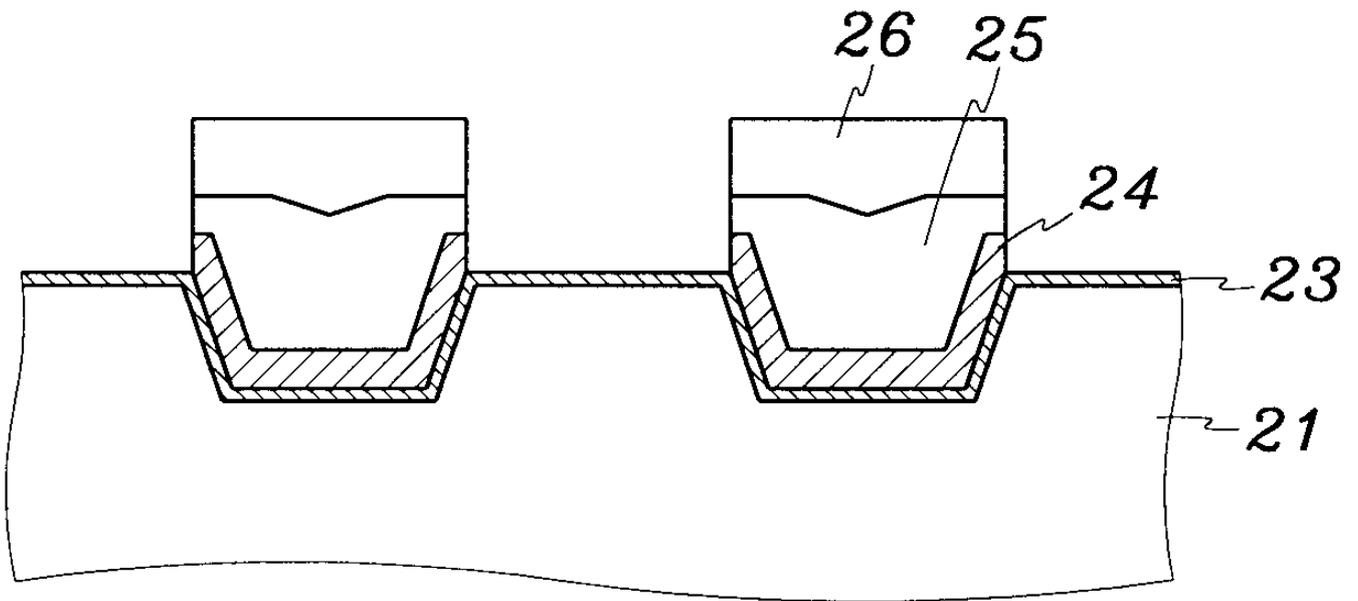
3c



3d



3e



3f

