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2003 04 28

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2001 07 06

(30) 1999-355645 1999 12 15 (JP)

(73) 가 가 2 2 3

(72) 가 2 2-3 가 가

(74)

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(54)

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(13)

(13a) CMP

(10)

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(9)

(11b)

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(11a)

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 9a :
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 11a :
 11b :
 12 :
 13 :
 13a, 13d :
 13b, 13e : ()
 14 :
 15 :
 16 :

, , ,
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 , CMP
 9 , 가
 1a (1) [(1) (2)]
 10 9 (1a)] 9 A9-A9
 (2) (2) 10 (b) 9 B9-B9
 (1a) (3) (underlayer) (4), (5)
 (2) (5) (5)
 (3) (6) (6) (7) (7) ()
 6) (7) , CMP (7a) (5) (4)
 , CMP (5) (5) (7) 가 (5)
 , 10 (a) (dishing) (2) [(7a)] 가 가
 (sink)
 , 10 (b) (2) [(7a)] 가 (1a) (ov
 erpolishing) 11 (7a) (1a) (5) (7a) 가

) 12 CMP 13 (8 : (8b) (2)) 12 9 (8a) , 13 (2)
 CMP 가 (7) 14 (7) (8a) (8a) (5) (5)
 (4) (7) 가 (underpolishing) (7) (8a) (5)
 , 13 (1a) (8b) (8b) , B13-B13 (1) 10 (b)
 가 (5) (7a) 가 (11) . (1a) (7a)

CMP

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1.
 1 (b) 1 B1-B1 [(9)] (10) (9a) 11 9a
 (10) 1b (9) 12 (10) 11a 13 (11; 11a, 11)
 b) (11) (9) 가 (9) , 18μm (square) ()
 11b) (11b) 20μm (9) (11b) (11a) 5μm

2 (b) 3, 4 . 3 2 (a) , 4
 , 10 . cm p (12)
 (14) , 10nm (15) 0.1μm (15)
 (9) (11) (9, 11) (15) (15)
) (16) HDP() (16) (13a) , 0.4
 μm (17) (13a) (9, 11) (13a) (9, 11) ,
 1.5μm (undersizing) (3 (a), 4 (a)).
 , (17) (13a) (15)
 , (9, 11), , (11b) (9)
 (13a) 가 (13b) HDP (13c) HDP (13
 (9a) (9a) (9a) (13)
 , DRAM 가 (3 (b), 4 (b)). (13a) (16)
 c) CMP (13) (15) (13a) (16)
 (15), (14) (3 (c), 4 (c)). 2 (a), 2
 (b) 가 (9) (11b) (11b)
 , (9) (11b) (11a)
 , CMP (13a) , (13) 가 , (dishing)
 , (9a) (13) (11a)
 , (9a) (15)
 , (13a) (9a) (15) (11a)
 , (13) (9a) 1 10 가 , CMP (9a)
 MP , (11b) (11a) , (11a) , C
 (11b) (9) (13a) (13a) CMP
 () ,
 , (11) (9, 11) (13a) , CMP
 5 8 (12) (13a) CMP 가 ,
 , (11) (11a) (9) 1 100 , (11
 b) (9) (strap), 10 1000 , 가
 , (13a) 가 (17) 1.5μm (13a)
 , (13a) (15)
 , CMP
 2.
 , 1 1 2 TEOS
 , 5, 6
 5 2 (a) , 6 2 (b)
 , 1 가 (12) (14), (15) , ()
 9) (11) (9, 11) (12) (15) (15)
 (12) (16)

(16) TEOS (13d) (17a) (13d) (9, 11)
 (17a) DRAM (9a) (17a) (13d) (5 (a), 6 (a))
 (17a) (13d) (15) (11b), (9)
 (9a) (13d) 가 (15) (5 (b), 6 (b)).
 (13e)가 (9a) 1 가 , CMP (13d) (15) (5 (c), 6 (c)). (13d)
 (16) (14) (13) (5 (c), 6 (c)). 2 (a), 2
 (b) 가 1 가 (13d) CMP 가 (9, 11)
 , TEOS (13d) TEOS (13d) (9a) TEOS (9a) (13d)
 (9a) 가 (9a) , CMP ,
) (16) ,
3.
 7 , 3 , 8 (a) 7 A7-A7 , 8
 (b) 7 B7-B7 (9) (10) (11; 11a, 11)
 b) (11) (9) (11a) (11a) (11b)
 , 3 μ m (11a) 5 μ m (11b) 20 μ m HDP (13a)
 , 18 μ m (11b) TEOS (13d) 2 1 가 (
 가 (3, 4), (11a) (13) (11b)
 5, 6) (9) (13) , (11b)
 , 1 2 가 CMP (13a, 13d) , 가
 , (dishing) (9a) (13) (9a) (11a)
 , (11b) (15) (11a) (11b)
 (9) (11a) (13a, 13d) CMP ()
 , 1 2 가 (13a,
 13d) CMP 가 ,
 , 1 3 (11) 2 , 3
 , 1 (9) 가 (11) , (9) 가
 (11) (11) (11) 3 (9) 가
 (9) (11) (11) ()
 13) , CMP (13a, 13d) , (
 가
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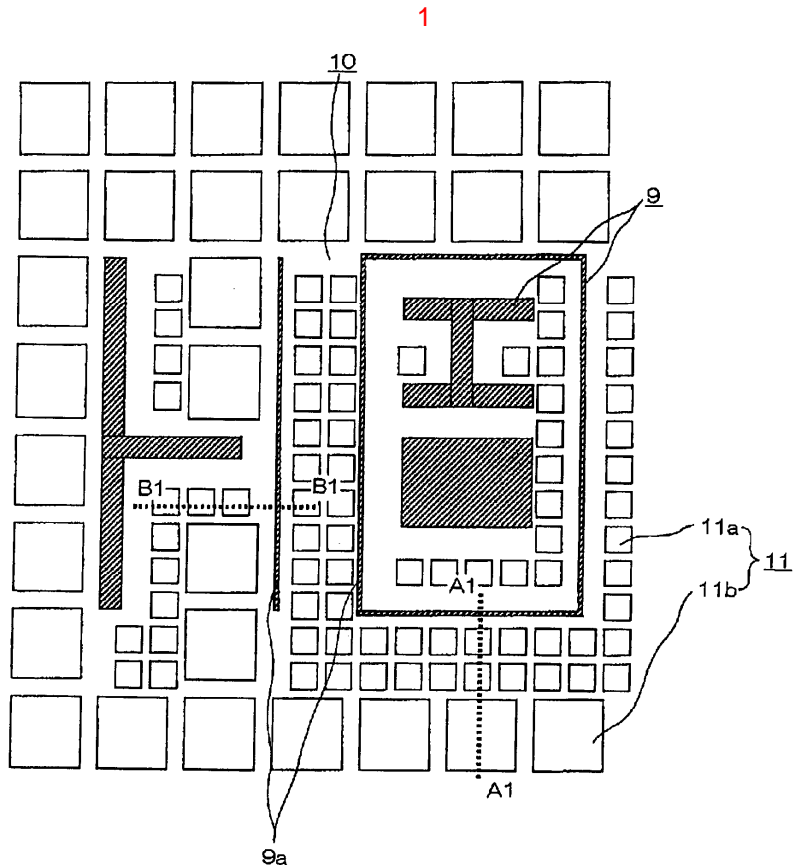
2

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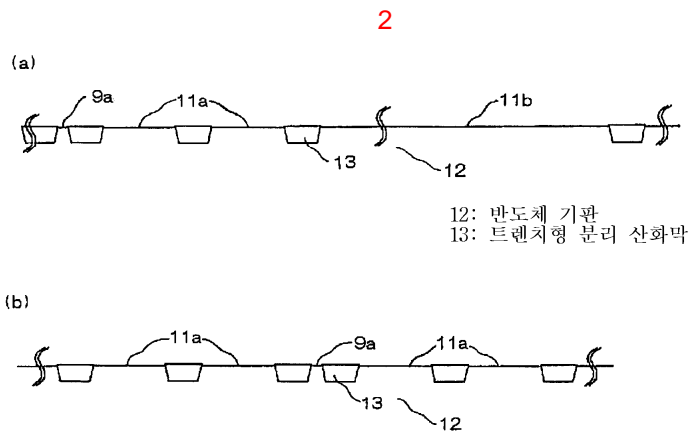
3

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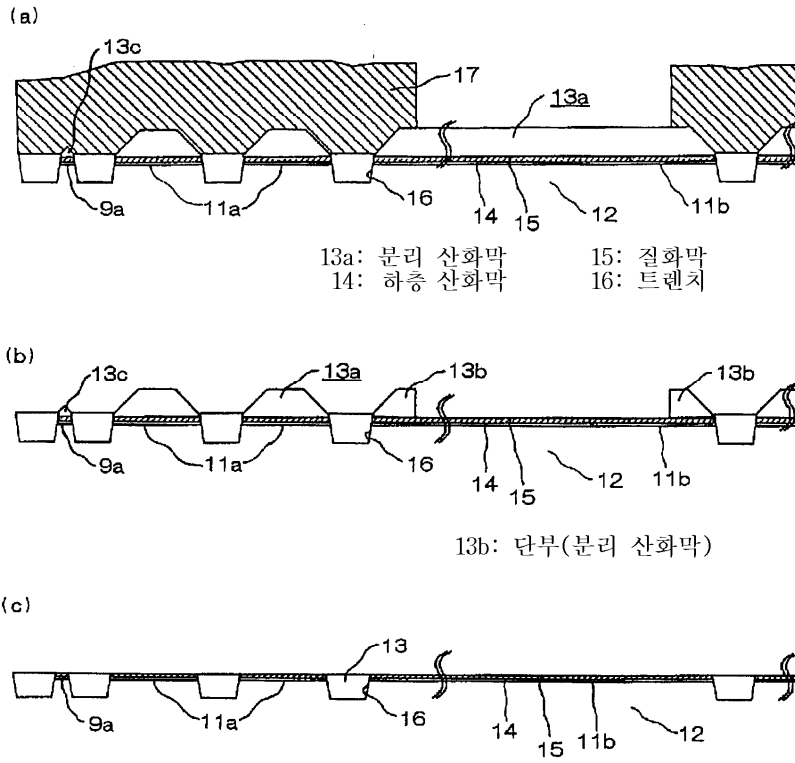
CMP



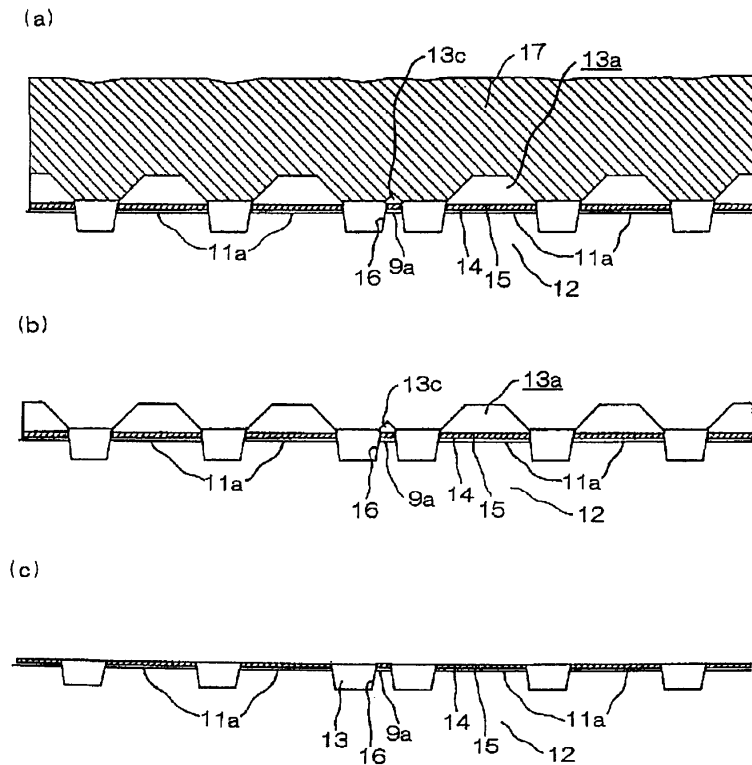
- 9: 전기적 액티브 디바이스 영역(실제 패턴)
- 9a: 미세 실제 패턴
- 10: 분리 영역
- 11: 더미 패턴
- 11a: 작은 더미 패턴
- 11b: 큰 더미 패턴



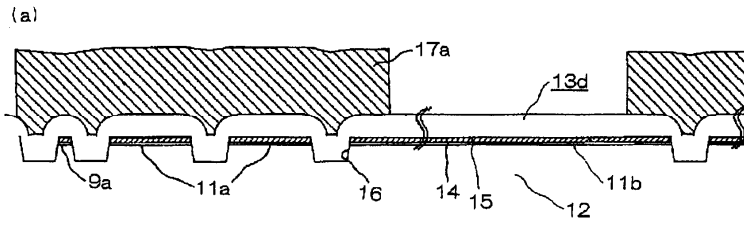
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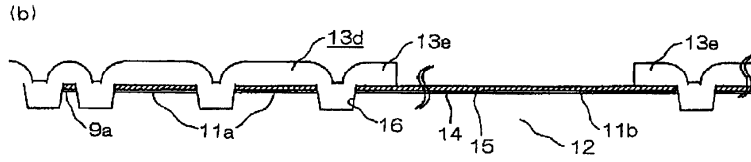
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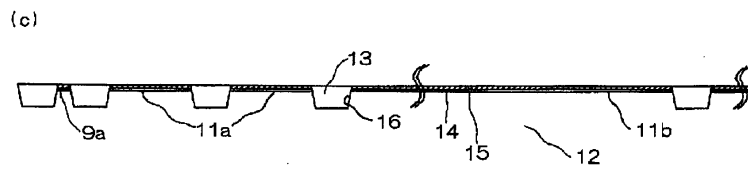
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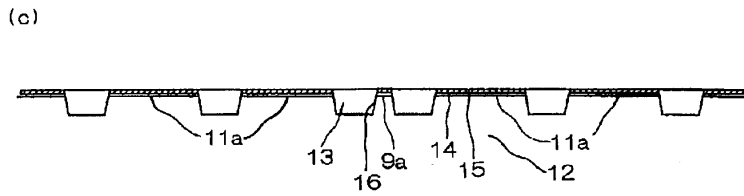
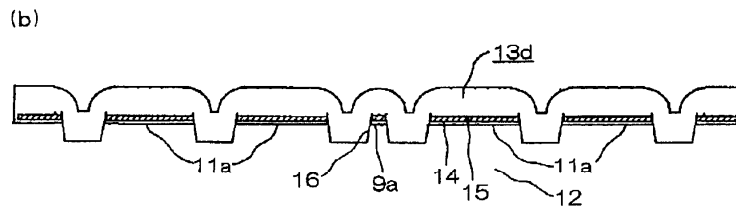
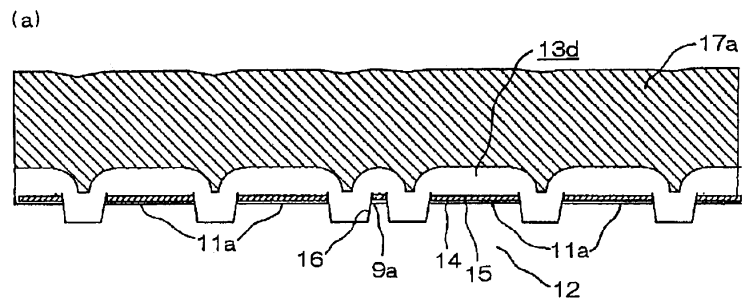
13d: 분리 산화막



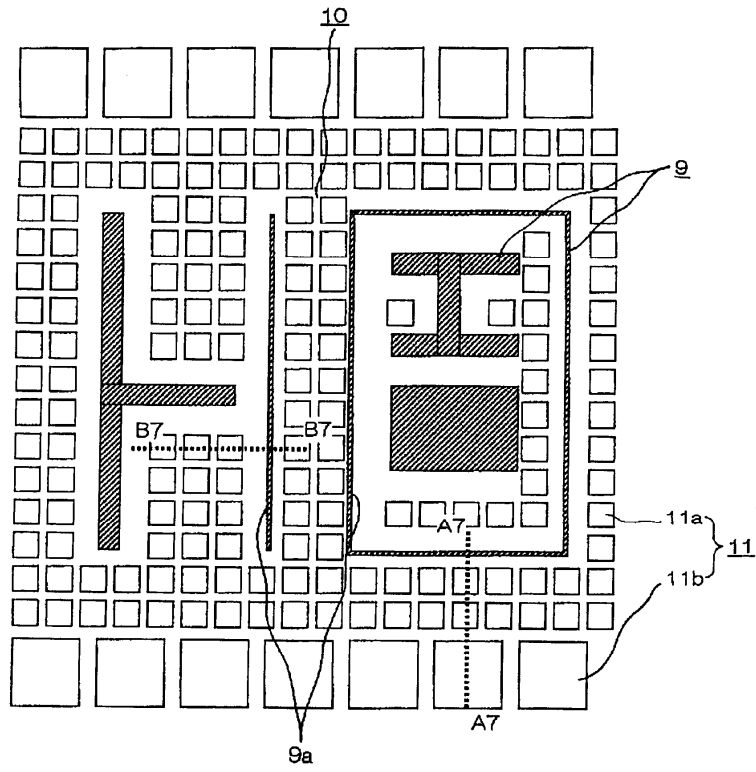
13e: 단부(분리 산화막)



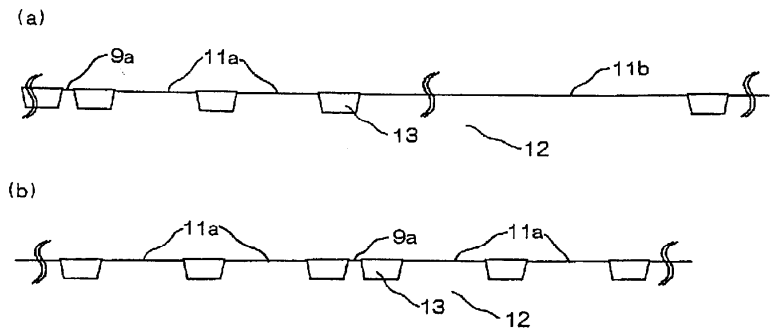
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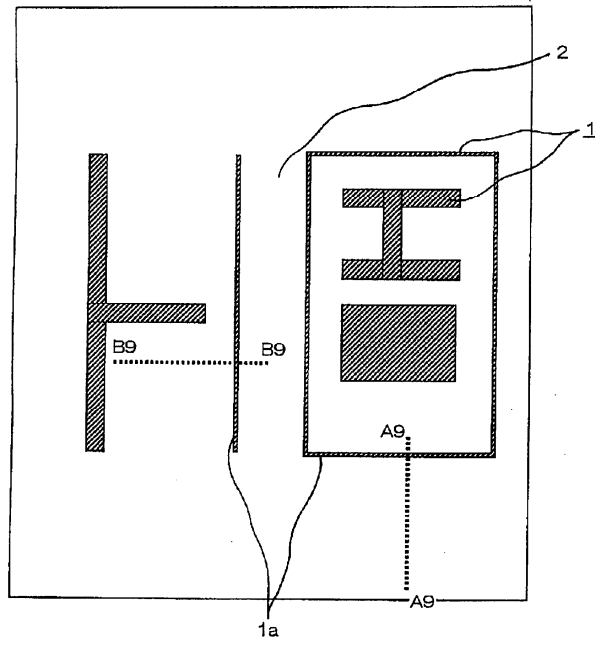
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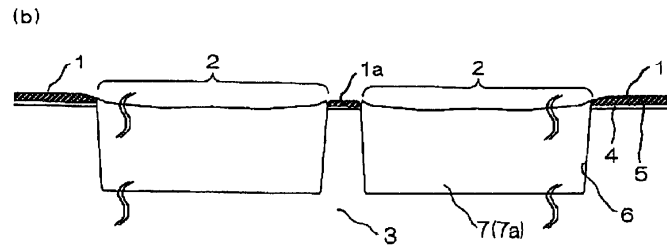
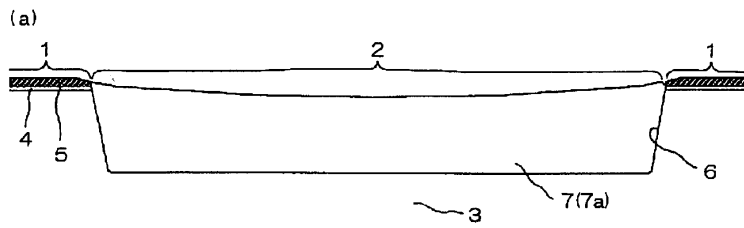
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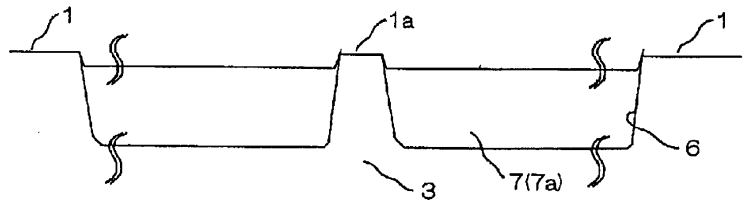
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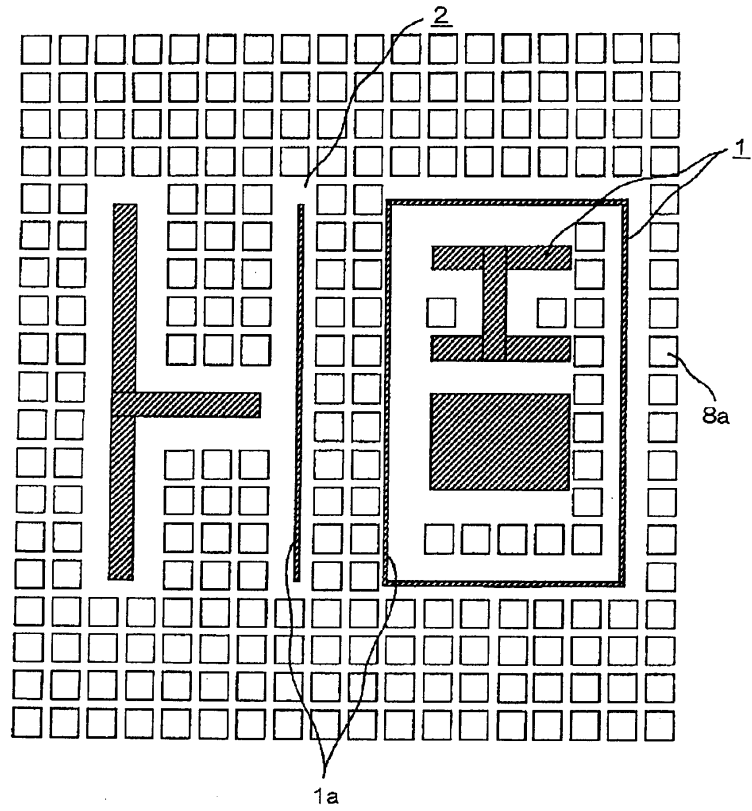
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