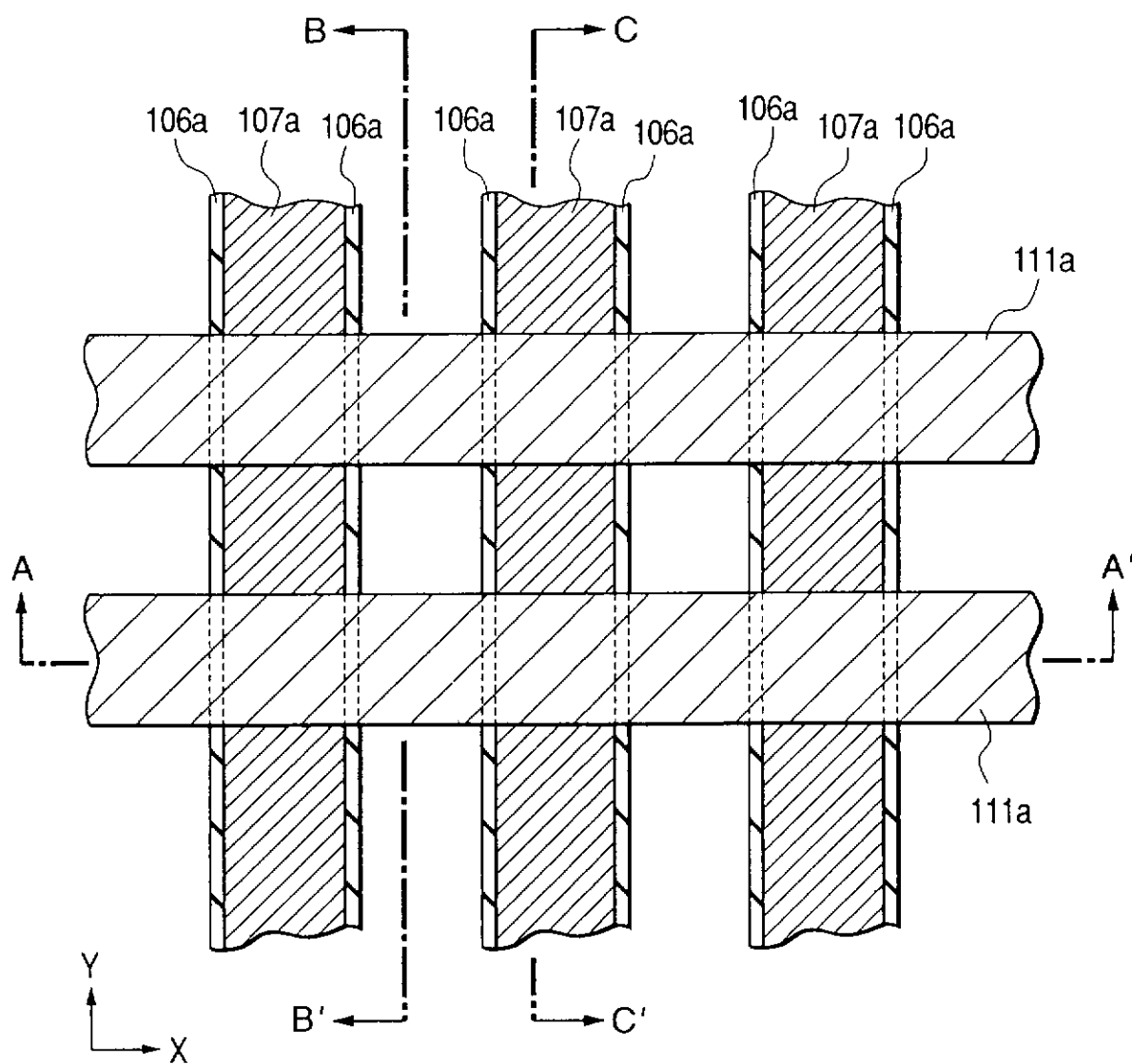


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FIG. 1



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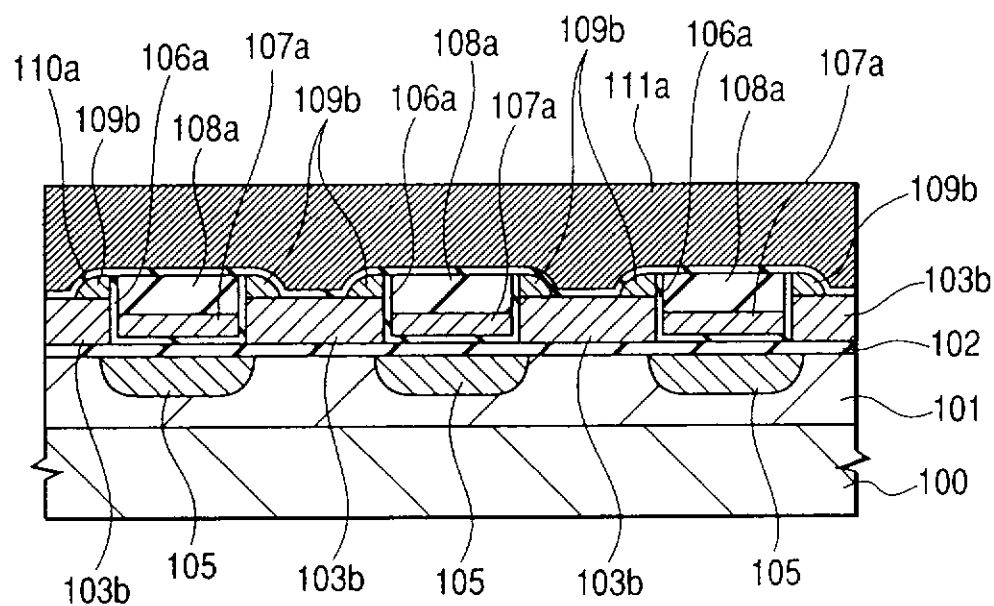
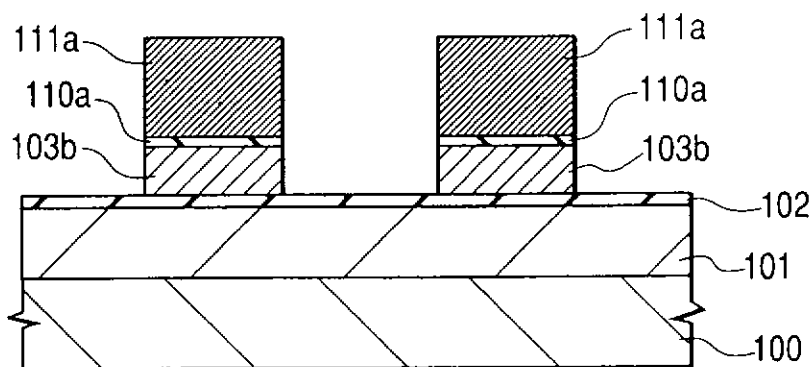
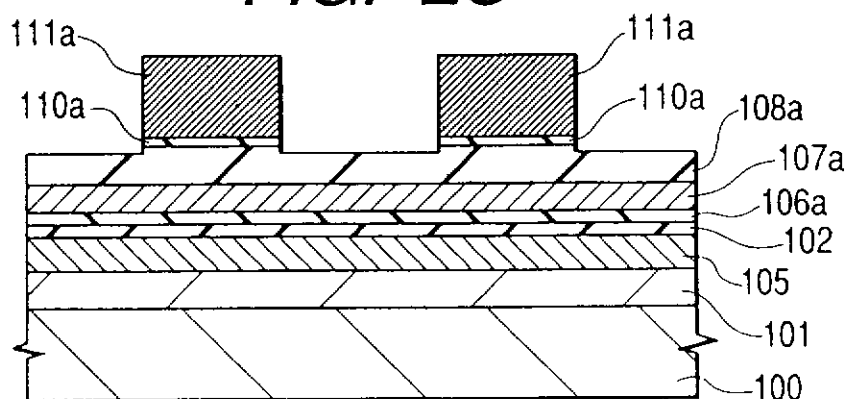
FIG. 2A*FIG. 2B**FIG. 2C*

FIG. 3A

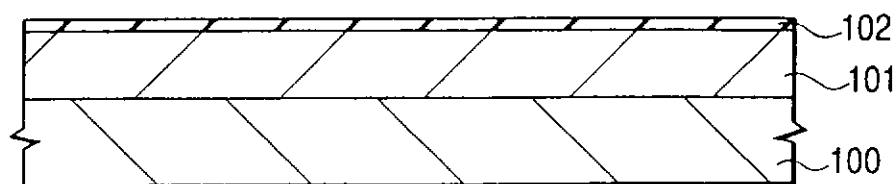


FIG. 3B

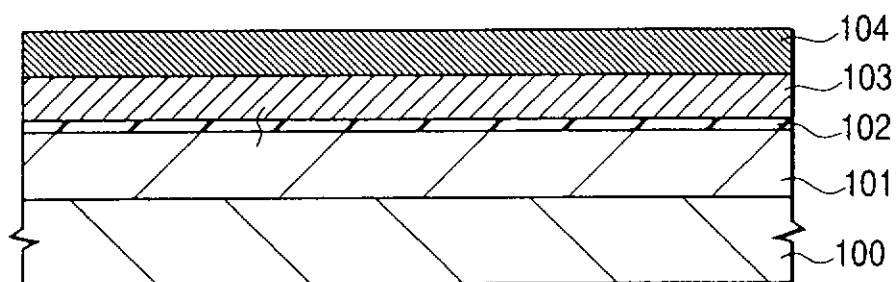


FIG. 3C

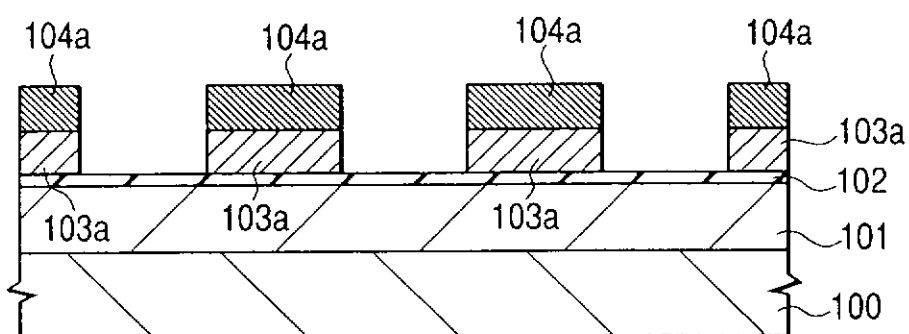


FIG. 3D

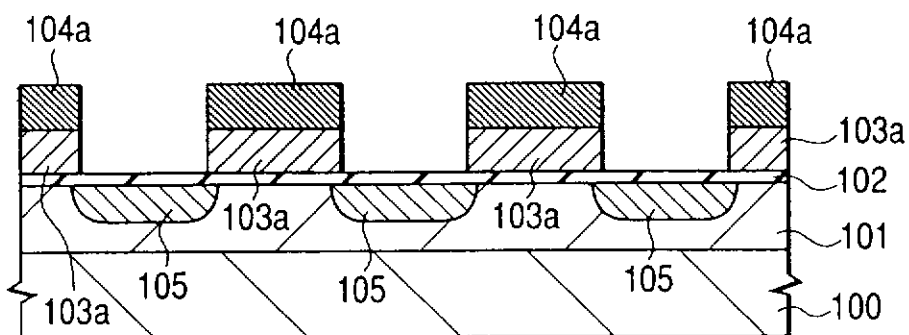
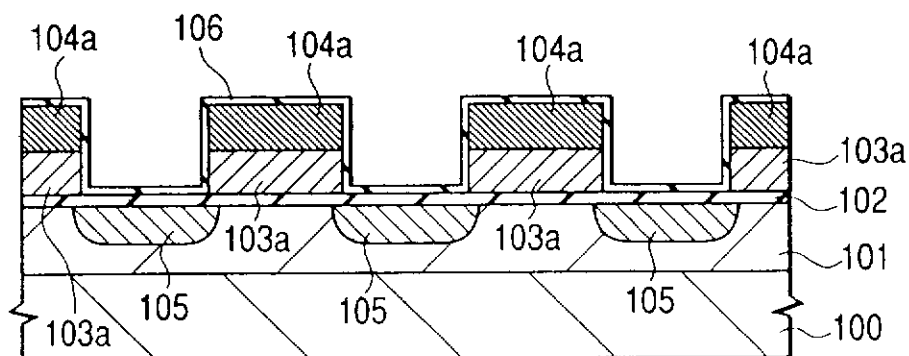


FIG. 3E



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FIG. 4A

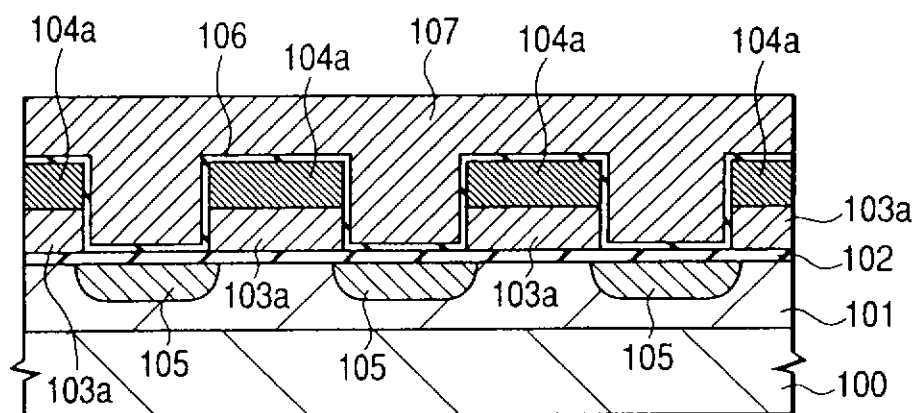


FIG. 4B

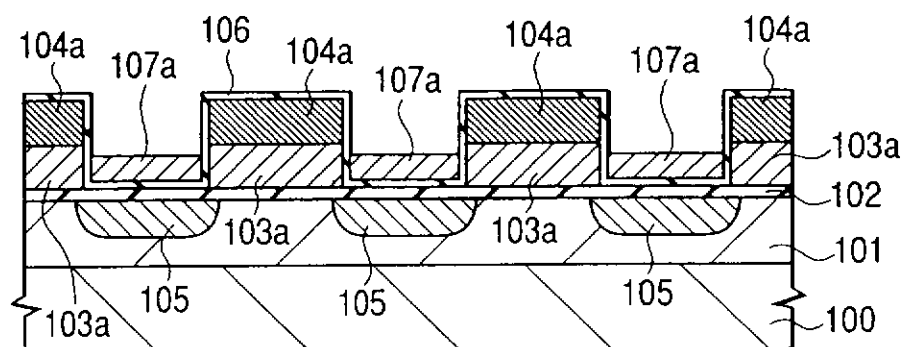


FIG. 4C

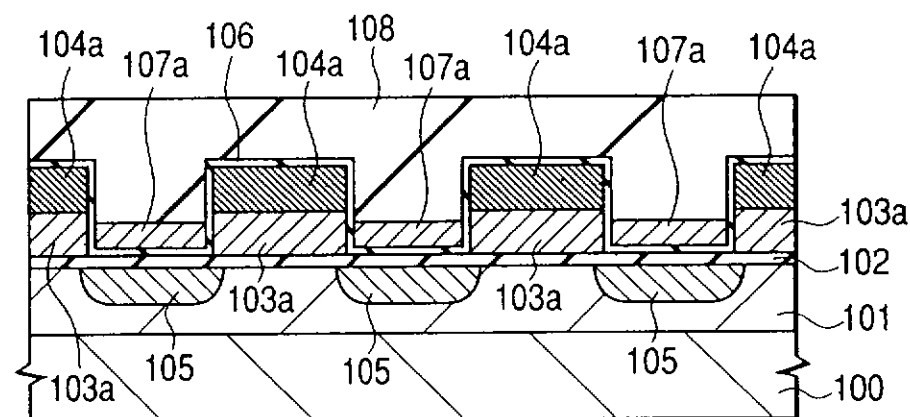
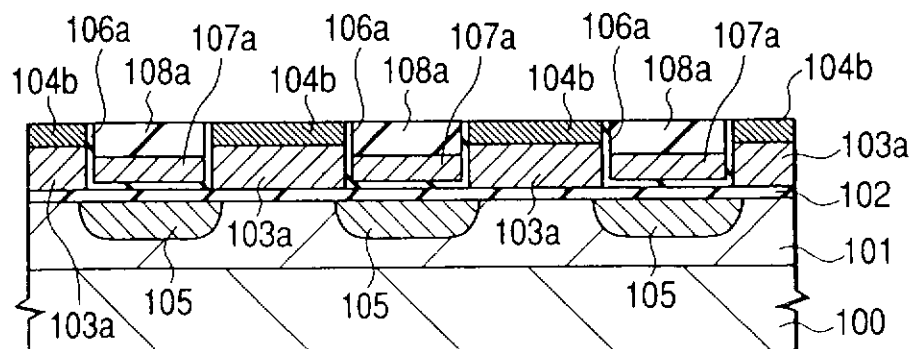
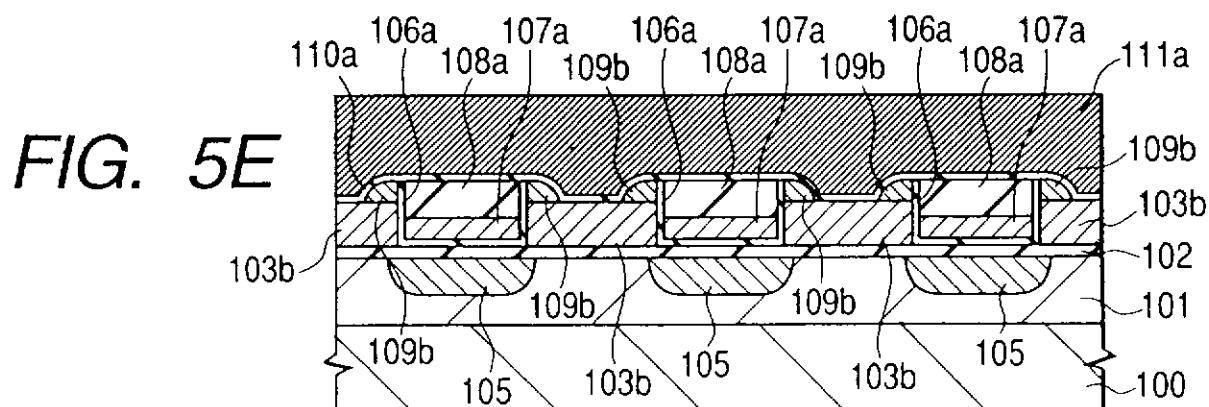
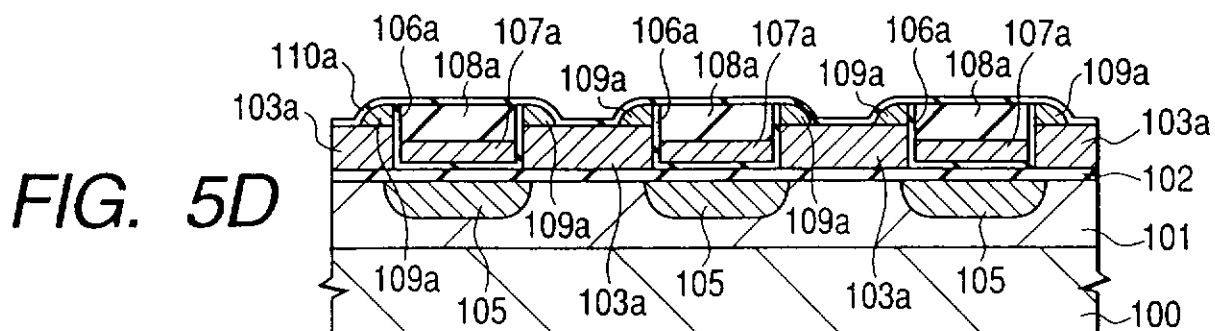
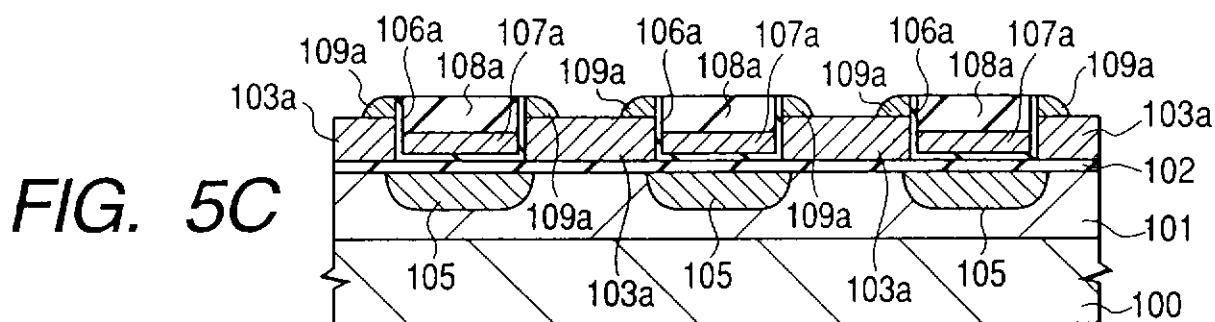
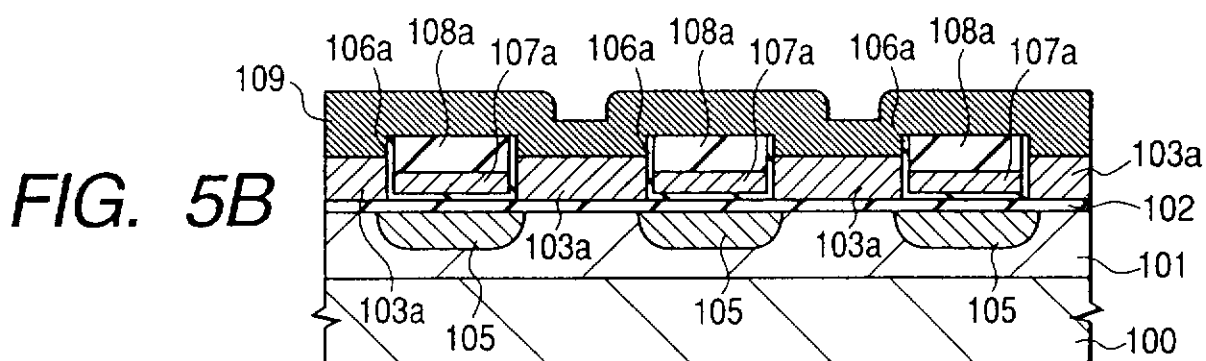
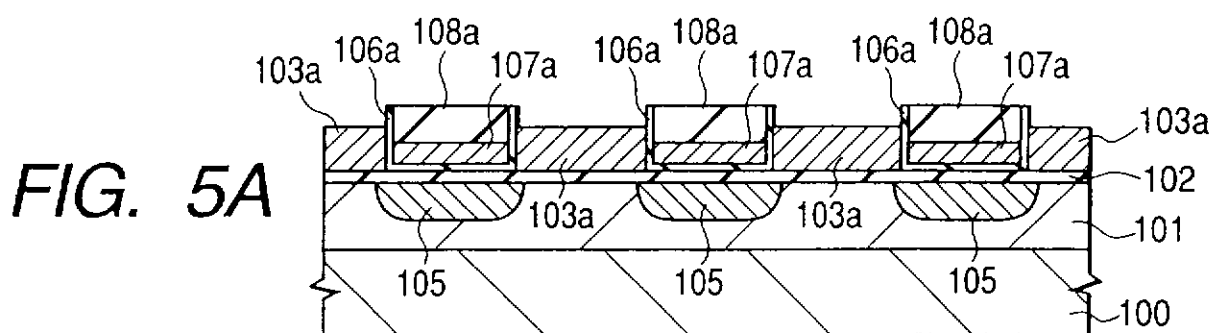


FIG. 4D

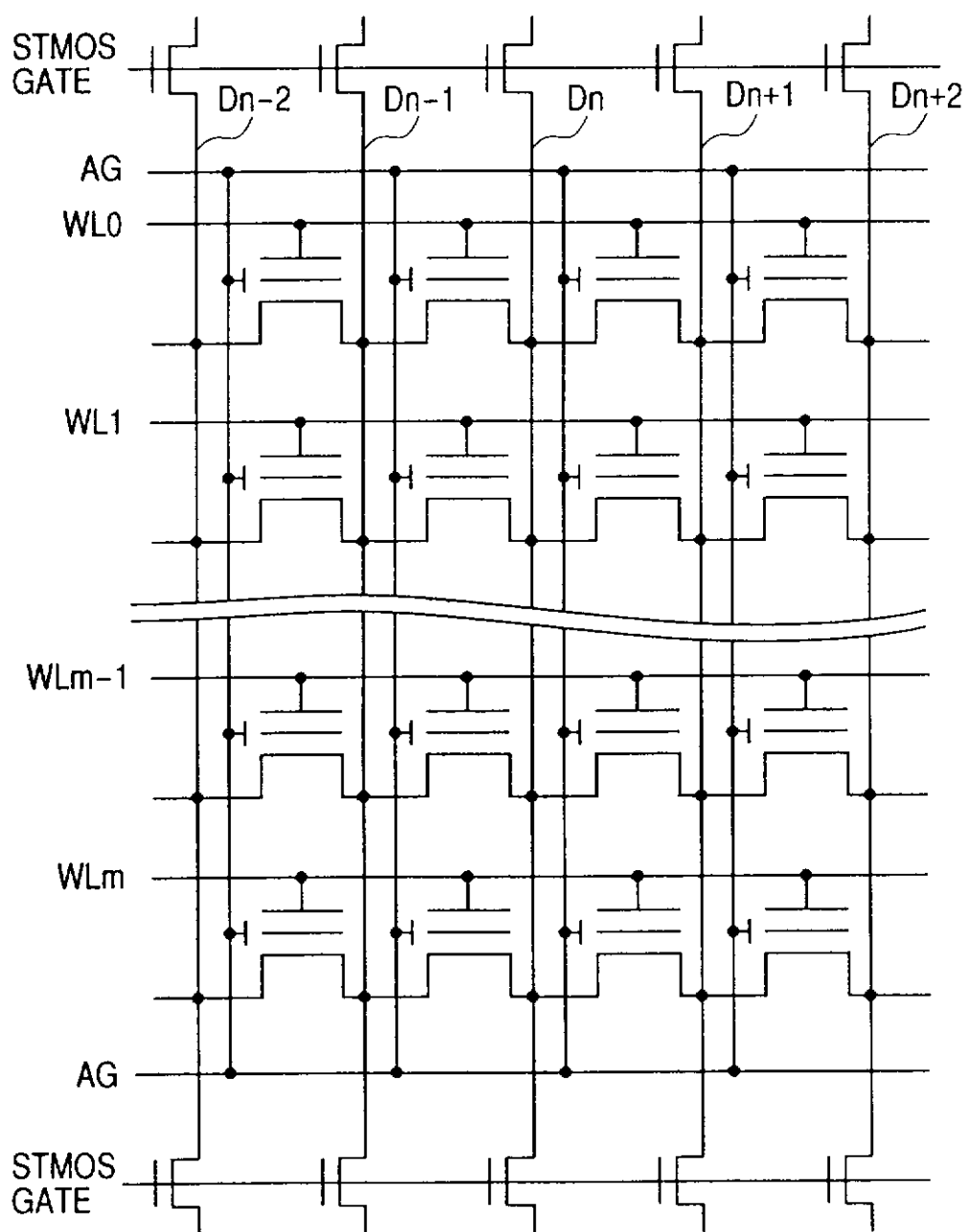


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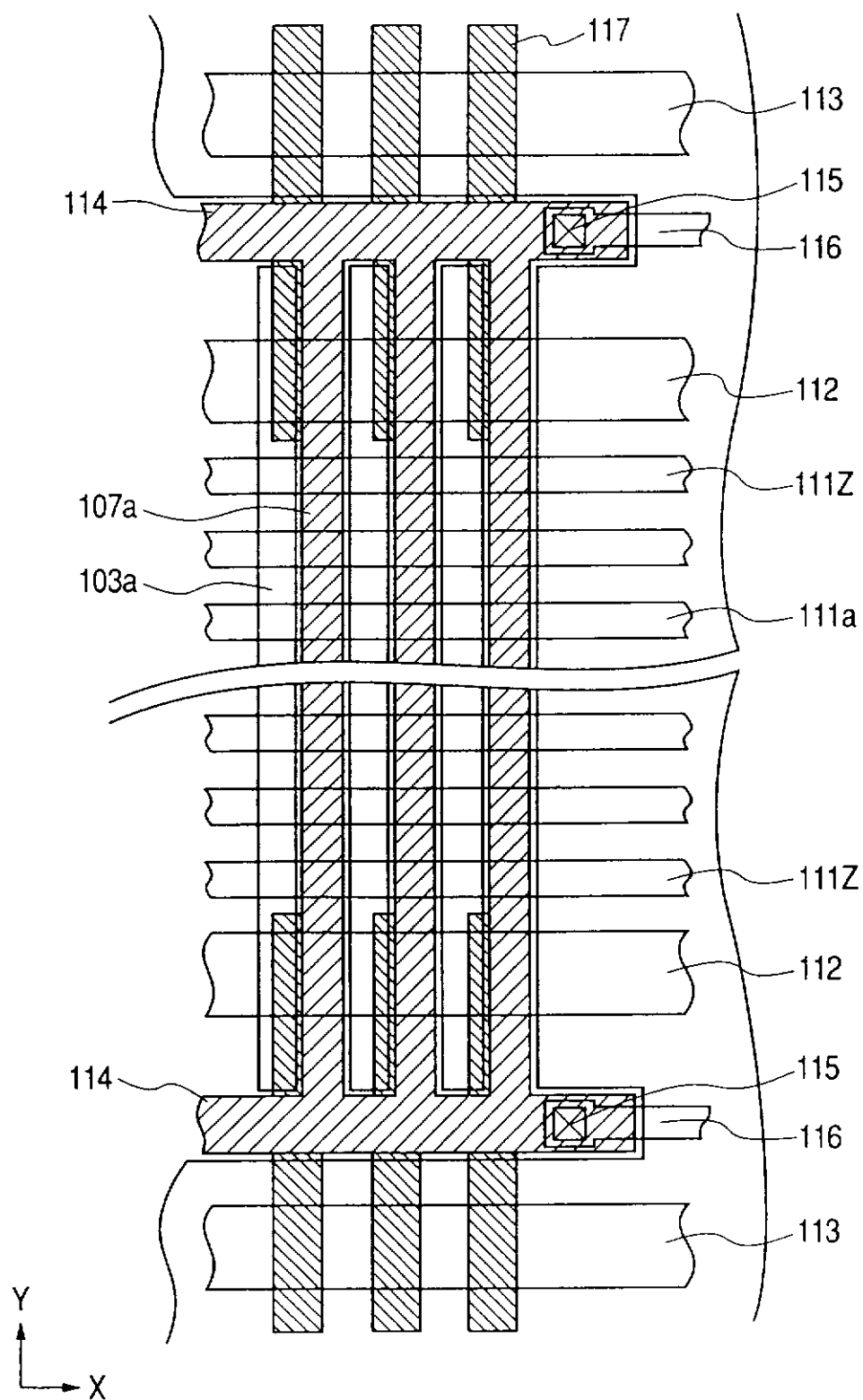
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FIG. 6



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FIG. 7



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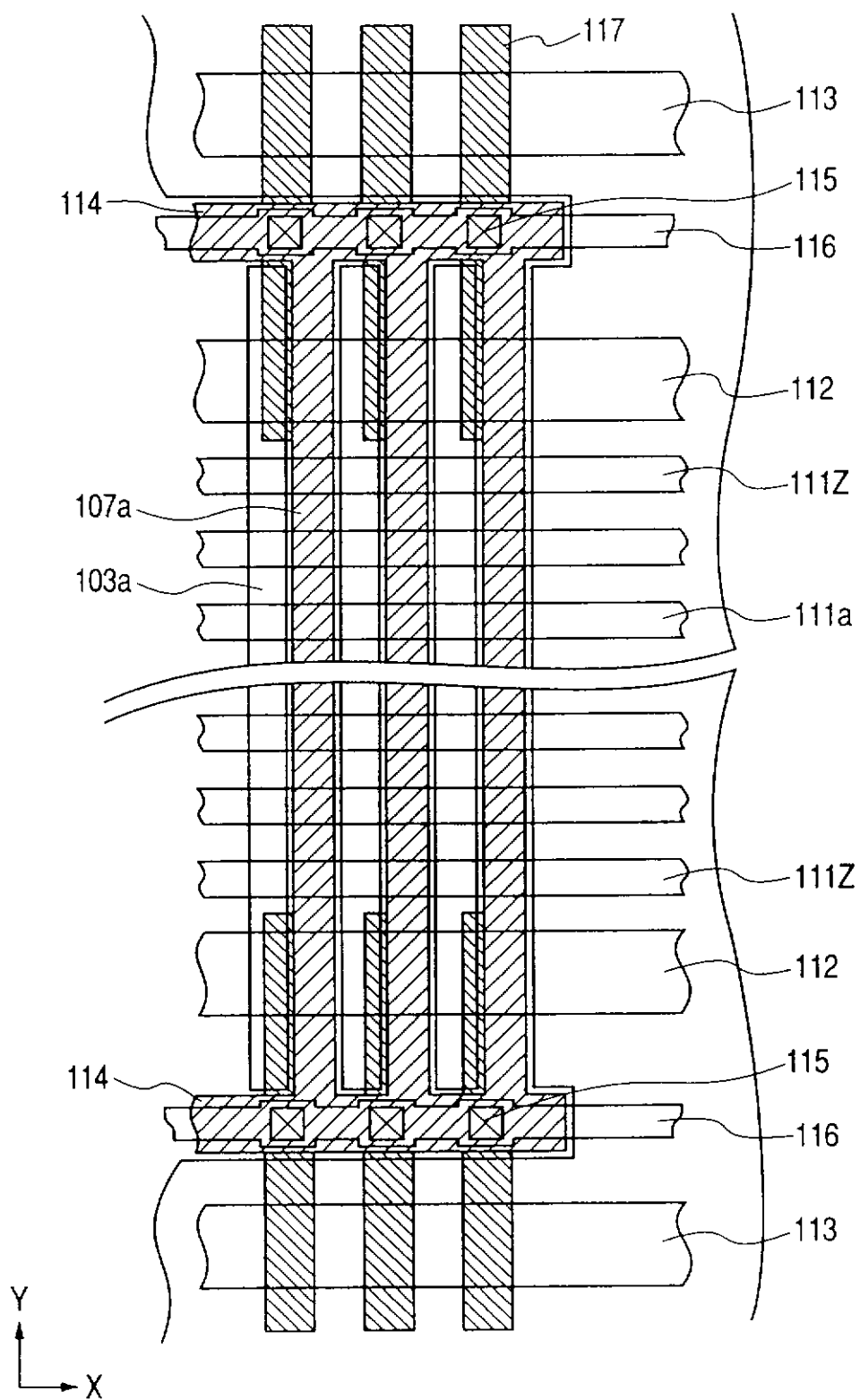
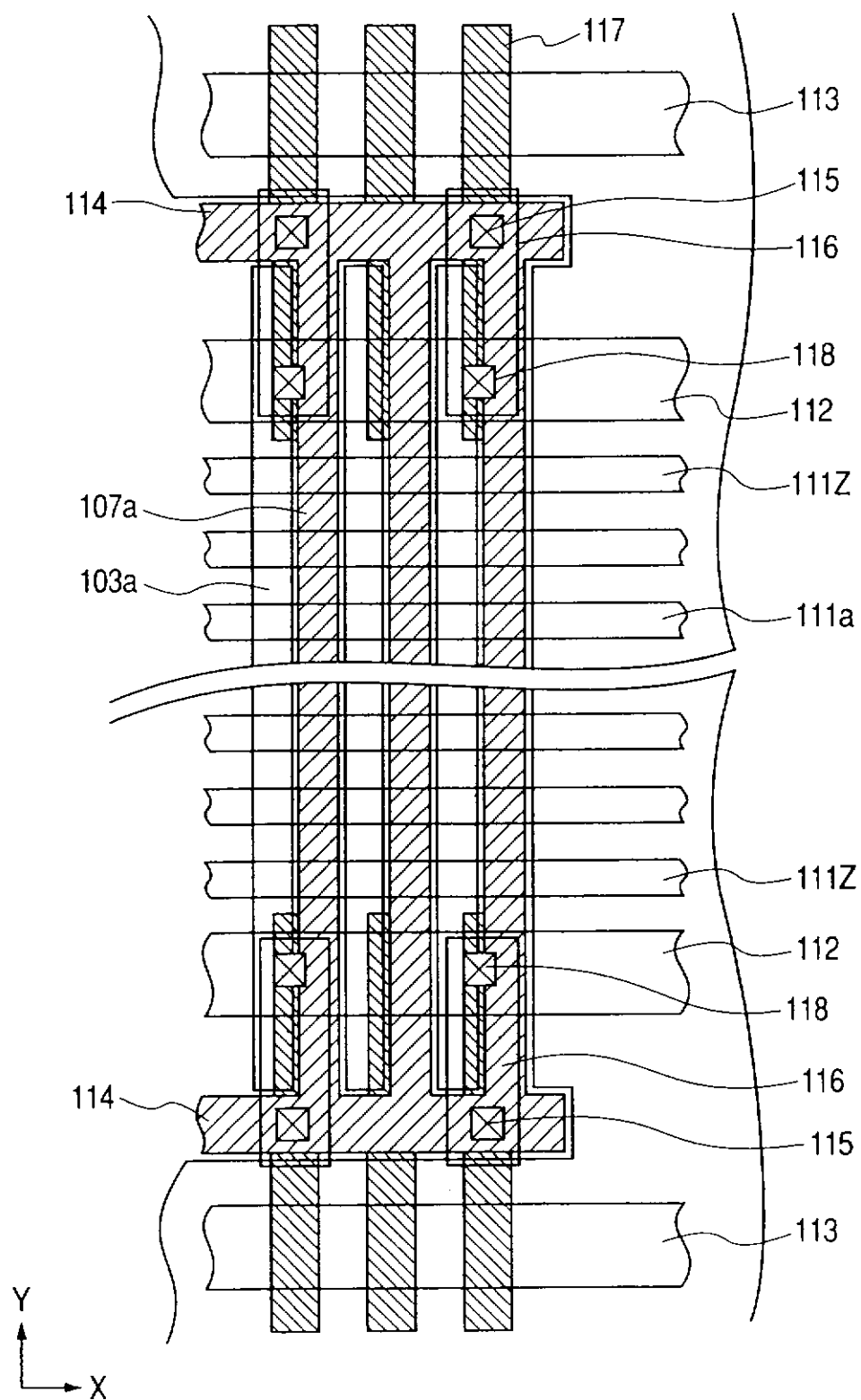
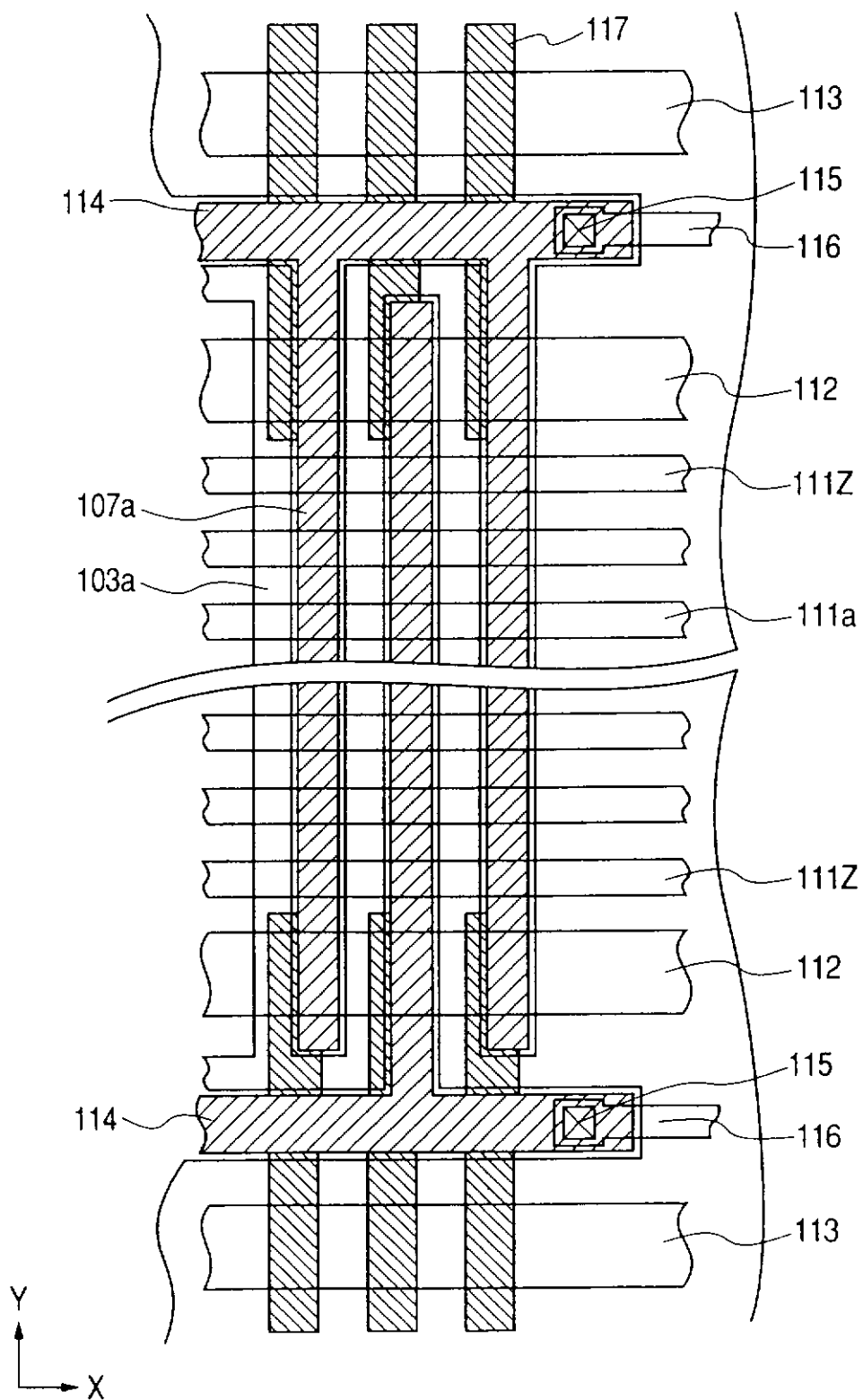
FIG. 8

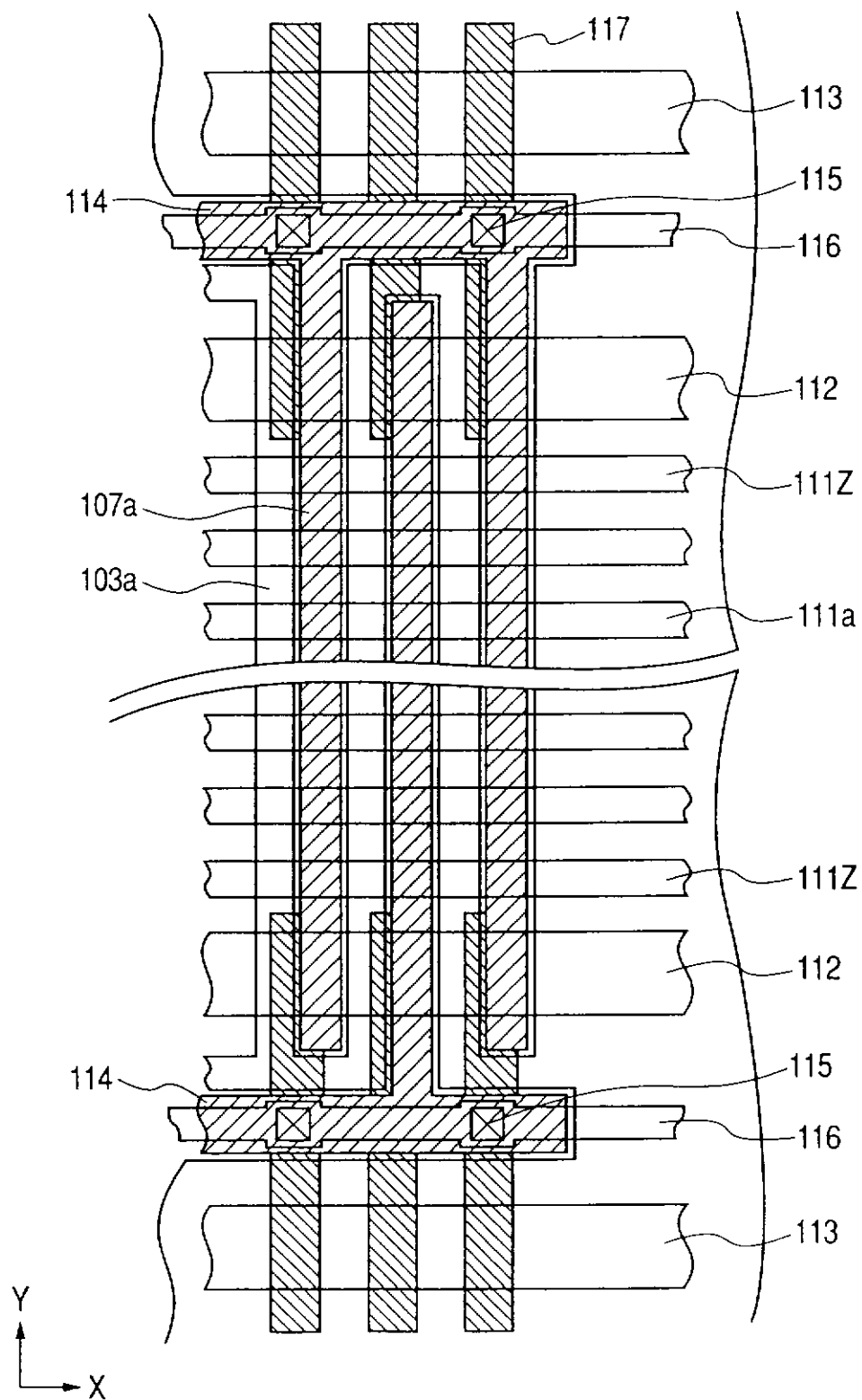
FIG. 9



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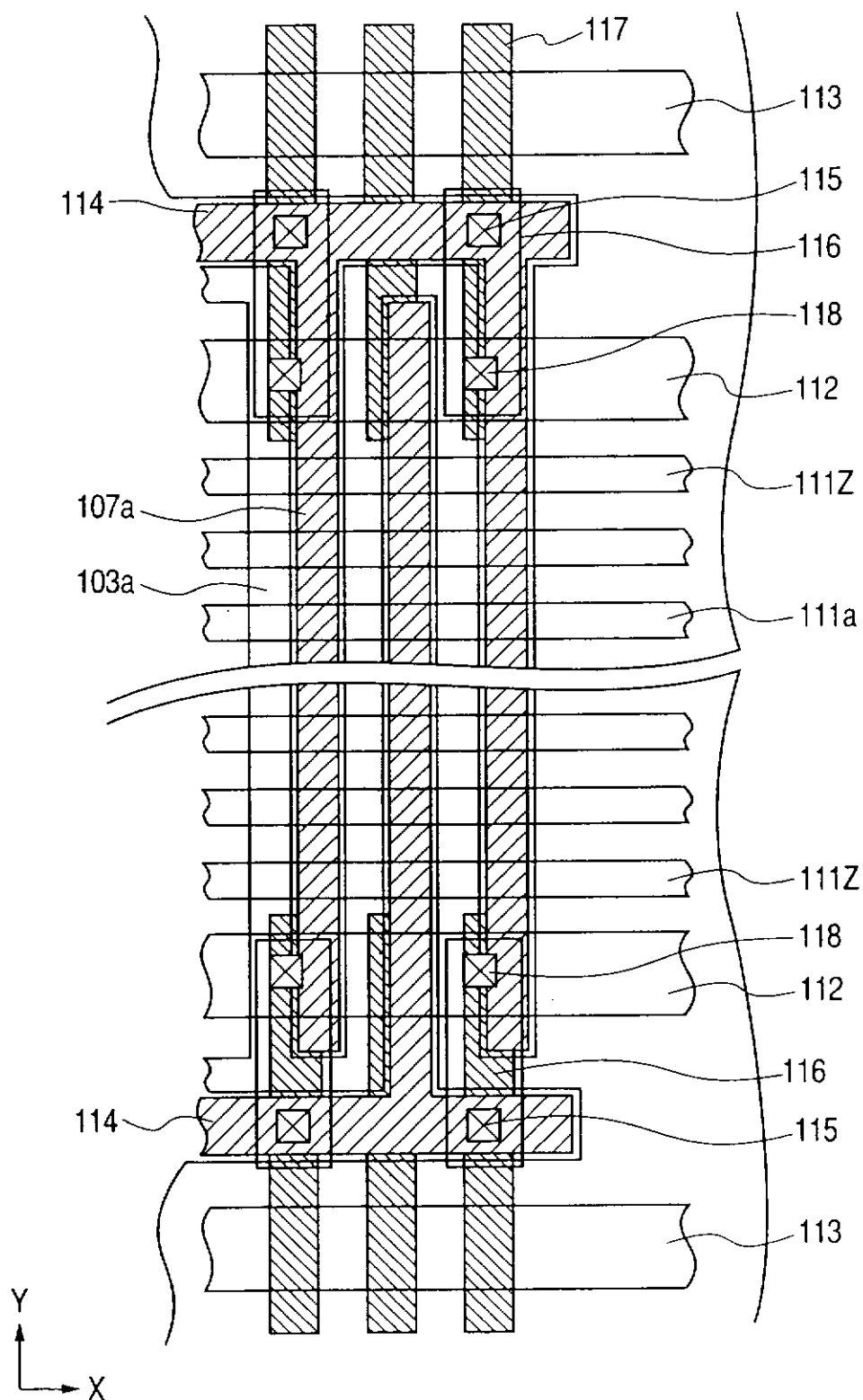
FIG. 10

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FIG. 11

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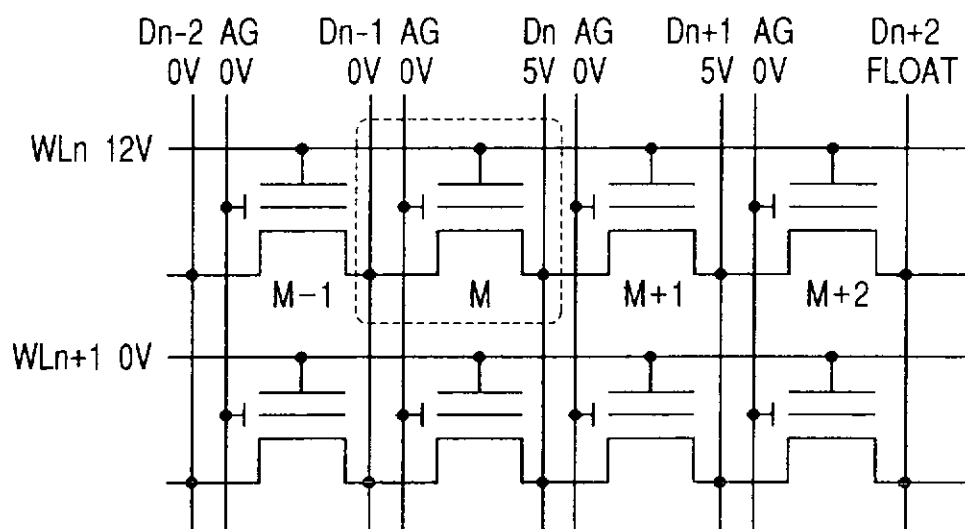
FIG. 12



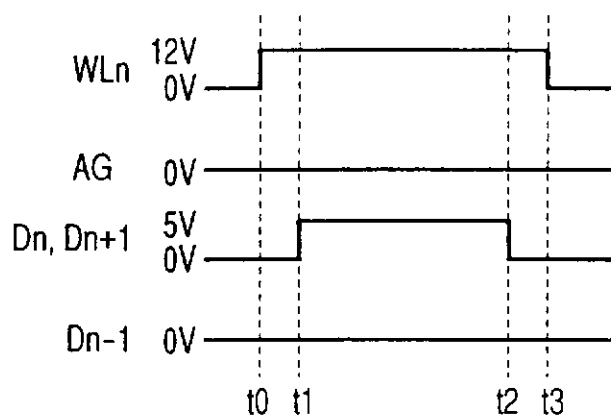
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FIG. 13A

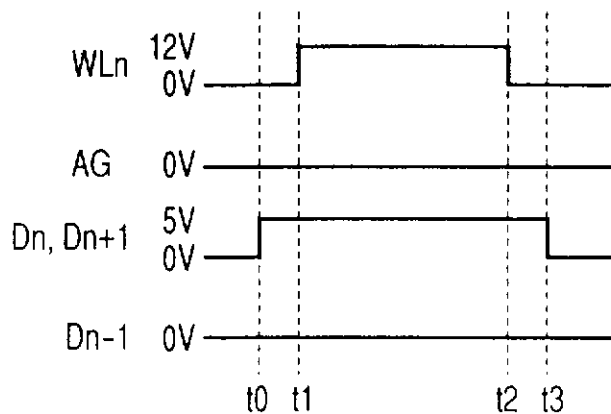
PROGRAM OPERATION VOLTAGE

**FIG. 13B**

TIMING 1

**FIG. 13C**

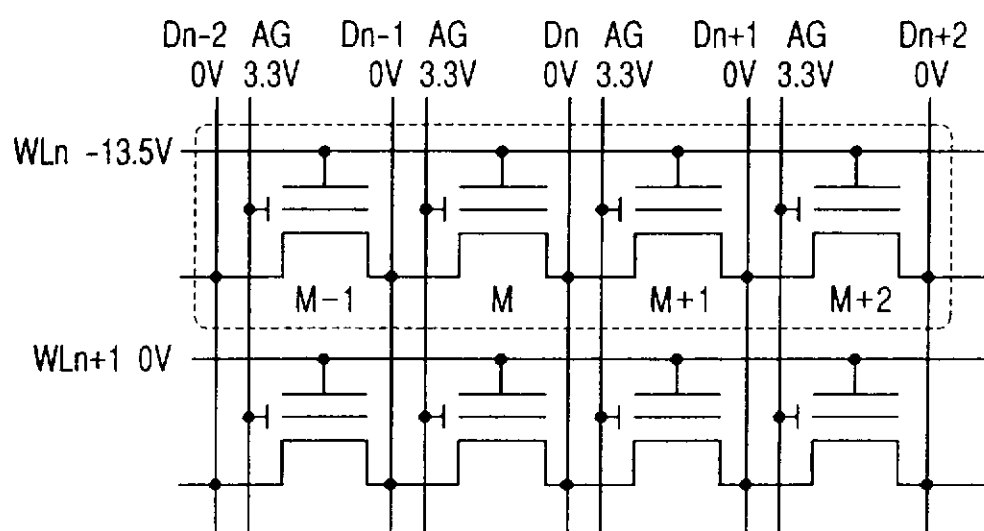
TIMING 2



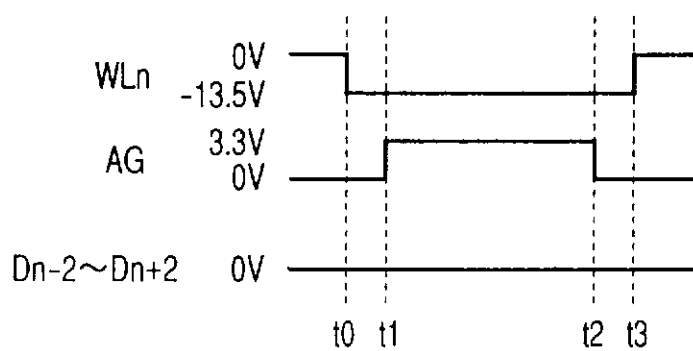
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FIG. 14A

ERASE OPERATION VOLTAGE

**FIG. 14B**

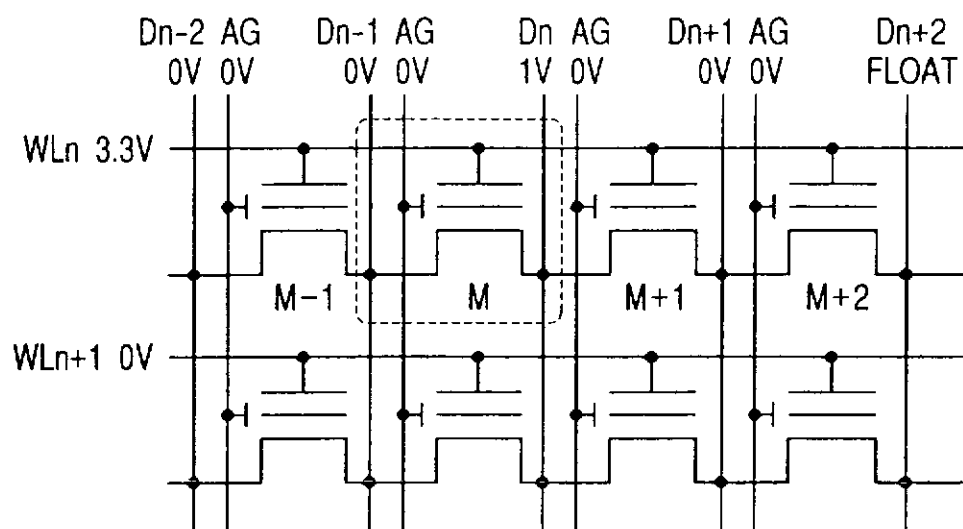
TIMING 1



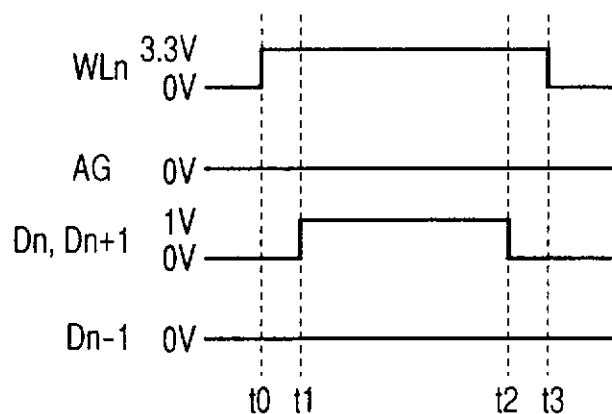
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FIG. 15A

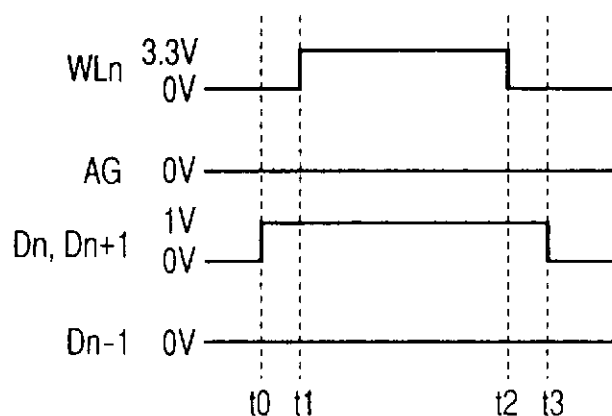
READ OPERATION VOLTAGE

**FIG. 15B**

TIMING 1

**FIG. 15C**

TIMING 2



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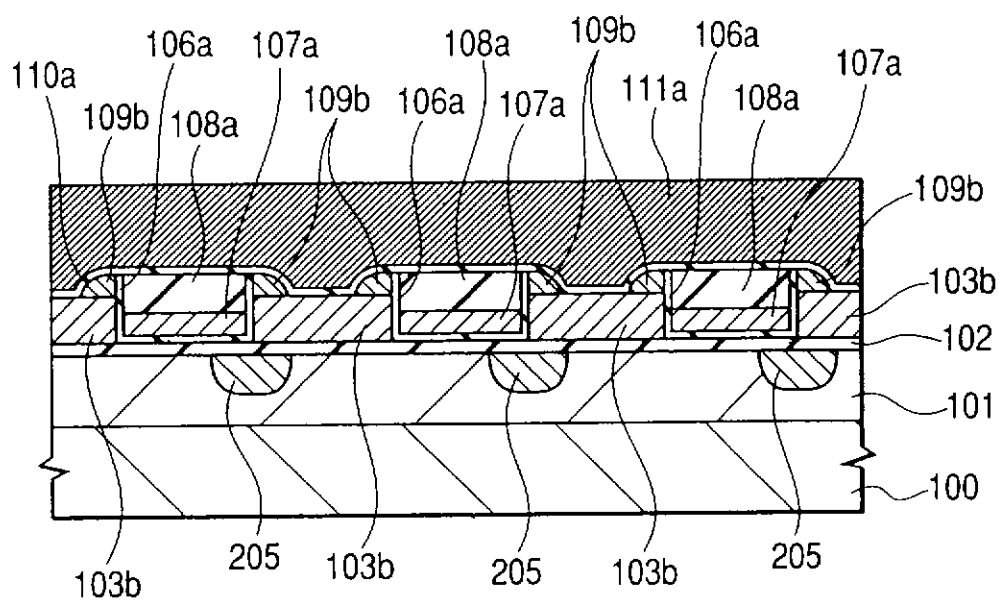
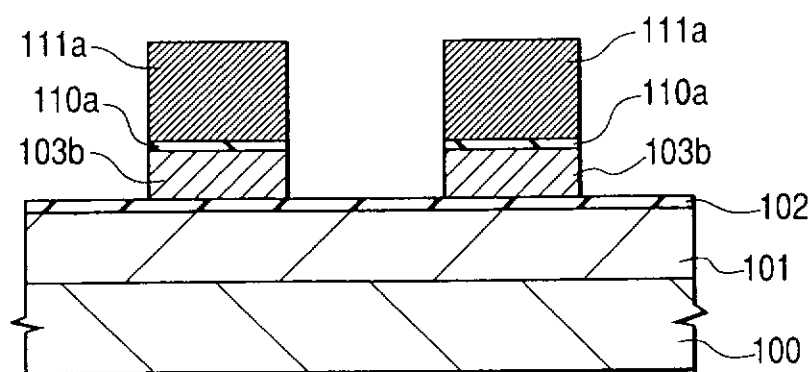
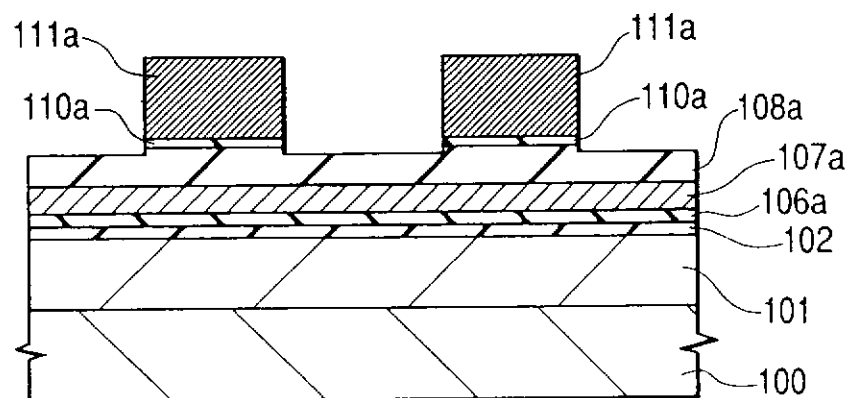
FIG. 16A*FIG. 16B**FIG. 16C*

FIG. 17

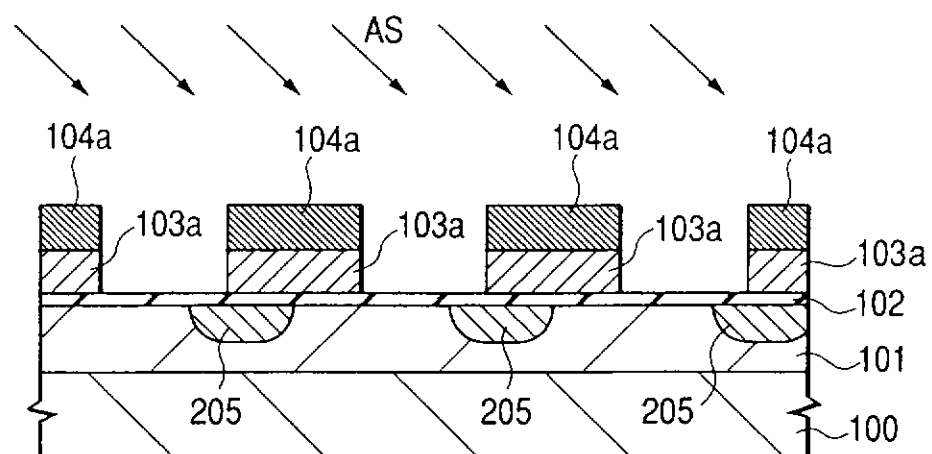
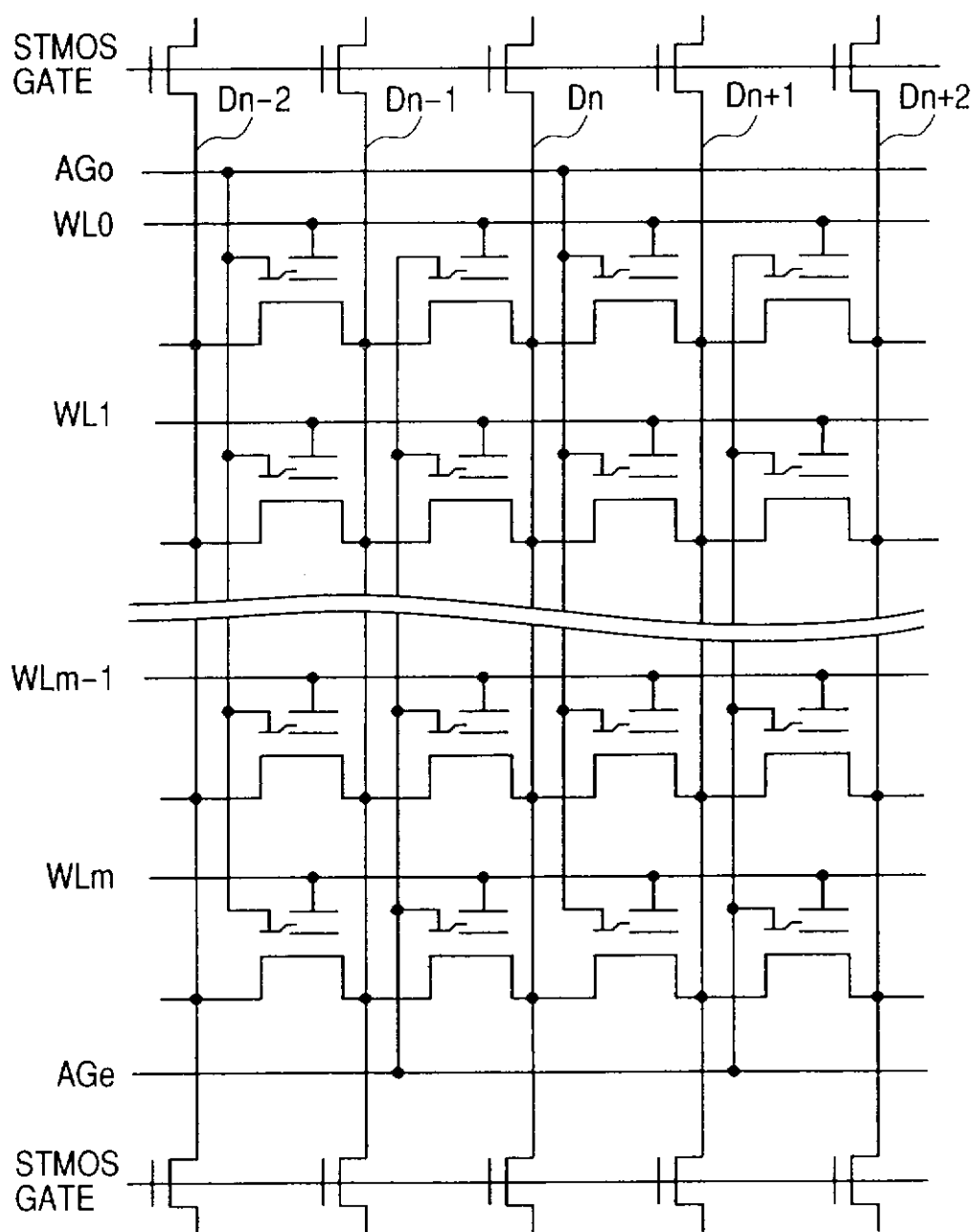


FIG. 18



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FIG. 19A
PROGRAM OPERATION VOLTAGE

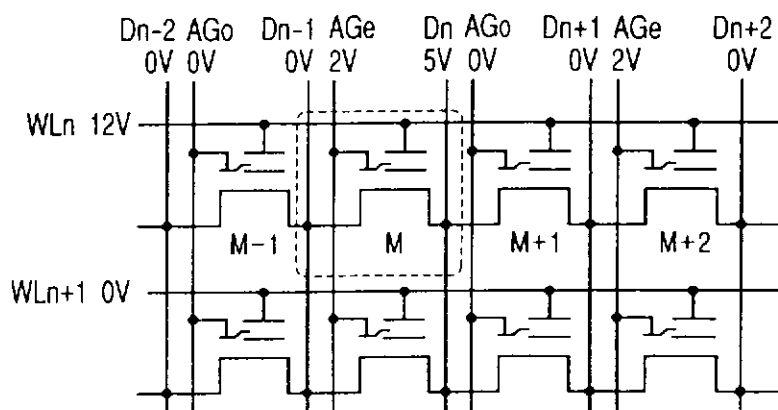


FIG. 19B
TIMING 1

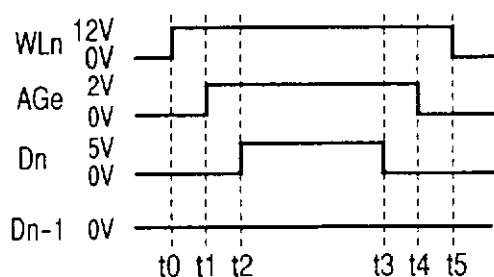


FIG. 19C
TIMING 2

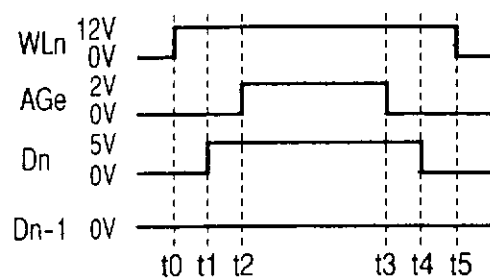


FIG. 19D
TIMING 3

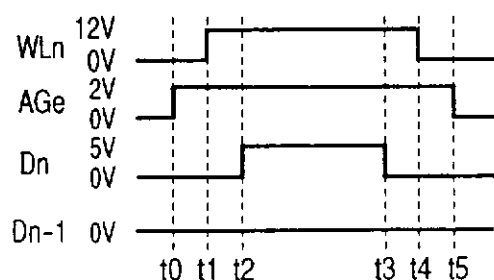


FIG. 19E
TIMING 4

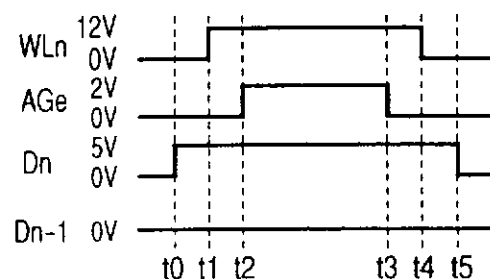


FIG. 19F
TIMING 5

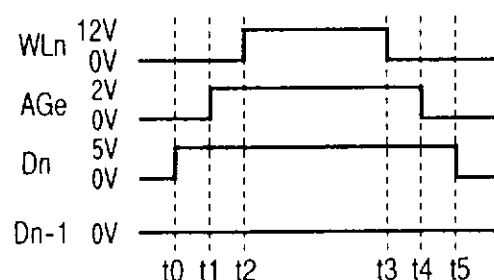
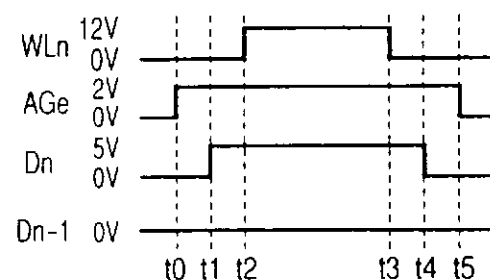


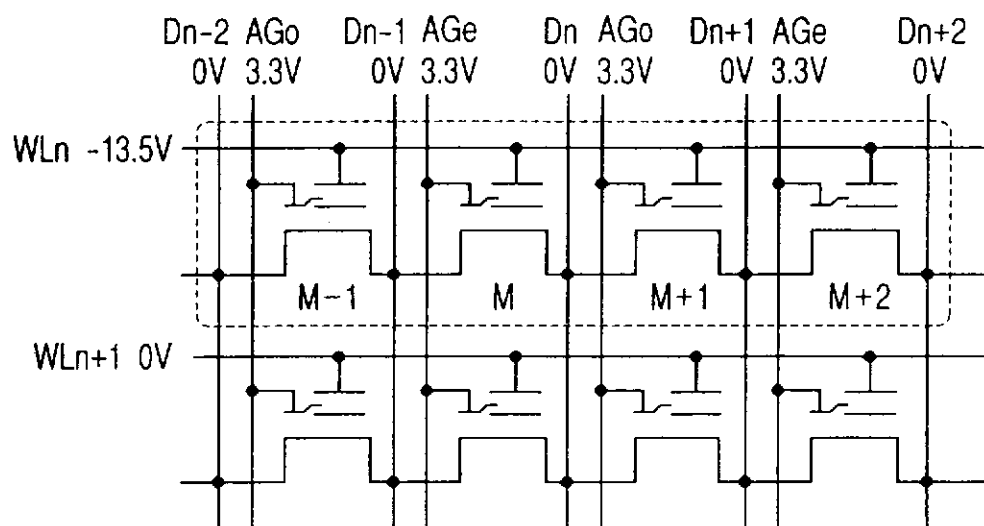
FIG. 19G
TIMING 6



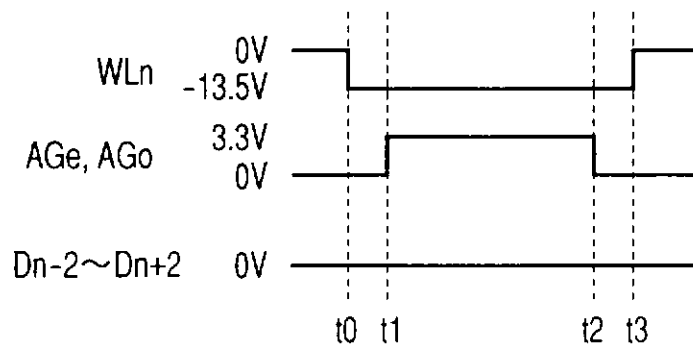
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FIG. 20A

ERASE OPERATION VOLTAGE

**FIG. 20B**

TIMING 1



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FIG. 21A
READ OPERATION VOLTAGE

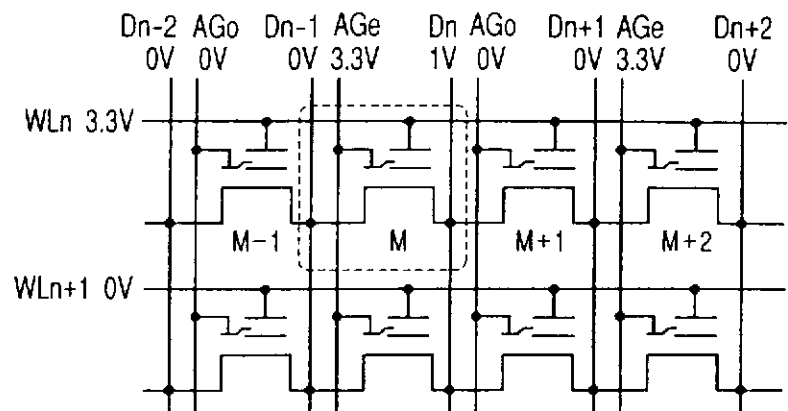


FIG. 21B
TIMING 1

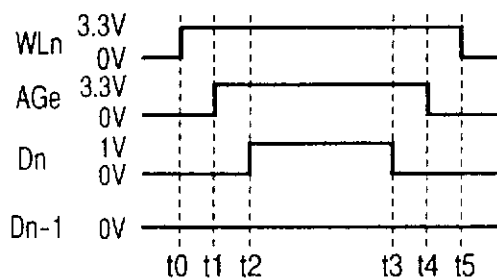


FIG. 21C
TIMING 2

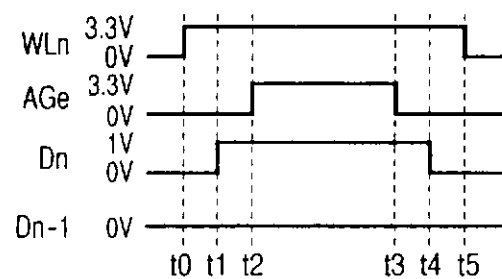


FIG. 21D
TIMING 3

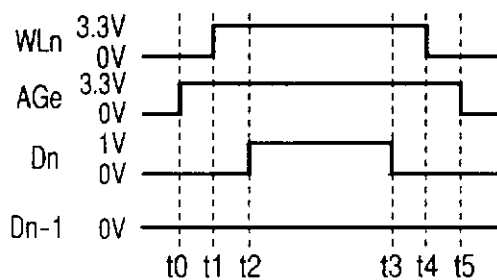


FIG. 21E
TIMING 4

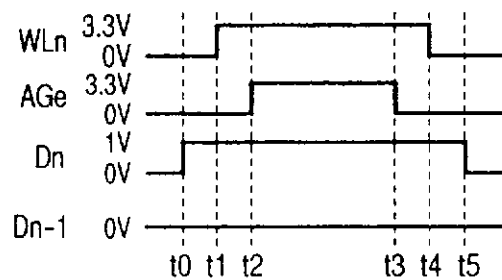


FIG. 21F
TIMING 5

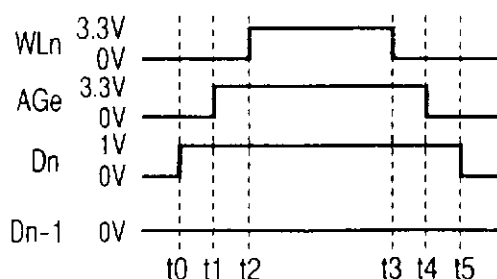


FIG. 21G
TIMING 6

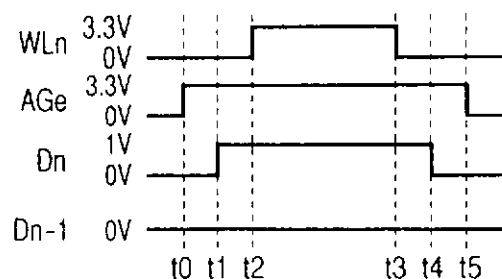
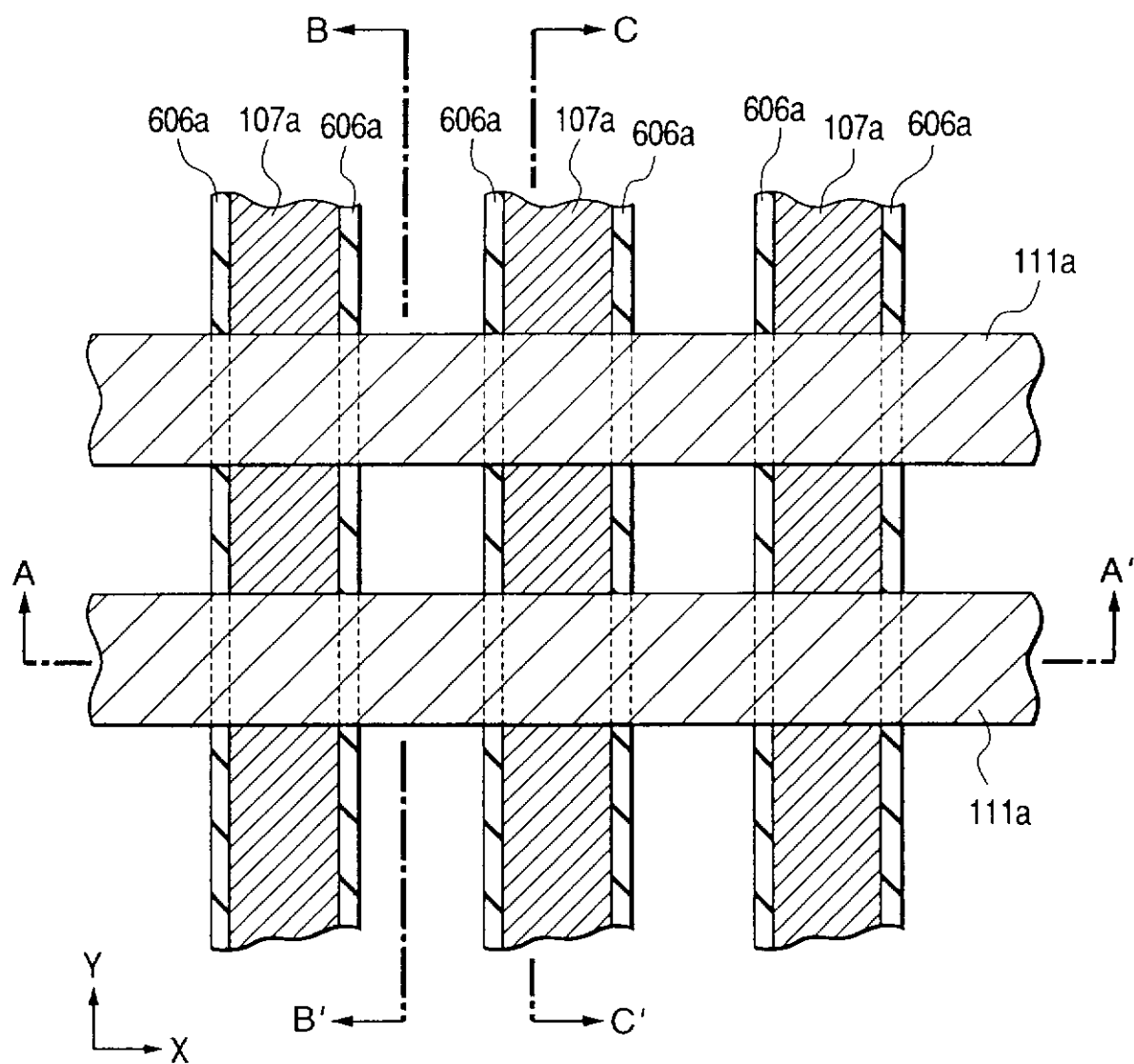
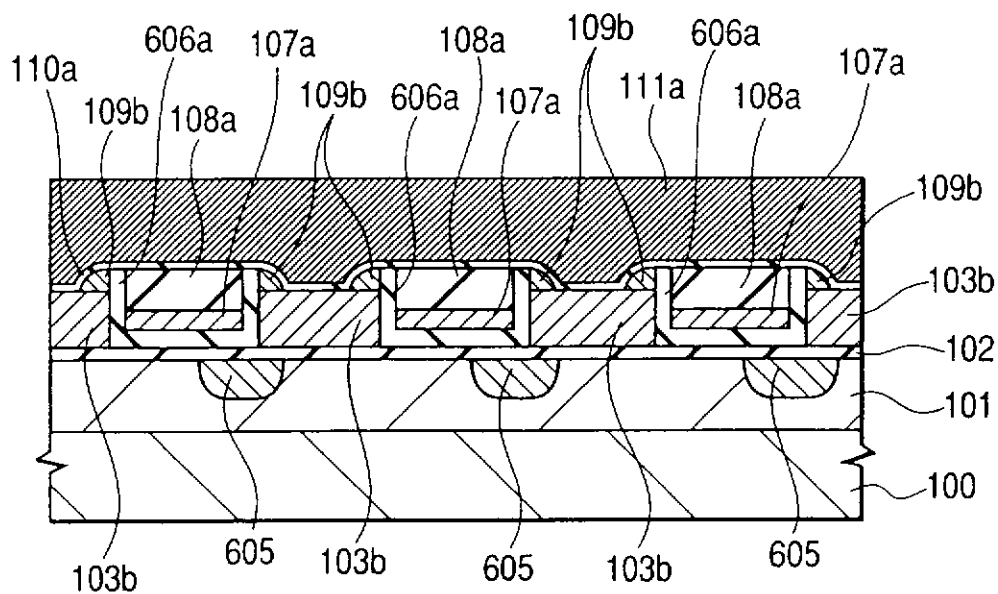
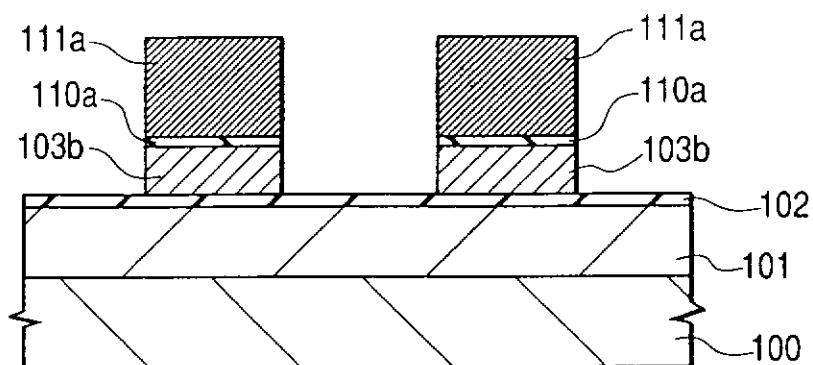
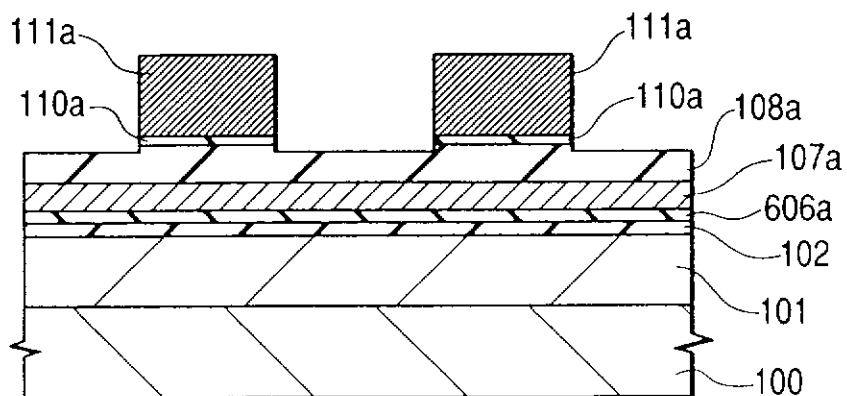


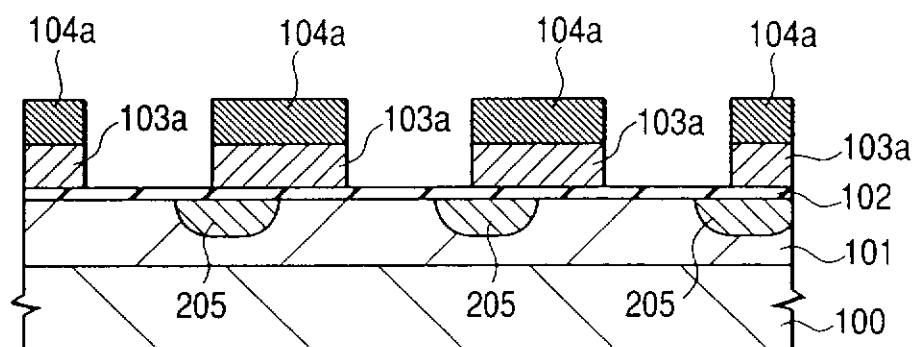
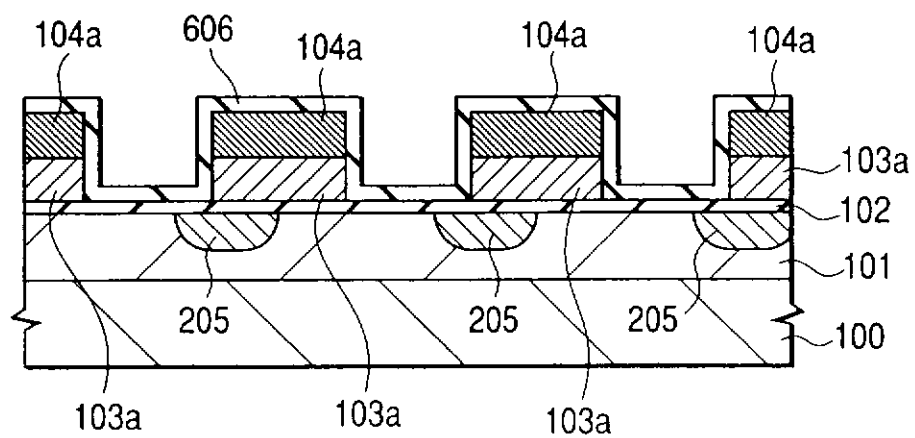
FIG. 22



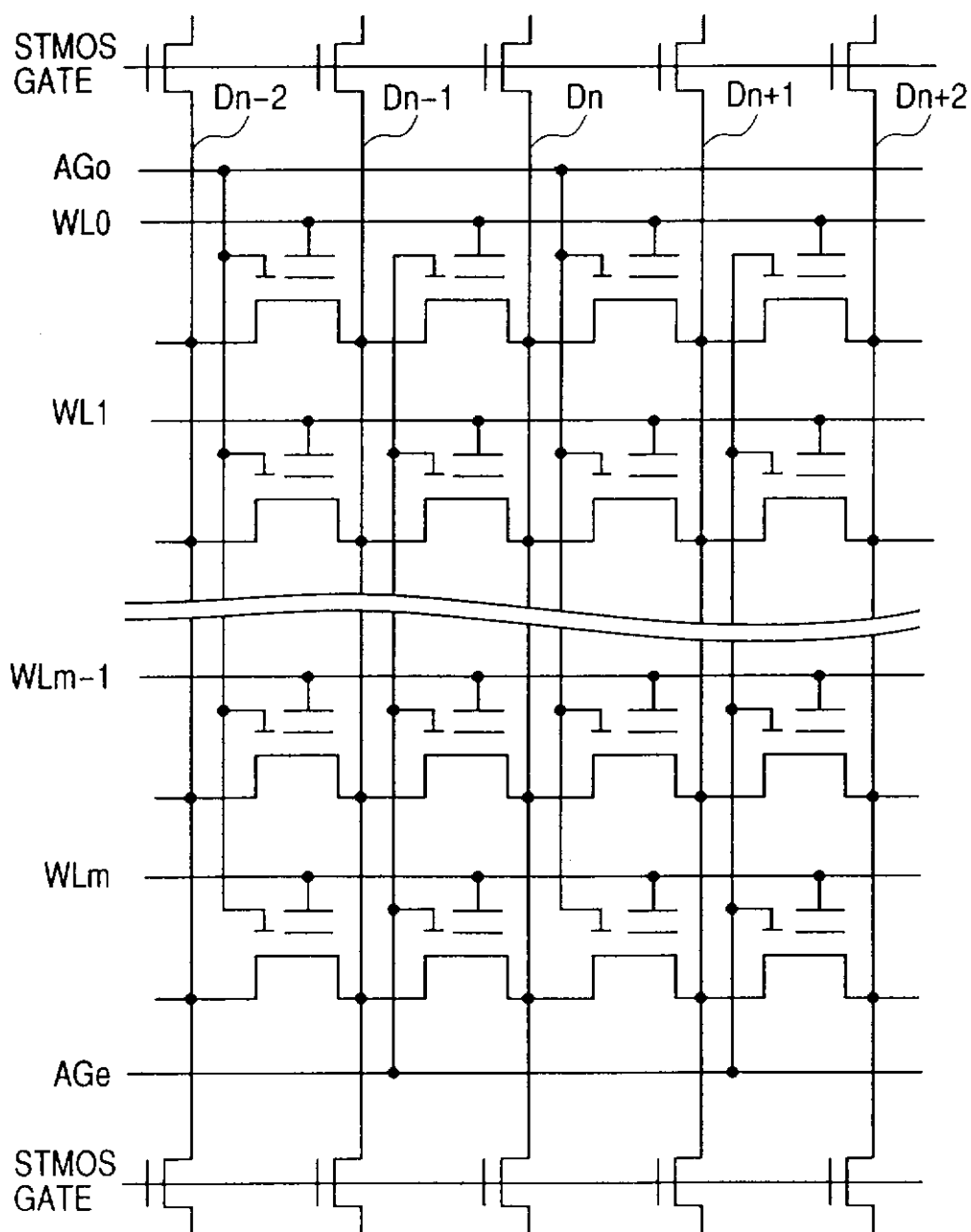
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FIG. 23A*FIG. 23B**FIG. 23C*

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FIG. 24A*FIG. 24B*

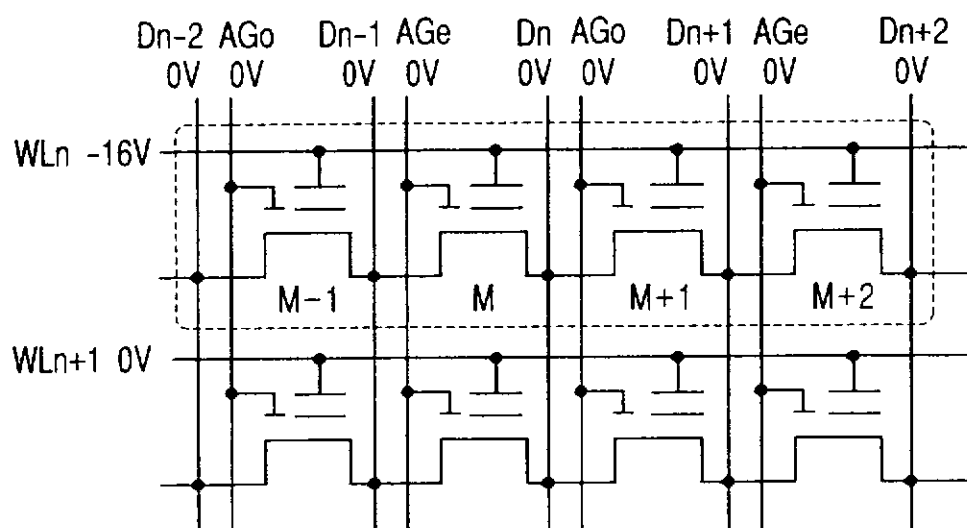
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FIG. 25

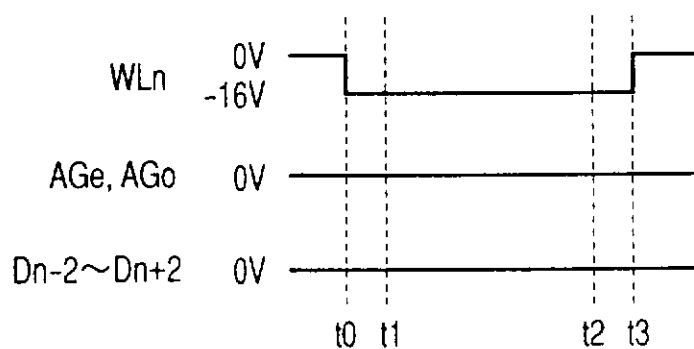
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FIG. 26A

ERASE OPERATION VOLTAGE

**FIG. 26B**

TIMING 1



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FIG. 27A

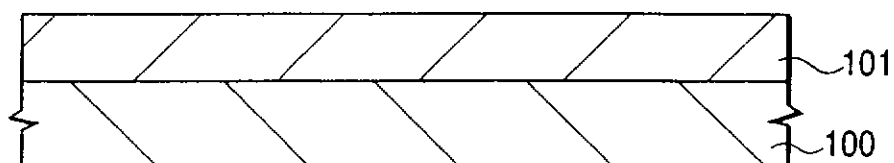


FIG. 27B

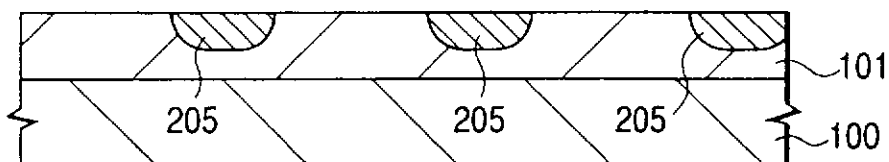


FIG. 27C

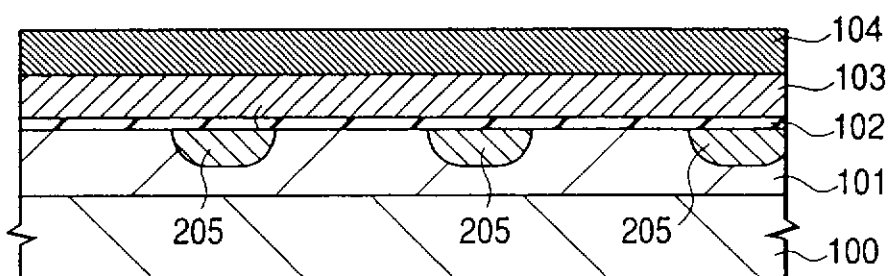


FIG. 27D

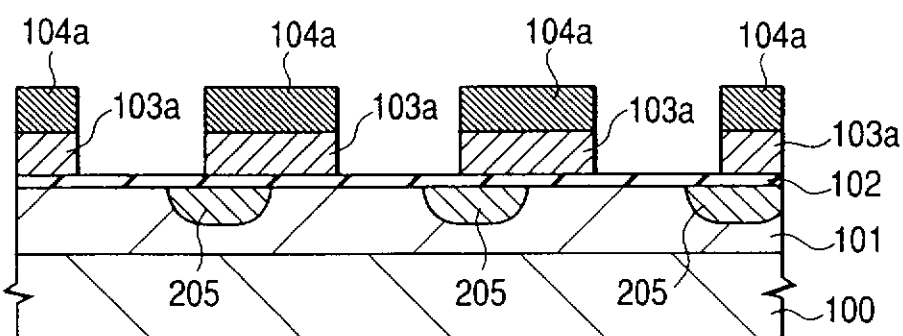


FIG. 27E

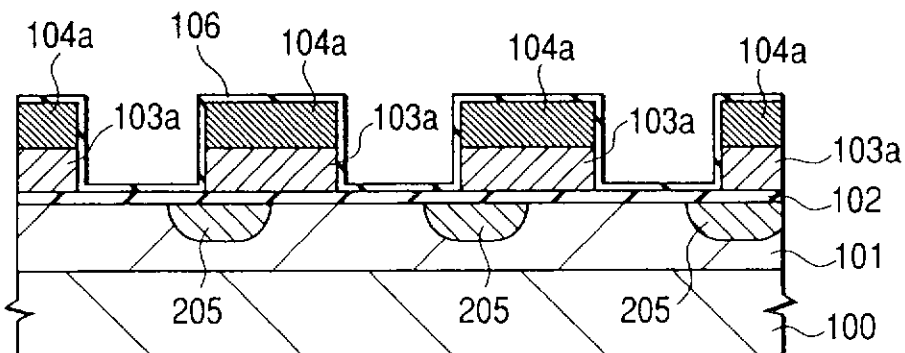
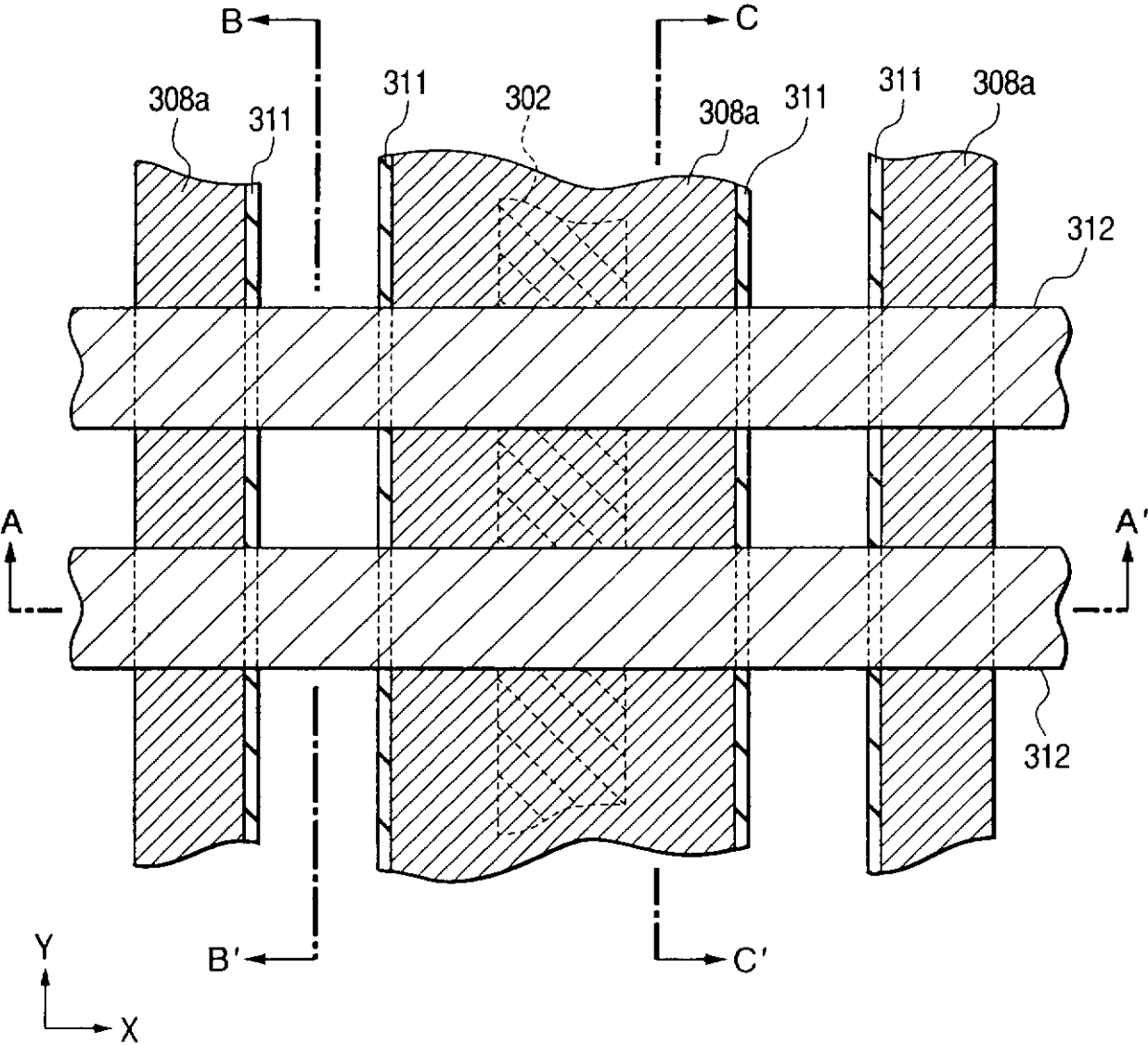
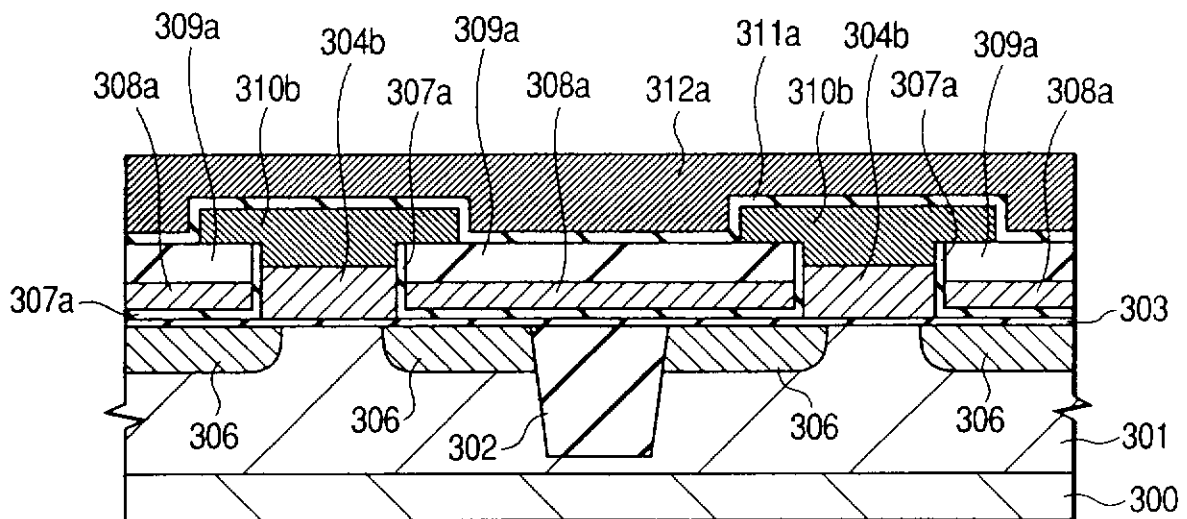
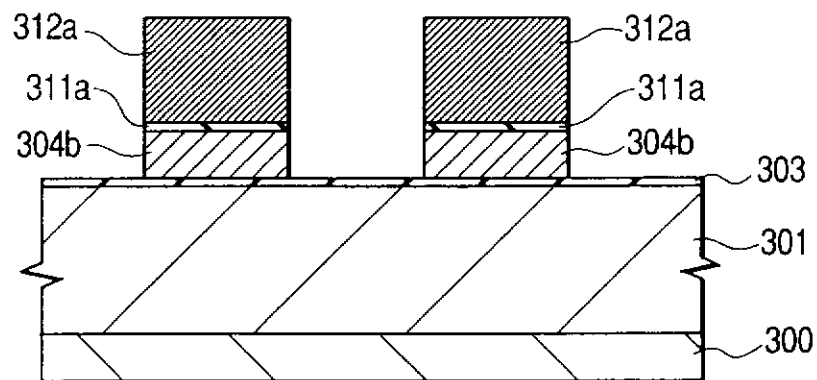
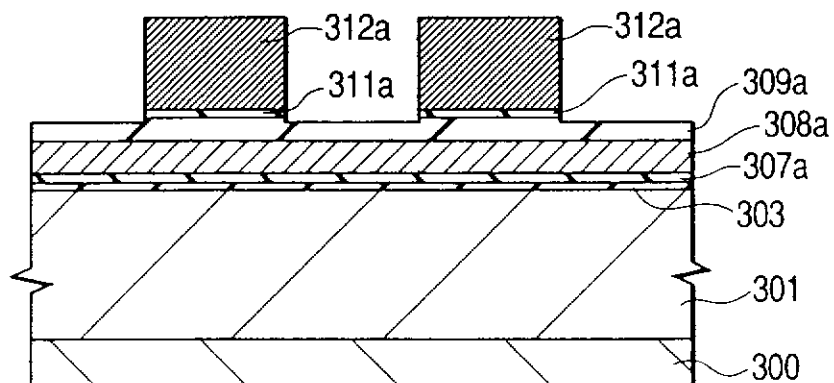


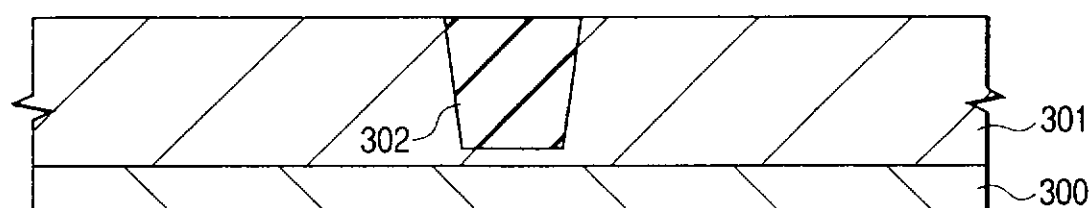
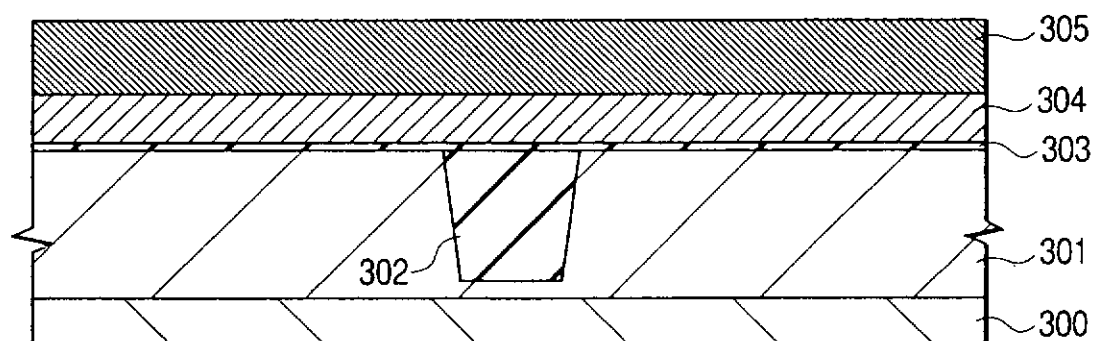
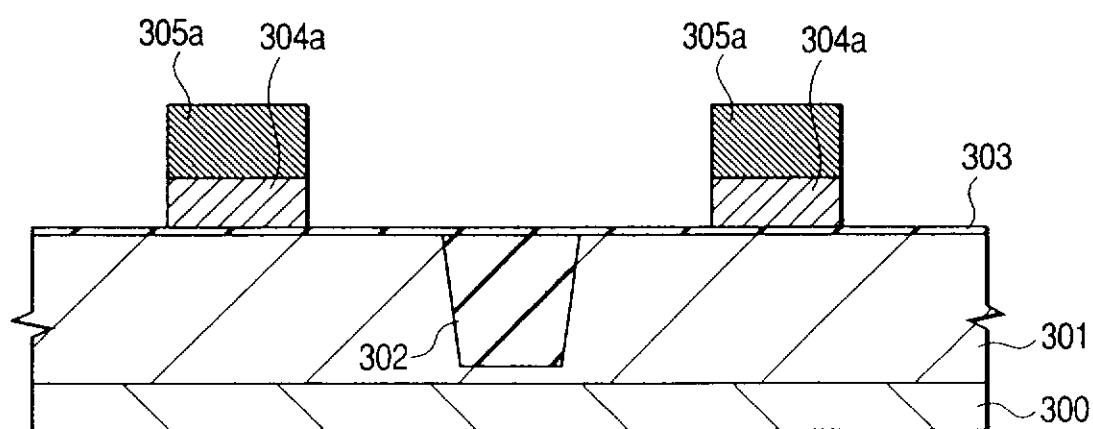
FIG. 28



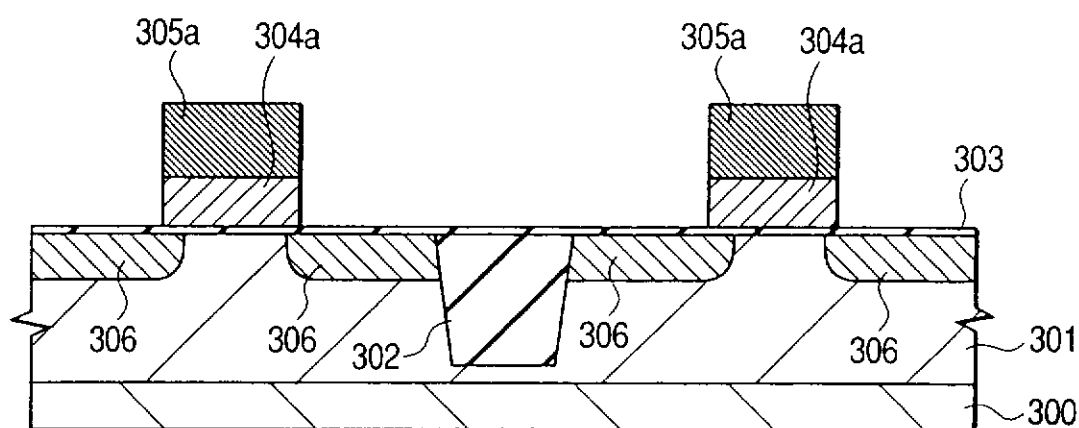
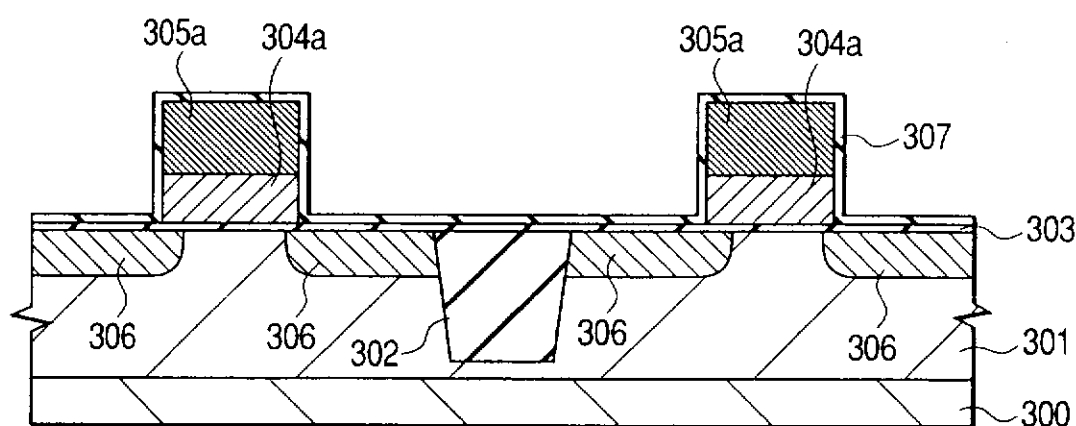
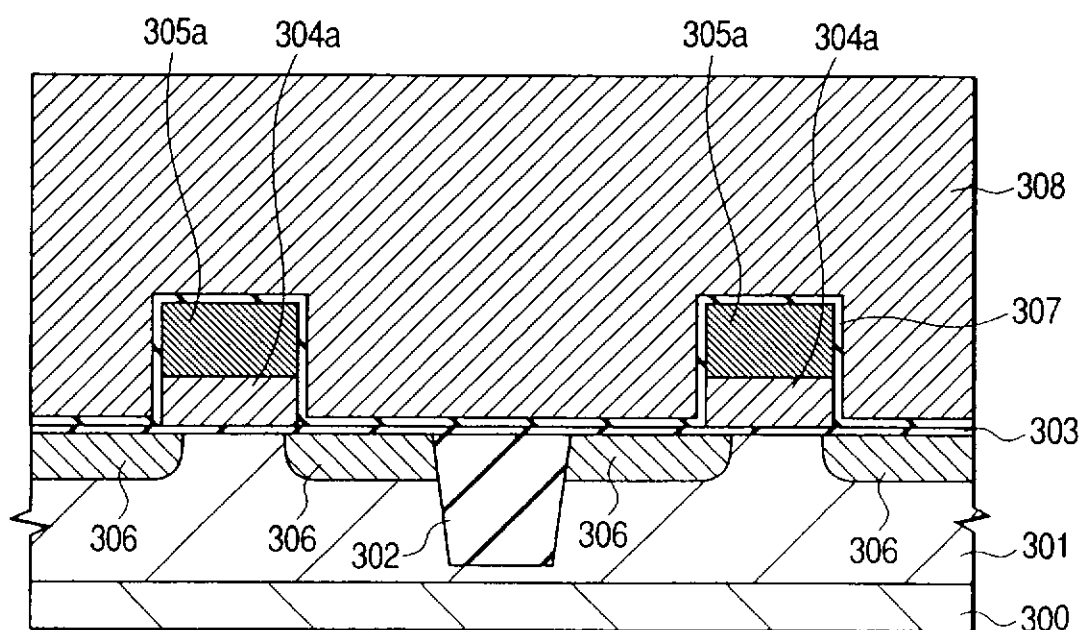
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FIG. 29A*FIG. 29B**FIG. 29C*

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FIG. 30A*FIG. 30B**FIG. 30C*

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FIG. 31A*FIG. 31B**FIG. 31C*

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FIG. 32A

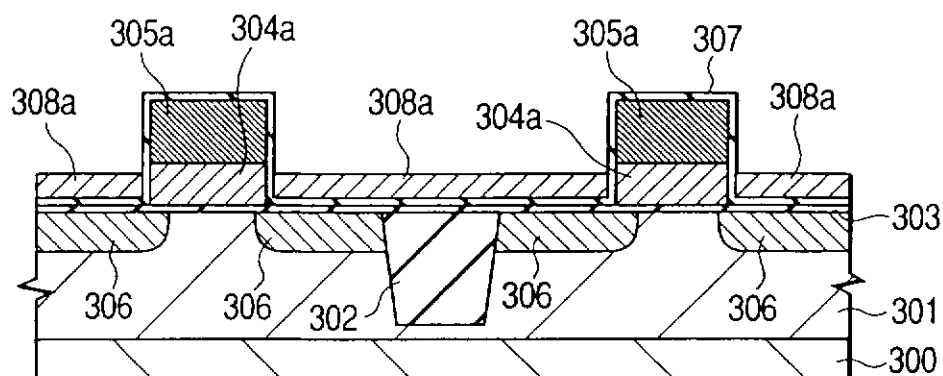


FIG. 32B

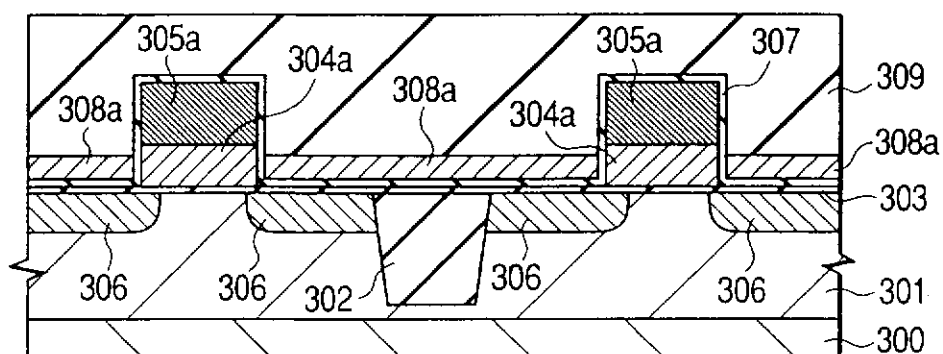


FIG. 32C

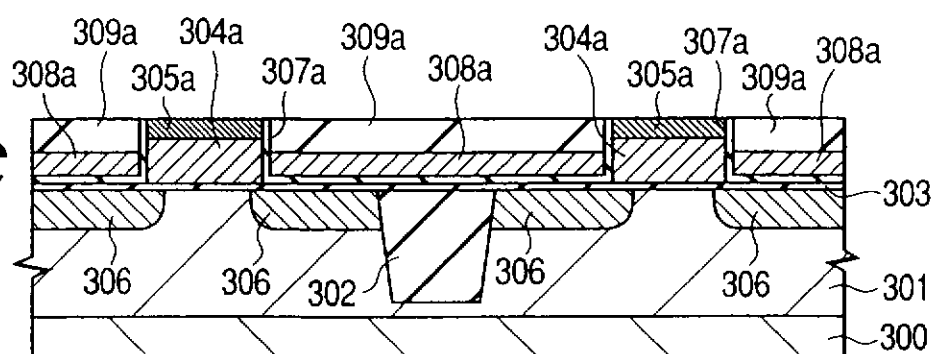
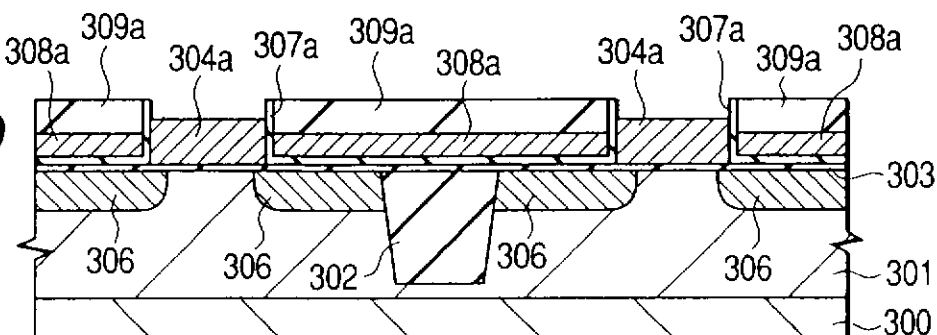


FIG. 32D



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FIG. 33A

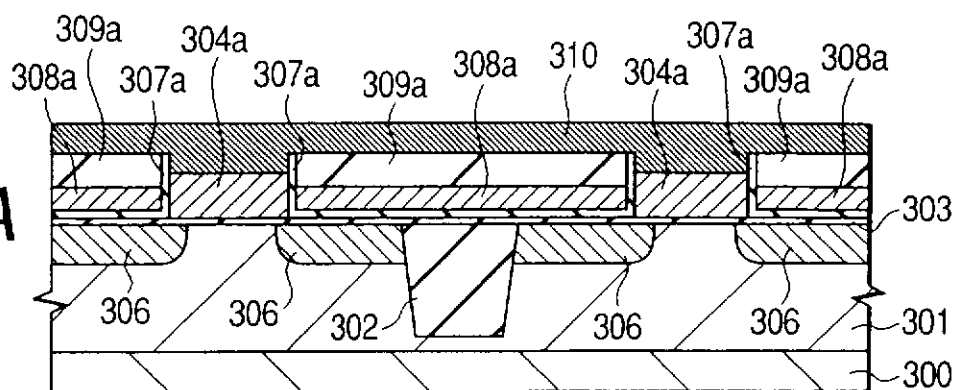


FIG. 33B

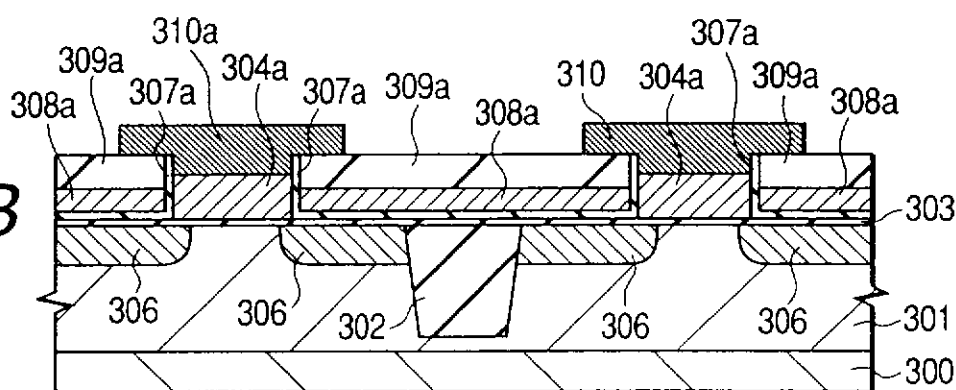


FIG. 33C

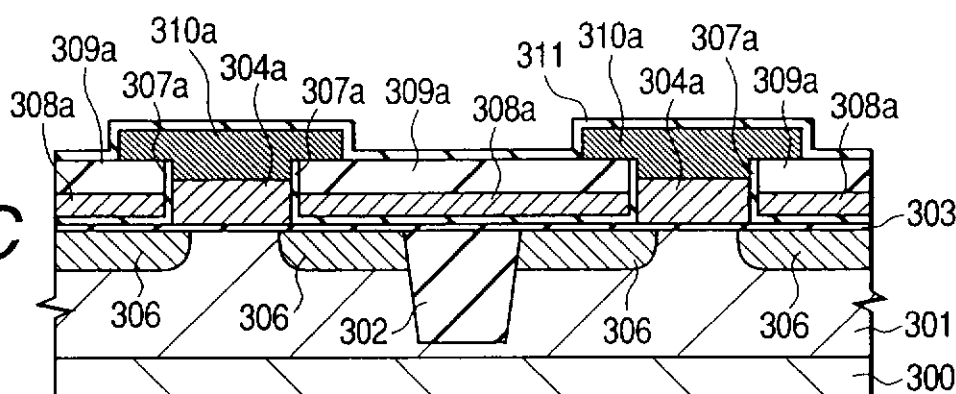


FIG. 33D

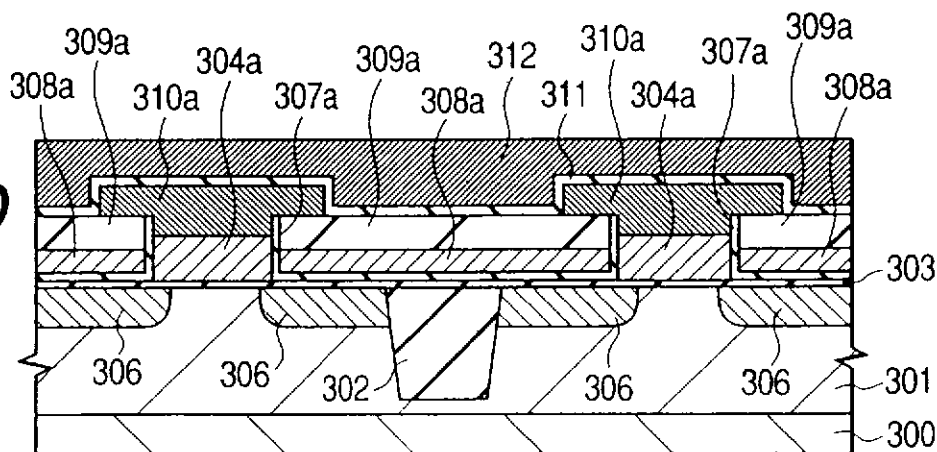
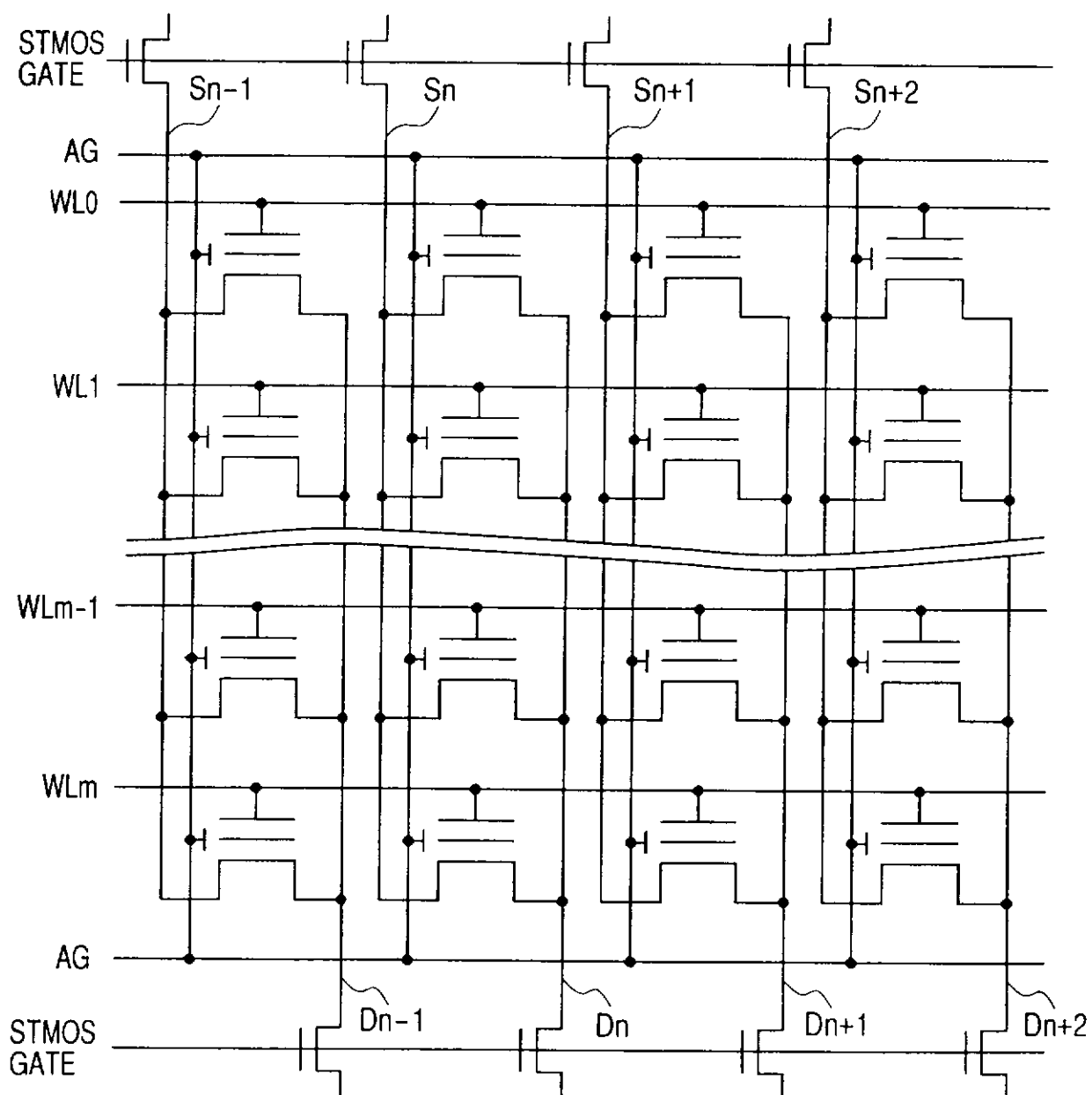


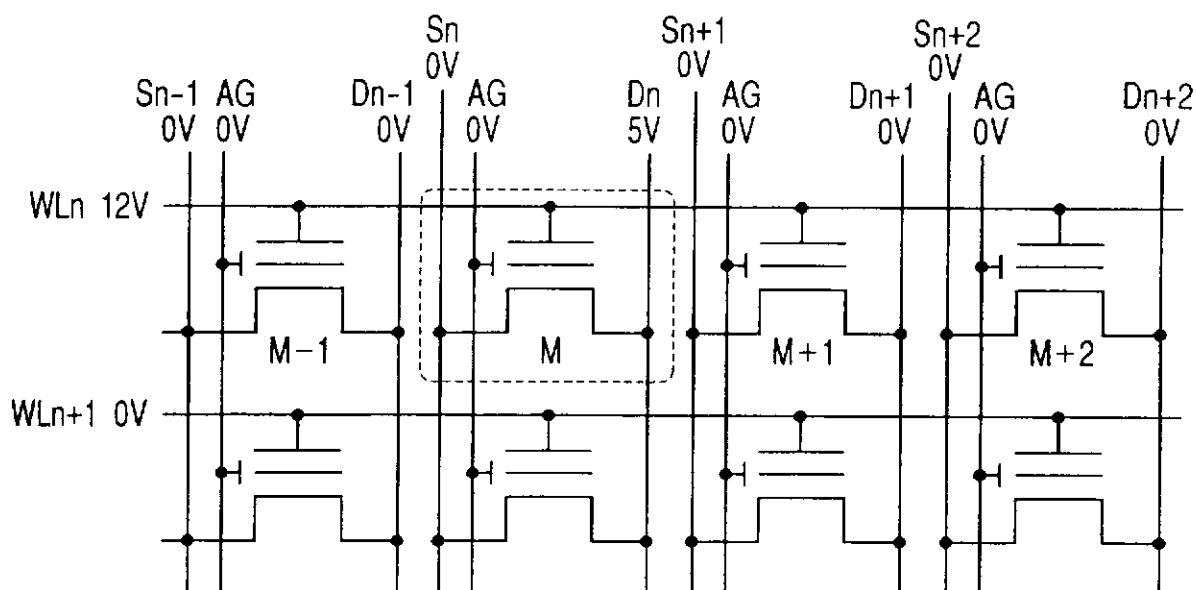
FIG. 34



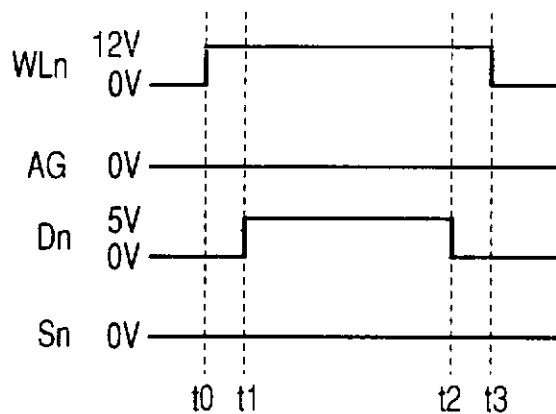
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FIG. 35A

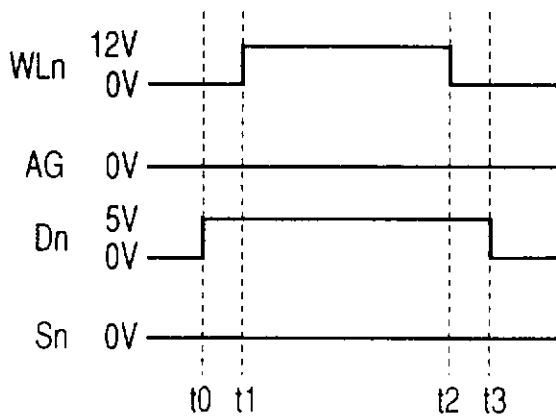
PROGRAM OPERATION VOLTAGE

**FIG. 35B**

TIMING 1

**FIG. 35C**

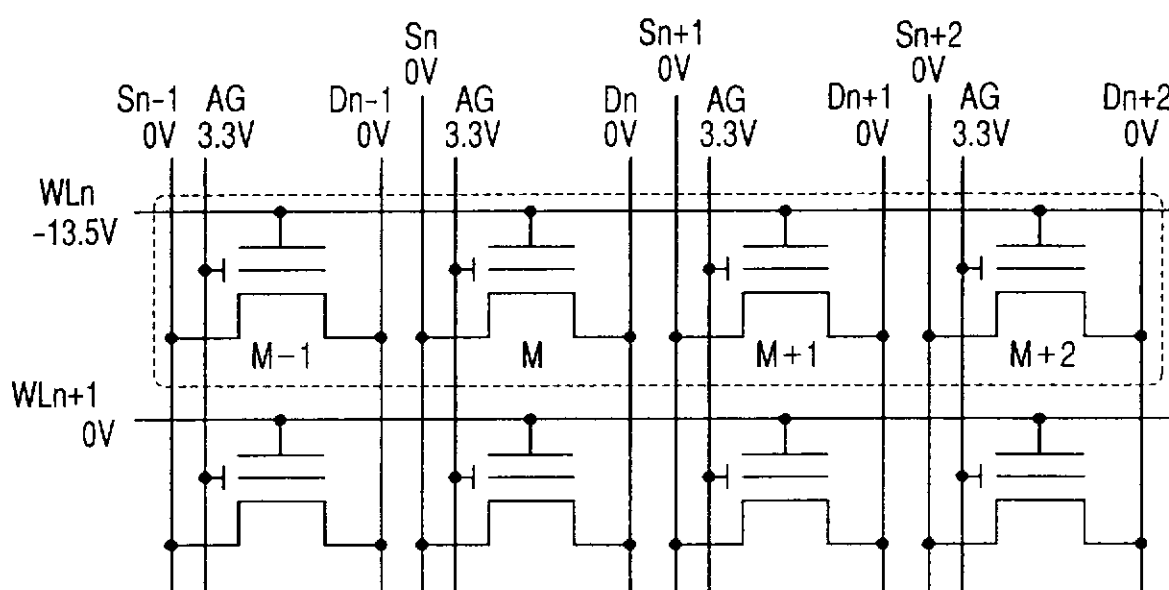
TIMING 2



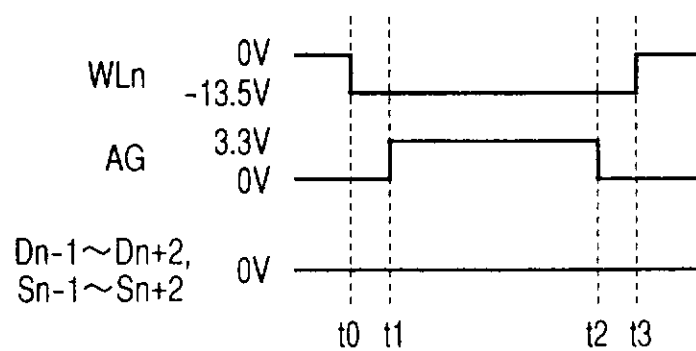
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FIG. 36A

ERASE OPERATION VOLTAGE

**FIG. 36B**

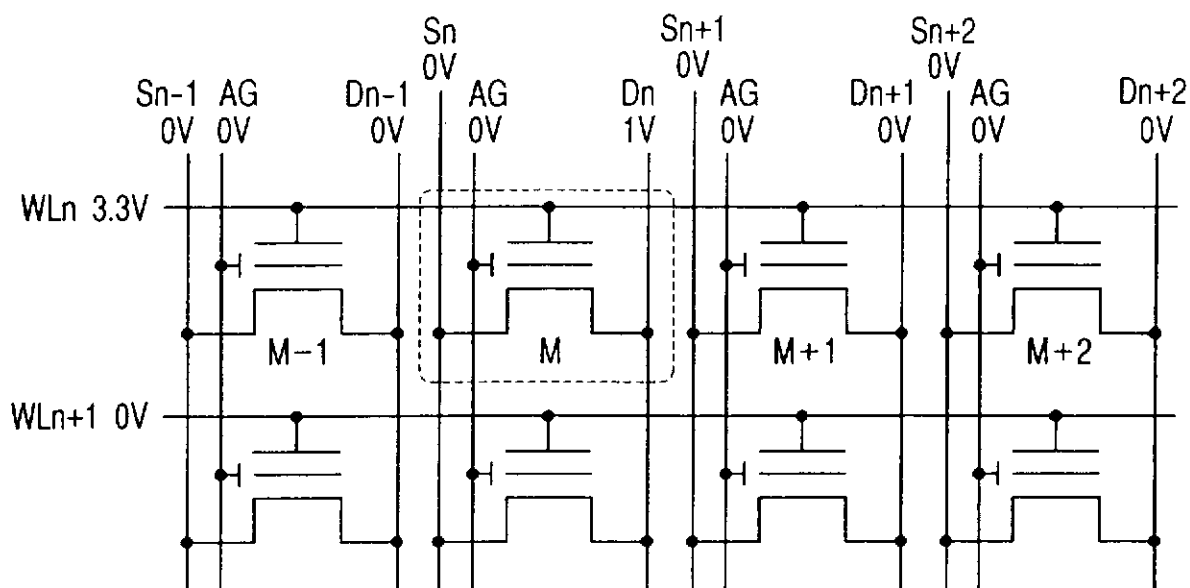
TIMING 1



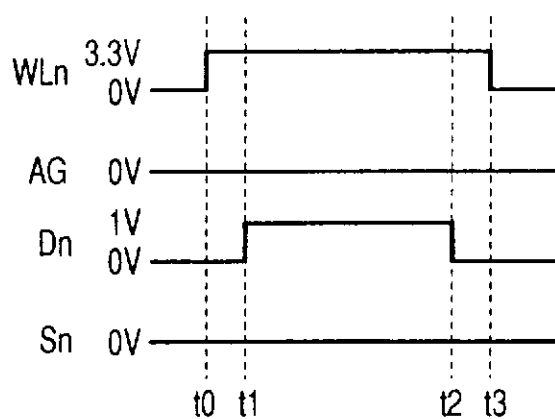
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FIG. 37A

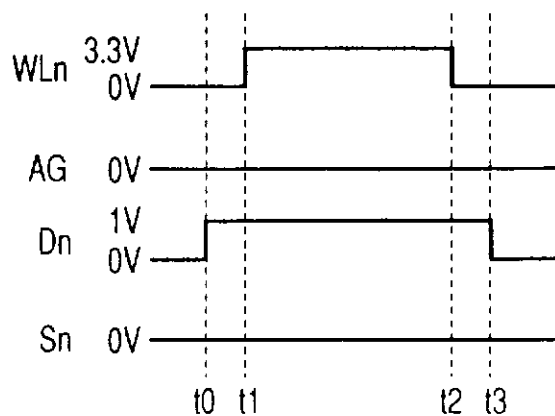
READ OPERATION VOLTAGE

**FIG. 37B**

TIMING 1

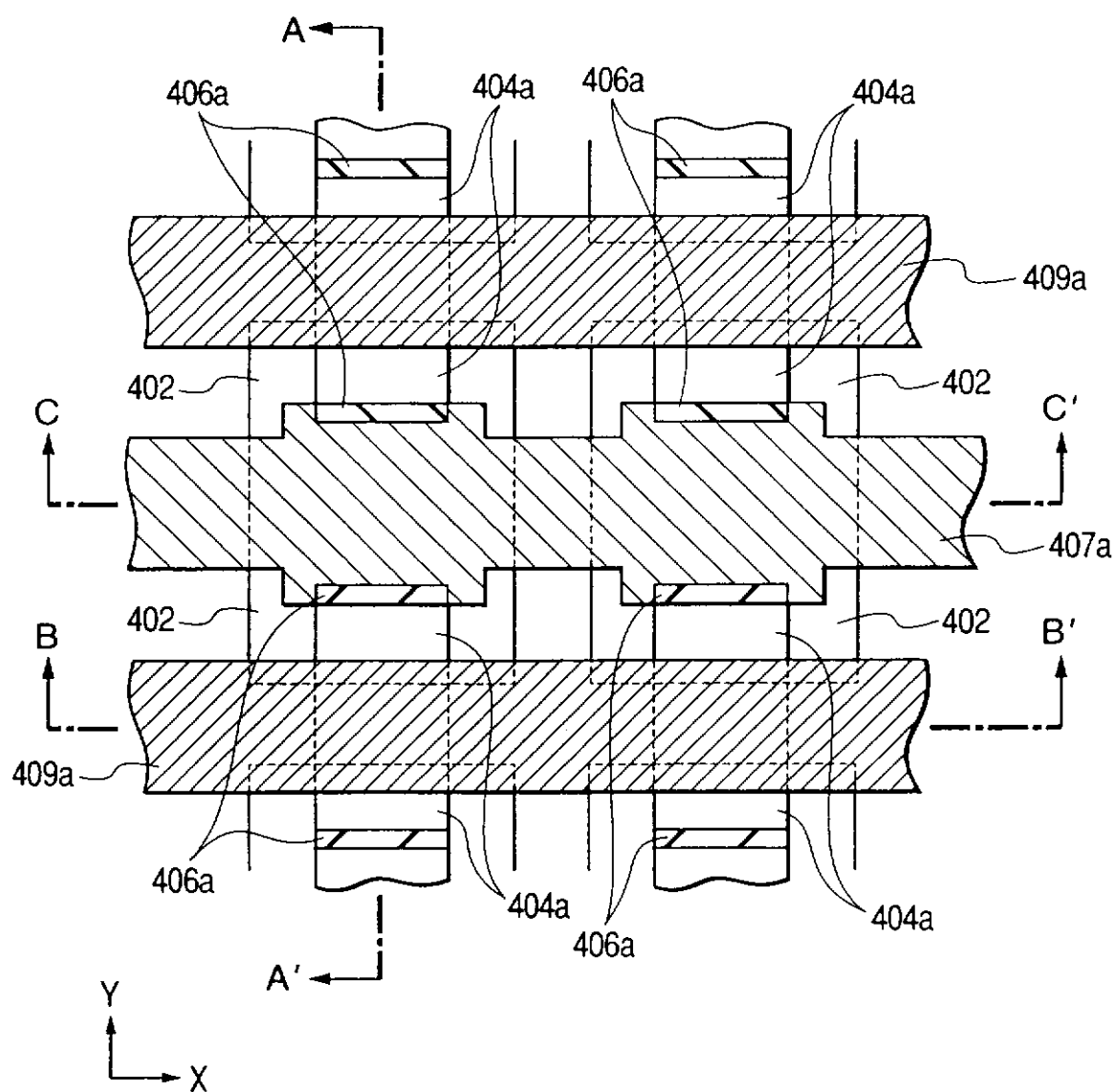
**FIG. 37C**

TIMING 2

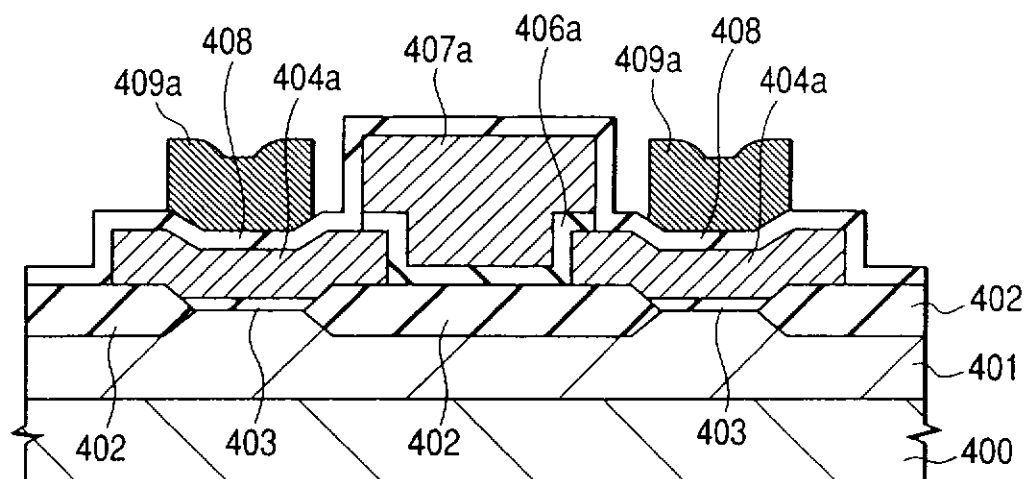
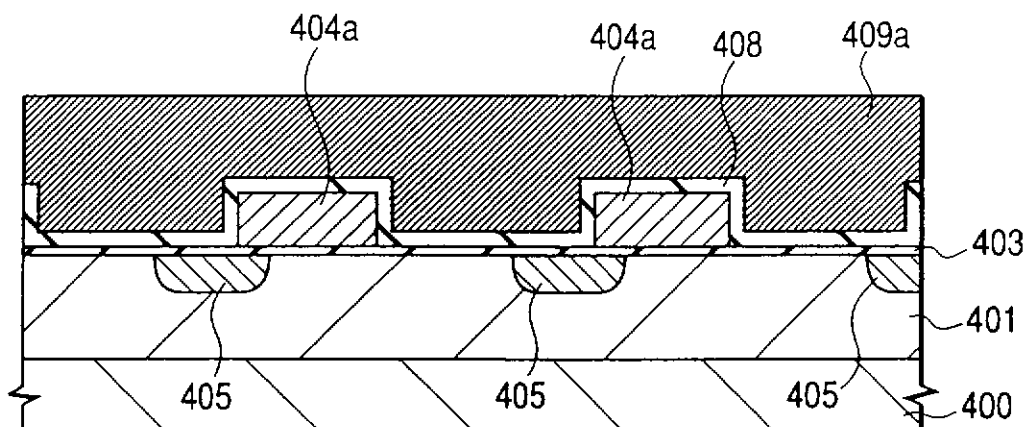
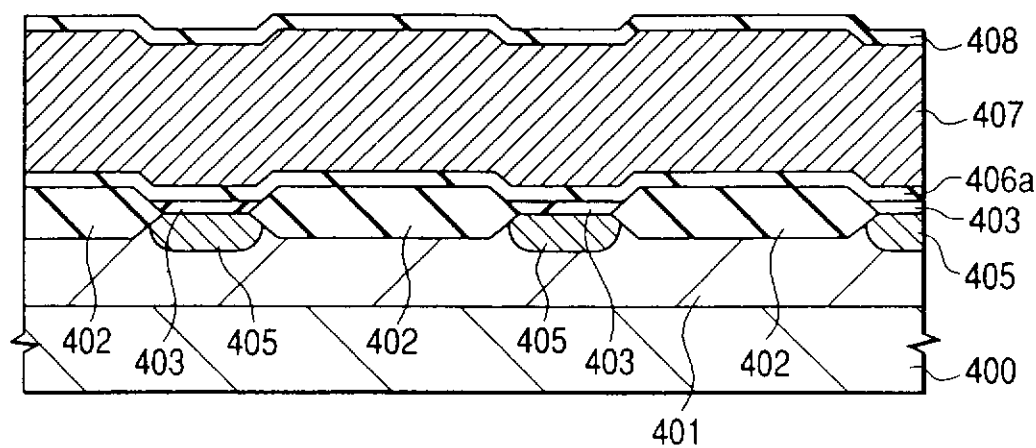


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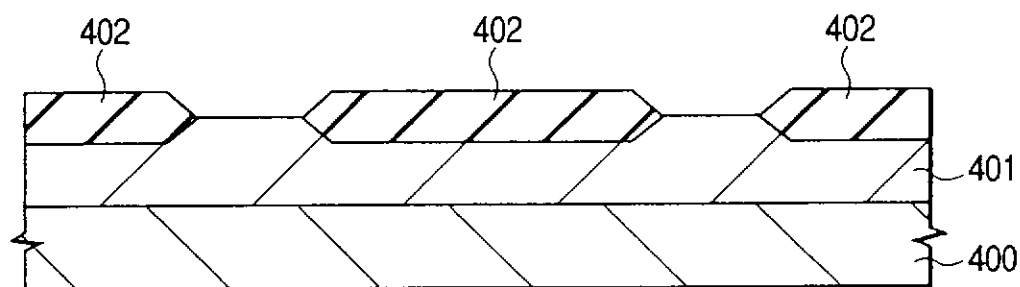
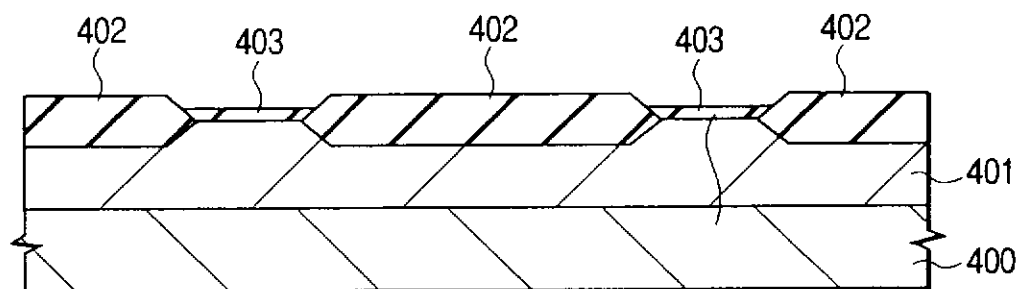
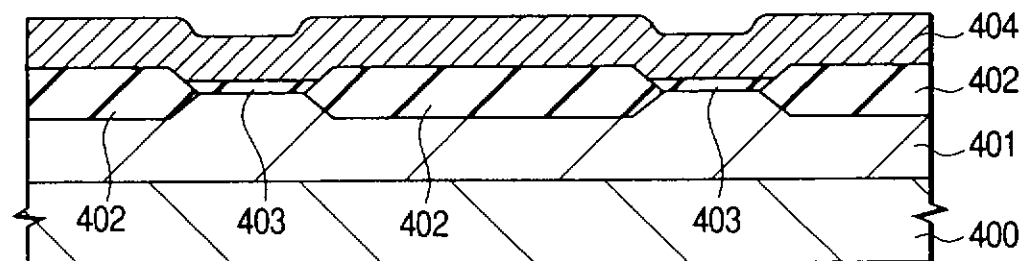
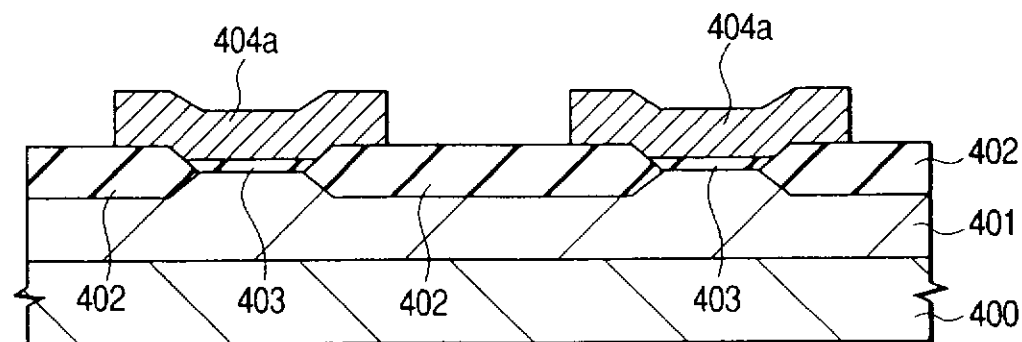
FIG. 38



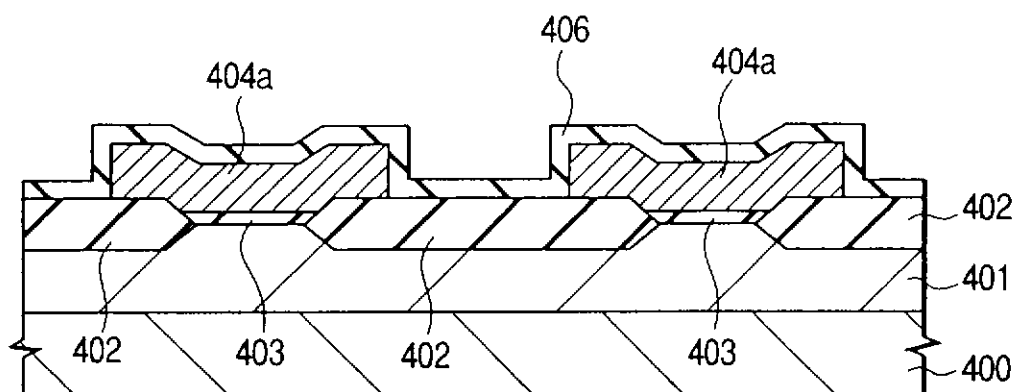
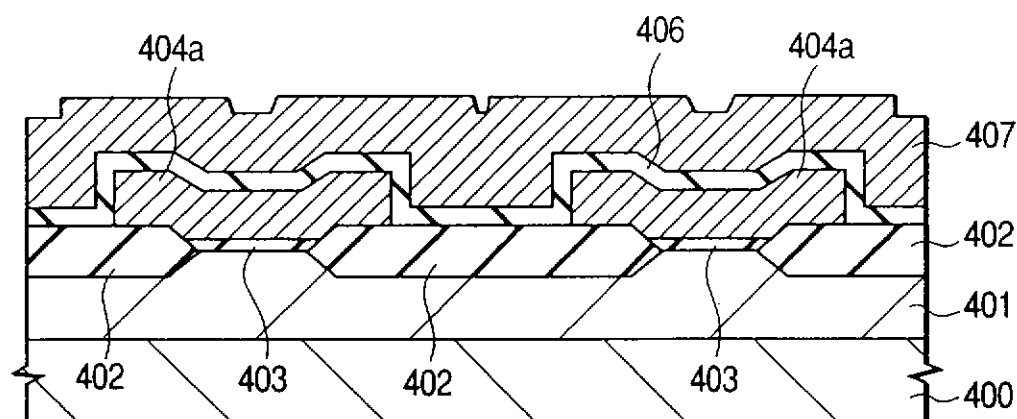
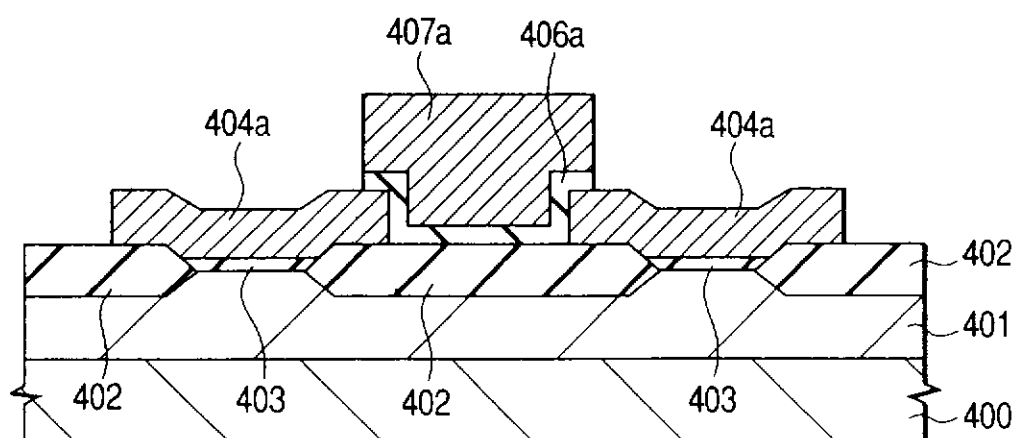
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FIG. 39A*FIG. 39B**FIG. 39C*

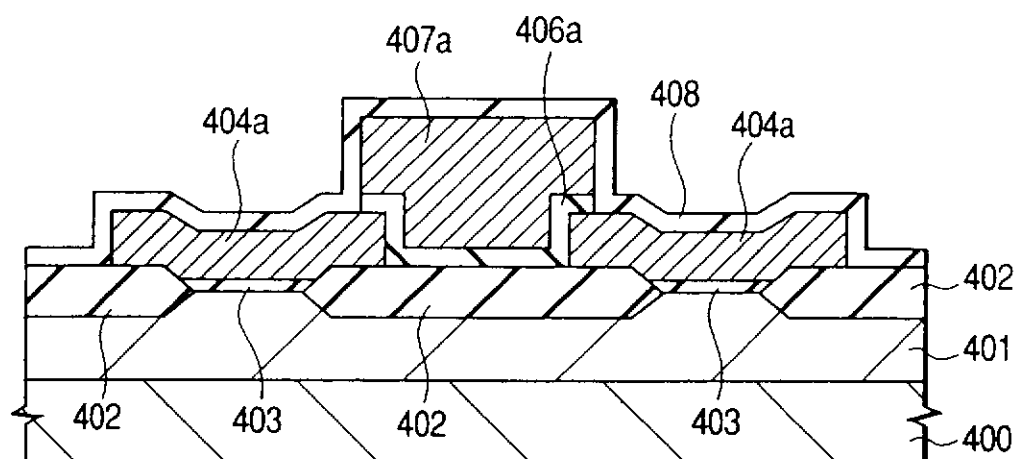
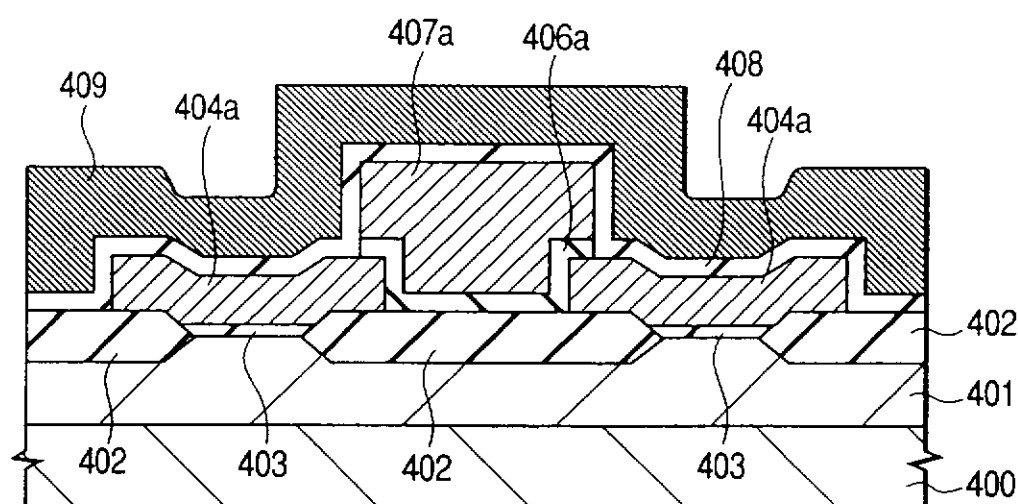
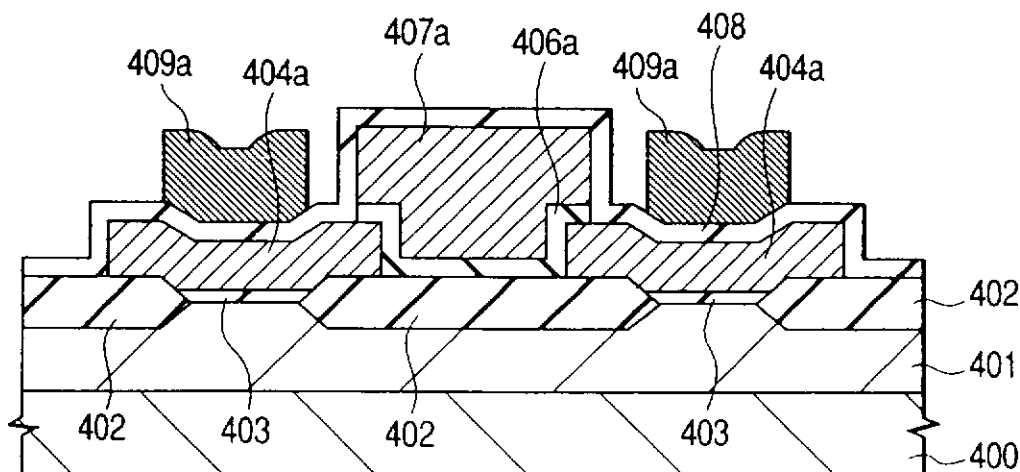
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FIG. 40A*FIG. 40B**FIG. 40C**FIG. 40D*

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FIG. 41A*FIG. 41B**FIG. 41C*

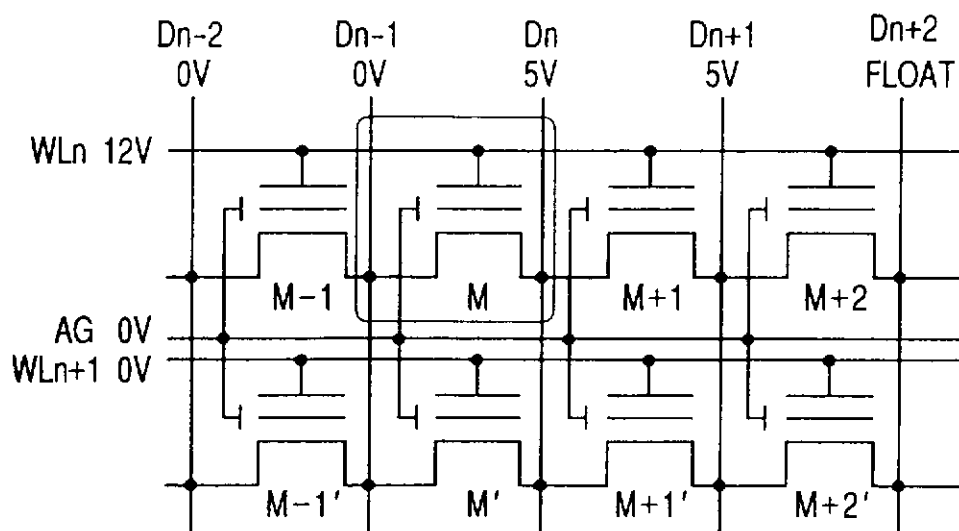
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FIG. 42A**FIG. 42B****FIG. 42C**

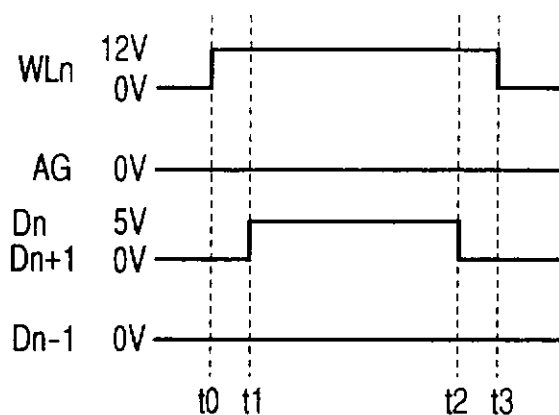
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FIG. 43A

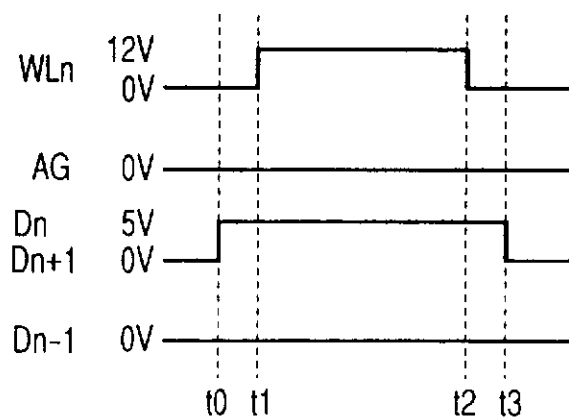
PROGRAM OPERATION VOLTAGE

**FIG. 43B**

TIMING 1

**FIG. 43C**

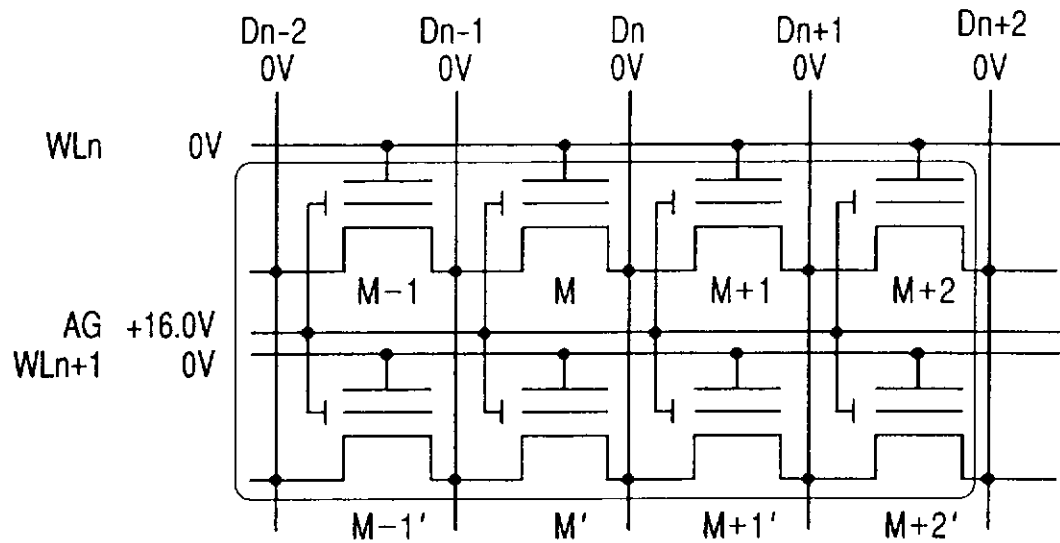
TIMING 2



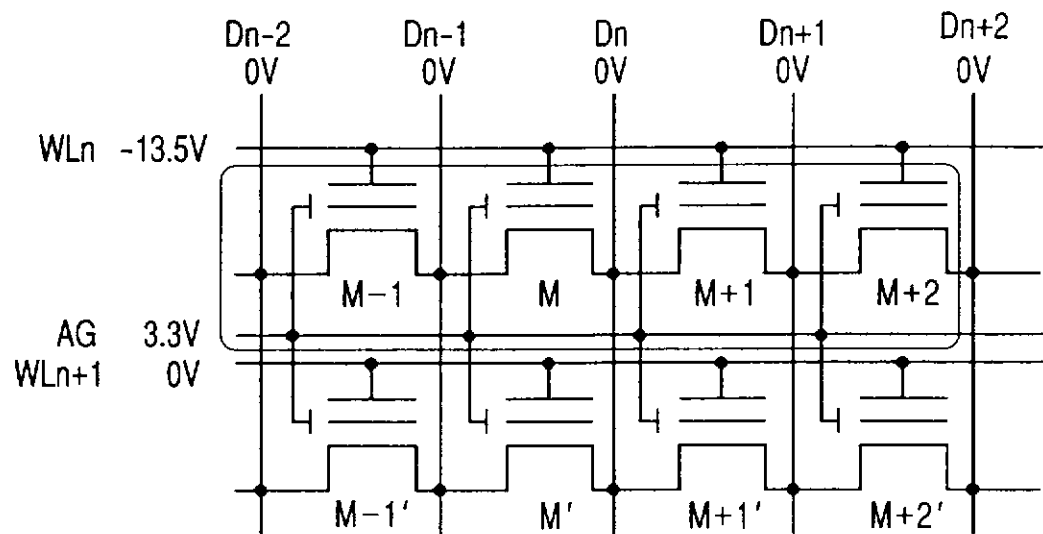
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FIG. 44A

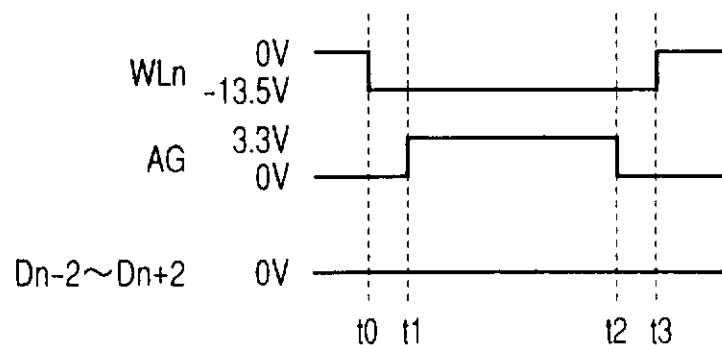
ERASE OPERATION VOLTAGE

**FIG. 44B**

ERASE OPERATION VOLTAGE

**FIG. 44C**

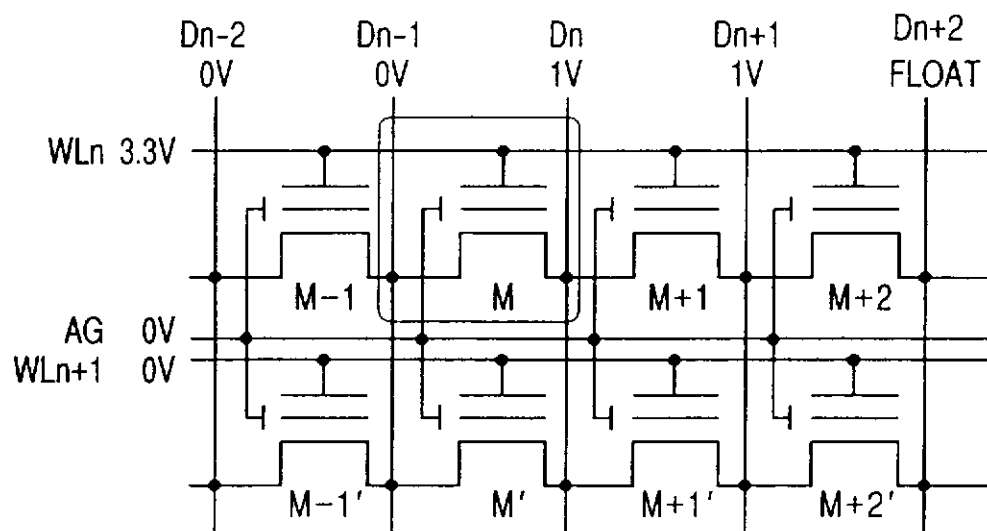
TIMING 1



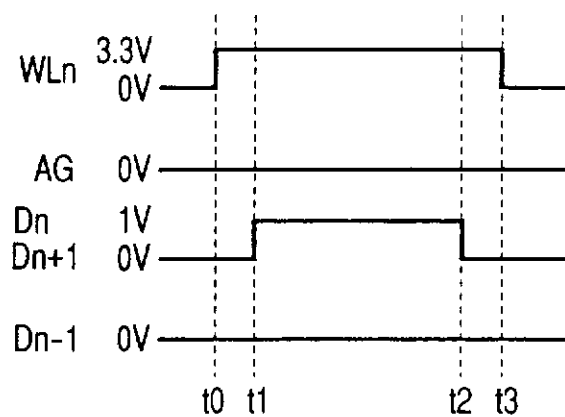
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FIG. 45A

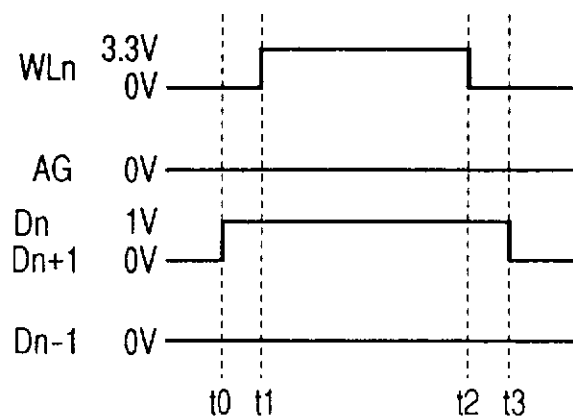
READ OPERATION VOLTAGE

**FIG. 45B**

TIMING 1

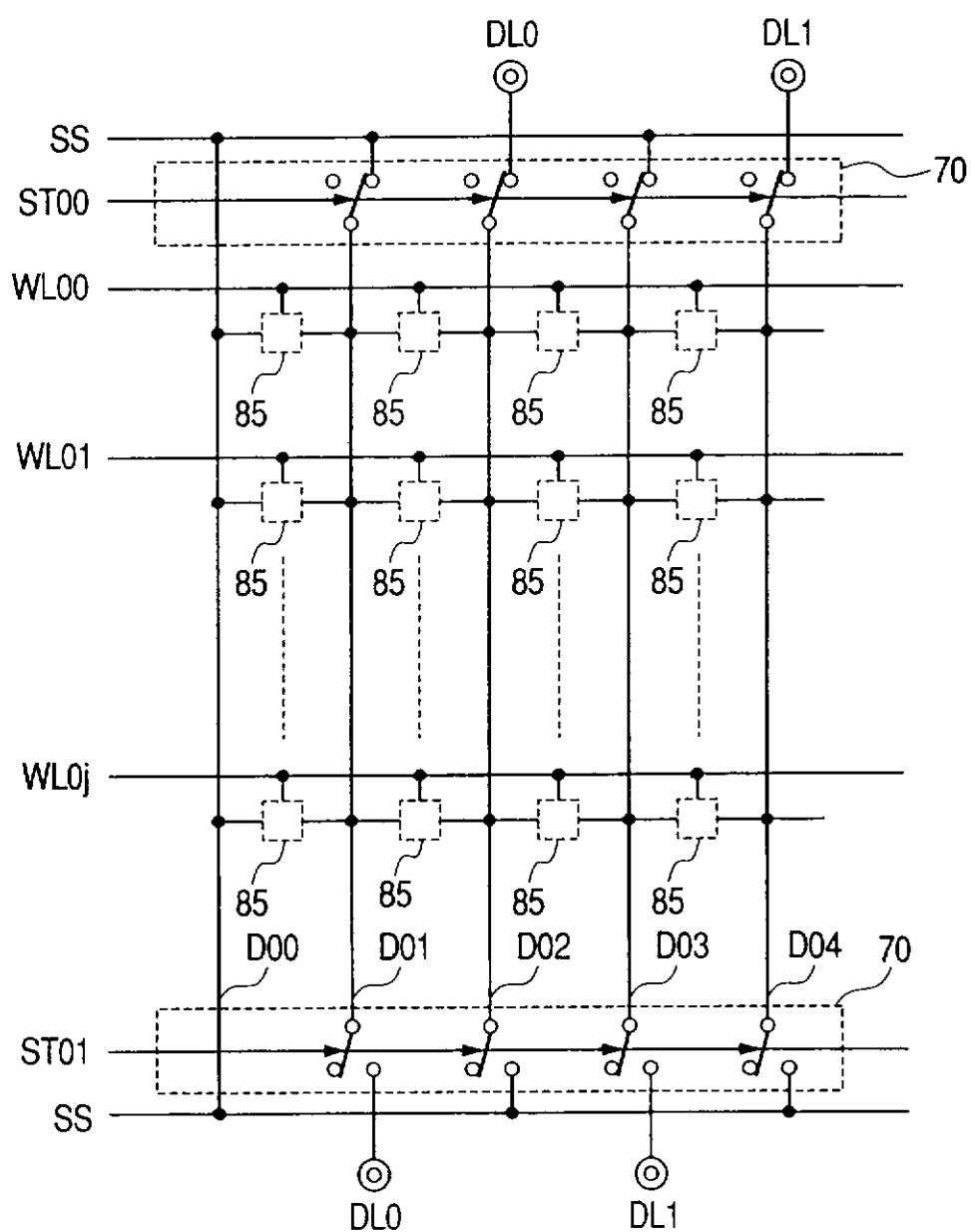
**FIG. 45C**

TIMING 2



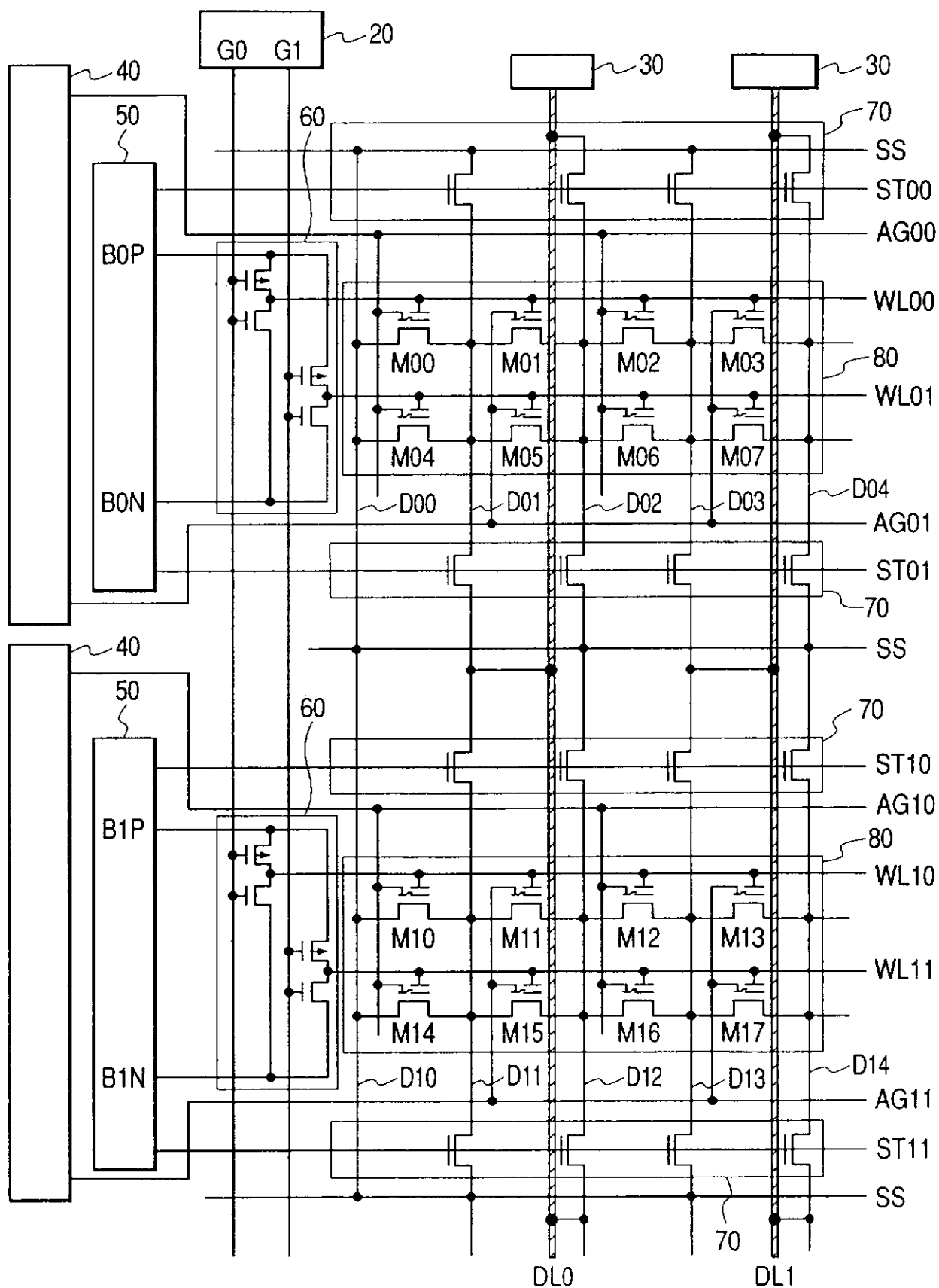
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FIG. 46



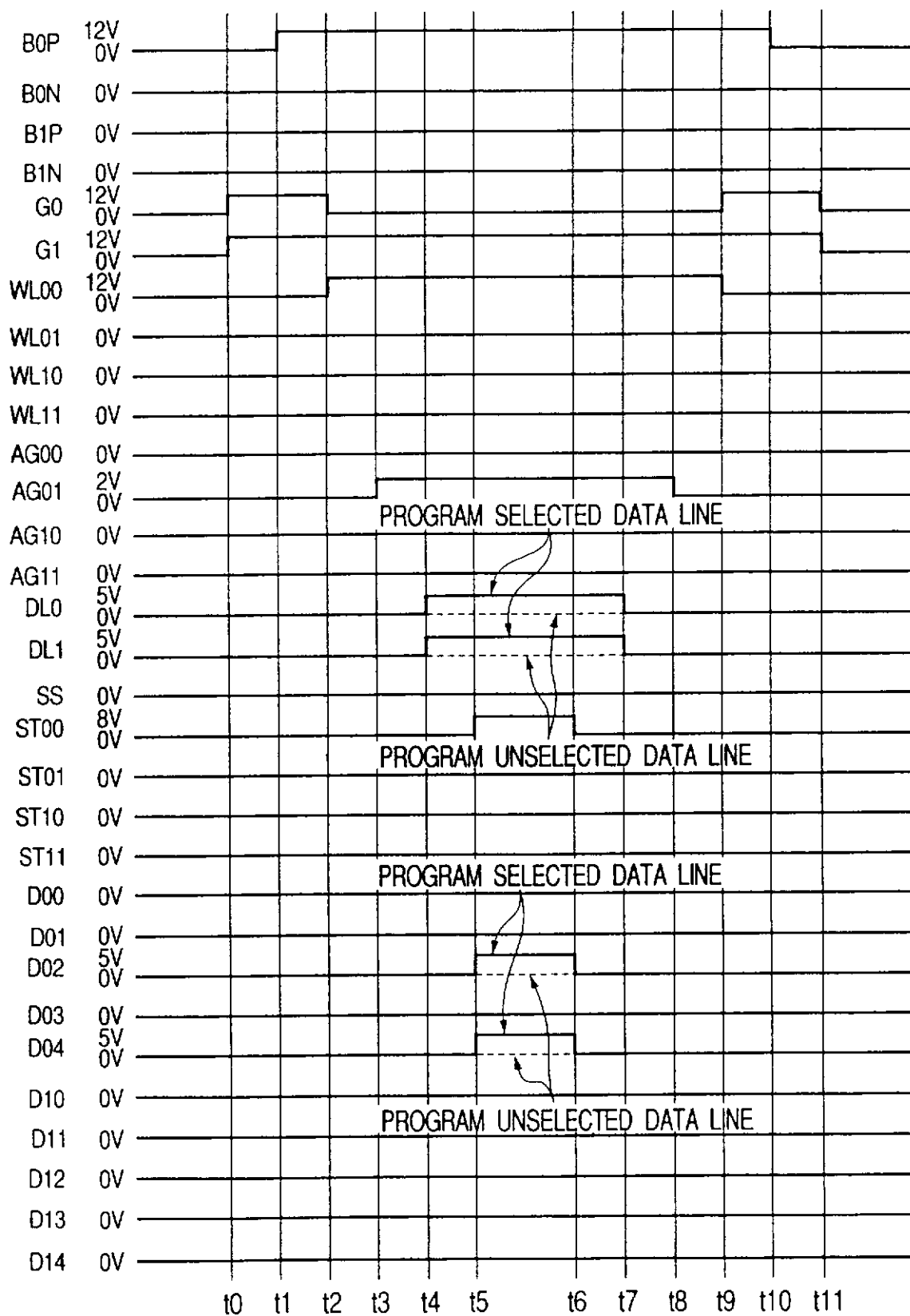
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FIG. 47



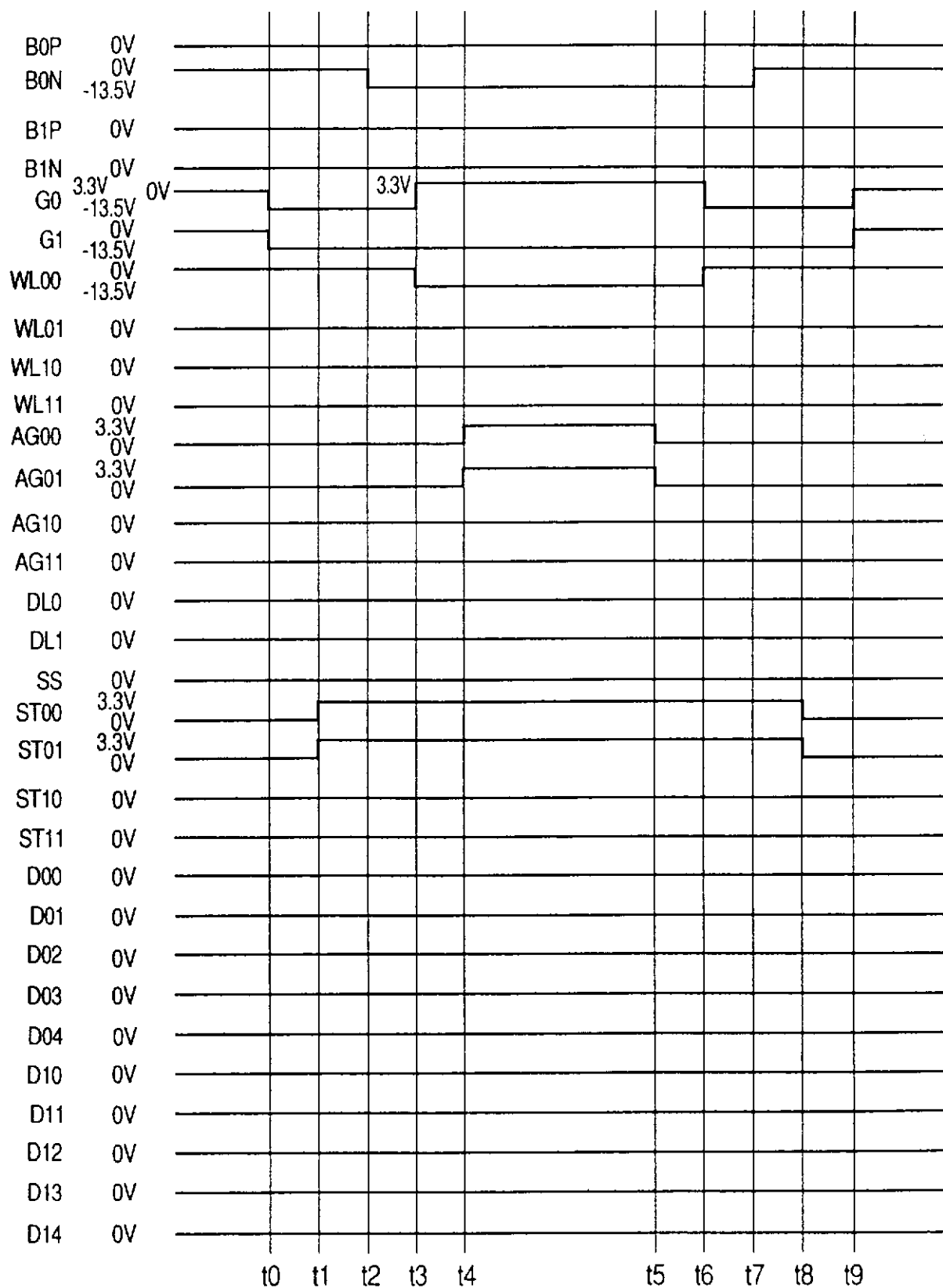
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FIG. 48



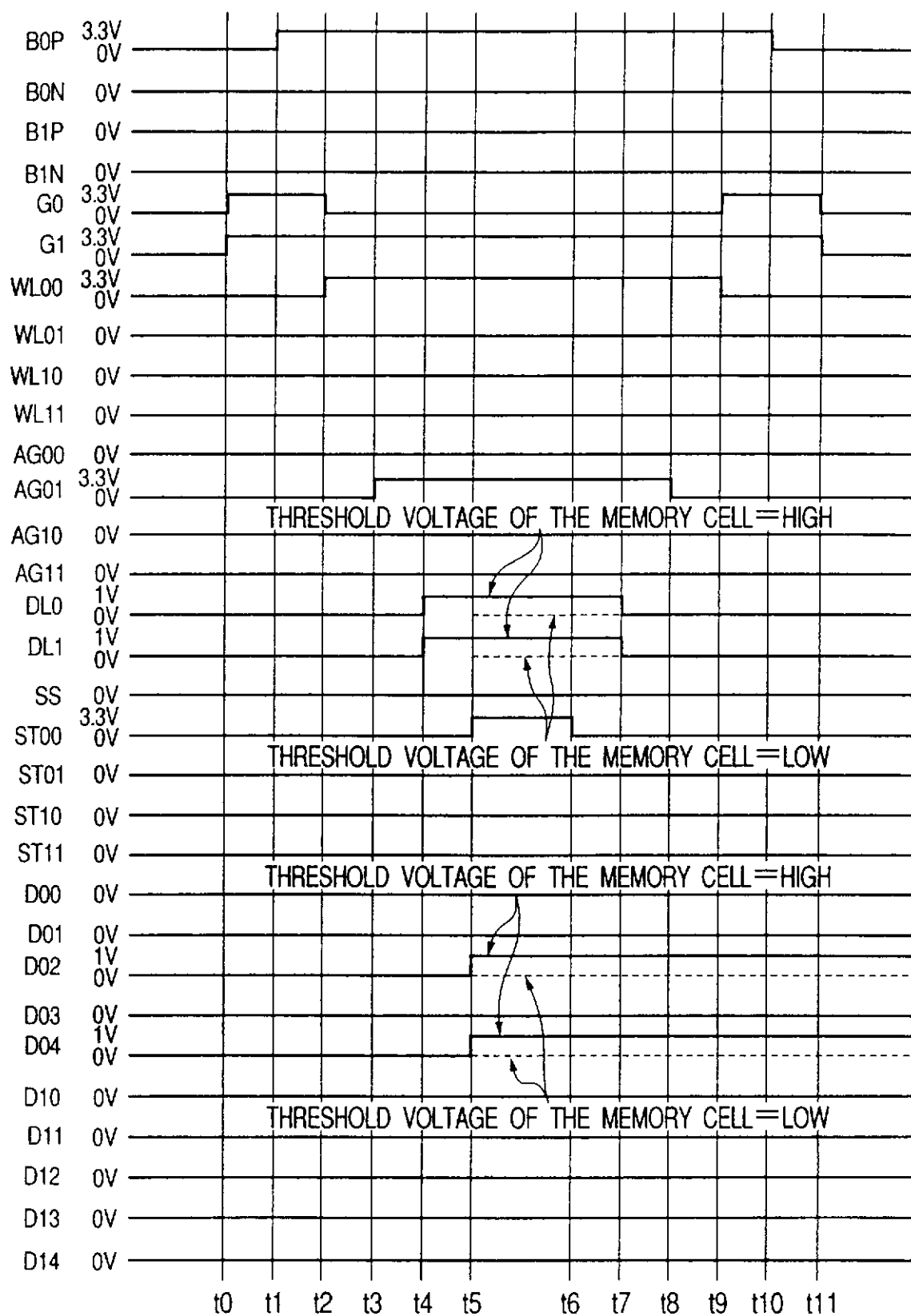
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FIG. 49



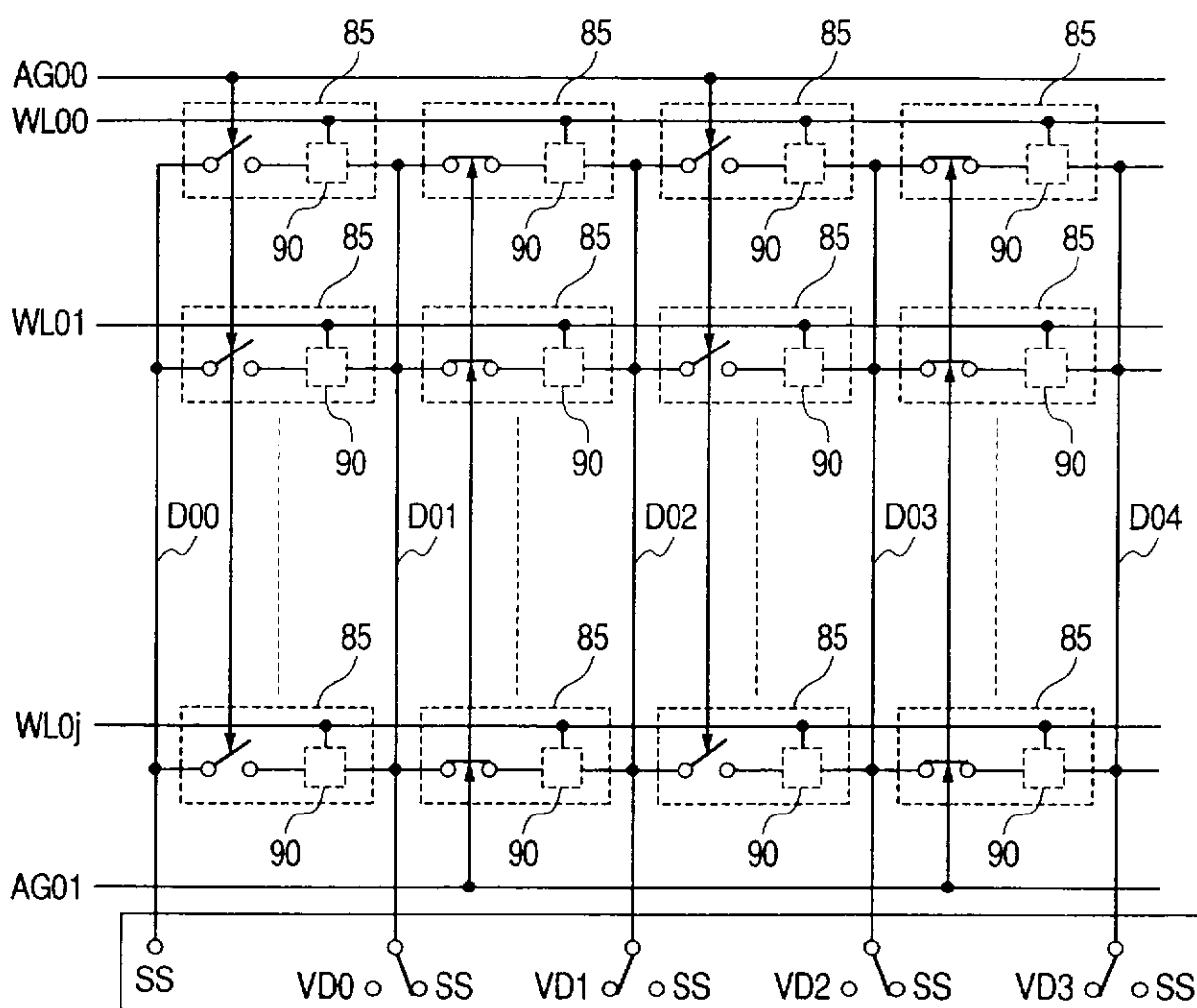
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FIG. 50

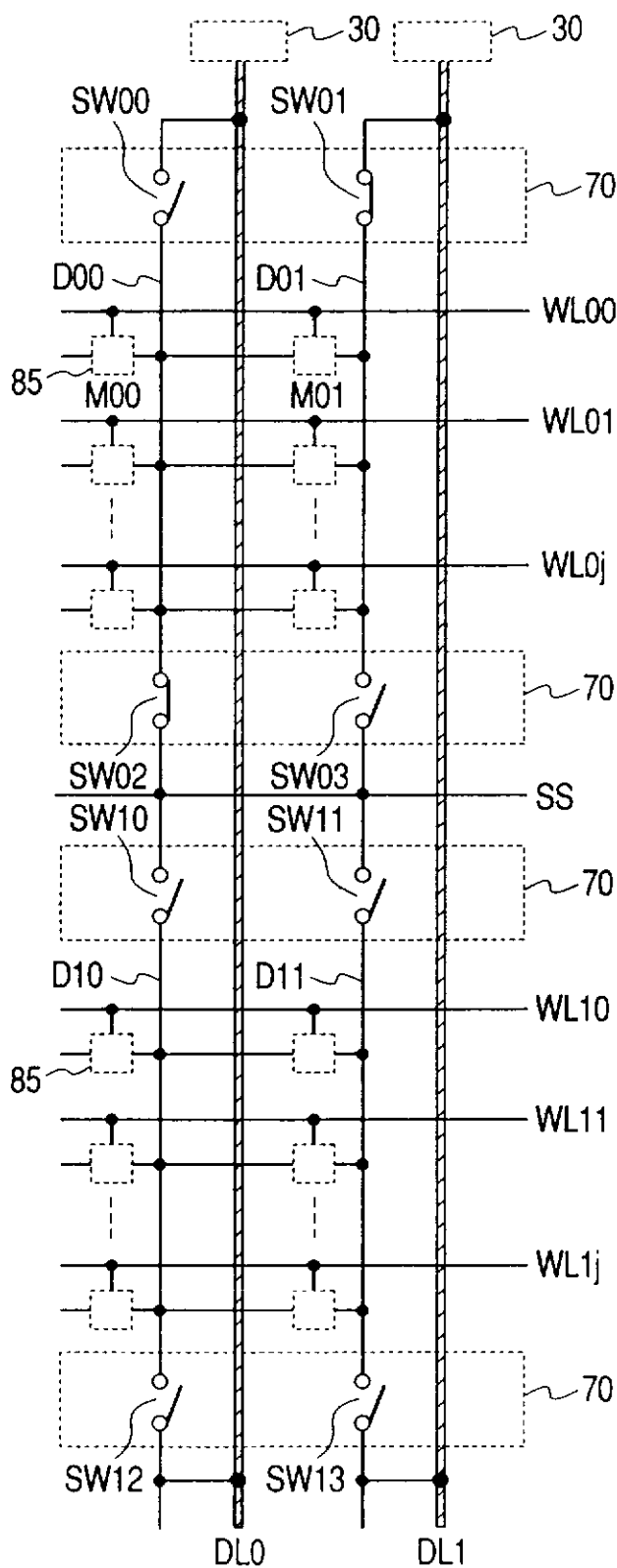


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FIG. 51



WITH SELECT TRANSISTOR



WITHOUT SELECT TRANSISTOR

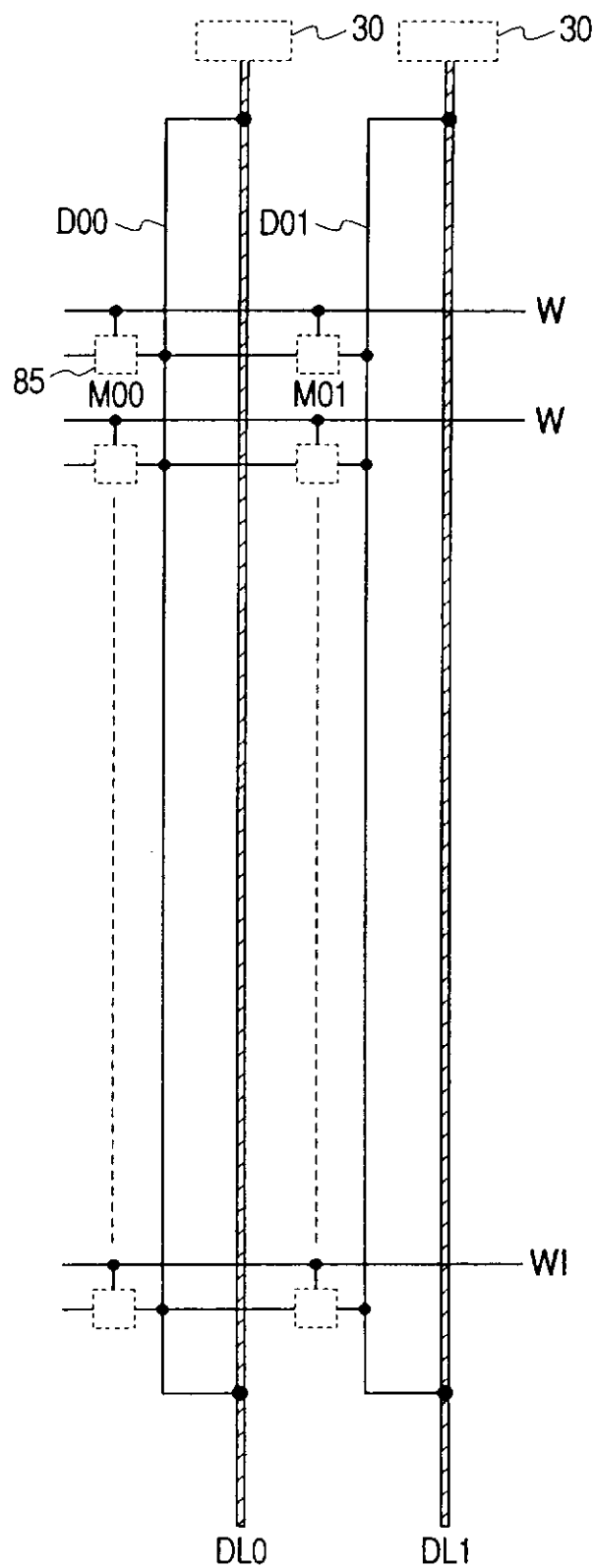
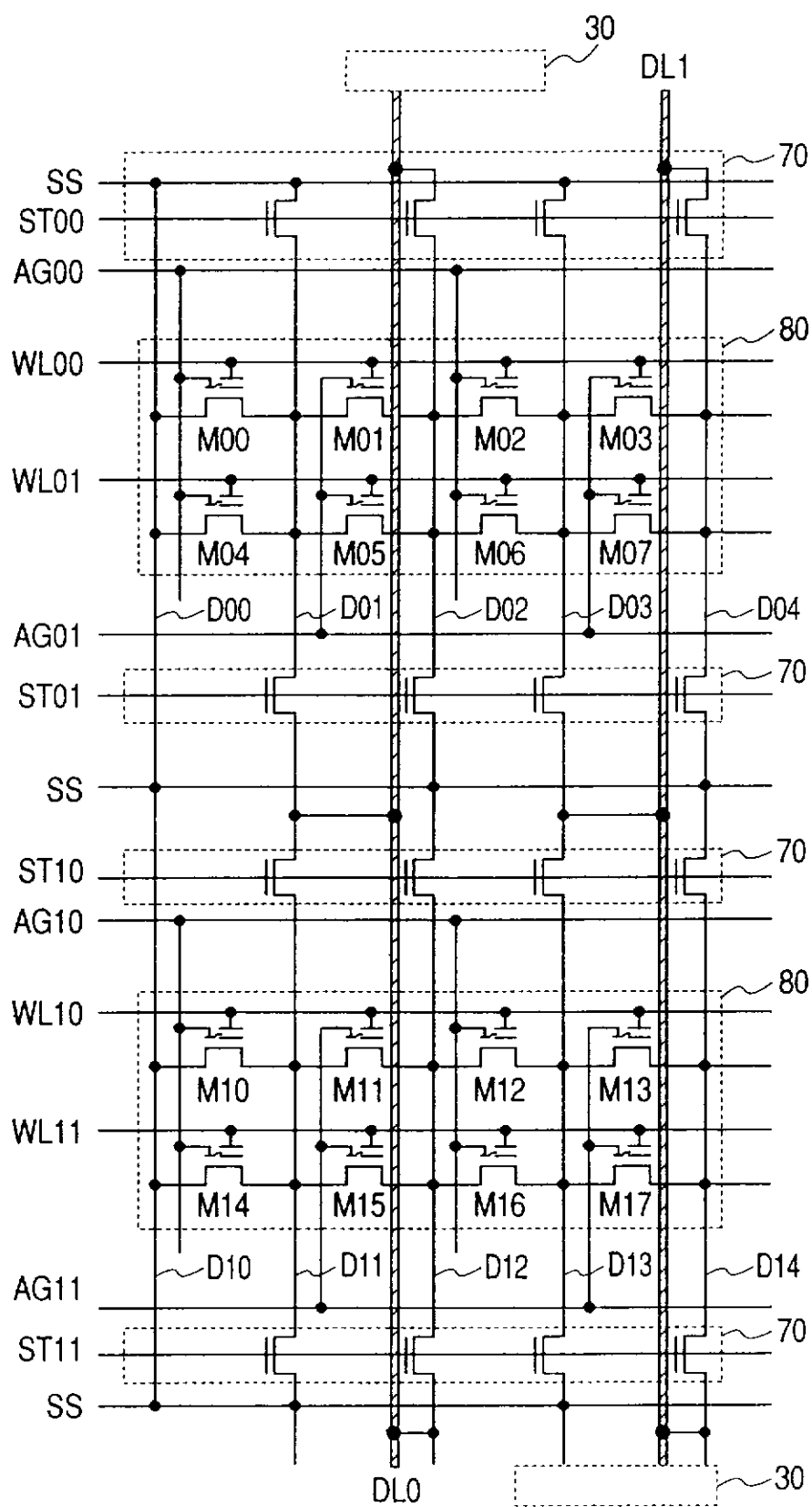
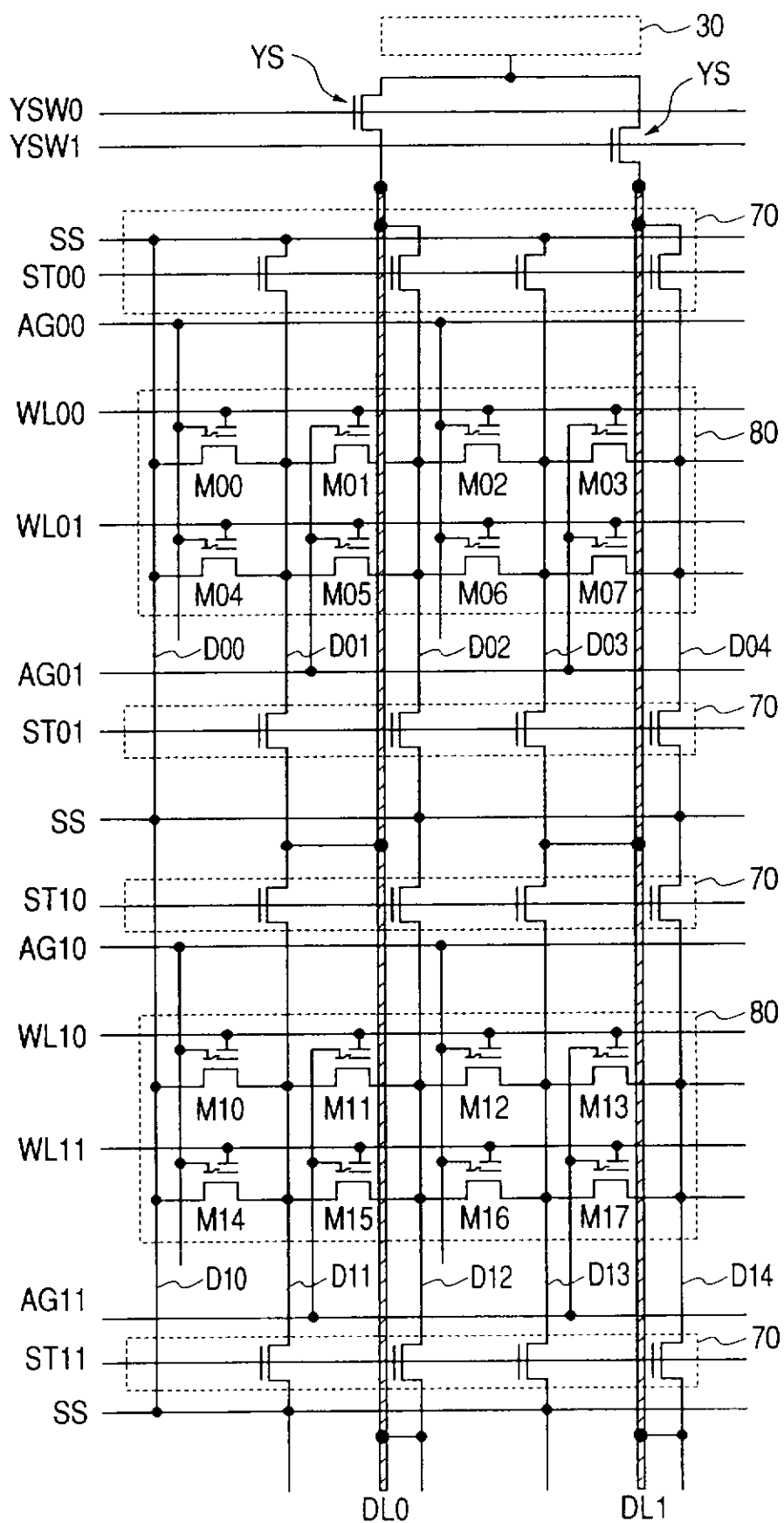


FIG. 53



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FIG. 54



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FIG. 55

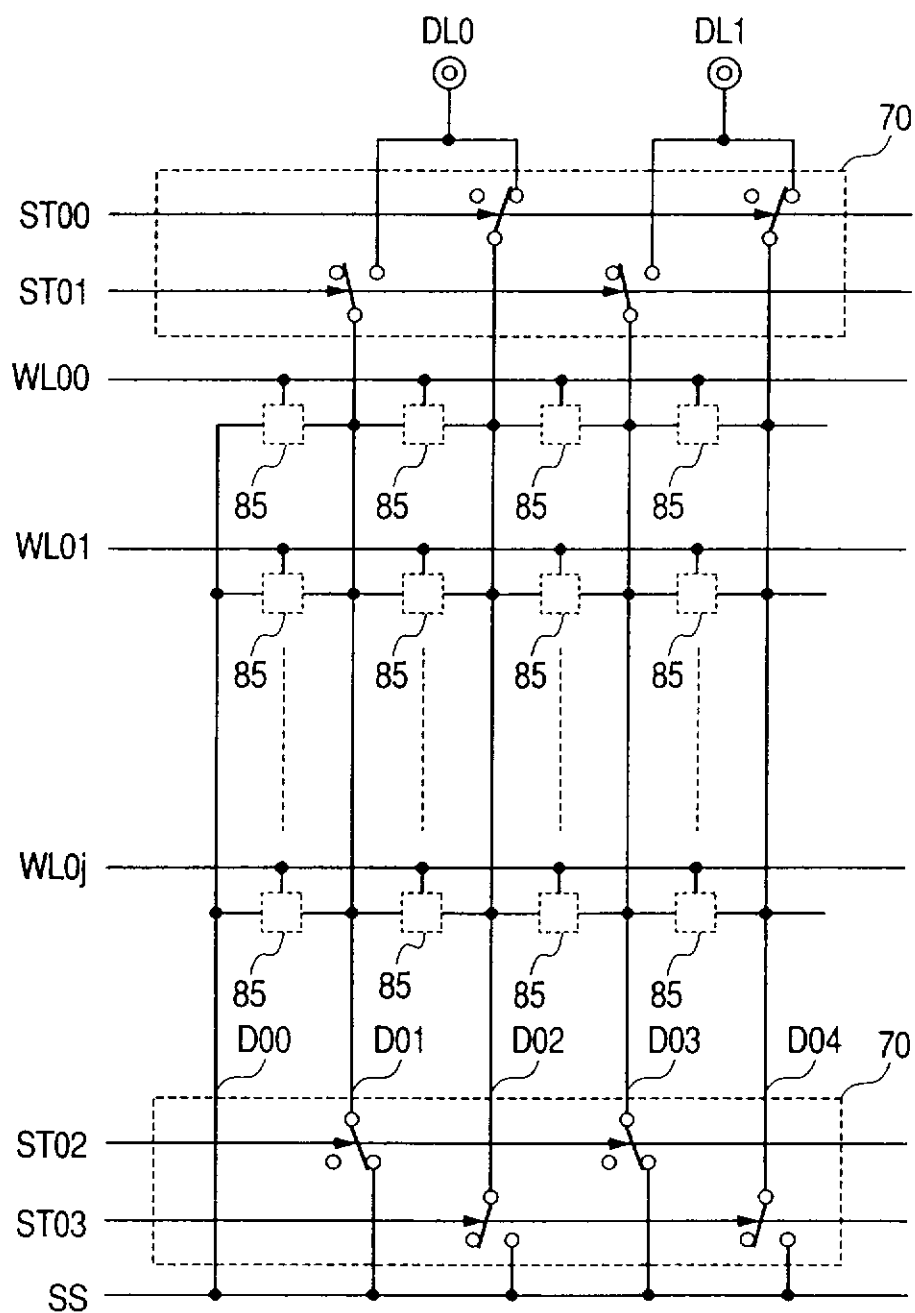
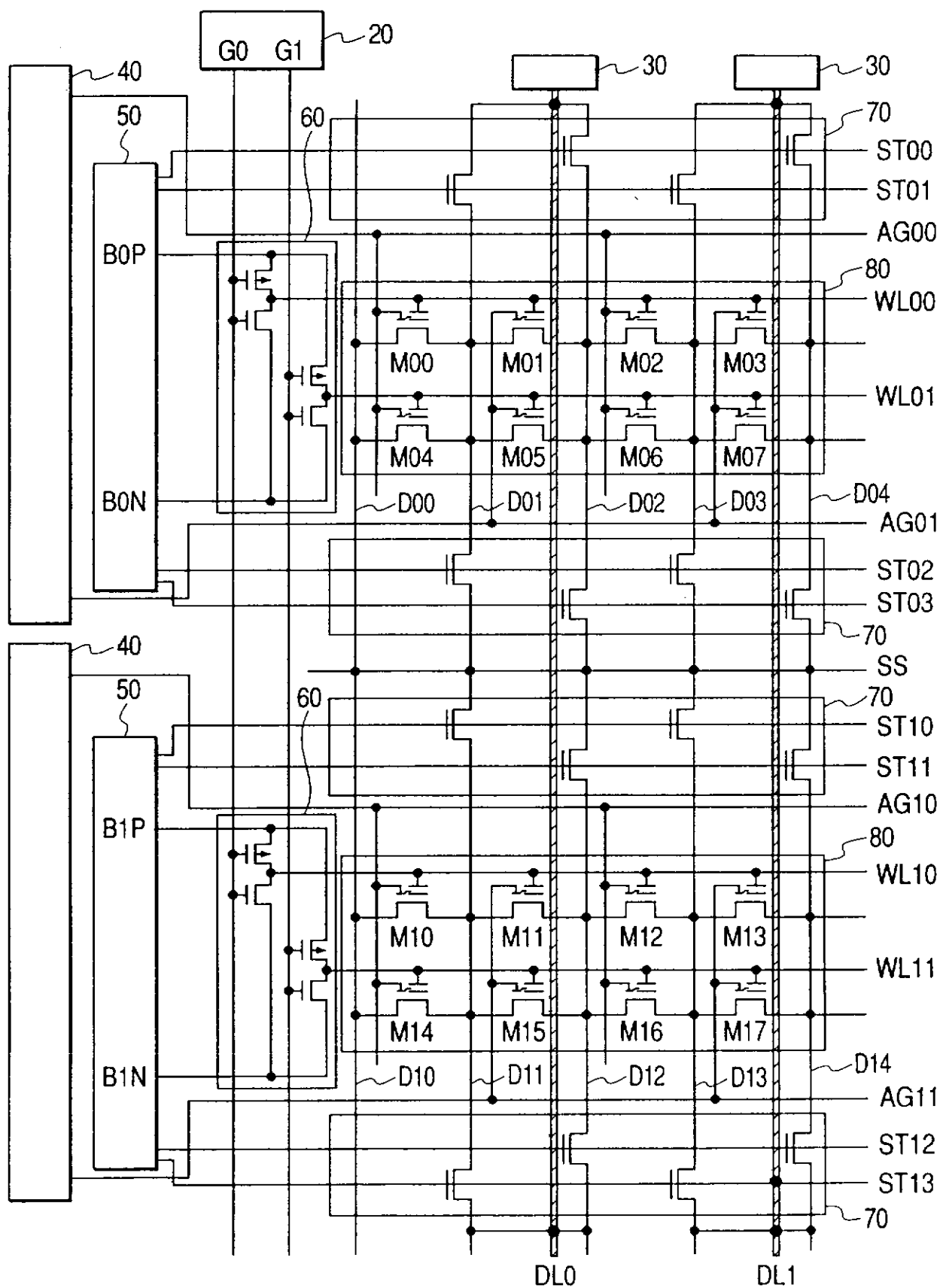
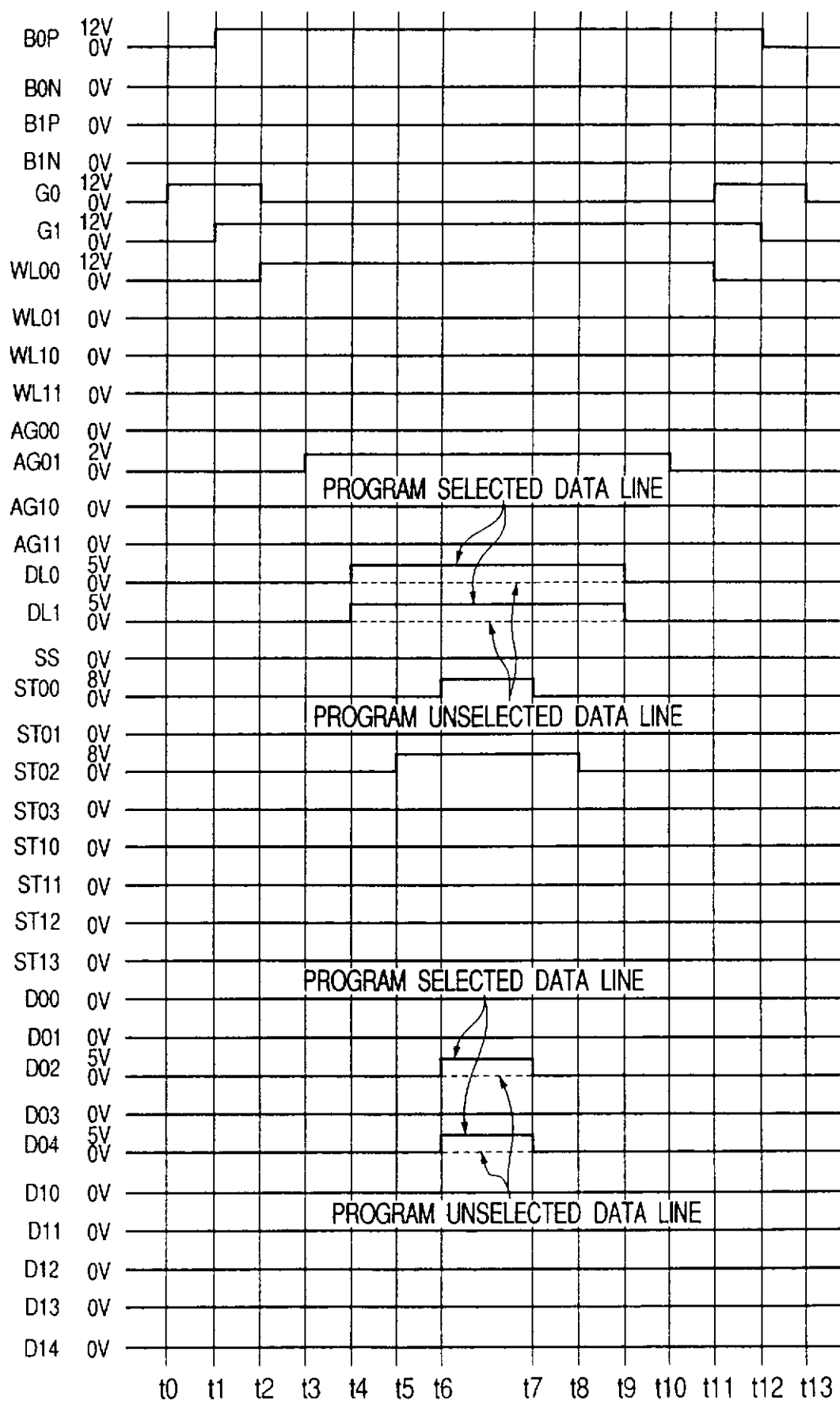


FIG. 56



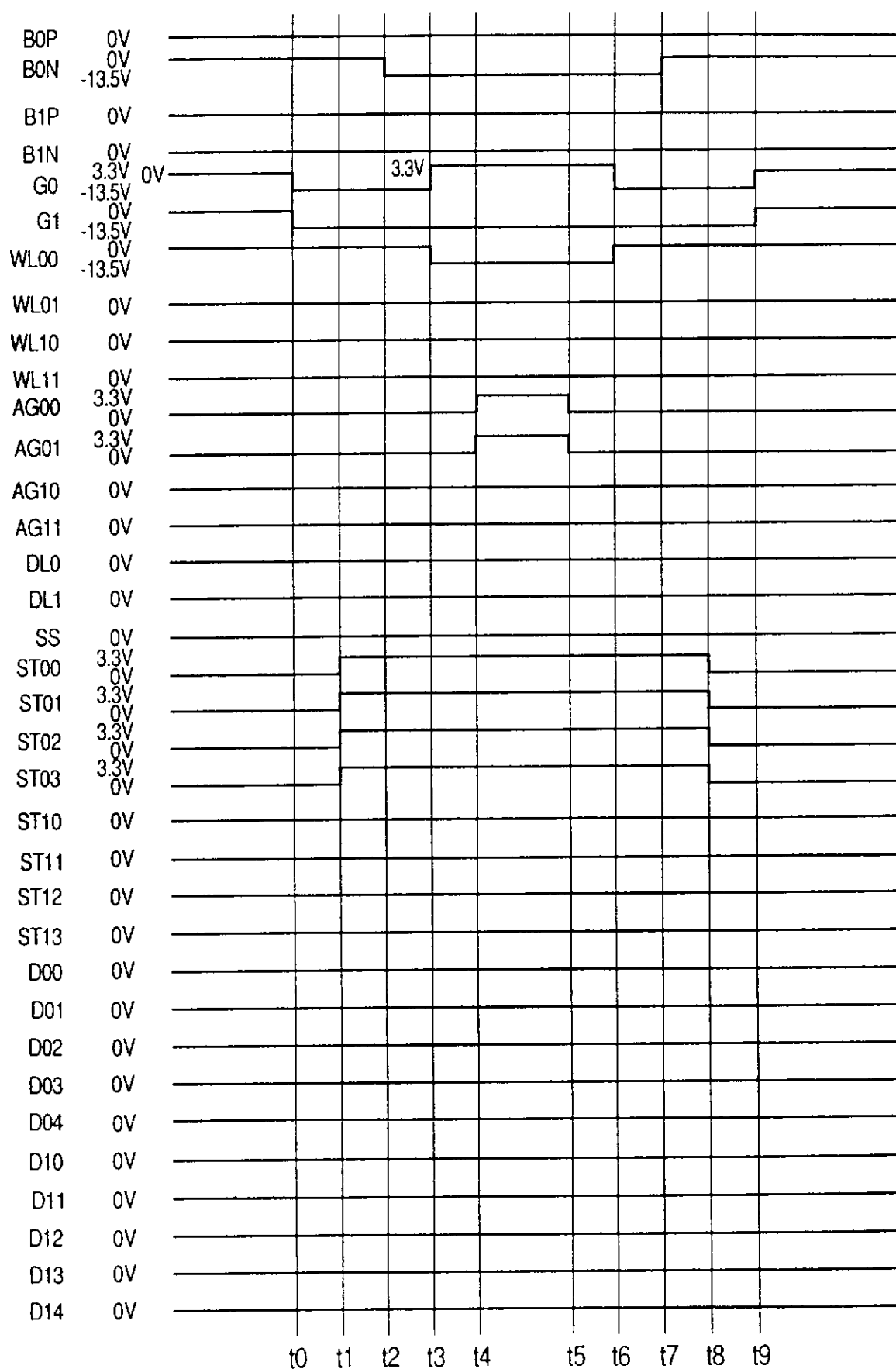
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FIG. 57



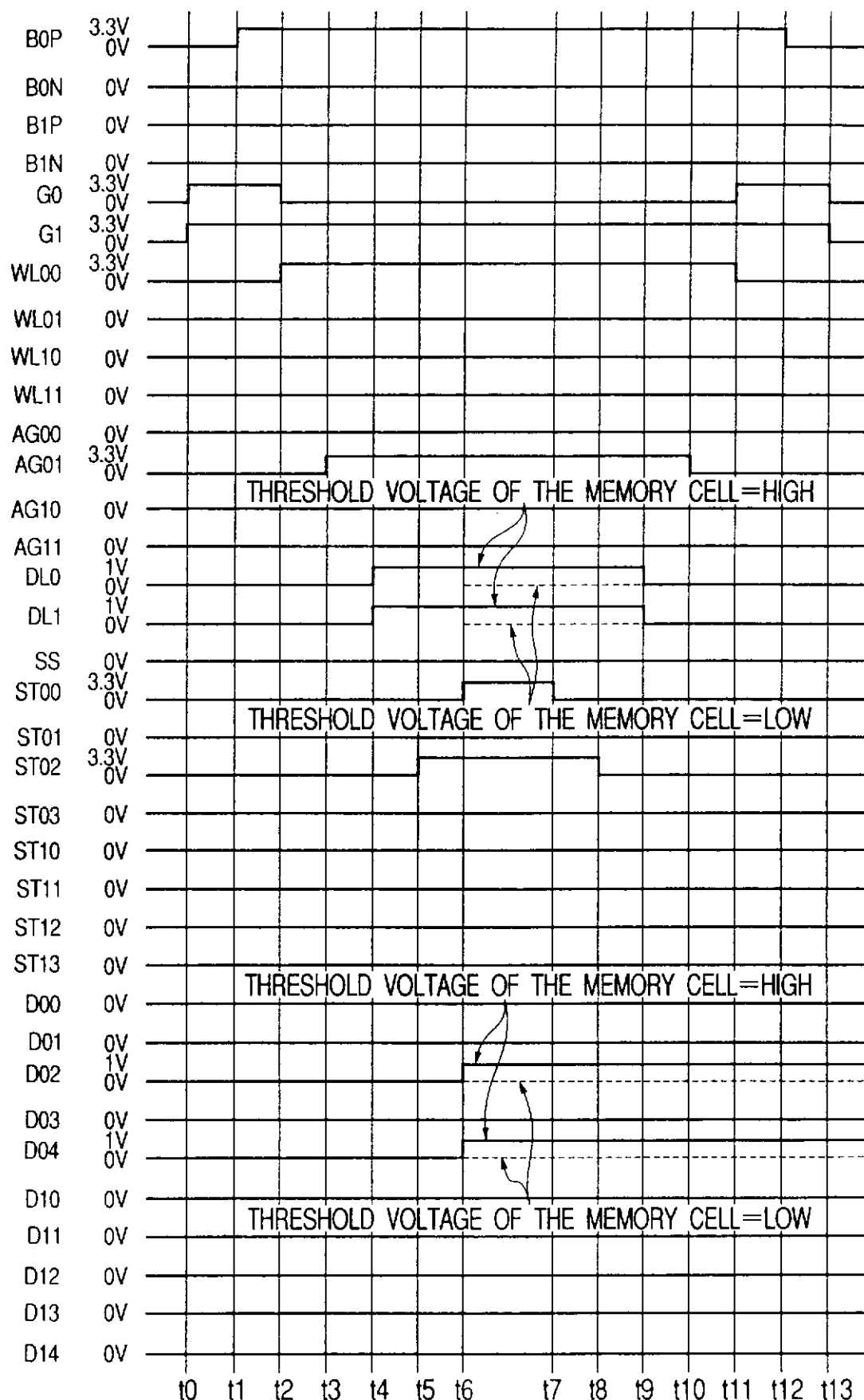
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FIG. 58



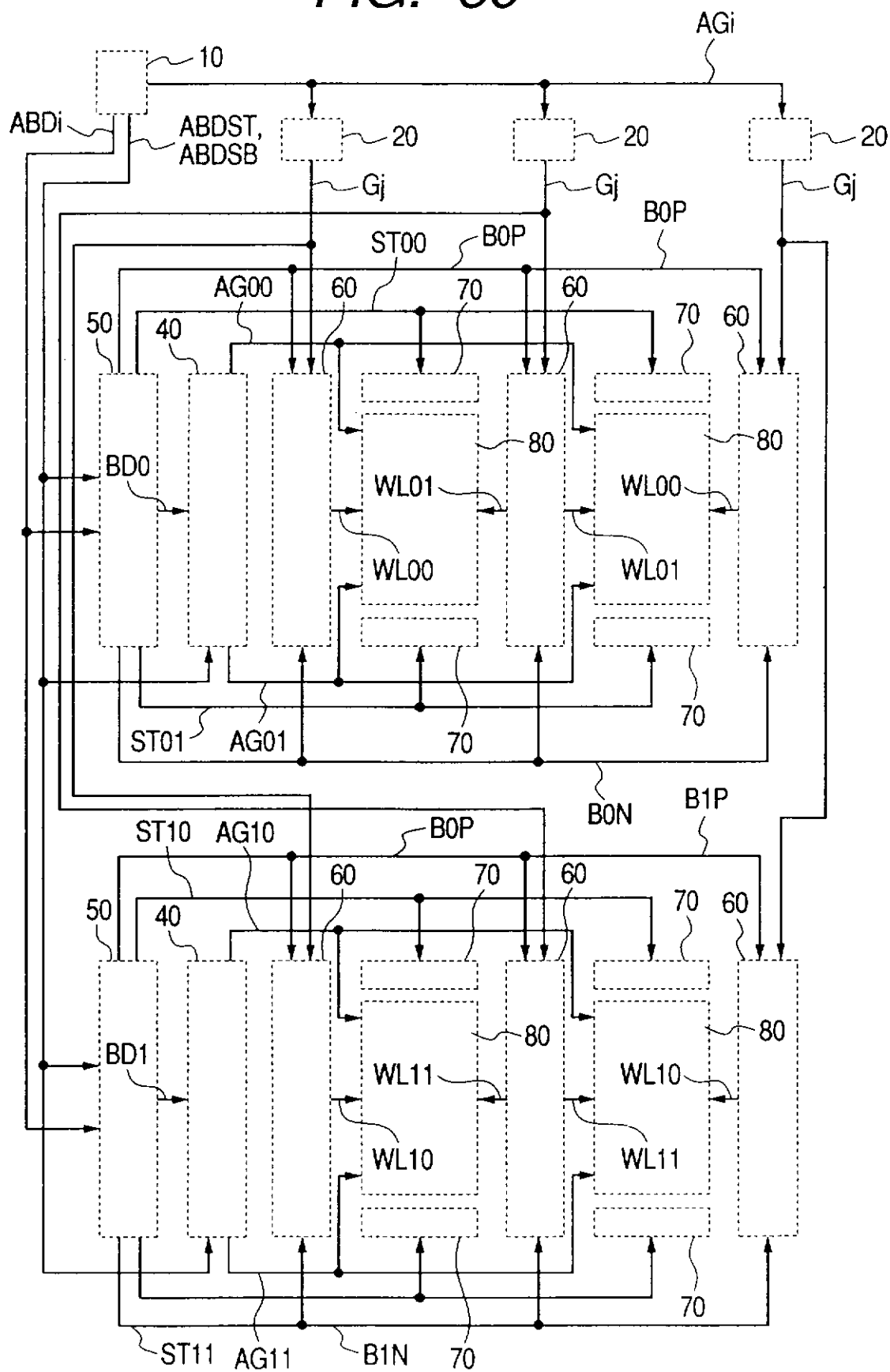
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FIG. 59



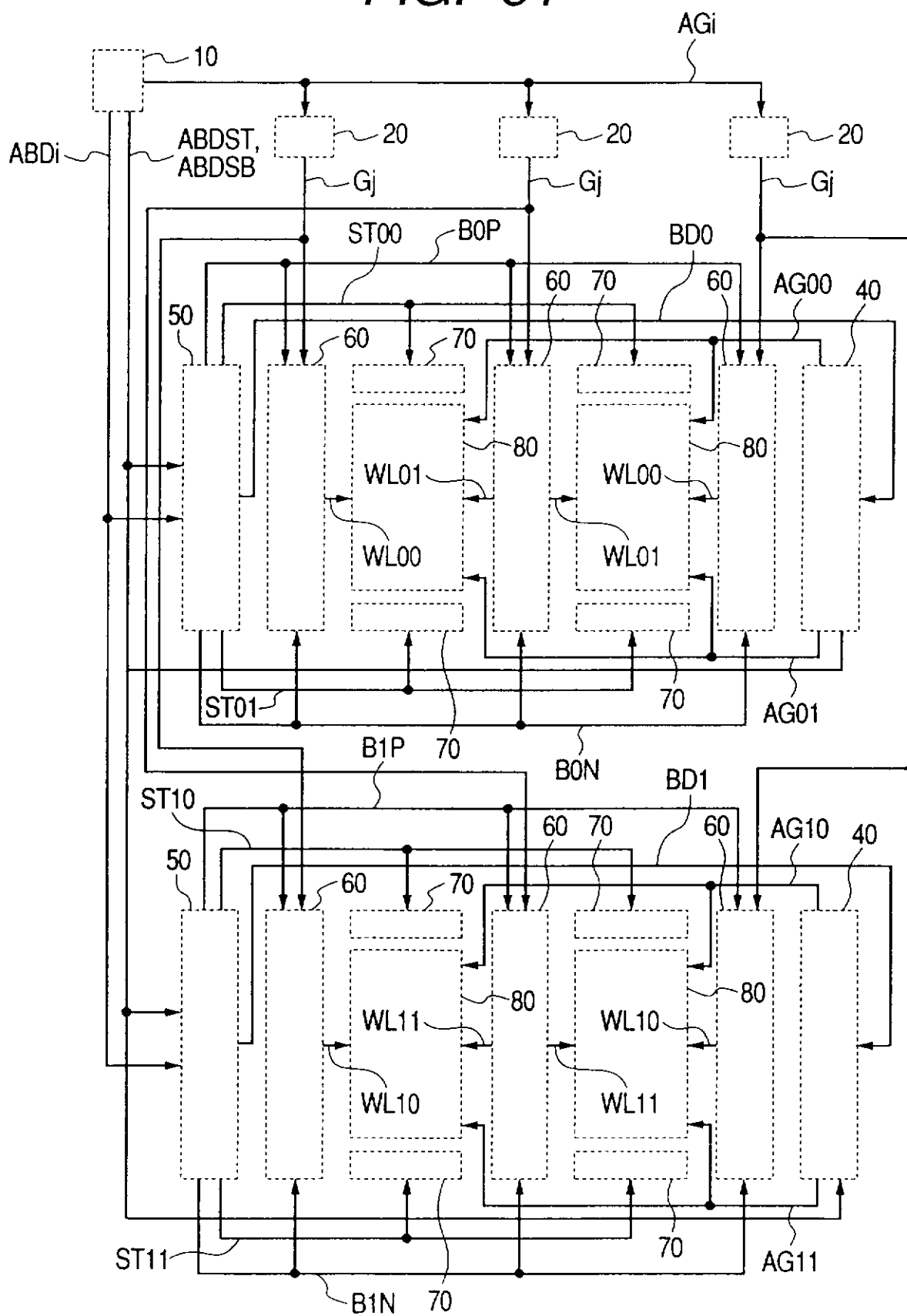
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FIG. 60



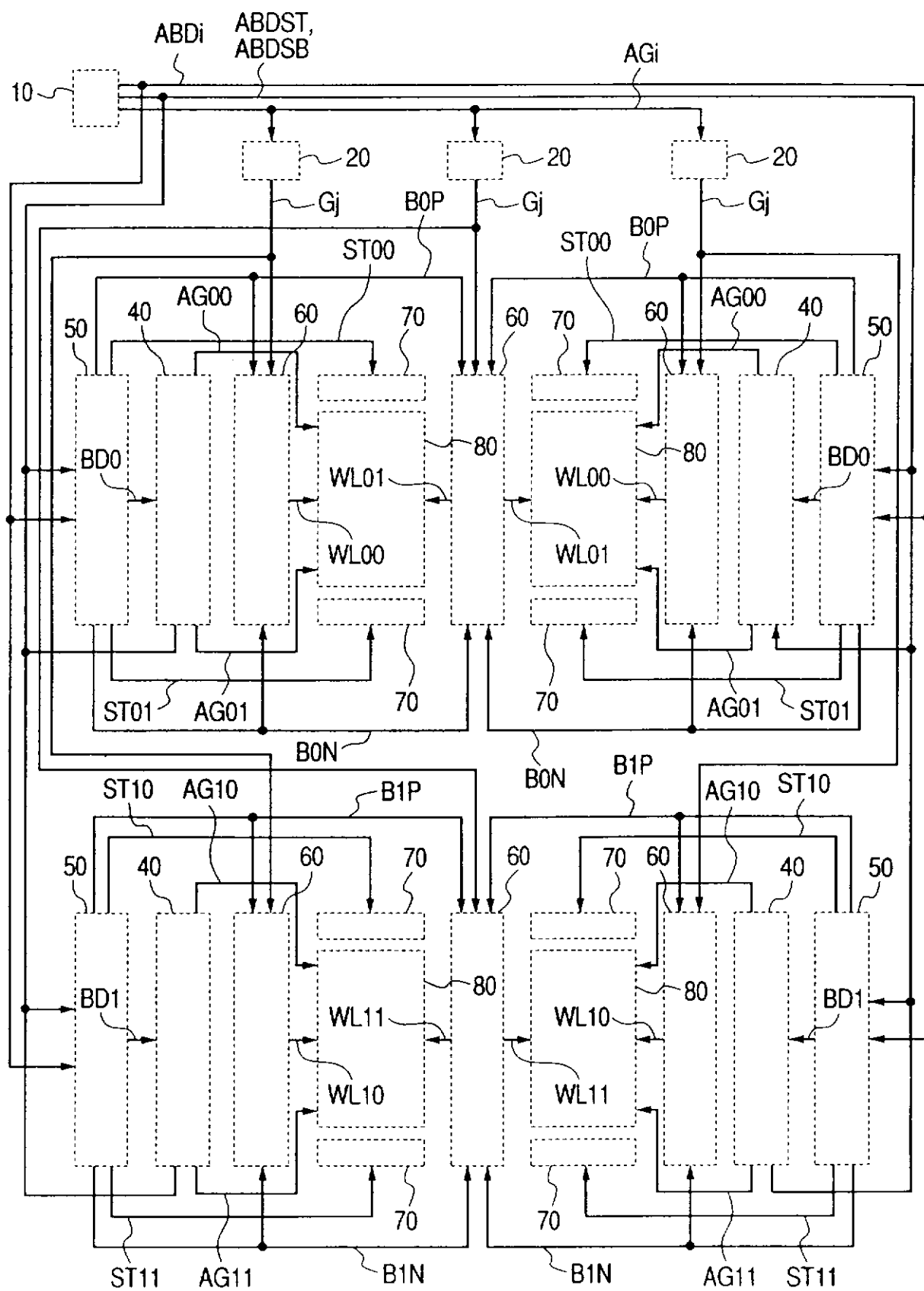
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FIG. 61



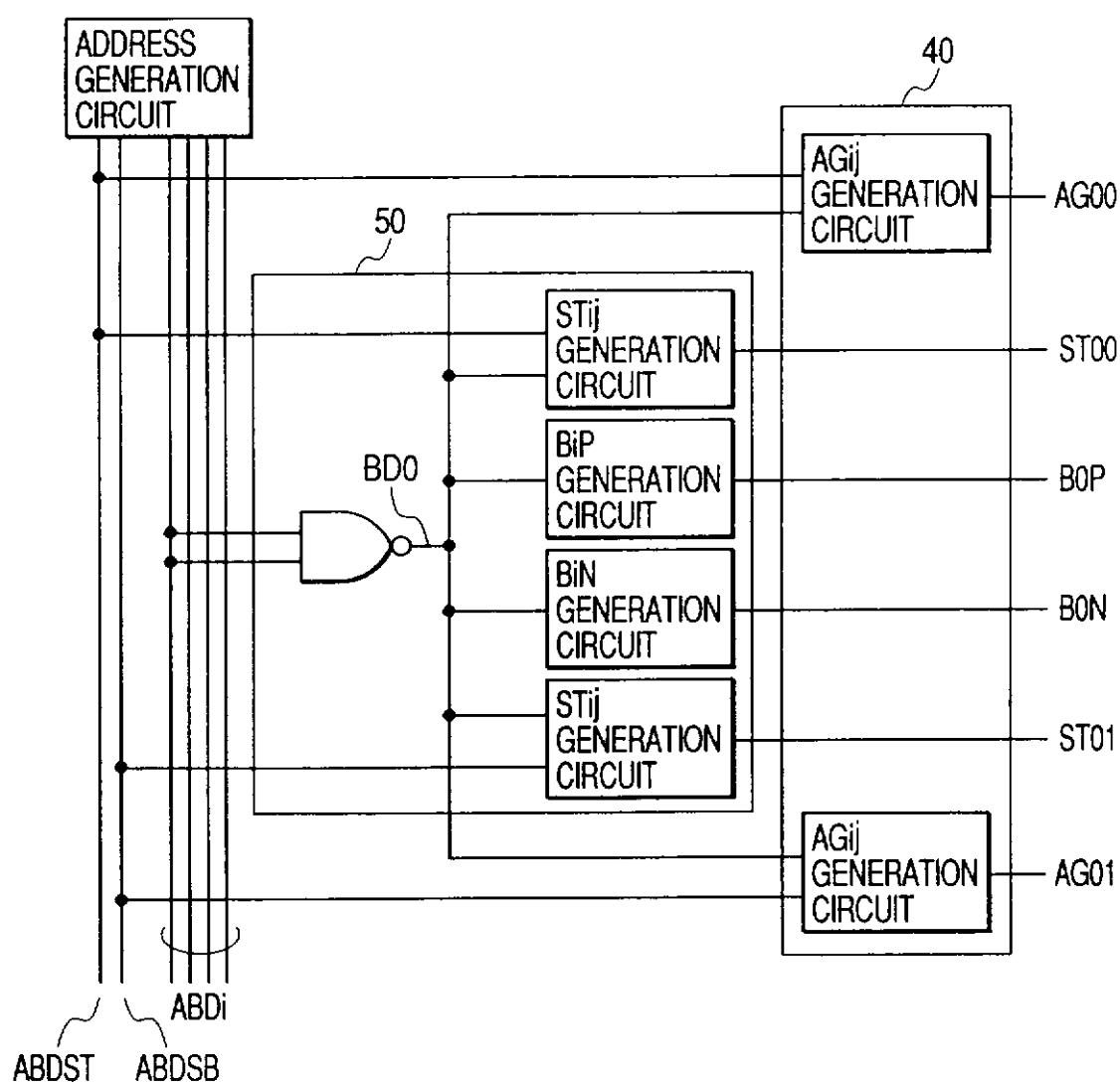
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FIG. 62



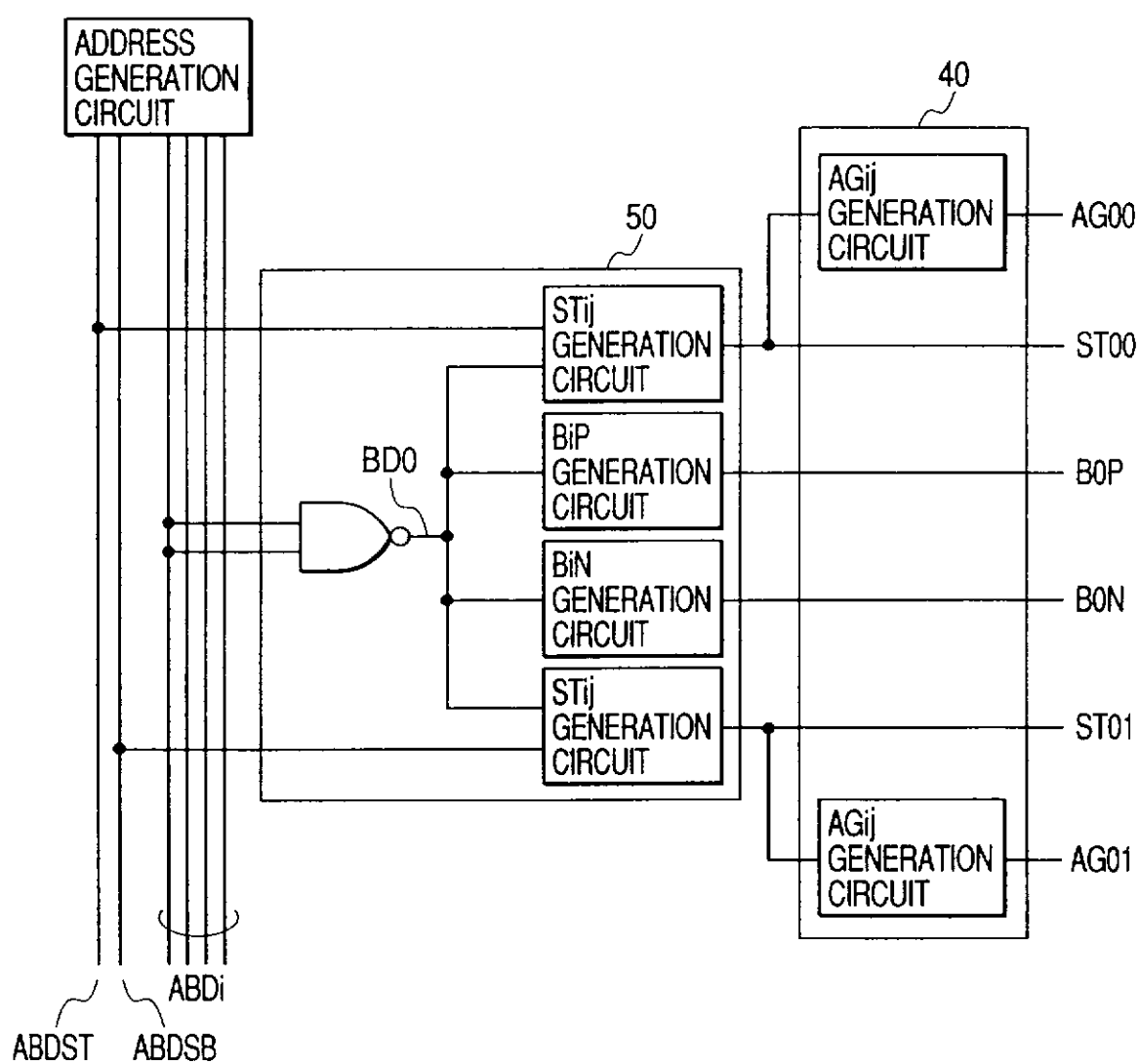
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FIG. 63



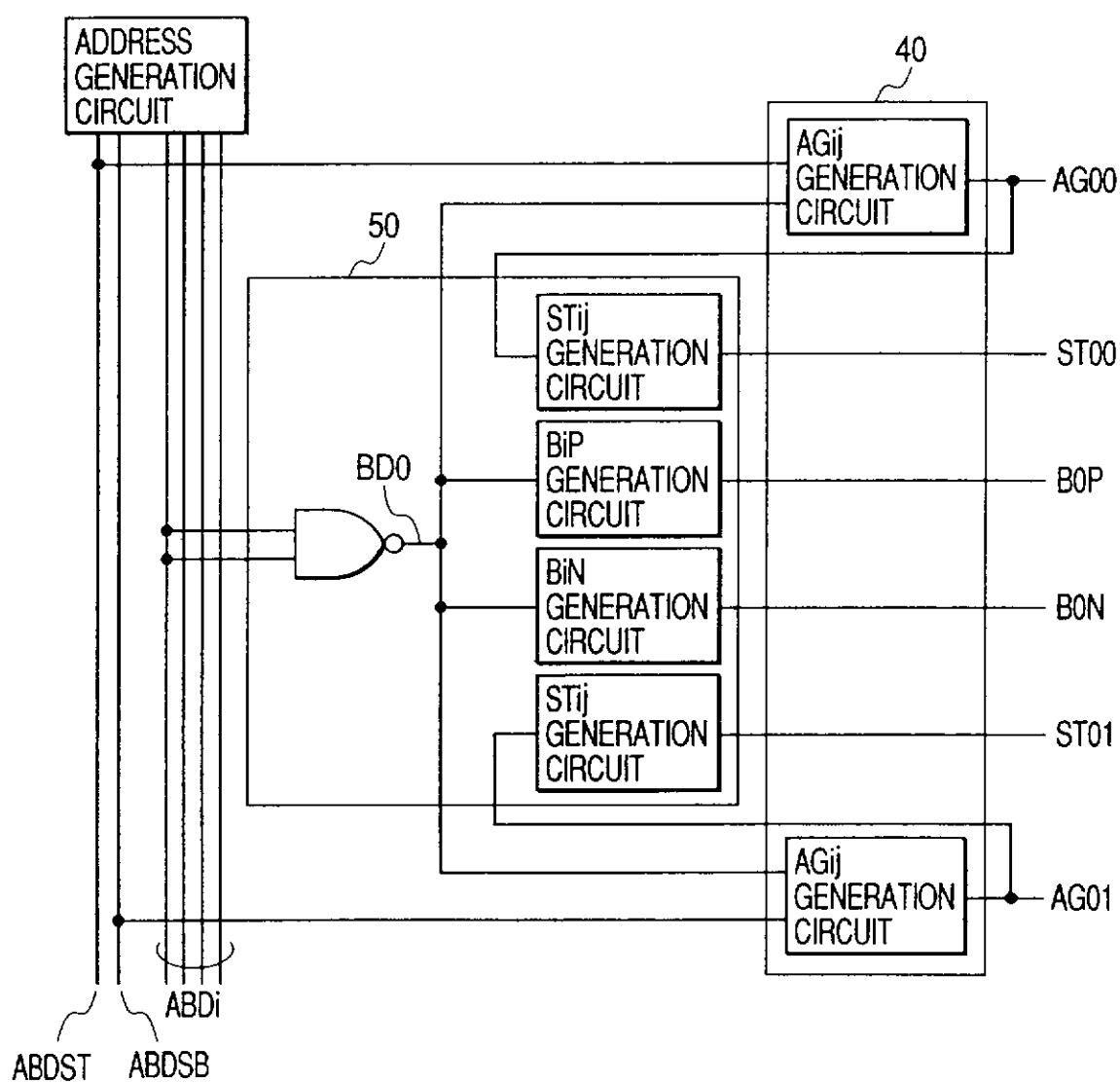
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FIG. 64



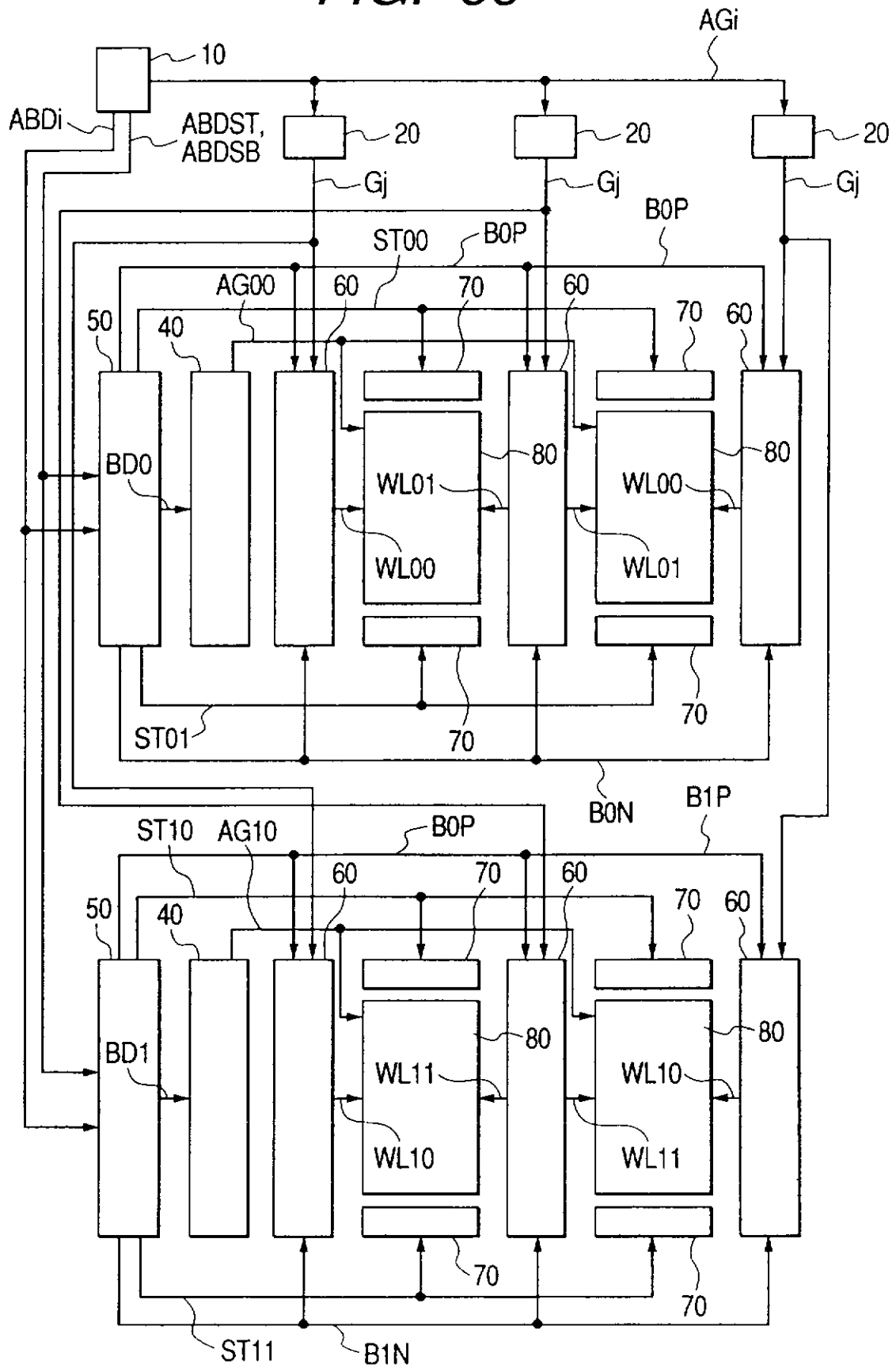
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FIG. 65



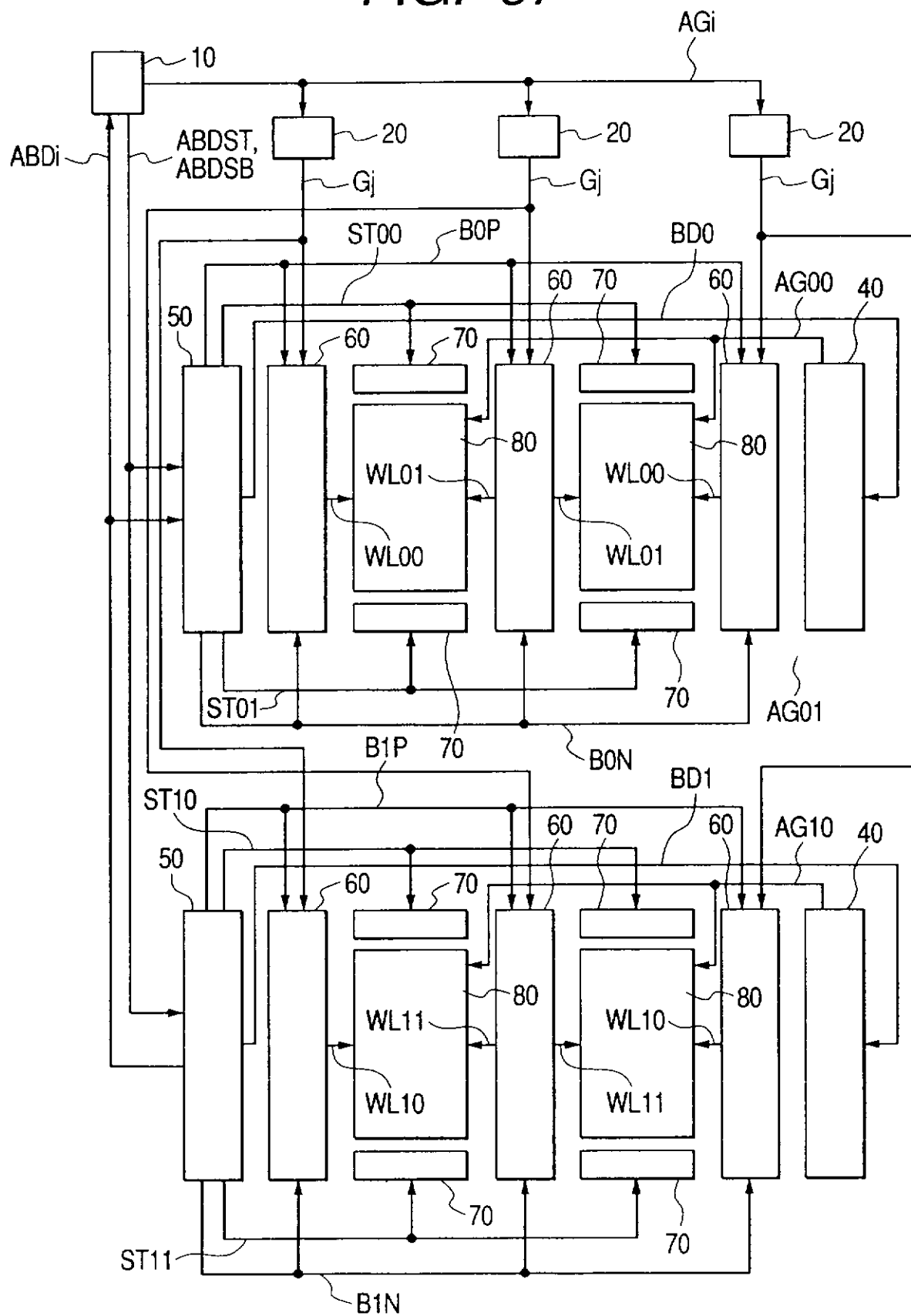
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FIG. 66



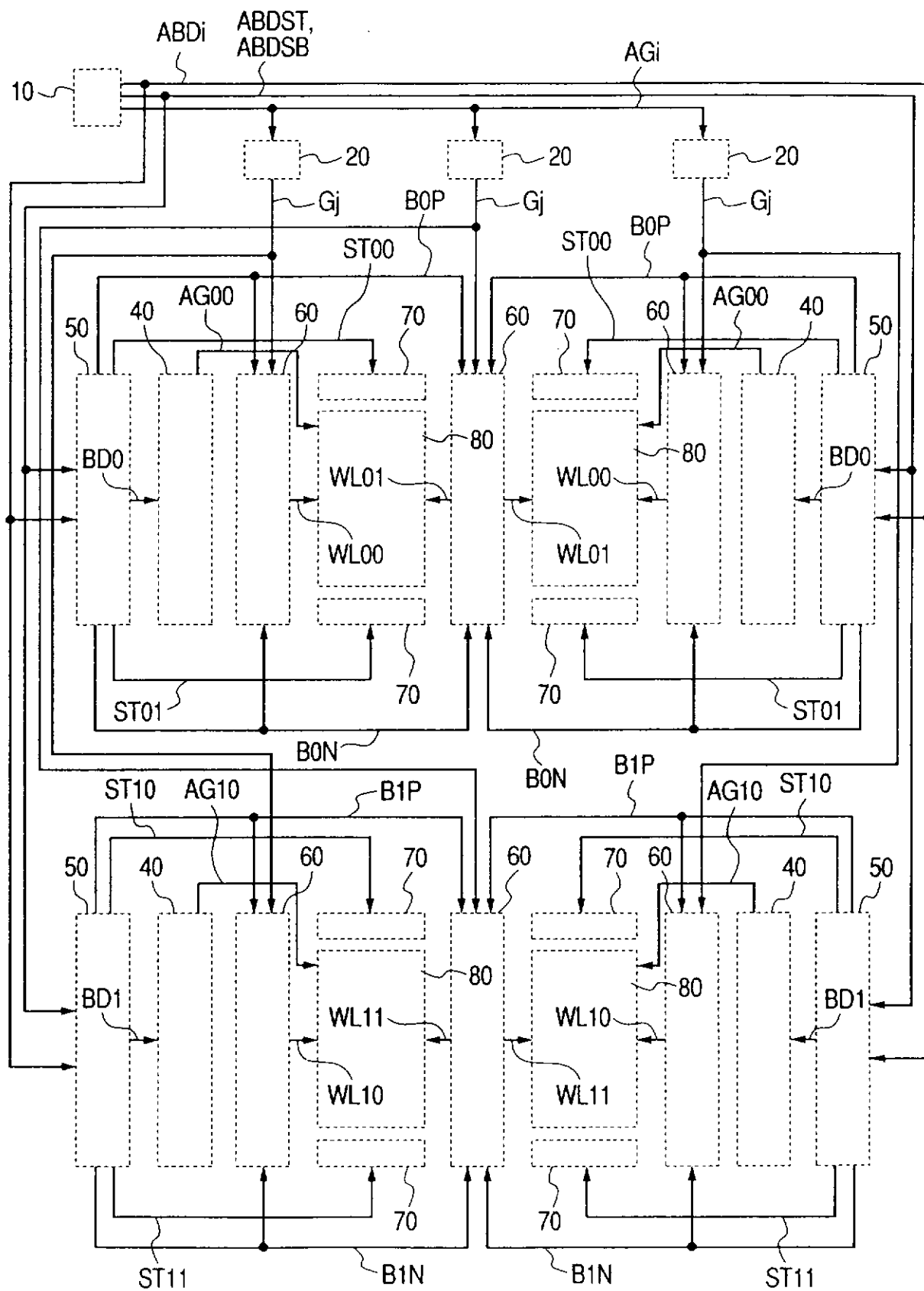
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FIG. 67



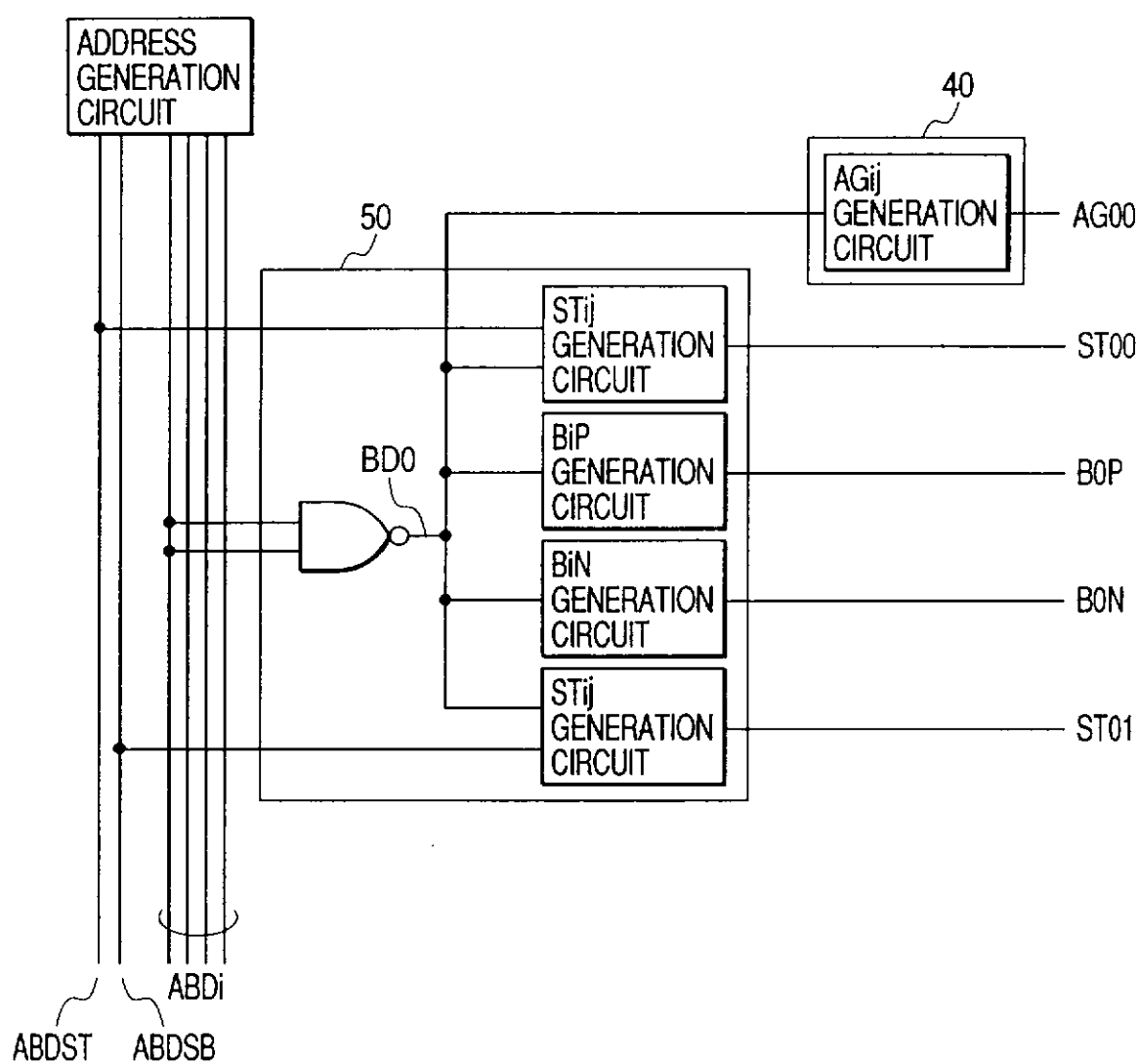
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FIG. 68



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FIG. 69



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FIG. 70

