

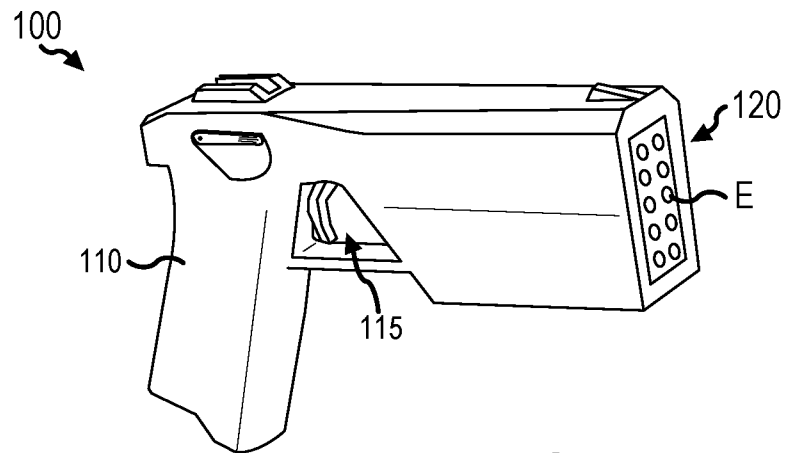


FIG. 1

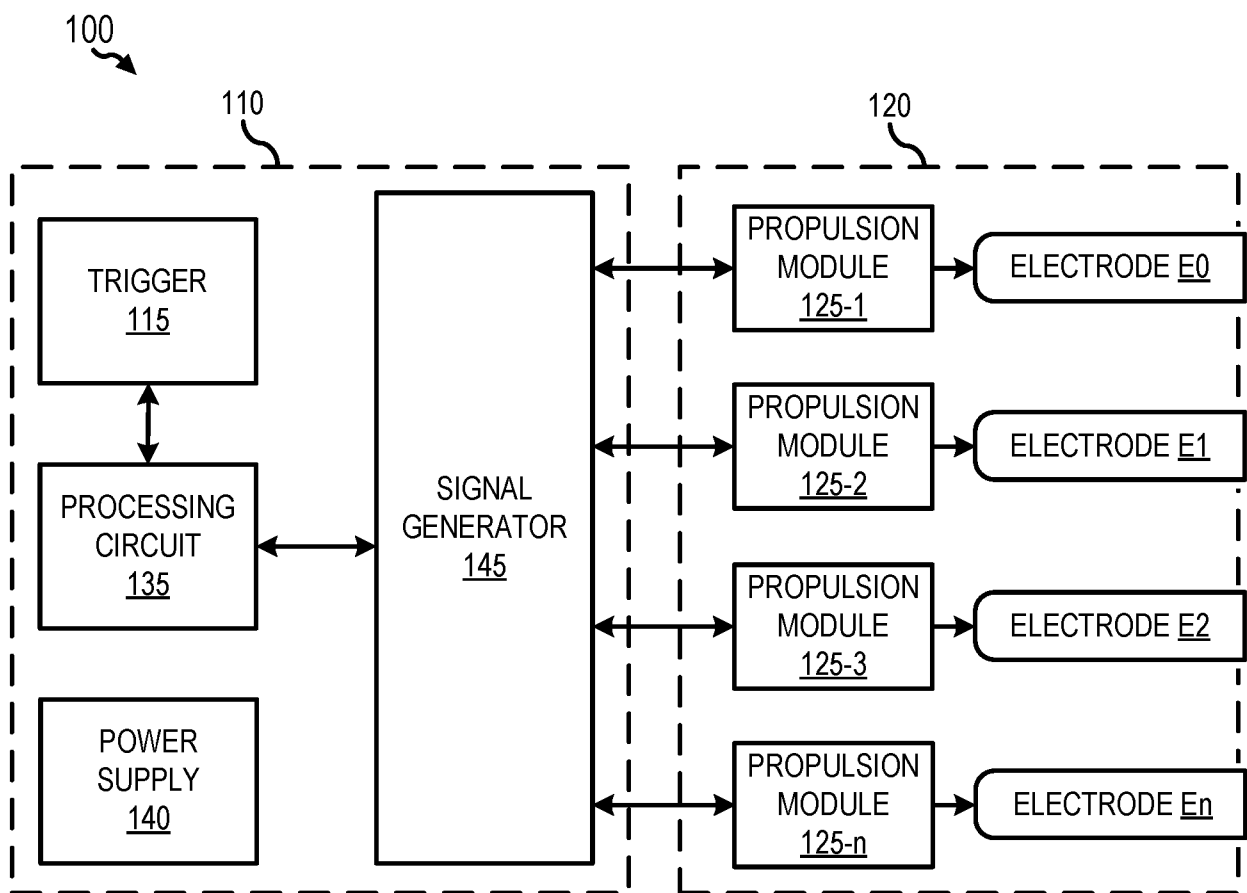
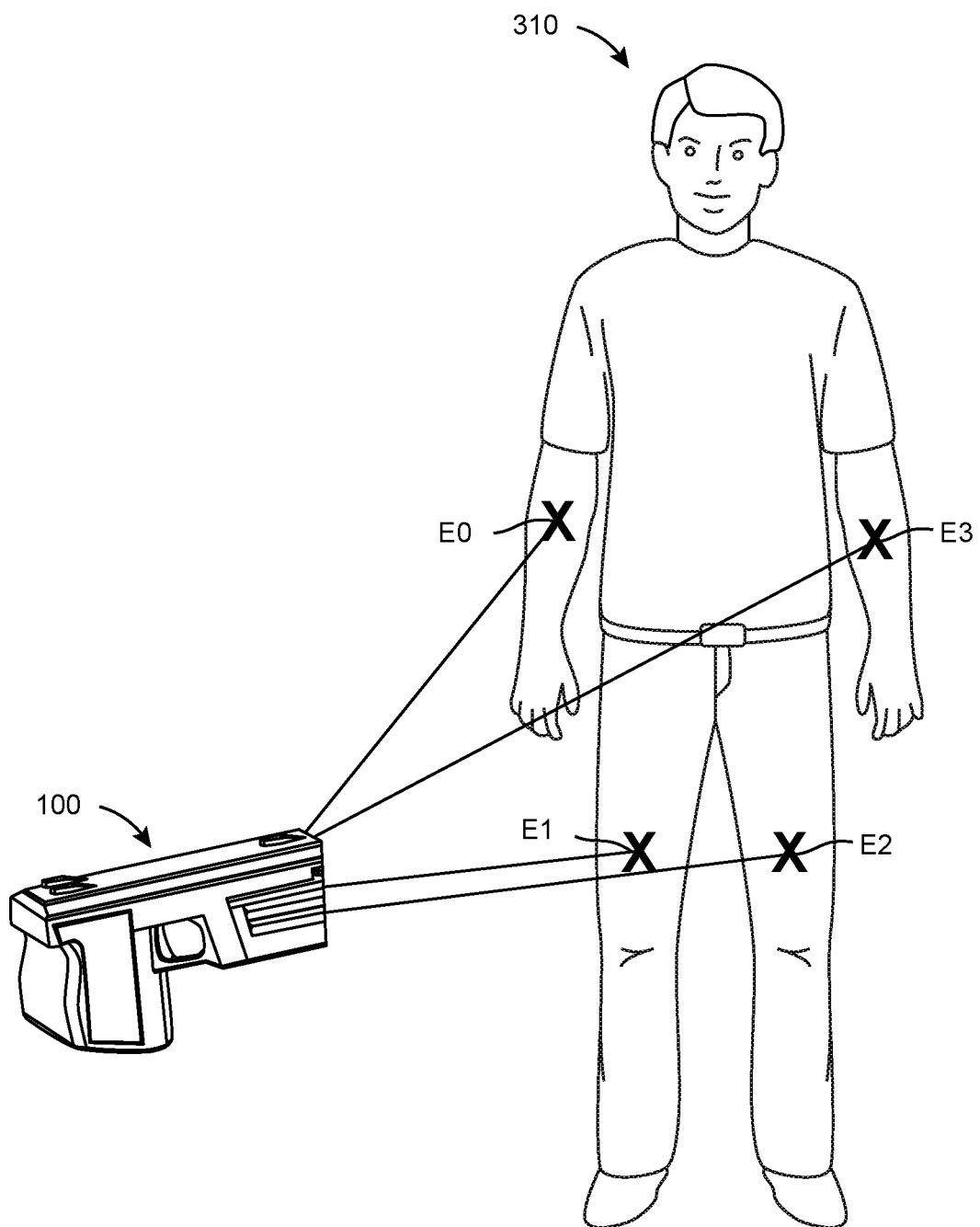


FIG. 2

**FIG. 3**

400 

|     | E0 | E1 | E2 | E3 |
|-----|----|----|----|----|
| 420 | -  | -  | -  | +  |
| 422 | -  | -  | +  | -  |
| 424 | -  | -  | +  | +  |
| 426 | -  | +  | -  | -  |
| 428 | -  | +  | -  | +  |
| 430 | -  | +  | +  | -  |
| 432 | -  | +  | +  | +  |
| 434 | +  | -  | -  | -  |
| 436 | +  | -  | -  | +  |
| 438 | +  | -  | +  | -  |
| 440 | +  | -  | +  | +  |
| 442 | +  | +  | -  | -  |
| 444 | +  | +  | -  | +  |
| 446 | +  | +  | +  | -  |

**FIG. 4**500 

|     | E0 | E1 | E2 | E3 |
|-----|----|----|----|----|
| 520 | +  | -  | Z  | Z  |
| 522 | +  | Z  | -  | Z  |
| 524 | +  | Z  | Z  | -  |
| 526 | -  | +  | Z  | Z  |
| 528 | Z  | +  | -  | Z  |
| 530 | Z  | +  | Z  | -  |
| 532 | -  | Z  | +  | Z  |
| 534 | Z  | -  | +  | Z  |
| 536 | Z  | Z  | +  | -  |
| 538 | -  | Z  | Z  | +  |
| 540 | Z  | -  | Z  | +  |
| 542 | Z  | Z  | -  | +  |

**FIG. 5**

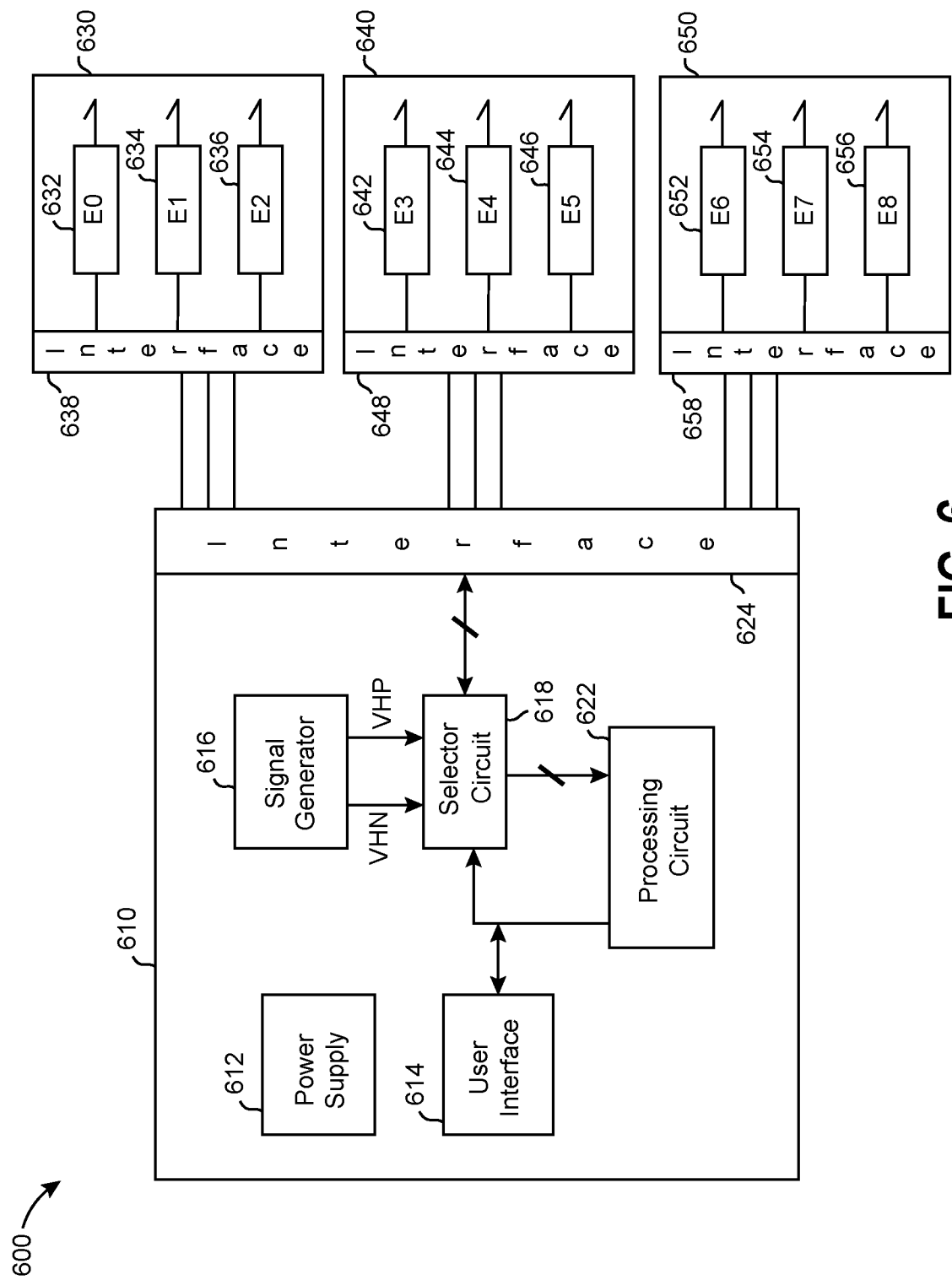


FIG. 6

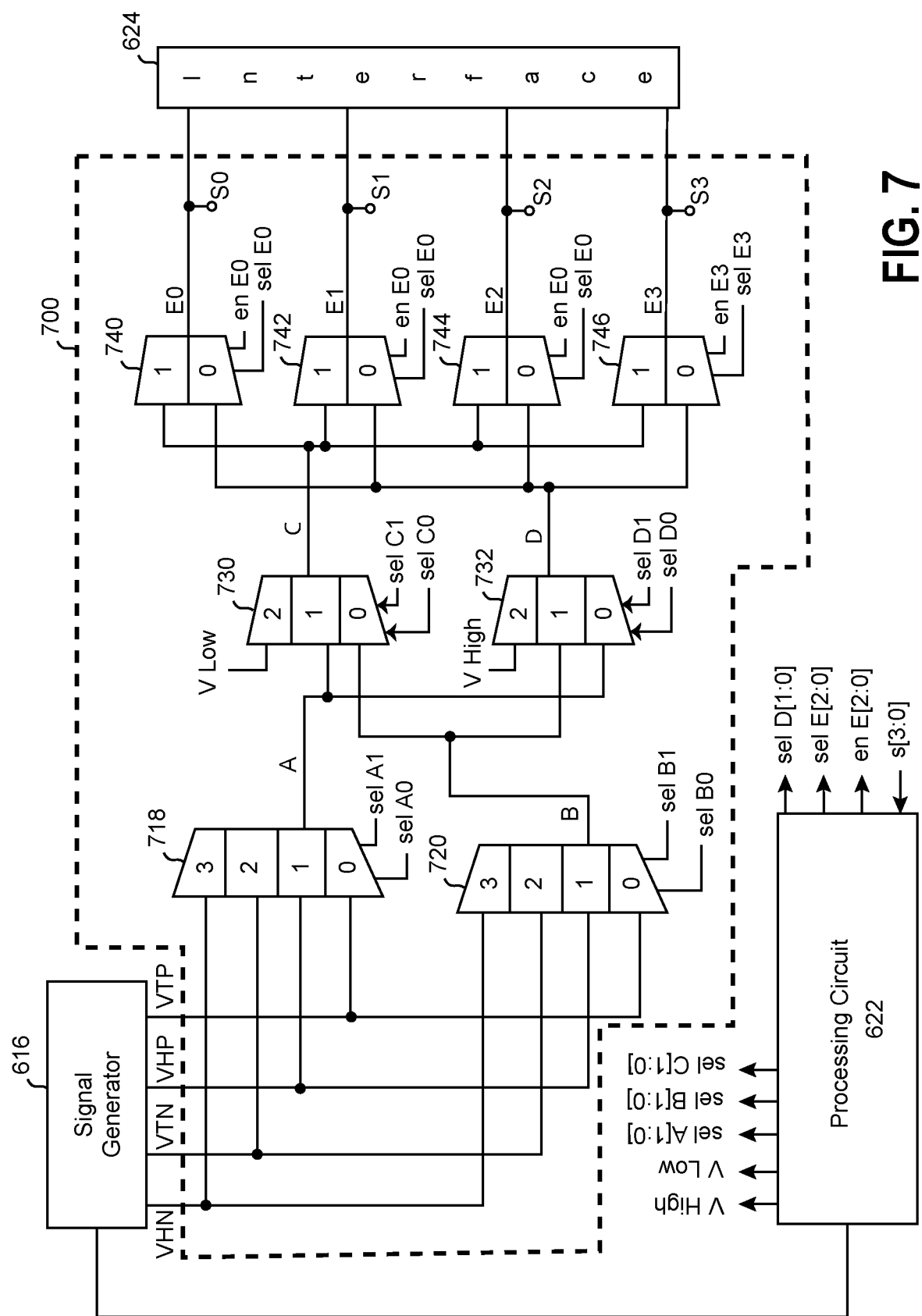
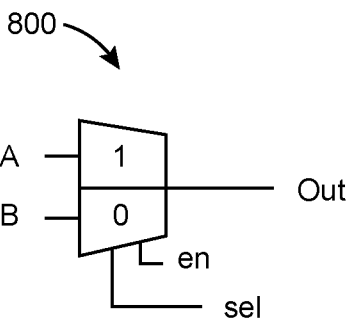
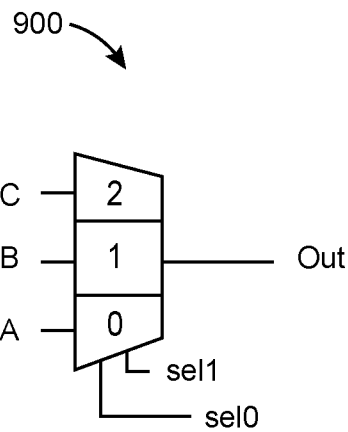


FIG. 7



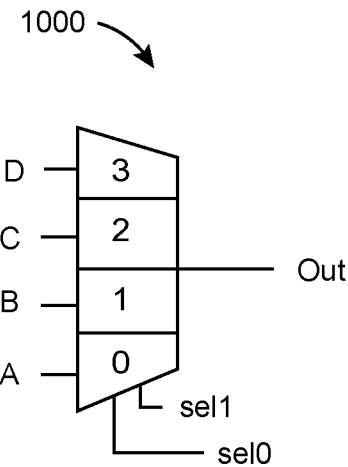
| en | sel | A | B | Out  |
|----|-----|---|---|------|
| 0  | X   | X | X | hi-Z |
| 1  | 0   | A | B | B    |
| 1  | 1   | A | B | A    |

FIG. 8



| sel1 | sel0 | A | B | C | Out |
|------|------|---|---|---|-----|
| 0    | 0    | A | B | C | A   |
| 0    | 1    | A | B | C | B   |
| 1    | X    | A | B | A | C   |

FIG. 9



| sel1 | sel0 | A | B | C | D | Out |
|------|------|---|---|---|---|-----|
| 0    | 0    | A | B | C | D | A   |
| 0    | 1    | A | B | C | D | B   |
| 1    | 0    | A | B | C | D | C   |
| 1    | 1    | A | B | C | D | D   |

FIG. 10

1100 

|      | 1102  |       |       |       | 1104 |     | 1106  |       |       |       | 1108 |     |
|------|-------|-------|-------|-------|------|-----|-------|-------|-------|-------|------|-----|
|      | selA1 | selA0 | selB1 | selB0 | A    | B   | selC1 | selC0 | selD1 | selD0 | C    | D   |
| 1130 | 0     | 1     | 1     | 1     | VHP  | VHN | 0     | 0     | 0     | 0     | VHN  | VHP |
| 1132 | 0     | 1     | 1     | 1     | VHP  | VHN | 0     | 1     | 0     | 1     | VHP  | VHN |
| 1134 | 0     | 1     | 1     | 1     | VHP  | VHN | 0     | 0     | 0     | 0     | VHN  | VHP |
| 1136 | 0     | 1     | 1     | 1     | VHP  | VHN | 0     | 1     | 0     | 1     | VHP  | VHN |
| 1138 | 0     | 1     | 1     | 1     | VHP  | VHN | 0     | 1     | 0     | 1     | VHP  | VHN |
| 1140 | 0     | 1     | 1     | 1     | VHP  | VHN | 0     | 0     | 0     | 0     | VHN  | VHP |

|      | 1110 |      |      |      | 1112  |       |       |       | 1114 |     |     |     |
|------|------|------|------|------|-------|-------|-------|-------|------|-----|-----|-----|
|      | enE0 | enE1 | enE2 | enE3 | selC1 | selC0 | selD1 | selD0 | E0   | E1  | E2  | E3  |
| 1130 | 1    | 1    | 0    | 0    | 1     | 0     | X     | X     | VHN  | VHP | Z   | Z   |
| 1132 | 1    | 1    | 1    | 1    | 1     | 0     | 0     | 0     | VHP  | VHN | VHN | VHN |
| 1134 | 1    | 0    | 0    | 1    | 1     | X     | X     | 0     | VHN  | Z   | Z   | VHN |
| 1136 | 1    | 1    | 1    | 1    | 0     | 1     | 1     | 0     | VHN  | VHP | VHP | VHN |
| 1138 | 0    | 1    | 1    | 0    | X     | 1     | 0     | X     | Z    | VHP | VHN | Z   |
| 1140 | 0    | 1    | 1    | 0    | X     | 1     | 0     | X     | Z    | VHN | VHP | Z   |

|      | 1116 |
|------|------|
| 1130 | 526  |
| 1132 | 434  |
| 1134 | 538  |
| 1136 | 430  |
| 1138 | 528  |
| 1140 | 534  |

**FIG. 11**

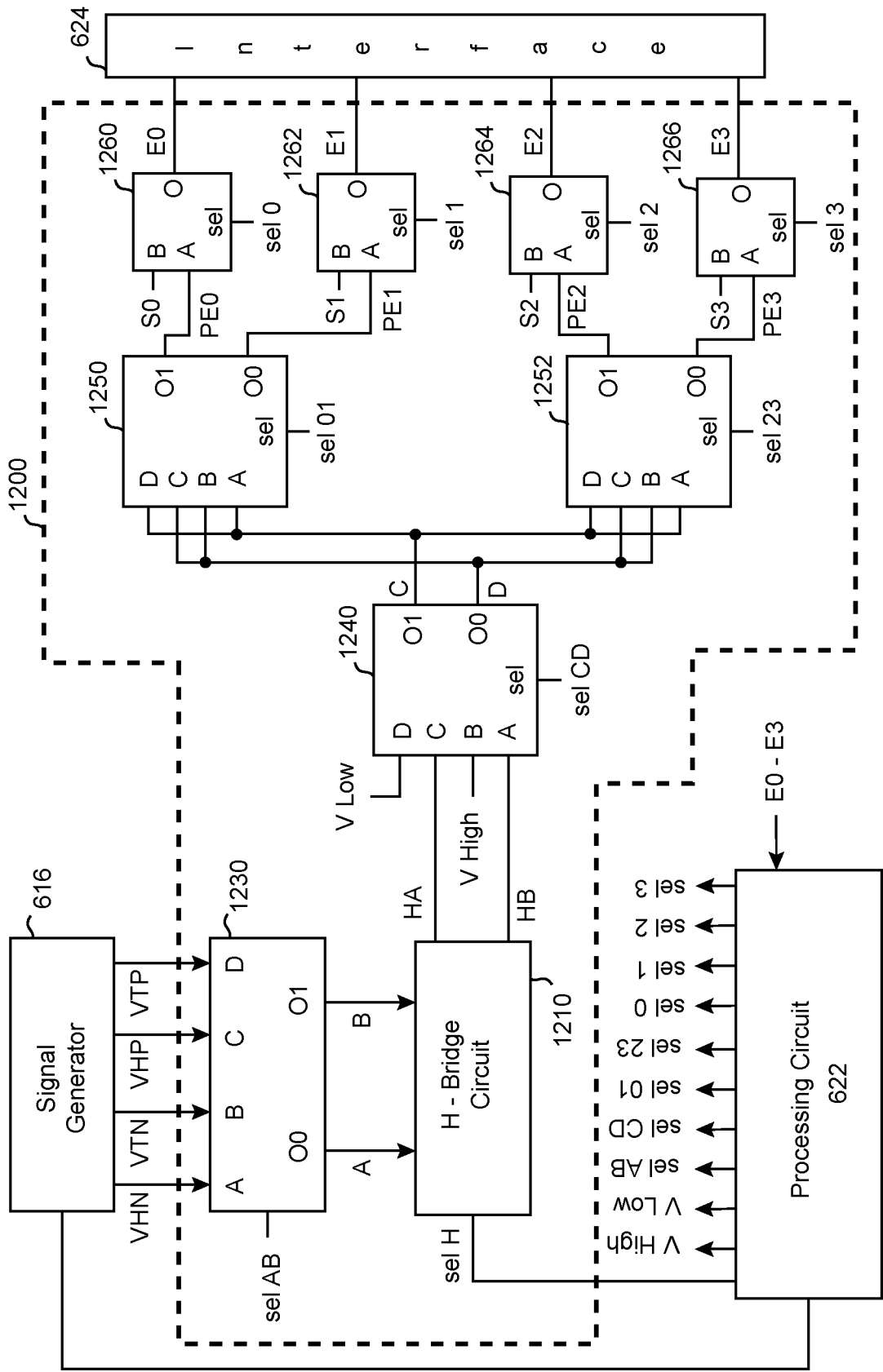


FIG. 12

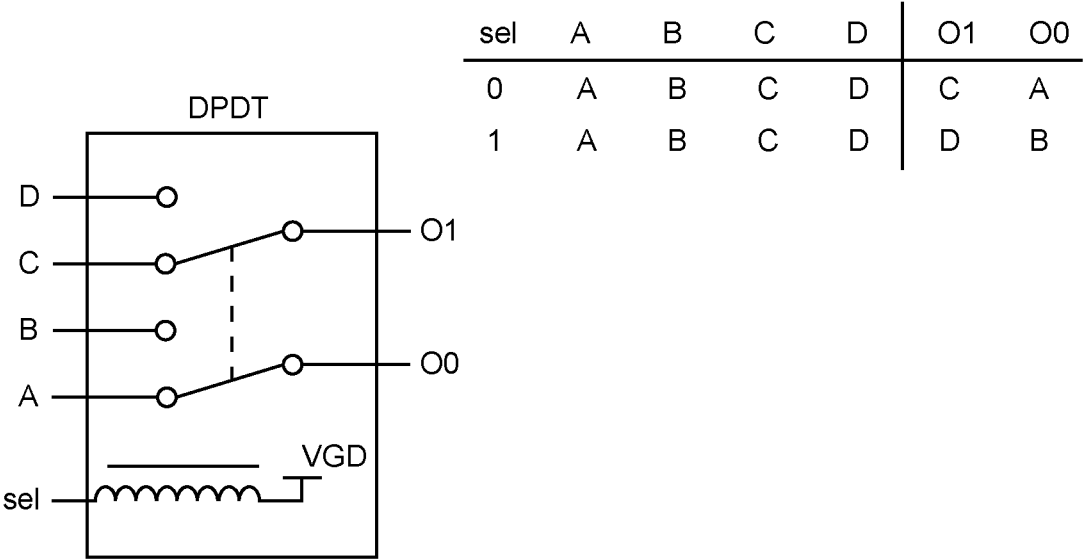


FIG. 13

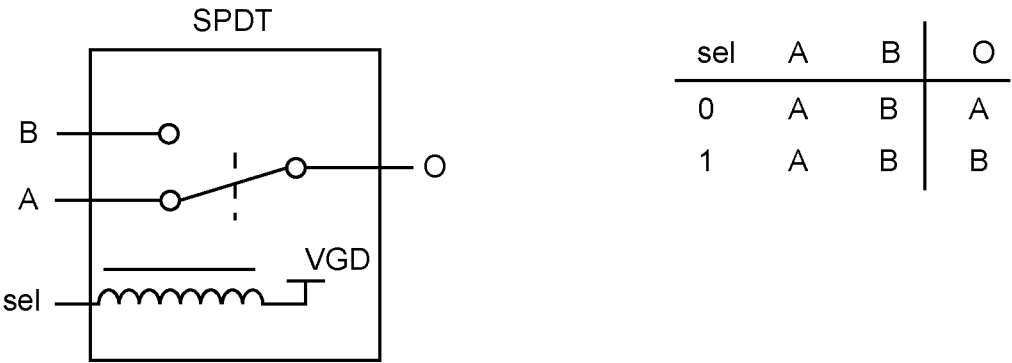


FIG. 14

1500 →

|      | 1502  |     |     | 1504 |     |     | 1506  |     |     | 1508  |       |
|------|-------|-----|-----|------|-----|-----|-------|-----|-----|-------|-------|
|      | selAB | A   | B   | selH | HA  | HB  | selCD | C   | D   | sel01 | sel23 |
| 1530 | 0     | VHN | VHP | 0    | VHN | VHP | 0     | VHP | VHN | 0     | 0     |
| 1532 | 0     | VHN | VHP | 0    | VHN | VHP | 0     | VHP | VHN | 0     | 0     |
| 1534 | 0     | VHN | VHP | 0    | VHN | VHP | 0     | VHP | VHN | 0     | 0     |
| 1536 | 0     | VHN | VHP | 0    | VHN | VHP | 0     | VHP | VHN | 0     | 0     |
| 1538 | 0     | VHN | VHP | 0    | VHN | VHP | 0     | VHP | VHN | 0     | 1     |
| 1540 | 0     | VHN | VHP | 0    | VHN | VHP | 0     | VHP | VHN | 0     | 1     |

|      | 1510 |     |     |     | 1512 |      |      |      | 1514 |     |     |     | 1516 |
|------|------|-----|-----|-----|------|------|------|------|------|-----|-----|-----|------|
|      | PE0  | PE1 | PE2 | PE3 | sel0 | sel1 | sel2 | sel3 | E0   | E1  | E2  | E3  |      |
| 1530 | VHN  | VHP | VHN | VHP | 0    | 0    | 1    | 1    | VHN  | VHP | Z   | Z   | 526  |
| 1532 | VHN  | VHP | VHN | VHP | 0    | 1    | 1    | 0    | VHN  | Z   | Z   | VHP | 538  |
| 1534 | VHN  | VHP | VHN | VHP | 1    | 0    | 0    | 1    | Z    | VHP | VHN | Z   | 528  |
| 1536 | VHN  | VHP | VHN | VHP | 1    | 1    | 0    | 0    | Z    | Z   | VHN | VHP | 542  |
| 1538 | VHN  | VHP | VHP | VHN | 0    | 1    | 0    | 1    | VHN  | Z   | VHP | Z   | 532  |
| 1540 | VHN  | VHP | VHP | VHN | 1    | 0    | 1    | 0    | Z    | VHP | Z   | VHN | 530  |

FIG. 15

1600 →

|      | 1502  |     |     | 1504 |     |     | 1506  |     |     | 1508  |       |
|------|-------|-----|-----|------|-----|-----|-------|-----|-----|-------|-------|
|      | selAB | A   | B   | selH | HA  | HB  | selCD | C   | D   | sel01 | sel23 |
| 1630 | 1     | VTN | VTP | 0    | VTN | VTP | 0     | VTP | VTN | 0     | 0     |
| 1632 | 1     | VTN | VTP | 0    | VTN | VTP | 0     | VTP | VTN | 0     | 0     |
| 1634 | 1     | VTN | VTP | 0    | VTN | VTP | 0     | VTP | VTN | 0     | 0     |
| 1636 | 1     | VTN | VTP | 0    | VTN | VTP | 0     | VTP | VTN | 0     | 0     |
| 1638 | 1     | VTN | VTP | 0    | VTN | VTP | 0     | VTP | VTN | 0     | 1     |
| 1640 | 1     | VTN | VTP | 0    | VTN | VTP | 0     | VTP | VTN | 0     | 1     |

|      | 1510 |     |     |     | 1512 |      |      |      | 1514 |     |     |     | 1516 |
|------|------|-----|-----|-----|------|------|------|------|------|-----|-----|-----|------|
|      | PE0  | PE1 | PE2 | PE3 | sel0 | sel1 | sel2 | sel3 | E0   | E1  | E2  | E3  |      |
| 1630 | VTN  | VTP | VTN | VTP | 0    | 0    | 1    | 1    | VTN  | VTP | Z   | Z   | 526  |
| 1632 | VTN  | VTP | VTN | VTP | 0    | 1    | 1    | 0    | VTN  | Z   | Z   | VTP | 538  |
| 1634 | VTN  | VTP | VTN | VTP | 1    | 0    | 0    | 1    | Z    | VTP | VTN | Z   | 528  |
| 1636 | VTN  | VTP | VTN | VTP | 1    | 1    | 0    | 0    | Z    | Z   | VTN | VTP | 542  |
| 1638 | VTN  | VTP | VTN | VTP | 0    | 1    | 0    | 1    | VTN  | Z   | VTP | Z   | 532  |
| 1640 | VTN  | VTP | VTN | VTP | 1    | 0    | 1    | 0    | Z    | VTP | Z   | VTN | 530  |

FIG. 16

1700 

|      | 1502  |   |   | 1504    |    |    | 1506  |      |       | 1508  |       |
|------|-------|---|---|---------|----|----|-------|------|-------|-------|-------|
|      | selAB | A | B | Hbridge | HA | HB | selCD | C    | D     | sel01 | sel23 |
| 1730 | X     | X | X | 0       | X  | X  | 1     | Vlow | Vhigh | 0     | 0     |
| 1732 | X     | X | X | 0       | X  | X  | 1     | Vlow | Vhigh | 0     | 0     |
| 1734 | X     | X | X | 0       | X  | X  | 1     | Vlow | Vhigh | 0     | 0     |
| 1736 | X     | X | X | 0       | X  | X  | 1     | Vlow | Vhigh | 0     | 0     |
| 1738 | X     | X | X | 0       | X  | X  | 1     | Vlow | Vhigh | 0     | 1     |
| 1740 | X     | X | X | 0       | X  | X  | 1     | Vlow | Vhigh | 0     | 1     |

|      | 1510  |      |       |       | 1512 |      |      |      | 1514  |      |       |       | 1516 |
|------|-------|------|-------|-------|------|------|------|------|-------|------|-------|-------|------|
|      | PE0   | PE1  | PE2   | PE3   | sel0 | sel1 | sel2 | sel3 | E0    | E1   | E2    | E3    |      |
| 1730 | Vhigh | Vlow | Vhigh | Vlow  | 0    | 0    | 1    | 1    | Vhigh | Vlow | Z     | Z     | 526  |
| 1732 | Vhigh | Vlow | Vhigh | Vlow  | 0    | 1    | 1    | 0    | Vhigh | Z    | Z     | Vlow  | 538  |
| 1734 | Vhigh | Vlow | Vhigh | Vlow  | 1    | 0    | 0    | 1    | Z     | Vlow | Vhigh | Z     | 528  |
| 1736 | Vhigh | Vlow | Vhigh | Vlow  | 1    | 1    | 0    | 0    | Z     | Z    | Vhigh | Vlow  | 542  |
| 1738 | Vhigh | Vlow | Vlow  | Vhigh | 0    | 1    | 0    | 1    | Vhigh | Z    | Vlow  | Z     | 532  |
| 1740 | Vhigh | Vlow | Vlow  | Vhigh | 1    | 0    | 1    | 0    | Z     | Vlow | Z     | Vhigh | 530  |

FIG. 17

1800 

|      | 1102  |       |       |       | 1104 |     | 1106  |       |       |       | 1108 |       |
|------|-------|-------|-------|-------|------|-----|-------|-------|-------|-------|------|-------|
|      | selA1 | selA0 | selB0 | selB1 | A    | B   | selC1 | selC0 | selD1 | selD0 | C    | D     |
| 1830 | X     | X     | X     | X     | X    | X   | 1     | 0     | 1     | 0     | Vlow | Vhigh |
| 1832 | X     | X     | X     | X     | X    | X   | 1     | 0     | 1     | 0     | Vlow | Vhigh |
| 1834 | 1     | 0     | 0     | 0     | VTN  | VTP | 0     | 1     | 0     | 1     | VTN  | VTP   |
| 1836 | 1     | 0     | 0     | 0     | VTN  | VTP | 0     | 0     | 0     | 0     | VTP  | VTN   |

|      | 1110 |      |      |      | 1112  |       |       |       |
|------|------|------|------|------|-------|-------|-------|-------|
|      | enE0 | enE1 | enE2 | enE3 | selE0 | selE1 | selE2 | selE3 |
| 1830 | 1    | 0    | 0    | 1    | 0     | X     | X     | 1     |
| 1832 | 0    | 1    | 1    | 0    | X     | 1     | 0     | X     |
| 1834 | 1    | 0    | 1    | 0    | 0     | X     | 0     | X     |
| 1836 | 0    | 1    | 0    | 1    | X     | 1     | X     | 0     |

|      | 1114  |      |       |      | 1116 |
|------|-------|------|-------|------|------|
|      | E0    | E1   | E2    | E3   |      |
| 1830 | Vhigh | Z    | Z     | Vlow | 524  |
| 1832 | Z     | Vlow | Vhigh | Z    | 532  |
| 1834 | VTN   | Z    | VTP   | Z    | 530  |
| 1836 | Z     | VTP  | Z     | VTN  | 534  |

FIG. 18

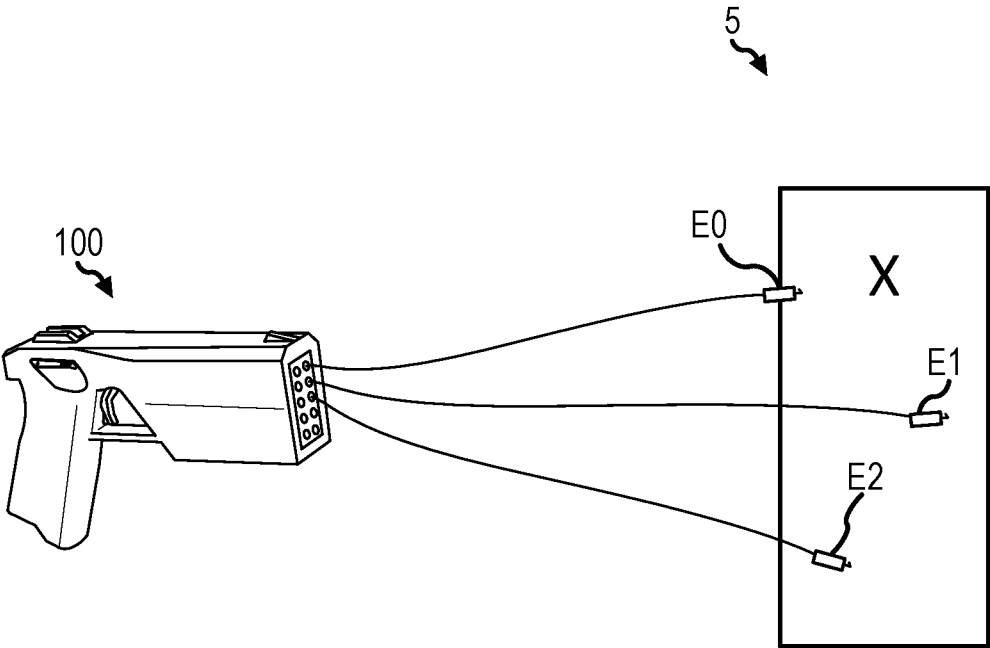


FIG. 19A

1900

|         | <u>ELECTRODES</u> |     |     |
|---------|-------------------|-----|-----|
|         | E0                | E1  | E2  |
| PULSE 1 | -                 | +   |     |
| PULSE 2 |                   | -   | +   |
| PULSE 3 | +                 |     | -   |
| PULSE n | ...               | ... | ... |

FIG. 19B

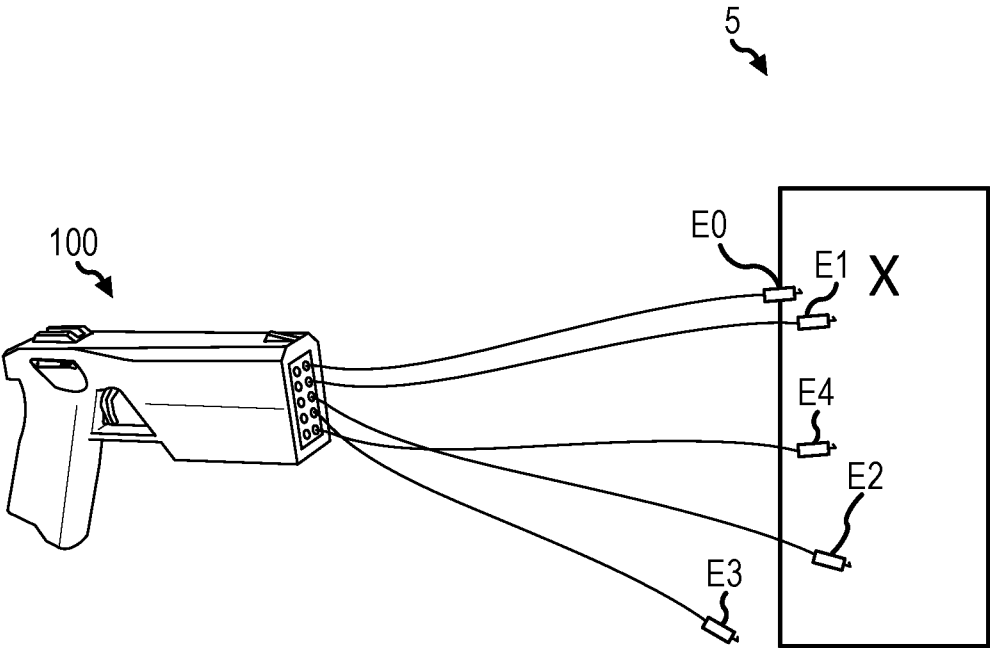


FIG. 20A

2000

|        | <u>ELECTRODES</u> |                 |                 |                |                 |
|--------|-------------------|-----------------|-----------------|----------------|-----------------|
|        | E0                | E1              | E2              | E3             | E4              |
| TEST 1 | <b>FIRST V</b>    | ~FIRST V        | <b>SECOND V</b> | 0              | ~SECOND V       |
| TEST 2 | ~FIRST V          | <b>FIRST V</b>  | ~SECOND V       | 0              | <b>SECOND V</b> |
| TEST 3 | ~SECOND V         | ~SECOND V       | <b>FIRST V</b>  | 0              | <b>SECOND V</b> |
| TEST 4 | SECOND V          | <b>SECOND V</b> | SECOND V        | <b>FIRST V</b> | SECOND V        |

FIG. 20B