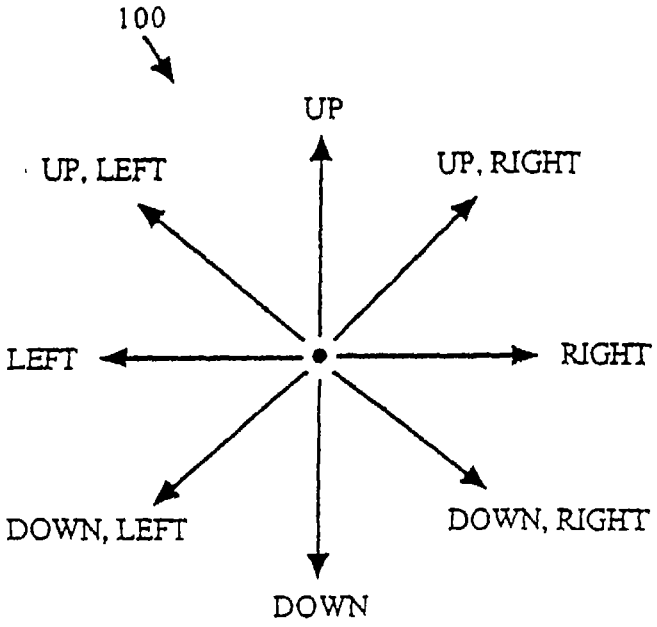
FIG. 1



G00002

FIG. 2

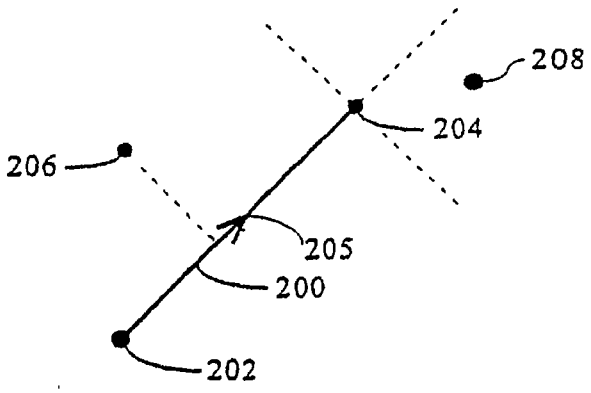
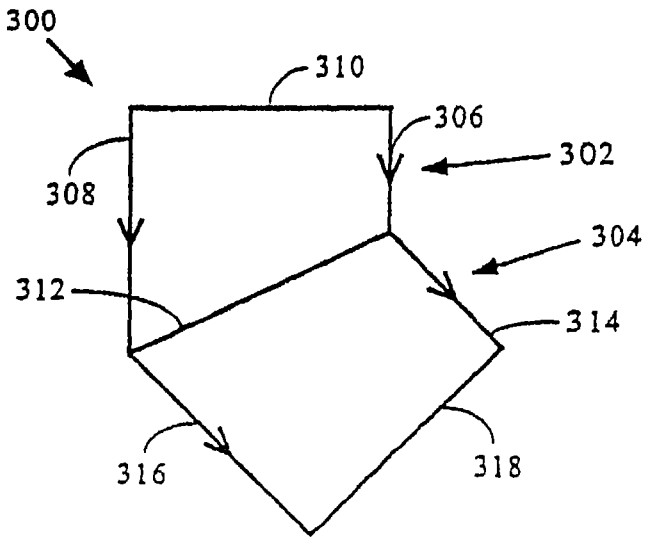


FIG. 3



163163

FIG. 4A

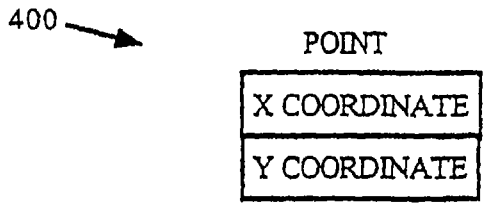


FIG. 4B

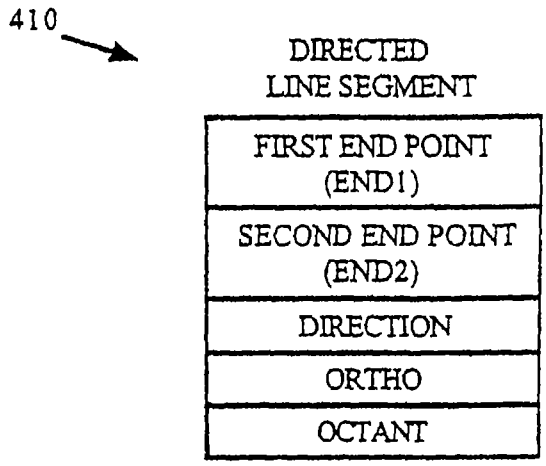


FIG. 4C

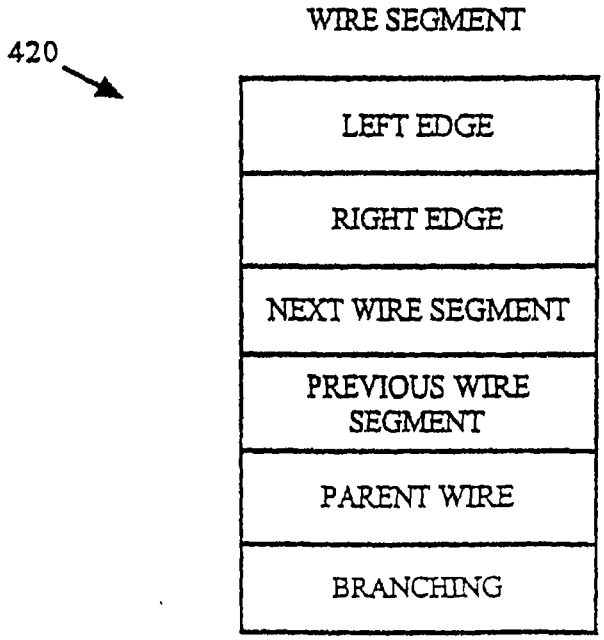


FIG. 4D

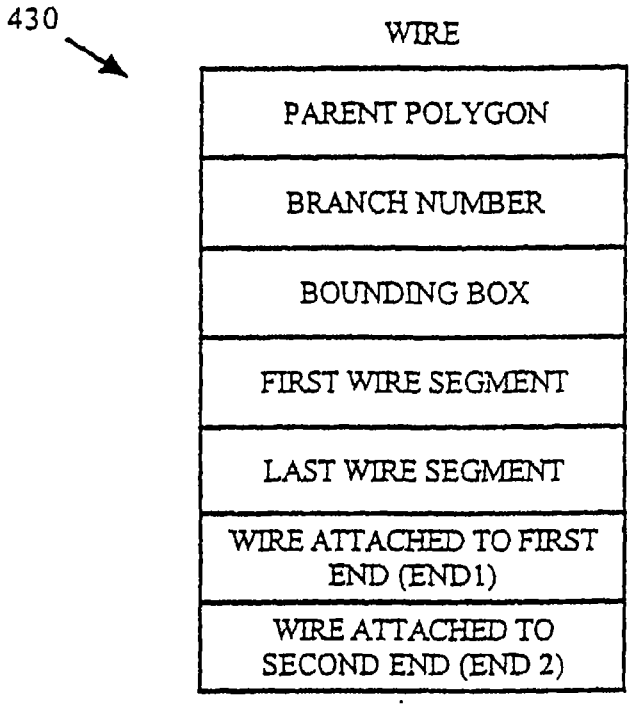

430
WIRE
PARENT POLYGON
BRANCH NUMBER
BOUNDING BOX
FIRST WIRE SEGMENT
LAST WIRE SEGMENT
WIRE ATTACHED TO FIRST END (END1)
WIRE ATTACHED TO SECOND END (END 2)

FIG. 4E

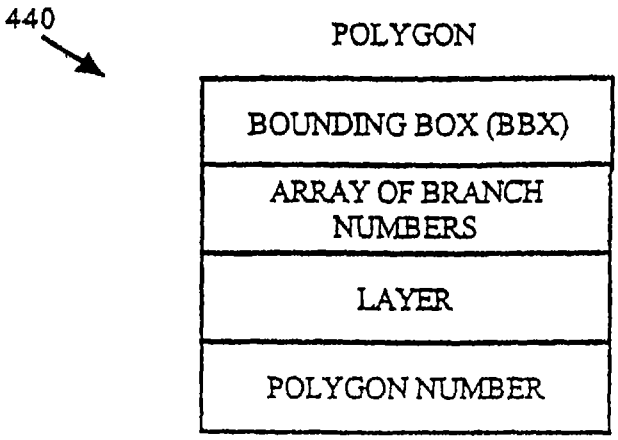

440
POLYGON
BOUNDING BOX (BBX)
ARRAY OF BRANCH NUMBERS
LAYER
POLYGON NUMBER

FIG. 4F

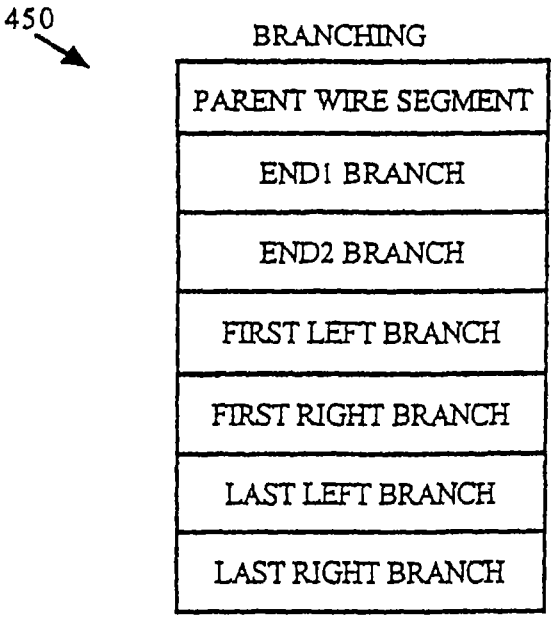
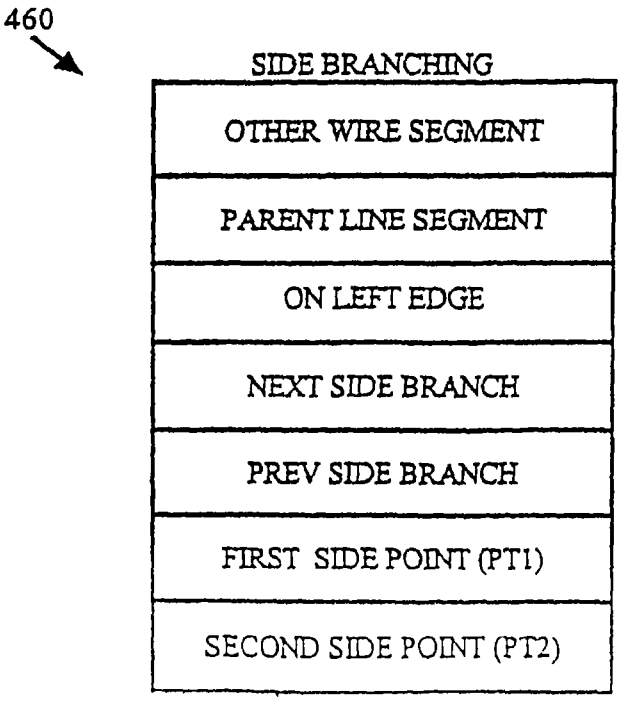

450
BRANCHING
PARENT WIRE SEGMENT
END1 BRANCH
END2 BRANCH
FIRST LEFT BRANCH
FIRST RIGHT BRANCH
LAST LEFT BRANCH
LAST RIGHT BRANCH

FIG. 4G


460
SIDE BRANCHING
OTHER WIRE SEGMENT
PARENT LINE SEGMENT
ON LEFT EDGE
NEXT SIDE BRANCH
PREV SIDE BRANCH
FIRST SIDE POINT (PT1)
SECOND SIDE POINT (PT2)

22 APR 2002

FIG. 5

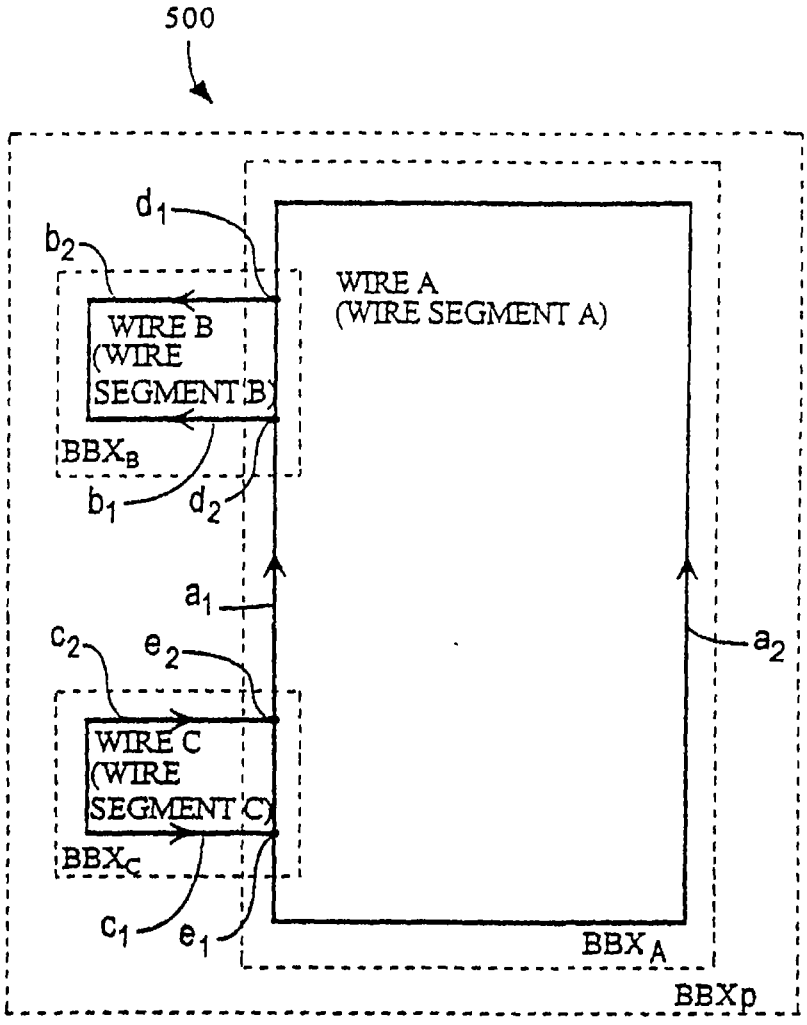


FIG. 6A

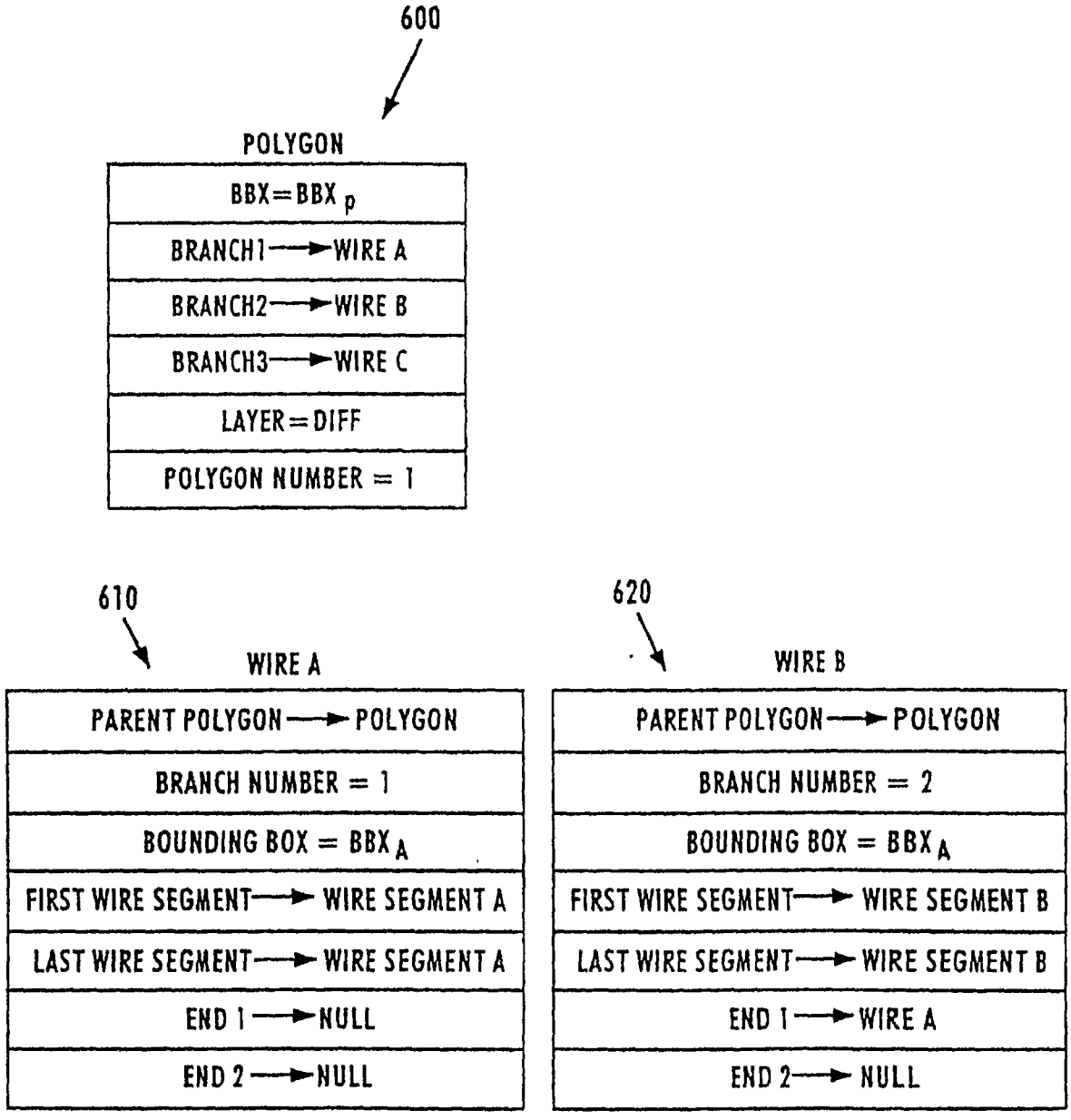

600
POLYGON
BBX=BBX p
BRANCH1→WIRE A
BRANCH2→WIRE B
BRANCH3→WIRE C
LAYER=DIFF
POLYGON NUMBER = 1
610
WIRE A
PARENT POLYGON→POLYGON
BRANCH NUMBER = 1
BOUNDING BOX = BBX A
FIRST WIRE SEGMENT→WIRE SEGMENT A
LAST WIRE SEGMENT→WIRE SEGMENT A
END 1→NULL
END 2→NULL
620
WIRE B
PARENT POLYGON→POLYGON
BRANCH NUMBER = 2
BOUNDING BOX = BBX A
FIRST WIRE SEGMENT→WIRE SEGMENT B
LAST WIRE SEGMENT→WIRE SEGMENT B
END 1→WIRE A
END 2→NULL

FIG. 6B

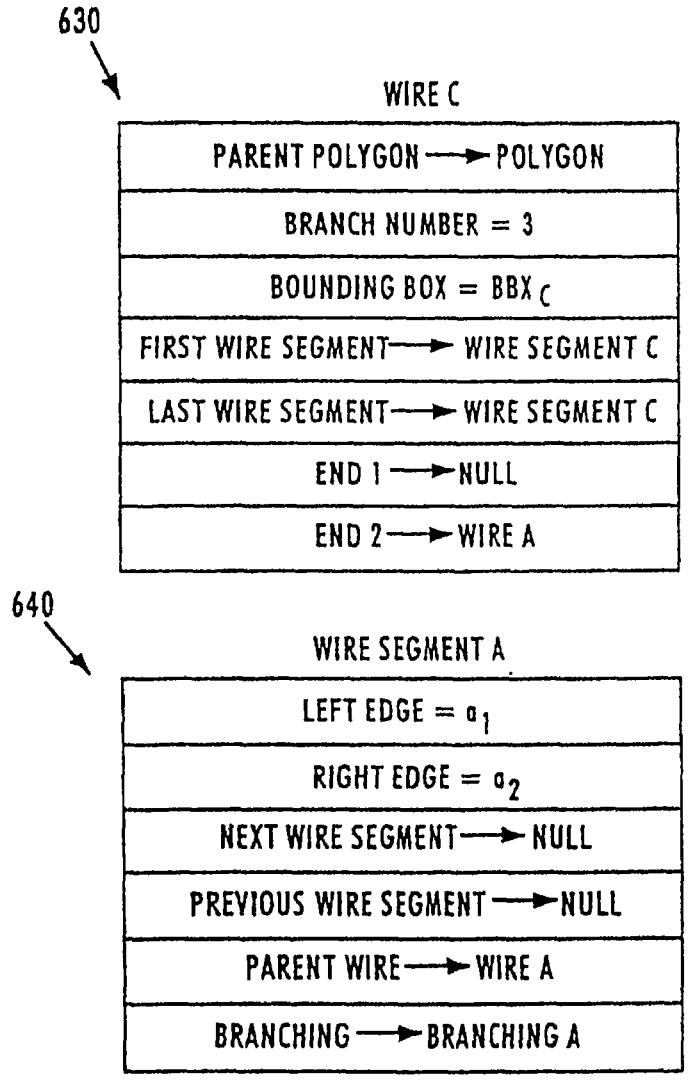

630
WIRE C
PARENT POLYGON → POLYGON
BRANCH NUMBER = 3
BOUNDING BOX = BBX C
FIRST WIRE SEGMENT → WIRE SEGMENT C
LAST WIRE SEGMENT → WIRE SEGMENT C
END 1 → NULL
END 2 → WIRE A
640
WIRE SEGMENT A
LEFT EDGE = a1
RIGHT EDGE = a2
NEXT WIRE SEGMENT → NULL
PREVIOUS WIRE SEGMENT → NULL
PARENT WIRE → WIRE A
BRANCHING → BRANCHING A

FIG. 6C

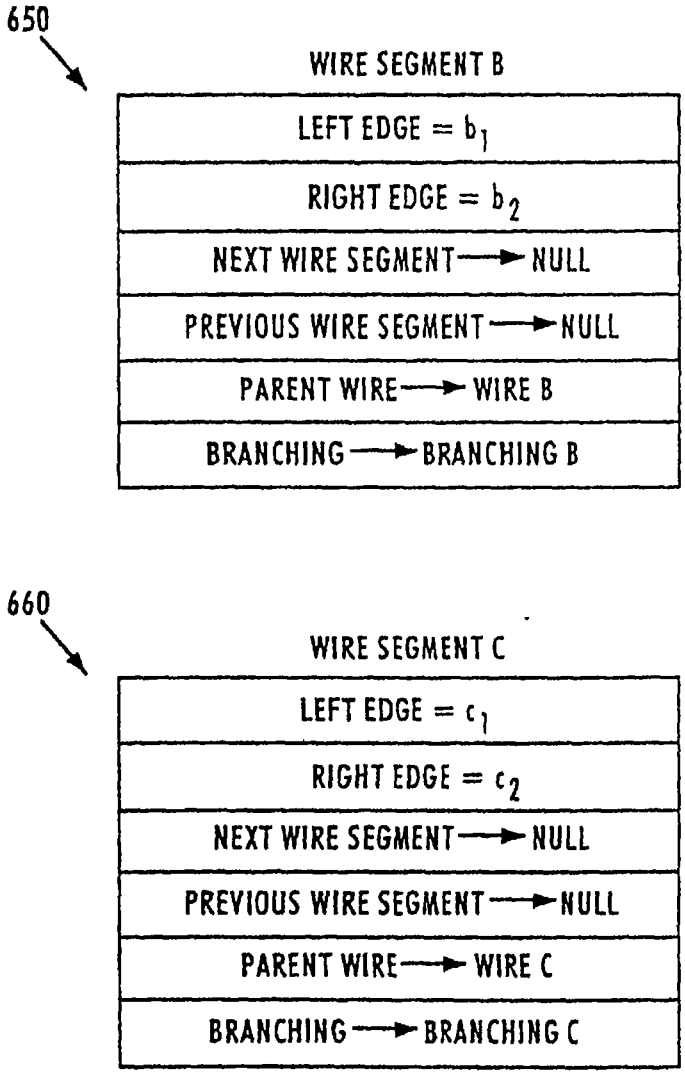

650
WIRE SEGMENT B
LEFT EDGE = b_1
RIGHT EDGE = b_2
NEXT WIRE SEGMENT → NULL
PREVIOUS WIRE SEGMENT → NULL
PARENT WIRE → WIRE B
BRANCHING → BRANCHING B
660
WIRE SEGMENT C
LEFT EDGE = c_1
RIGHT EDGE = c_2
NEXT WIRE SEGMENT → NULL
PREVIOUS WIRE SEGMENT → NULL
PARENT WIRE → WIRE C
BRANCHING → BRANCHING C

FIG. 6D

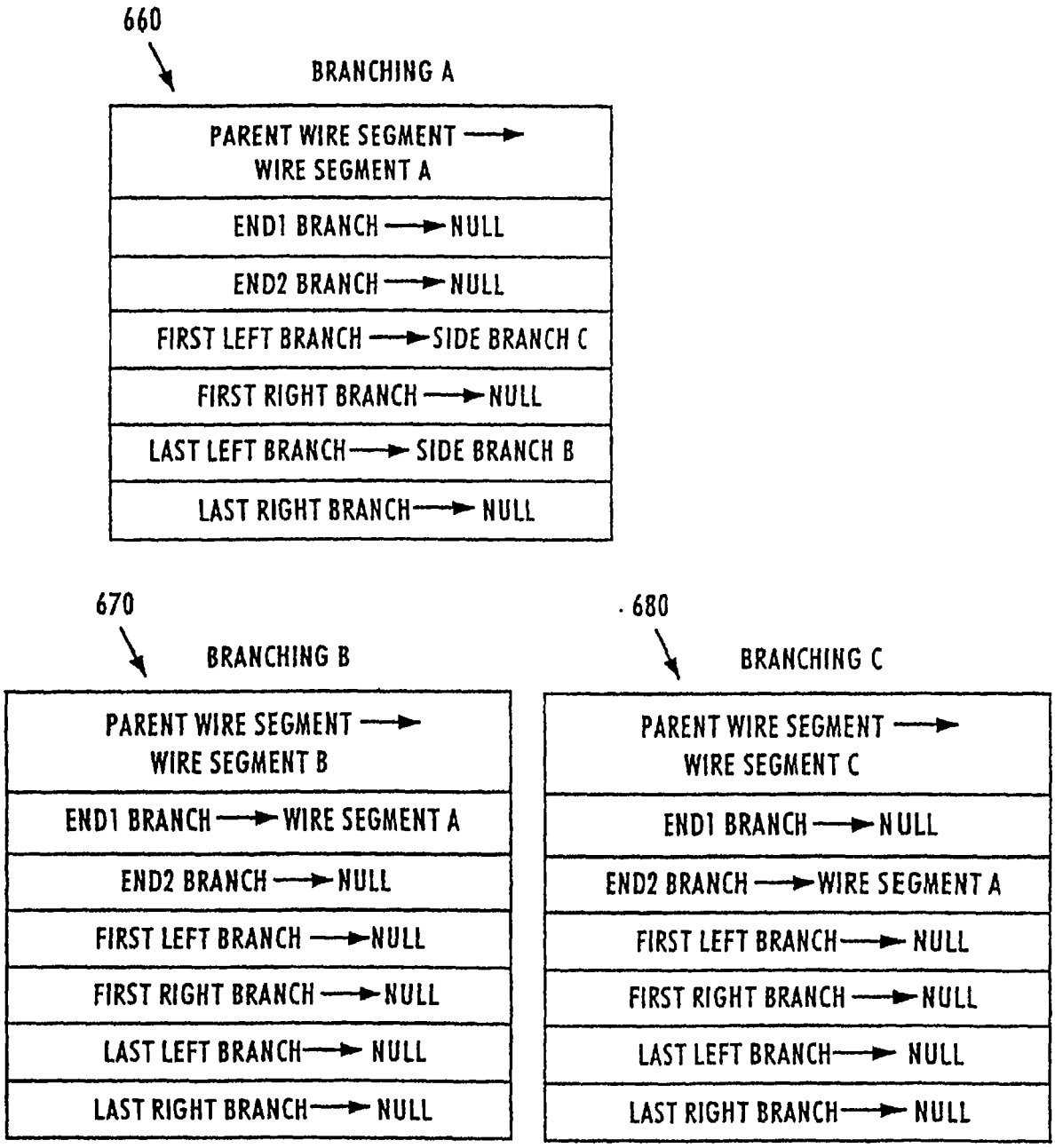

660
BRANCHING A
PARENT WIRE SEGMENT → WIRE SEGMENT A
END1 BRANCH → NULL
END2 BRANCH → NULL
FIRST LEFT BRANCH → SIDE BRANCH C
FIRST RIGHT BRANCH → NULL
LAST LEFT BRANCH → SIDE BRANCH B
LAST RIGHT BRANCH → NULL
670
BRANCHING B
PARENT WIRE SEGMENT → WIRE SEGMENT B
END1 BRANCH → WIRE SEGMENT A
END2 BRANCH → NULL
FIRST LEFT BRANCH → NULL
FIRST RIGHT BRANCH → NULL
LAST LEFT BRANCH → NULL
LAST RIGHT BRANCH → NULL
680
BRANCHING C
PARENT WIRE SEGMENT → WIRE SEGMENT C
END1 BRANCH → NULL
END2 BRANCH → WIRE SEGMENT A
FIRST LEFT BRANCH → NULL
FIRST RIGHT BRANCH → NULL
LAST LEFT BRANCH → NULL
LAST RIGHT BRANCH → NULL

FIG. 6E

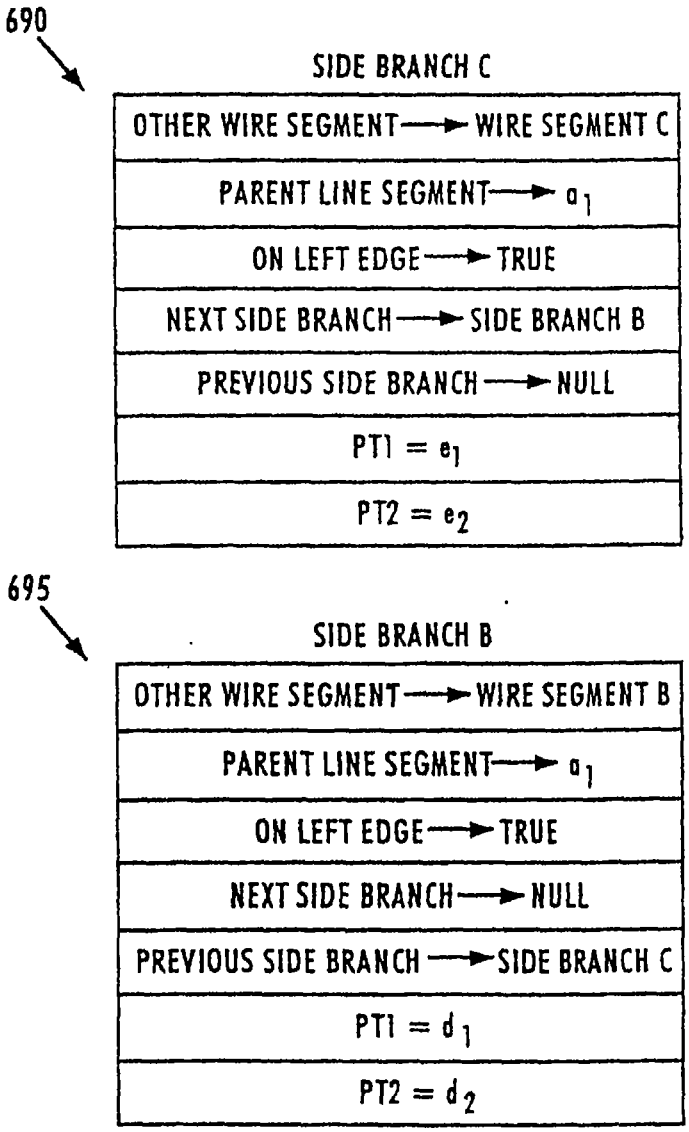

690
SIDE BRANCH C
OTHER WIRE SEGMENT → WIRE SEGMENT C
PARENT LINE SEGMENT → a_1
ON LEFT EDGE → TRUE
NEXT SIDE BRANCH → SIDE BRANCH B
PREVIOUS SIDE BRANCH → NULL
PT1 = e_1
PT2 = e_2
695
SIDE BRANCH B
OTHER WIRE SEGMENT → WIRE SEGMENT B
PARENT LINE SEGMENT → a_1
ON LEFT EDGE → TRUE
NEXT SIDE BRANCH → NULL
PREVIOUS SIDE BRANCH → SIDE BRANCH C
PT1 = d_1
PT2 = d_2

FIG. 7

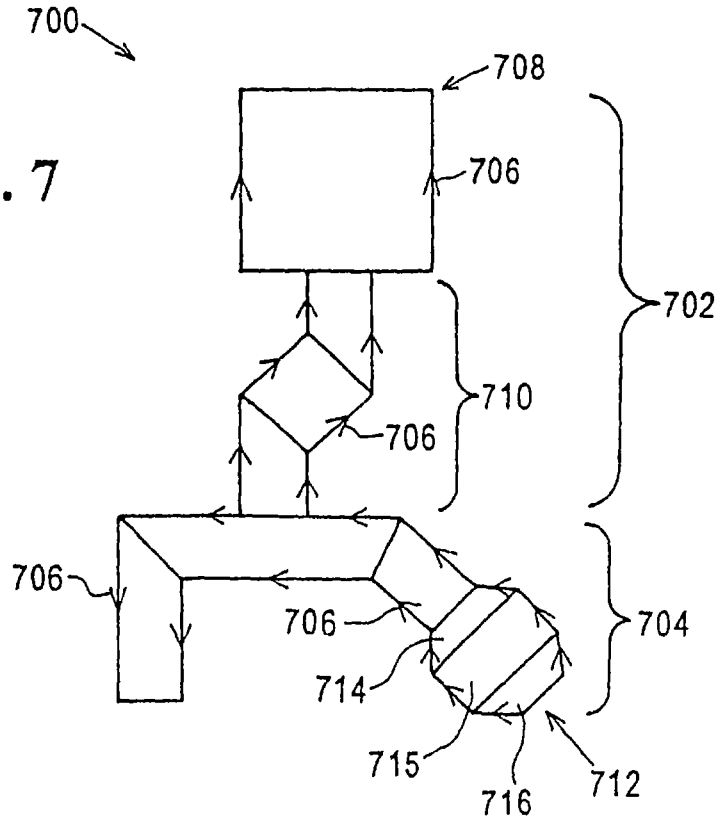

700
708
706
702
710
706
706
706
704
714
715
716
712

FIG. 8

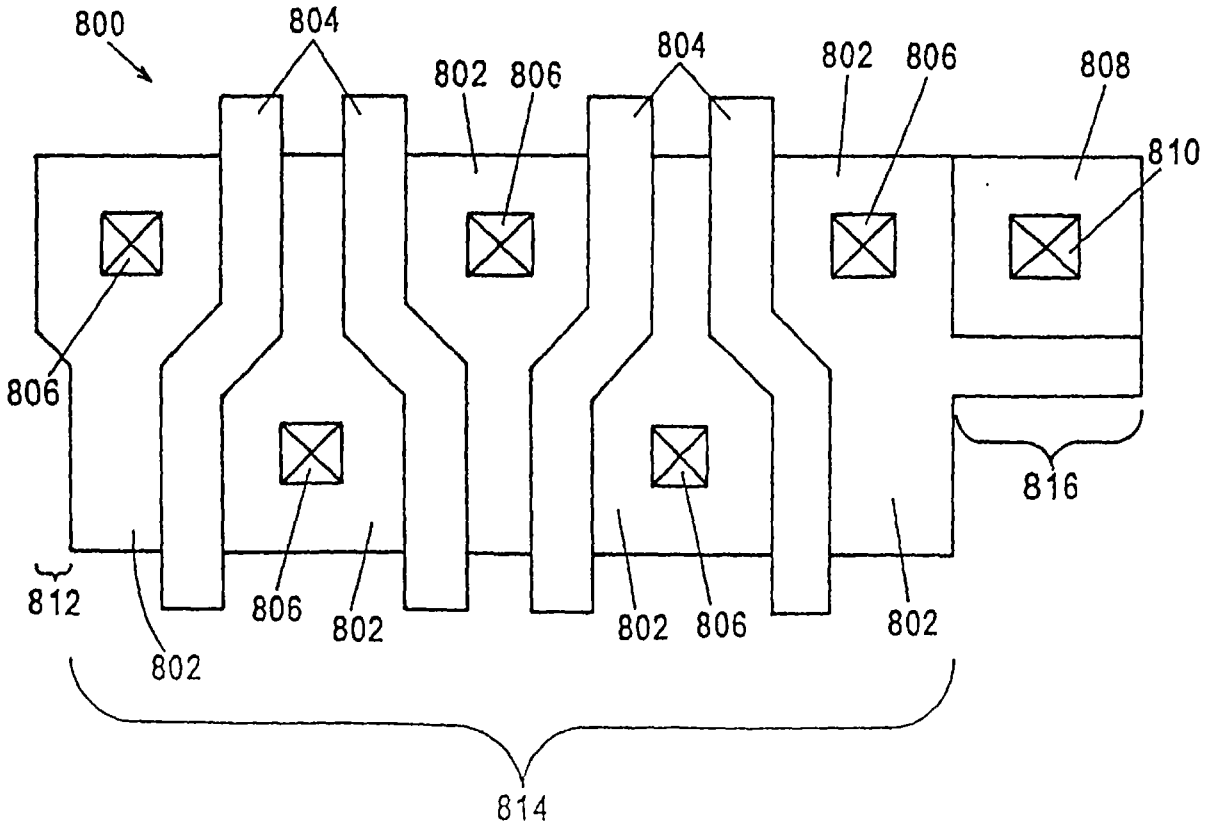

800
804
802
806
804
802
806
808
810
806
812
806
802
802
806
802
816
802
814

FIG. 9A

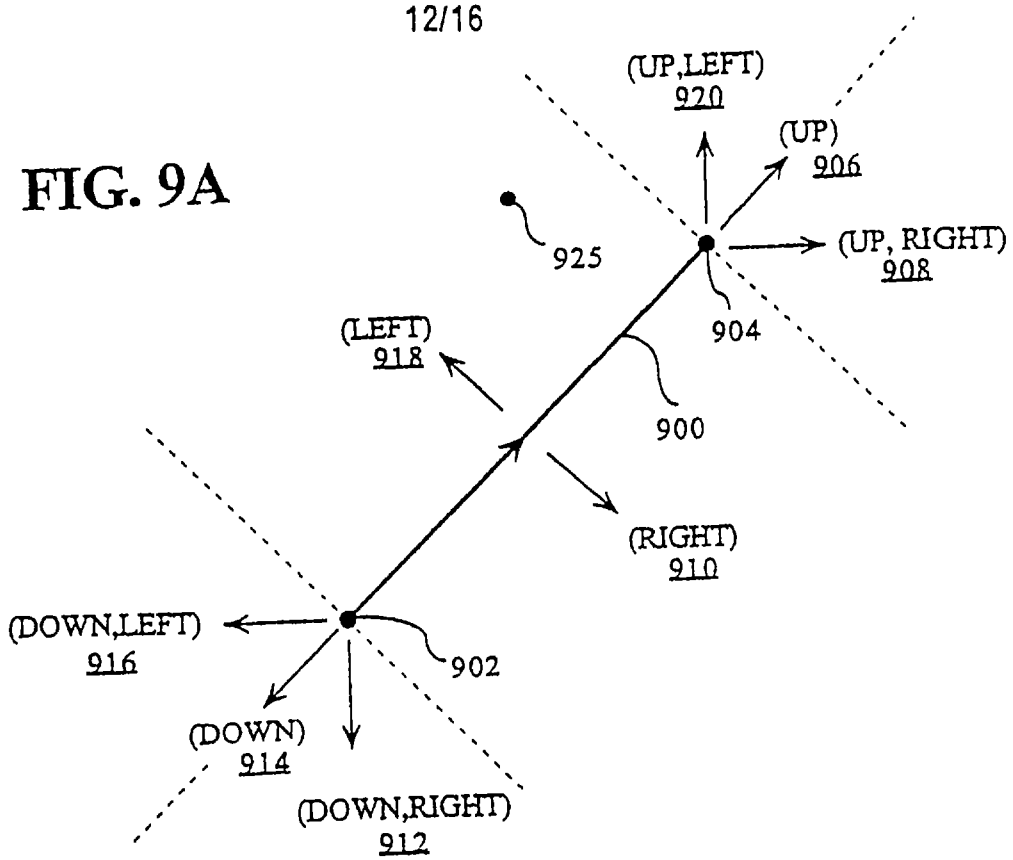

(UP,LEFT)
920
(UP)
906
(UP, RIGHT)
908
925
904
(LEFT)
918
900
(RIGHT)
910
(DOWN,LEFT)
916
902
(DOWN)
914
(DOWN,RIGHT)
912

FIG. 9B

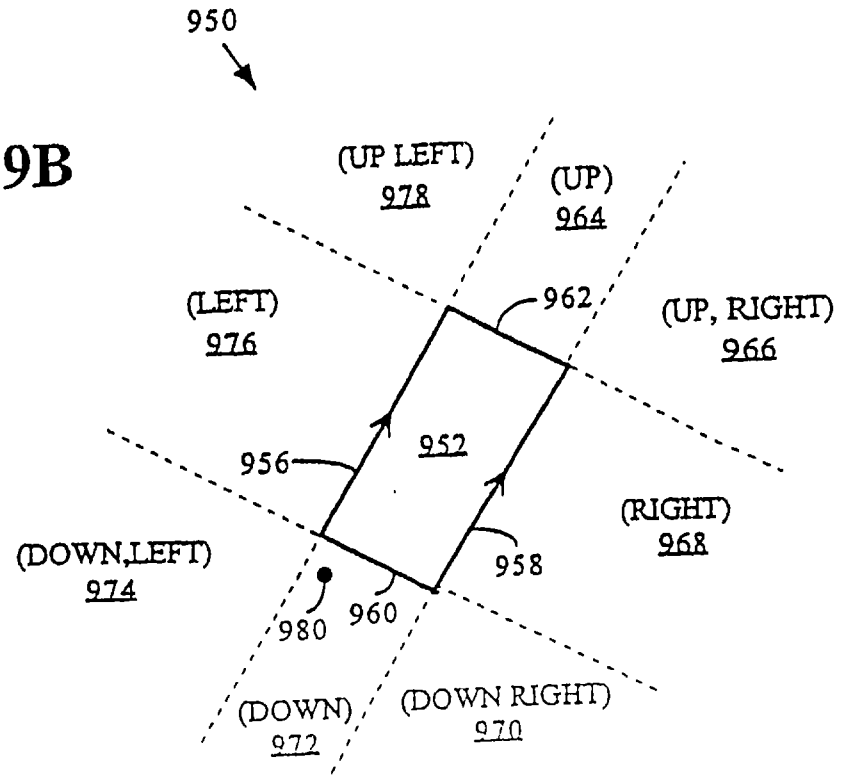

950
(UP LEFT)
978
(UP)
964
(LEFT)
976
962
(UP, RIGHT)
966
952
956
(RIGHT)
968
(DOWN,LEFT)
974
958
980
960
(DOWN)
972
(DOWN RIGHT)
970

FIG. 10

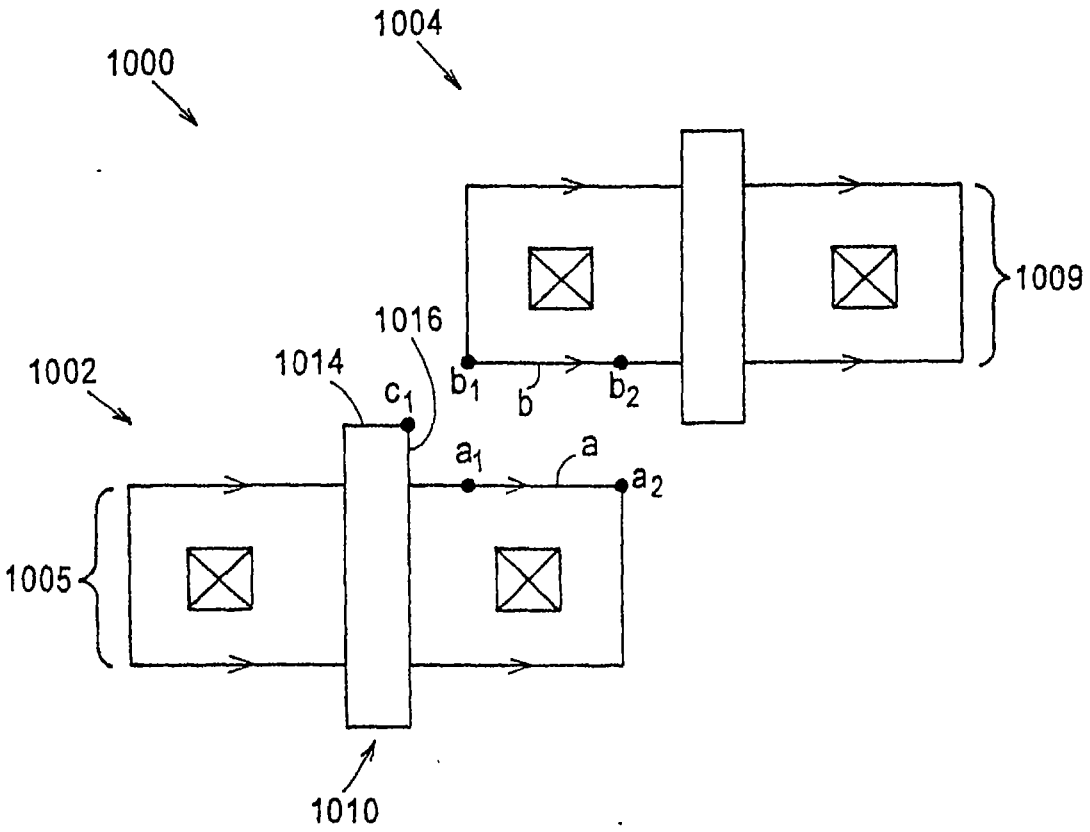

1004
1000
1009
1016
1014
1002
c_1
b_1
b
b_2
a_1
a
a_2
1005
1010

FIG. 11

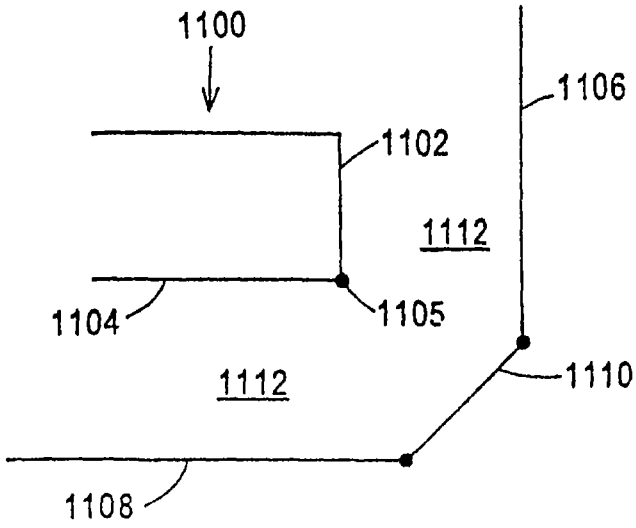

1100
1106
1102
1112
1104
1105
1112
1110
1108

FIG. 12

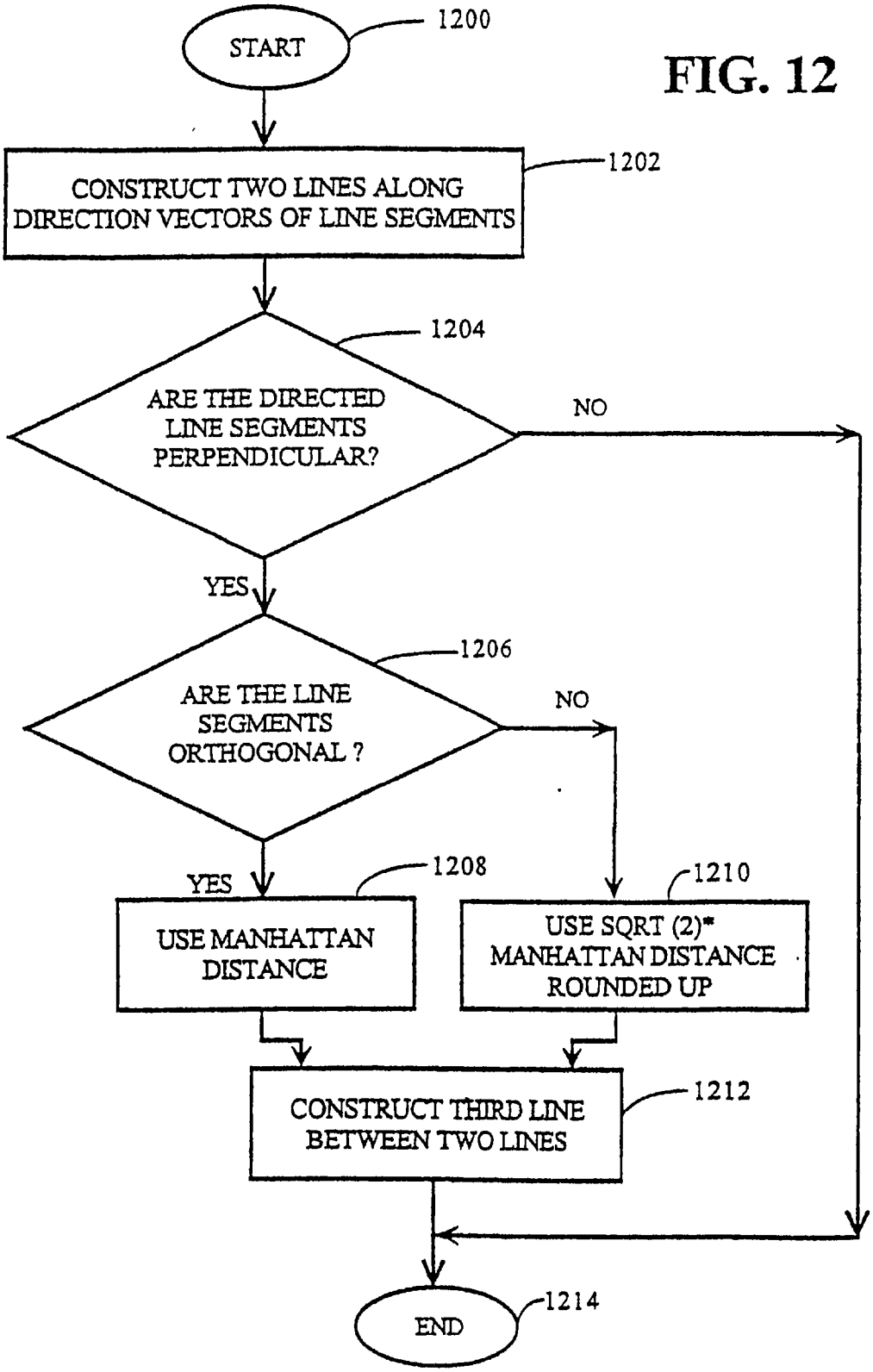

START
1200
CONSTRUCT TWO LINES ALONG DIRECTION VECTORS OF LINE SEGMENTS
1202
ARE THE DIRECTED LINE SEGMENTS PERPENDICULAR?
1204
NO
YES
ARE THE LINE SEGMENTS ORTHOGONAL ?
1206
NO
YES
USE MANHATTAN DISTANCE
1208
USE SQRT (2)* MANHATTAN DISTANCE ROUNDED UP
1210
CONSTRUCT THIRD LINE BETWEEN TWO LINES
1212
END
1214

FIG. 13A

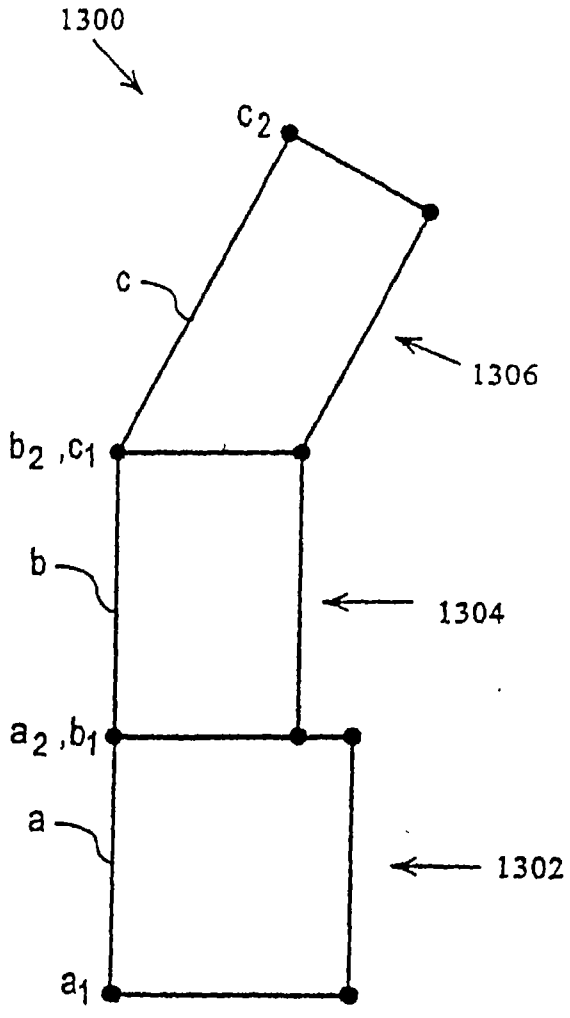


FIG. 13B

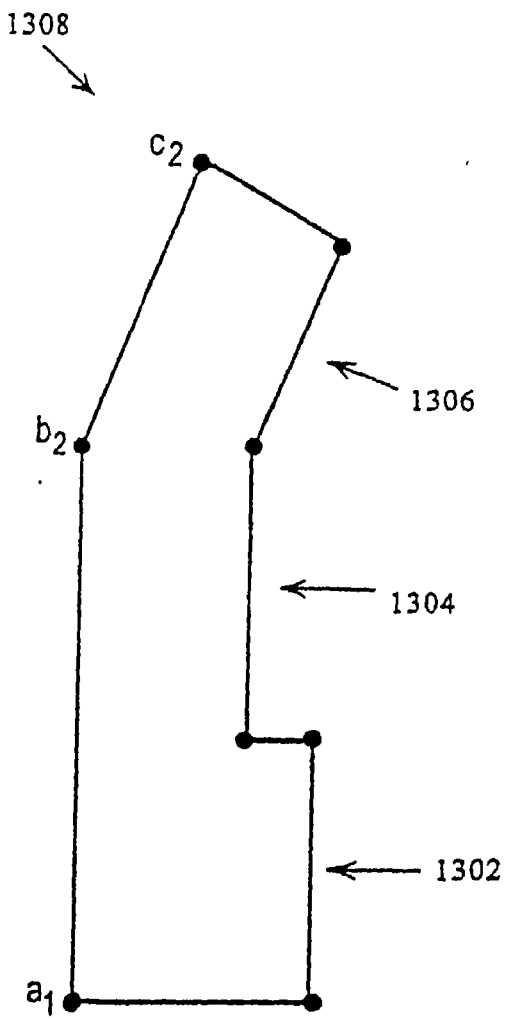
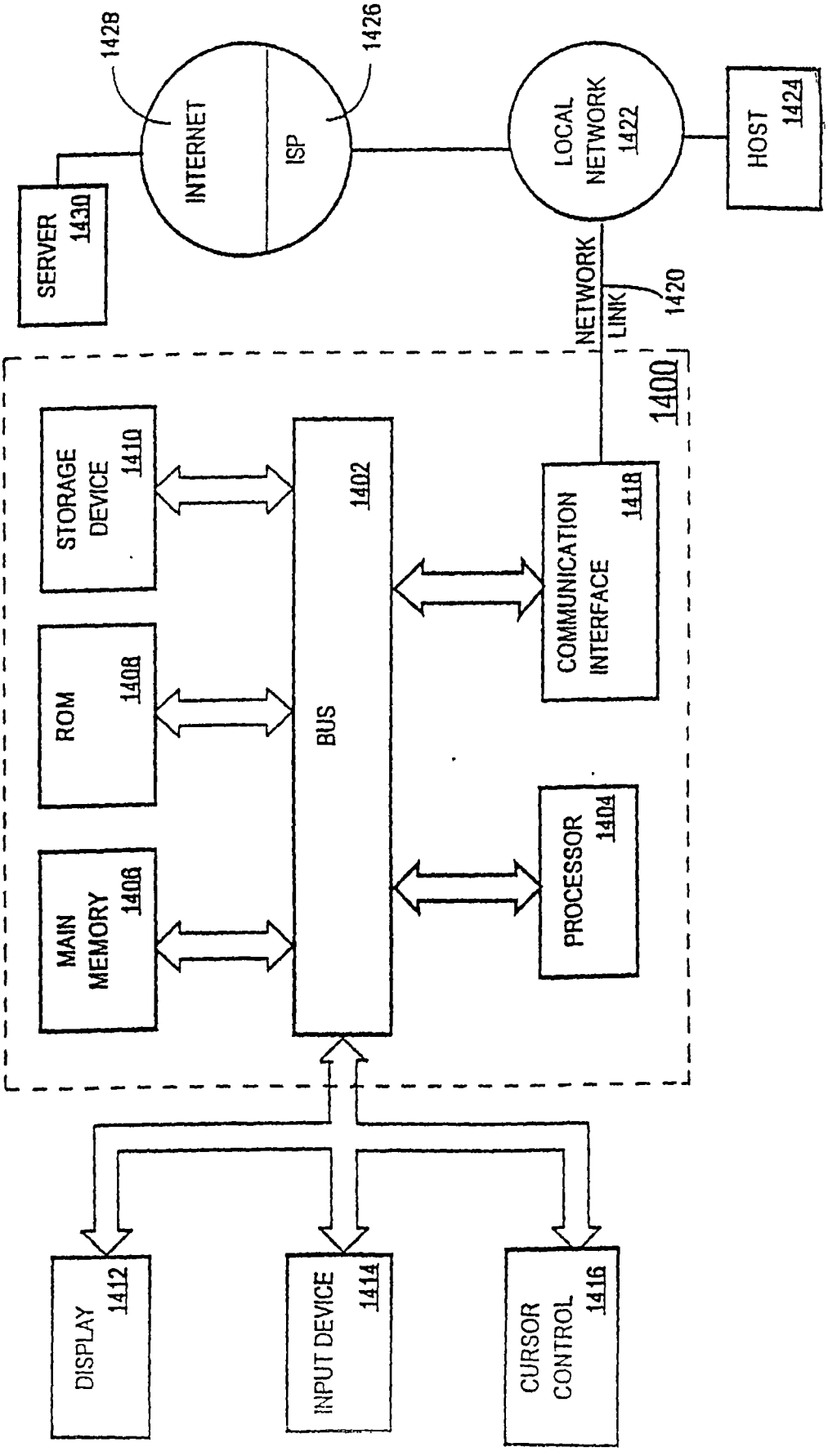


FIG. 14


1428
1426
INTERNET
ISP
LOCAL NETWORK 1422
HOST 1424
SERVER 1430
NETWORK LINK 1420
1400
STORAGE DEVICE 1410
ROM 1408
MAIN MEMORY 1406
BUS 1402
COMMUNICATION INTERFACE 1418
PROCESSOR 1404
DISPLAY 1412
INPUT DEVICE 1414
CURSOR CONTROL 1416