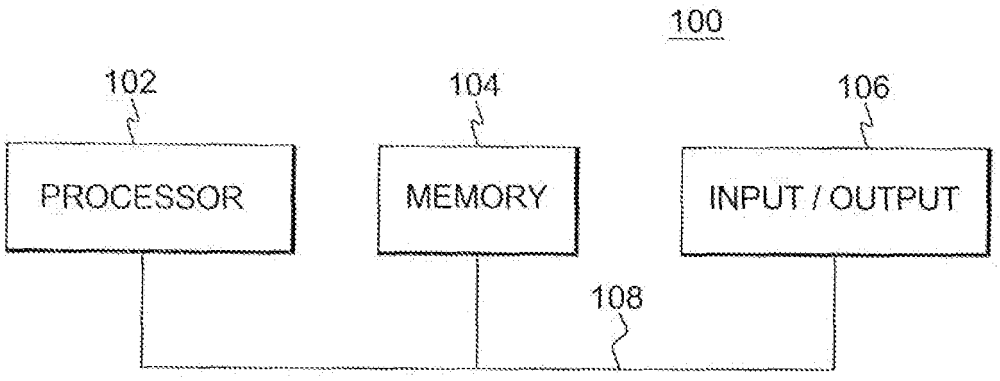

FIG. 1

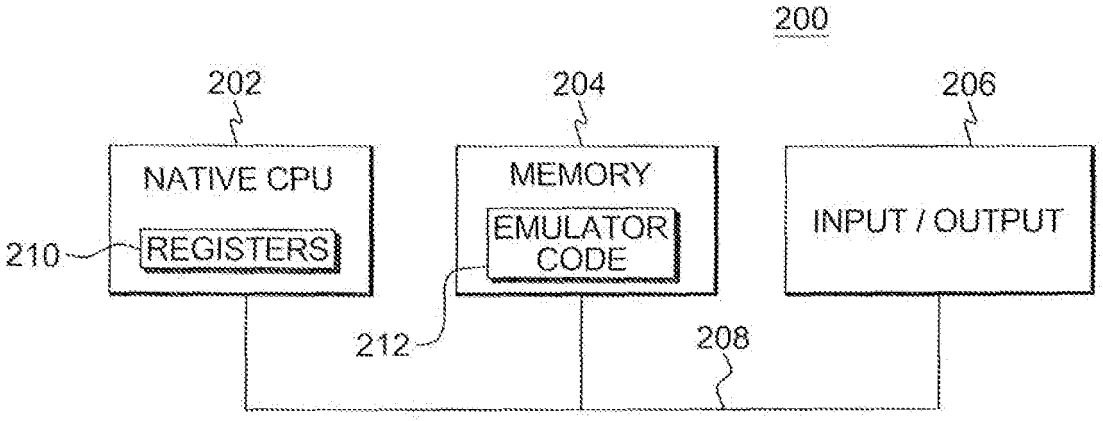

FIG. 2A

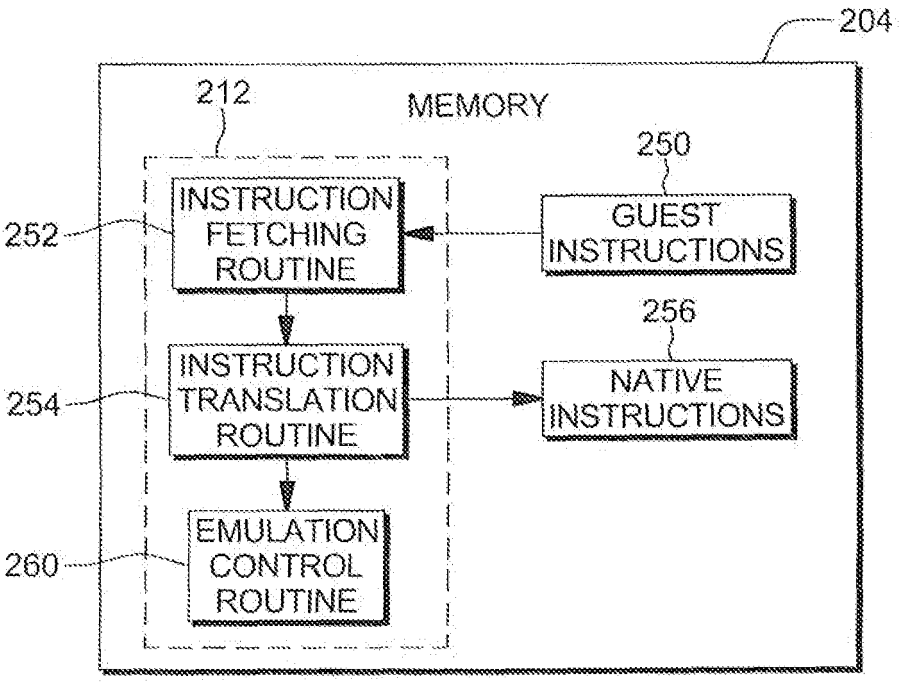

FIG. 2B

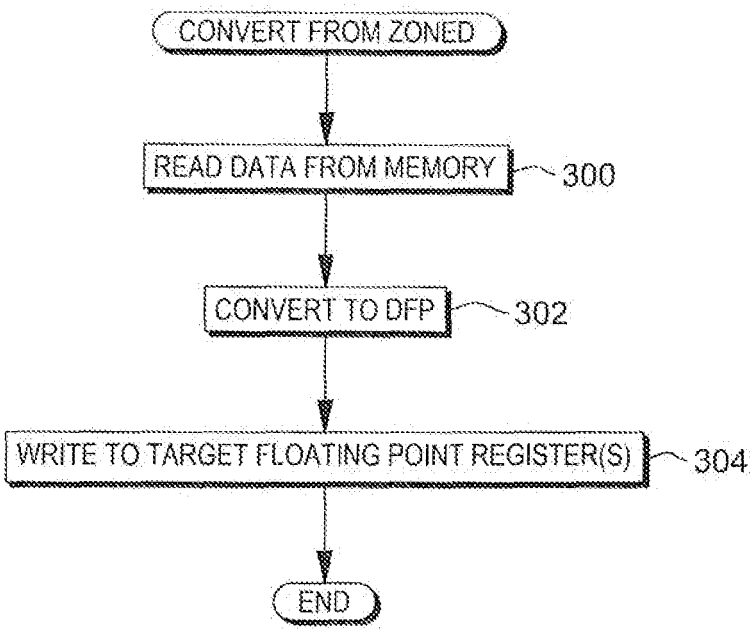
CONVERT FROM ZONED
READ DATA FROM MEMORY
300
CONVERT TO DFP
302
WRITE TO TARGET FLOATING POINT REGISTER(S)
304
END

FIG. 3

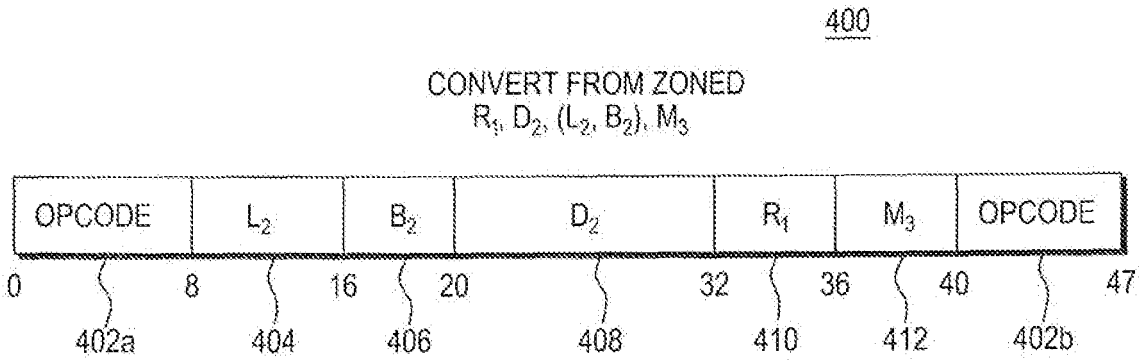
400
CONVERT FROM ZONED
R1, D2, (L2, B2), M3
OPCODE
L2
B2
D2
R1
M3
OPCODE
0
8
16
20
32
36
40
47
402a
404
406
408
410
412
402b

FIG. 4

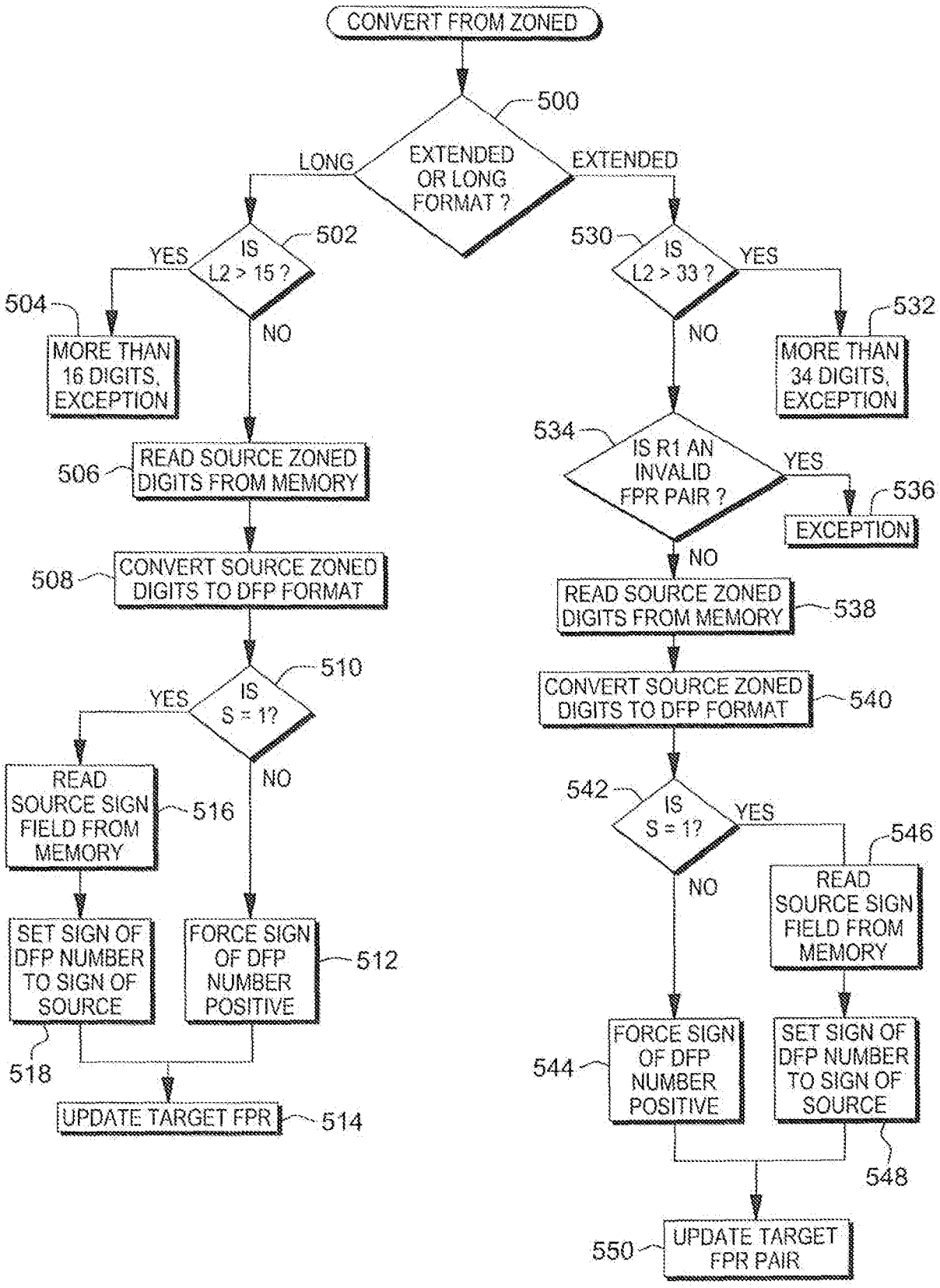
CONVERT FROM ZONED
500
EXTENDED OR LONG FORMAT ?
LONG
EXTENDED
IS L2 > 15 ?
502
YES
NO
504
MORE THAN 16 DIGITS, EXCEPTION
506
READ SOURCE ZONED DIGITS FROM MEMORY
508
CONVERT SOURCE ZONED DIGITS TO DFP FORMAT
IS S = 1?
510
YES
NO
READ SOURCE SIGN FIELD FROM MEMORY
516
SET SIGN OF DFP NUMBER TO SIGN OF SOURCE
FORCE SIGN OF DFP NUMBER POSITIVE
512
518
UPDATE TARGET FPR
514
530
IS L2 > 33 ?
YES
NO
532
MORE THAN 34 DIGITS, EXCEPTION
534
IS R1 AN INVALID FPR PAIR ?
YES
536
EXCEPTION
NO
READ SOURCE ZONED DIGITS FROM MEMORY
538
CONVERT SOURCE ZONED DIGITS TO DFP FORMAT
540
542
IS S = 1?
YES
NO
546
READ SOURCE SIGN FIELD FROM MEMORY
544
FORCE SIGN OF DFP NUMBER POSITIVE
SET SIGN OF DFP NUMBER TO SIGN OF SOURCE
548
550
UPDATE TARGET FPR PAIR

FIG. 5

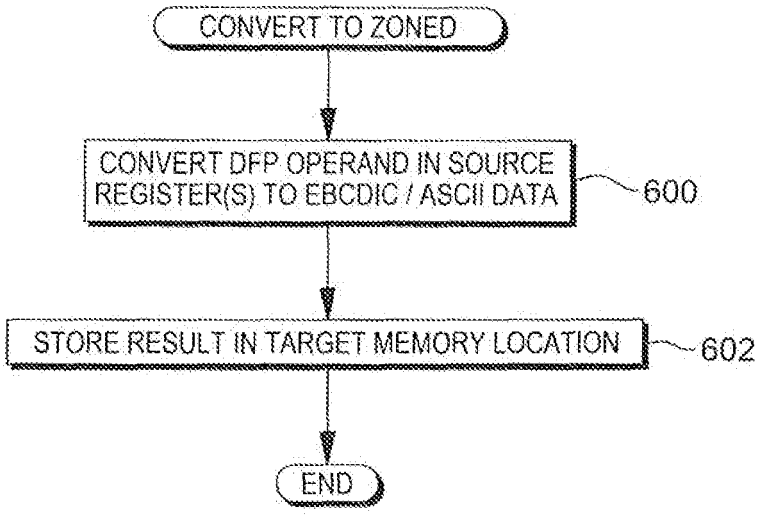
CONVERT TO ZONED
CONVERT DFP OPERAND IN SOURCE REGISTER(S) TO EBCDIC / ASCII DATA
600
STORE RESULT IN TARGET MEMORY LOCATION
602
END

FIG. 6

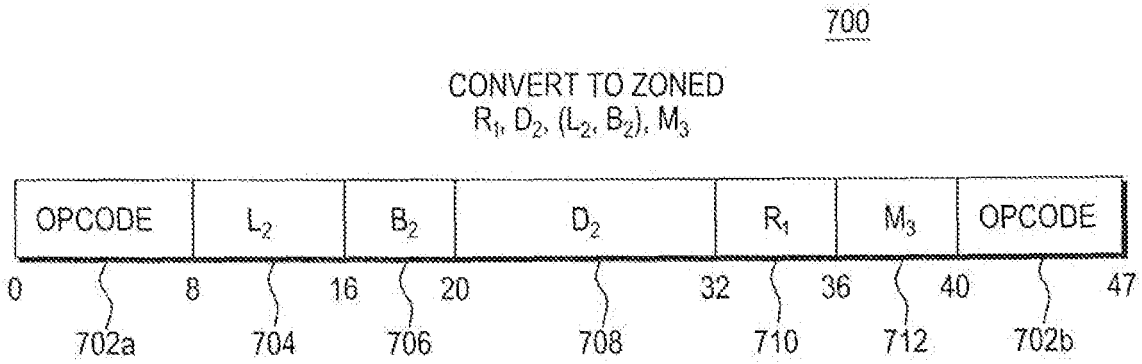
700
CONVERT TO ZONED
R1, D2, (L2, B2), M3
OPCODE
L2
B2
D2
R1
M3
OPCODE
0
8
16
20
32
36
40
47
702a
704
706
708
710
712
702b

FIG. 7

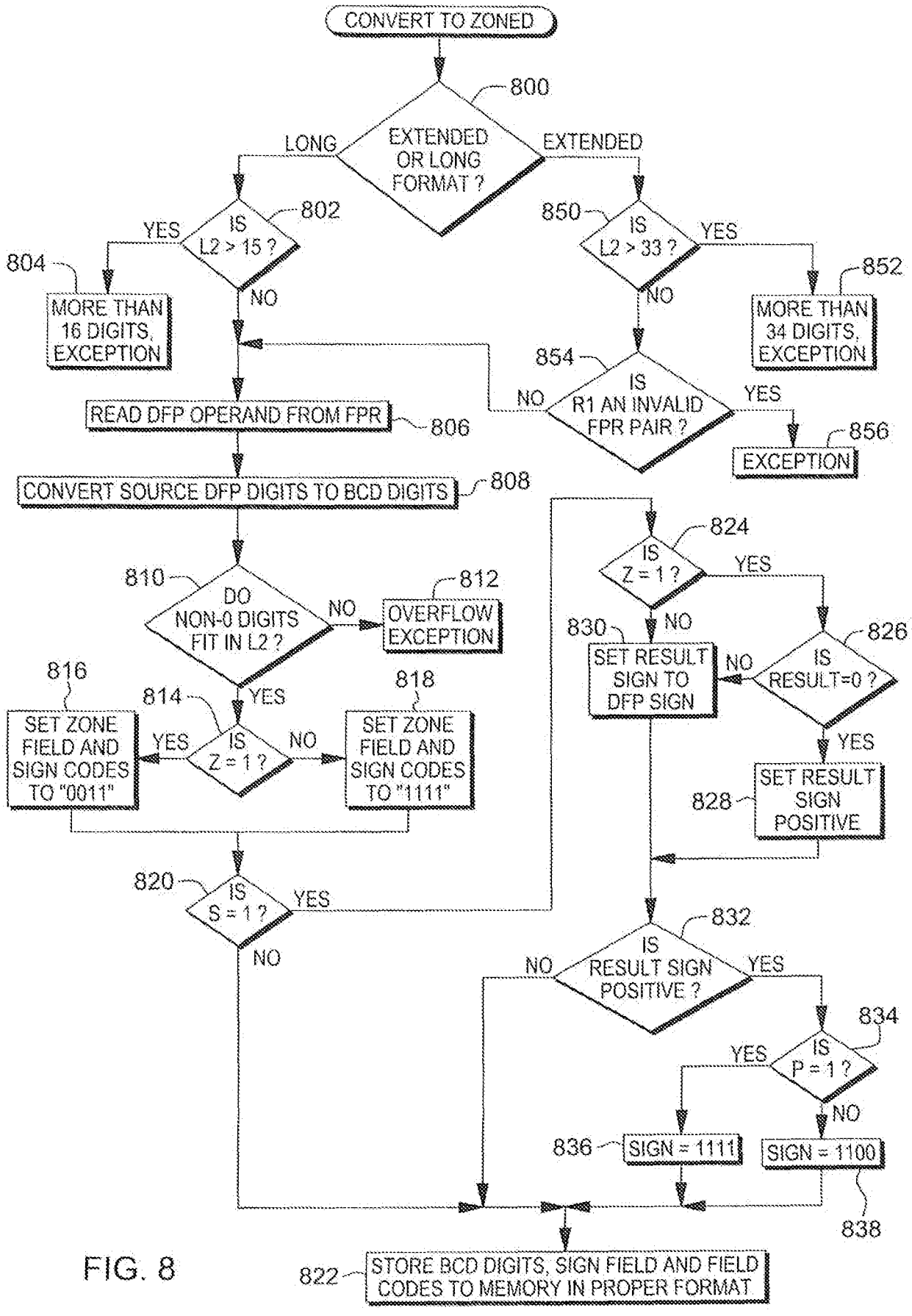
CONVERT TO ZONED
800
EXTENDED OR LONG FORMAT ?
LONG
EXTENDED
802
IS L2 > 15 ?
YES
NO
804
MORE THAN 16 DIGITS, EXCEPTION
850
IS L2 > 33 ?
YES
NO
852
MORE THAN 34 DIGITS, EXCEPTION
854
IS R1 AN INVALID FPR PAIR ?
NO
YES
856
EXCEPTION
READ DFP OPERAND FROM FPR
806
CONVERT SOURCE DFP DIGITS TO BCD DIGITS
808
810
DO NON-0 DIGITS FIT IN L2 ?
NO
812
OVERFLOW EXCEPTION
YES
816
SET ZONE FIELD AND SIGN CODES TO "0011"
814
IS Z = 1 ?
YES
NO
818
SET ZONE FIELD AND SIGN CODES TO "1111"
820
IS S = 1 ?
YES
NO
824
IS Z = 1 ?
YES
NO
830
SET RESULT SIGN TO DFP SIGN
826
IS RESULT=0 ?
NO
YES
828
SET RESULT SIGN POSITIVE
832
IS RESULT SIGN POSITIVE ?
NO
YES
834
IS P = 1 ?
YES
NO
836
SIGN = 1111
SIGN = 1100
838
822
STORE BCD DIGITS, SIGN FIELD AND FIELD CODES TO MEMORY IN PROPER FORMAT

FIG. 8

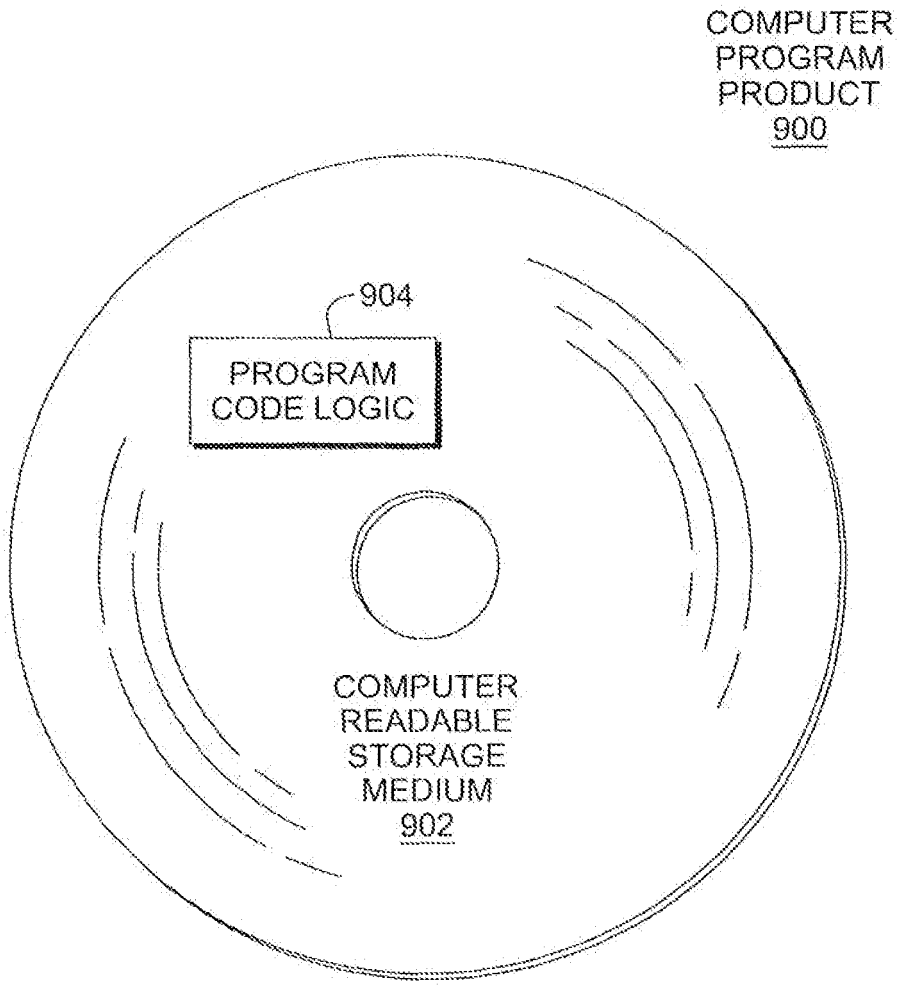
COMPUTER
PROGRAM
PRODUCT
900
904
PROGRAM
CODE LOGIC
COMPUTER
READABLE
STORAGE
MEDIUM
902

FIG. 9

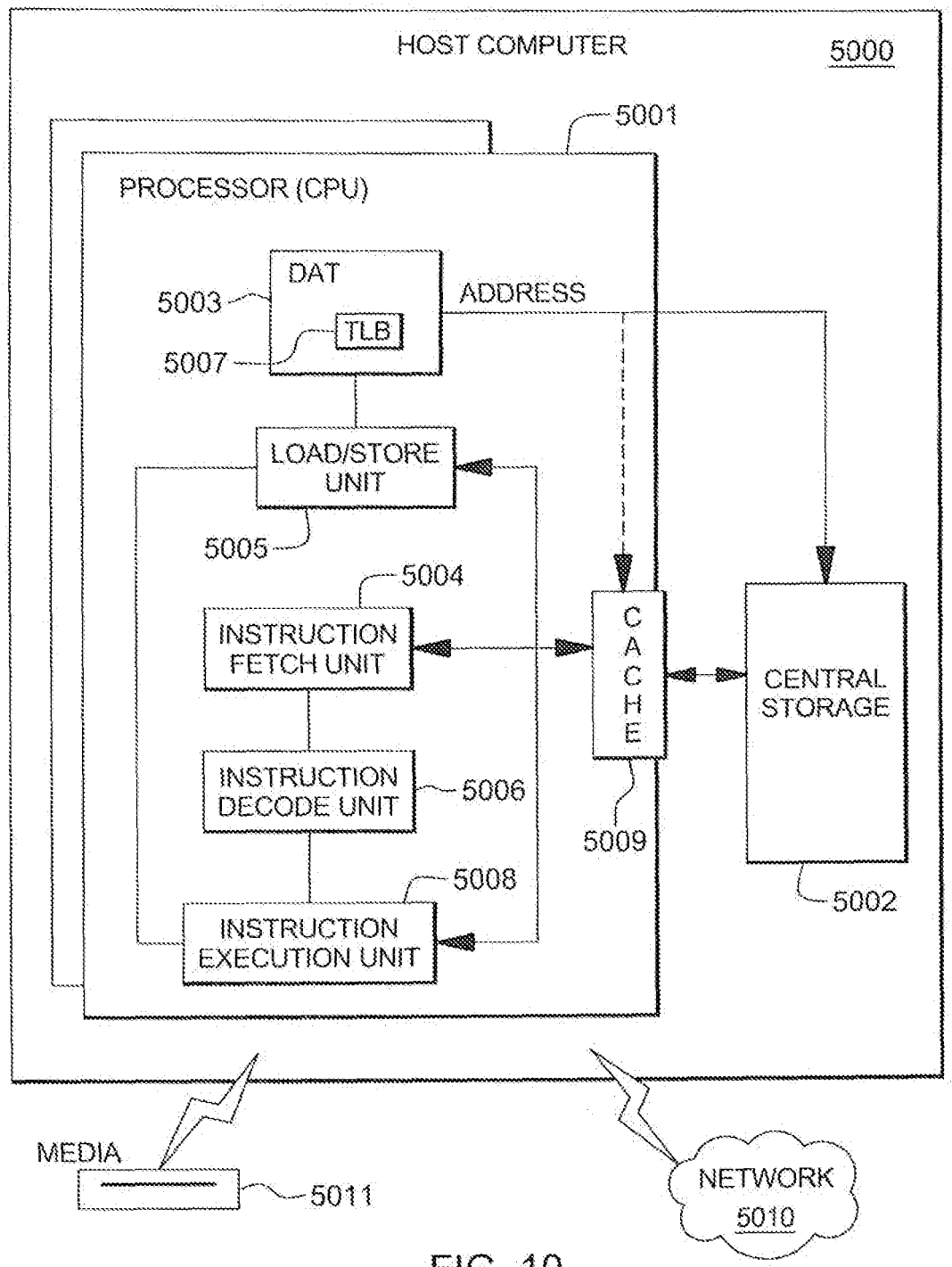
HOST COMPUTER
5000
5001
PROCESSOR (CPU)
DAT
5003
TLB
5007
ADDRESS
LOAD/STORE UNIT
5005
5004
INSTRUCTION FETCH UNIT
INSTRUCTION DECODE UNIT
5006
5008
INSTRUCTION EXECUTION UNIT
CACHE
5009
CENTRAL STORAGE
5002
MEDIA
5011
NETWORK
5010

FIG. 10

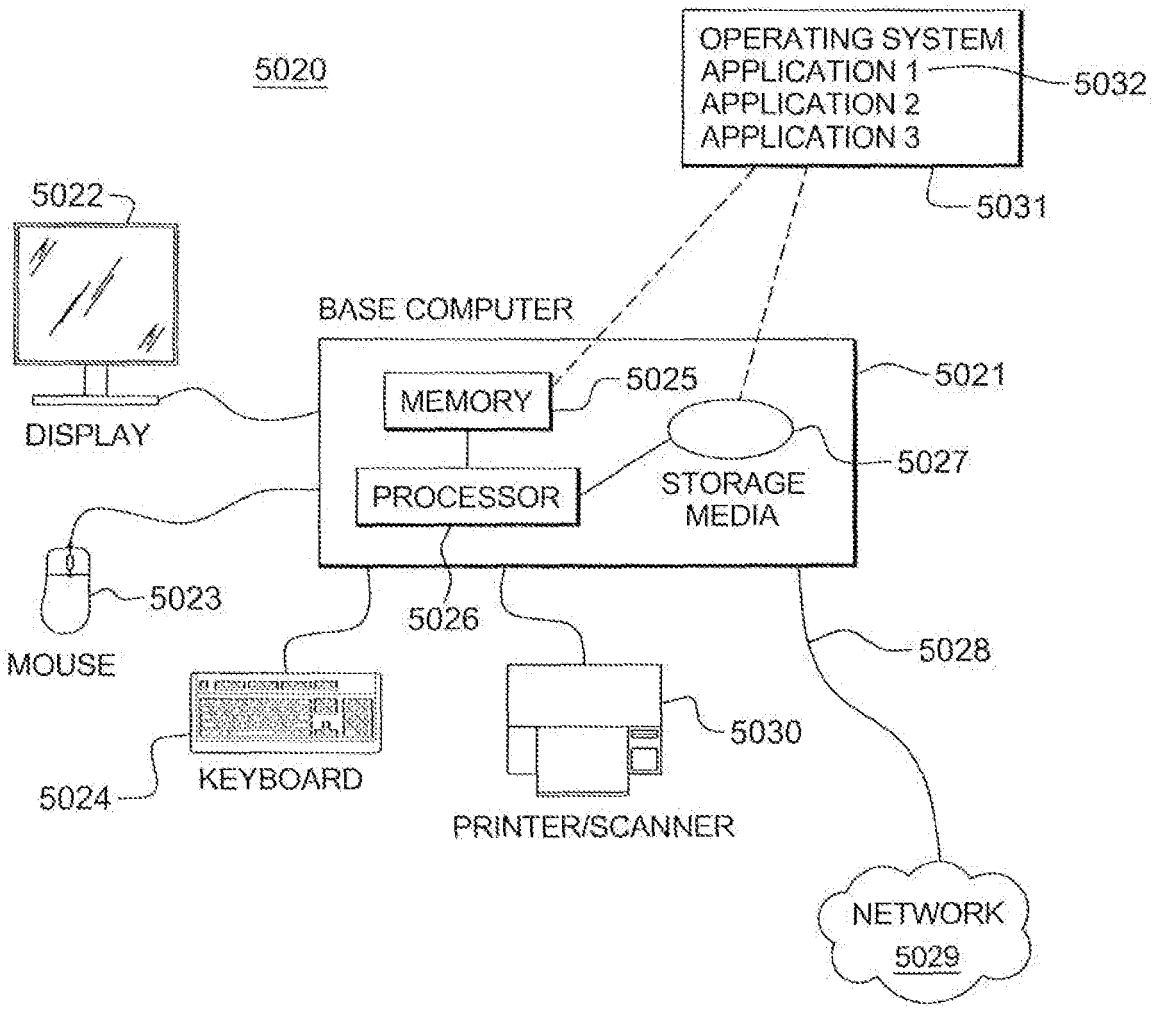
5020
OPERATING SYSTEM
APPLICATION 1
APPLICATION 2
APPLICATION 3
5032
5031
5022
BASE COMPUTER
MEMORY
5025
5021
DISPLAY
PROCESSOR
STORAGE MEDIA
5027
5023
MOUSE
5026
5028
5030
5024
KEYBOARD
PRINTER/SCANNER
NETWORK
5029

FIG. 11

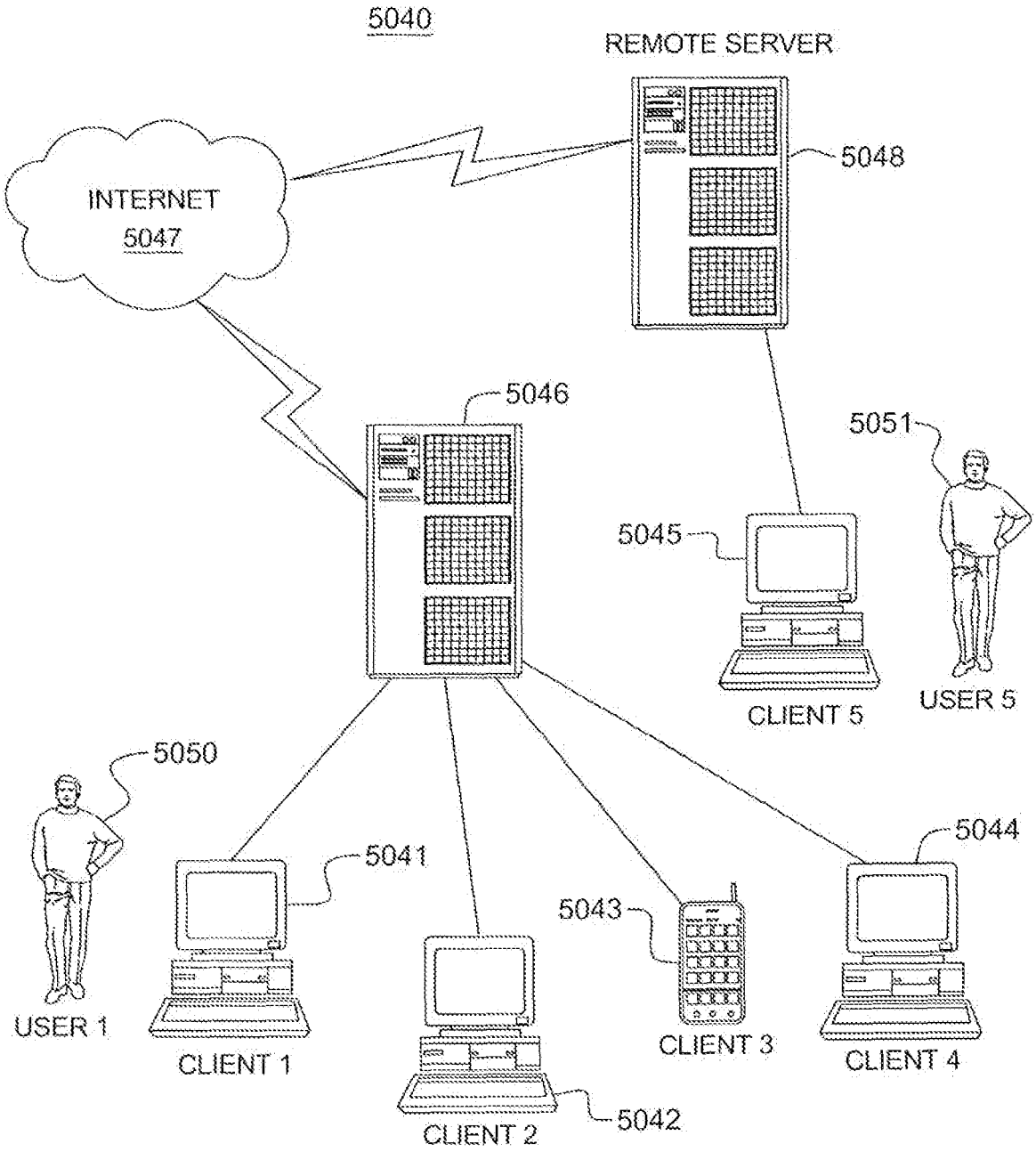
5040
REMOTE SERVER
5048
INTERNET
5047
5046
5051
5045
USER 5
CLIENT 5
5050
5044
5041
5043
USER 1
CLIENT 1
CLIENT 3
CLIENT 4
CLIENT 2
5042

FIG. 12

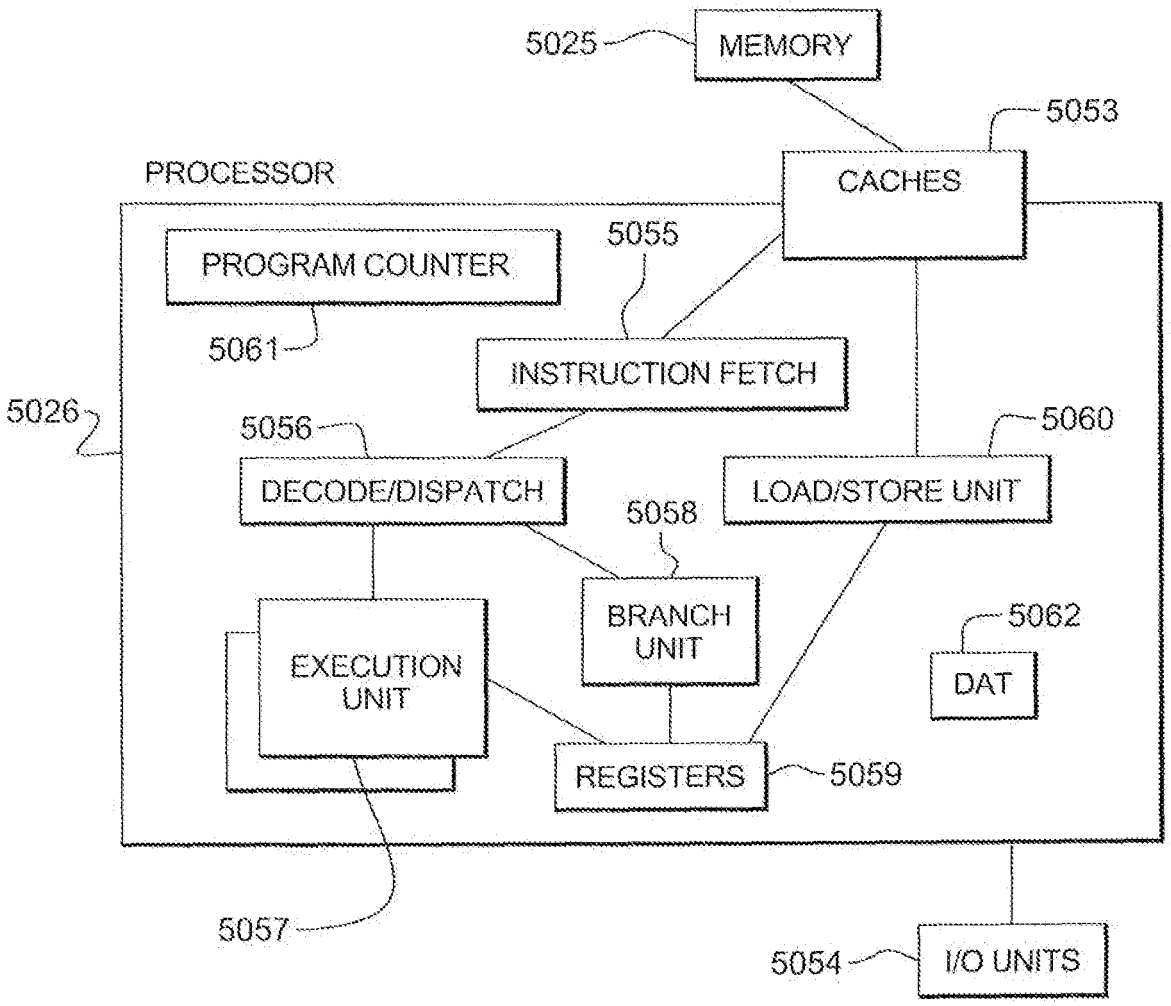
5025
MEMORY
5053
CACHES
PROCESSOR
PROGRAM COUNTER
5055
5061
INSTRUCTION FETCH
5026
5056
5060
DECODE/DISPATCH
LOAD/STORE UNIT
5058
BRANCH UNIT
5062
DAT
EXECUTION UNIT
REGISTERS
5059
5057
5054
I/O UNITS

FIG. 13

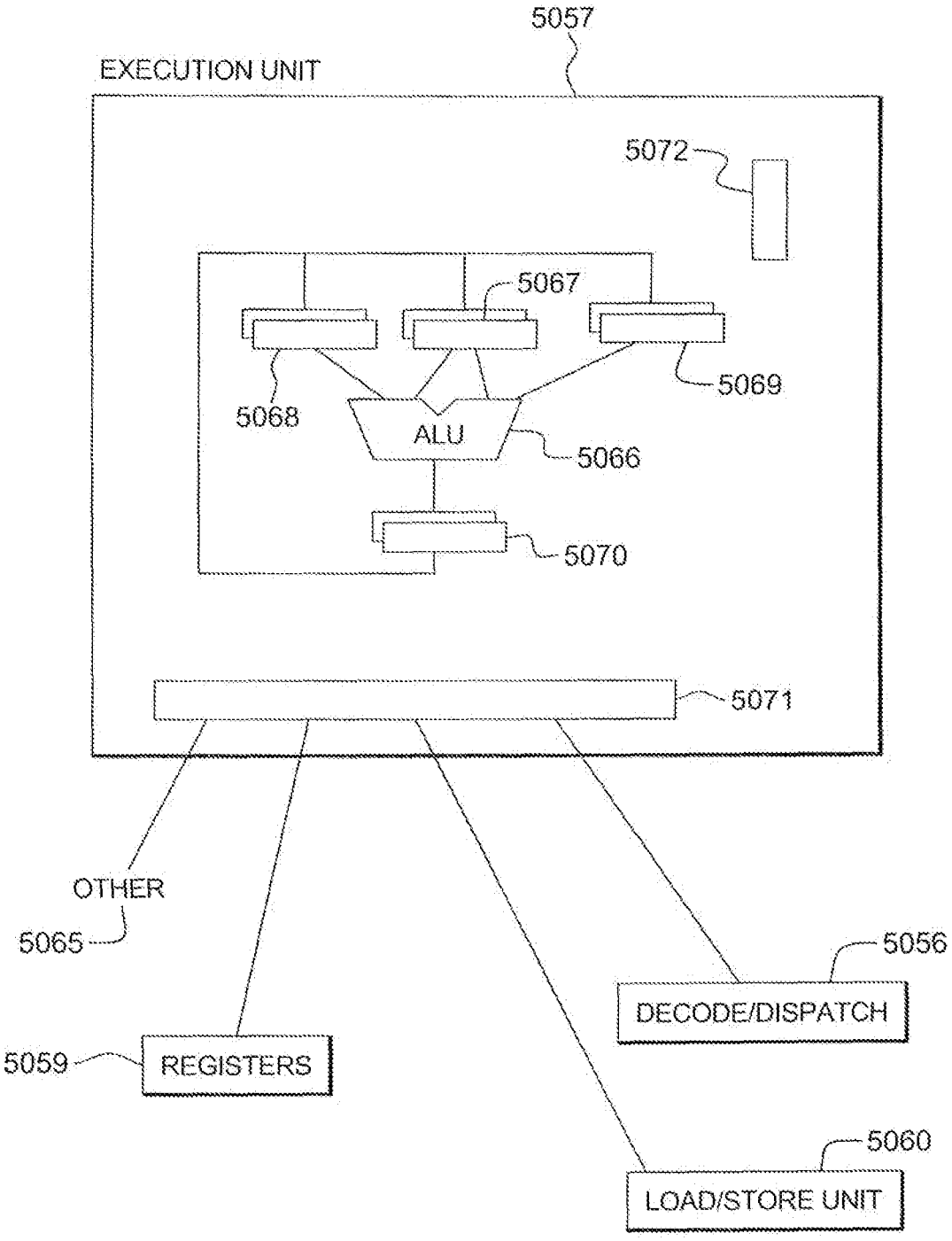
5057
EXECUTION UNIT
5072
5067
5068
5069
ALU
5066
5070
5071
OTHER
5065
5056
DECODE/DISPATCH
5059
REGISTERS
5060
LOAD/STORE UNIT

FIG. 14A

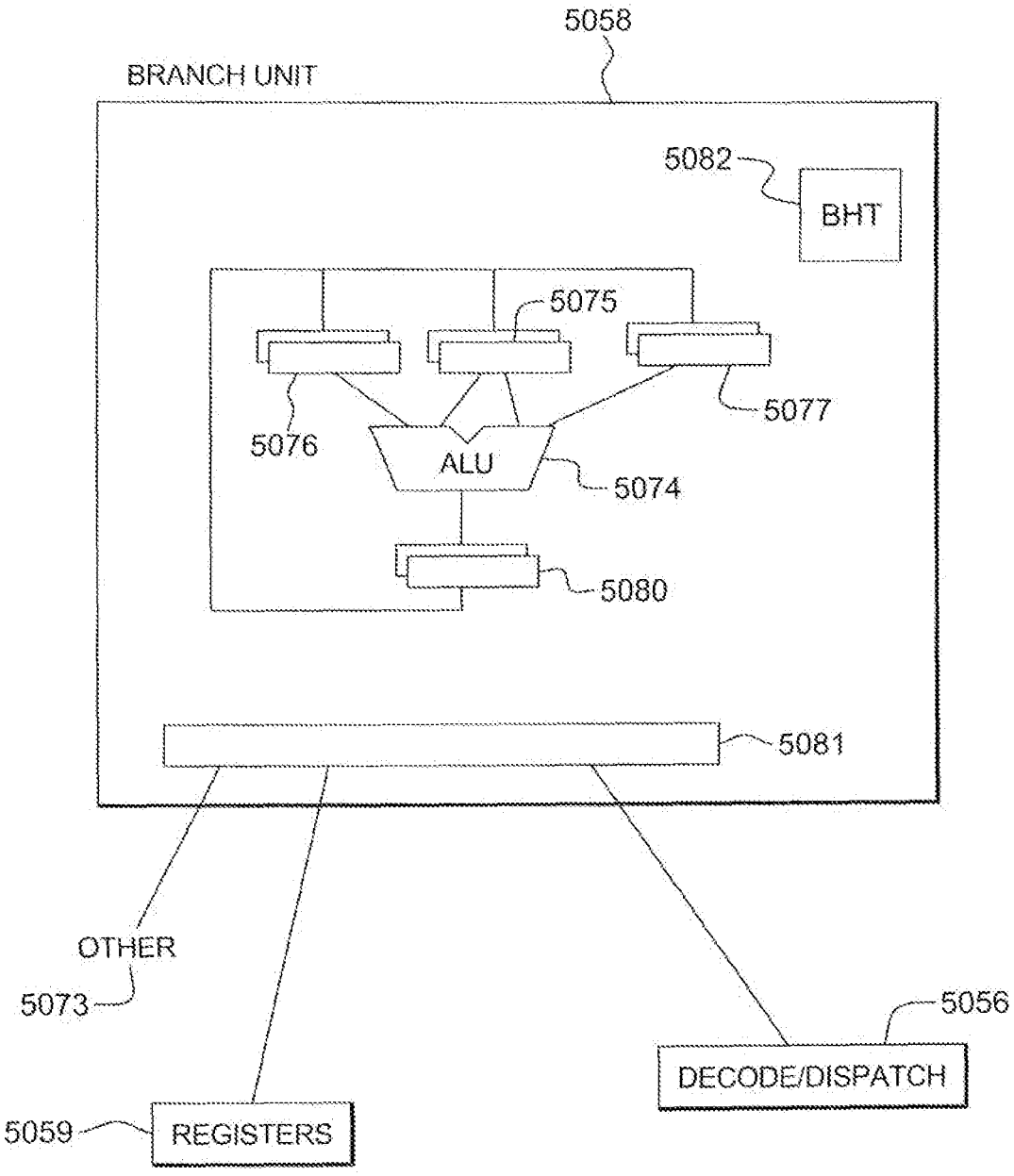
5058
BRANCH UNIT
5082
BHT
5075
5077
5076
ALU
5074
5080
5081
OTHER
5073
5056
DECODE/DISPATCH
5059
REGISTERS

FIG. 14B

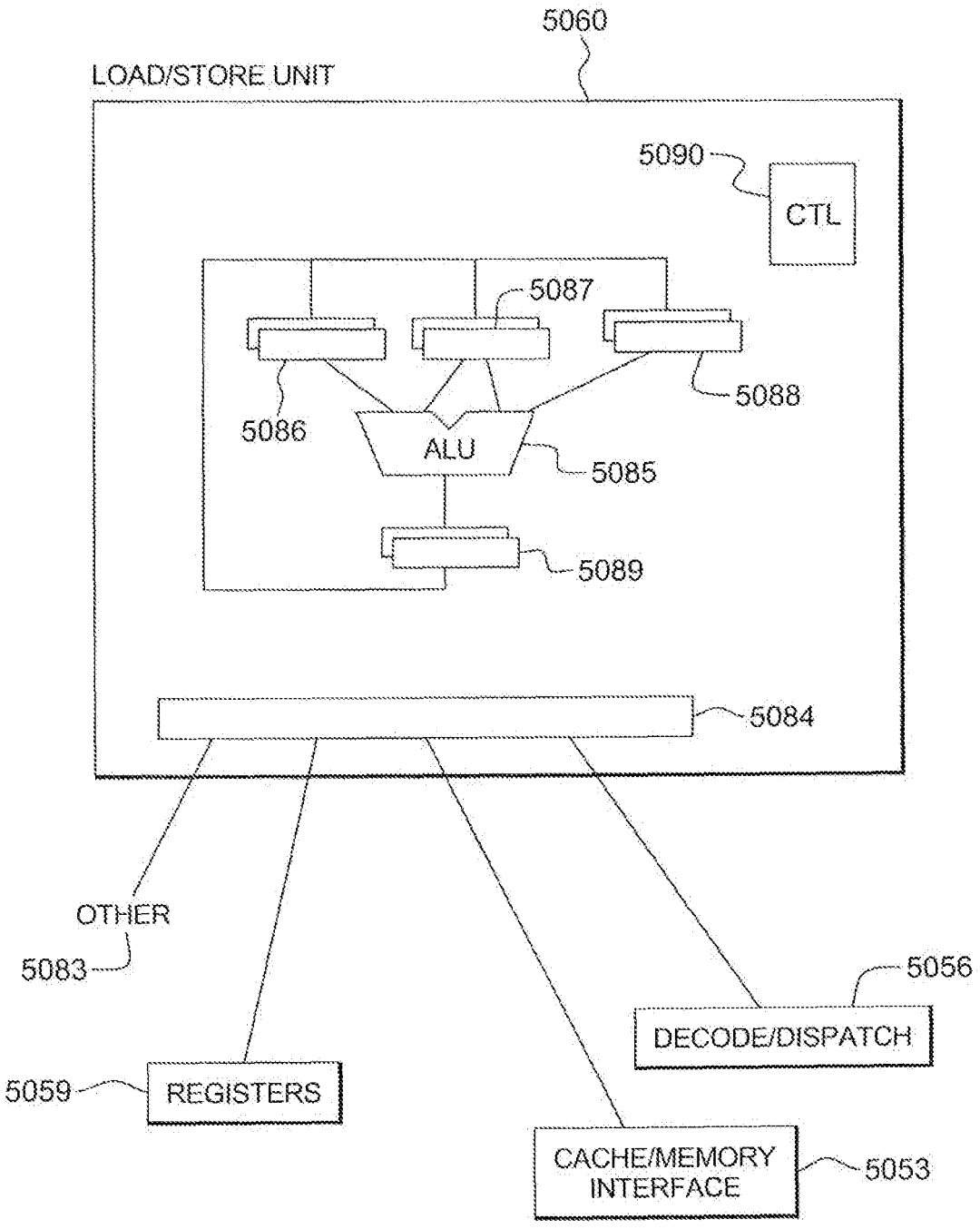
5060
LOAD/STORE UNIT
5090
CTL
5087
5086
5088
ALU
5085
5089
5084
OTHER
5083
5056
DECODE/DISPATCH
5059
REGISTERS
CACHE/MEMORY
INTERFACE
5053

FIG. 14C

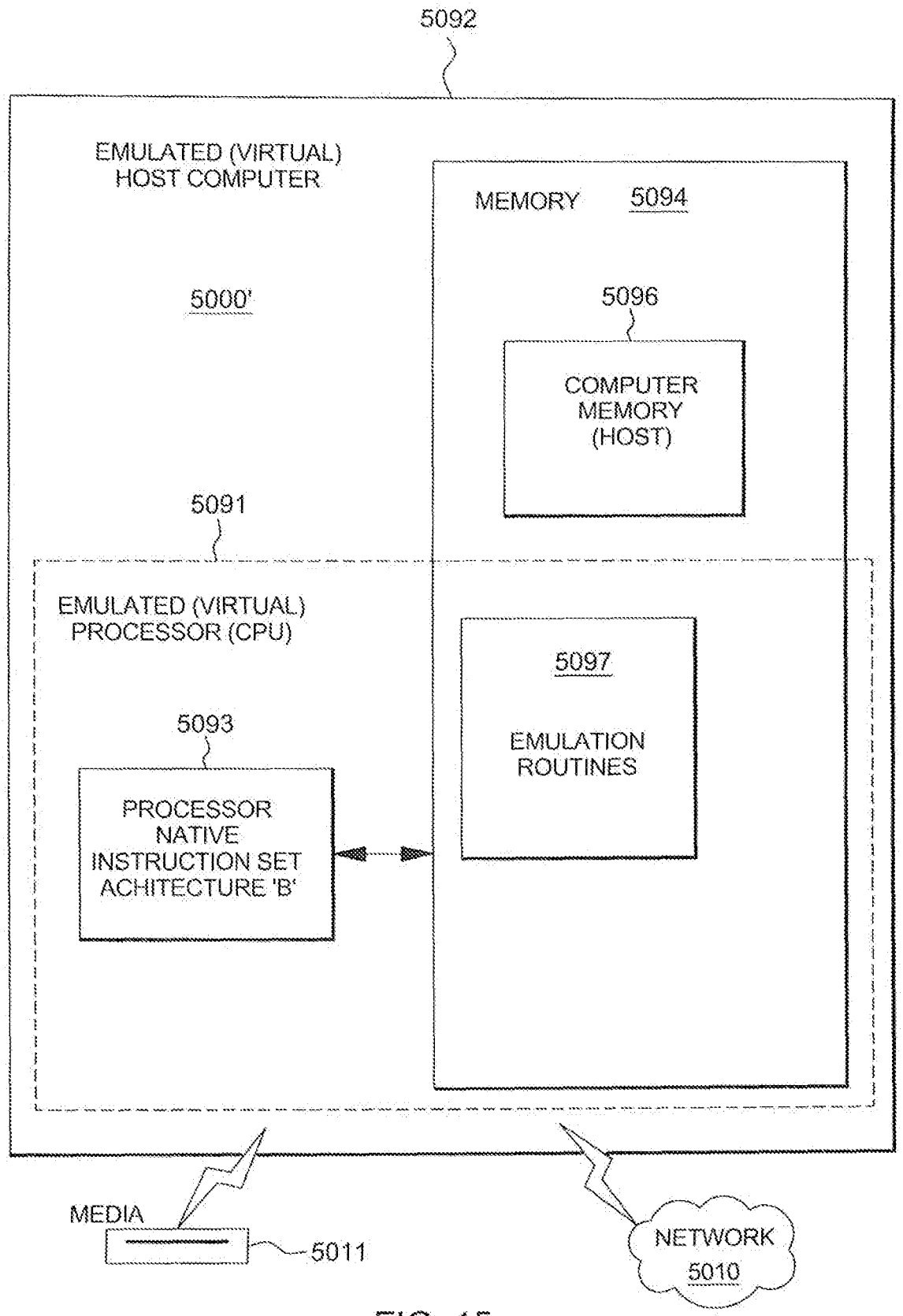
5092
EMULATED (VIRTUAL)
HOST COMPUTER
MEMORY 5094
5000'
5096
COMPUTER
MEMORY
(HOST)
5091
EMULATED (VIRTUAL)
PROCESSOR (CPU)
5097
EMULATION
ROUTINES
5093
PROCESSOR
NATIVE
INSTRUCTION SET
ACHITECTURE 'B'
MEDIA
5011
NETWORK
5010

FIG. 15