

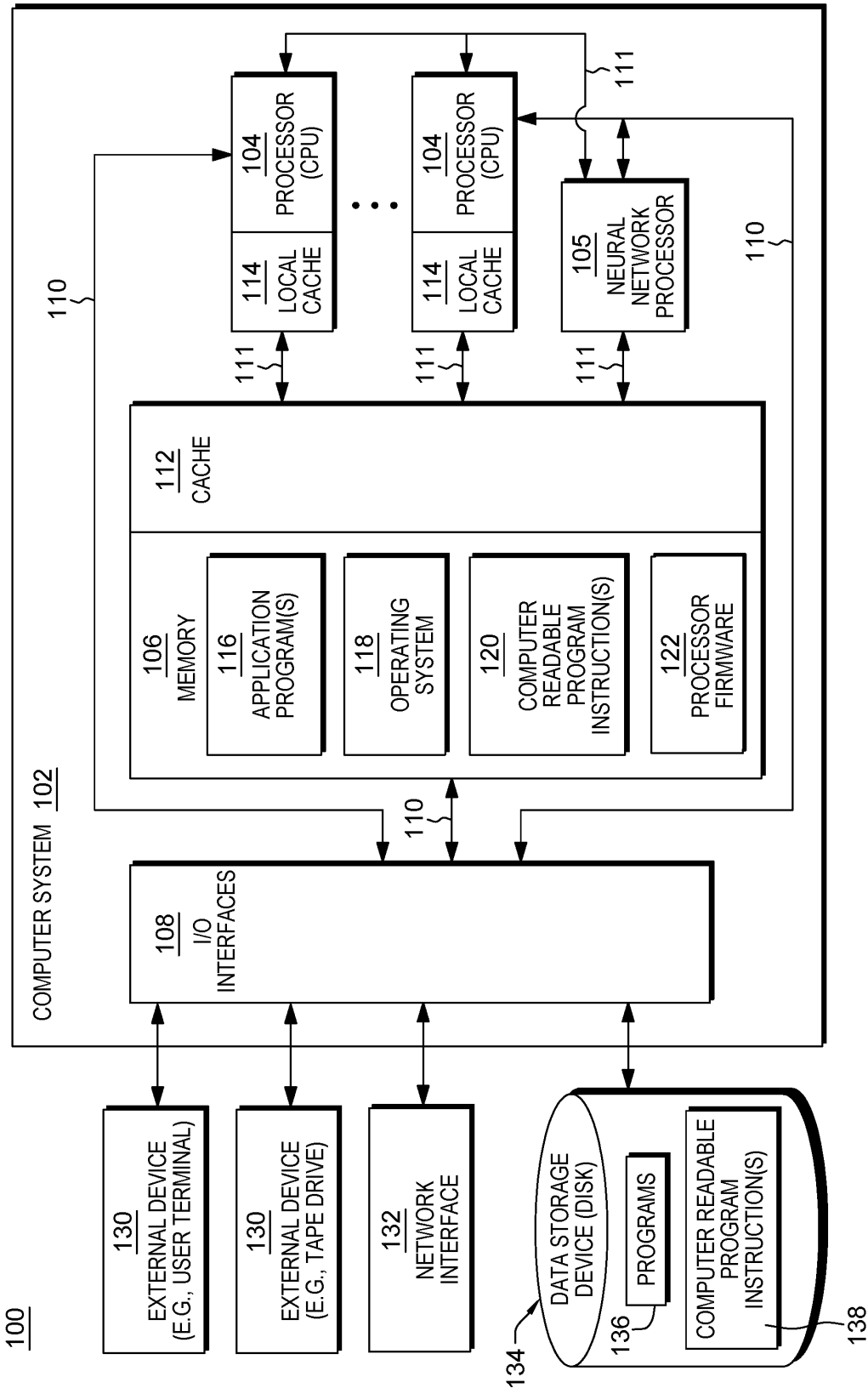


FIG. 1A

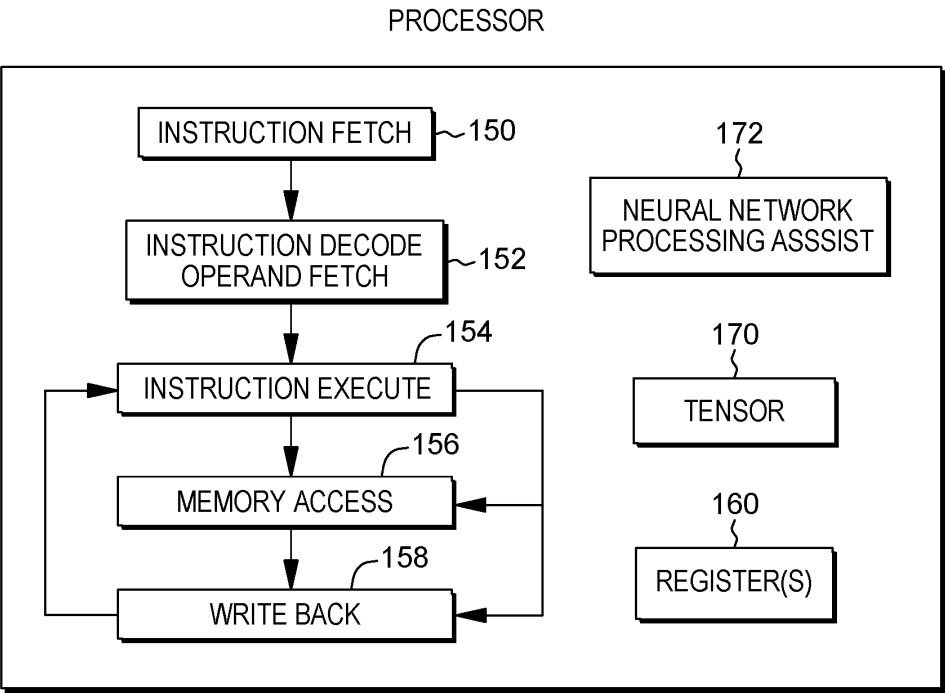


FIG. 1B

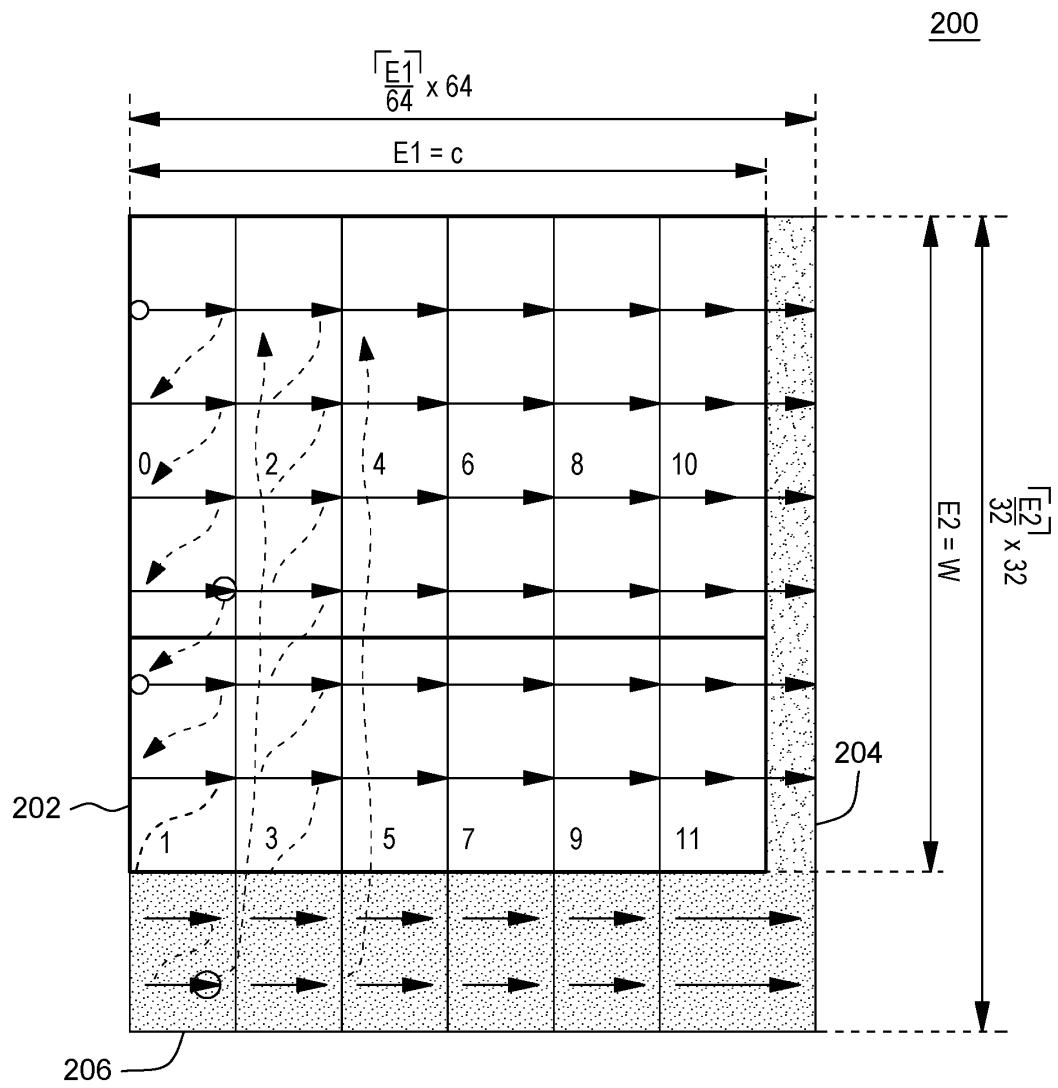


FIG. 2A

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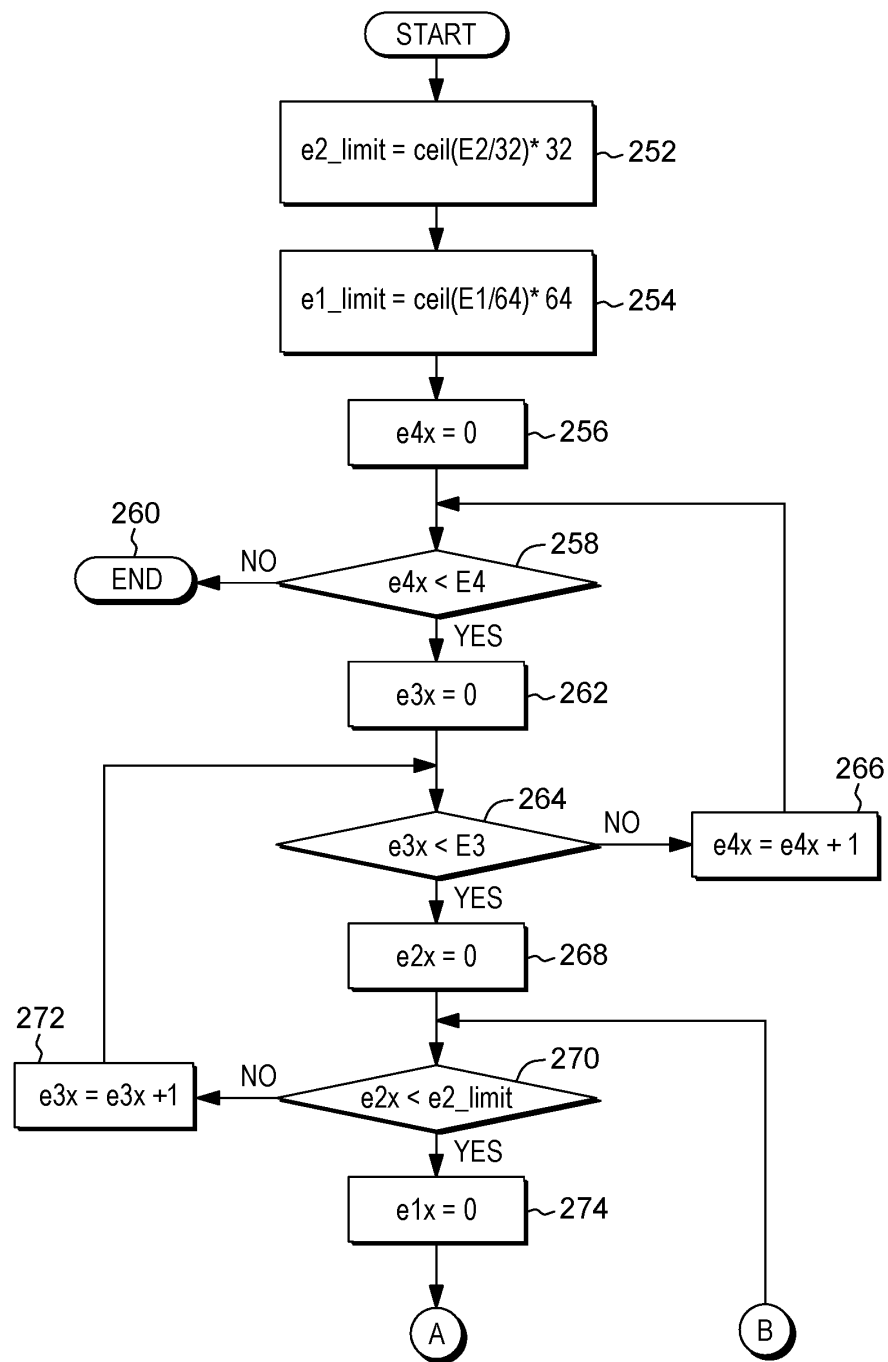


FIG. 2B

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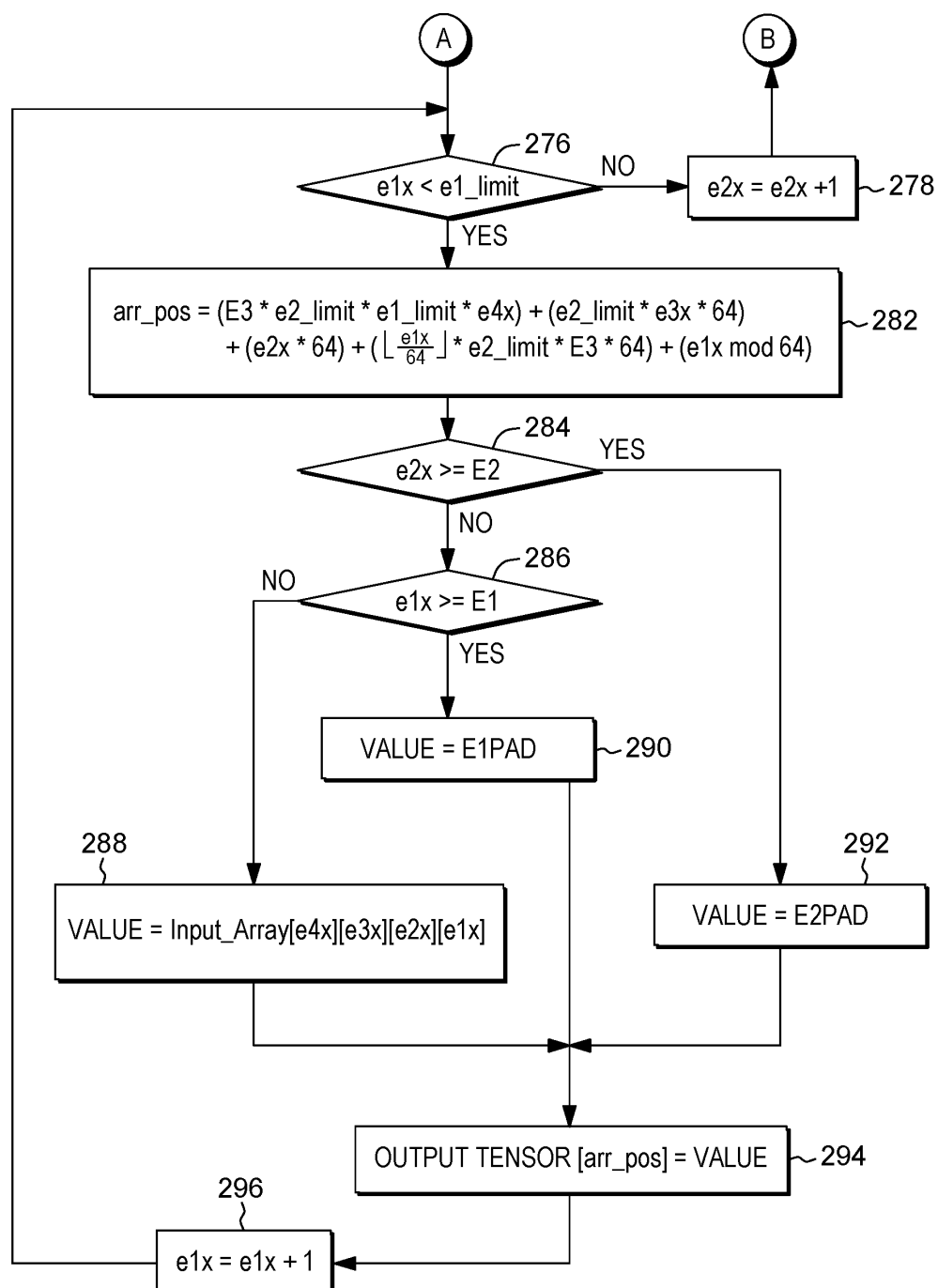


FIG. 2C

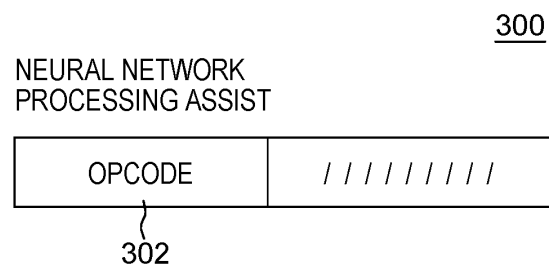


FIG. 3A

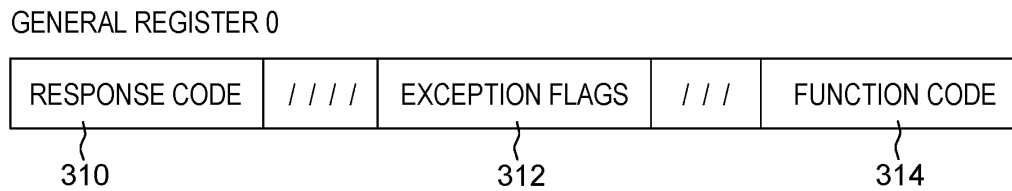


FIG. 3B

CODE (DEC)	CODE (HEX)	FUNCTION	PARAMETER BLOCK SIZE (BYTES)
0	0	NNPA - QAF	256
16	10	NNPA - ADD	4096
17	11	NNPA - SUB	4096
18	12	NNPA - MUL	4096
19	13	NNPA - DIV	4096
20	14	NNPA - MIN	4096
21	15	NNPA - MAX	4096
32	20	NNPA - LOG	4096
33	21	NNPA - EXP	4096
49	31	NNPA - RELU	4096
50	32	NNPA - TANH	4096
51	33	NNPA - SIGMOID	4096
52	34	NNPA - SOFTMAX	4096
64	40	NNPA - BATCHNORM	4096
80	50	NNPA - MAXPOOL2D	4096
81	51	NNPA - AVGPOOL2D	4096
96	60	NNPA - LSTMACT	4096
97	61	NNPA - GRUACT	4096
112	70	NNPA - CONVOLUTION	4096
113	71	NNPA - MATMUL-OP	4096
114	72	NNPA - MATMUL-OP-BCAST23	4096

FIG. 3C

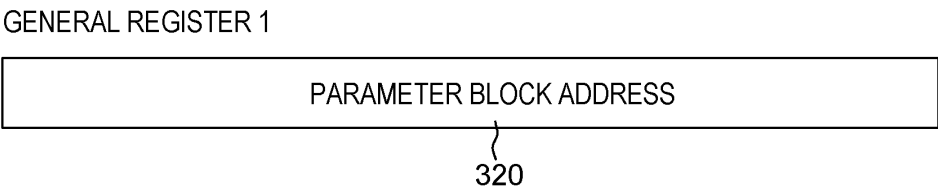


FIG. 3D

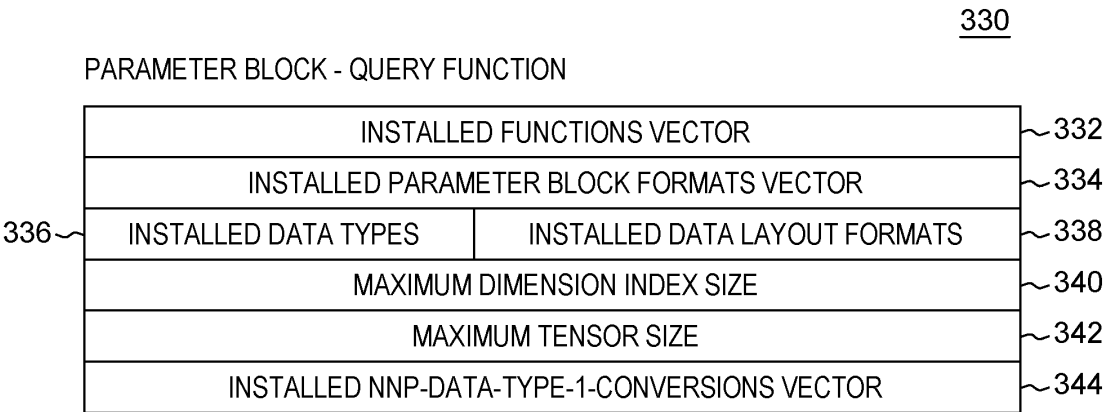


FIG. 3E

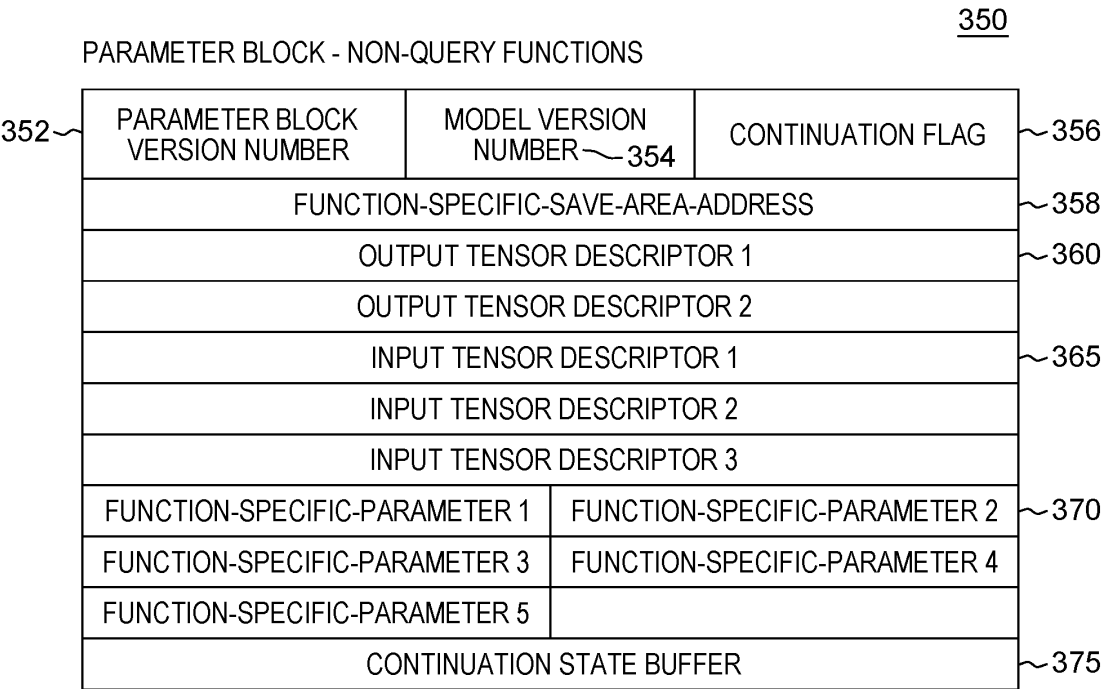


FIG. 3F

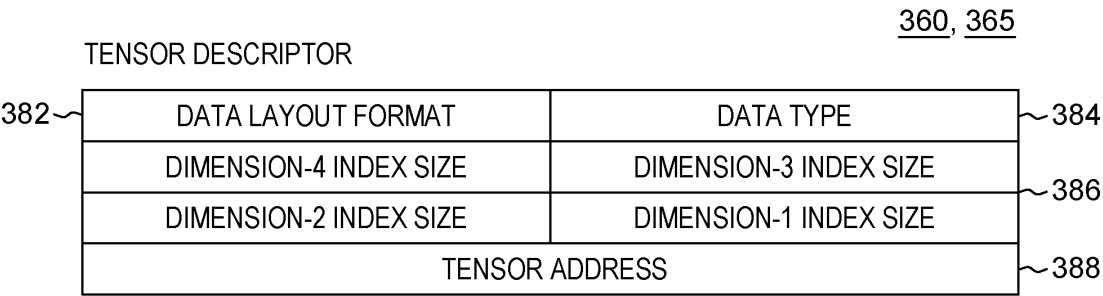


FIG. 3G

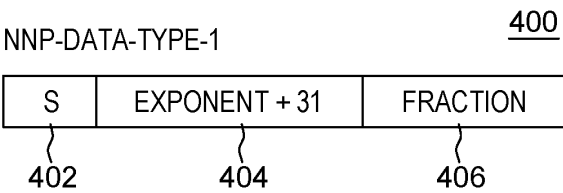
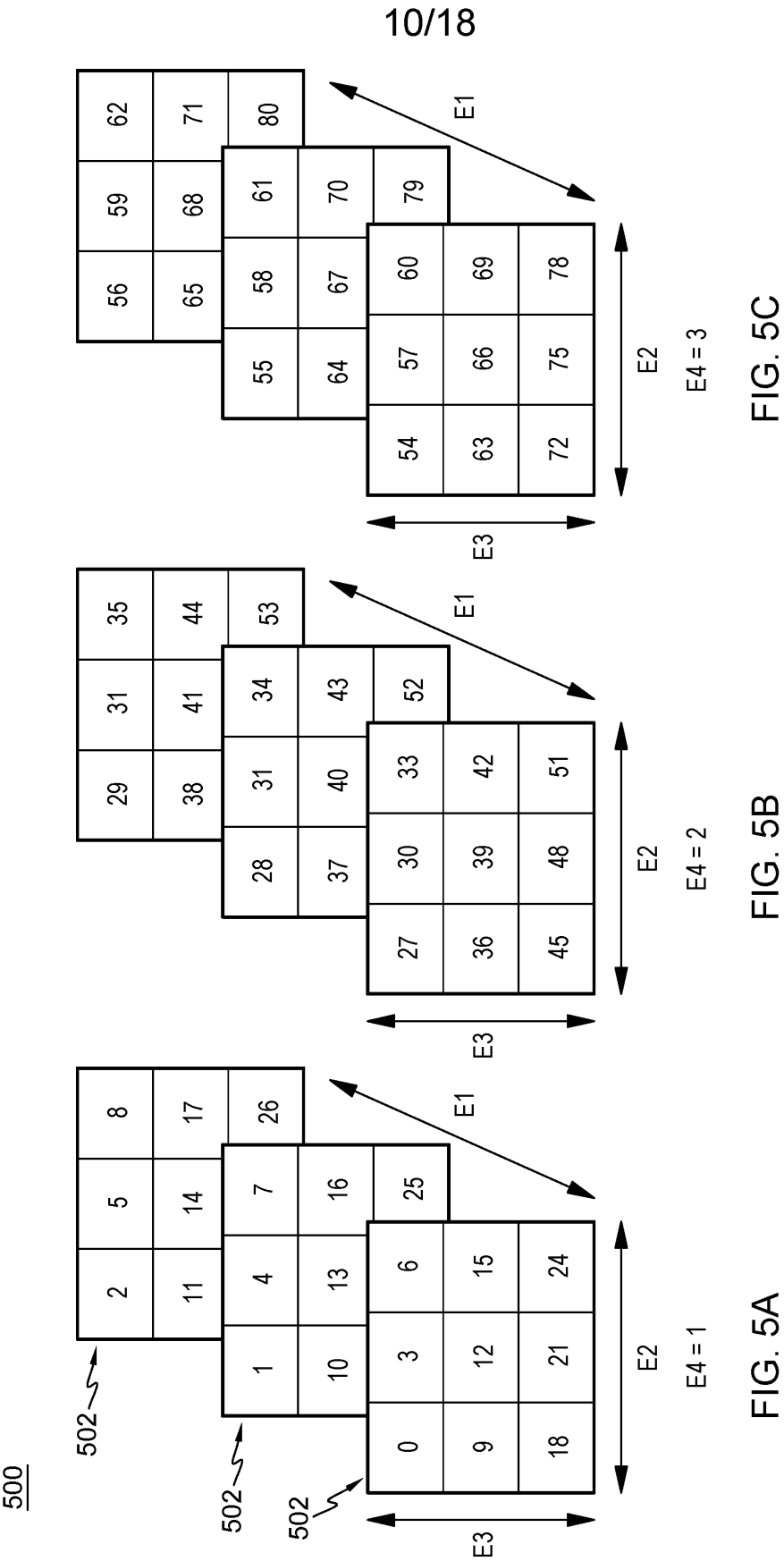


FIG. 4



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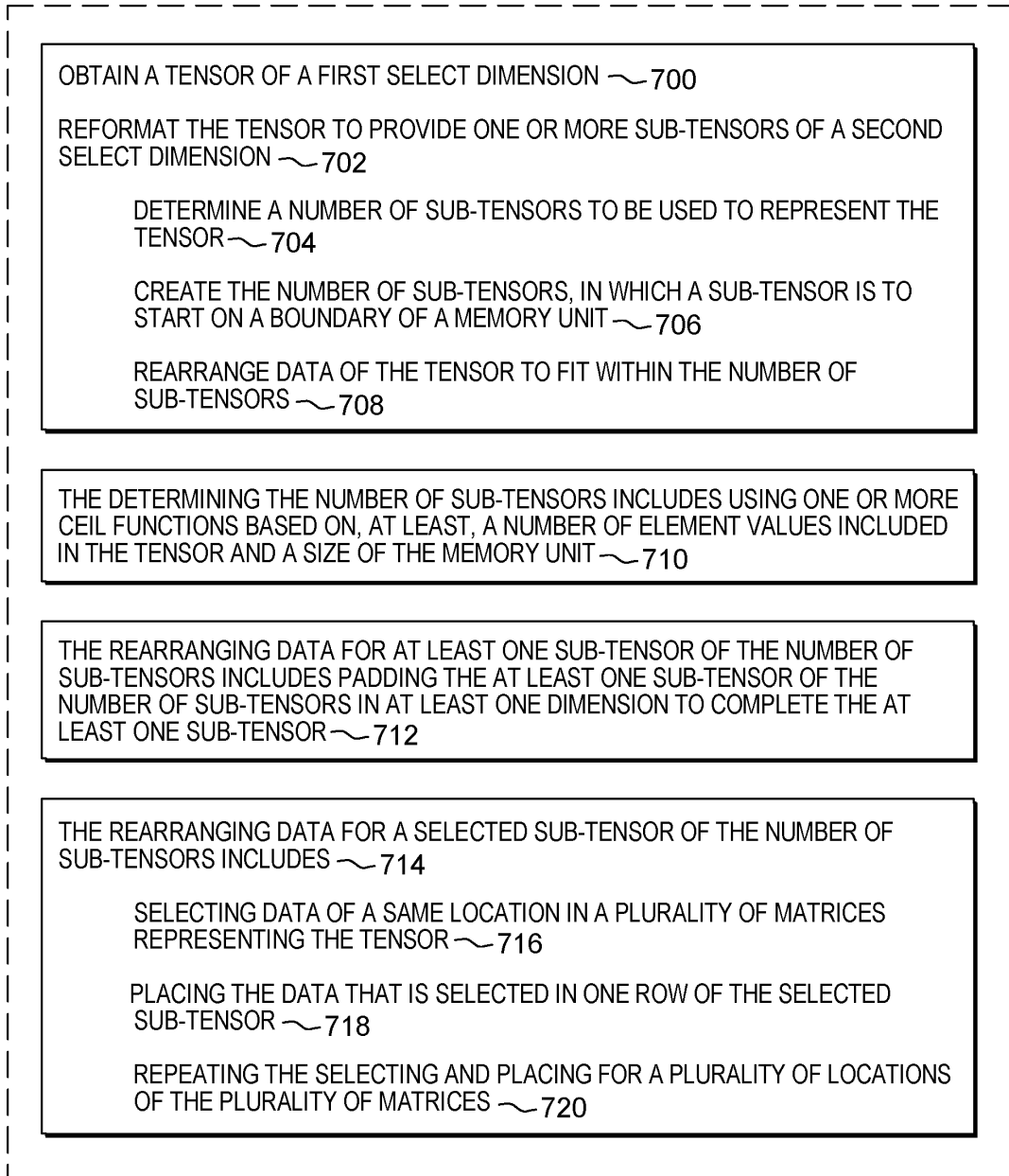


FIG. 7A

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THE REARRANGING DATA FURTHER INCLUDES

PADDING ONE OR MORE ROWS OF THE SELECTED SUB-TENSOR, BASED ON THE ONE OR MORE ROWS HAVING LESS DATA THAN ACCOMMODATED BY A SIZE OF THE SELECTED SUB-TENSOR ~ 730

PADDING THE SELECTED SUB-TENSOR WITH ONE OR MORE ADDITIONAL PADDED ROWS, BASED ON THE SELECTED SUB-TENSOR HAVING LESS ROWS THAN ACCOMMODATED BY THE SIZE OF THE SELECTED SUB-TENSOR ~ 732

THE MEMORY UNIT IS A MEMORY PAGE, AND THE BOUNDARY OF THE MEMORY UNIT IS A PAGE BOUNDARY ~ 734

THE ONE OR MORE SUB-TENSORS ARE PROVIDED TO A PROCESSOR FOR USE IN TENSOR COMPUTATIONS ~ 740

THE PROVIDING THE ONE OR MORE SUB-TENSORS INCLUDES PROVIDING ADDRESS INFORMATION AND INFORMATION RELATING TO THE SECOND SELECT DIMENSION TO THE PROCESSOR TO BE USED TO STORE THE DATA OF THE ONE OR MORE SUB-TENSORS IN ONE OPERATION ~ 742

THE PROVIDING THE ONE OR MORE SUB-TENSORS INCLUDES PROVIDING ADDRESS INFORMATION AND INFORMATION RELATING TO THE SECOND SELECT DIMENSION TO THE PROCESSOR TO BE USED TO LOAD THE DATA OF THE ONE OR MORE SUB-TENSORS IN ONE OPERATION ~ 744

THE FIRST SELECT DIMENSION IS 4-DIMENSIONS, AND THE SECOND SELECT DIMENSION IS 2-DIMENSIONS, IN WHICH ONE OR MORE 2-DIMENSION SUB-TENSORS REPRESENT ONE 4-DIMENSION TENSOR ~ 750

FIG. 7B

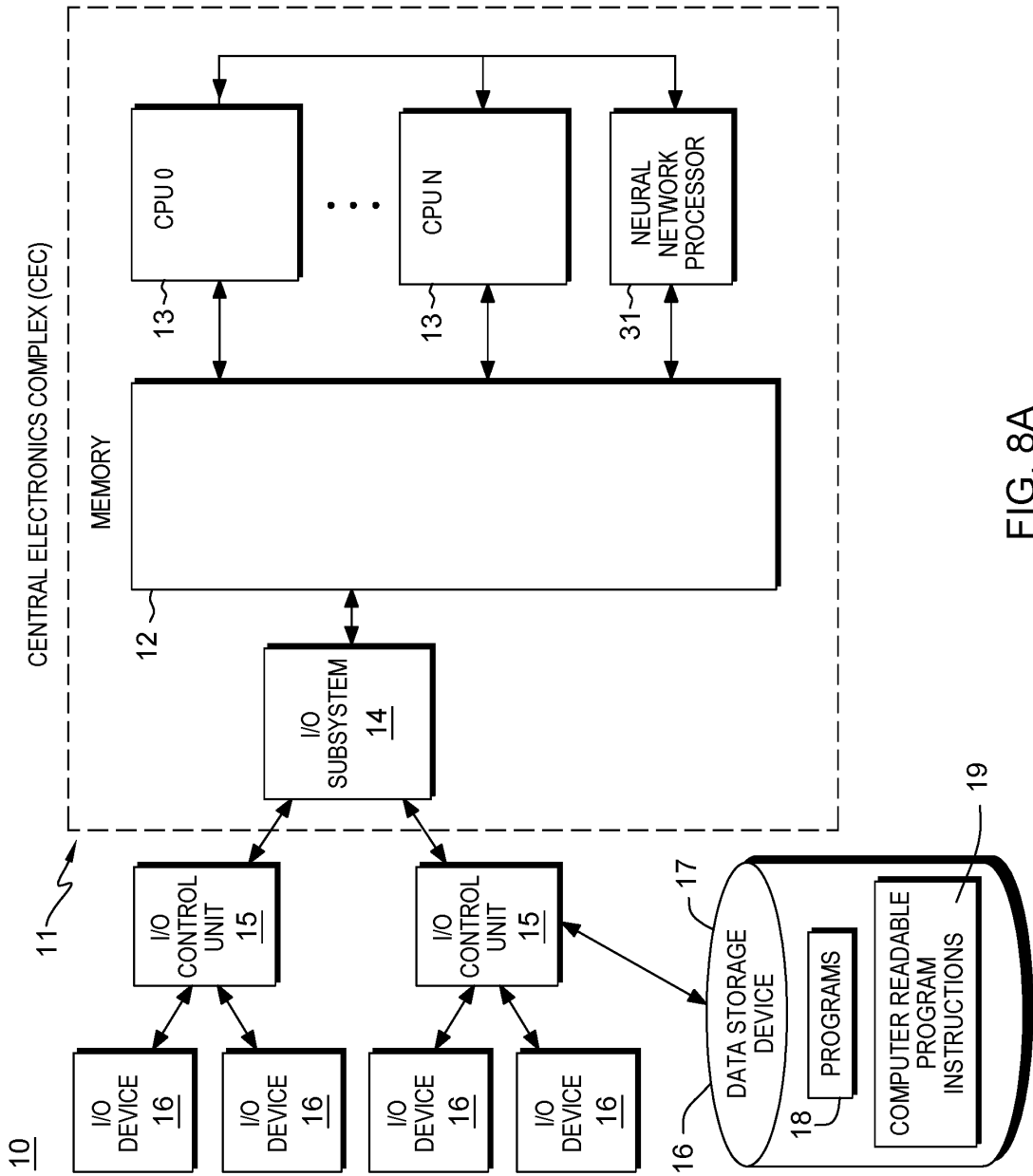


FIG. 8A

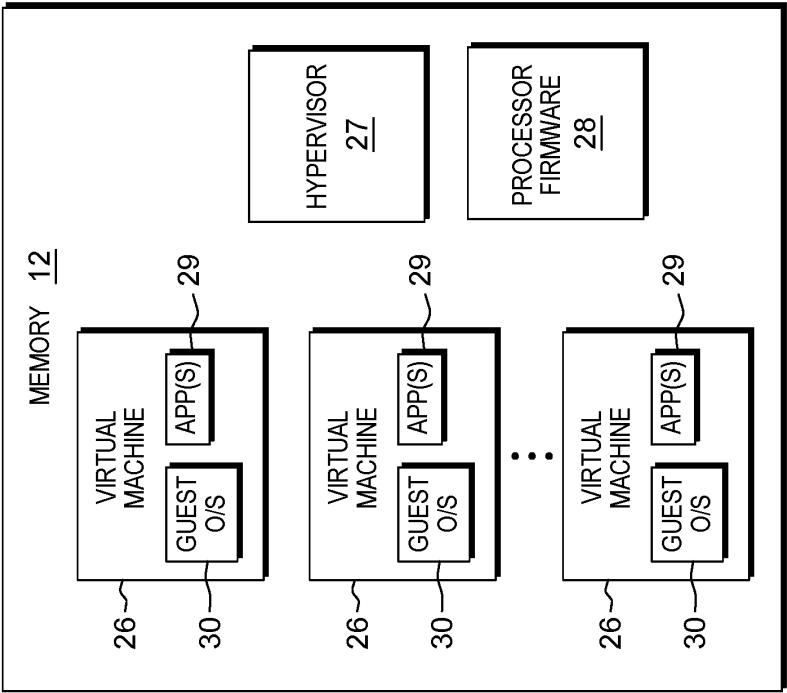


FIG. 8C

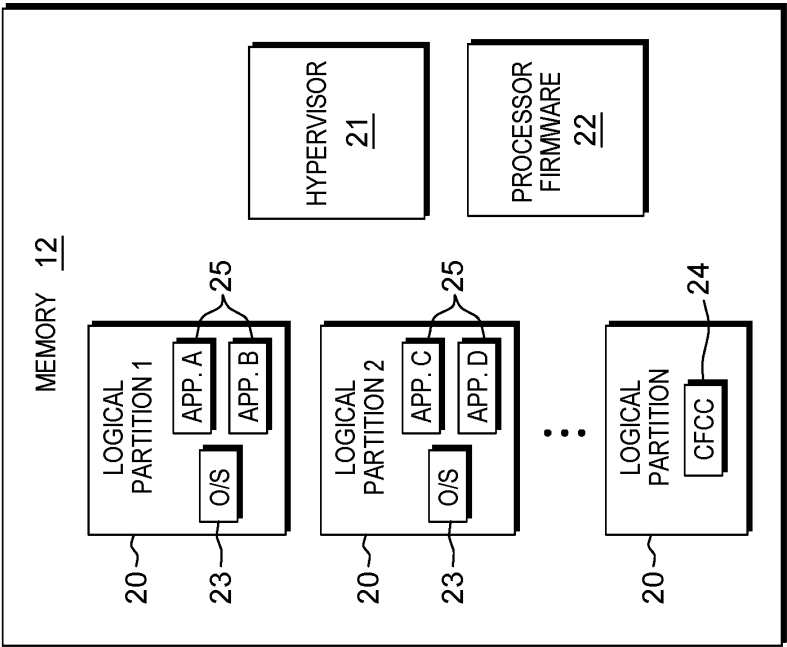


FIG. 8B

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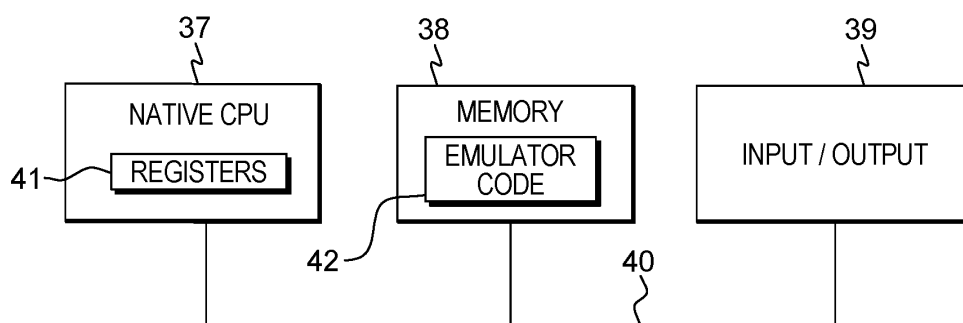
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FIG. 9A

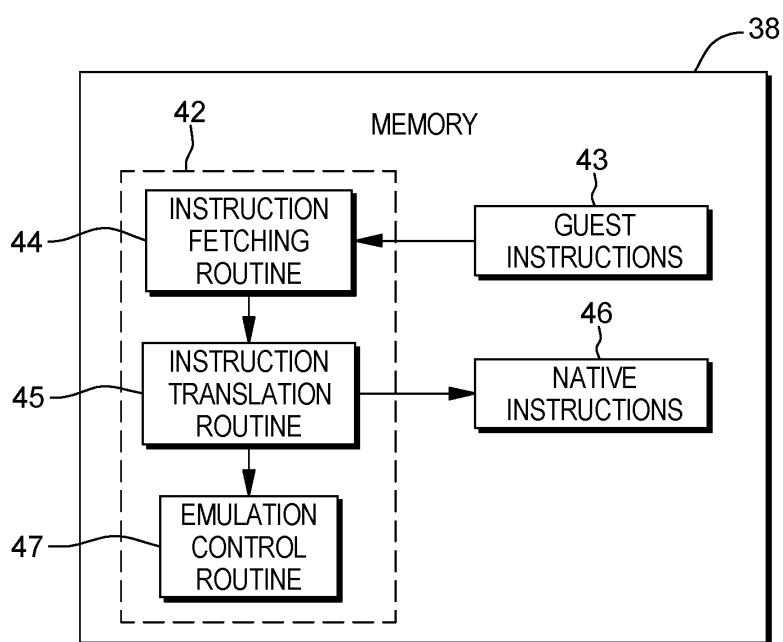


FIG. 9B

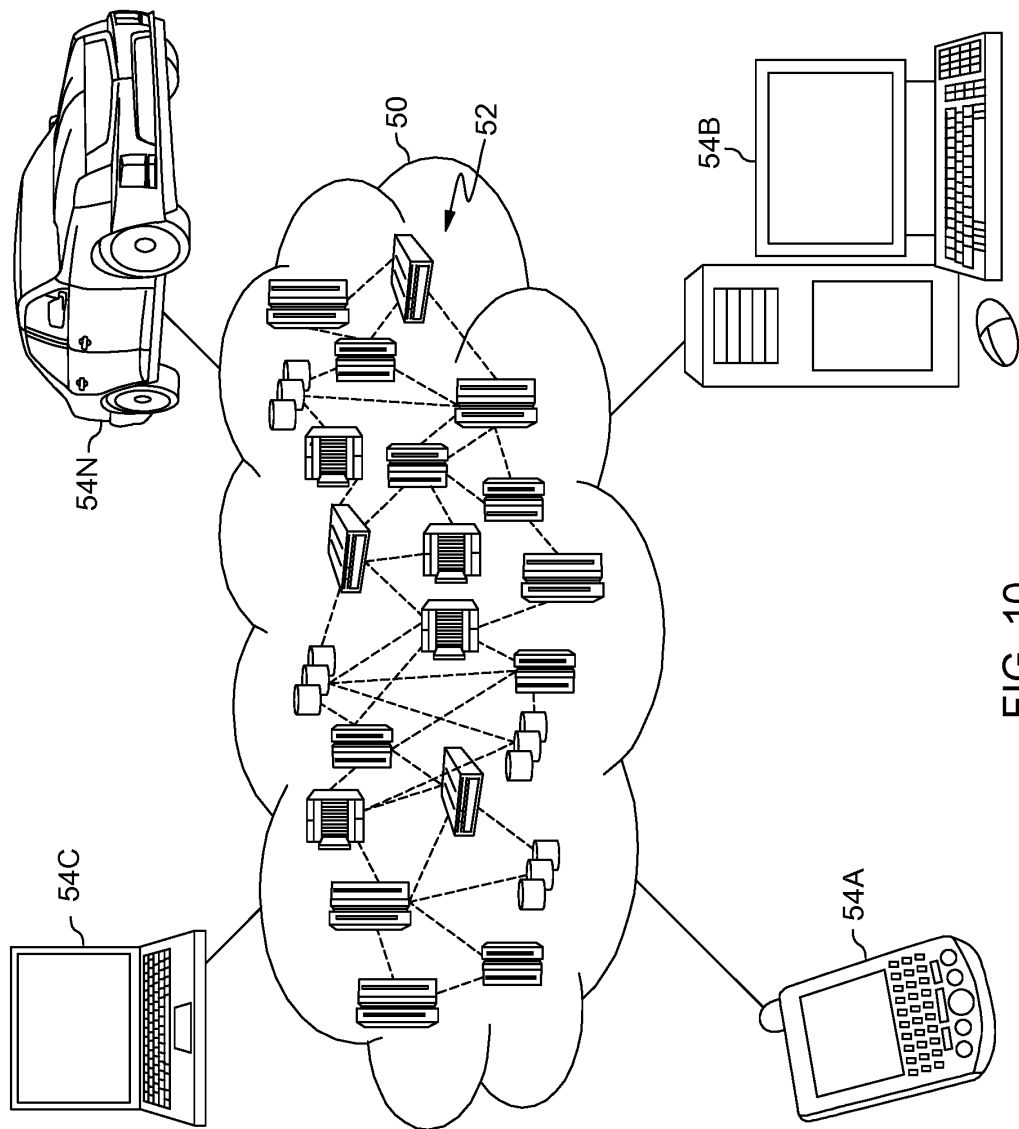


FIG. 10

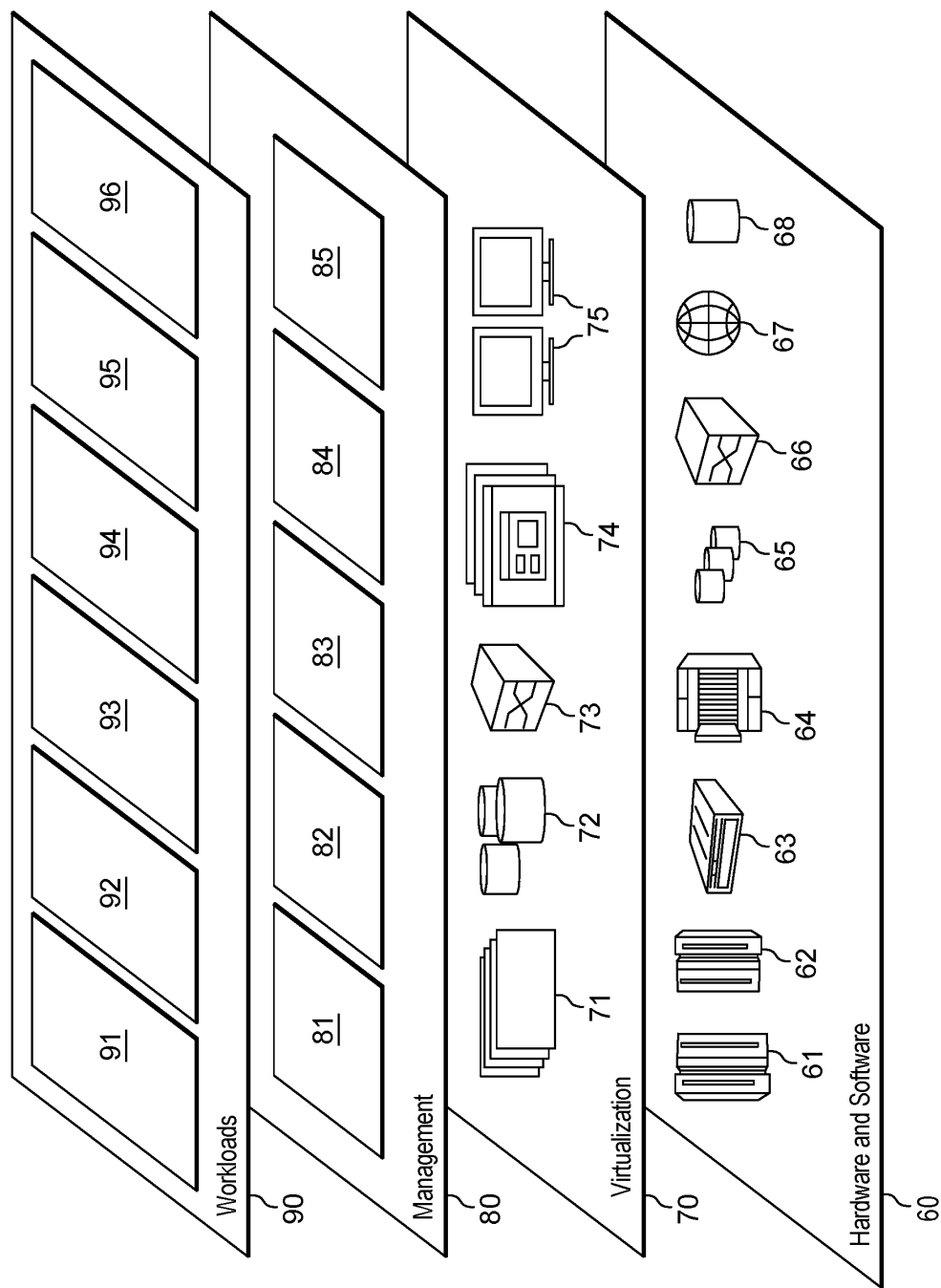


FIG. 11