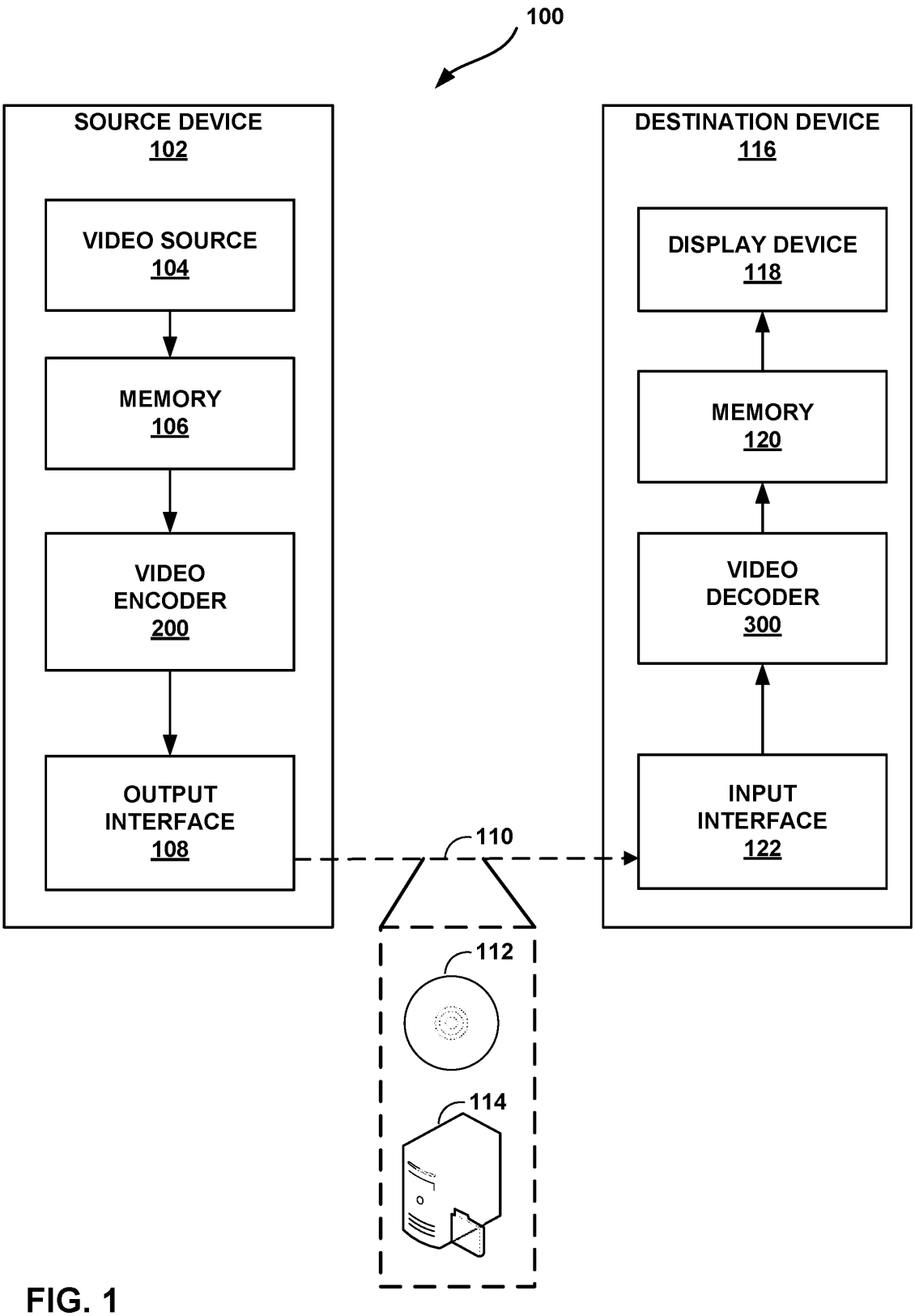

100
SOURCE DEVICE
102
VIDEO SOURCE
104
MEMORY
106
VIDEO
ENCODER
200
OUTPUT
INTERFACE
108
DESTINATION DEVICE
116
DISPLAY DEVICE
118
MEMORY
120
VIDEO
DECODER
300
INPUT
INTERFACE
122
110
112
114

FIG. 1

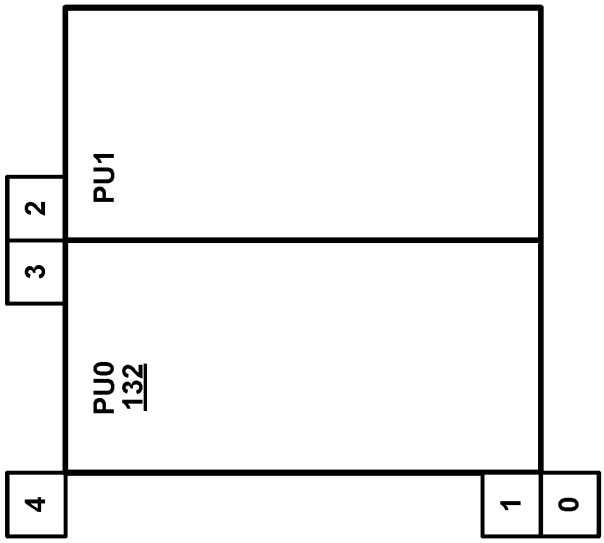


FIG. 2B

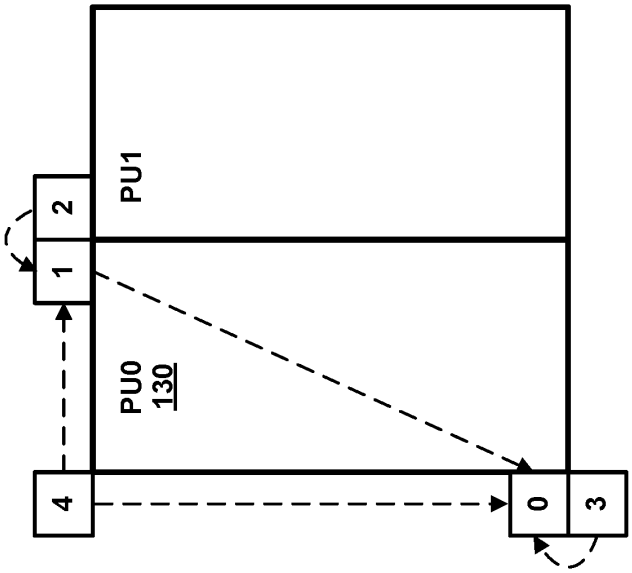


FIG. 2A

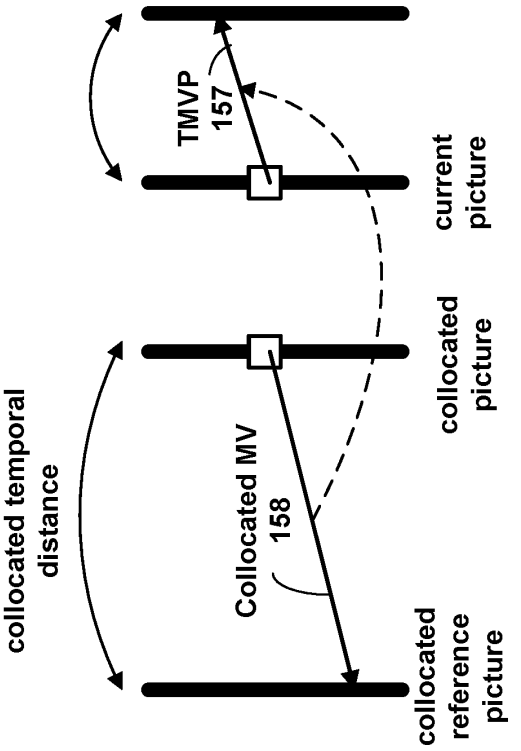

TMVP
157
current picture
collocated picture
collocated temporal distance
Collocated MV
158
collocated reference picture

FIG. 3B

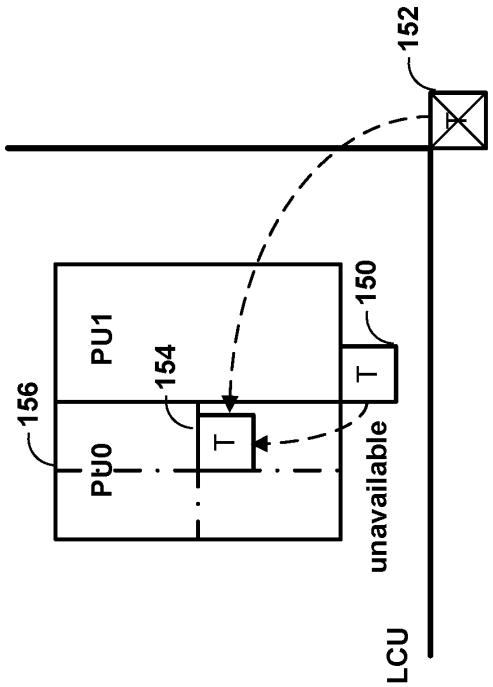

152
150
PU1
154
156
PU0
T
T
unavailable
LCU

FIG. 3A

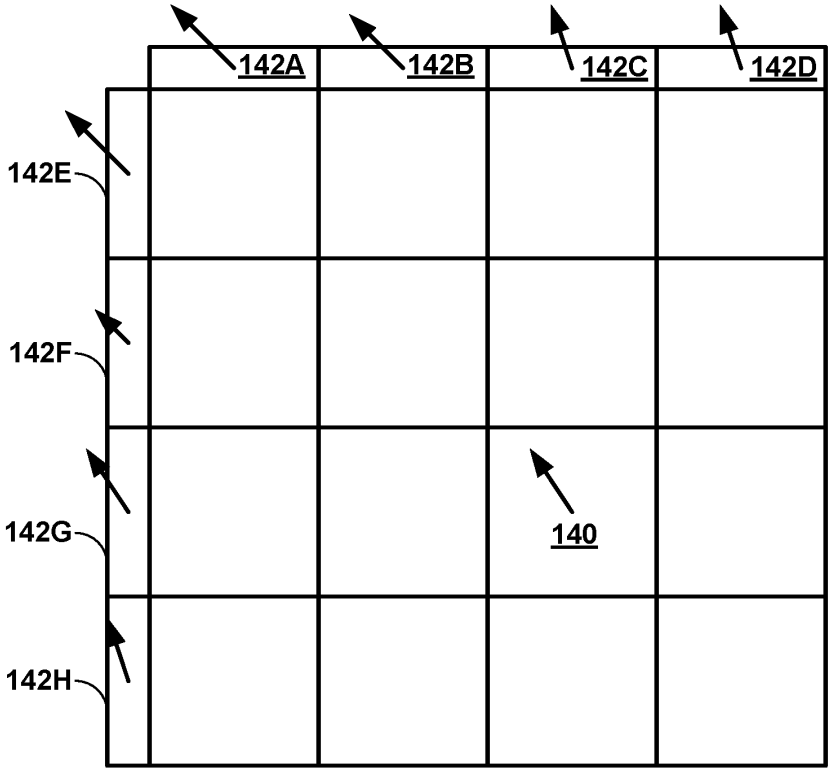


FIG. 4

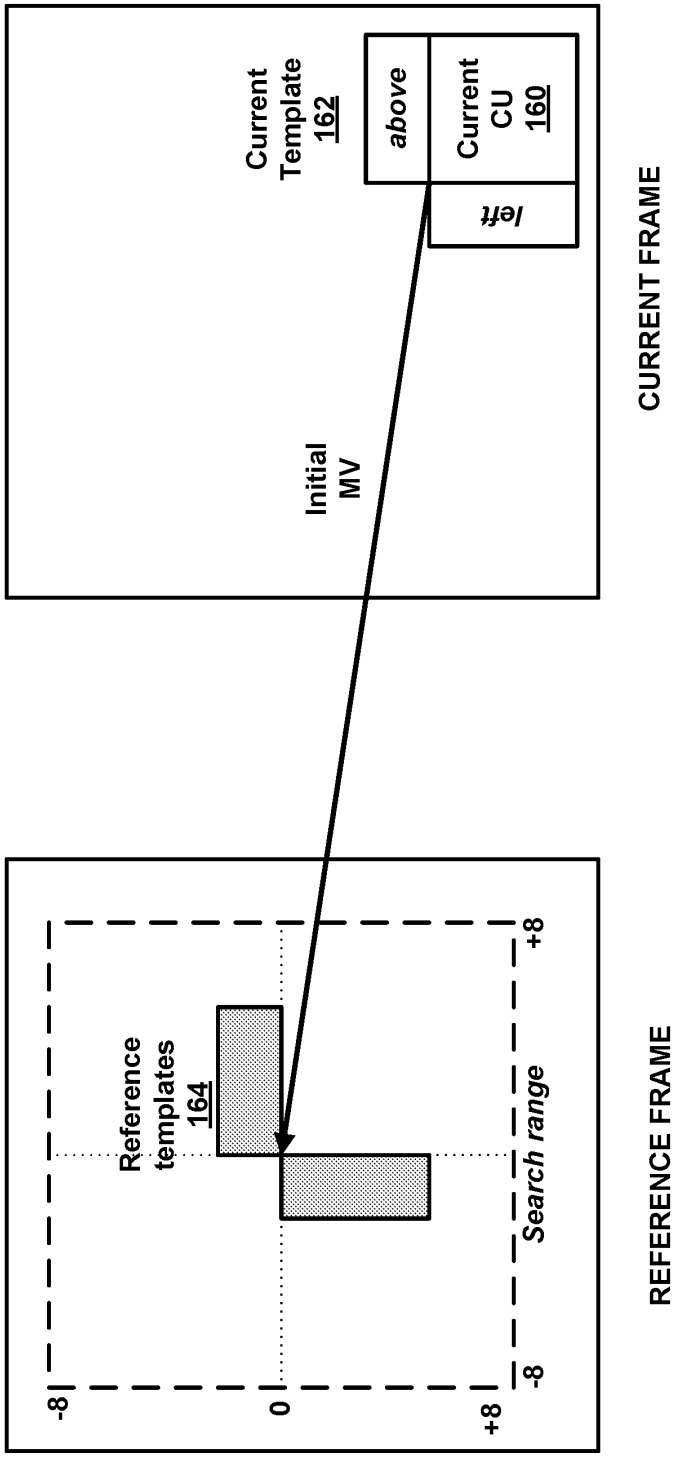

Current Template 162
above
Current CU 160
left
Initial MV
CURRENT FRAME
Reference templates 164
Search range
-8
0
+8
-8
+8
REFERENCE FRAME

FIG. 5

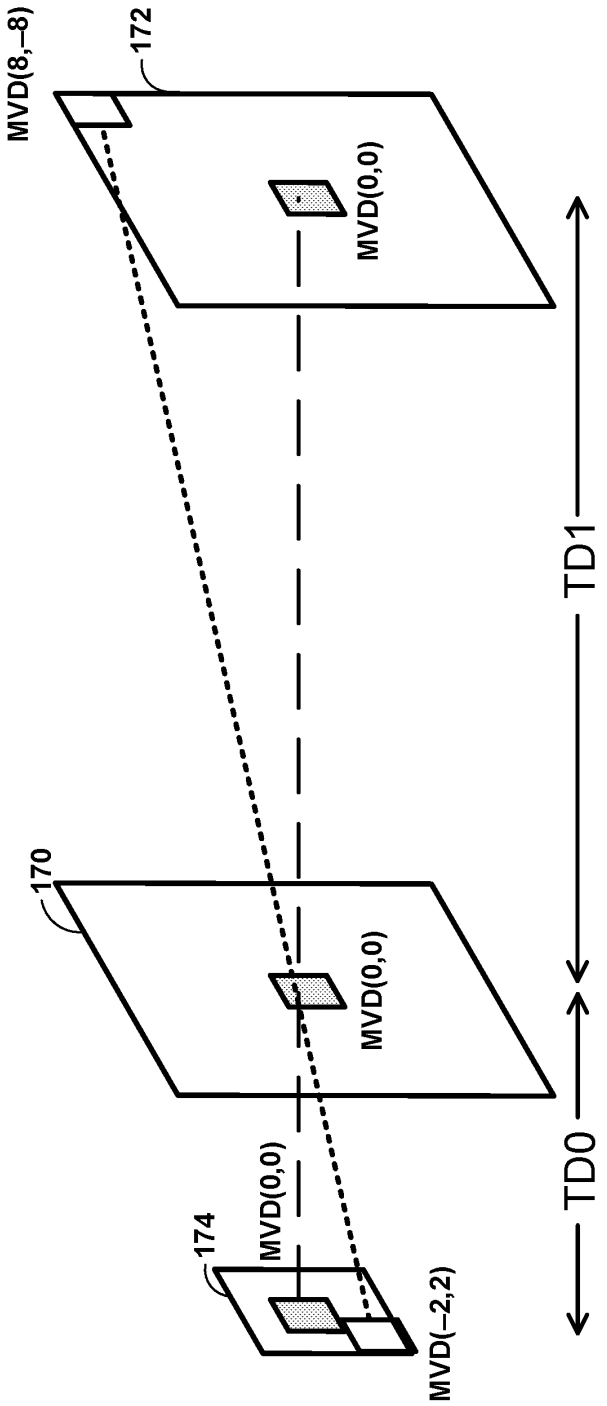


FIG. 6

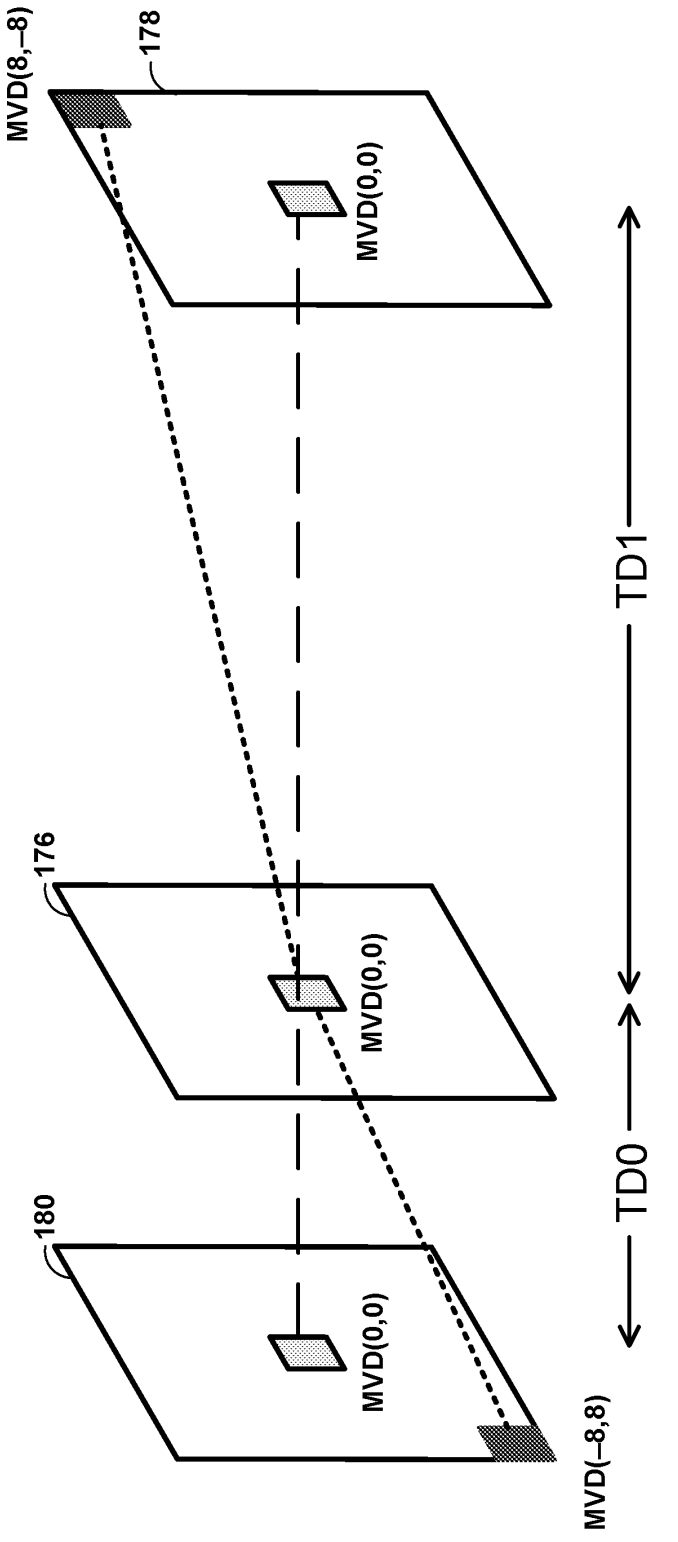


FIG. 7

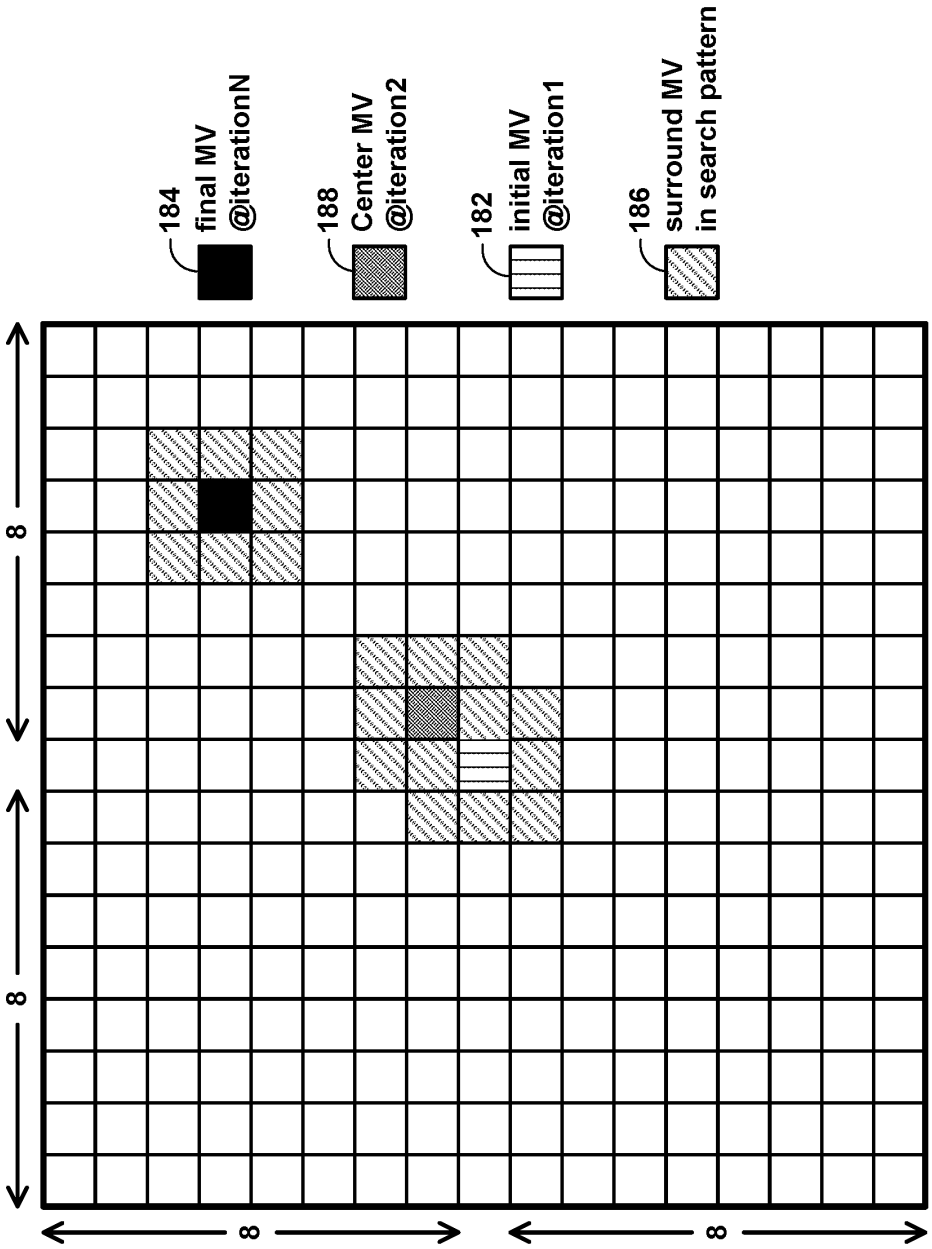

184
final MV
@iterationN
188
Center MV
@iteration2
182
initial MV
@iteration1
186
surround MV
in search pattern
8
8
8
8

FIG. 8

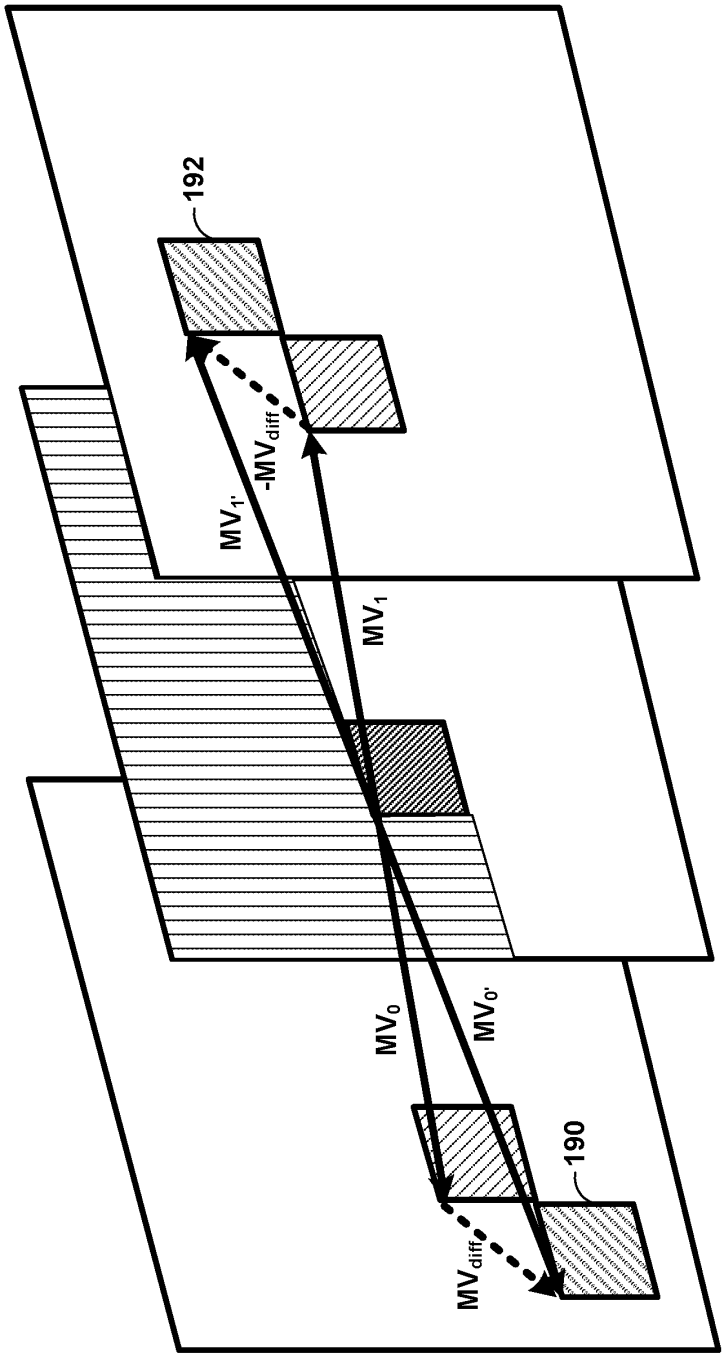

192
$-MV_{diff}$
$MV_{1'}$
MV_1
MV_0
$MV_{0'}$
190
MV_{diff}
refPic in List *L1*
Current Picture
refPic in List *L0*

FIG. 9

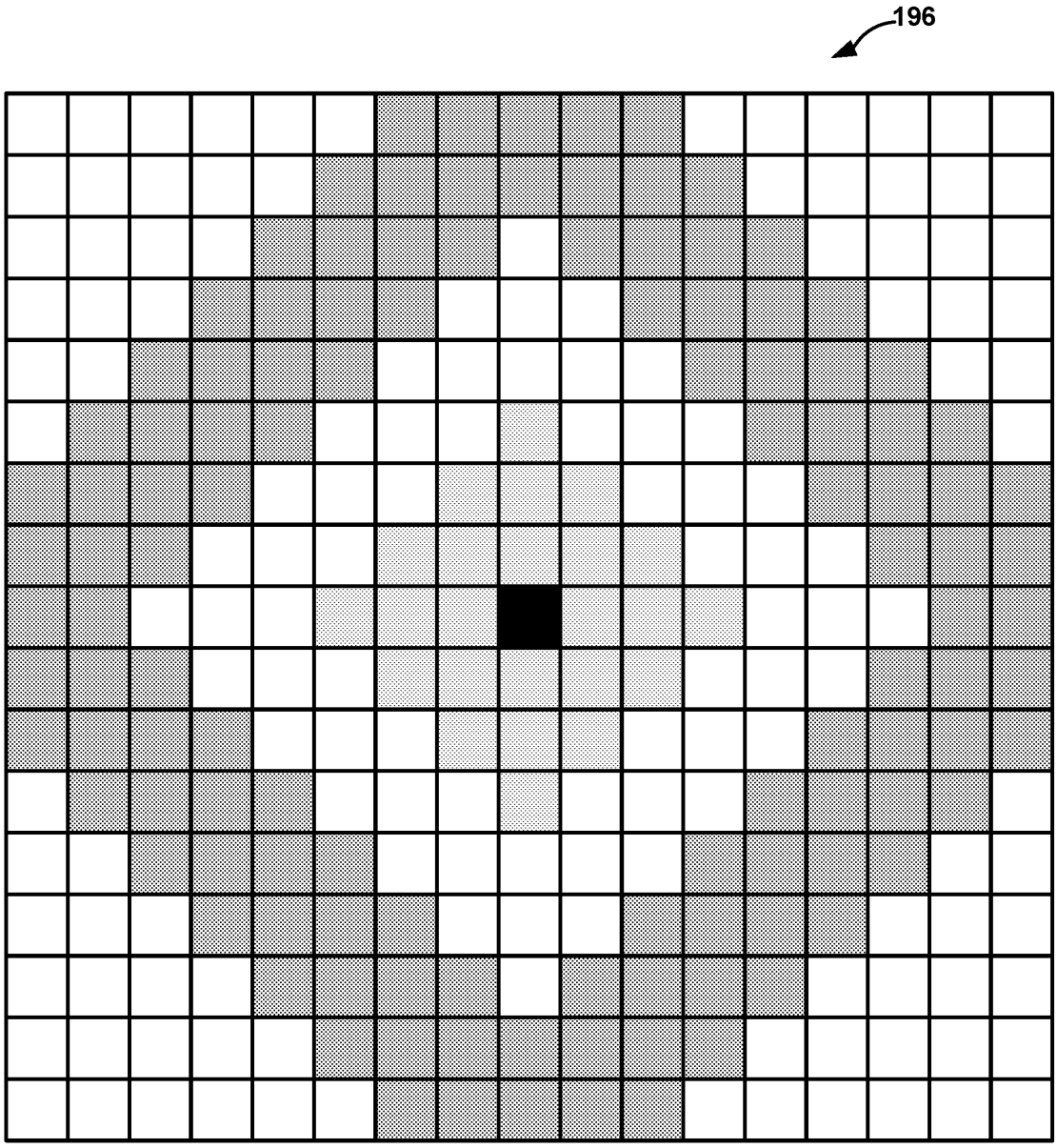


FIG. 10

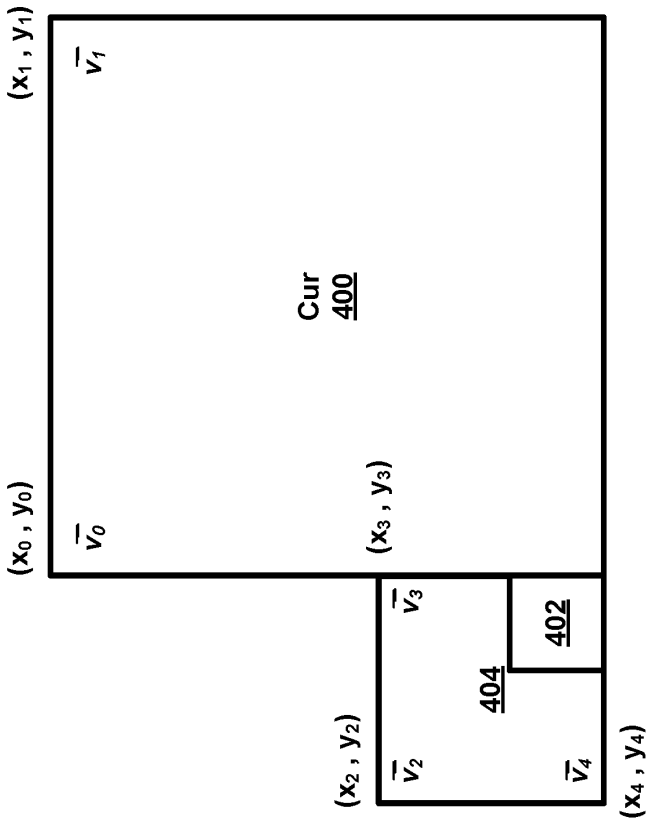

(x_1, y_1)
$\bar{v}_1$
Cur
400
(x_0, y_0)
$\bar{v}_0$
(x_3, y_3)
$\bar{v}_3$
402
404
(x_2, y_2)
$\bar{v}_2$
$\bar{v}_4$
(x_4, y_4)

FIG. 11

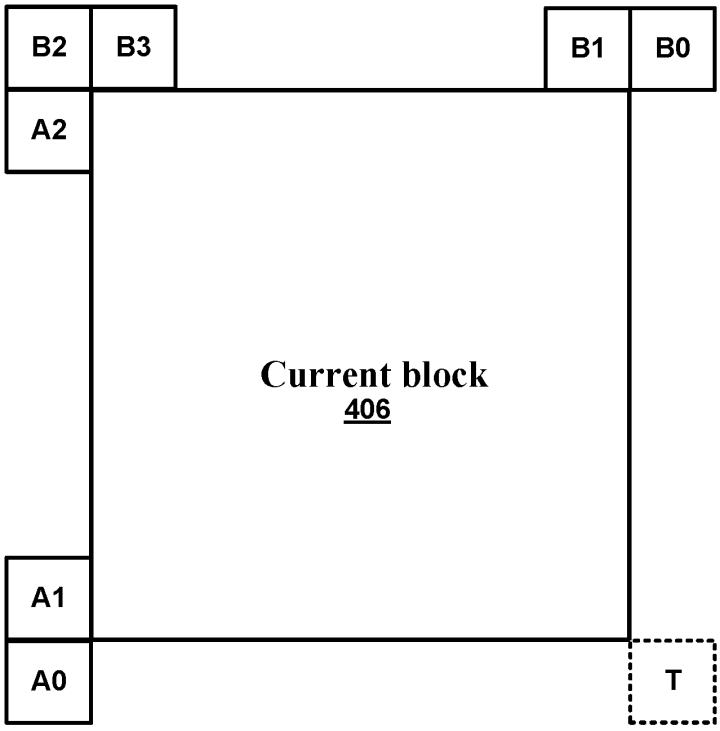


FIG. 12

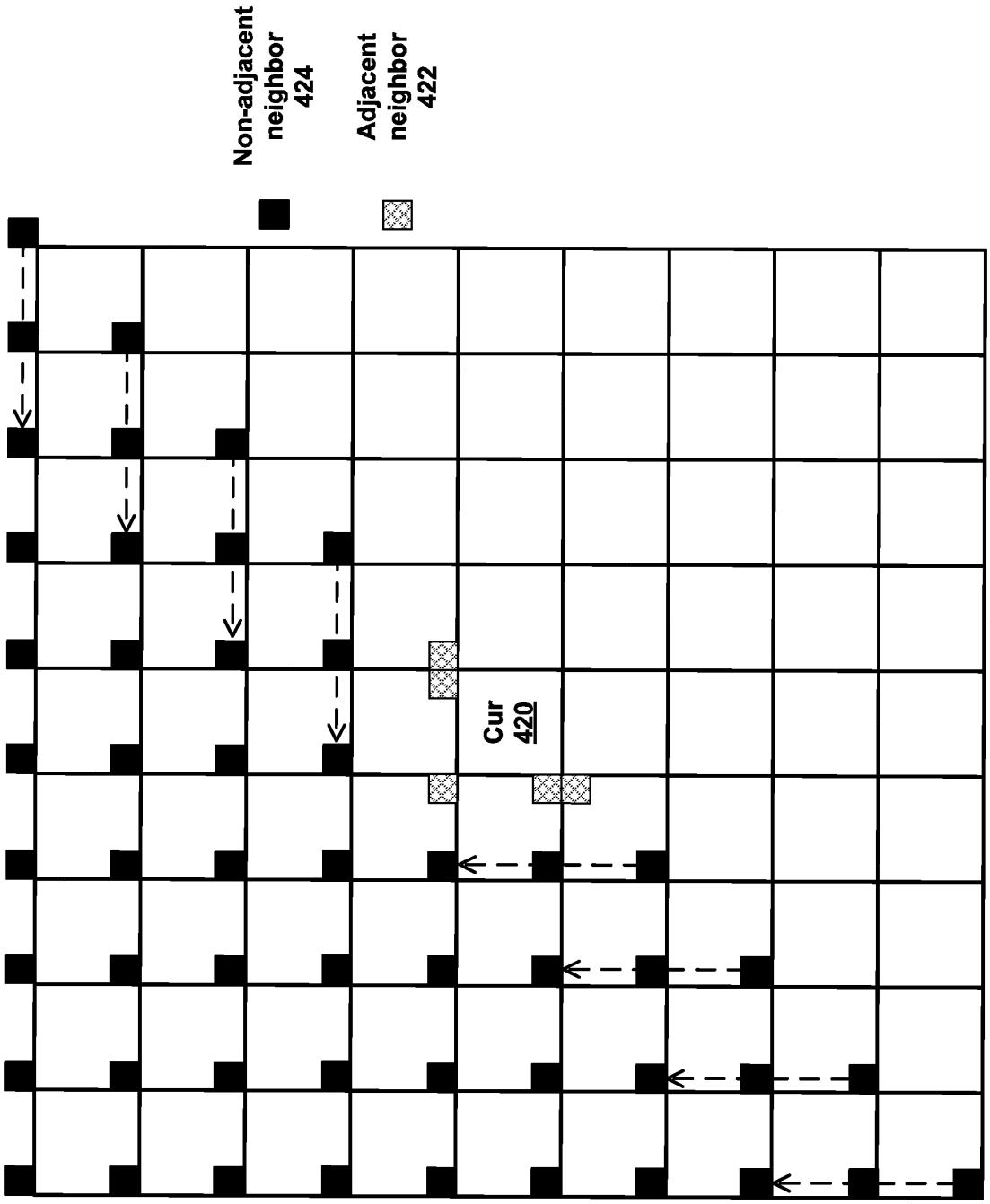


FIG. 13

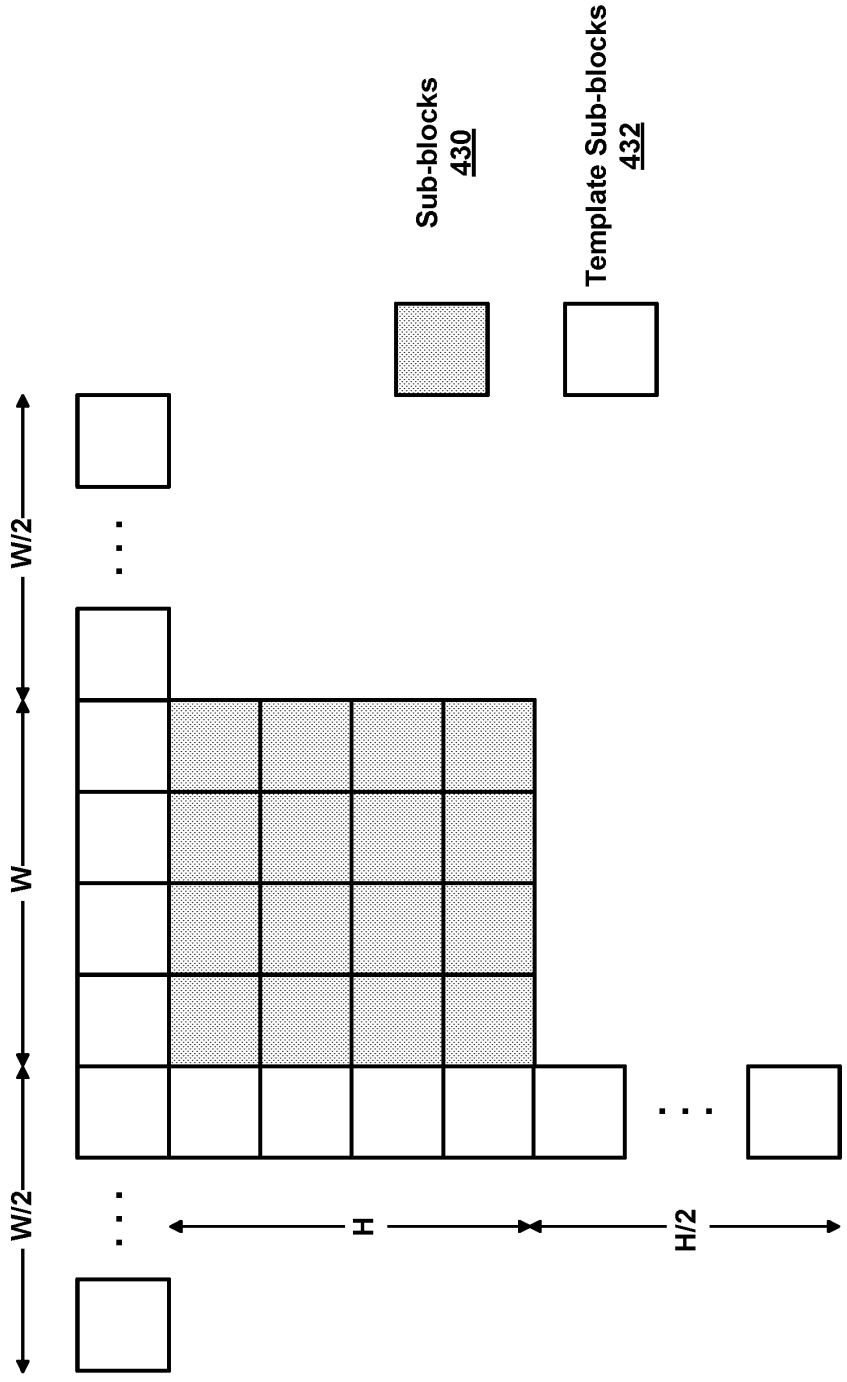


FIG. 14

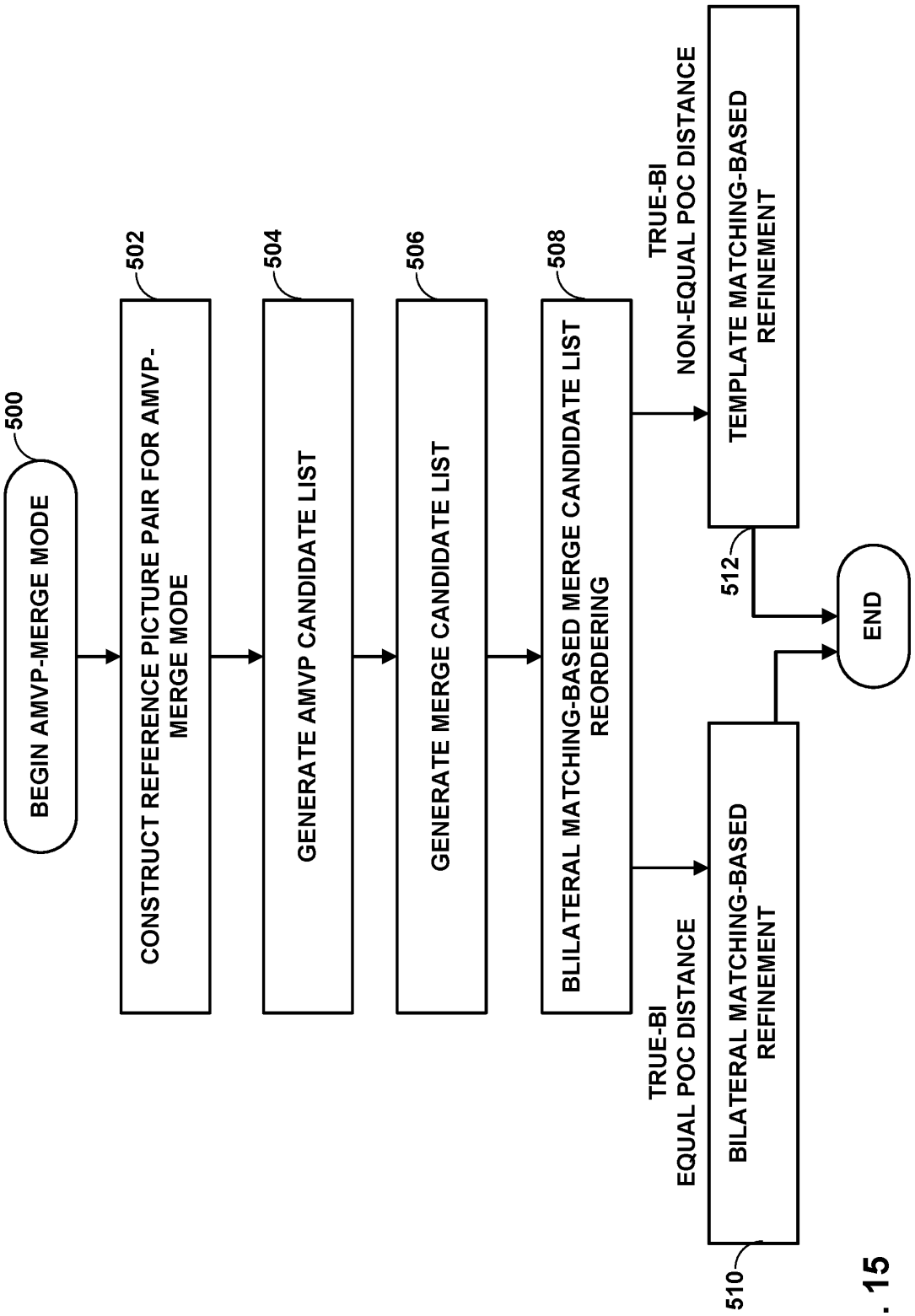

500
BEGIN AMVP-MERGE MODE
502
CONSTRUCT REFERENCE PICTURE PAIR FOR AMVP-MERGE MODE
504
GENERATE AMVP CANDIDATE LIST
506
GENERATE MERGE CANDIDATE LIST
508
BLILATERAL MATCHING-BASED MERGE CANDIDATE LIST REORDERING
TRUE-BI EQUAL POC DISTANCE
510
BILATERAL MATCHING-BASED REFINEMENT
TRUE-BI NON-EQUAL POC DISTANCE
512
TEMPLATE MATCHING-BASED REFINEMENT
END

FIG. 15

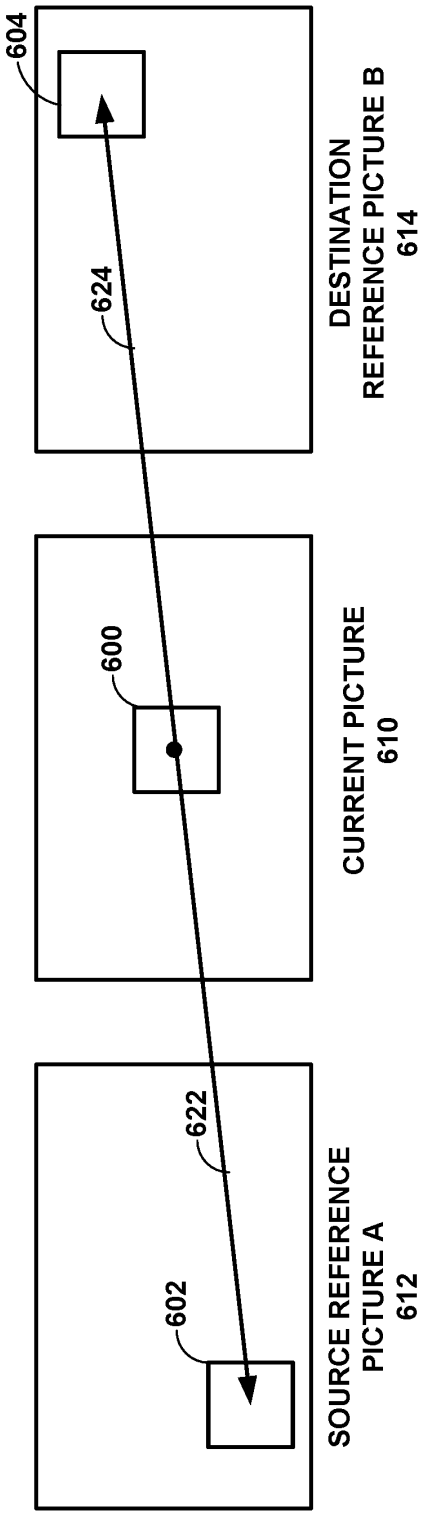

604
624
DESTINATION REFERENCE PICTURE B 614
600
CURRENT PICTURE 610
622
602
SOURCE REFERENCE PICTURE A 612

FIG. 16

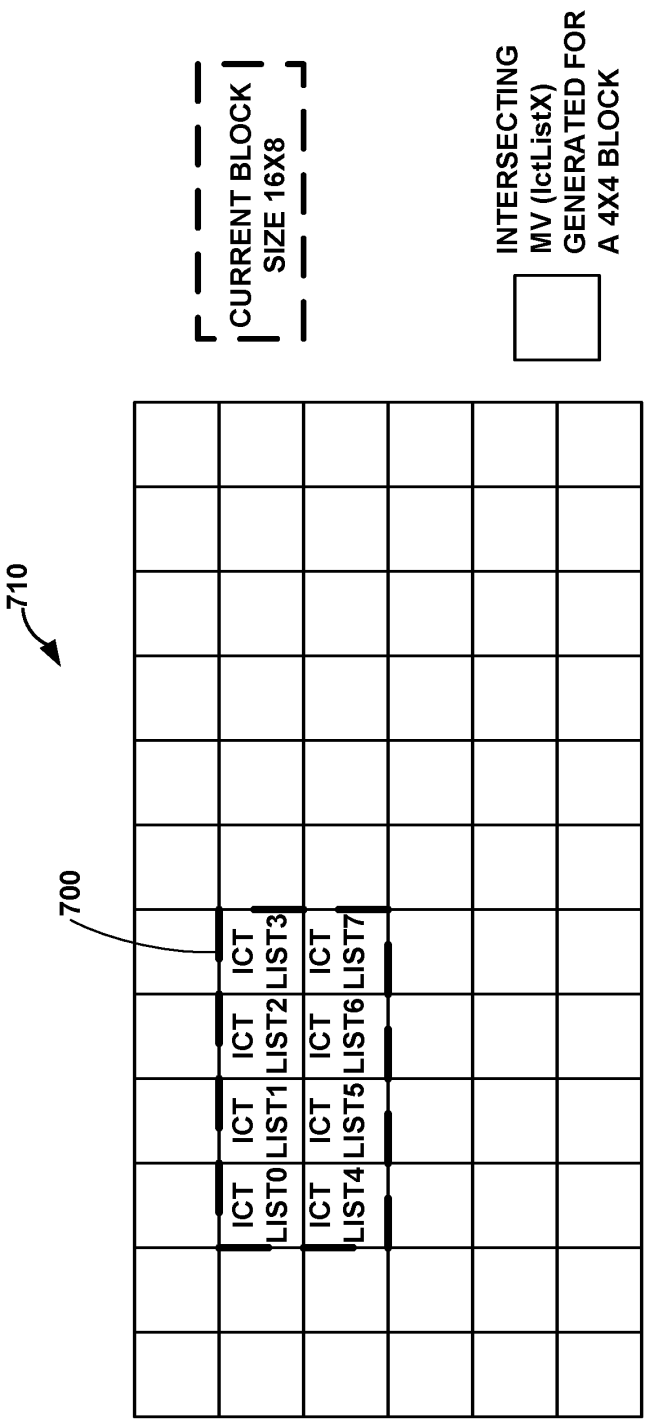

CURRENT BLOCK
SIZE 16X8
INTERSECTING
MV (lctListX)
GENERATED FOR
A 4X4 BLOCK
710
700
ICT LIST0
ICT LIST1
ICT LIST2
ICT LIST3
ICT LIST4
ICT LIST5
ICT LIST6
ICT LIST7

FIG. 17

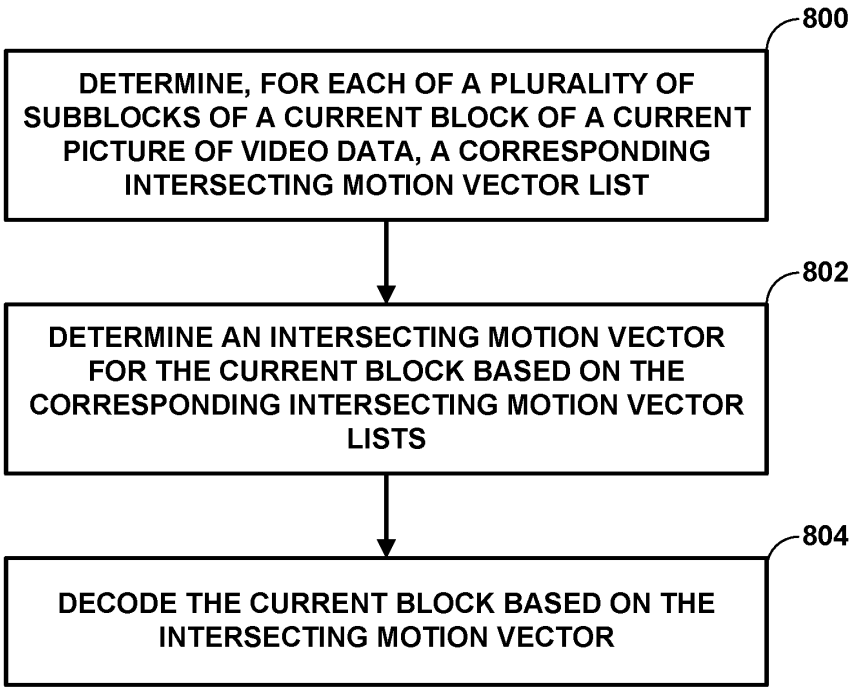


FIG. 18A

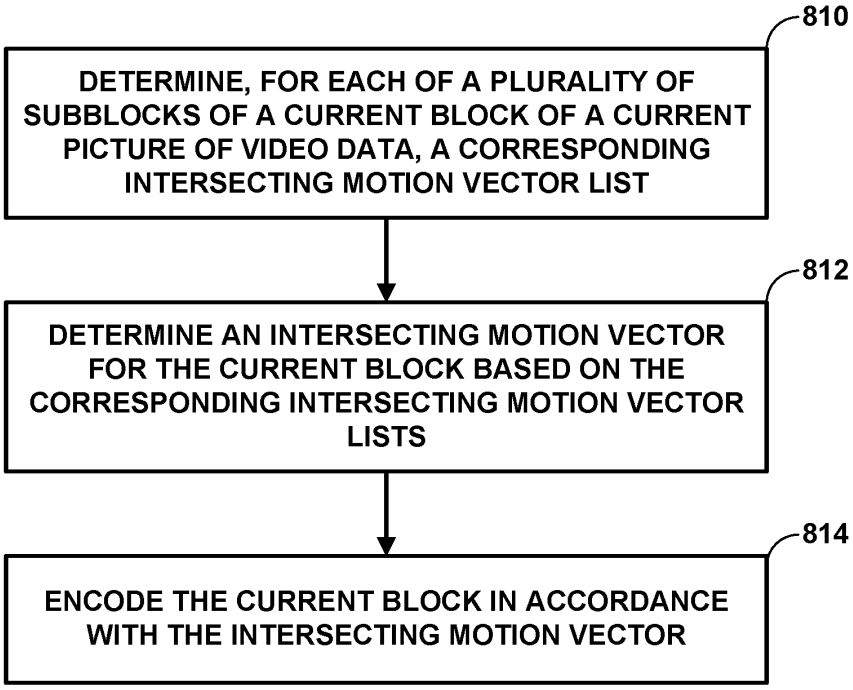


FIG. 18B

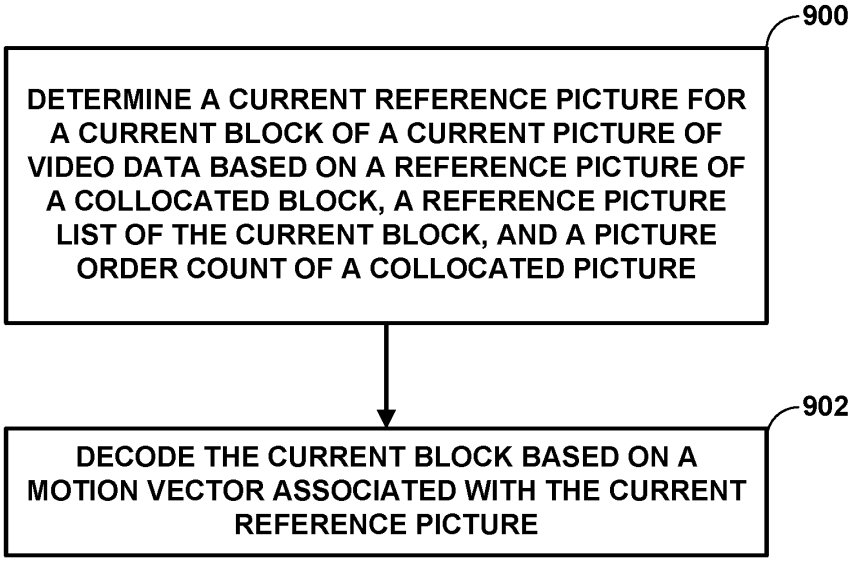


FIG. 19A

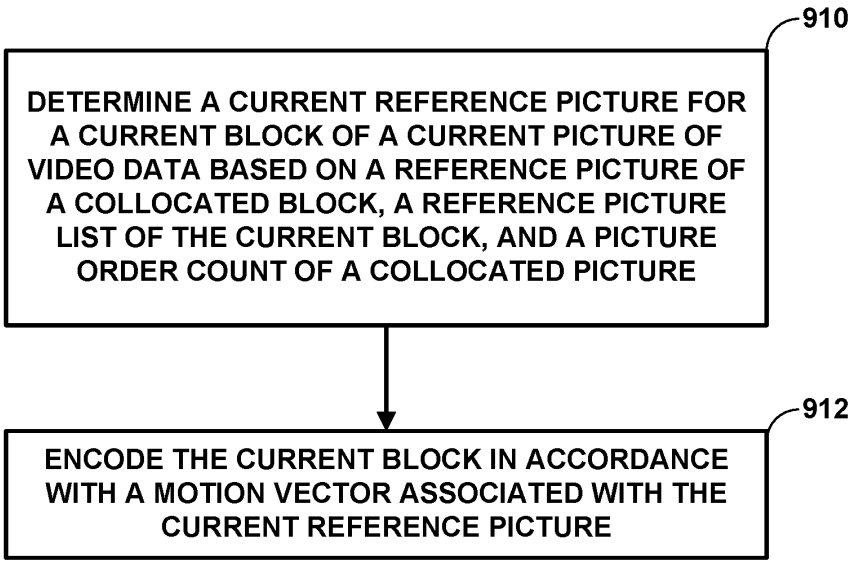


FIG. 19B

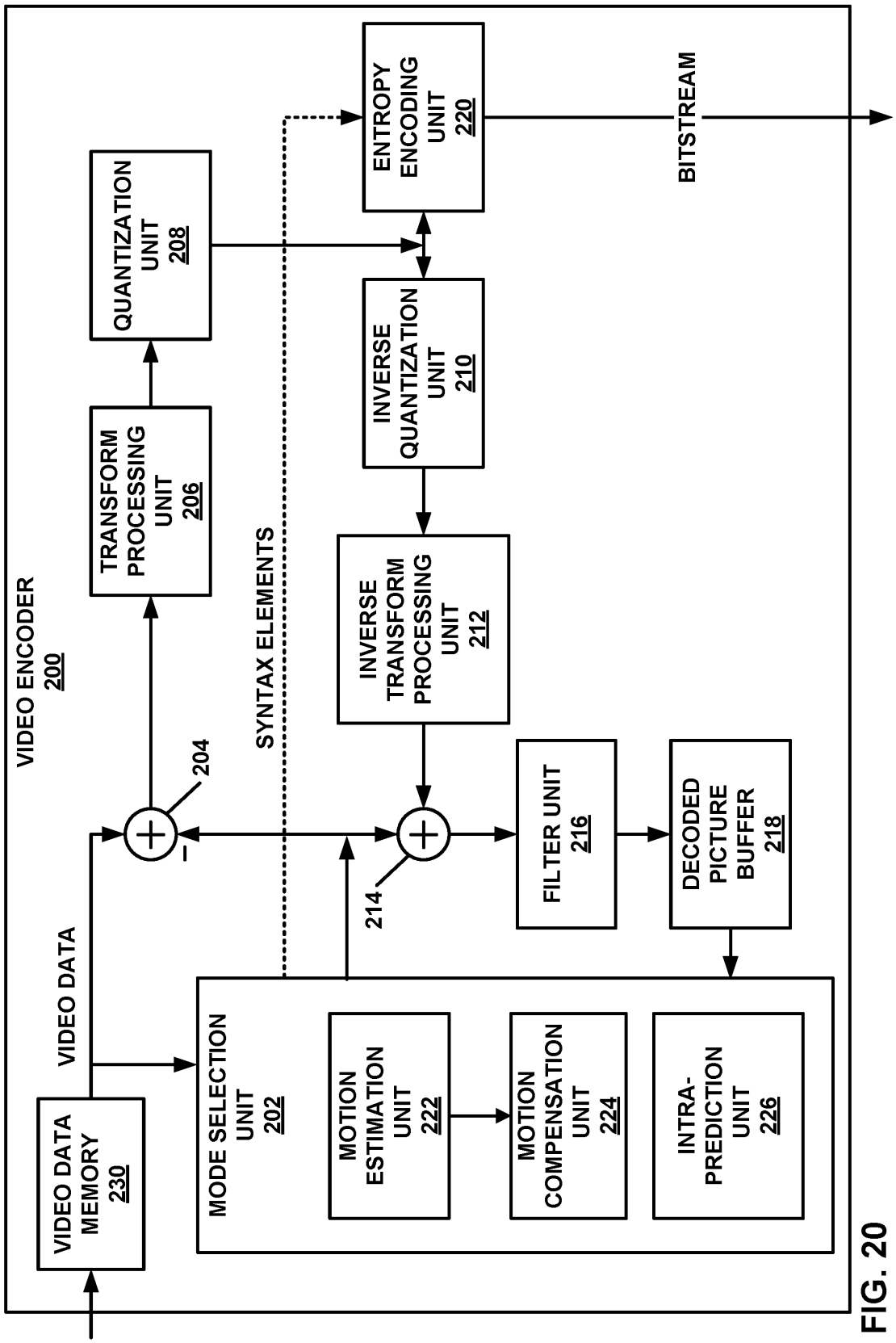

VIDEO ENCODER
200
VIDEO DATA MEMORY
230
VIDEO DATA
MODE SELECTION UNIT
202
MOTION ESTIMATION UNIT
222
MOTION COMPENSATION UNIT
224
INTRA-PREDICTION UNIT
226
204
214
SYNTAX ELEMENTS
TRANSFORM PROCESSING UNIT
206
QUANTIZATION UNIT
208
INVERSE QUANTIZATION UNIT
210
INVERSE TRANSFORM PROCESSING UNIT
212
FILTER UNIT
216
DECODED PICTURE BUFFER
218
ENTROPY ENCODING UNIT
220
BITSTREAM

FIG. 20

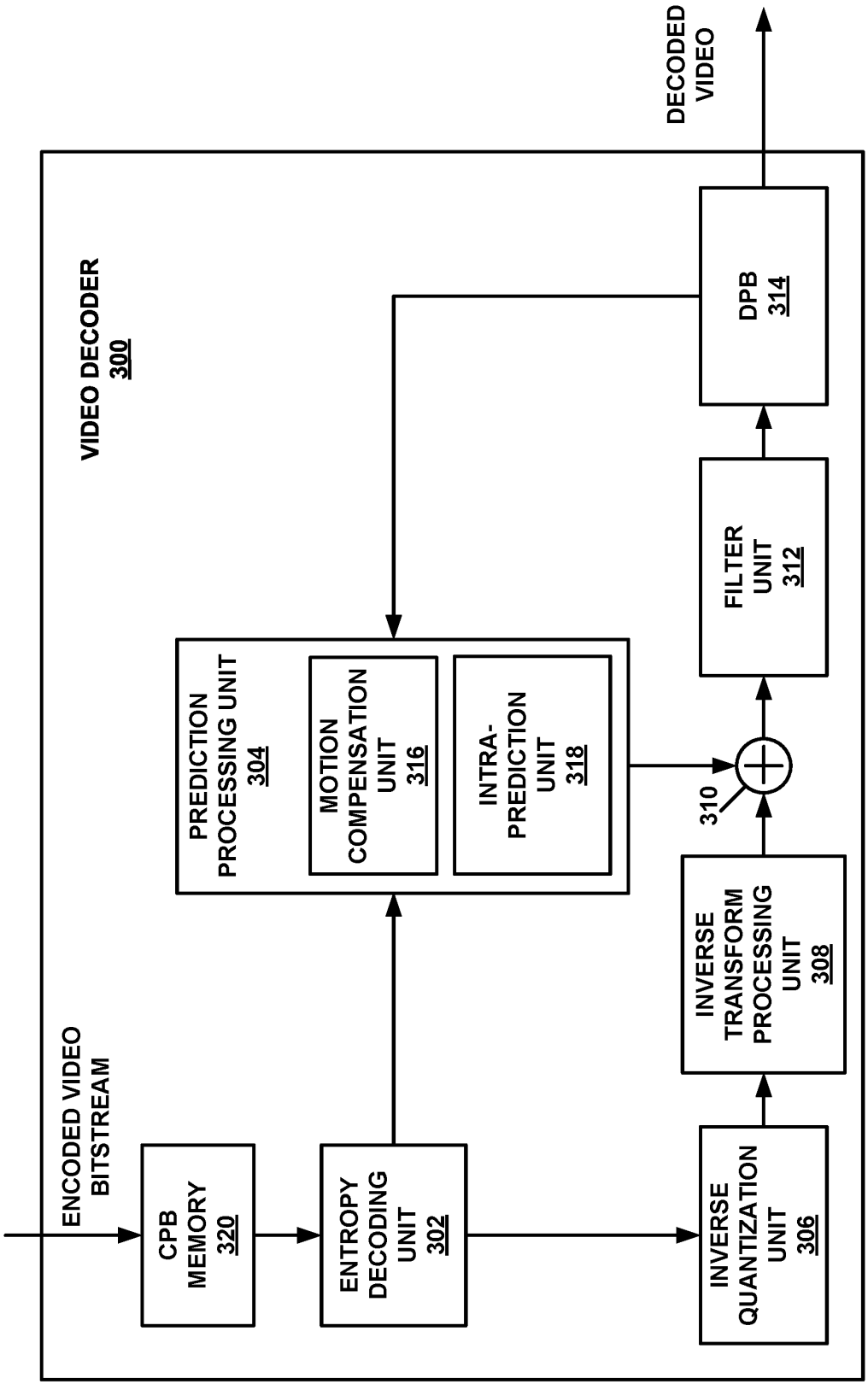

DECODED VIDEO
VIDEO DECODER 300
DPB 314
FILTER UNIT 312
PREDICTION PROCESSING UNIT 304
MOTION COMPENSATION UNIT 316
INTRA-PREDICTION UNIT 318
310
INVERSE TRANSFORM PROCESSING UNIT 308
INVERSE QUANTIZATION UNIT 306
ENTROPY DECODING UNIT 302
CPB MEMORY 320
ENCODED VIDEO BITSTREAM

FIG. 21

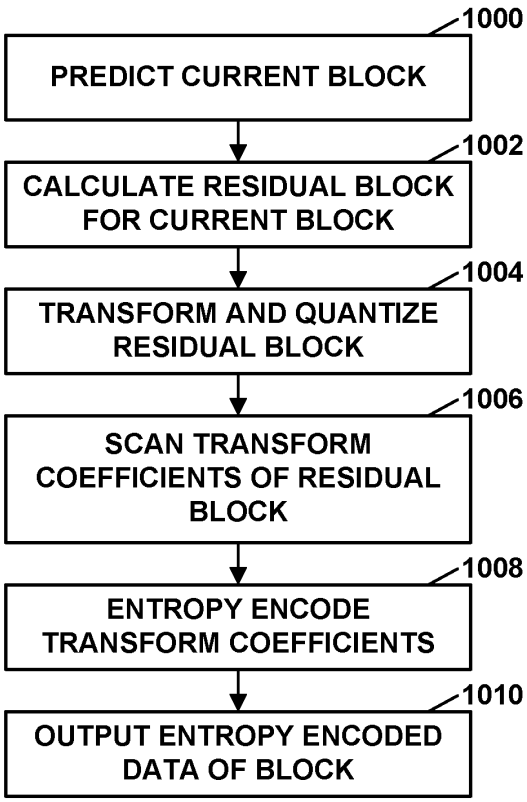

1000
PREDICT CURRENT BLOCK
1002
CALCULATE RESIDUAL BLOCK FOR CURRENT BLOCK
1004
TRANSFORM AND QUANTIZE RESIDUAL BLOCK
1006
SCAN TRANSFORM COEFFICIENTS OF RESIDUAL BLOCK
1008
ENTROPY ENCODE TRANSFORM COEFFICIENTS
1010
OUTPUT ENTROPY ENCODED DATA OF BLOCK

FIG. 22

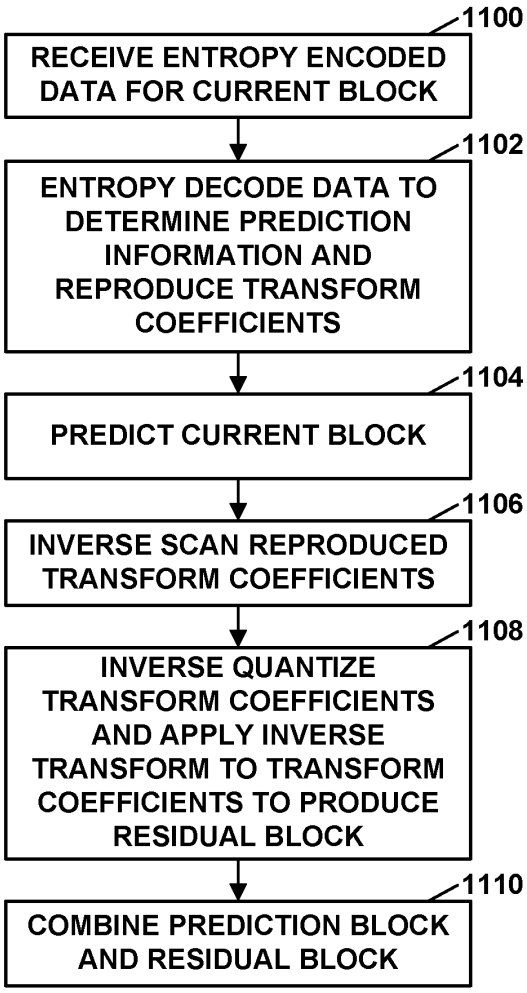

1100
RECEIVE ENTROPY ENCODED DATA FOR CURRENT BLOCK
1102
ENTROPY DECODE DATA TO DETERMINE PREDICTION INFORMATION AND REPRODUCE TRANSFORM COEFFICIENTS
1104
PREDICT CURRENT BLOCK
1106
INVERSE SCAN REPRODUCED TRANSFORM COEFFICIENTS
1108
INVERSE QUANTIZE TRANSFORM COEFFICIENTS AND APPLY INVERSE TRANSFORM TO TRANSFORM COEFFICIENTS TO PRODUCE RESIDUAL BLOCK
1110
COMBINE PREDICTION BLOCK AND RESIDUAL BLOCK

FIG. 23