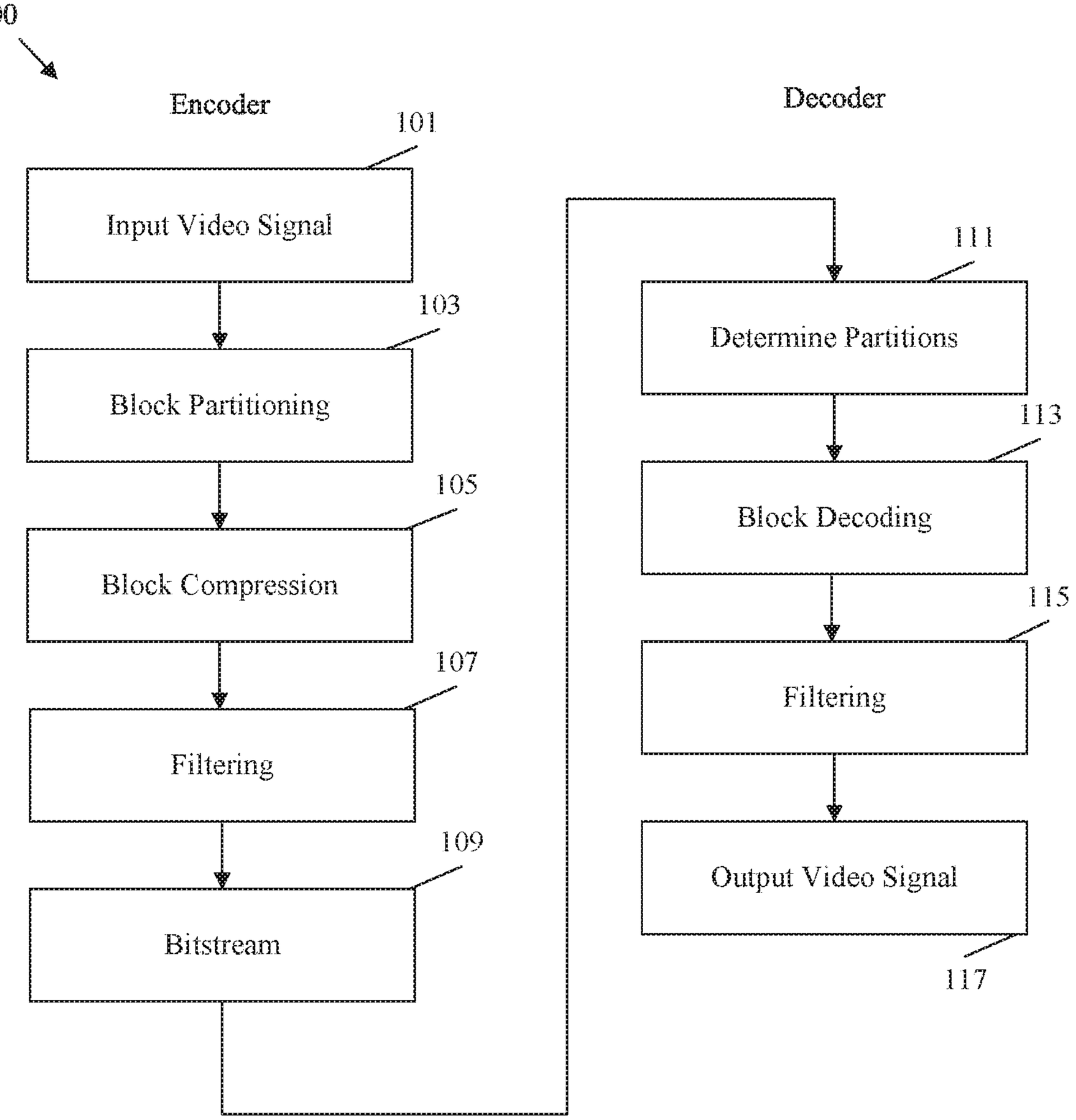
100
Encoder
101
Input Video Signal
103
Block Partitioning
105
Block Compression
107
Filtering
109
Bitstream
Decoder
111
Determine Partitions
113
Block Decoding
115
Filtering
Output Video Signal
117

FIG. 1

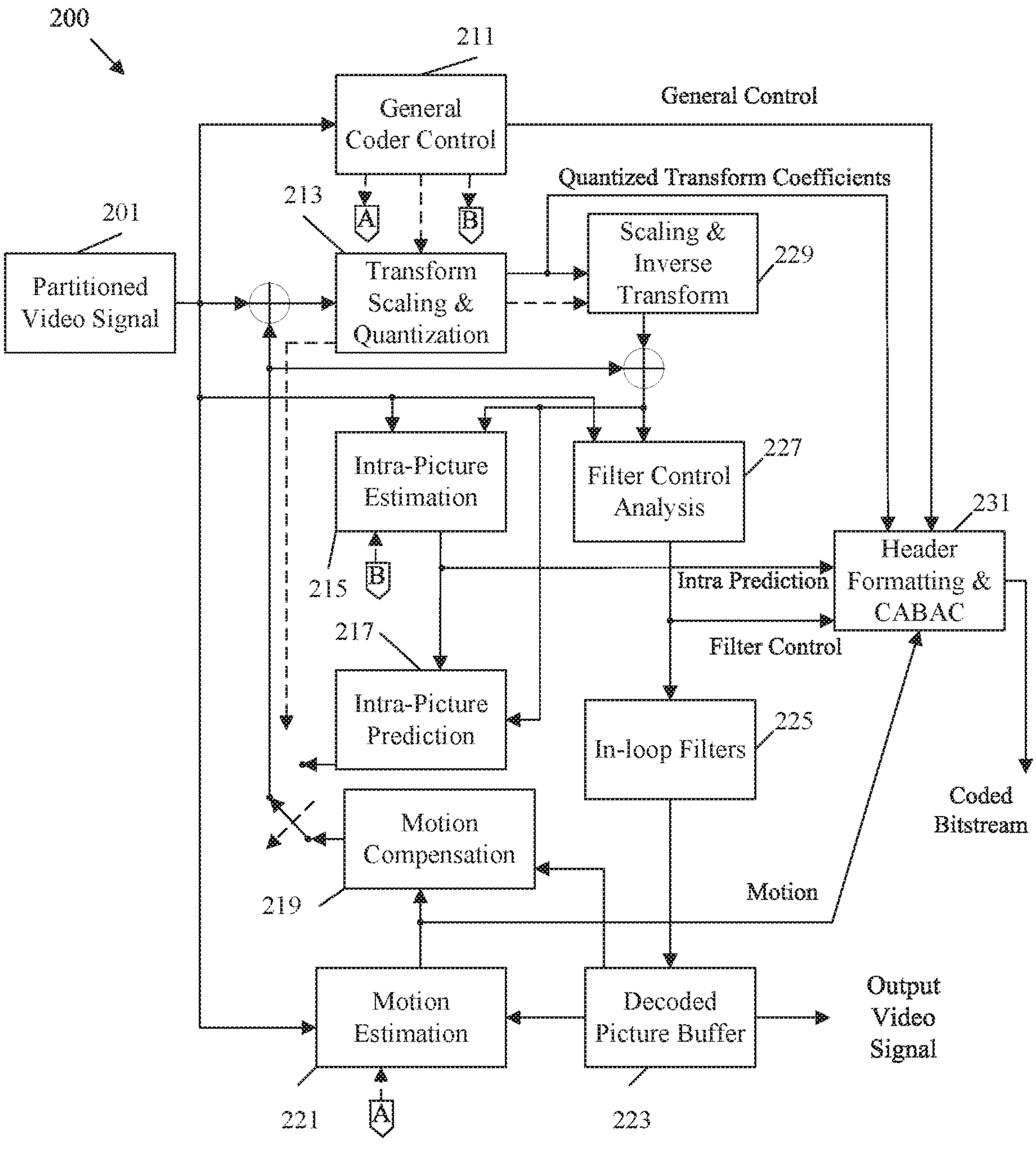
200
211
General Coder Control
General Control
Quantized Transform Coefficients
213
A
B
201
Partitioned Video Signal
Transform Scaling & Quantization
Scaling & Inverse Transform
229
Intra-Picture Estimation
Filter Control Analysis
227
231
Header Formatting & CABAC
215
B
Intra Prediction
217
Filter Control
Intra-Picture Prediction
In-loop Filters
225
Coded Bitstream
Motion Compensation
219
Motion
Motion Estimation
Decoded Picture Buffer
Output Video Signal
221
A
223

FIG. 2

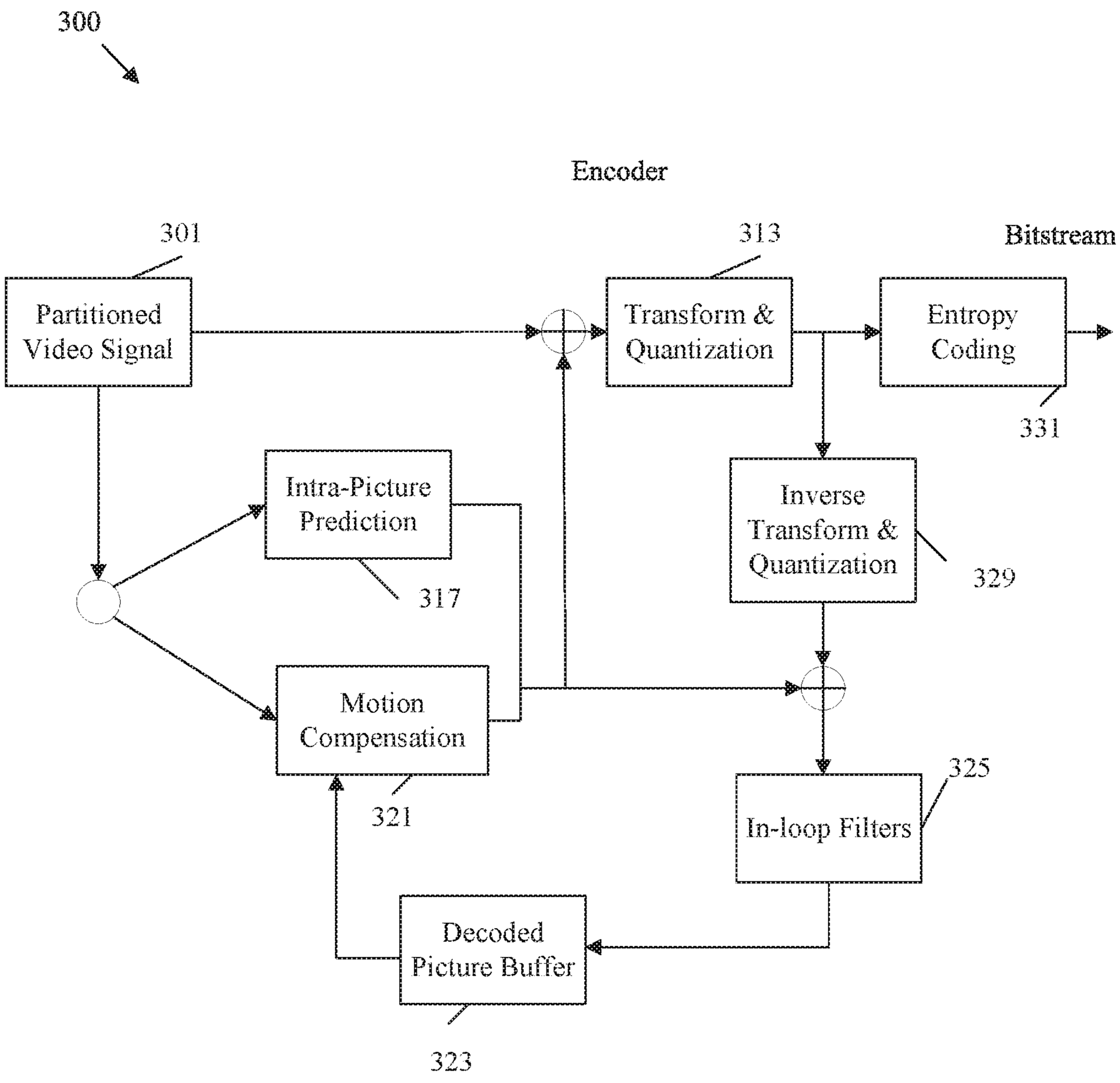
300
Encoder
301
Partitioned Video Signal
313
Transform & Quantization
Entropy Coding
Bitstream
331
Intra-Picture Prediction
317
Inverse Transform & Quantization
329
Motion Compensation
321
325
In-loop Filters
Decoded Picture Buffer
323

FIG. 3

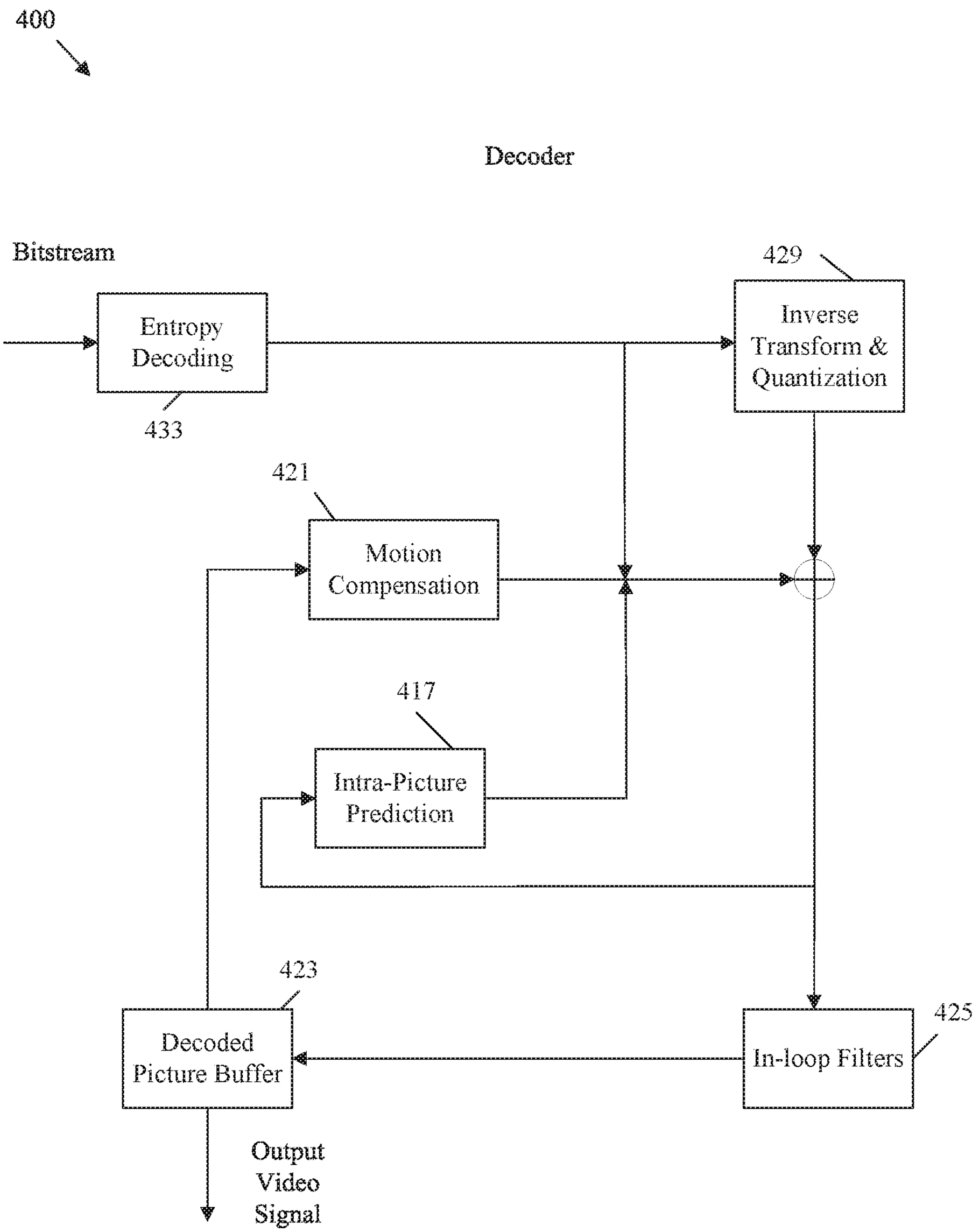
400
Decoder
Bitstream
Entropy Decoding
433
429
Inverse Transform & Quantization
421
Motion Compensation
417
Intra-Picture Prediction
423
Decoded Picture Buffer
425
In-loop Filters
Output Video Signal

FIG. 4

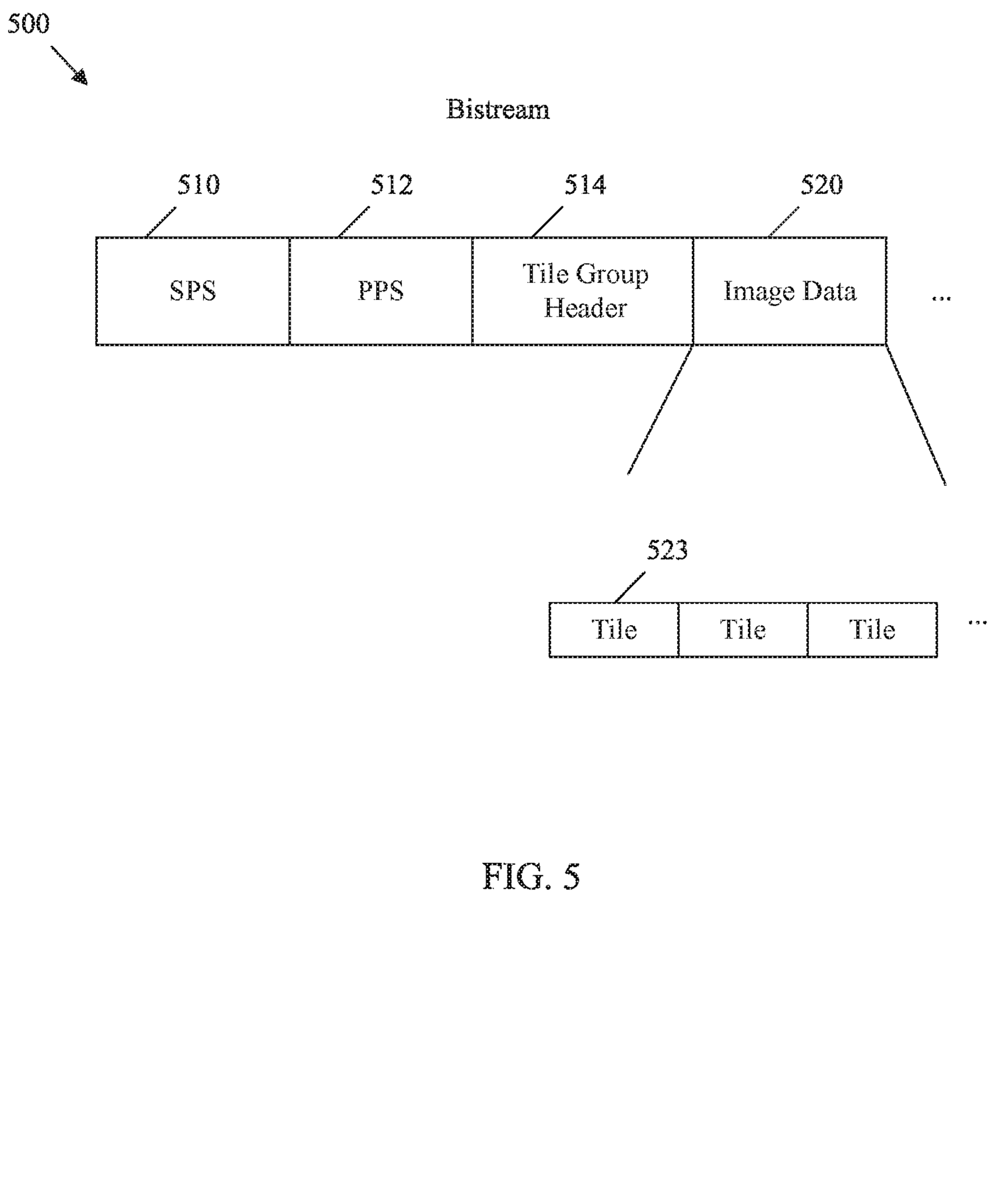
500
Bistream
510
512
514
520
SPS
PPS
Tile Group Header
Image Data
...
523
Tile
Tile
Tile
...

FIG. 5

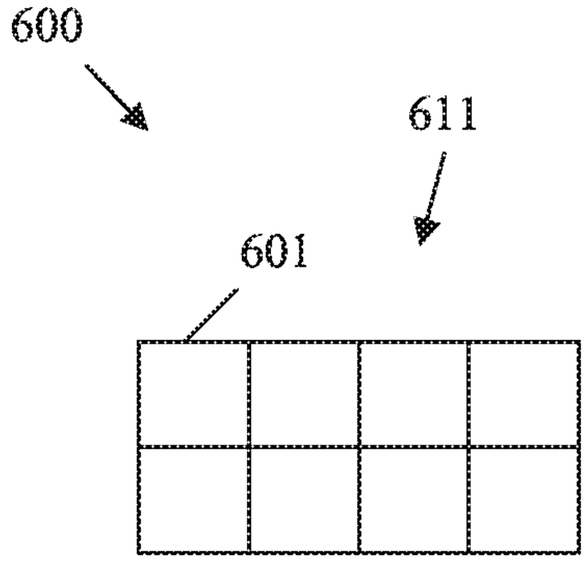

FIG. 6A

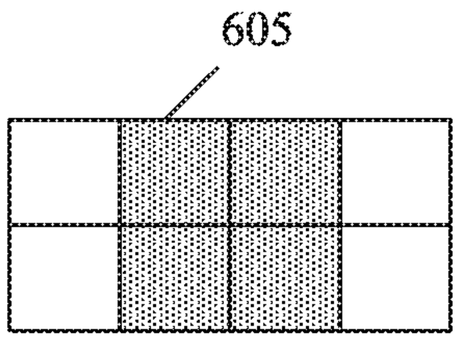

FIG. 6C

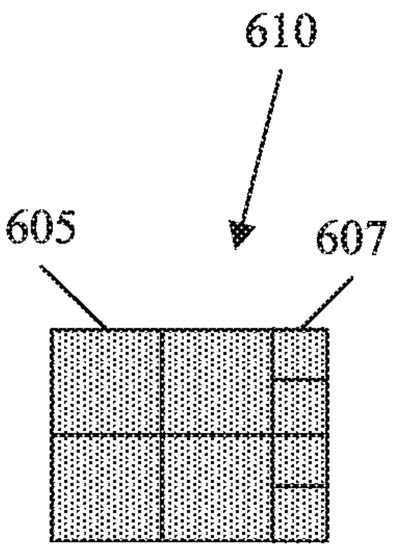

FIG. 6E

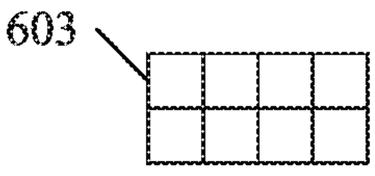

FIG. 6B

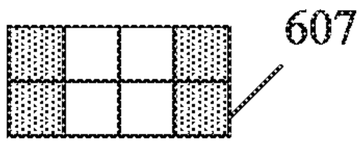

FIG. 6D

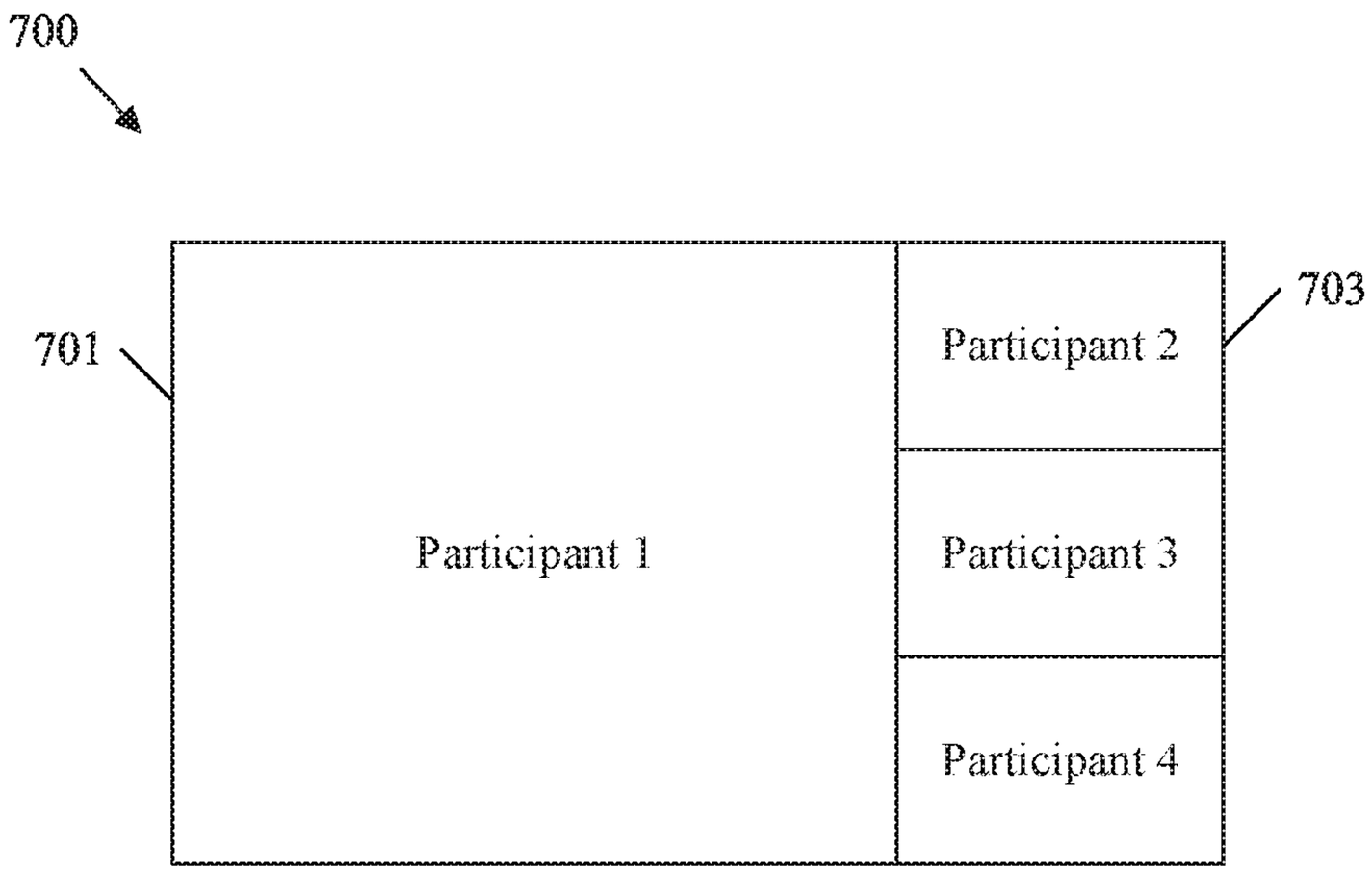

FIG. 7

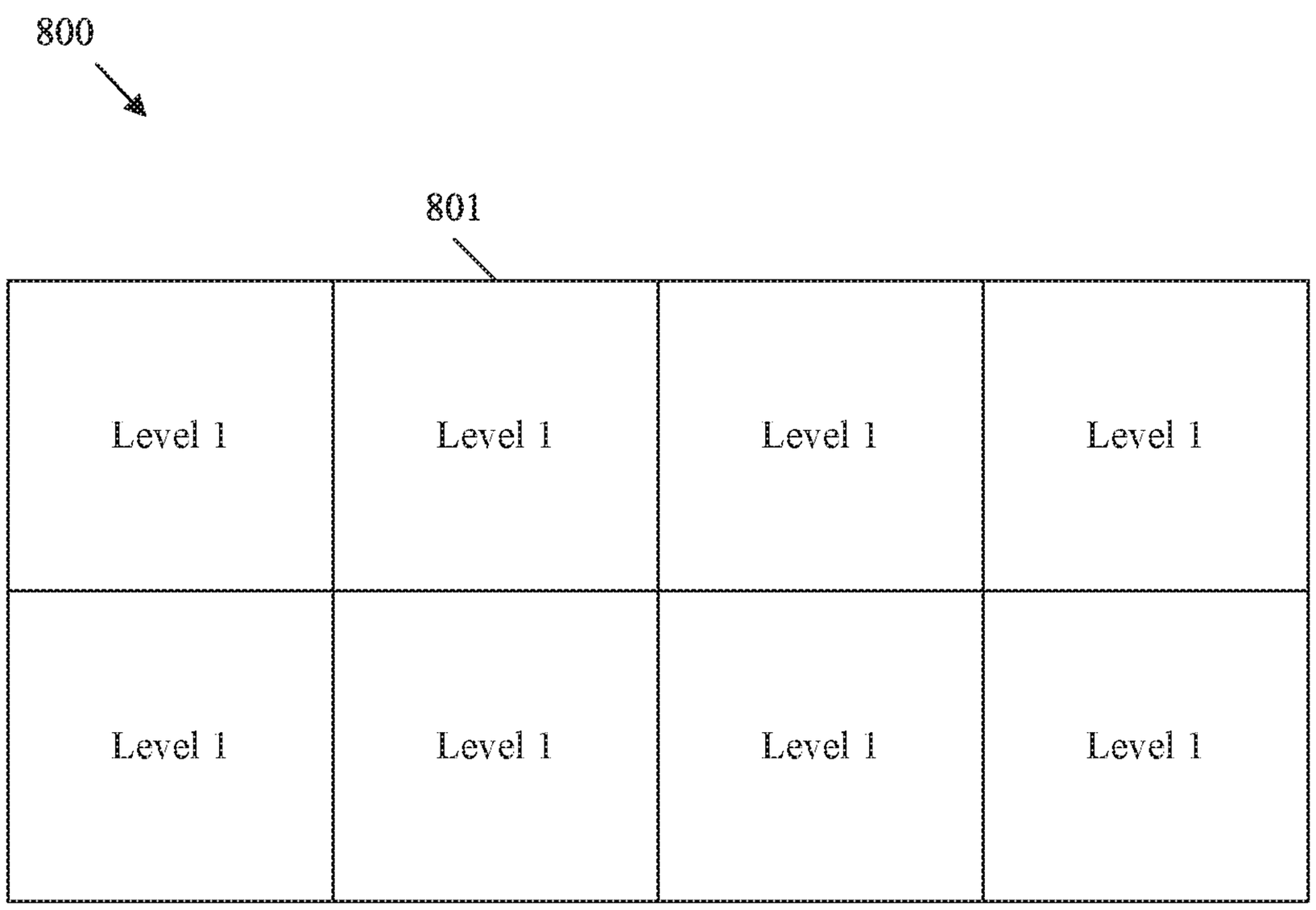
800
801
Level 1
Level 1
Level 1
Level 1
Level 1
Level 1
Level 1
Level 1

FIG. 8A

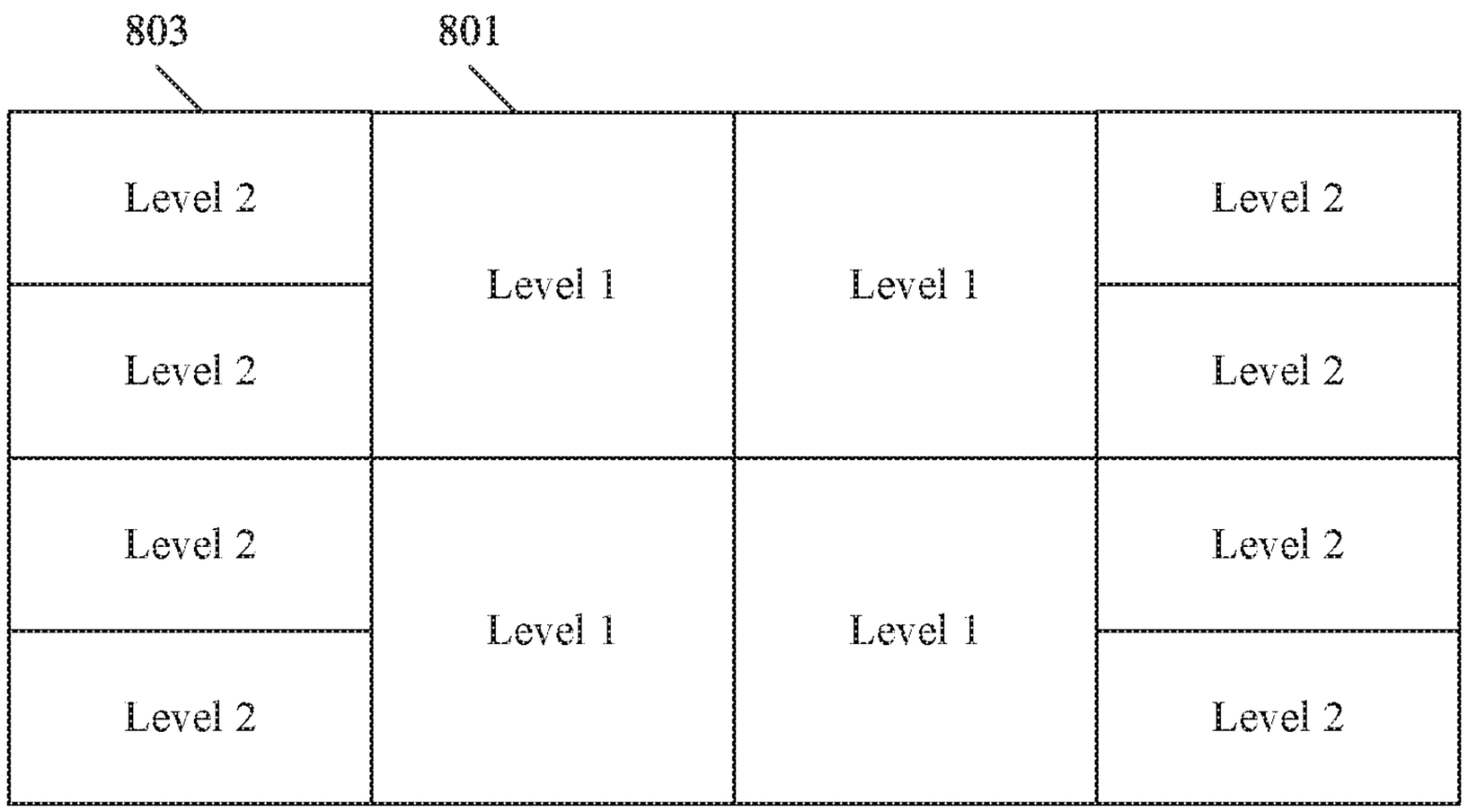
803
801
Level 2
Level 2
Level 2
Level 2
Level 1
Level 1
Level 1
Level 1
Level 2
Level 2
Level 2
Level 2

FIG. 8B

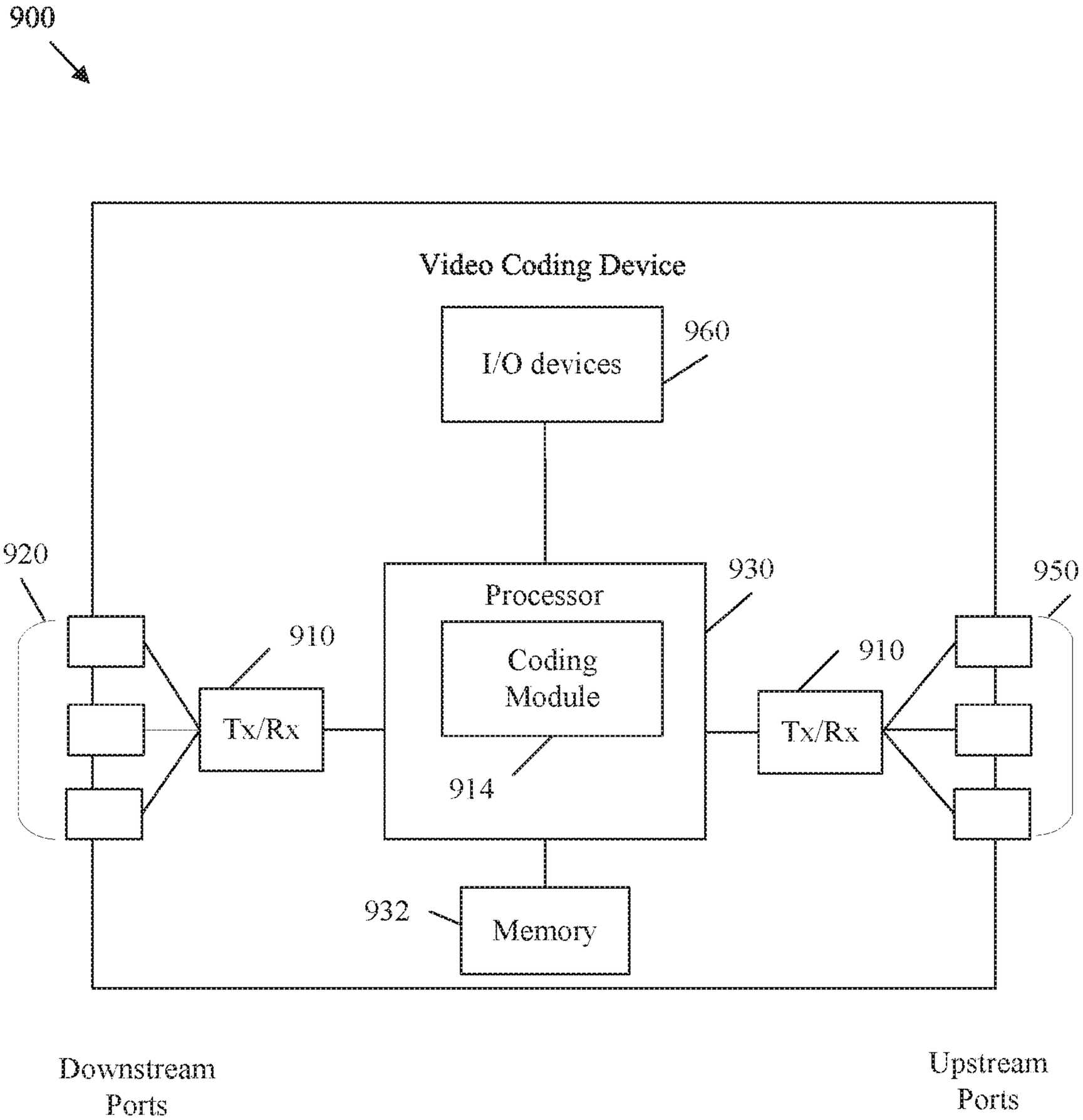
900
Video Coding Device
I/O devices
960
920
930
950
910
Processor
Coding Module
910
Tx/Rx
Tx/Rx
914
932
Memory
Downstream Ports
Upstream Ports

FIG. 9

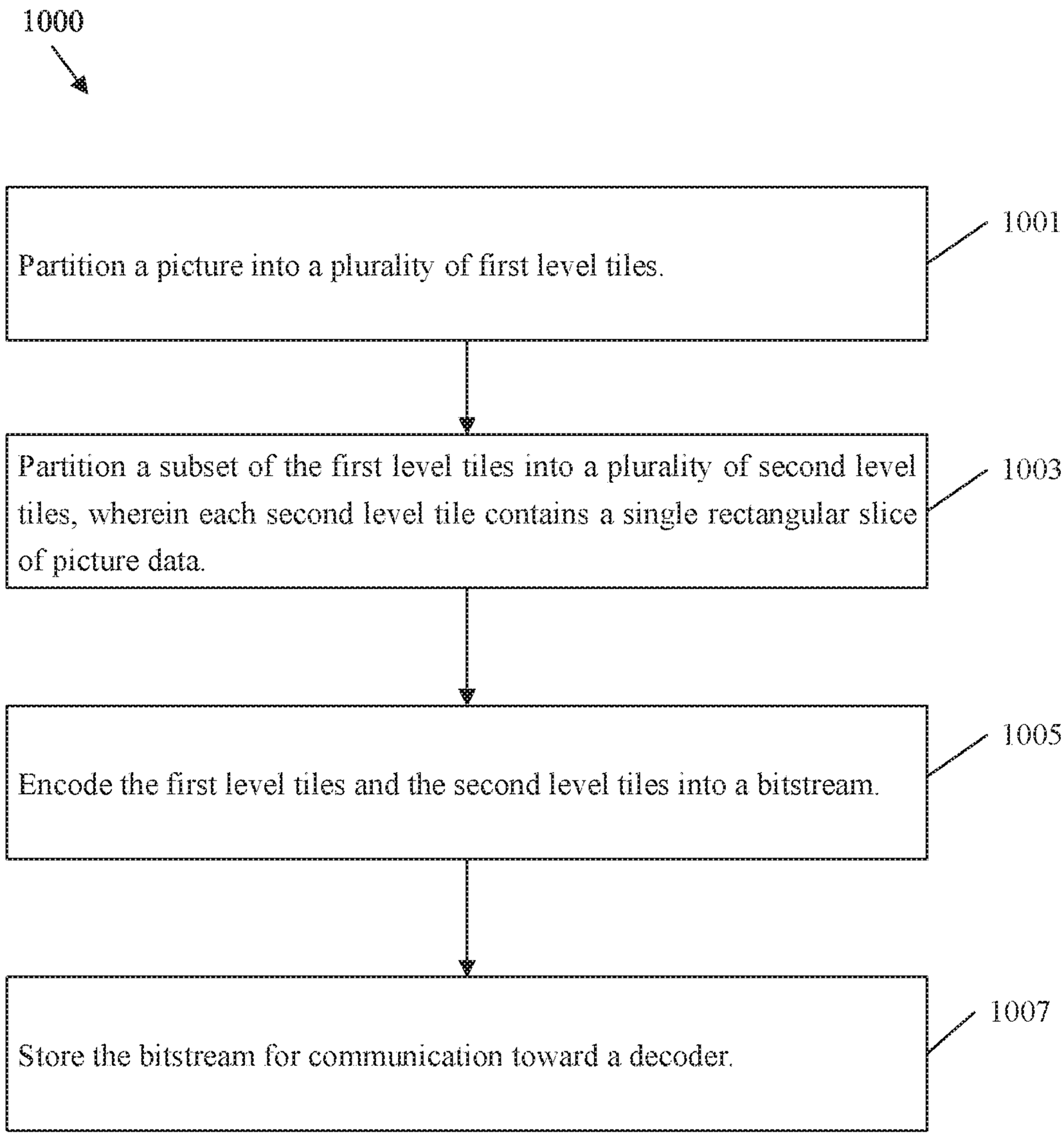
1000
Partition a picture into a plurality of first level tiles.
1001
Partition a subset of the first level tiles into a plurality of second level tiles, wherein each second level tile contains a single rectangular slice of picture data.
1003
Encode the first level tiles and the second level tiles into a bitstream.
1005
Store the bitstream for communication toward a decoder.
1007

FIG. 10

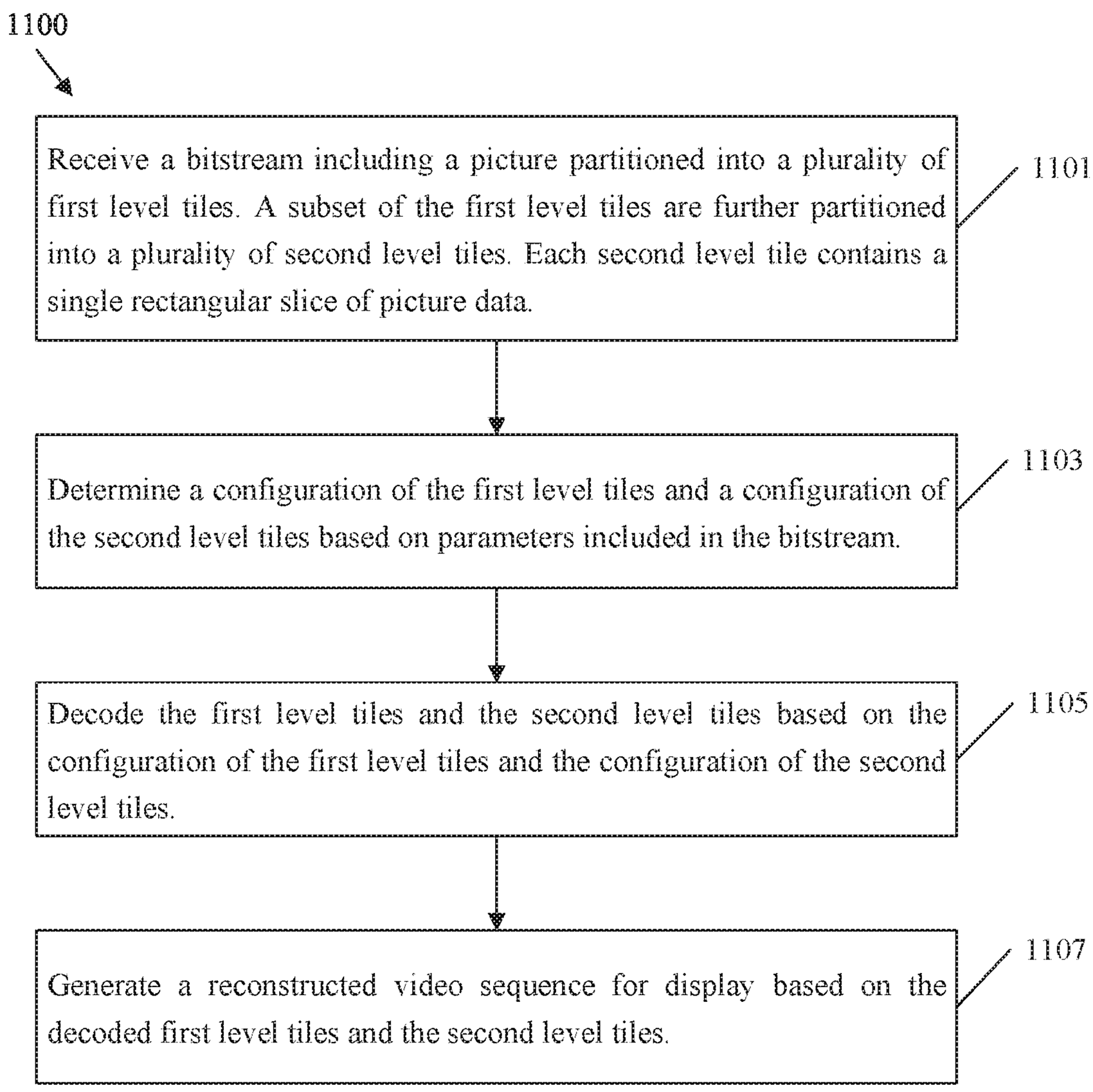
1100
Receive a bitstream including a picture partitioned into a plurality of first level tiles. A subset of the first level tiles are further partitioned into a plurality of second level tiles. Each second level tile contains a single rectangular slice of picture data.
1101
Determine a configuration of the first level tiles and a configuration of the second level tiles based on parameters included in the bitstream.
1103
Decode the first level tiles and the second level tiles based on the configuration of the first level tiles and the configuration of the second level tiles.
1105
Generate a reconstructed video sequence for display based on the decoded first level tiles and the second level tiles.
1107

FIG. 11

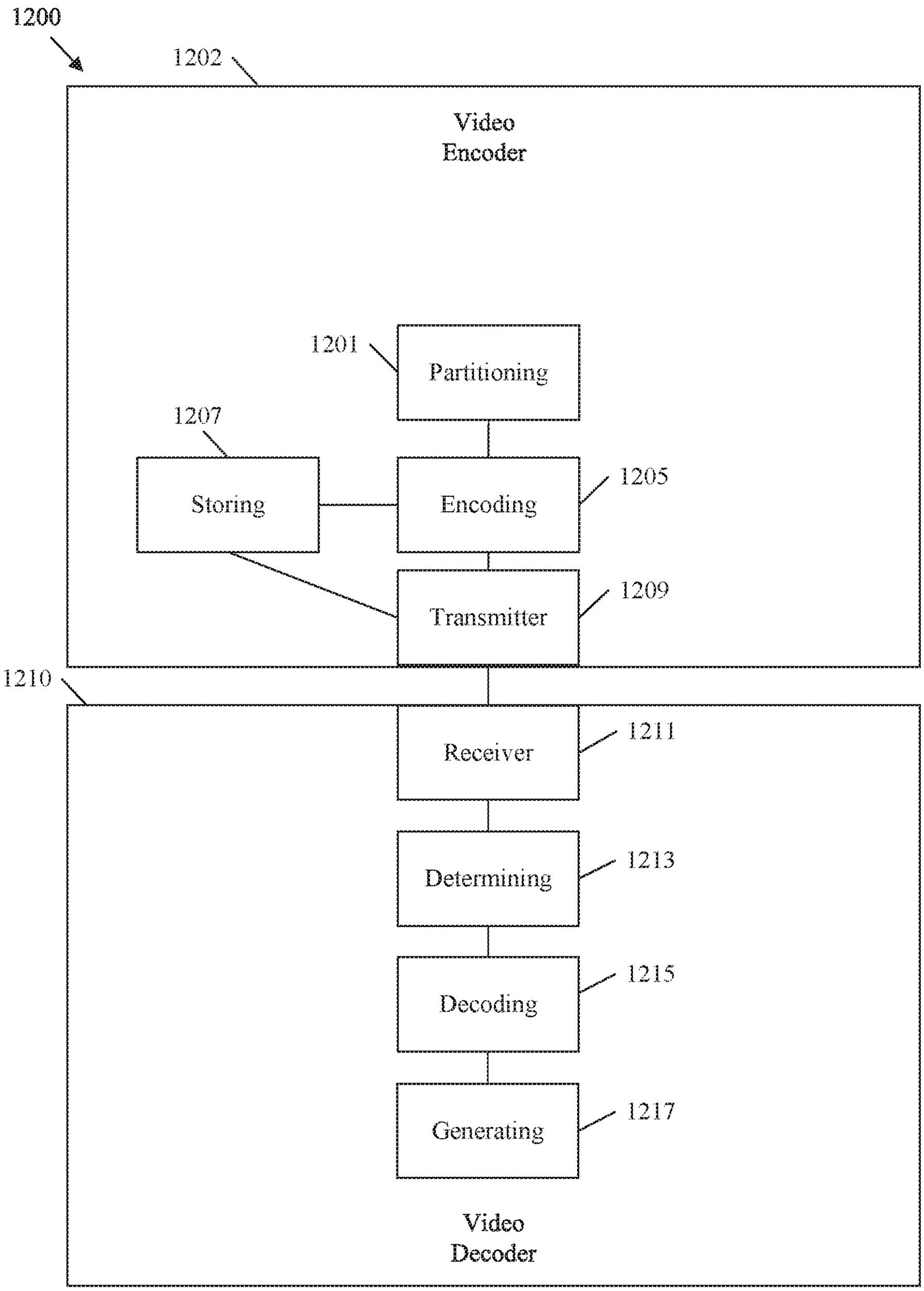
1200
1202
Video
Encoder
1201
Partitioning
1207
Storing
Encoding
1205
Transmitter
1209
1210
Receiver
1211
Determining
1213
Decoding
1215
Generating
1217
Video
Decoder

FIG. 12