FIG. 1A

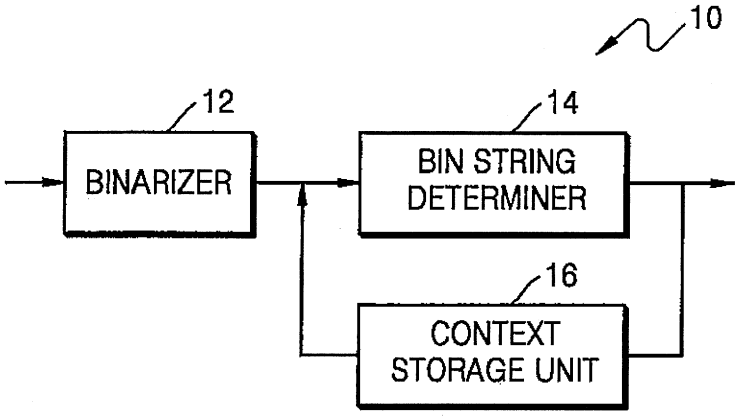

10
12
BINARIZER
14
BIN STRING DETERMINER
16
CONTEXT STORAGE UNIT

FIG. 1B

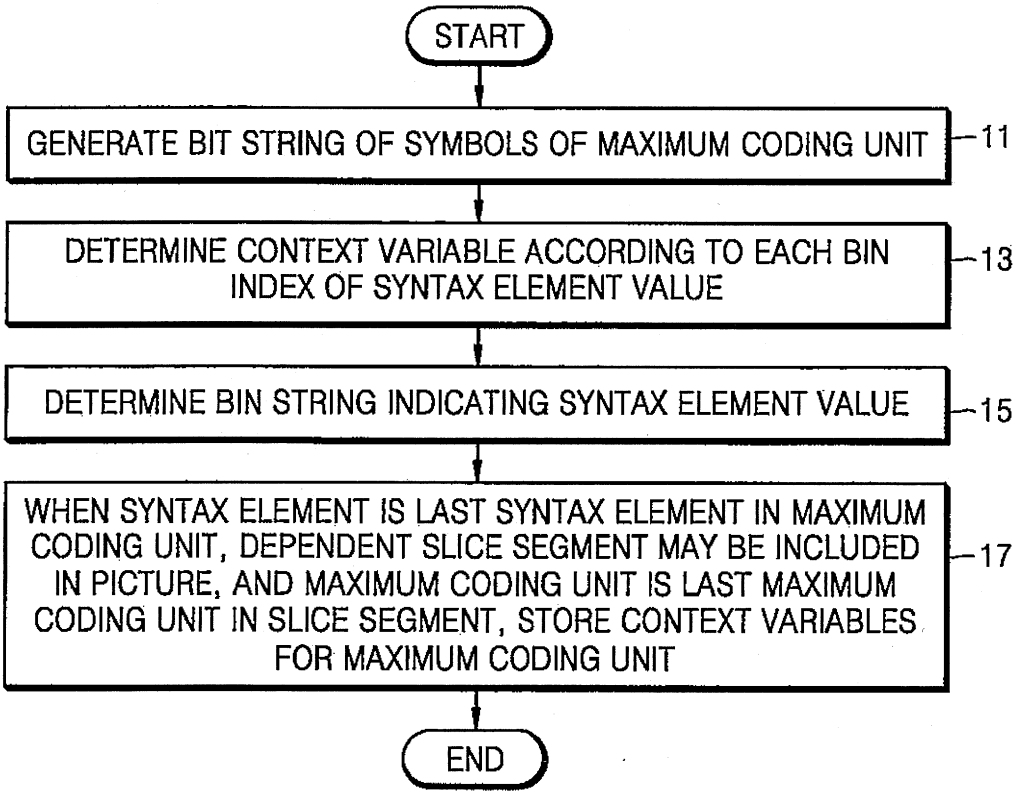

START
GENERATE BIT STRING OF SYMBOLS OF MAXIMUM CODING UNIT
11
DETERMINE CONTEXT VARIABLE ACCORDING TO EACH BIN INDEX OF SYNTAX ELEMENT VALUE
13
DETERMINE BIN STRING INDICATING SYNTAX ELEMENT VALUE
15
WHEN SYNTAX ELEMENT IS LAST SYNTAX ELEMENT IN MAXIMUM CODING UNIT, DEPENDENT SLICE SEGMENT MAY BE INCLUDED IN PICTURE, AND MAXIMUM CODING UNIT IS LAST MAXIMUM CODING UNIT IN SLICE SEGMENT, STORE CONTEXT VARIABLES FOR MAXIMUM CODING UNIT
17
END

FIG. 2A

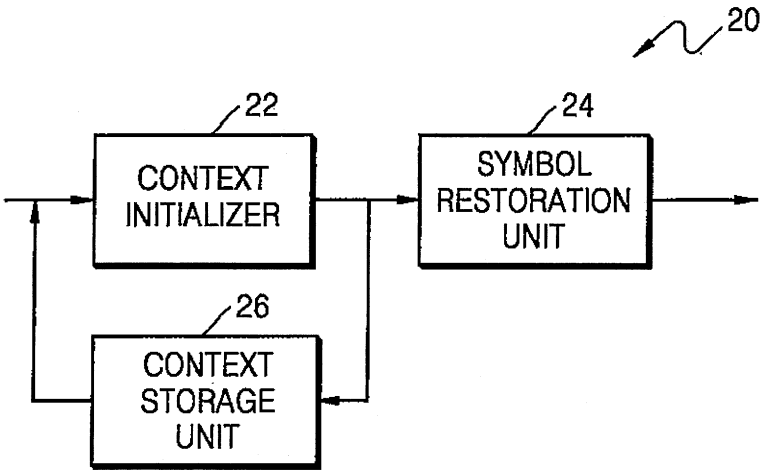

20
22
CONTEXT INITIALIZER
24
SYMBOL RESTORATION UNIT
26
CONTEXT STORAGE UNIT

FIG. 2B

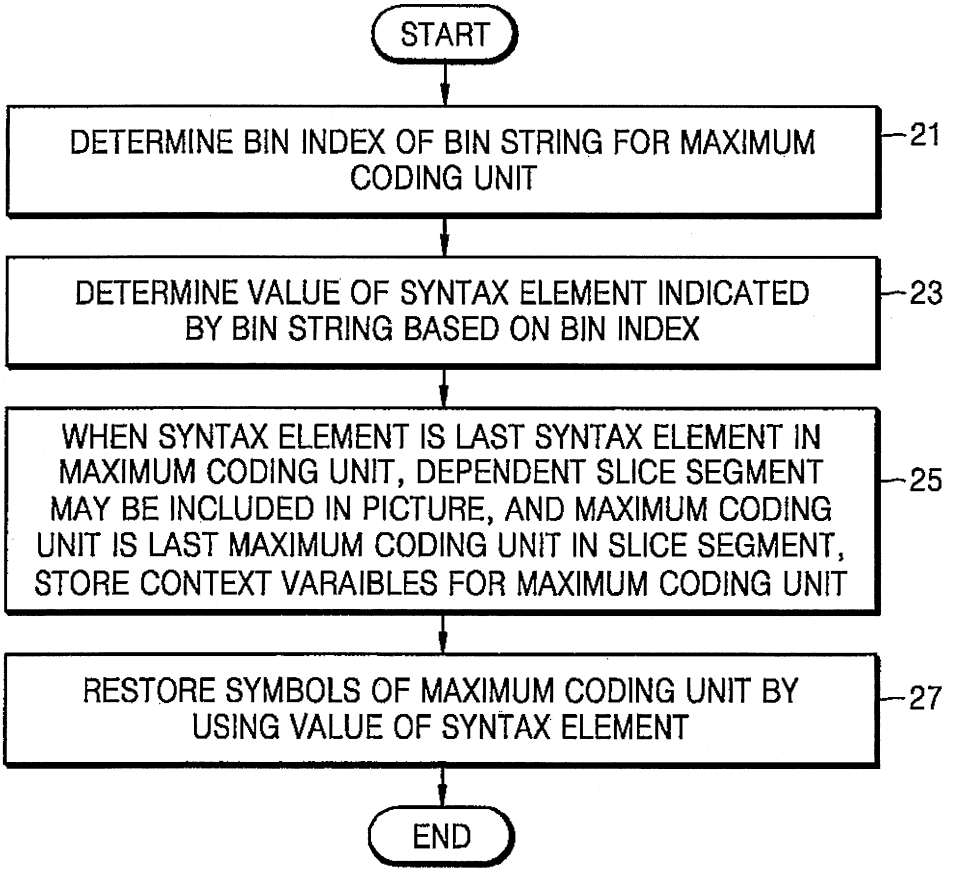

START
DETERMINE BIN INDEX OF BIN STRING FOR MAXIMUM CODING UNIT
21
DETERMINE VALUE OF SYNTAX ELEMENT INDICATED BY BIN STRING BASED ON BIN INDEX
23
WHEN SYNTAX ELEMENT IS LAST SYNTAX ELEMENT IN MAXIMUM CODING UNIT, DEPENDENT SLICE SEGMENT MAY BE INCLUDED IN PICTURE, AND MAXIMUM CODING UNIT IS LAST MAXIMUM CODING UNIT IN SLICE SEGMENT, STORE CONTEXT VARAIBLES FOR MAXIMUM CODING UNIT
25
RESTORE SYMBOLS OF MAXIMUM CODING UNIT BY USING VALUE OF SYNTAX ELEMENT
27
END

FIG. 3

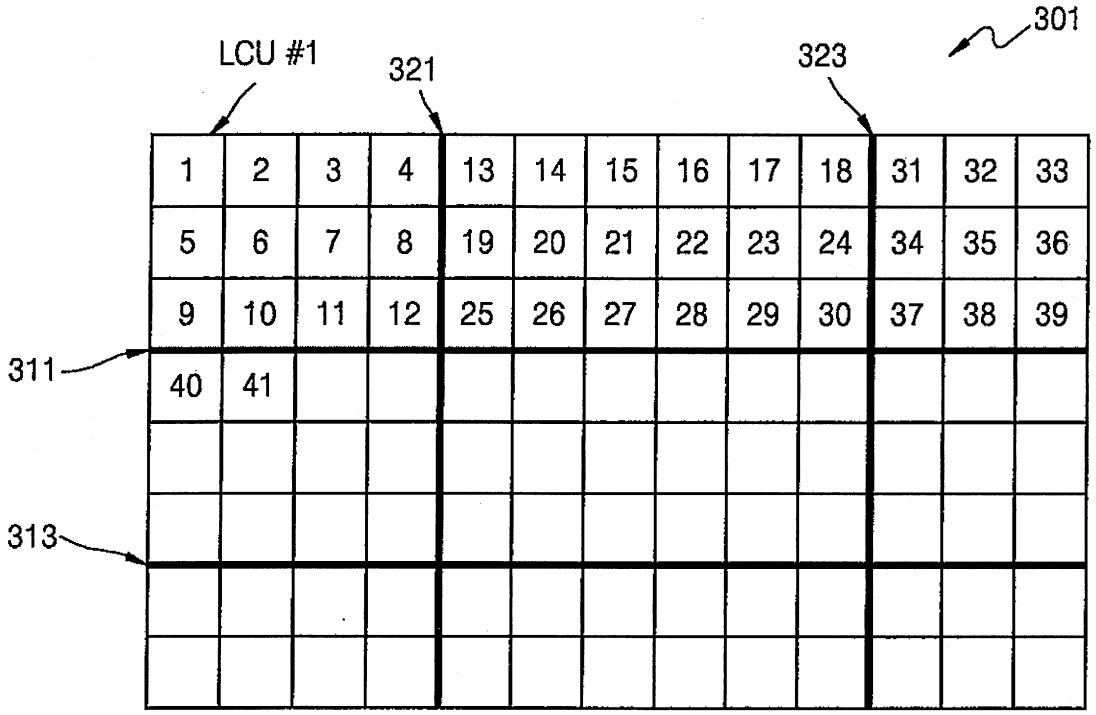

301
LCU #1
321
323
311
313
1 2 3 4 13 14 15 16 17 18 31 32 33
5 6 7 8 19 20 21 22 23 24 34 35 36
9 10 11 12 25 26 27 28 29 30 37 38 39
40 41

FIG. 4

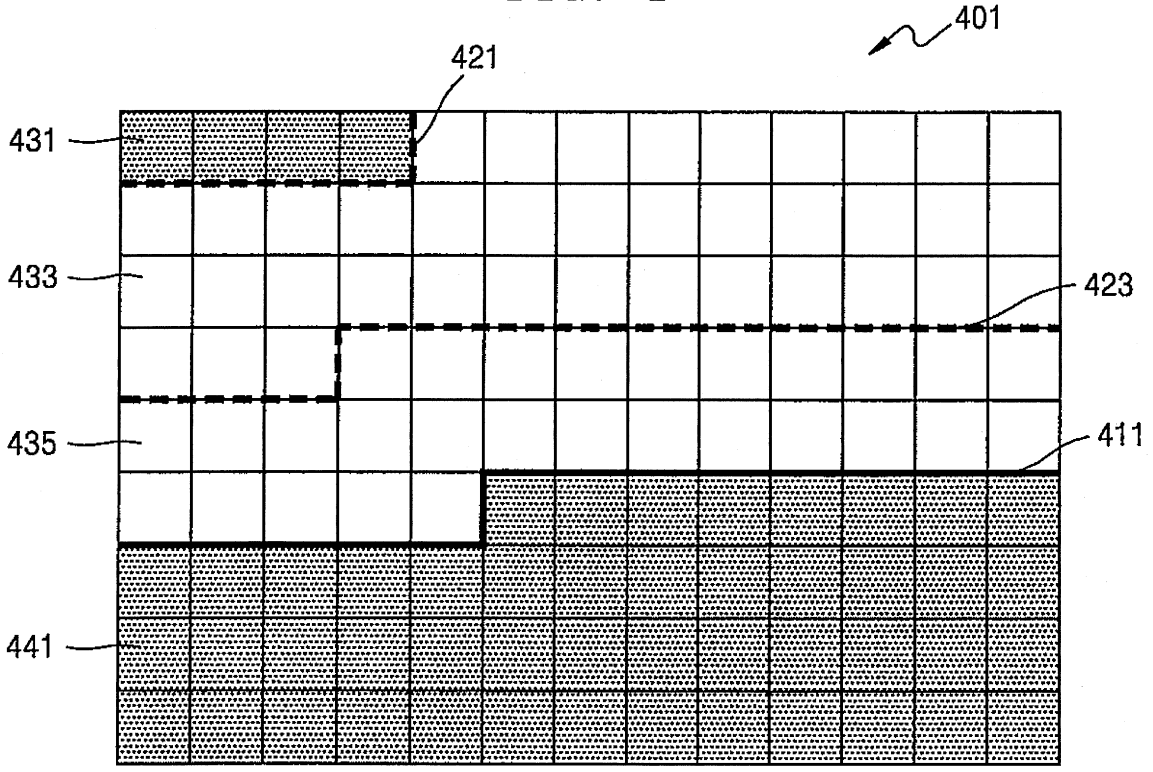

401
421
431
433
435
441
423
411

FIG. 5

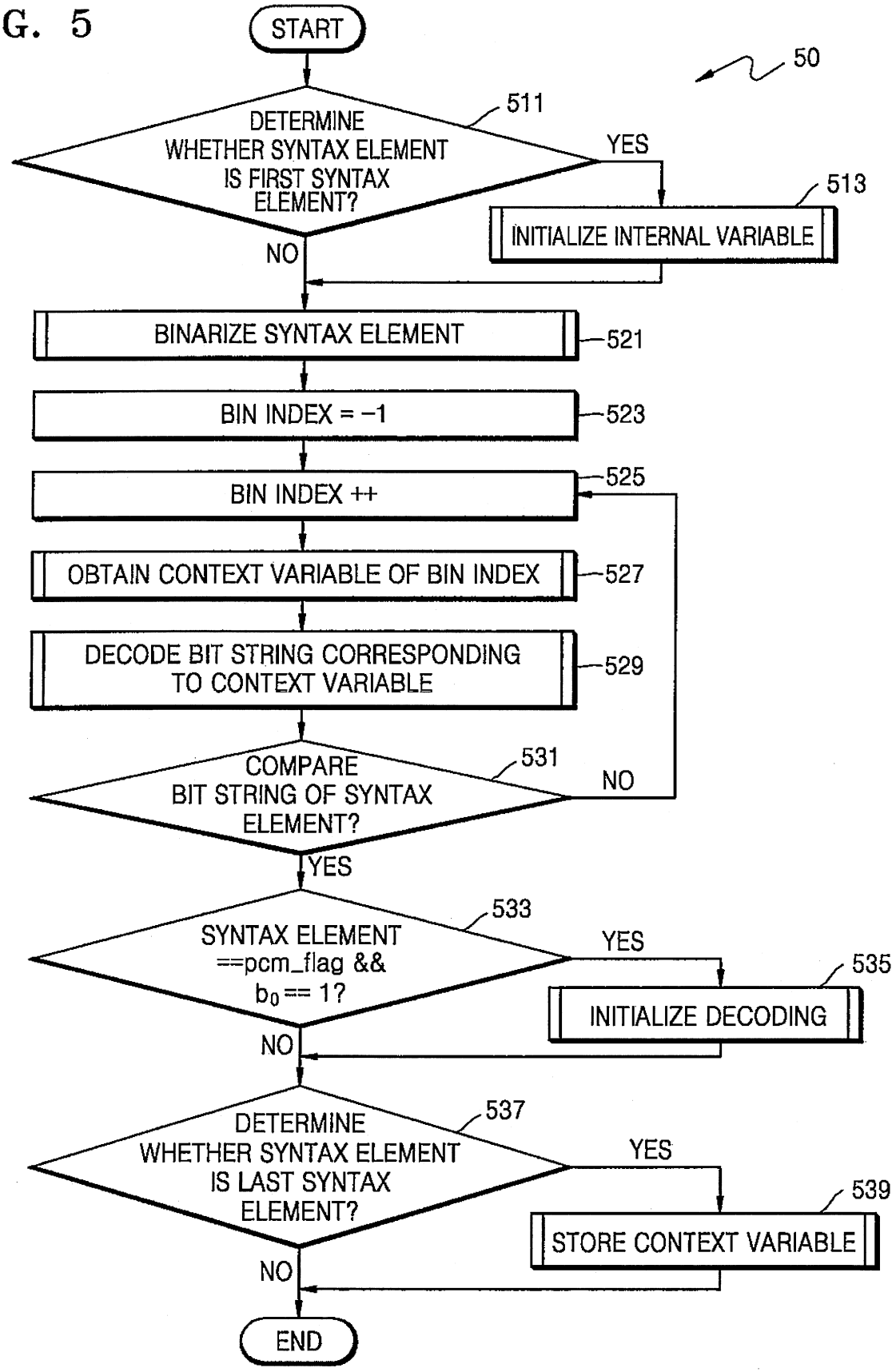

START
50
DETERMINE WHETHER SYNTAX ELEMENT IS FIRST SYNTAX ELEMENT?
511
YES
INITIALIZE INTERNAL VARIABLE
513
NO
BINARIZE SYNTAX ELEMENT
521
BIN INDEX = −1
523
BIN INDEX ++
525
OBTAIN CONTEXT VARIABLE OF BIN INDEX
527
DECODE BIT STRING CORRESPONDING TO CONTEXT VARIABLE
529
COMPARE BIT STRING OF SYNTAX ELEMENT?
531
NO
YES
SYNTAX ELEMENT ==pcm_flag && b_0 == 1?
533
YES
INITIALIZE DECODING
535
NO
DETERMINE WHETHER SYNTAX ELEMENT IS LAST SYNTAX ELEMENT?
537
YES
STORE CONTEXT VARIABLE
539
NO
END

FIG. 6A

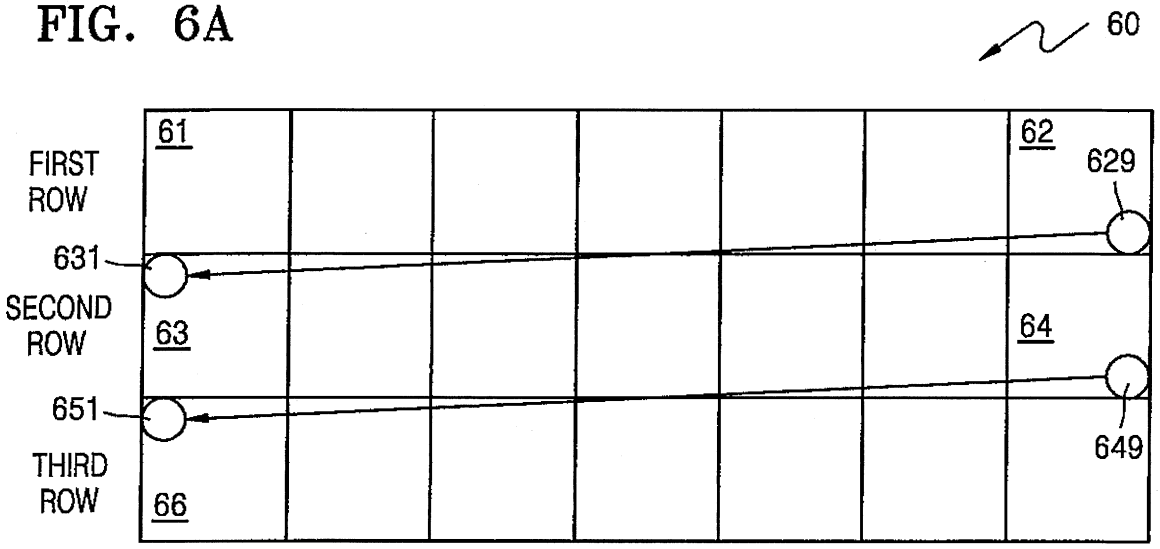

60
61
62
629
FIRST ROW
631
SECOND ROW
63
64
651
649
THIRD ROW
66

FIG. 6B

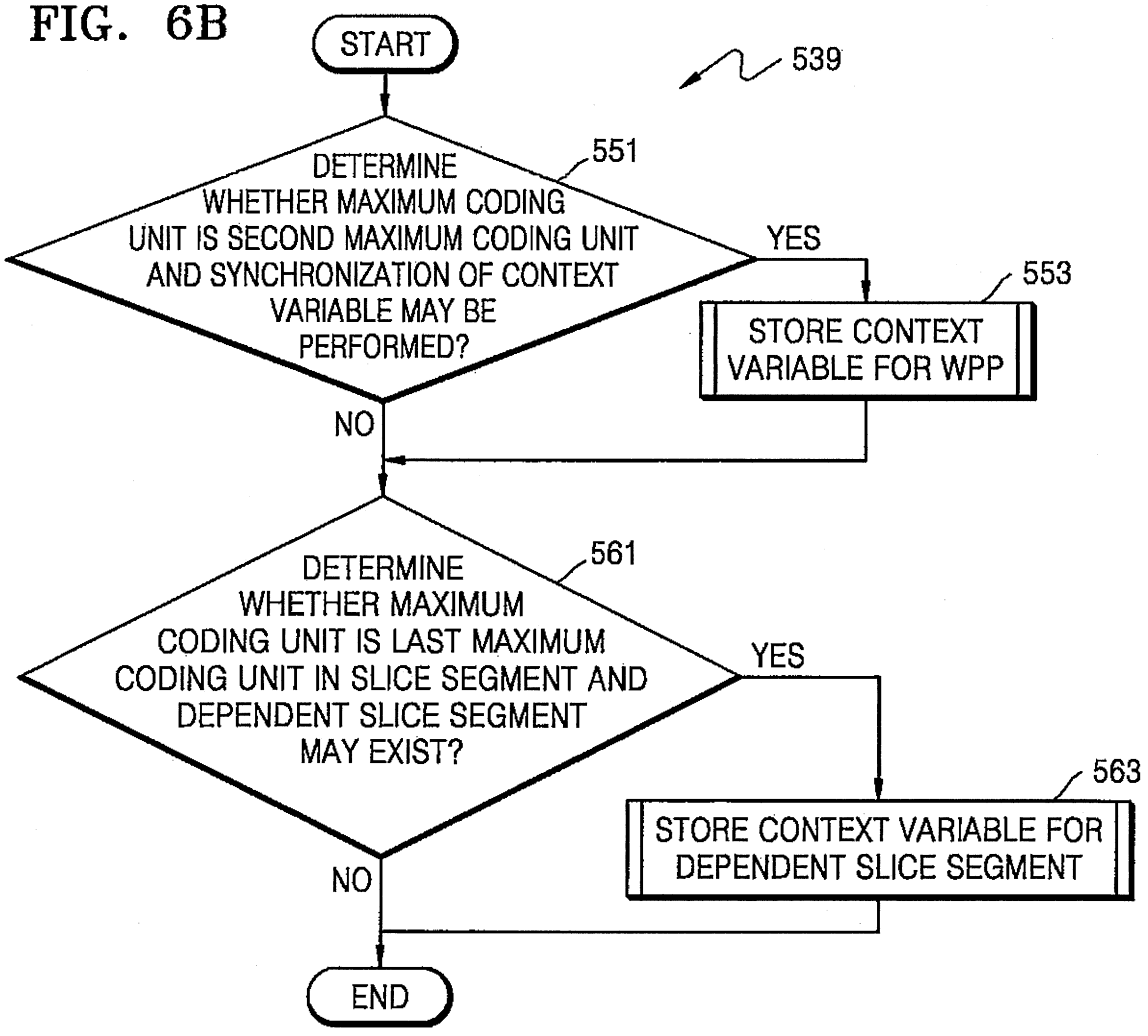

START
539
DETERMINE WHETHER MAXIMUM CODING UNIT IS SECOND MAXIMUM CODING UNIT AND SYNCHRONIZATION OF CONTEXT VARIABLE MAY BE PERFORMED?
551
YES
553
STORE CONTEXT VARIABLE FOR WPP
NO
DETERMINE WHETHER MAXIMUM CODING UNIT IS LAST MAXIMUM CODING UNIT IN SLICE SEGMENT AND DEPENDENT SLICE SEGMENT MAY EXIST?
561
YES
563
STORE CONTEXT VARIABLE FOR DEPENDENT SLICE SEGMENT
NO
END

FIG. 7

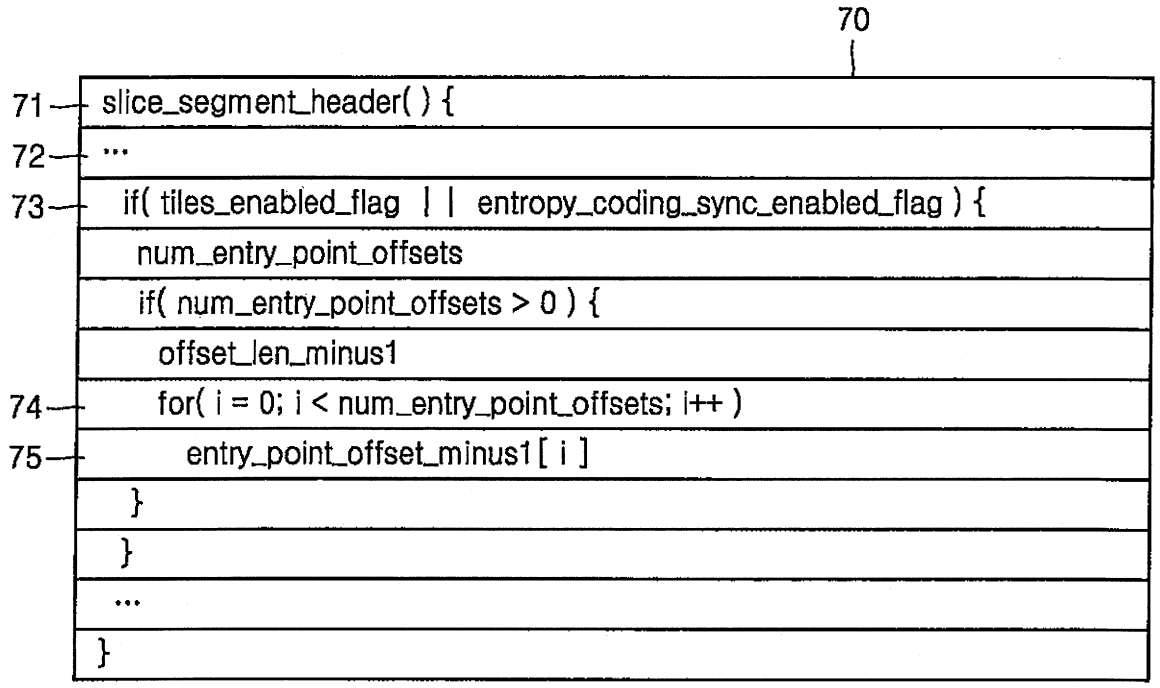

70
71
slice_segment_header( ) {
72
...
73
if(tiles_enabled_flag | | entropy_coding_sync_enabled_flag) {
num_entry_point_offsets
if(num_entry_point_offsets > 0) {
offset_len_minus1
74
for(i = 0; i < num_entry_point_offsets; i++)
75
entry_point_offset_minus1[i]
}
}
...
}

FIG. 8

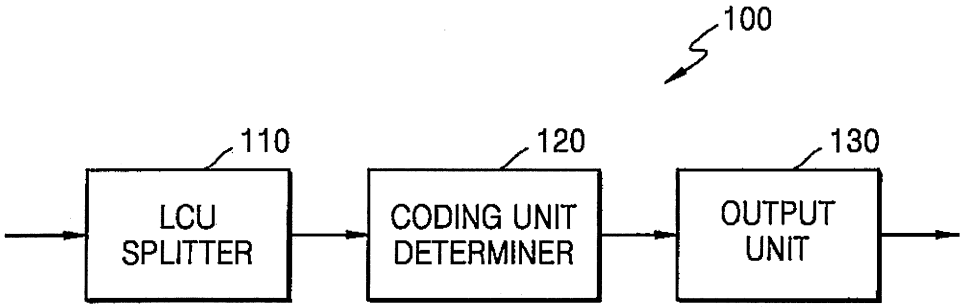

100
110
LCU SPLITTER
120
CODING UNIT DETERMINER
130
OUTPUT UNIT

FIG. 9

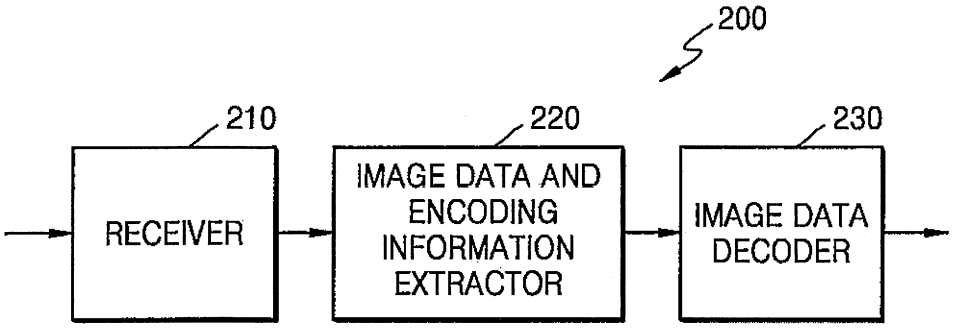

200
210
RECEIVER
220
IMAGE DATA AND ENCODING INFORMATION EXTRACTOR
230
IMAGE DATA DECODER

FIG. 10

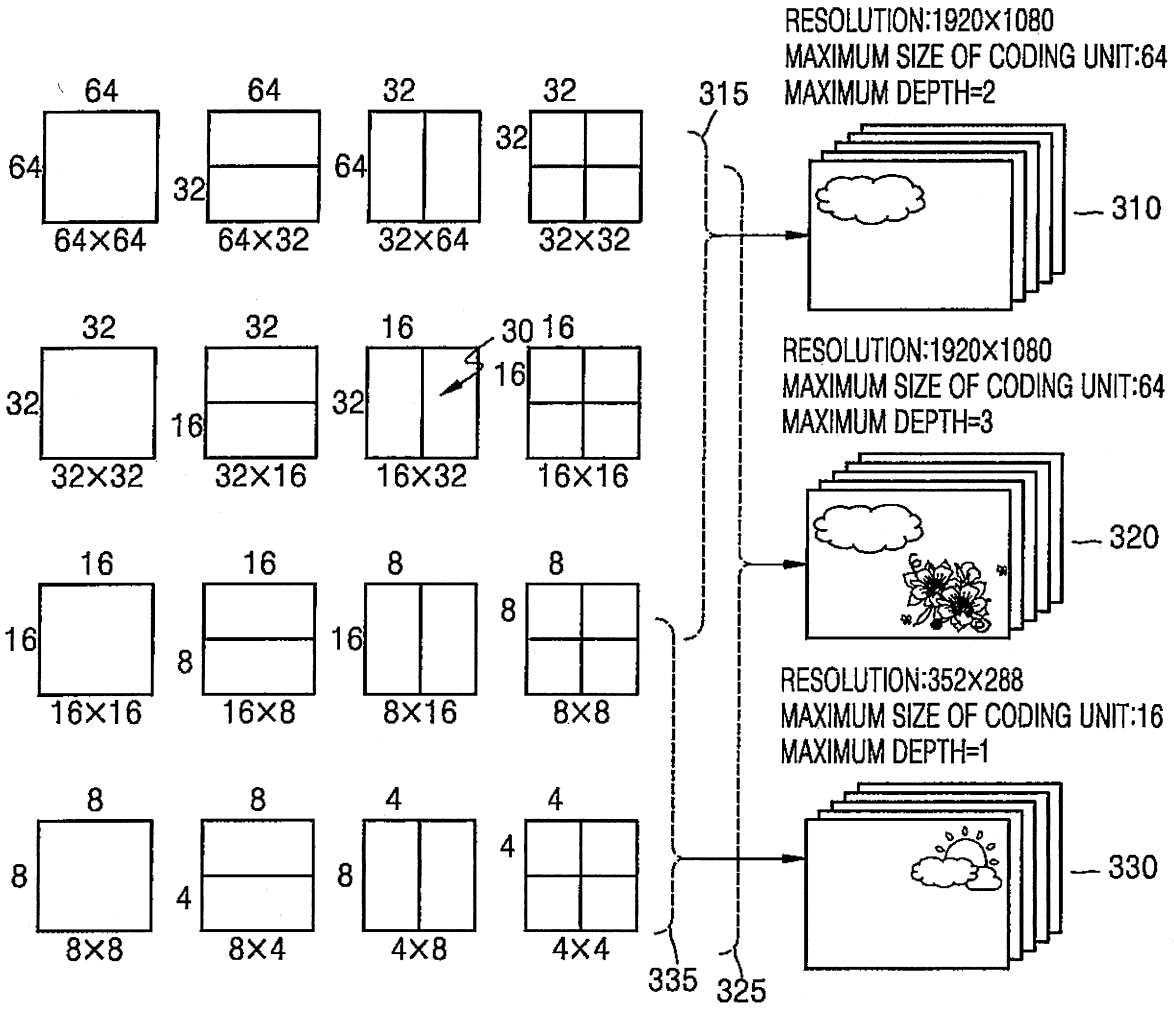

RESOLUTION:1920X1080
MAXIMUM SIZE OF CODING UNIT:64
MAXIMUM DEPTH=2
315
64
64
64X64
64
32
64X32
32
64
32X64
32
32
32X32
310
RESOLUTION:1920X1080
MAXIMUM SIZE OF CODING UNIT:64
MAXIMUM DEPTH=3
32
32
32X32
32
16
32X16
16
32
16X32
30
16
16
16X16
320
RESOLUTION:352X288
MAXIMUM SIZE OF CODING UNIT:16
MAXIMUM DEPTH=1
16
16
16X16
16
8
16X8
8
16
8X16
8
8
8X8
330
8
8
8X8
8
4
8X4
4
8
4X8
4
4
4X4
335
325

FIG. 11

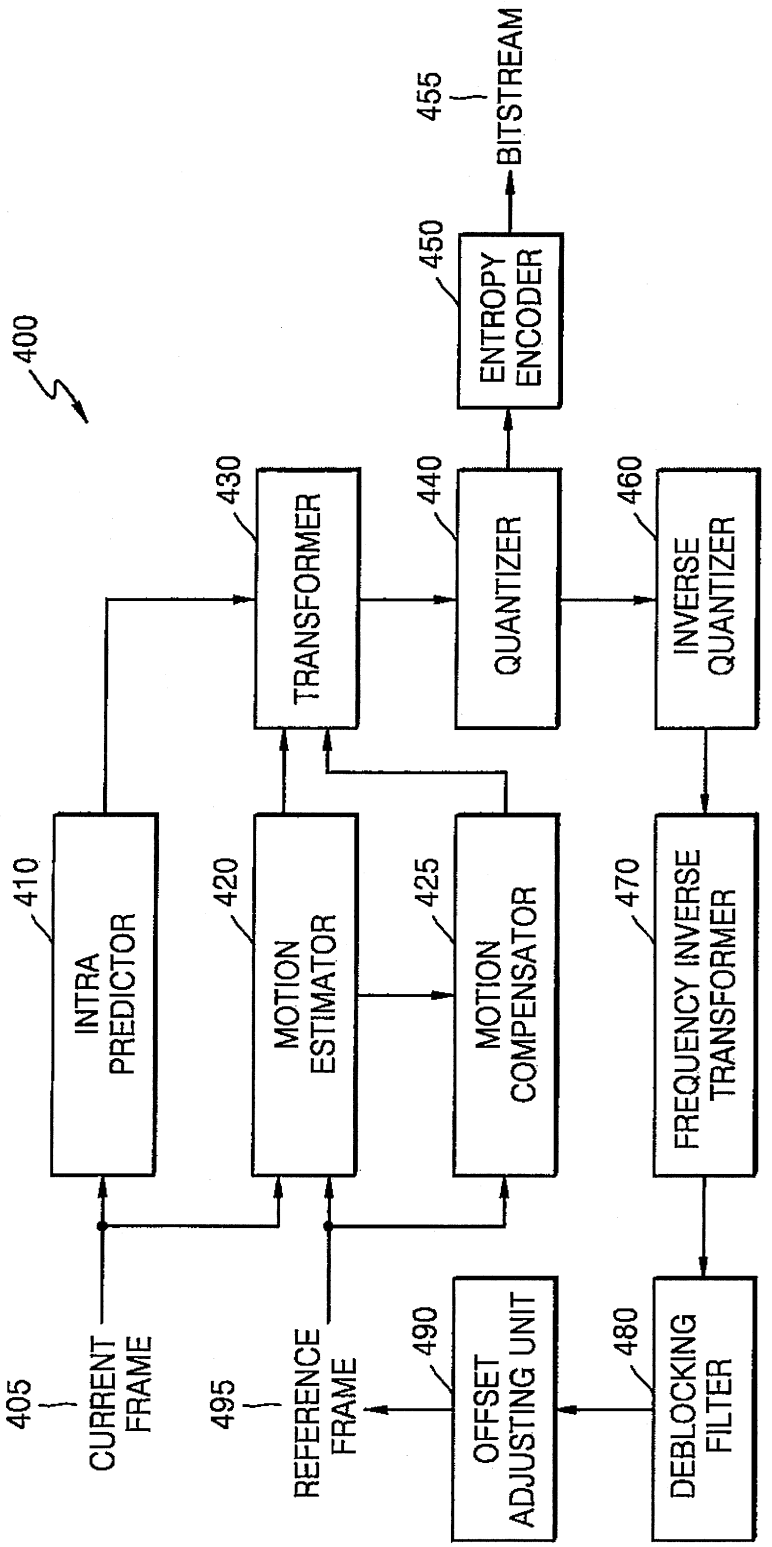

400
405
CURRENT FRAME
410
INTRA PREDICTOR
420
MOTION ESTIMATOR
425
MOTION COMPENSATOR
430
TRANSFORMER
440
QUANTIZER
450
ENTROPY ENCODER
455
BITSTREAM
460
INVERSE QUANTIZER
470
FREQUENCY INVERSE TRANSFORMER
480
DEBLOCKING FILTER
490
OFFSET ADJUSTING UNIT
495
REFERENCE FRAME

FIG. 12

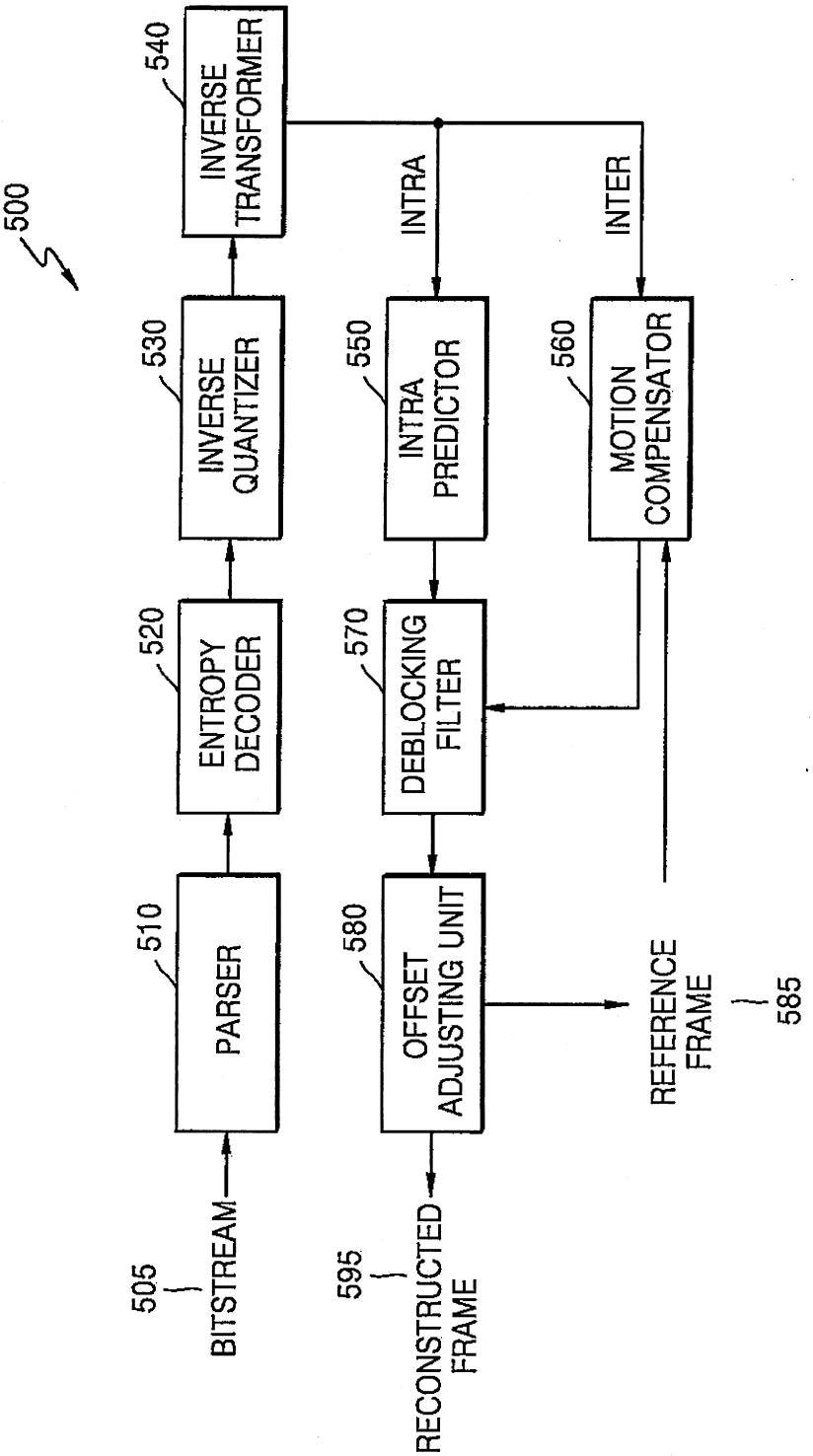

500
505
BITSTREAM
510
PARSER
520
ENTROPY DECODER
530
INVERSE QUANTIZER
540
INVERSE TRANSFORMER
INTRA
550
INTRA PREDICTOR
570
DEBLOCKING FILTER
580
OFFSET ADJUSTING UNIT
595
RECONSTRUCTED FRAME
INTER
560
MOTION COMPENSATOR
585
REFERENCE FRAME

FIG. 13

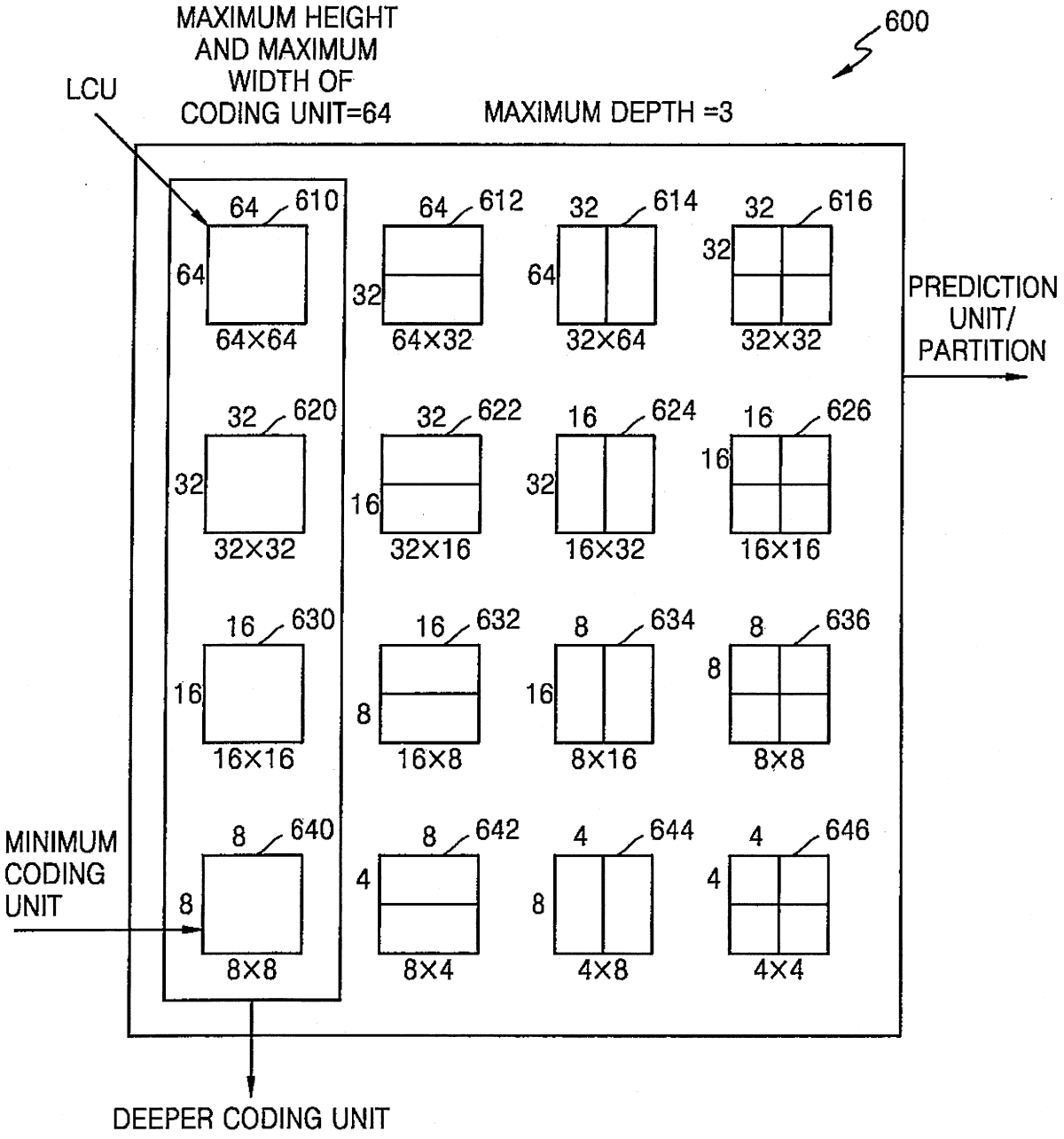

600
MAXIMUM HEIGHT AND MAXIMUM WIDTH OF CODING UNIT=64
MAXIMUM DEPTH =3
LCU
64 610
64
64X64
64 612
32
64X32
32 614
64
32X64
32 616
32
32X32
PREDICTION UNIT/ PARTITION
32 620
32
32X32
32 622
16
32X16
16 624
32
16X32
16 626
16
16X16
16 630
16
16X16
16 632
8
16X8
8 634
16
8X16
8 636
8
8X8
MINIMUM CODING UNIT
8 640
8
8X8
8 642
4
8X4
4 644
8
4X8
4 646
4
4X4
DEEPER CODING UNIT

FIG. 14

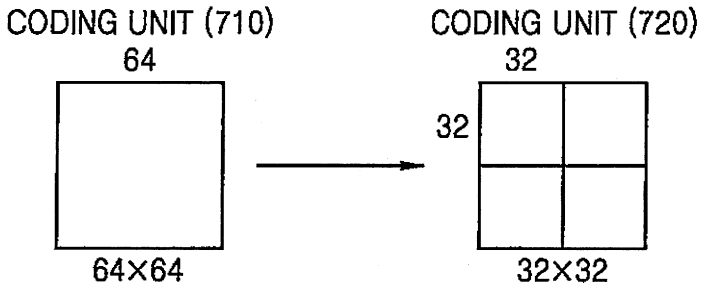

CODING UNIT (710)
64
64×64
CODING UNIT (720)
32
32
32×32

FIG. 15

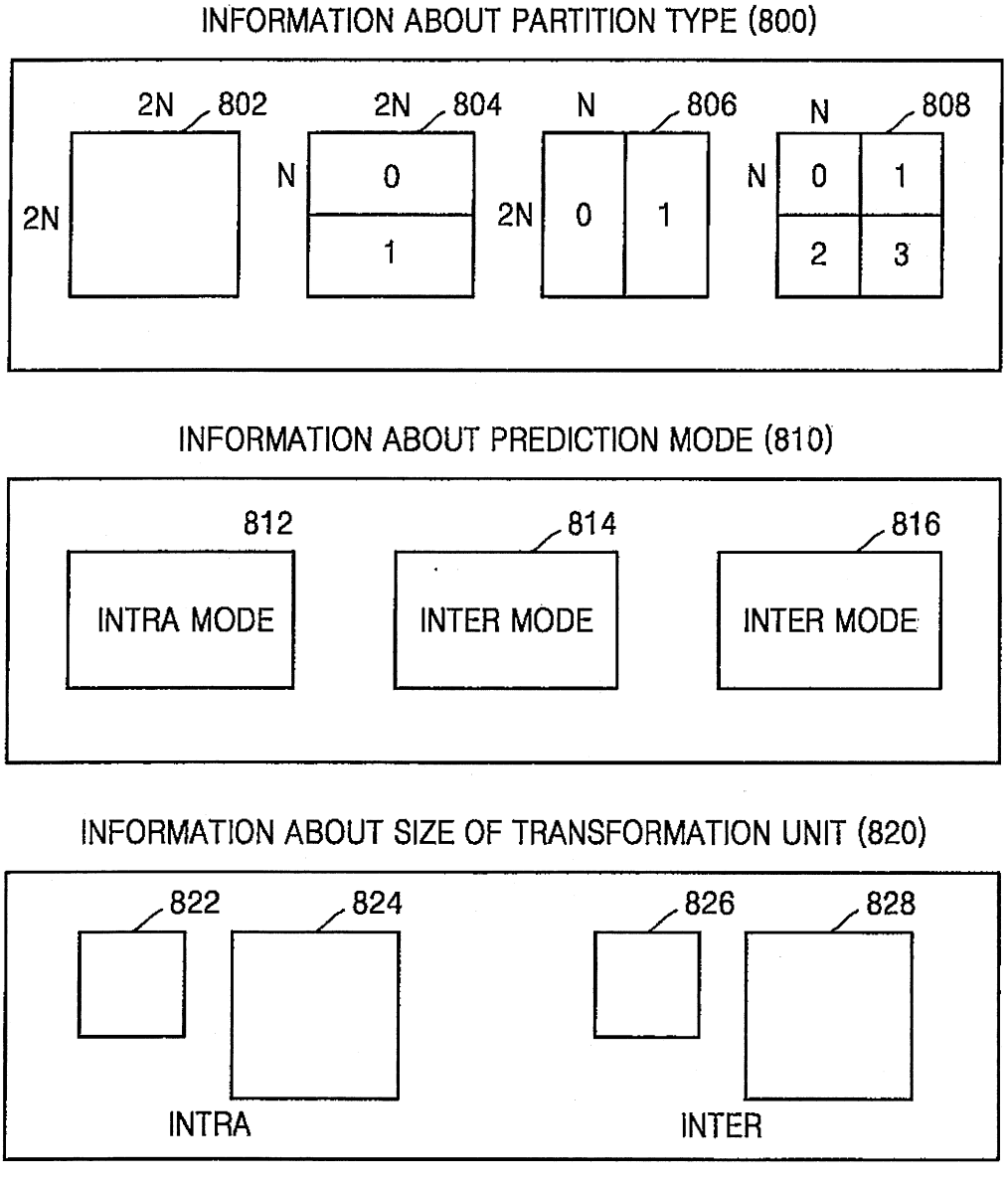

INFORMATION ABOUT PARTITION TYPE (800)
2N
802
2N
2N
804
N
0
1
N
806
2N
0
1
N
808
N
0
1
2
3
INFORMATION ABOUT PREDICTION MODE (810)
812
INTRA MODE
814
INTER MODE
816
INTER MODE
INFORMATION ABOUT SIZE OF TRANSFORMATION UNIT (820)
822
824
826
828
INTRA
INTER

FIG. 16

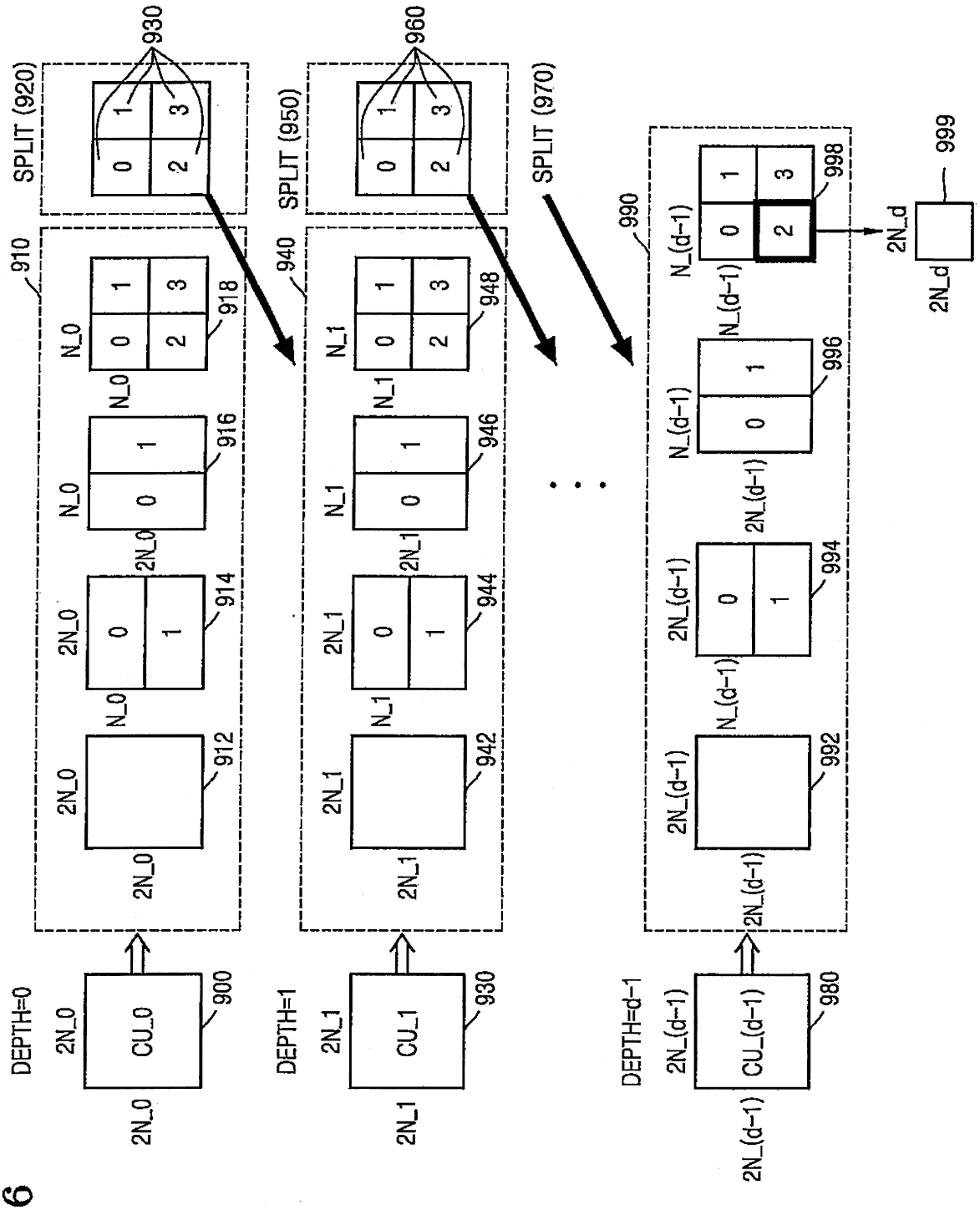
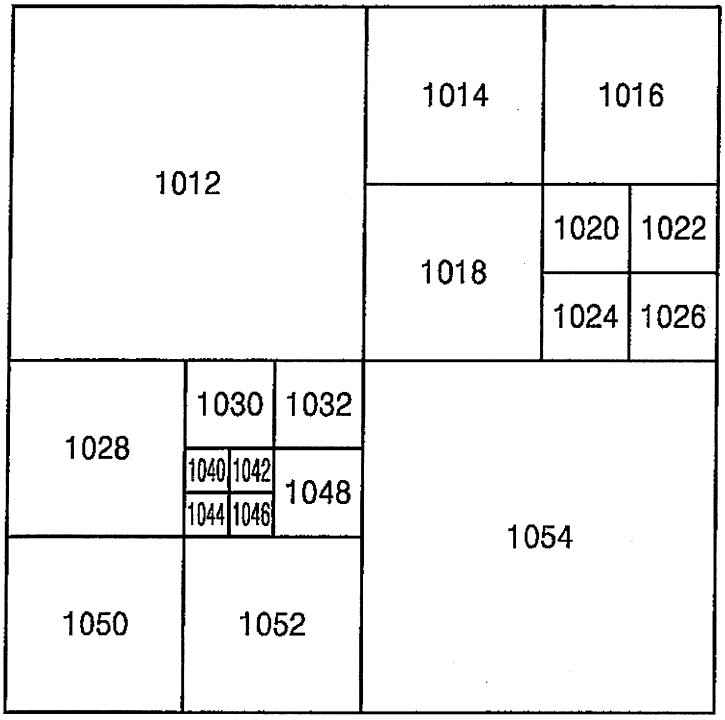

DEPTH=0
DEPTH=1
DEPTH=d-1
SPLIT (920)
SPLIT (950)
SPLIT (970)
CU_0
CU_1
CU_(d-1)
2N_0
2N_1
2N_(d-1)
N_0
N_1
N_(d-1)
2N_d
900
910
912
914
916
918
930
940
942
944
946
948
960
980
990
992
994
996
998
999
0
1
2
3

FIG. 17



CODING UNIT (1010)

FIG. 18

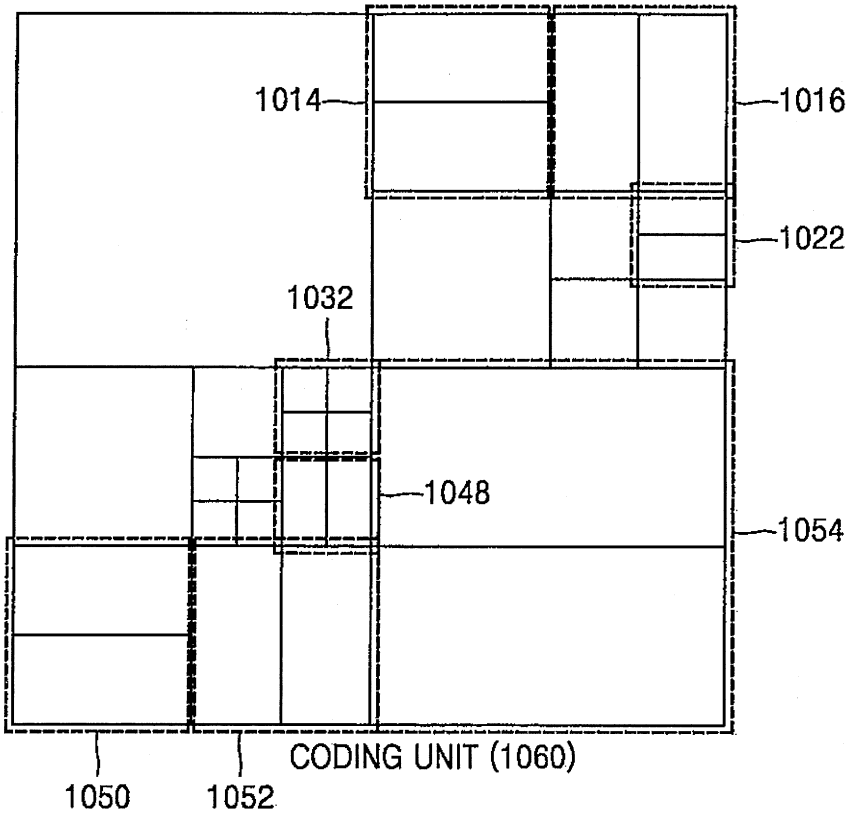


FIG. 19

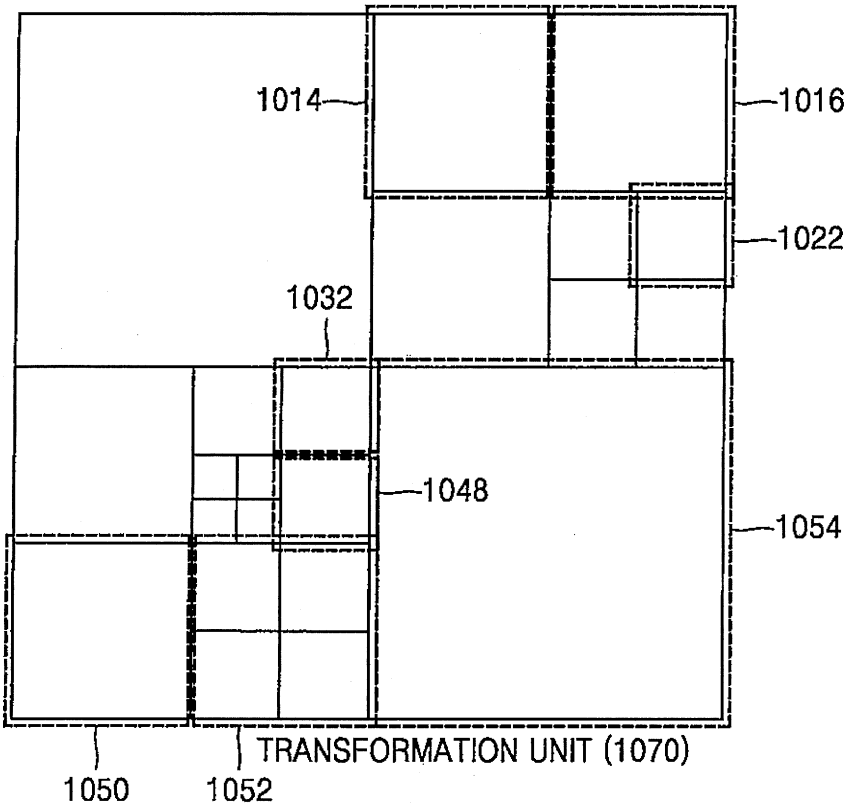

1014
1016
1022
1032
1048
1054
TRANSFORMATION UNIT (1070)
1050
1052

FIG. 20

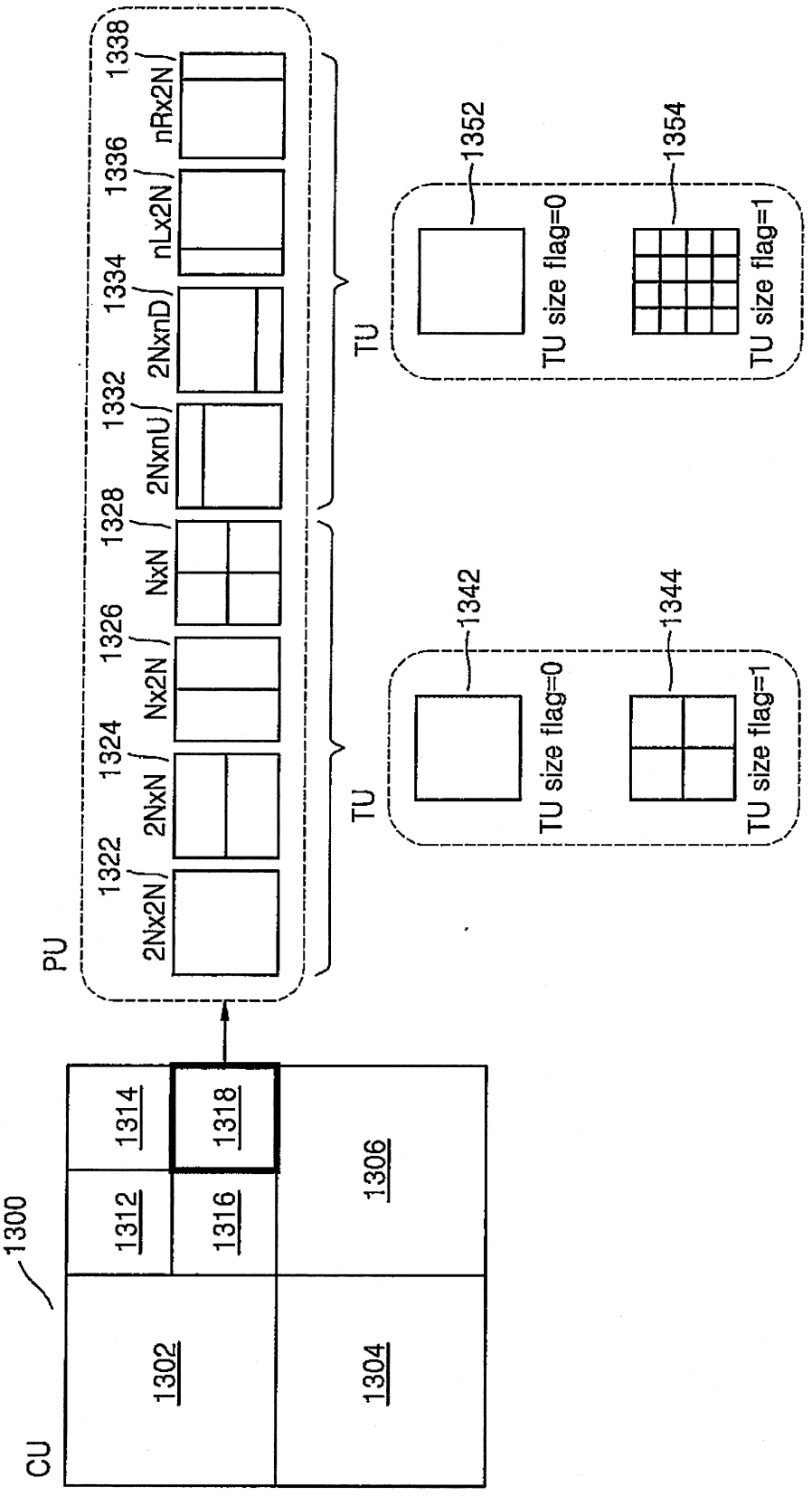

CU
1300
1302
1304
1306
1312
1314
1316
1318
PU
1322
2Nx2N
1324
2NxN
1326
Nx2N
1328
NxN
1332
2NxnU
1334
2NxnD
1336
nLx2N
1338
nRx2N
TU
TU
1342
TU size flag=0
1344
TU size flag=1
1352
TU size flag=0
1354
TU size flag=1

FIG. 21

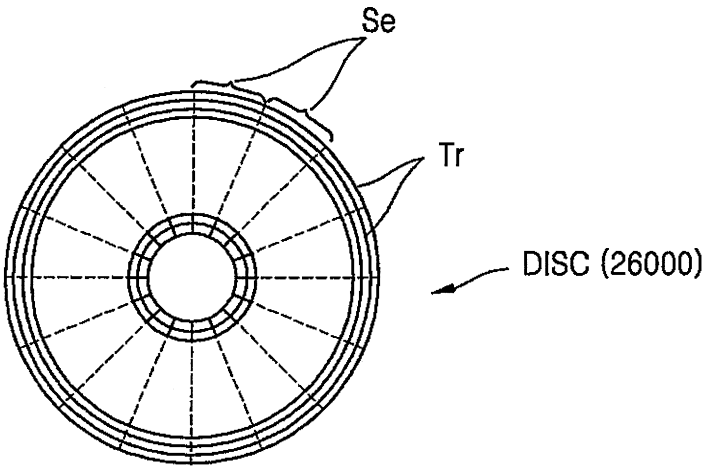


FIG. 22

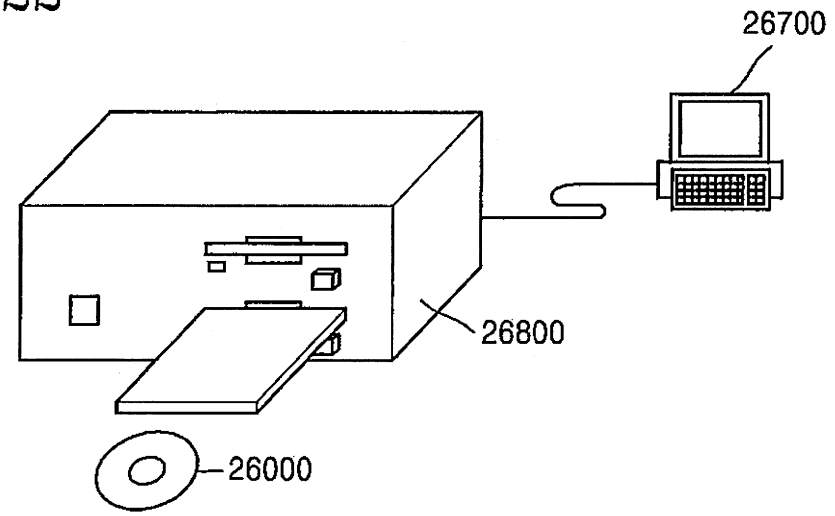


FIG. 23

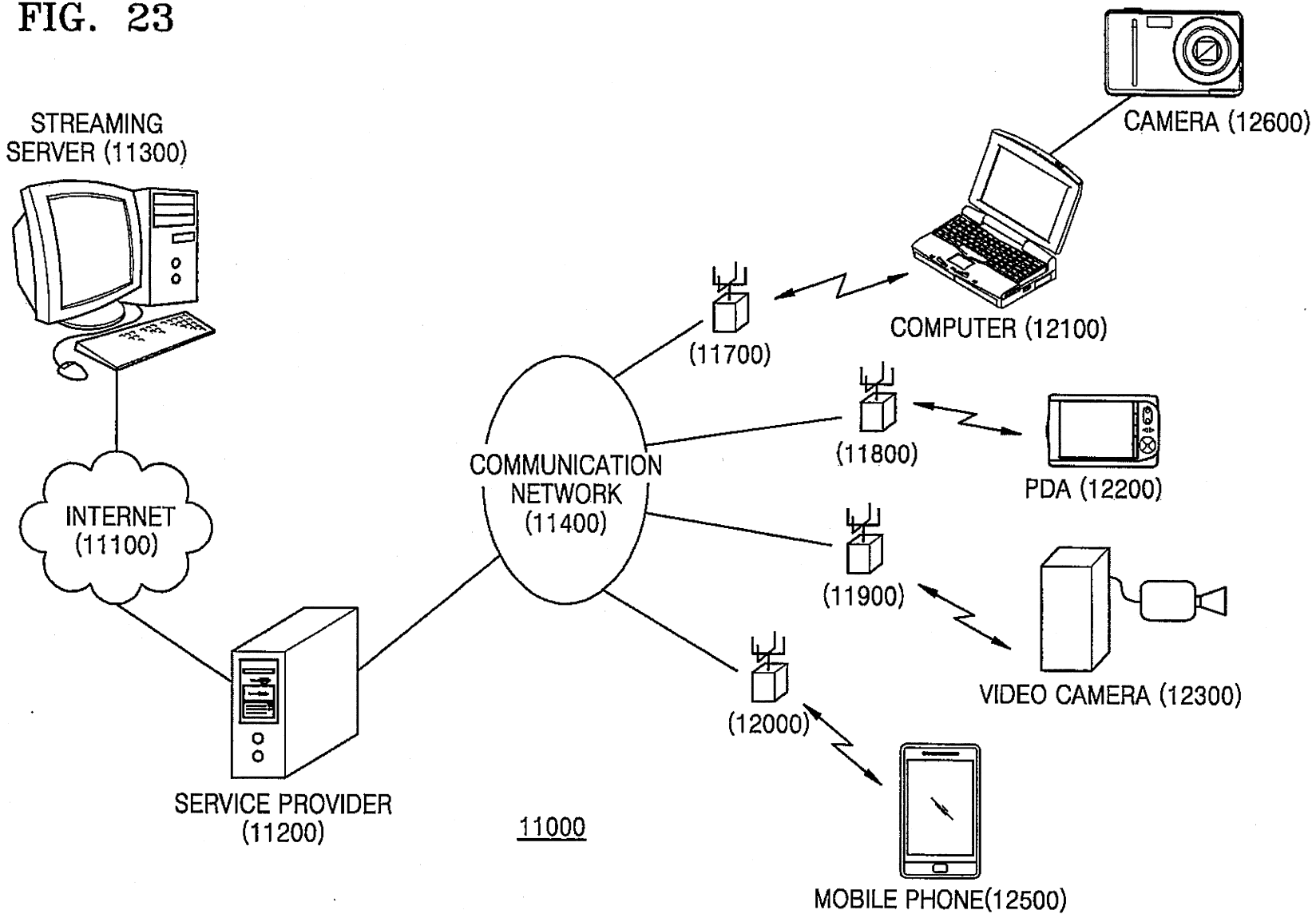

STREAMING SERVER (11300)
CAMERA (12600)
COMPUTER (12100)
(11700)
(11800)
PDA (12200)
COMMUNICATION NETWORK (11400)
INTERNET (11100)
(11900)
VIDEO CAMERA (12300)
(12000)
SERVICE PROVIDER (11200)
11000
MOBILE PHONE(12500)

FIG. 24

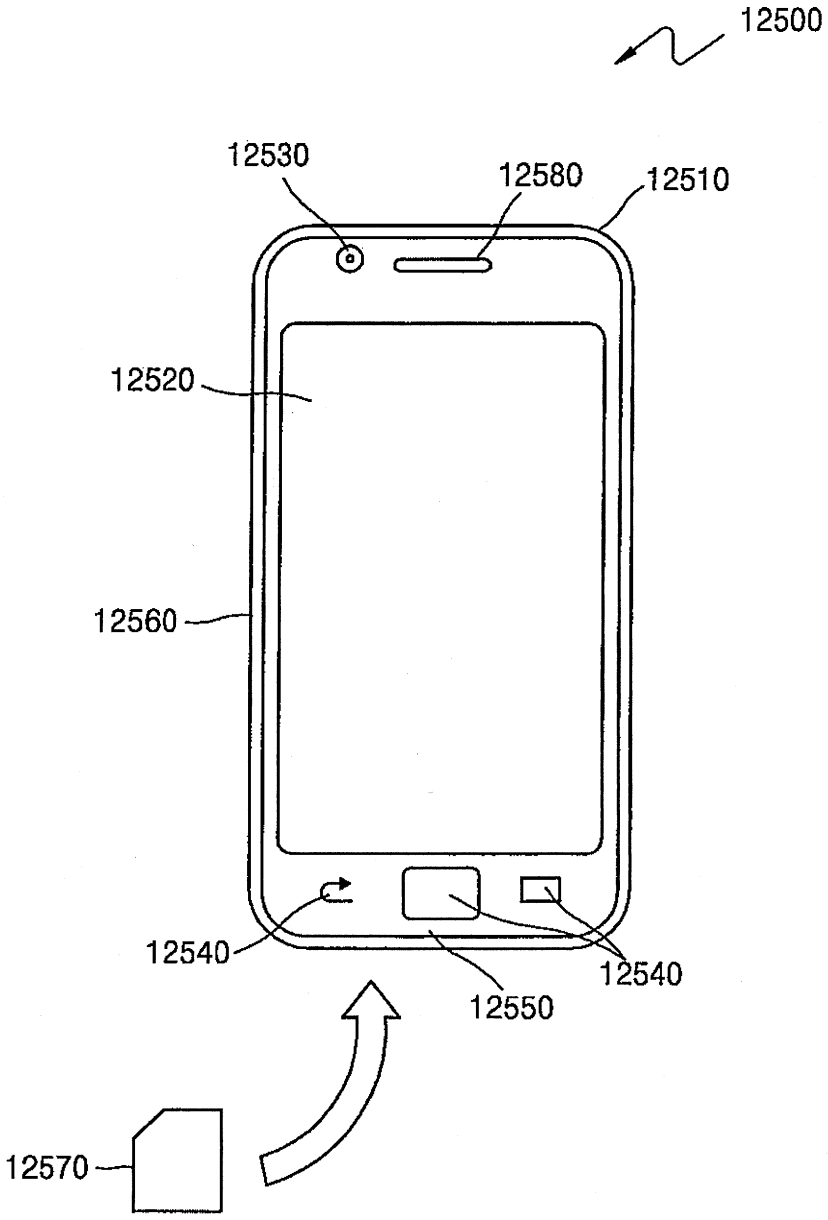

12500
12530
12580
12510
12520
12560
12540
12540
12550
12570

FIG. 25

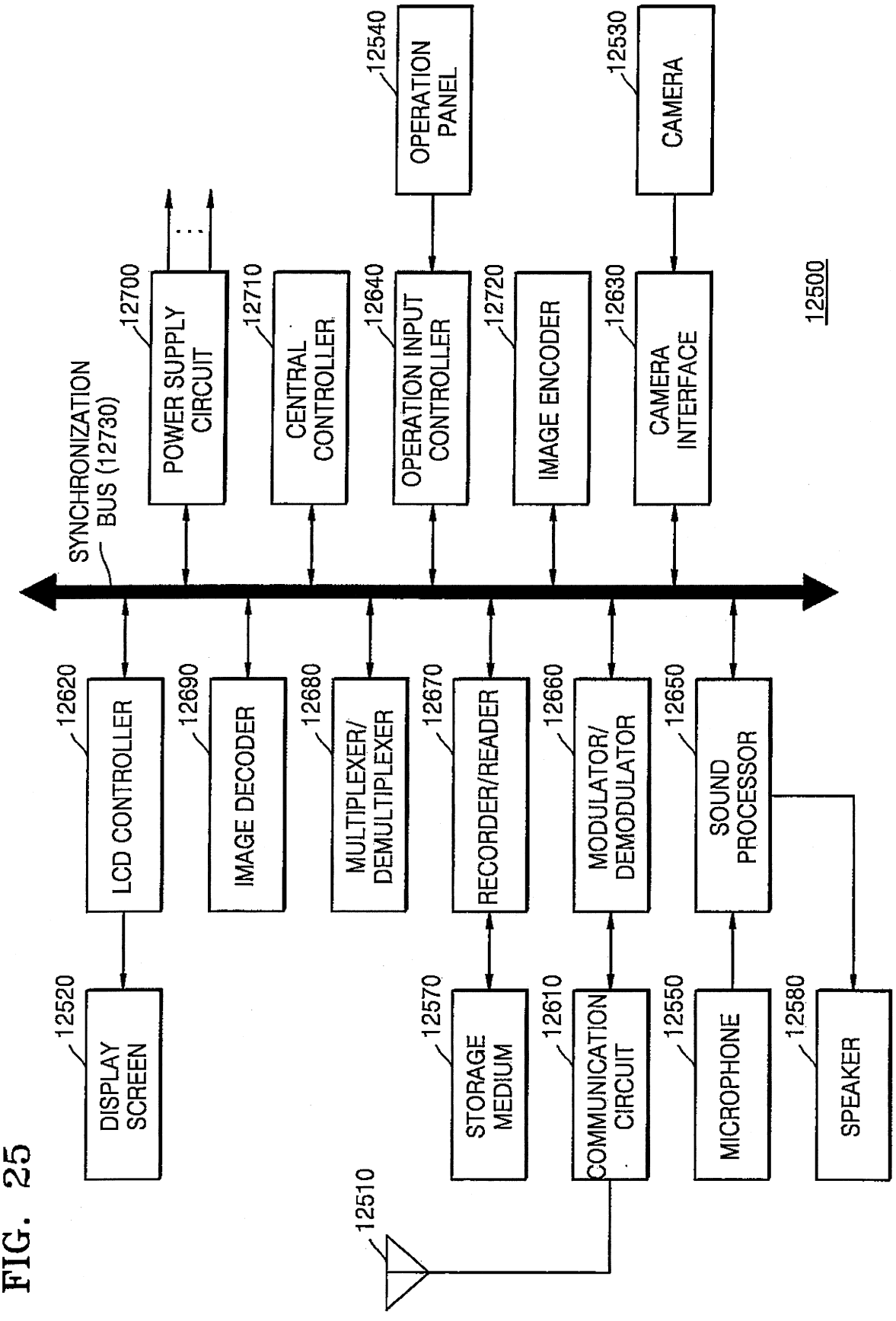

12500
SYNCHRONIZATION BUS (12730)
POWER SUPPLY CIRCUIT
12700
CENTRAL CONTROLLER
12710
OPERATION INPUT CONTROLLER
12640
IMAGE ENCODER
12720
CAMERA INTERFACE
12630
OPERATION PANEL
12540
CAMERA
12530
LCD CONTROLLER
12620
IMAGE DECODER
12690
MULTIPLEXER/ DEMULTIPLEXER
12680
RECORDER/READER
12670
MODULATOR/ DEMODULATOR
12660
SOUND PROCESSOR
12650
DISPLAY SCREEN
12520
STORAGE MEDIUM
12570
COMMUNICATION CIRCUIT
12610
MICROPHONE
12550
SPEAKER
12580
12510

FIG. 26

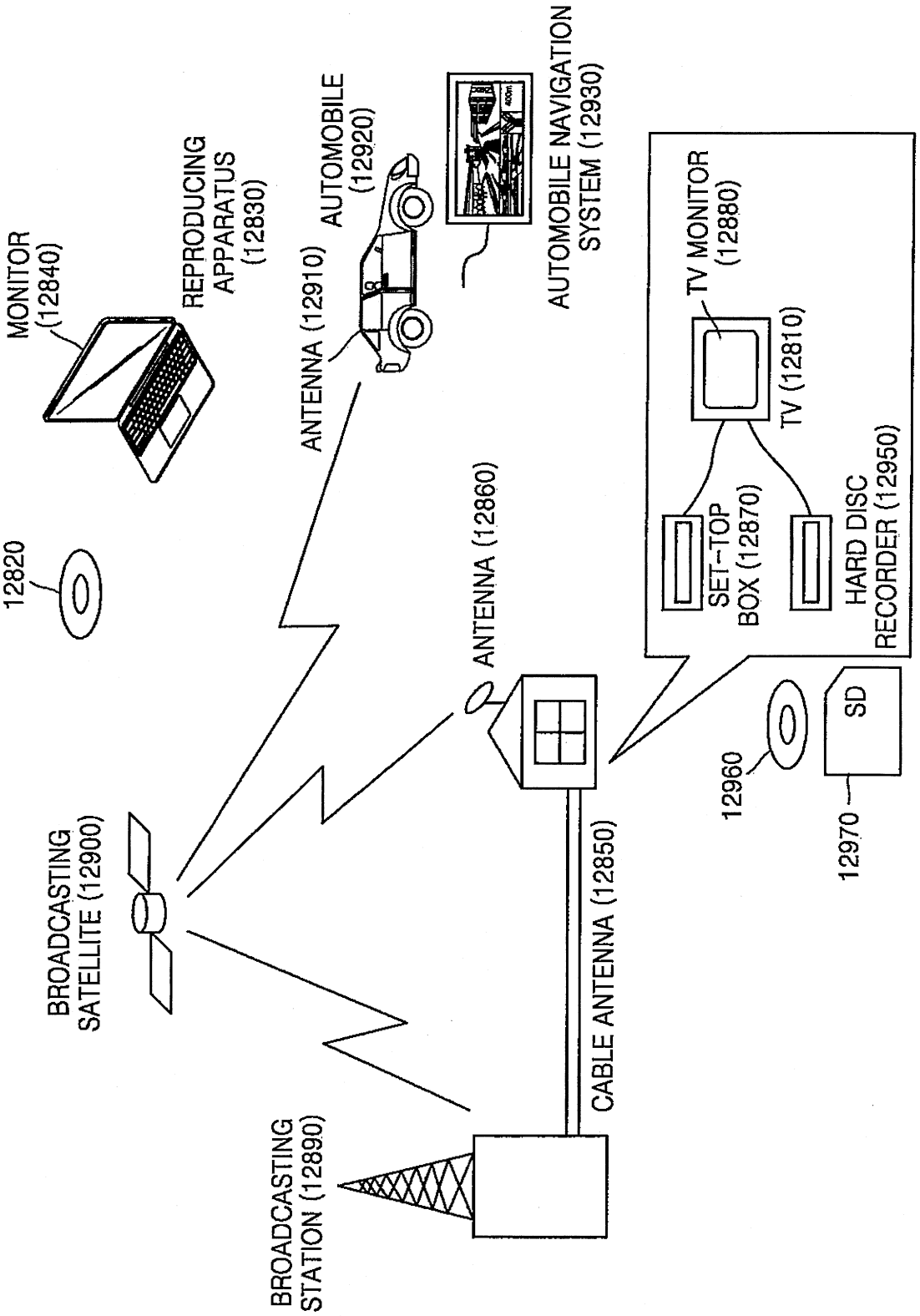
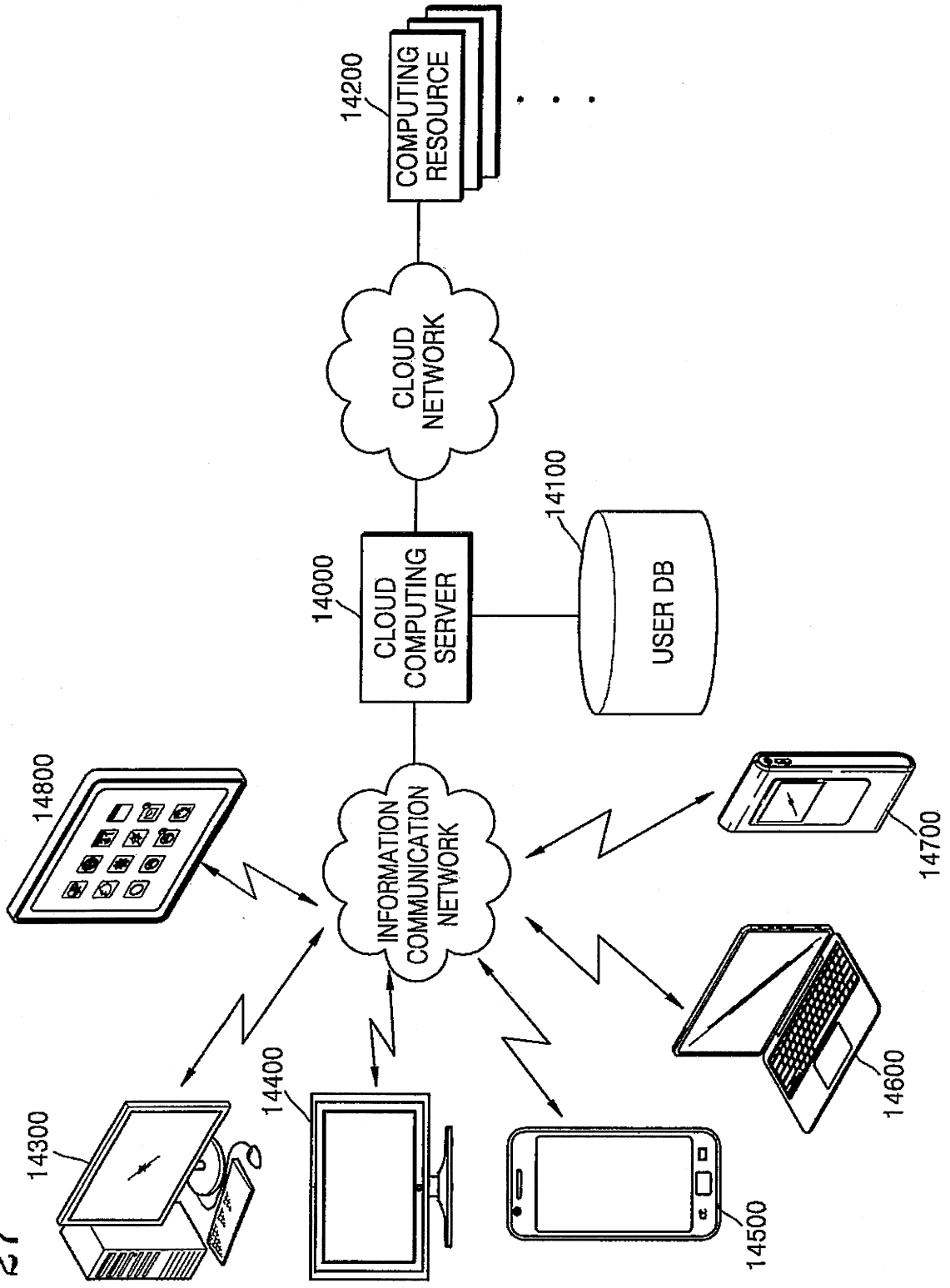

BROADCASTING STATION (12890)
BROADCASTING SATELLITE (12900)
CABLE ANTENNA (12850)
ANTENNA (12860)
ANTENNA (12910)
AUTOMOBILE (12920)
AUTOMOBILE NAVIGATION SYSTEM (12930)
REPRODUCING APPARATUS (12830)
MONITOR (12840)
12820
TV MONITOR (12880)
TV (12810)
SET-TOP BOX (12870)
HARD DISC RECORDER (12950)
12960
SD
12970

FIG. 27


14200
COMPUTING RESOURCE
CLOUD NETWORK
14100
USER DB
14000
CLOUD COMPUTING SERVER
INFORMATION COMMUNICATION NETWORK
14800
14700
14600
14400
14300
14500