

FIG. 1

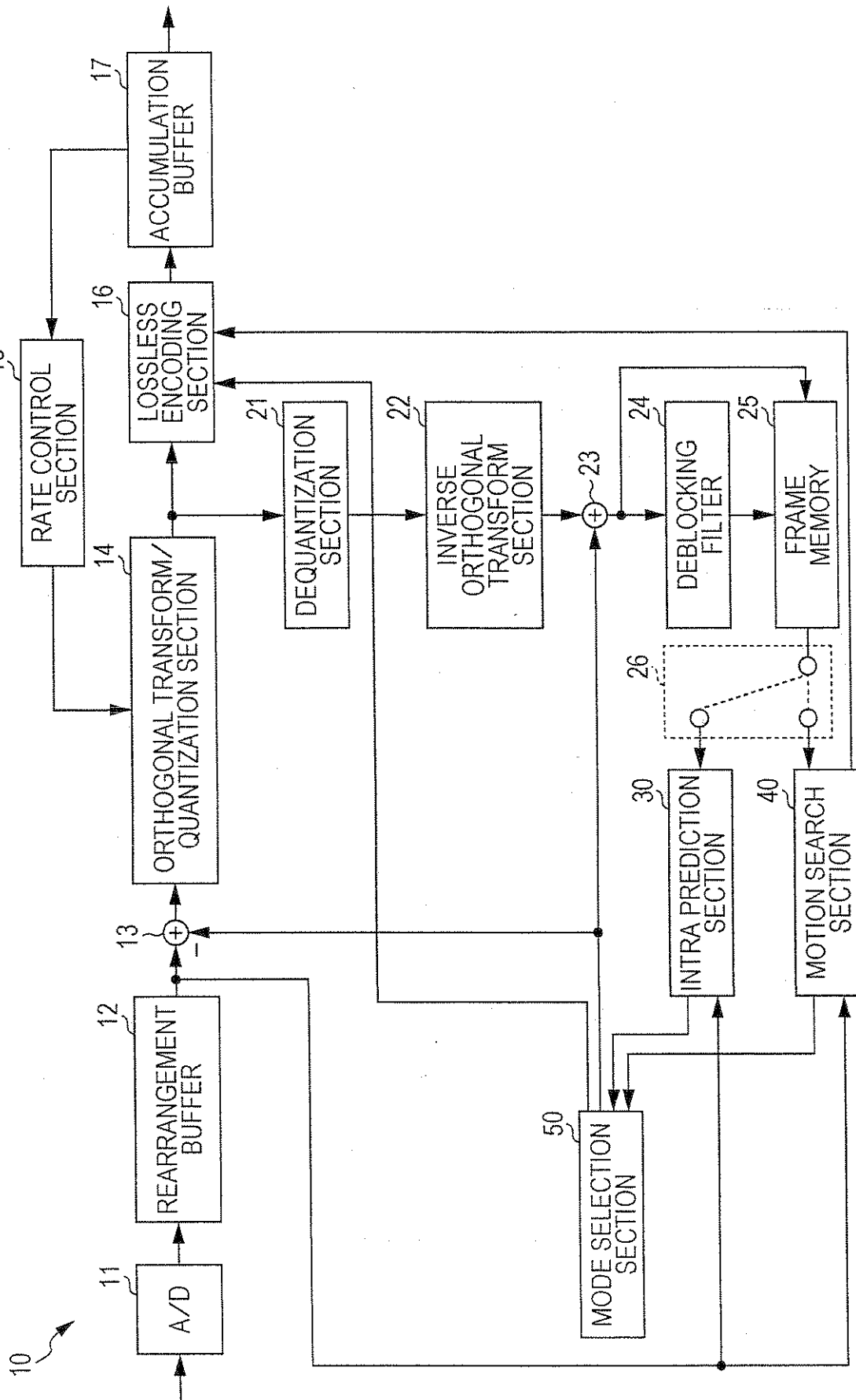


FIG. 2

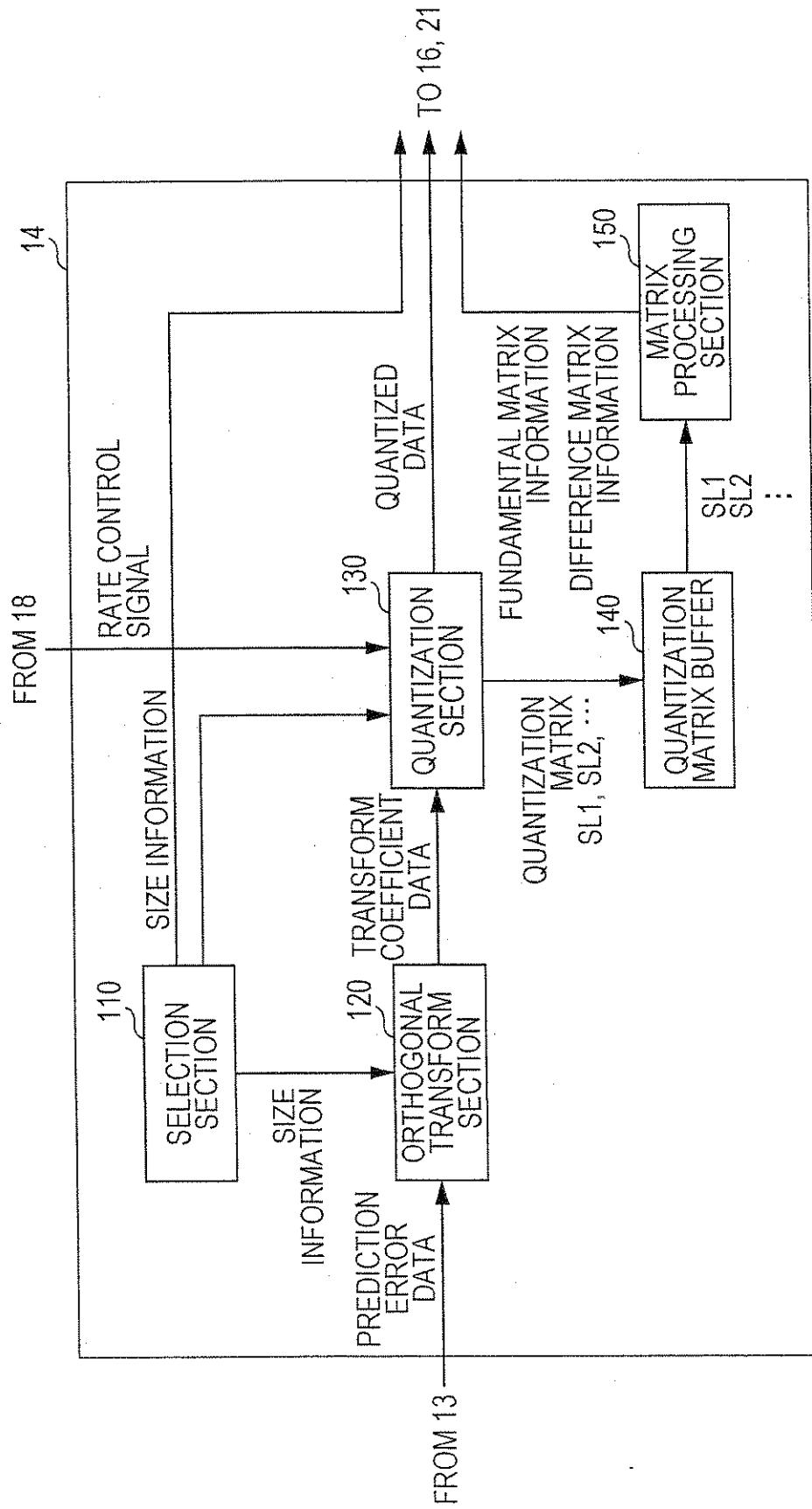


FIG. 3

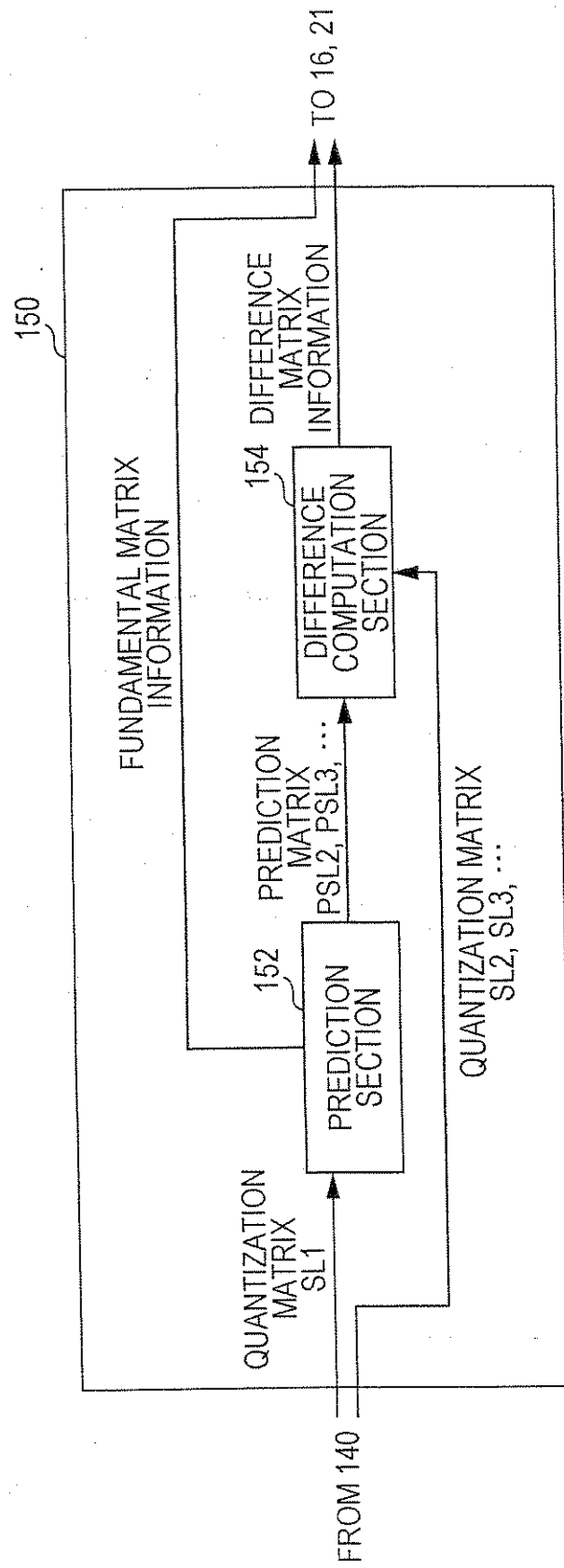


FIG. 4

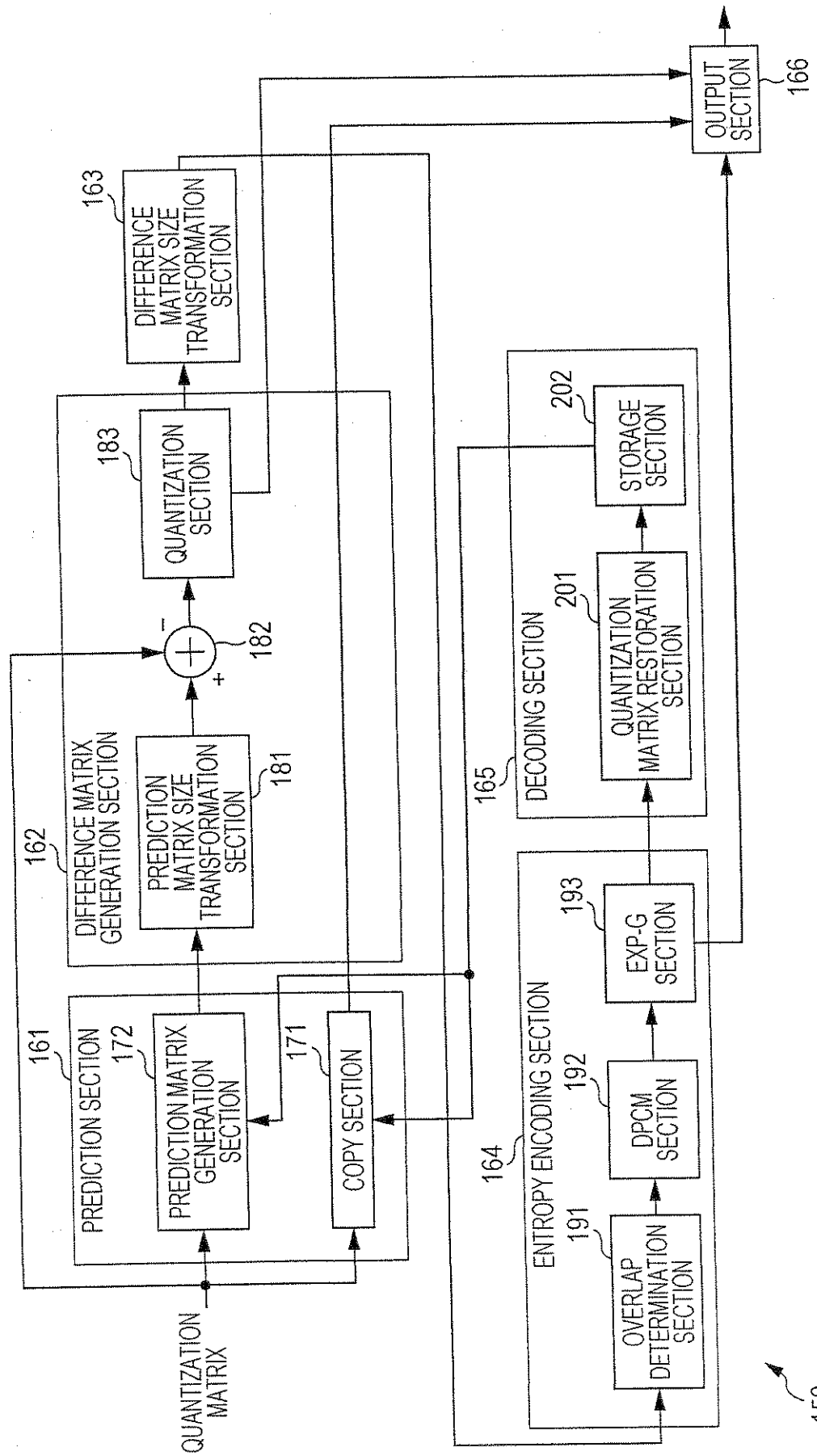


FIG. 5

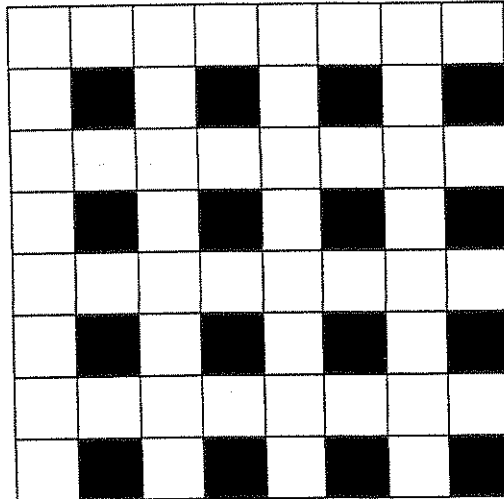


FIG. 6

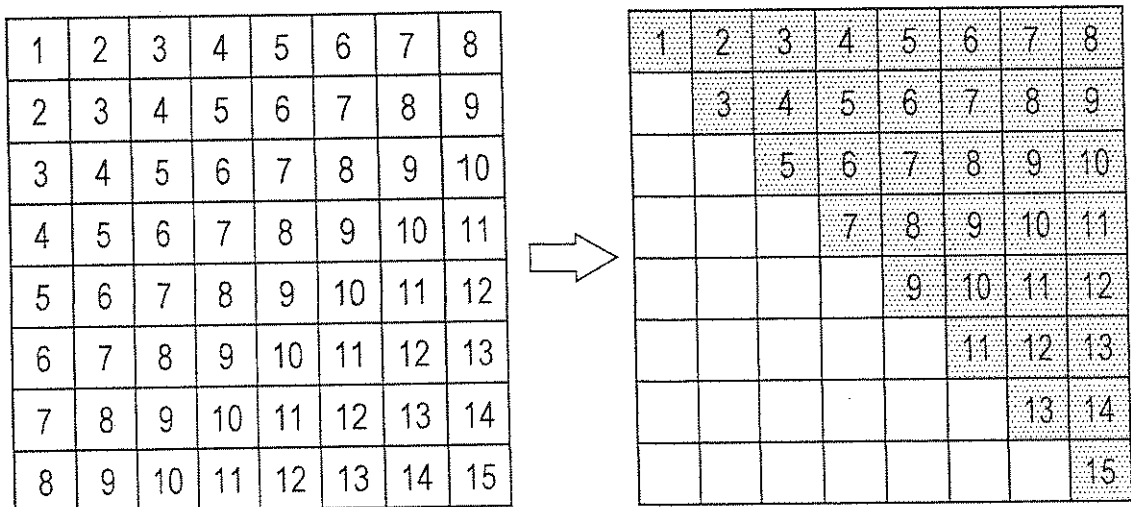


FIG. 7

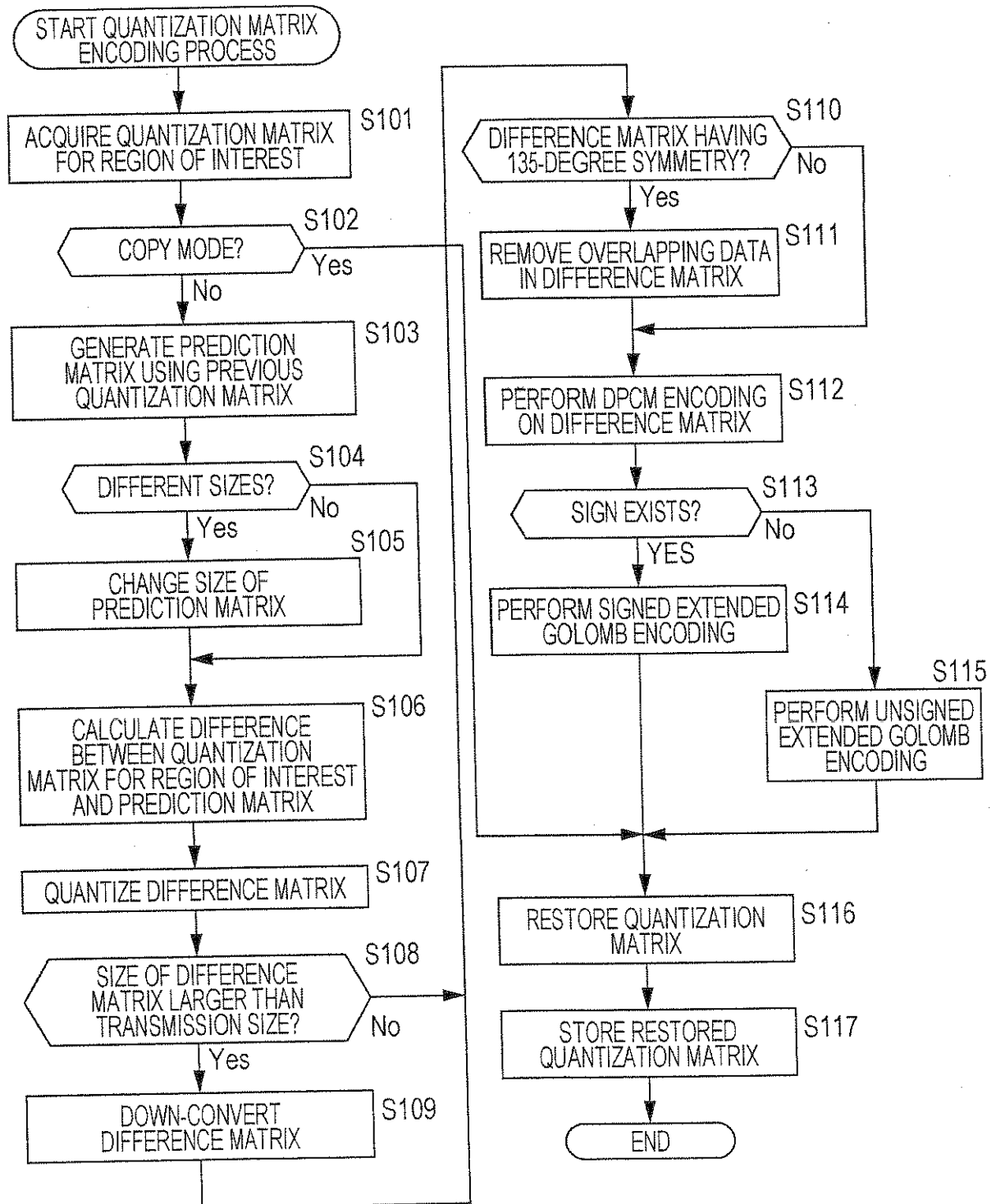


FIG. 8

	Descriptor
Qscale0: QUANTIZATION VALUE FOR REGION 0	ue (v)
Qscale1: QUANTIZATION VALUE FOR REGION 1	ue (v)
Qscale2: QUANTIZATION VALUE FOR REGION 2	ue (v)
Qscale3: QUANTIZATION VALUE FOR REGION 3	ue (v)
for (SizeID = 0; SizeID < 4; SizeID++) {	
for (MatrixID = 0; MatrixID < (SizeID == 3) ? 2 : 6; MatrixID++) {	
pred_mode: PREDICTION MODE FOR MATRIX	ue (v)
if (pred_mode == 0) { // Copy	
pred_matrix_id_delta: USED FOR PREDICTION OF MatrixID. pred_matrix_id = MatrixID - (pred_matrix_id_delta + 1);	ue (v)
} else if (pred_mode == 1) { // Pred of arbitrary size	
pred_matrix_id_delta: USED FOR PREDICTION OF MatrixID. pred_matrix_id = MatrixID + pred_matrix_id_delta;	se (v)
pred_size_id_delta: USED FOR PREDICTION OF MatrixID. pred_size_id = SizeID + pred_size_id_delta;	se (v)
residual_flag: WHETHER OR NOT RESIDUAL SIGNAL EXISTS?	u (1)
if (residual_flag) {	
residual_down_sampling_flag: WHETHER OR NOT RESIDUAL SIGNAL IS SUBJECTED TO DOWNSAMPLING?	u (1)
residual_symmetry_flag: WHETHER OR NOT RESIDUAL SIGNAL IS A 135-DEGREE SYMMETRIC MATRIX?	u (1)
scaling_list_residual(ScalingListResidual[SizeID][MatrixID], residual_symmetry_flag, (1 << (4 + (SizeID << 1))))	
}	
}	
}	
}	

FIG. 9

PARAMETER NAME	DESCRIPTION
QMPS ID	IDENTIFIER FOR IDENTIFYING QMPSs FROM EACH OTHER
GENERATION MODE PRESENCE FLAG	FLAG INDICATING WHETHER GENERATION MODE SEGMENT (pred_mode) IS PRESENT
GENERATION MODE <pred_mode>	SEGMENTS INDICATING MODES OF QUANTIZATION MATRIX GENERATION PROCESS e.g.) 0: COPY, 1: SPECIFYING OF AXIS, 2: FULL-SCAN
IN COPY MODE (pred_mode = '0')	
SOURCE ID	QMPS ID SPECIFYING QMPS OF COPY SOURCE * IF A SPECIFIED MATRIX IS USED, SELF ID IS SPECIFIED
COPY SOURCE SIZE	SIZE OF QUANTIZATION MATRIX OF COPY SOURCE
COPY SOURCE TYPE	TYPE OF QUANTIZATION MATRIX OF COPY SOURCE
RESIDUAL FLAG	FLAG INDICATING PRESENCE OF RESIDUE
RESIDUAL DATA	DATA FOR GENERATING RESIDUAL MATRIX
IN FULL-SCAN MODE (pred_mode = '1')	
DIFFERENCE DATA	LINEAR ARRAY OF DIFFERENCE VALUES CALCULATED USING DPCM METHOD FOR EACH ELEMENT IN QUANTIZATION MATRIX

QUANTIZATION MATRIX PARAMETER SET

FIG. 10

```

01 | QuantizaionMatrixParameterSet(){
02 |   quantizaion_matrix_parameter_id    ...QMPS ID
03 |   pred_present_flag                  ...GENERATION MODE PRESENCE FLAG
04 |   for(j=0;j < Sizeidc;i++){           //LOOP FOR EACH SIZE//
05 |     for(j=0;j < 6;j++){               //LOOP FOR EACH TYPE//
06 |       if(pred_present_flag){
07 |         pred_mode                    ...GENERATION MODE
08 |         if(pred_mode == 0){           //COPY MODE//
09 |           pred_qmps_id                ...SOURCE ID
10 |           pred_size_idc              ...COPY SOURCE SIZE
11 |           pred_matrix_id            ...COPY SOURCE TYPE
12 |           pred_matrix(j,i,pred_qmps_id,pred_size_idc,pred_matrix_id)
13 |                                     //COPY//
14 |           residual_flag              ...RESIDUAL FLAG
15 |           if(residual_flag){
16 |             residual_matrix(i)        //ADD RESIDUES//
17 |           }else if(pred_mode == 1)    //FULL-SCAN MODE//
18 |             qmatrix(i,j)
19 |           }
20 |         }else{
21 |           qmatrix(i,j)
22 |         }
23 |       }
24 |     }
25 |   }
26 | }

```

FIG. 11

```
01 | residual_matrix(){  
02 |   residual_dpcm_flag           ...RESIDUE SPECIFYING METHOD FLAG  
03 |   if(residual_dpcm_flag){      //DPCM METHOD//  
04 |     nextcoef=0  
05 |     for(i=0;i<coefNum;i++){  
06 |       delta_coef  
07 |       nextcoef=nextcoef+delta_coef  
08 |       coef[i]=nextcoef  
09 |     }  
10 |   }else{                        //RUN-LENGTH METHOD//  
11 |     next_pos=0  
12 |     while{last_pos==0){  
13 |       run  
14 |       data  
15 |       last_pos  
16 |       coef[next_pos+run]=data  
17 |       next_pos+=run+1  
18 |     }  
19 |   }  
20 | }
```

FIG. 12

```

01 | QuantizaionMatrixParameterSet(){
02 |   quantizaion_matrix_parameter_id    ...QMPS ID
03 |   use_default_only_flag
04 |   use_dqp_flag
05 |   if(use_default_only_flag
06 |     pred_present_flag                ...GENERATION MODE PRESENCE FLAG
07 |     Qscale0                          ...FIRST QUANTIZATION SCALE
08 |     Qscale1                          ...SECOND QUANTIZATION SCALE
09 |     Qscale2                          ...THIRD QUANTIZATION SCALE
10 |     Qscale3                          ...FOURTH QUANTIZATION SCALE
11 |     for(i=0;i<4;j++){                //LOOP FOR EACH SIZE//
12 |       for(i=0;j<6;j++){              //LOOP FOR EACH SIZE//
13 |         if(pred_present_flag){
14 |           pred_mode                  ...GENERATION MODE
15 |           if(pred_mode==0){           //COPY MODE//
16 |             pred_qmps_id              ...SOURCE ID
17 |             pred_size_idc            ...COPY SOURCE SIZE
18 |             pred_matrix_id          ...COPY SOURCE TYPE
19 |             residual_flag            ...RESIDUAL FLAG
20 |             if(residual_flag){
21 |               residual_matrix()        //SPECIFY RESIDUES//
22 |             }
23 |           }
24 |         }
25 |       }
26 |     }
27 |   }
28 | }
29 | }
30 | }
31 | }
32 | }
33 | }
34 | }
35 | }
36 | }
37 | }
38 | }
39 | }
40 | }
41 | }
42 | }
43 | }
44 | }
45 | }
46 | }
47 | }
48 | }
49 | }
50 | }
51 | }
52 | }
53 | }
54 | }
55 | }
56 | }
57 | }
58 | }
59 | }
60 | }
61 | }
62 | }
63 | }
64 | }
65 | }
66 | }
67 | }
68 | }
69 | }
70 | }
71 | }
72 | }
73 | }
74 | }
75 | }
76 | }
77 | }
78 | }
79 | }
80 | }

```

//SEE FIG. 11//

FIG. 13

```
57 | }else if(pred_mode == 1)           //FULL-SCAN MODE//
58 |   matrix_symmetry_flag
59 |   matrix_sign_flag
60 |   matrix_dpcm_run_flag           ...SPECIFYING METHOD FLAG
61 |   vlc_table_data                 ...VCL TABLE (DATA)
62 |   if(matrix_dpcm_run_flag){
63 |     vlc_table_run                 ...VCL TABLE (RUNS)
64 |   }
65 |   qmatrix()
66 | }
67 | }else{
68 |   matrix_symmetry_flag
69 |   matrix_sign_flag
70 |   matrix_dpcm_run_flag           ...SPECIFYING METHOD FLAG
71 |   vlc_table_data                 ...VCL TABLE (DATA)
72 |   if(matrix_dpcm_run_flag){
73 |     vlc_table_run                 ...VCL TABLE (RUNS)
74 |   }
75 |   qmatrix()
76 | }
```

FIG. 14

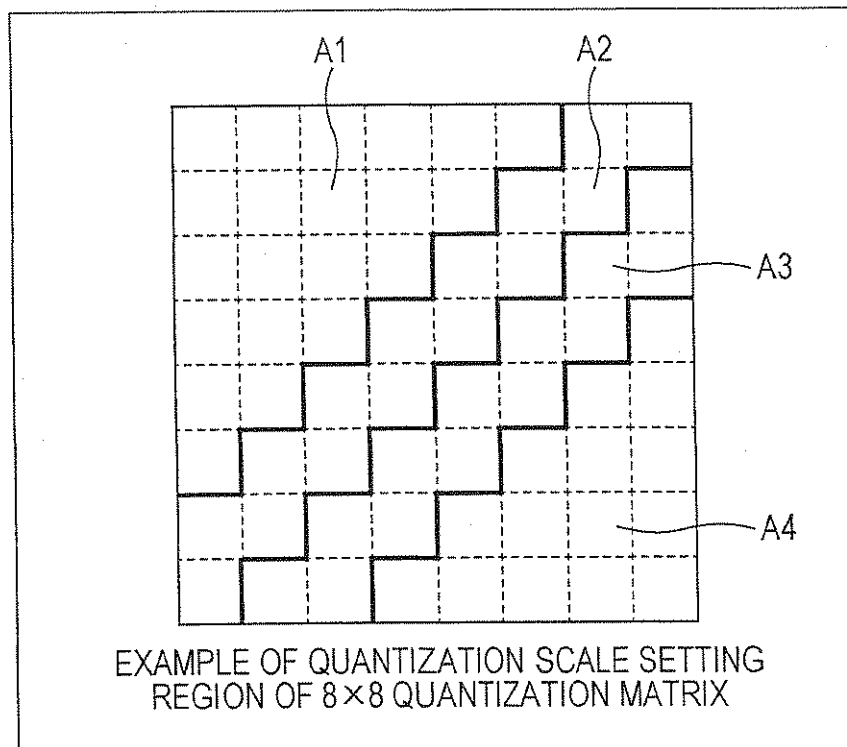


FIG. 15

REGION A1: Qscale0 = 1 (NOT QUANTIZED)	1	1	1	1	1	1	2	2
REGION A2: Qscale1 = 2	1	1	1	1	1	2	2	3
REGION A3: Qscale2 = 3	1	1	1	1	2	2	3	3
REGION A4: Qscale3 = 4	1	1	1	2	2	3	3	4
	1	1	2	2	3	3	4	4
	1	2	2	3	3	4	4	4
	2	2	3	3	4	4	4	4
	2	3	3	4	4	4	4	4

EXAMPLE OF
QUANTIZATION SCALE SETTING

FIG. 16

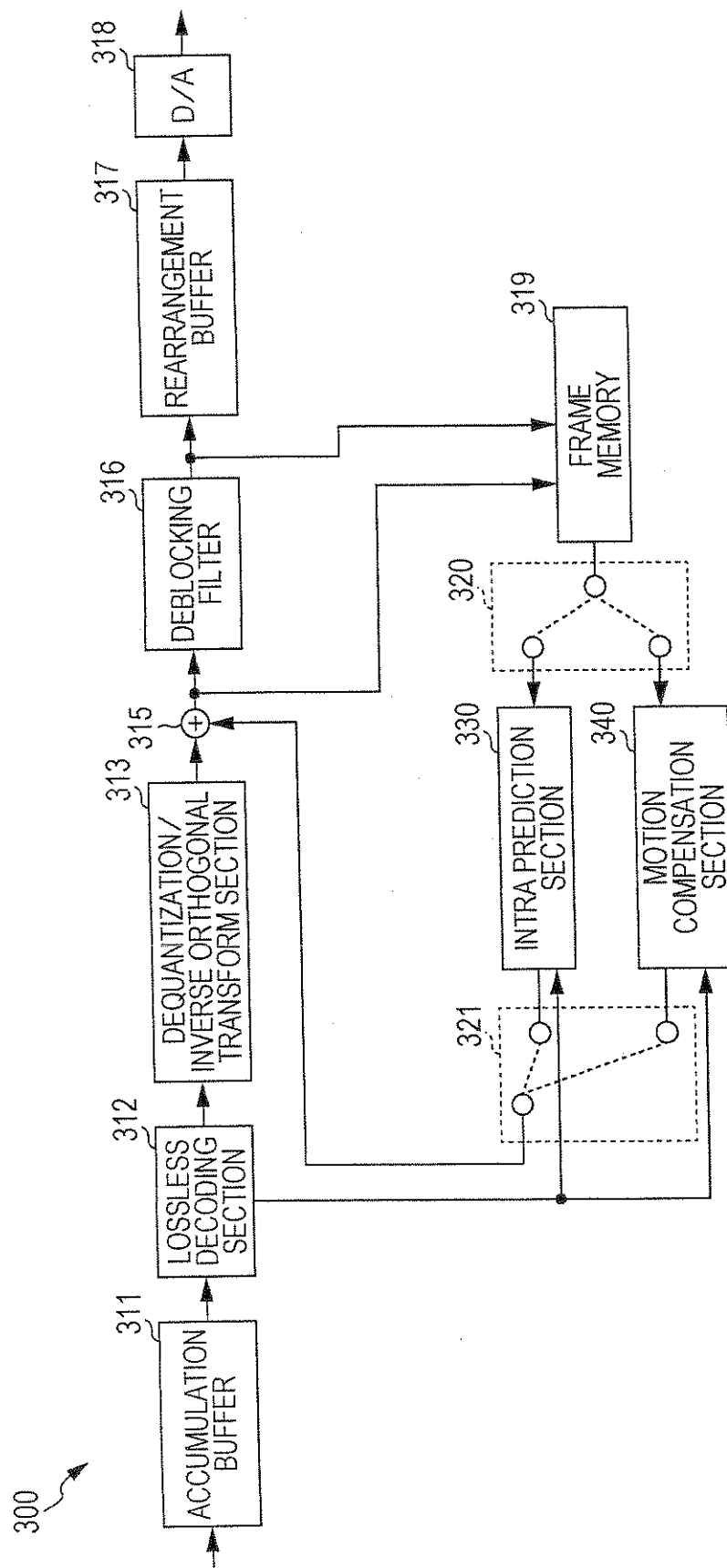


FIG. 17

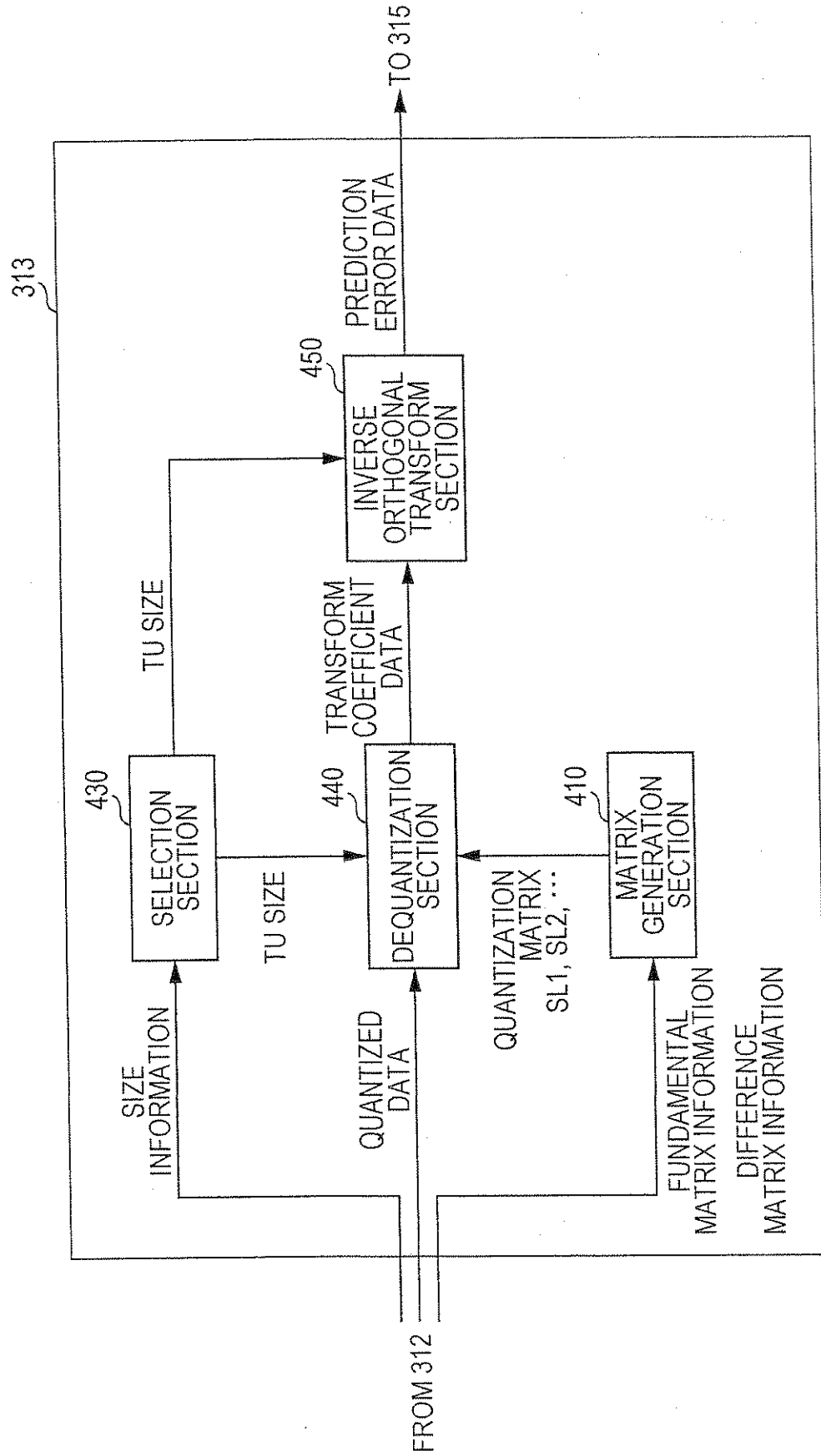


FIG. 18

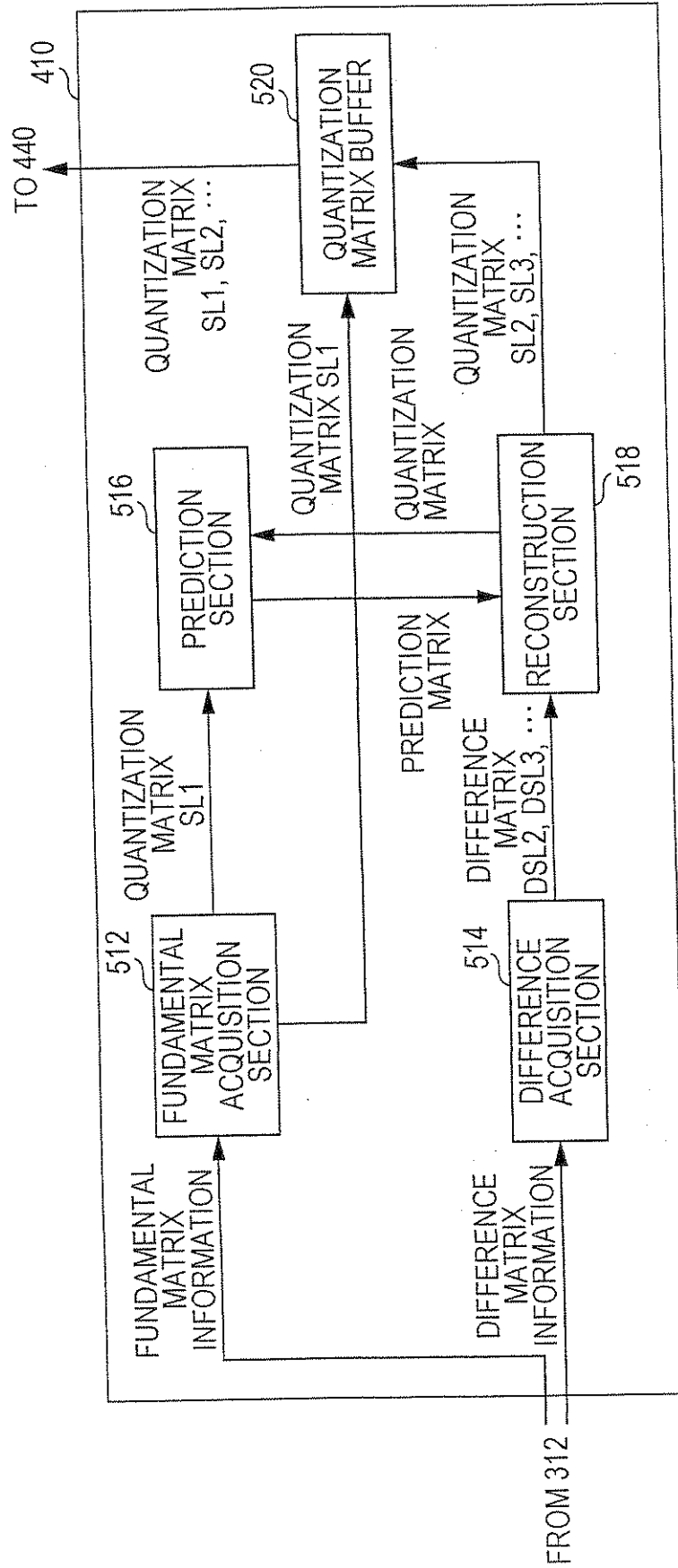


FIG. 19

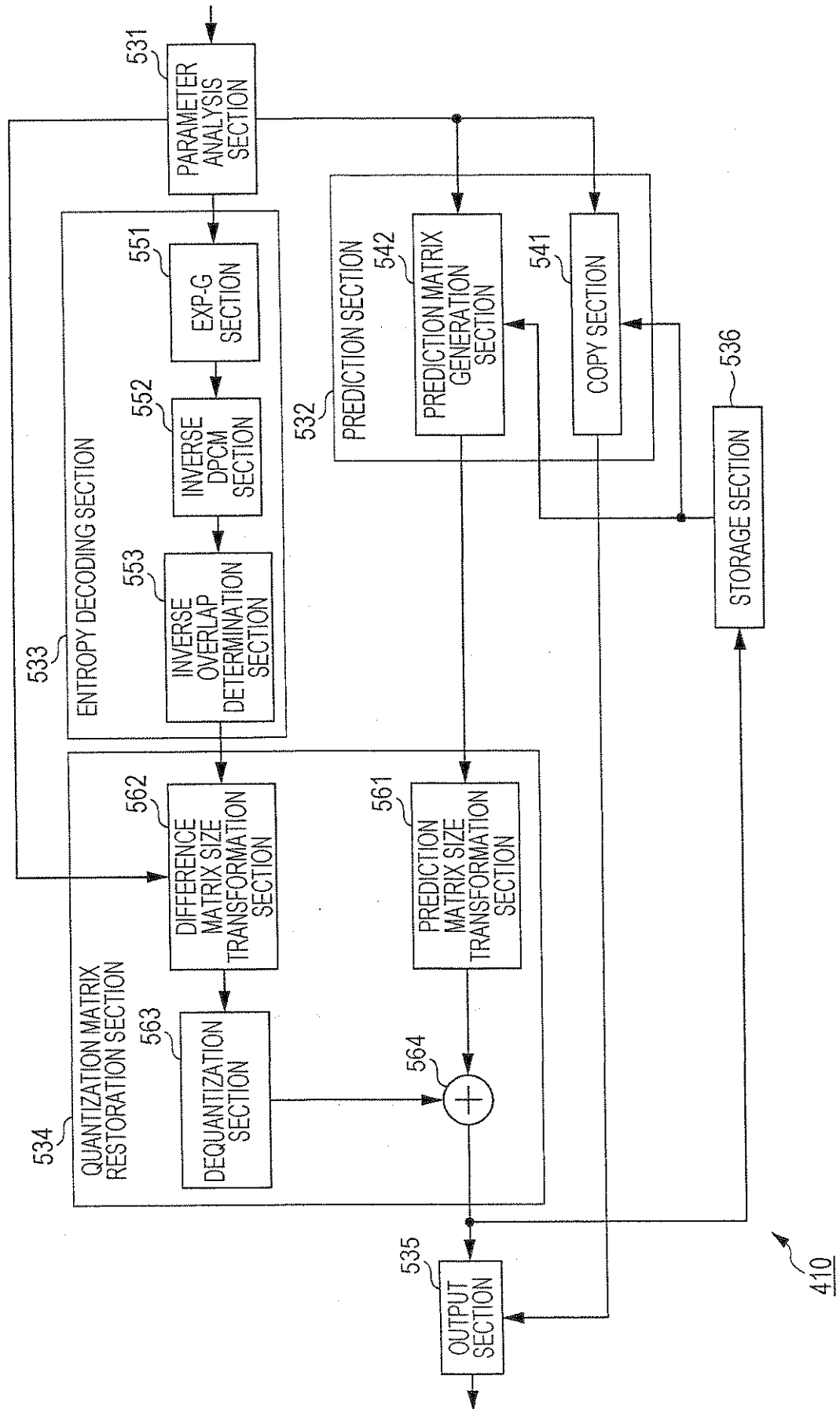


FIG. 20

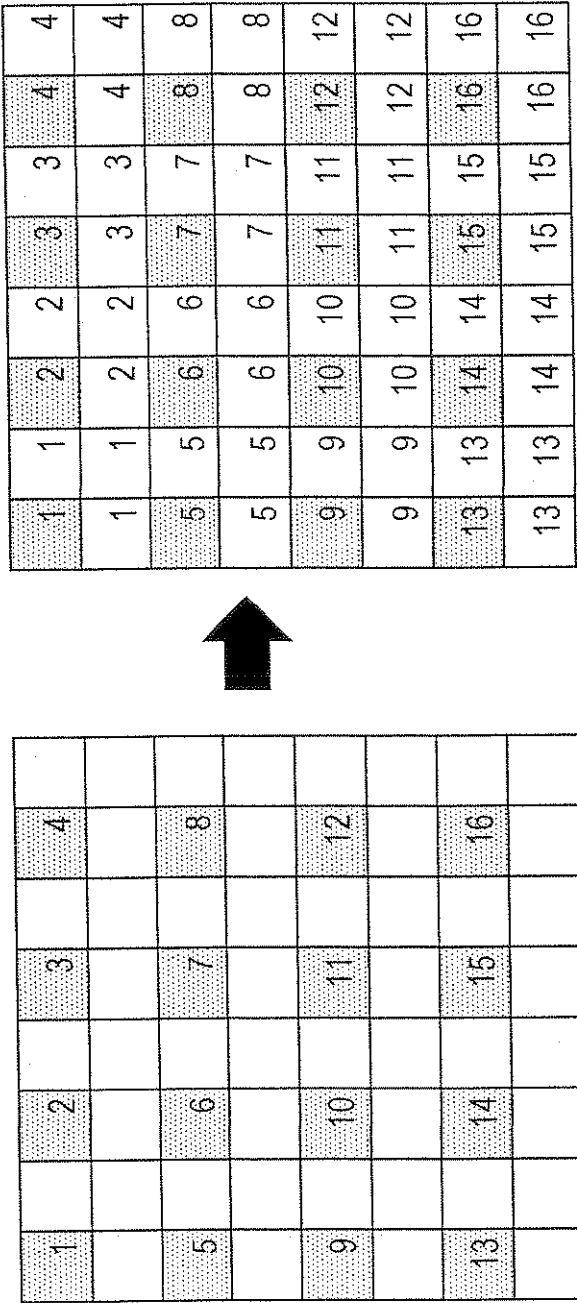


FIG. 21

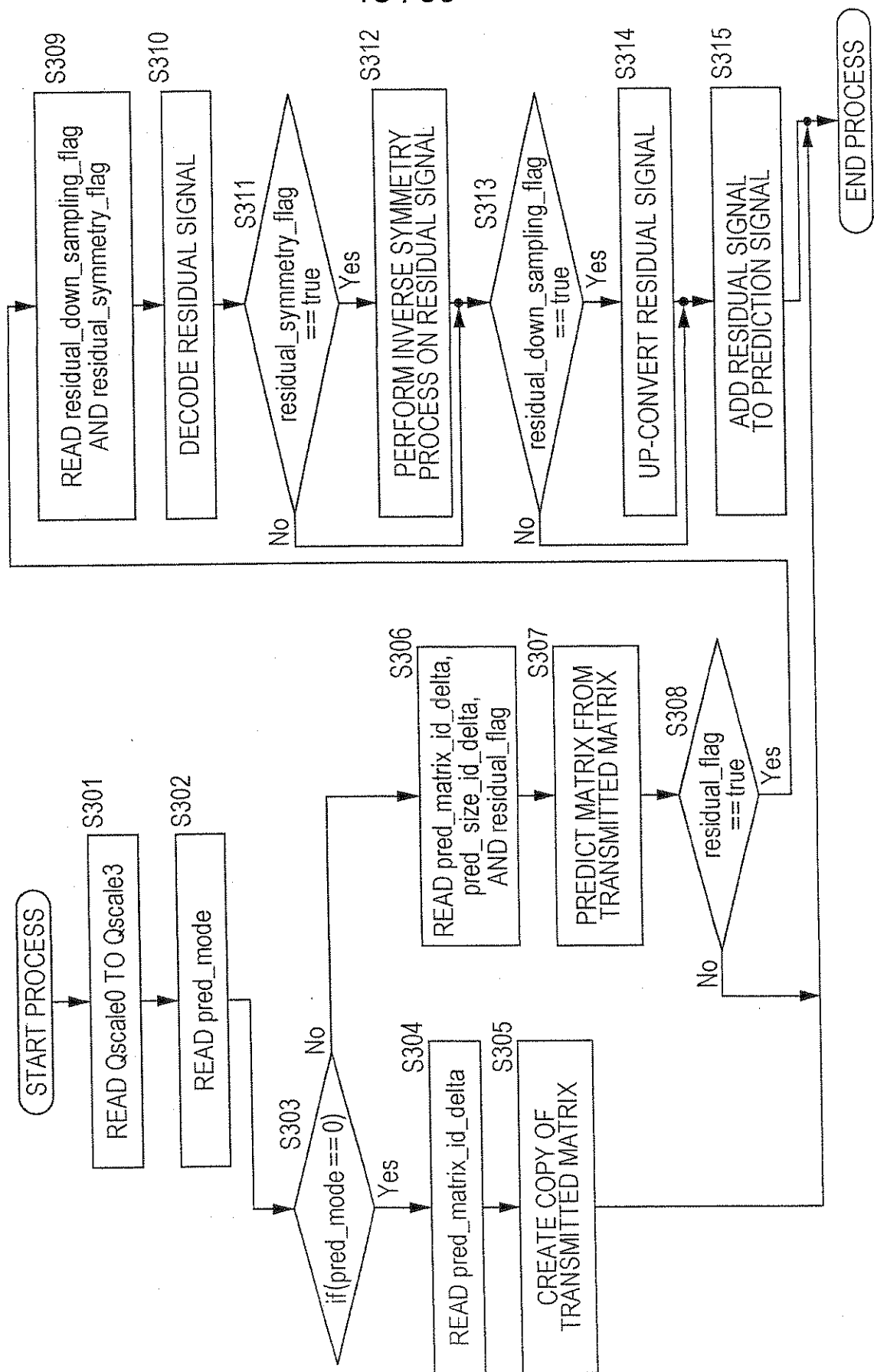


FIG. 22

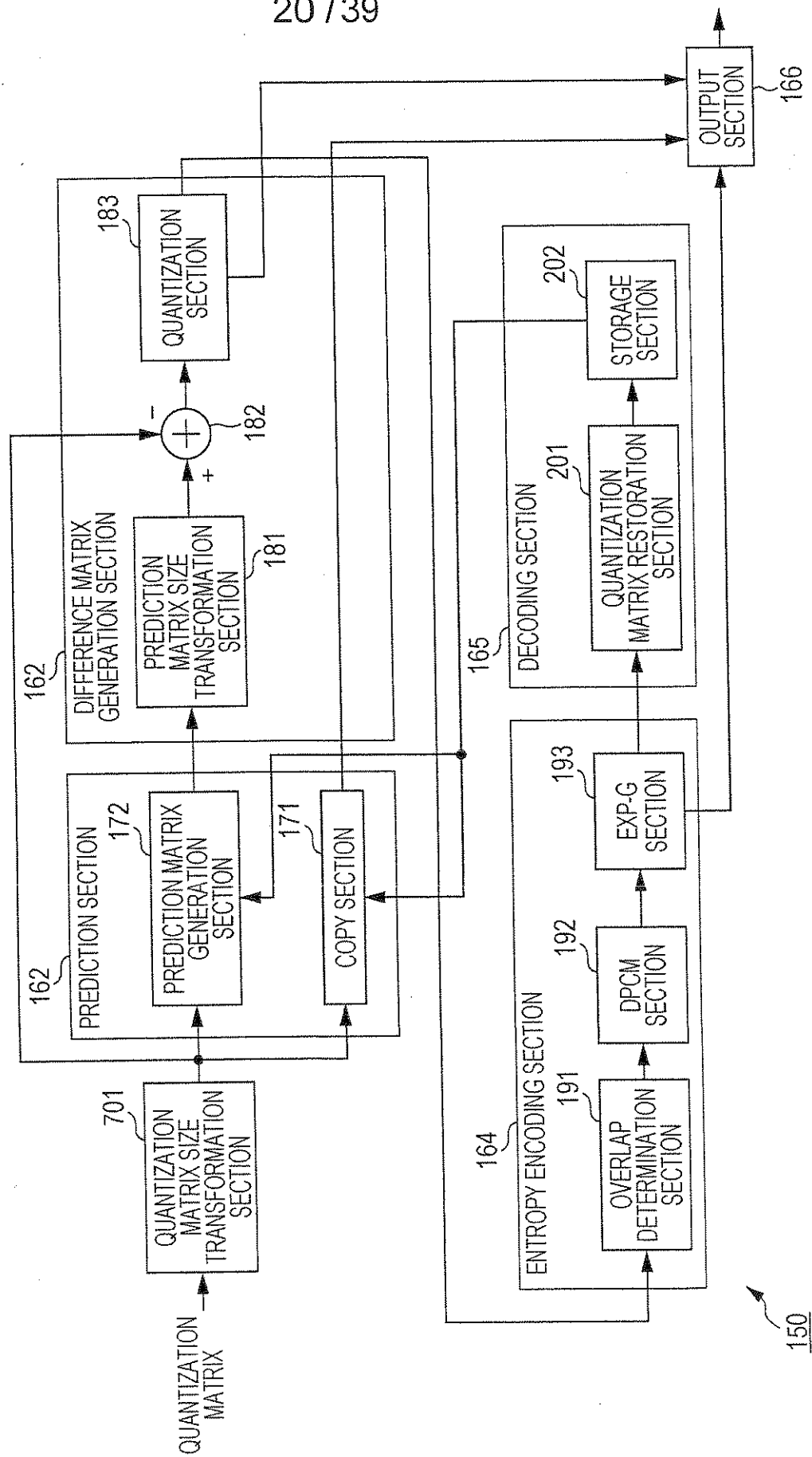


FIG. 23

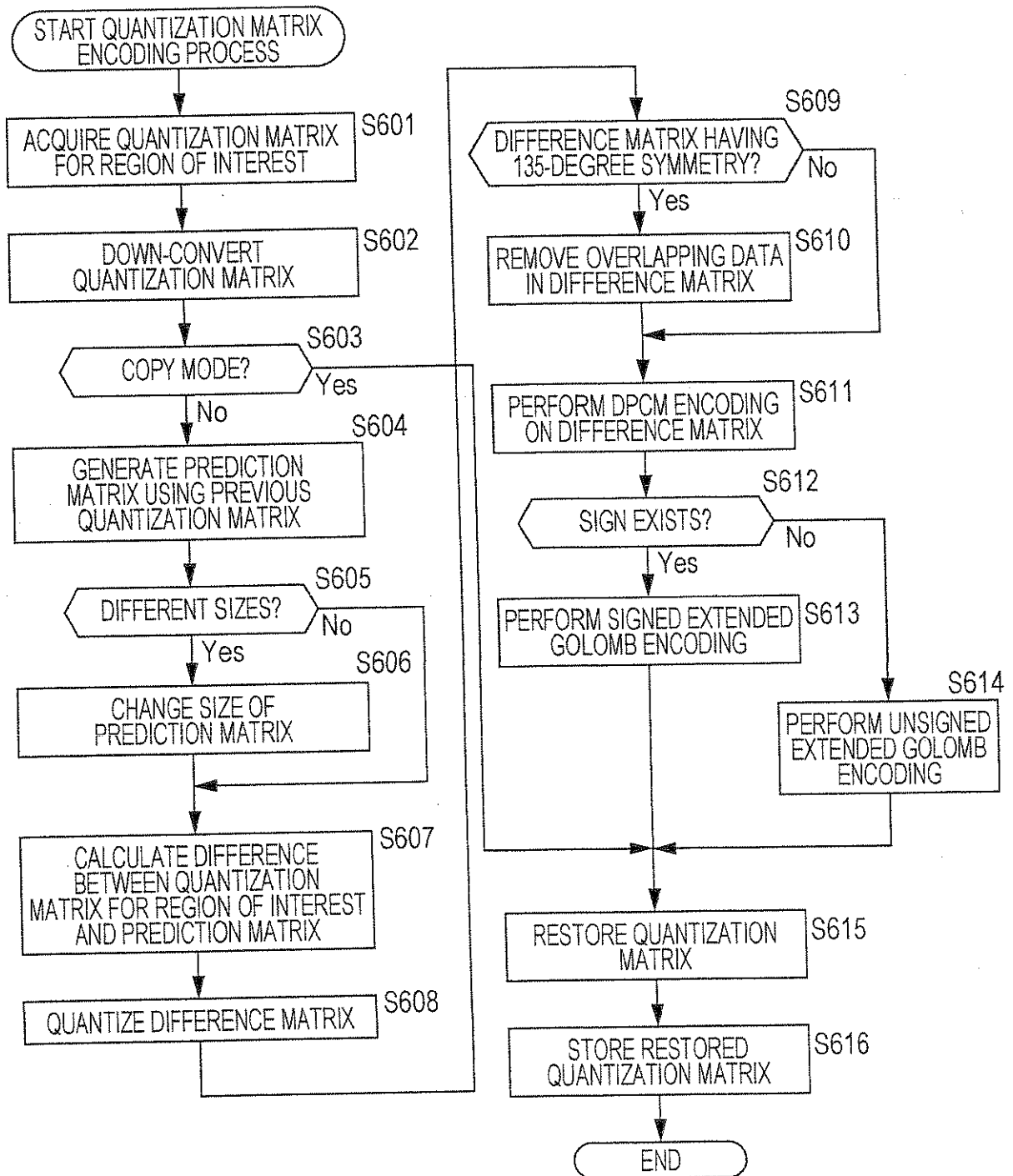


FIG. 24

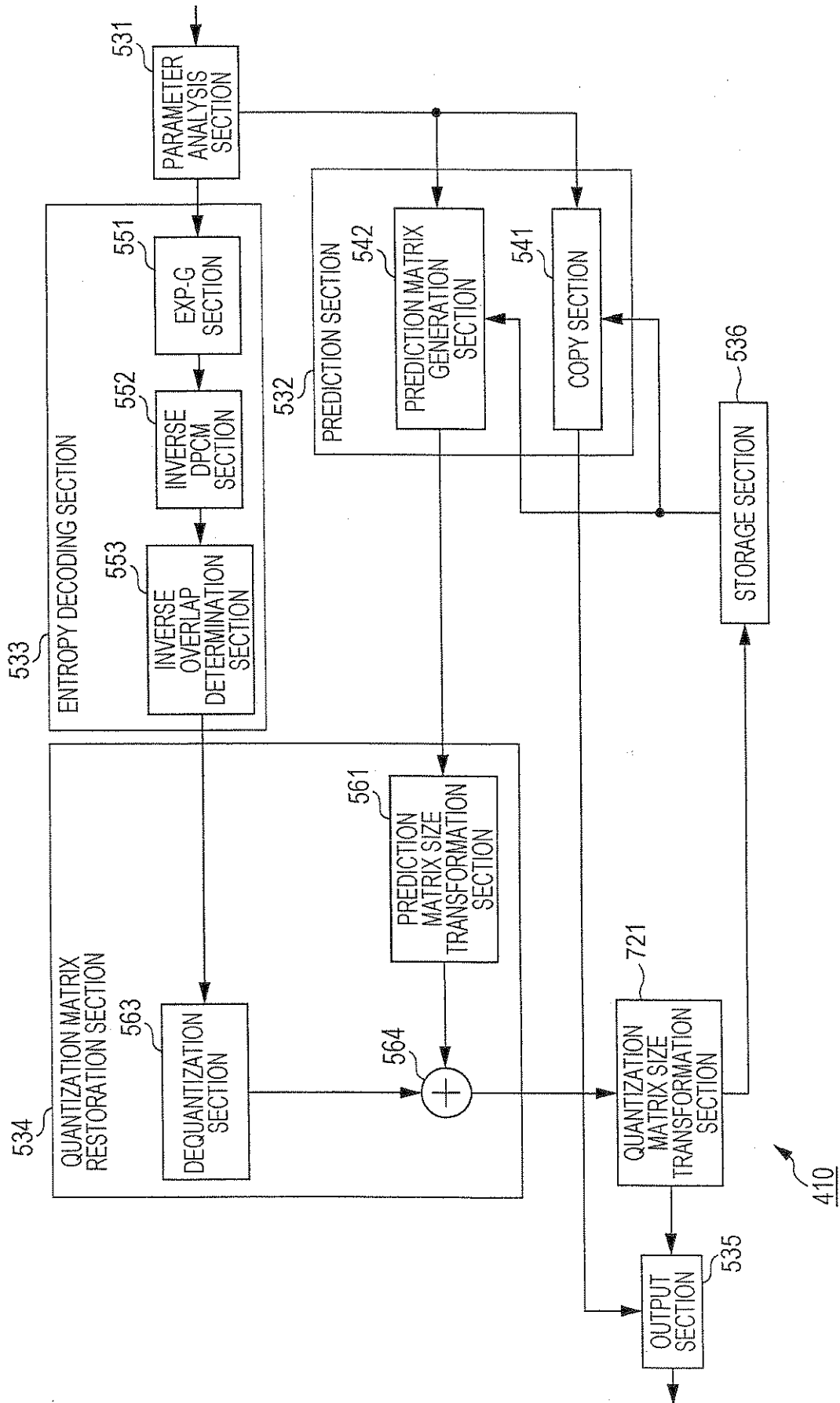


FIG. 25

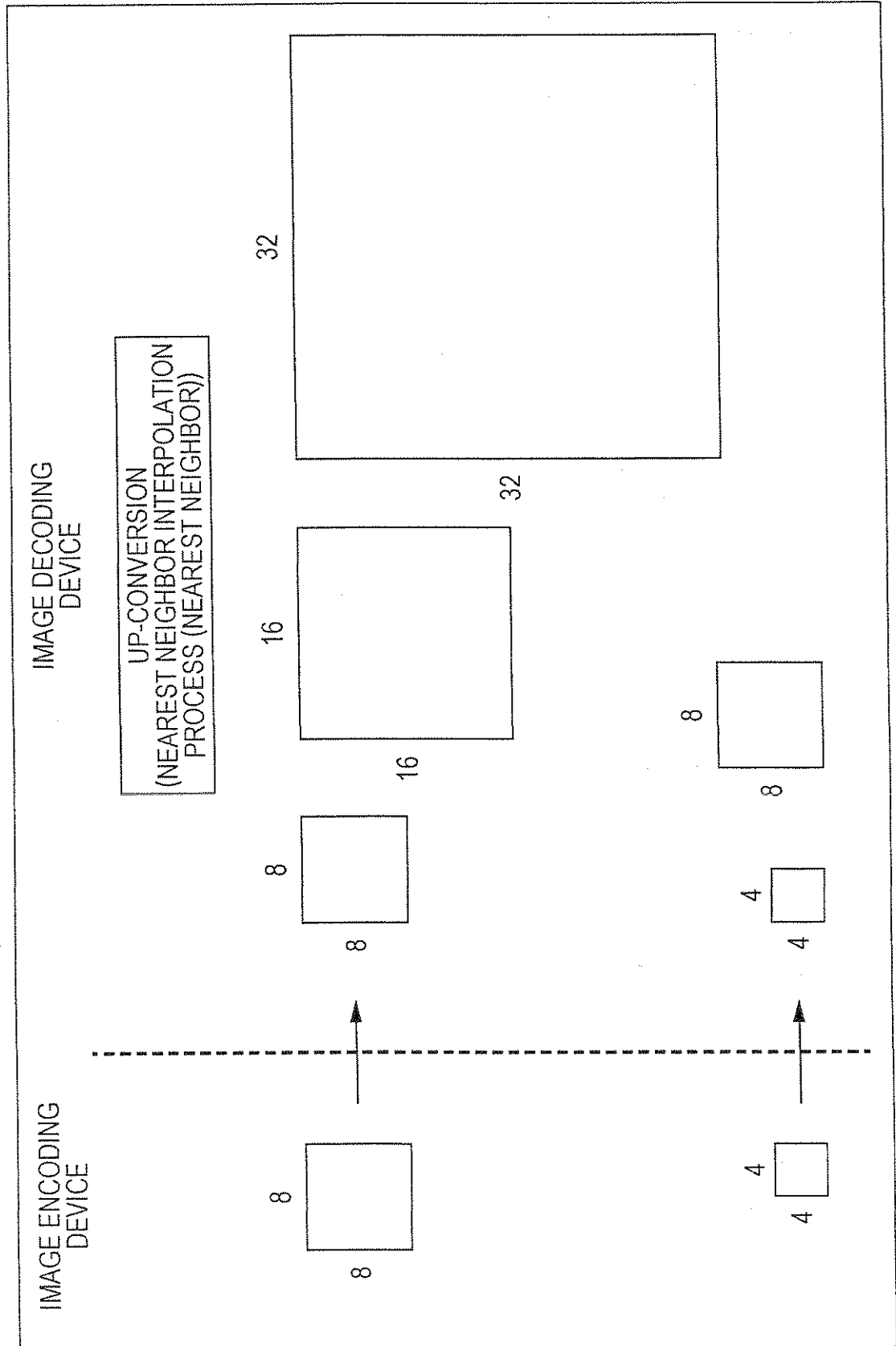


FIG. 26

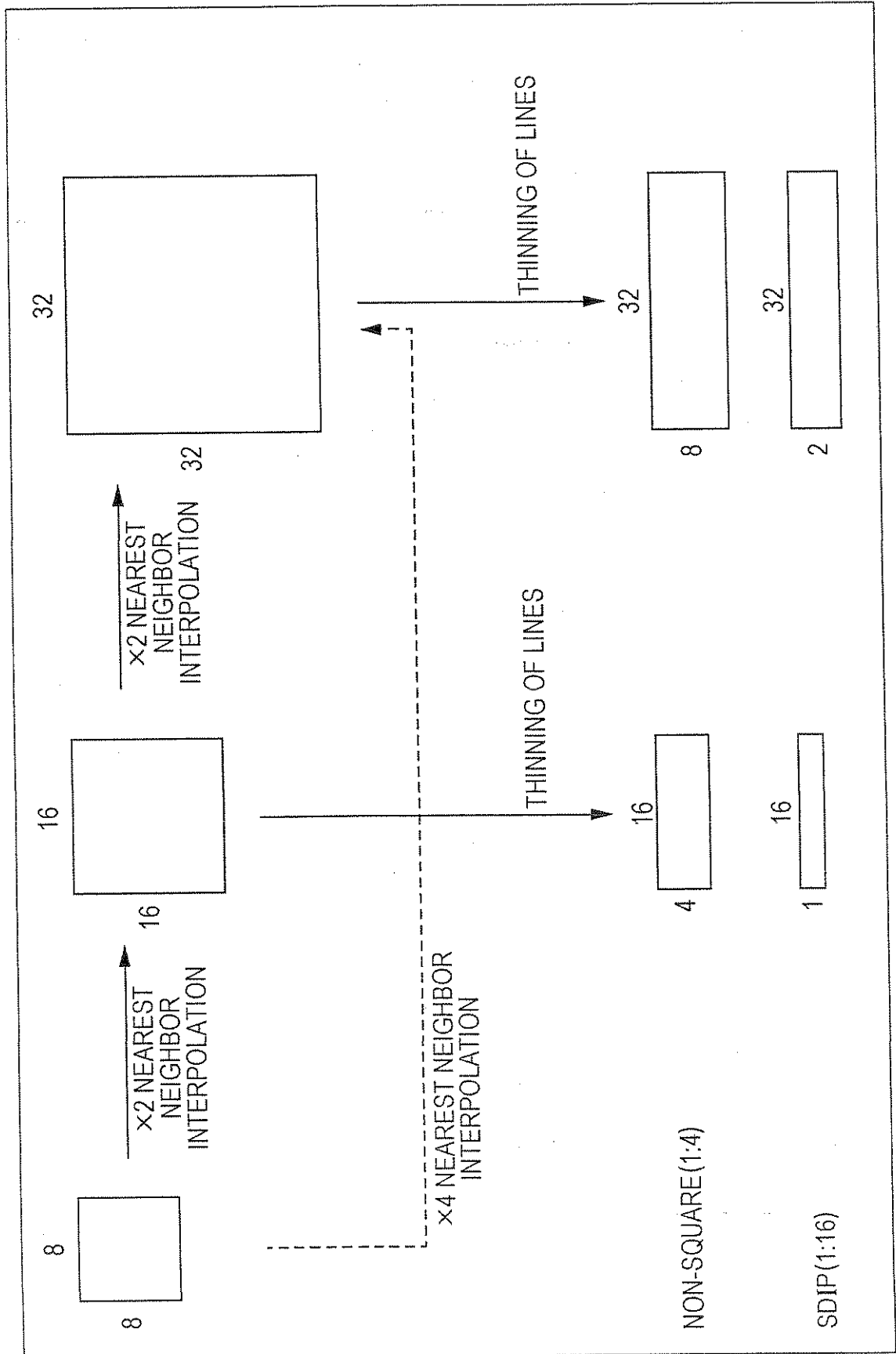


FIG. 27

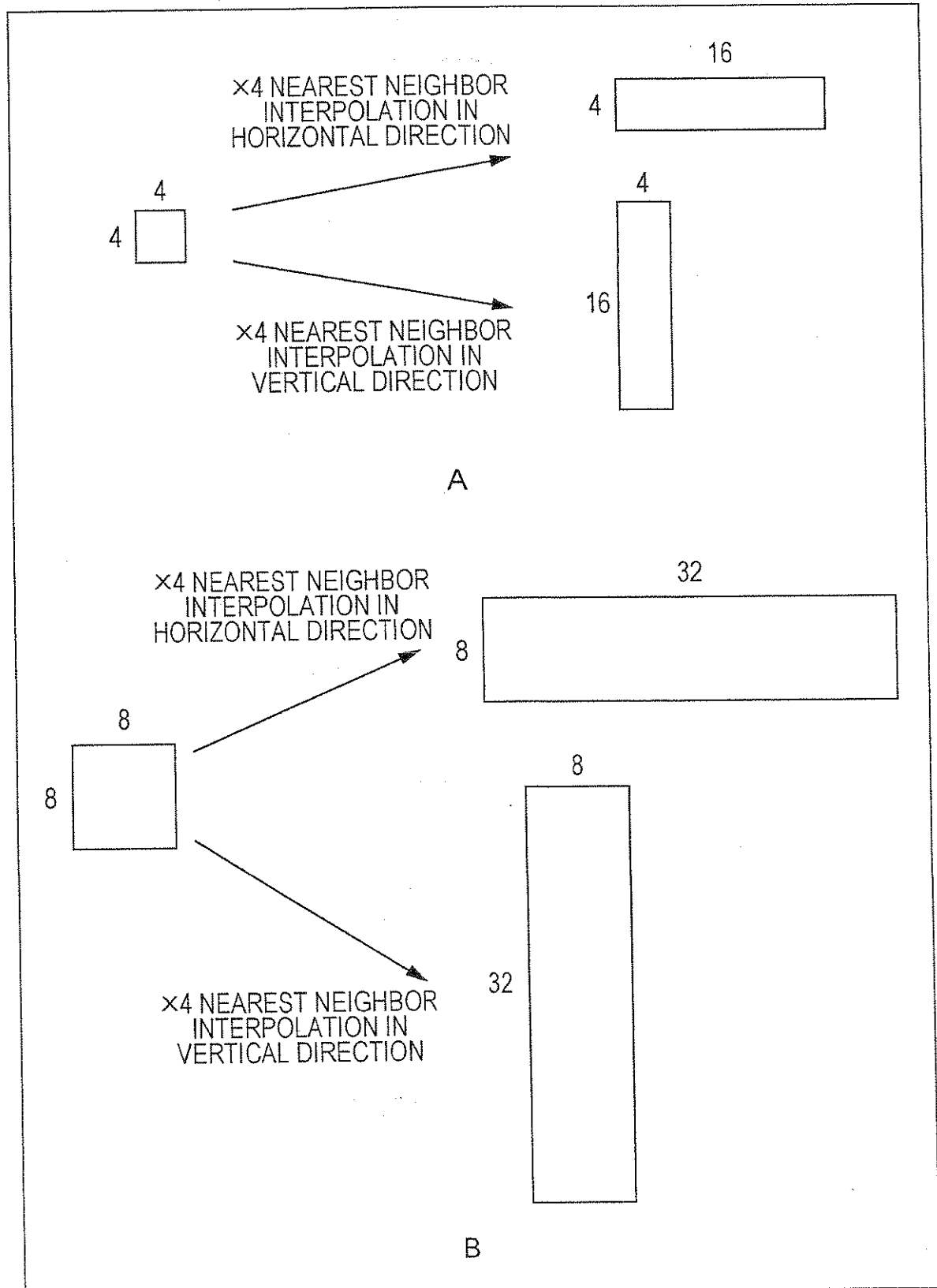


FIG. 28

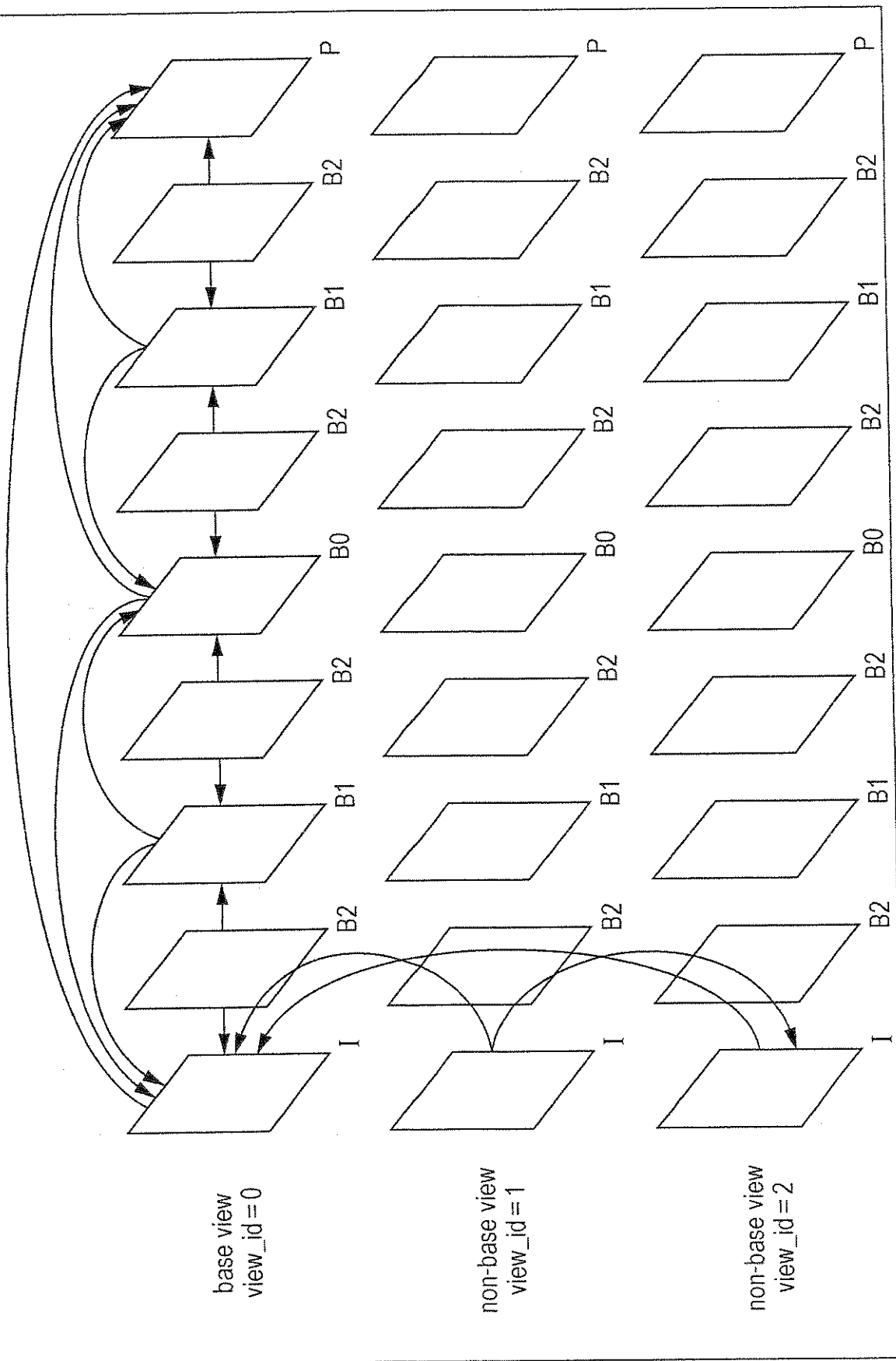


FIG. 29

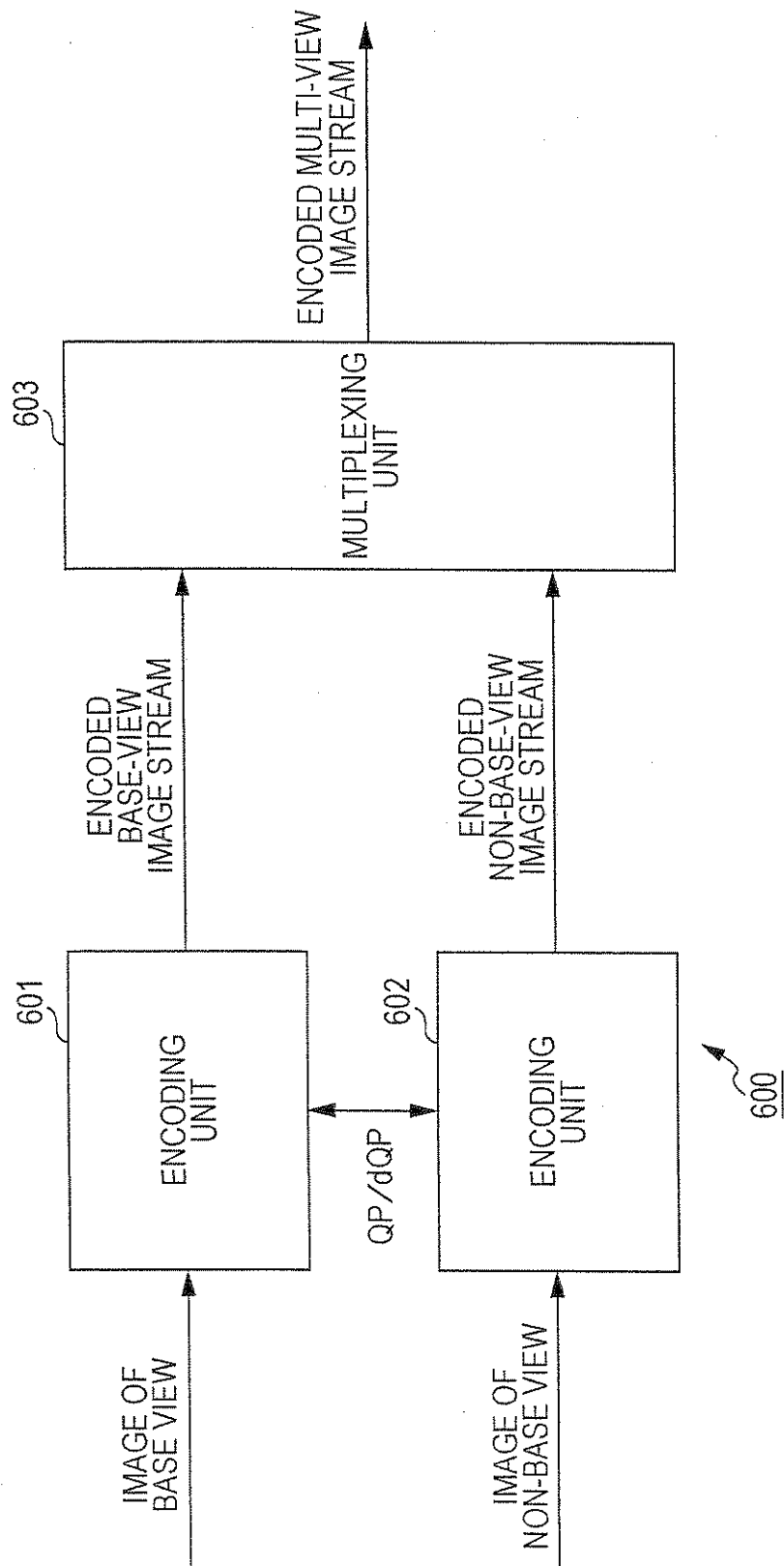


FIG. 30

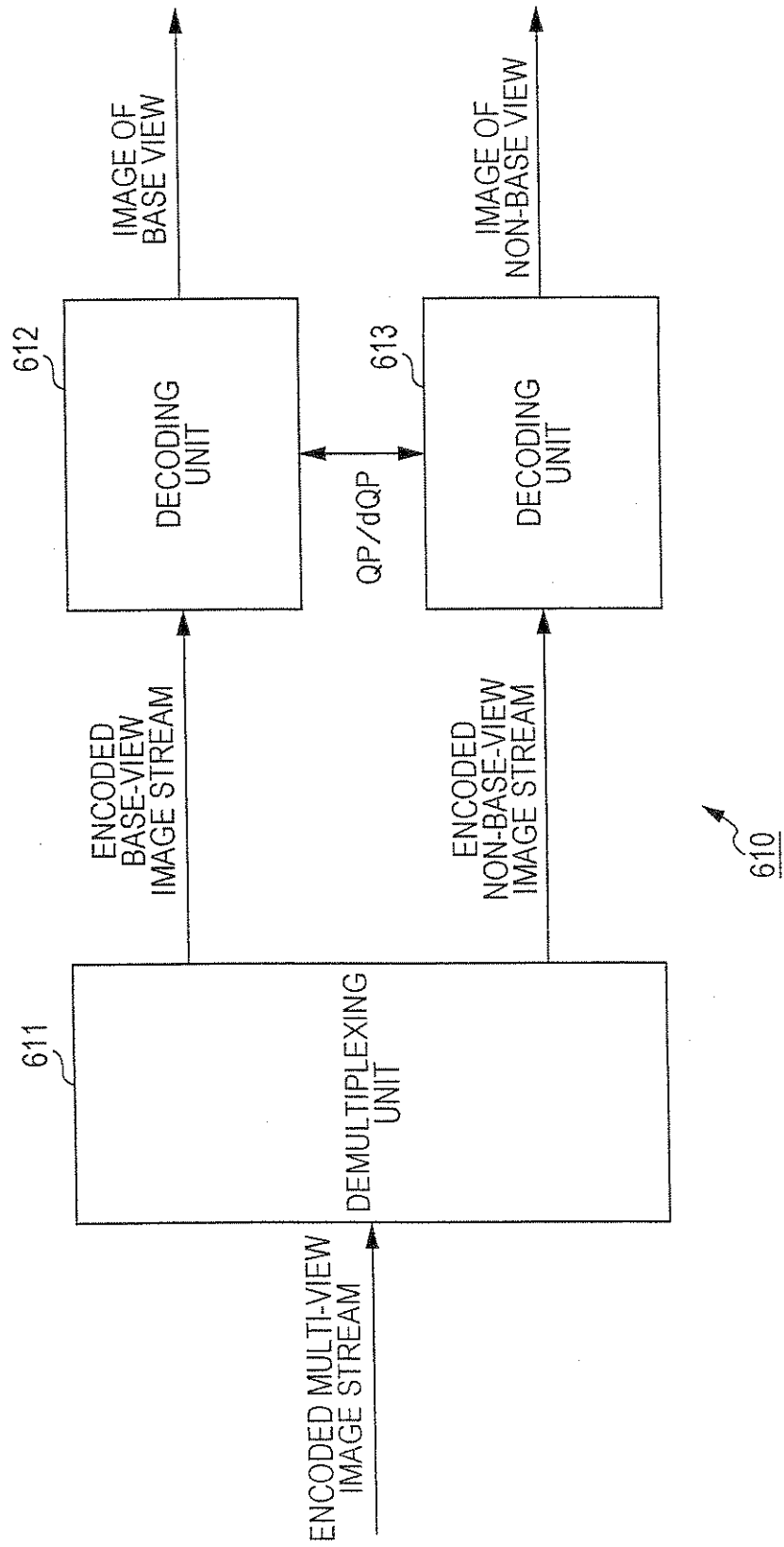


FIG. 31

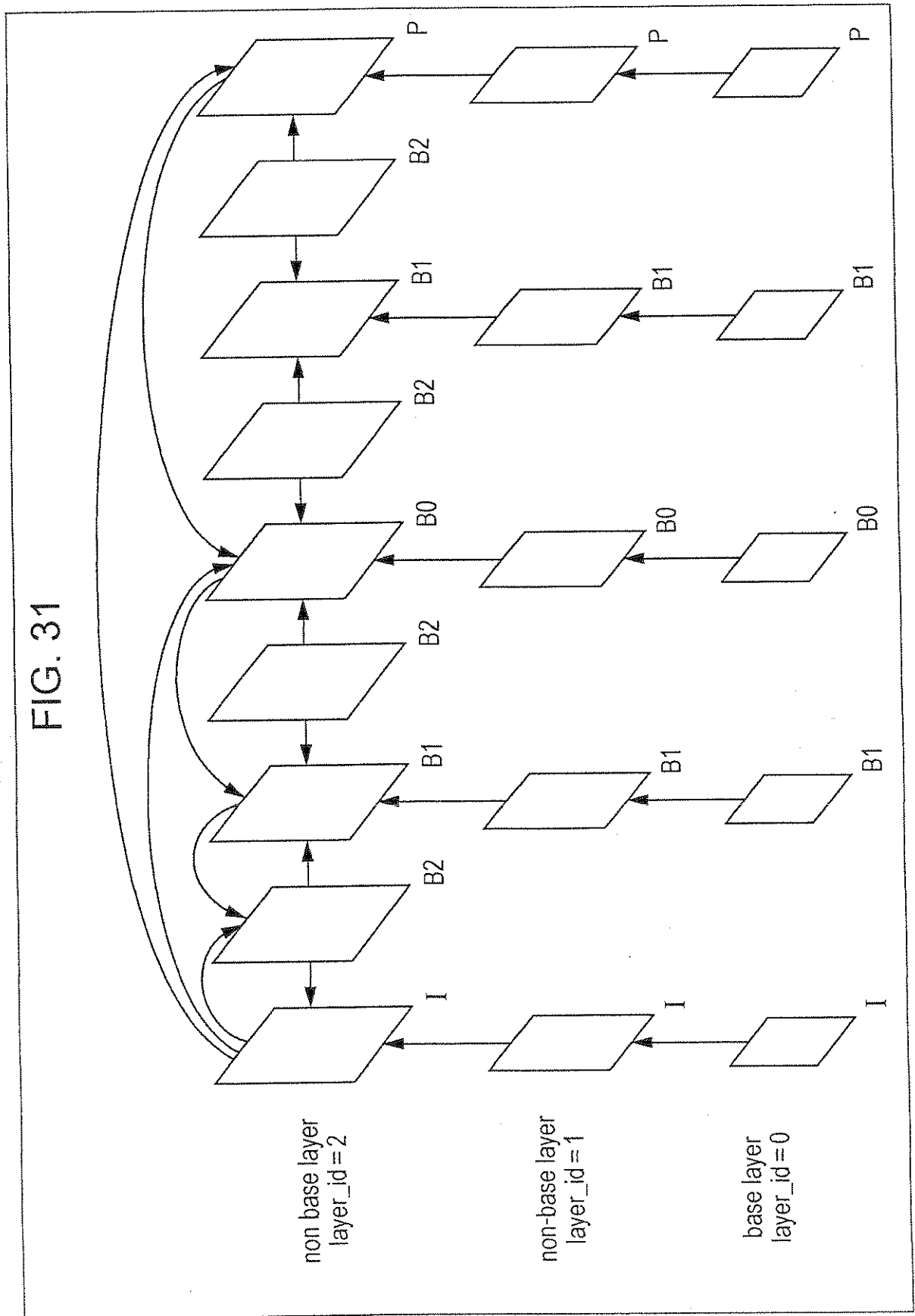


FIG. 32

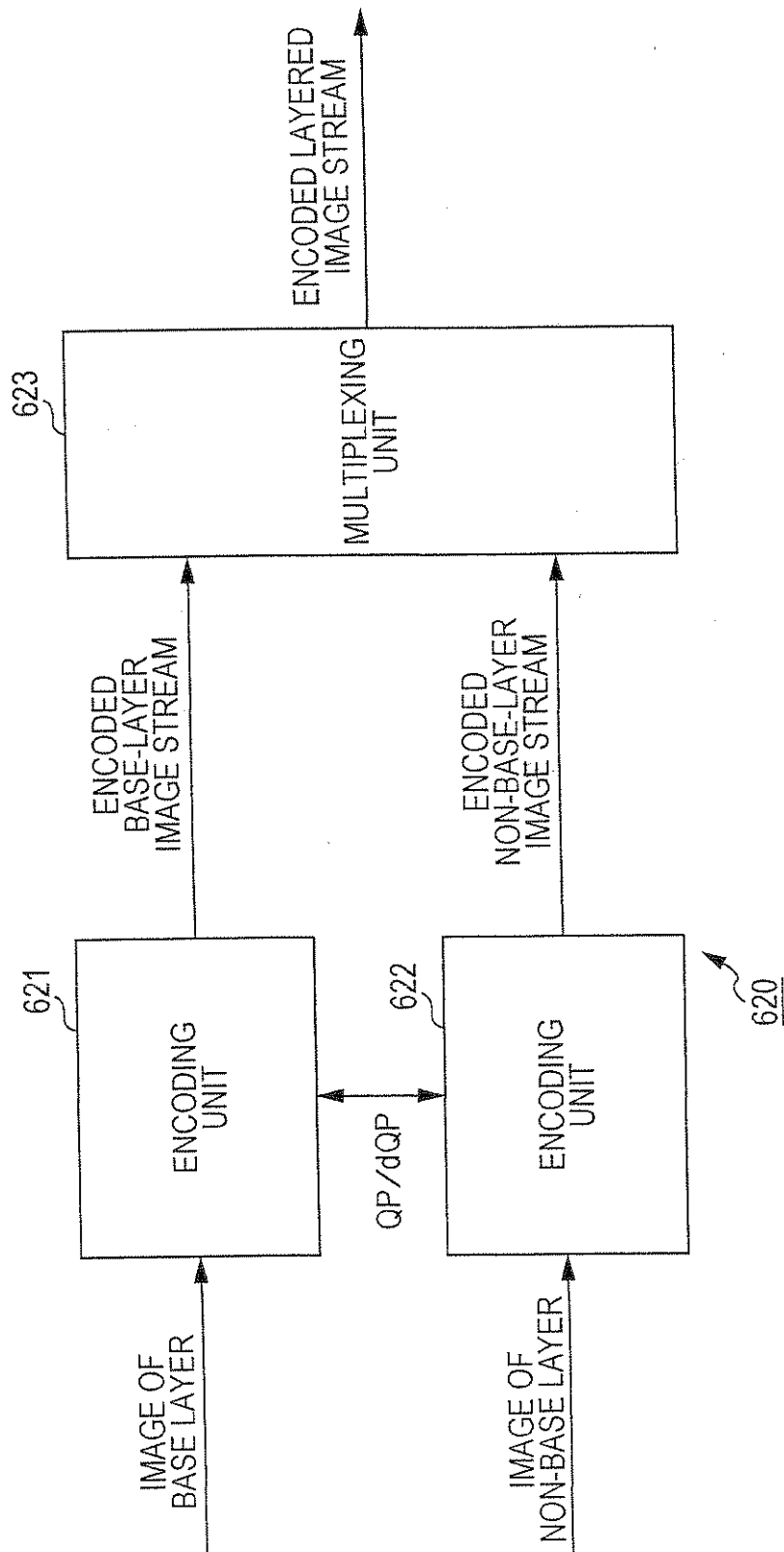


FIG. 33

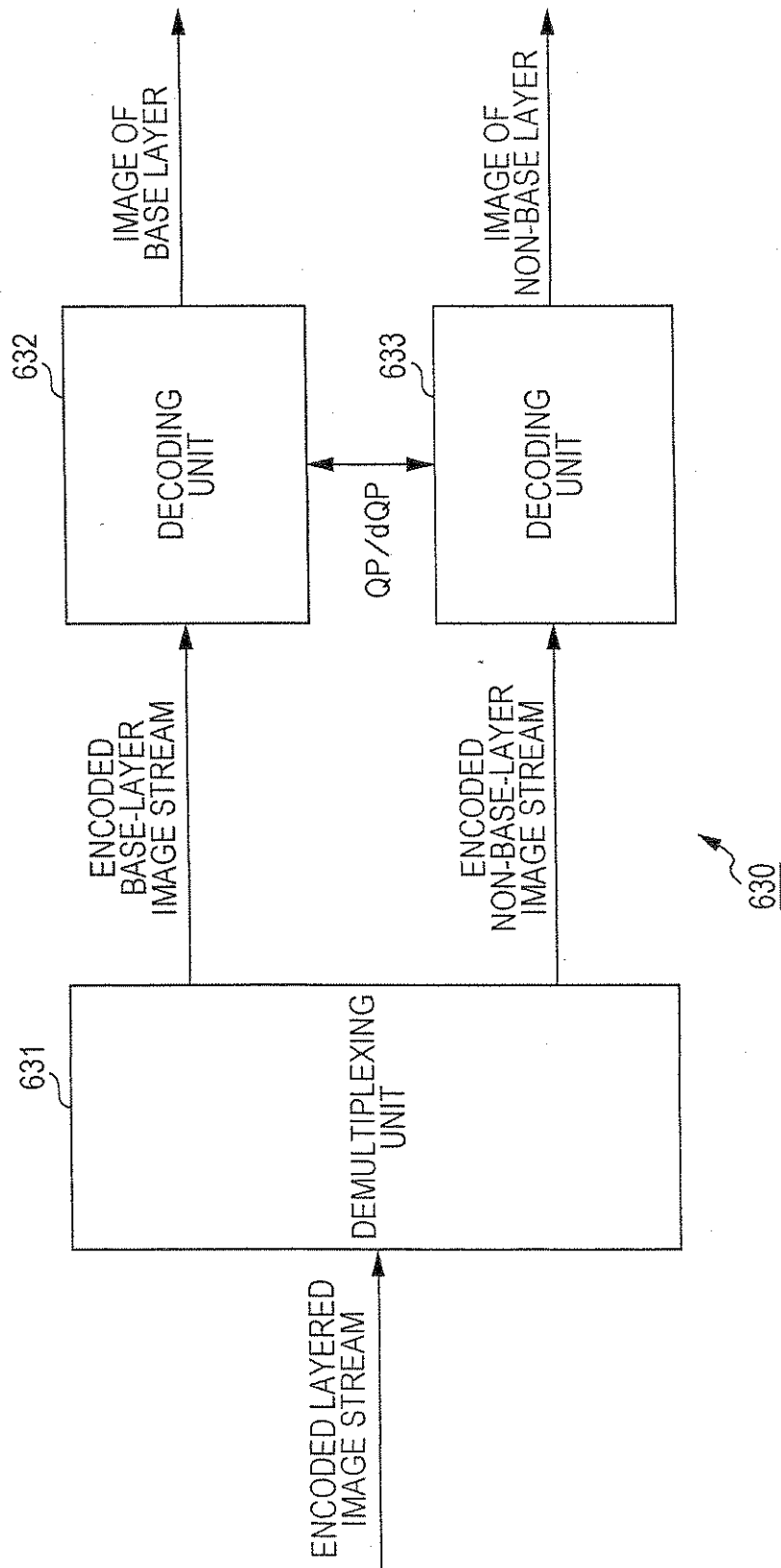


FIG. 34

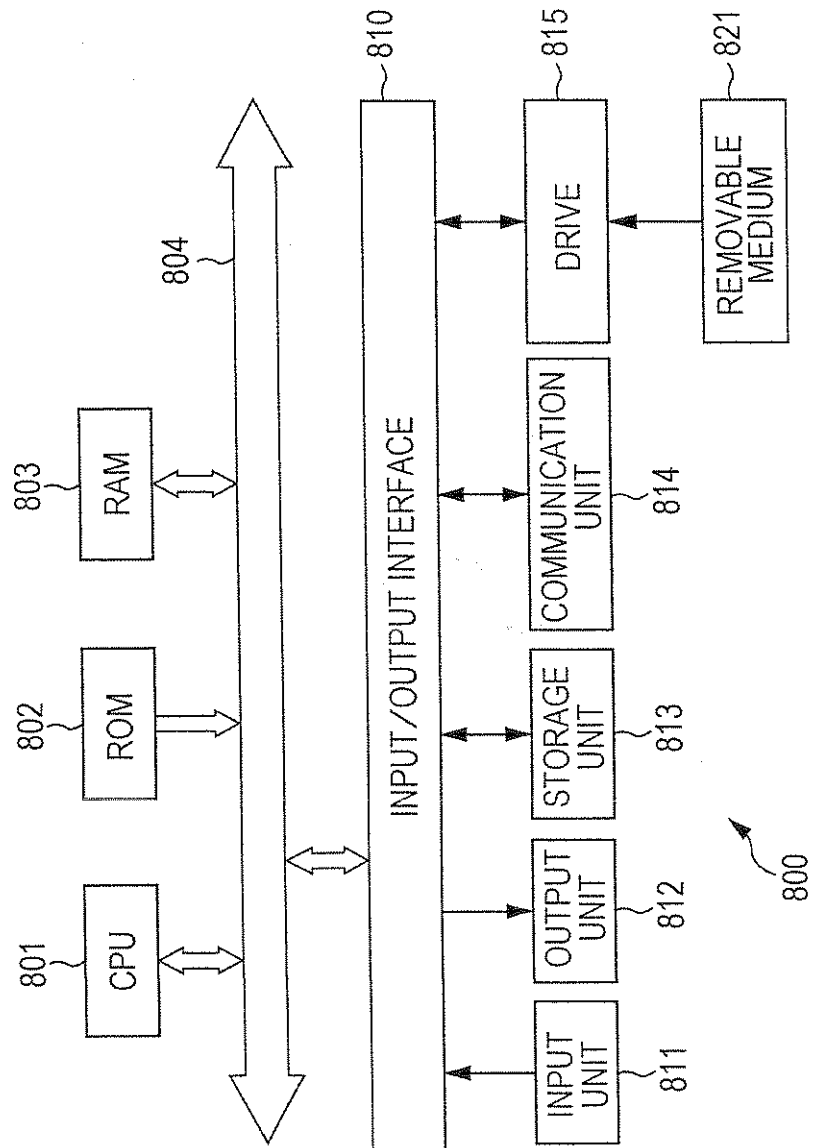


FIG. 35

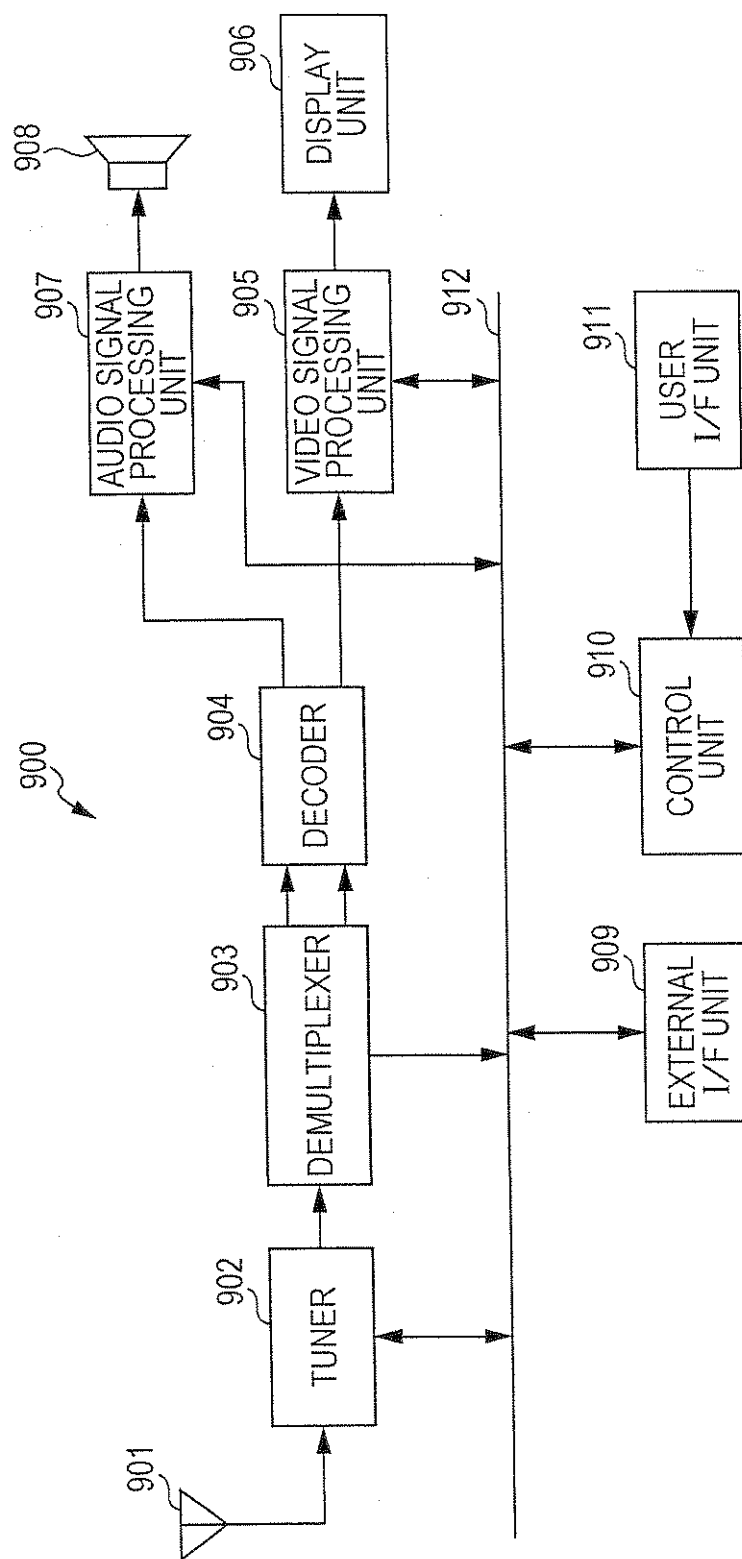


FIG. 36

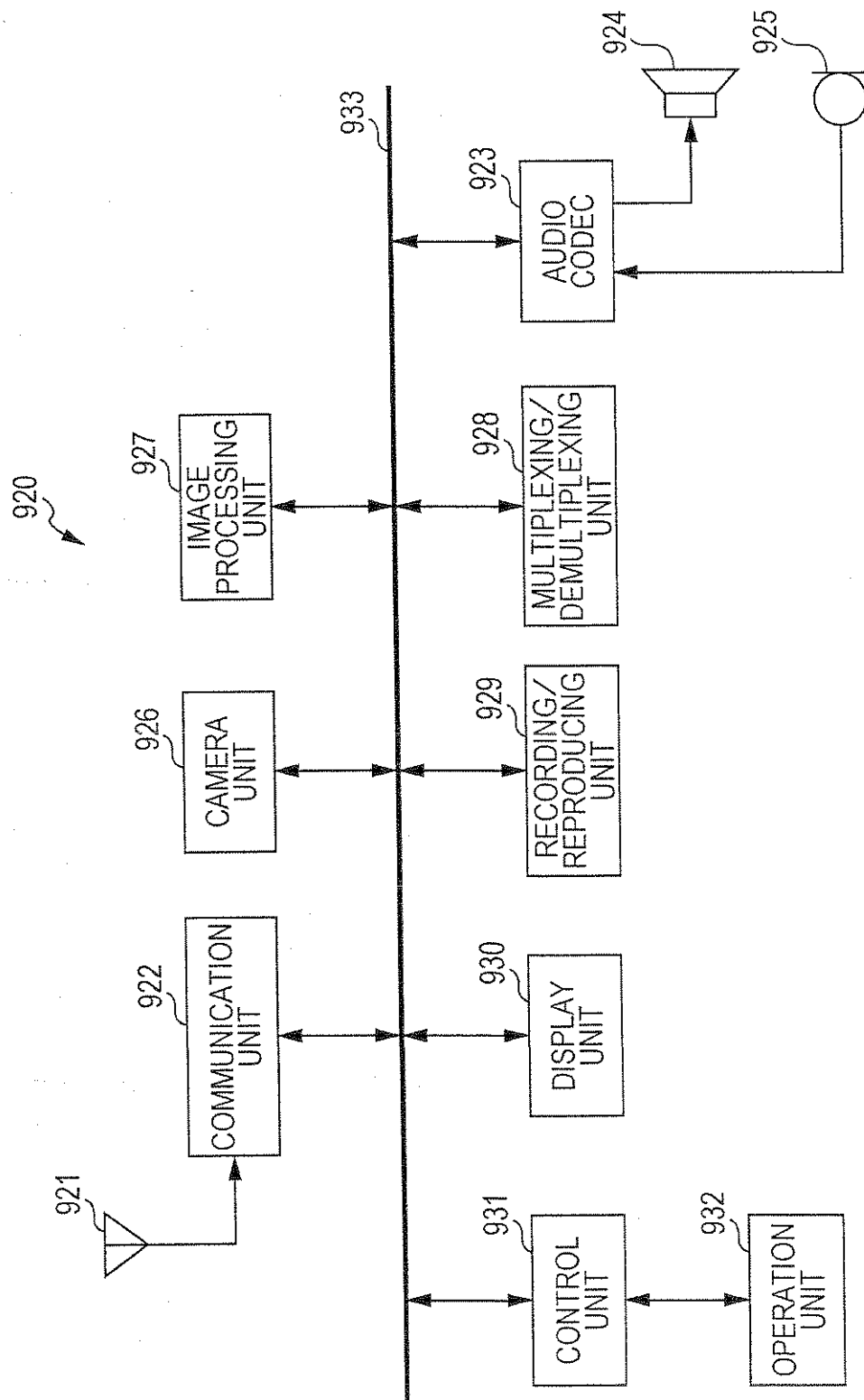


FIG. 37

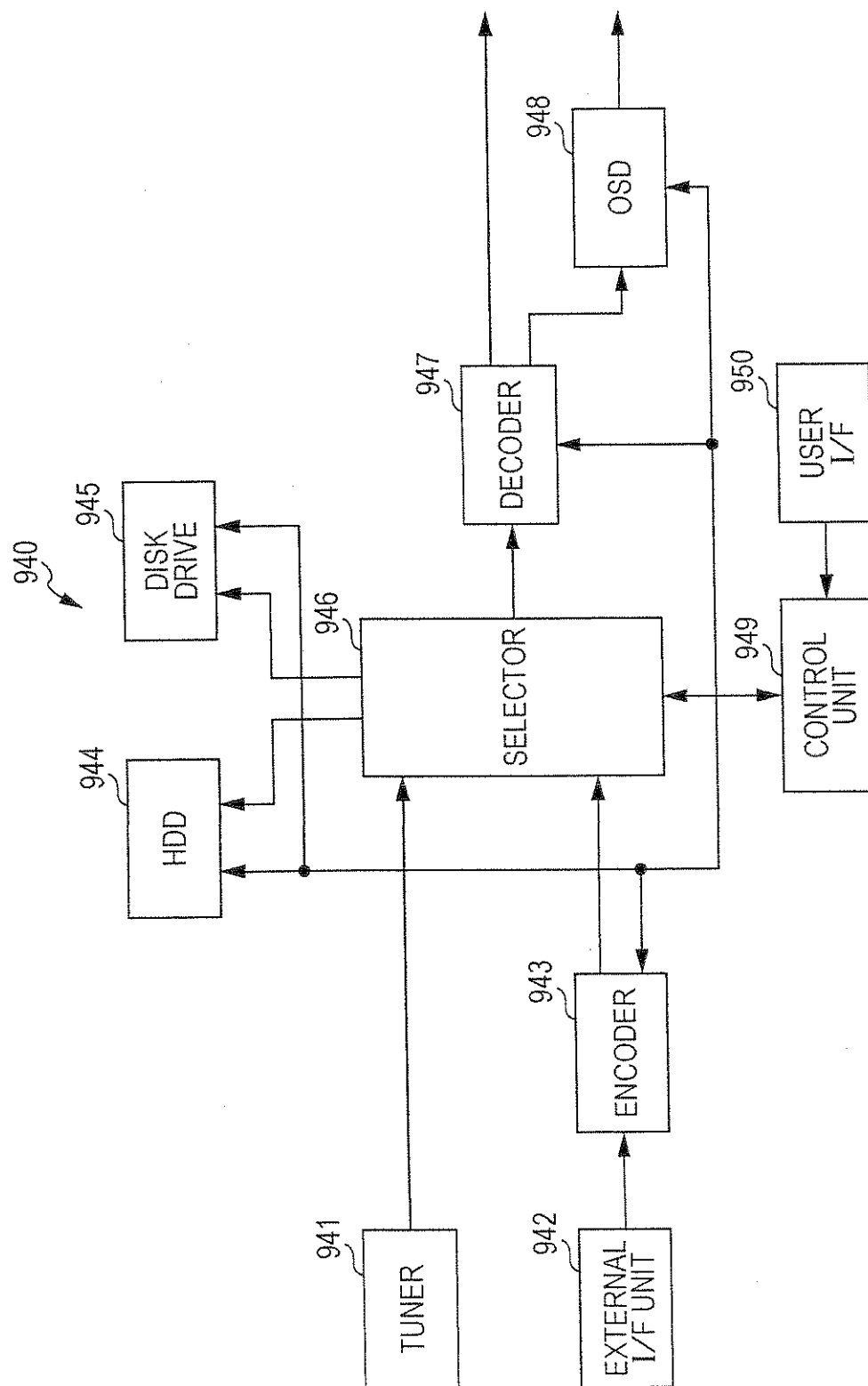


FIG. 38

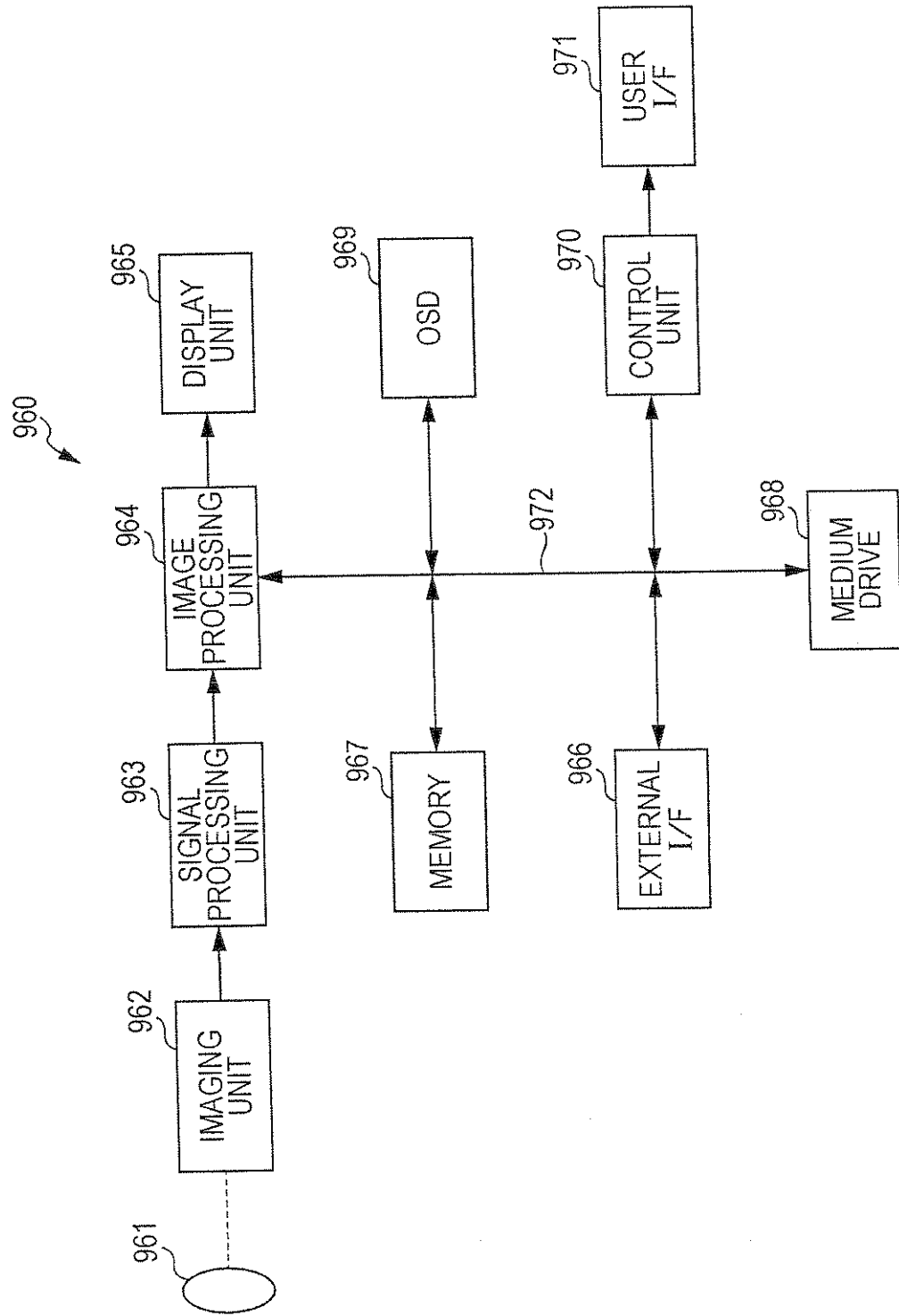


FIG. 39

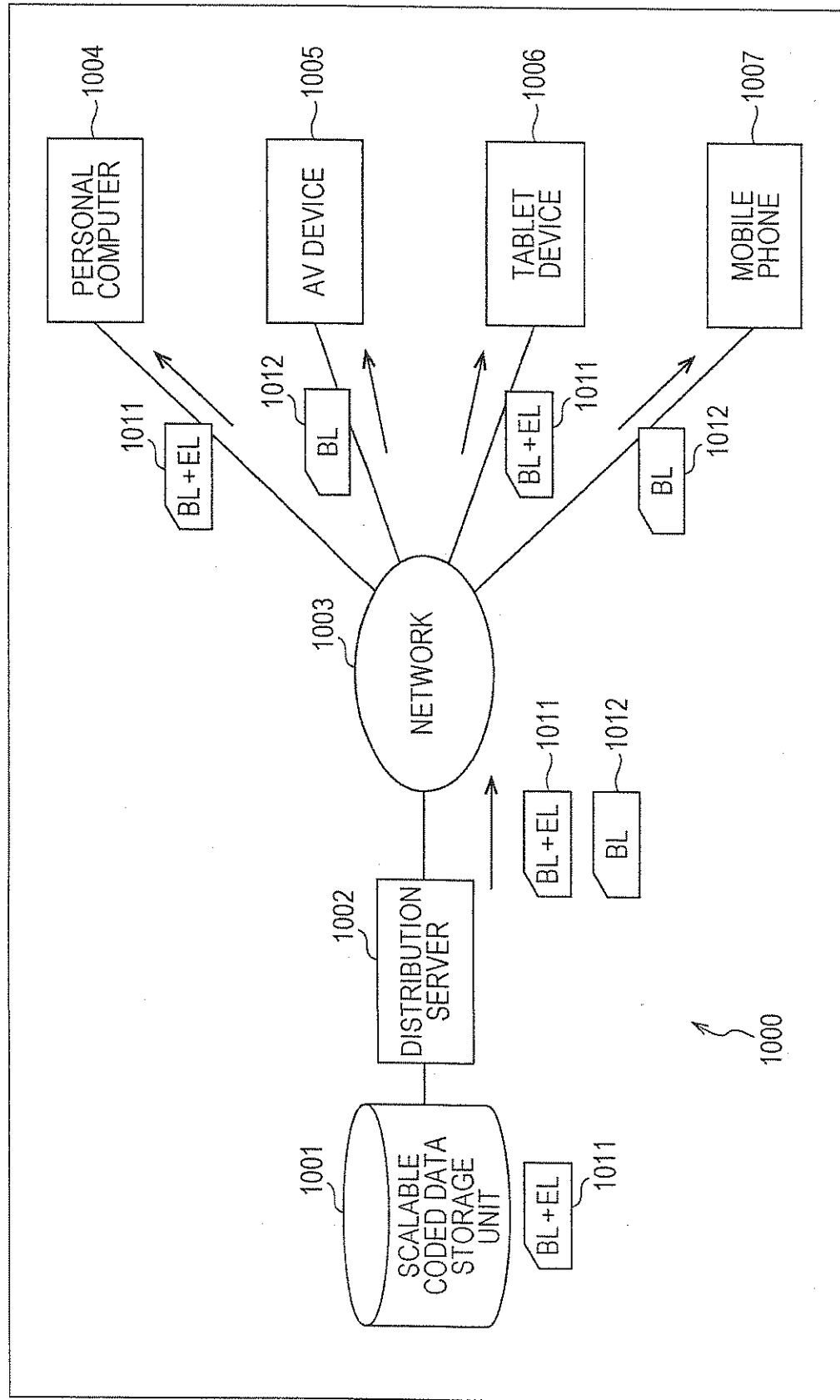


FIG. 40

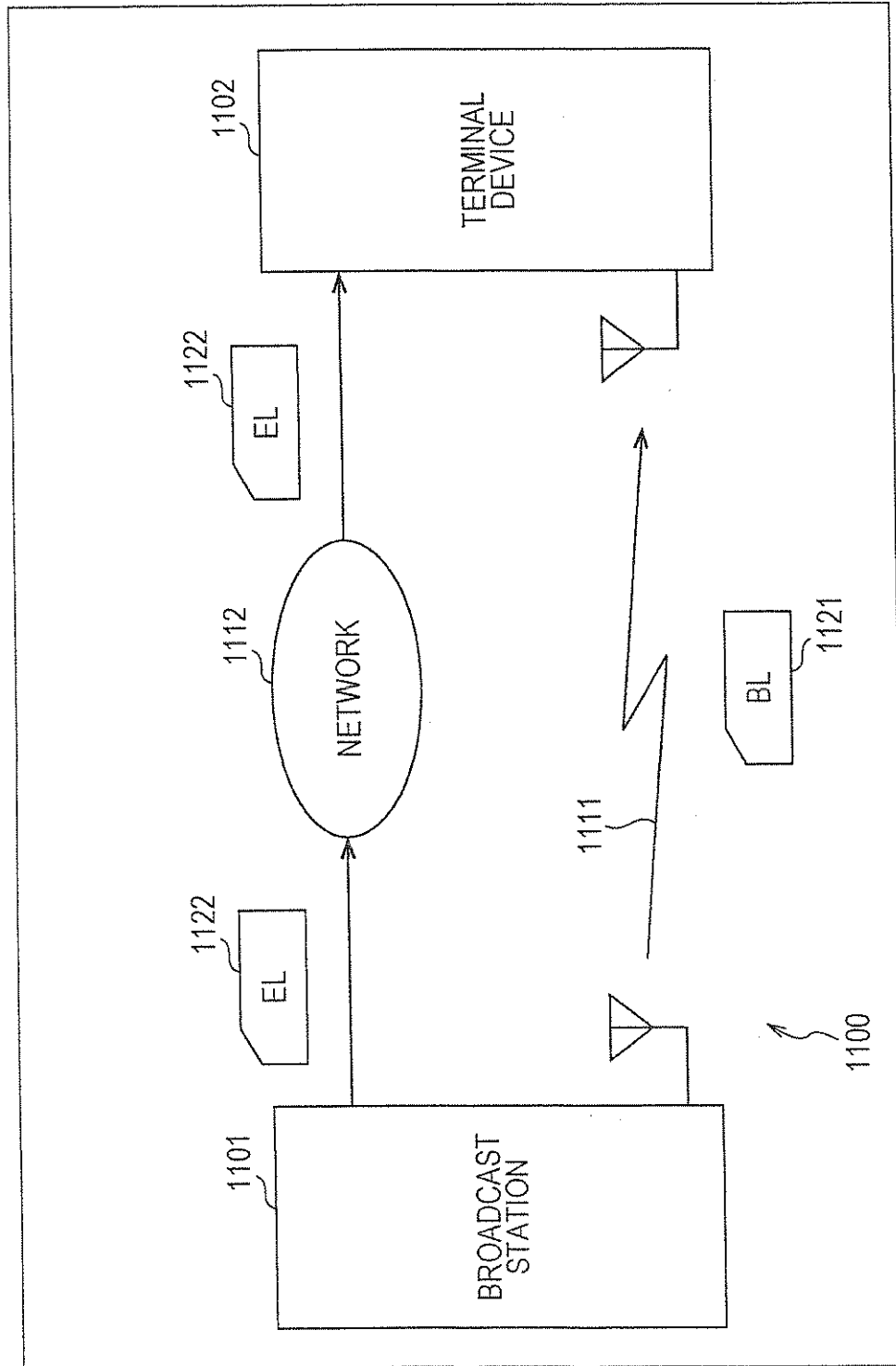


FIG. 41

