

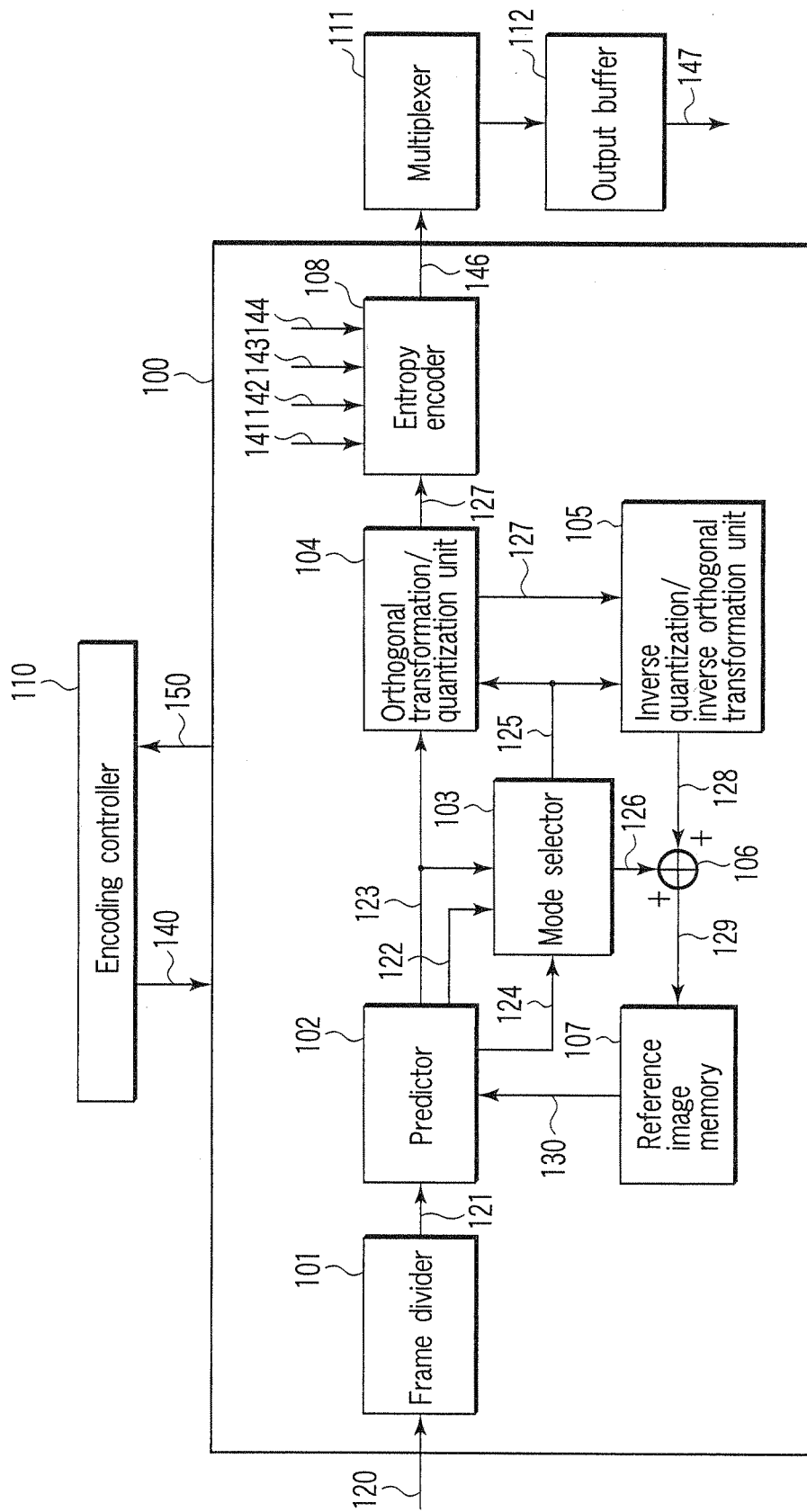


FIG. 1

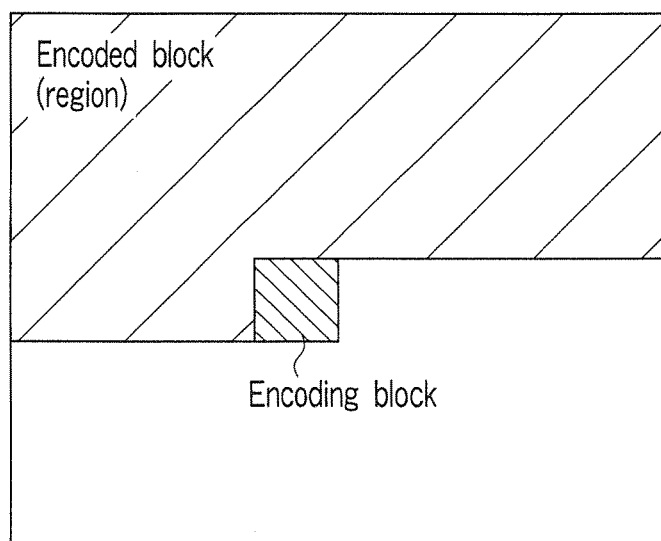


FIG. 2A

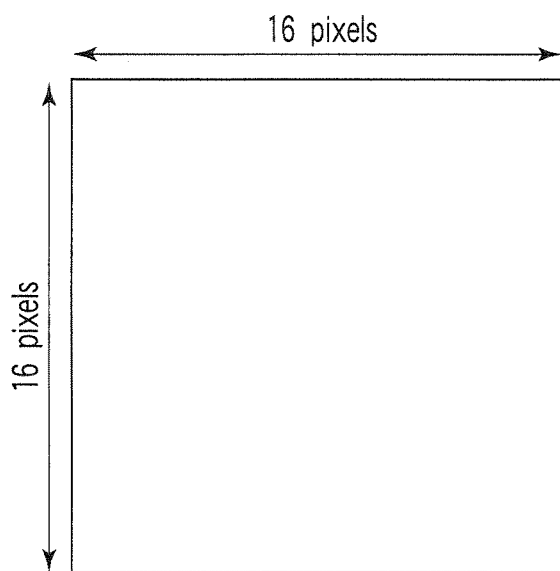


FIG. 2B

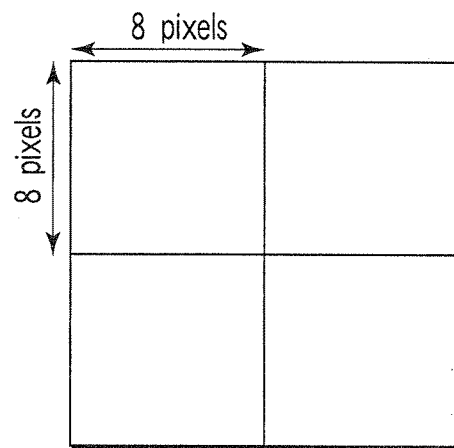


FIG. 3A

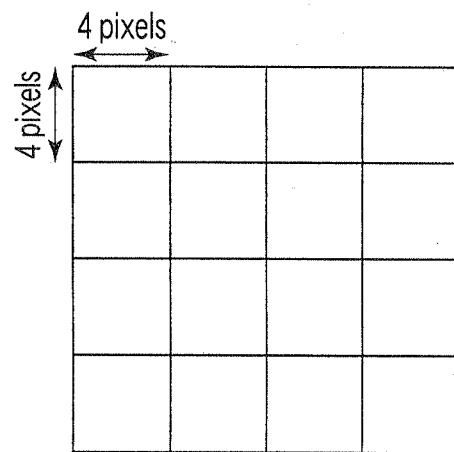


FIG. 3B

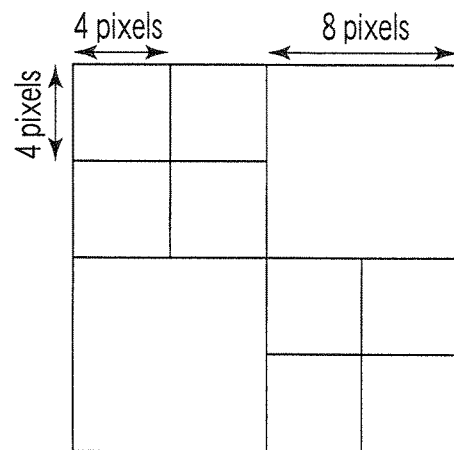


FIG. 3C

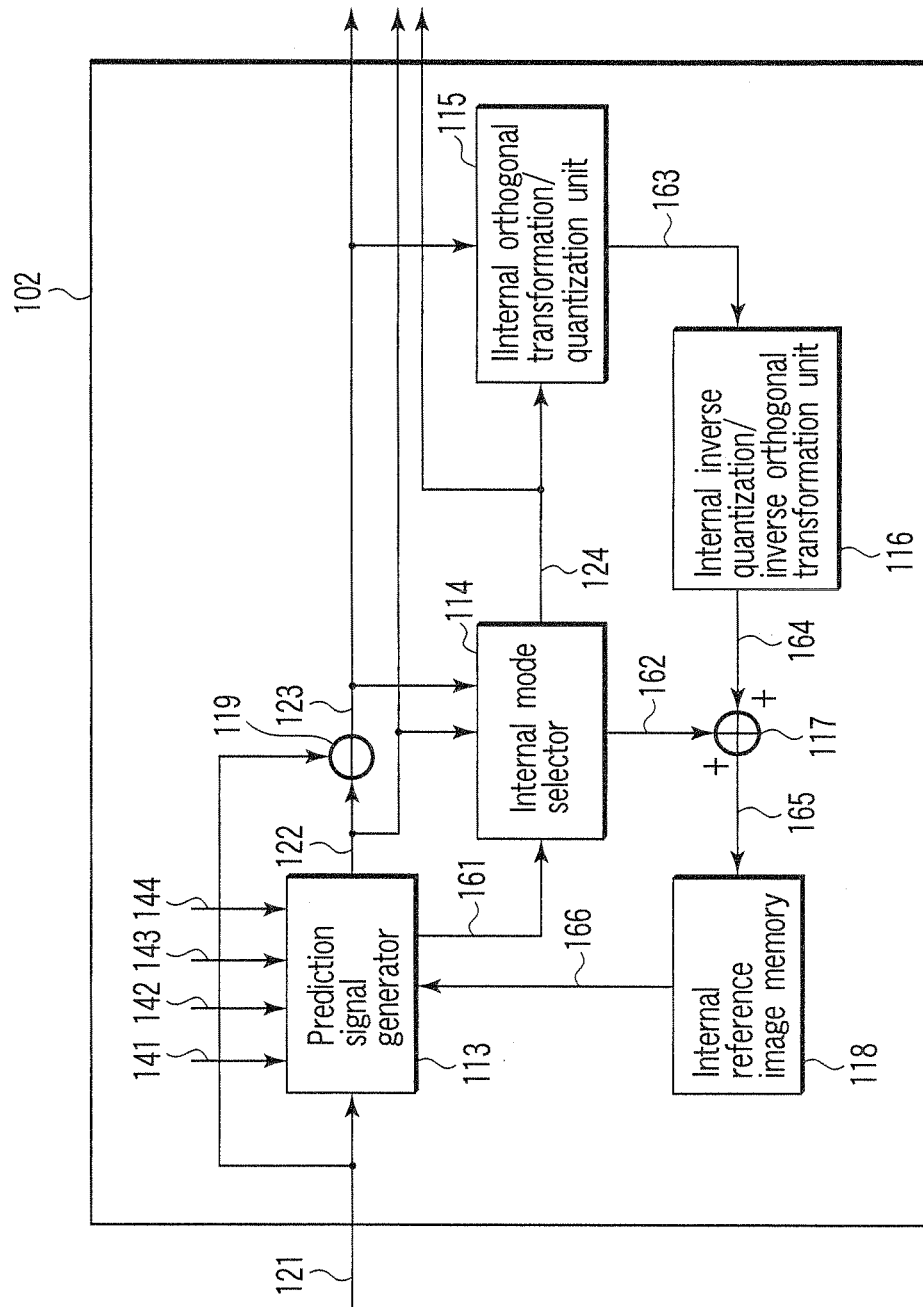


FIG. 4

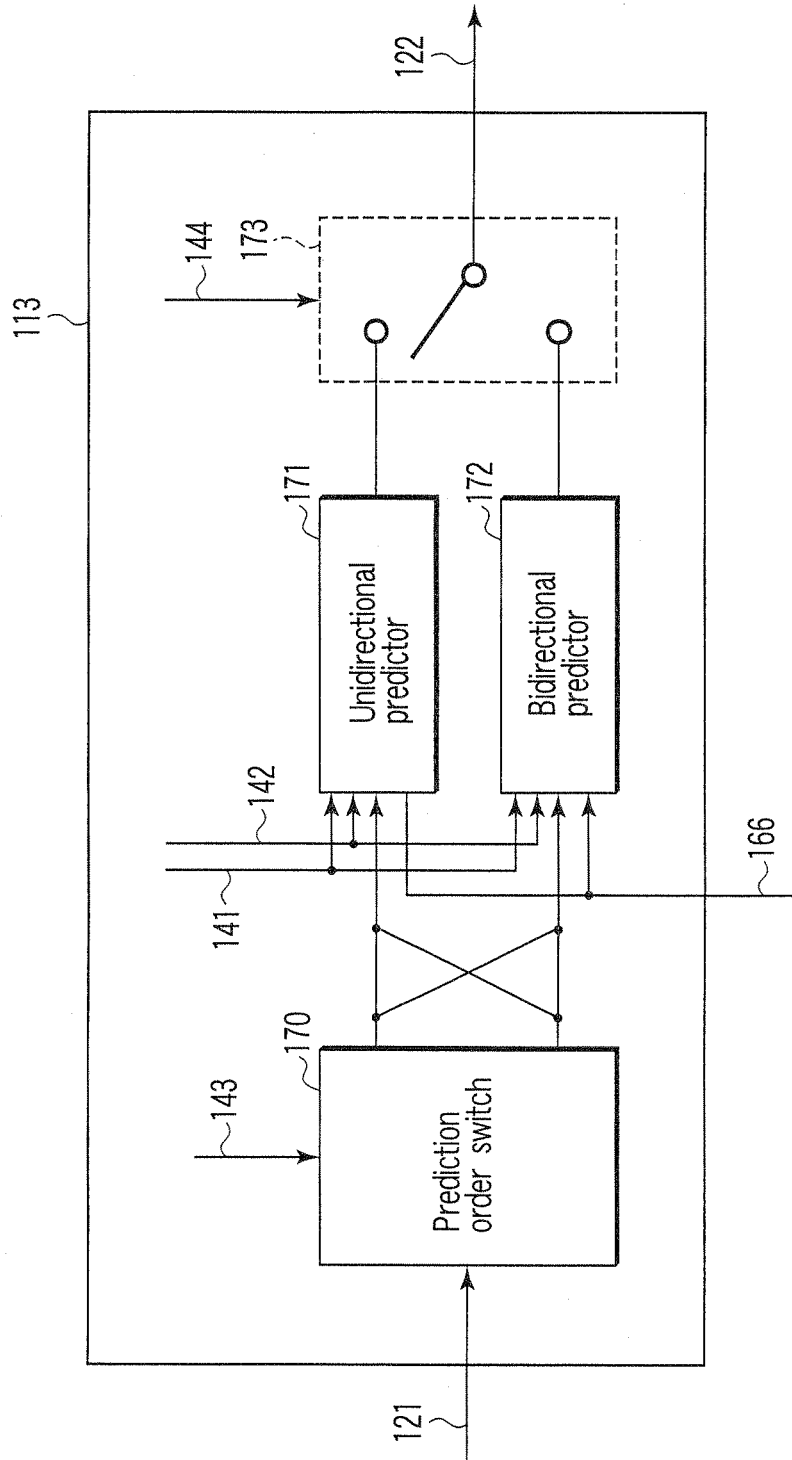


FIG. 5

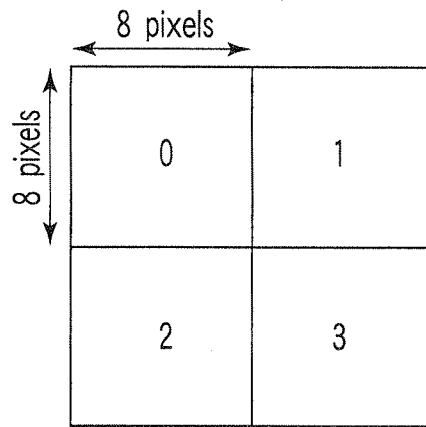


FIG. 6A

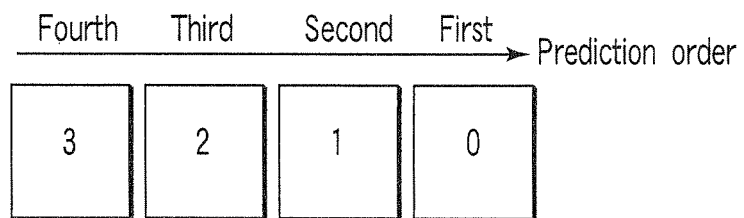


FIG. 6B

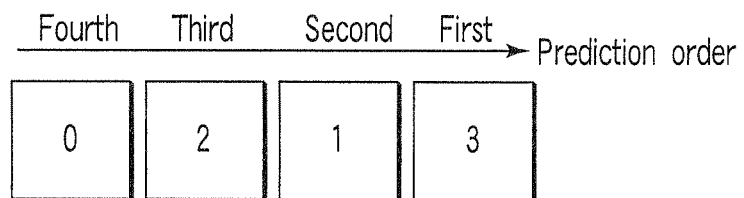


FIG. 6C

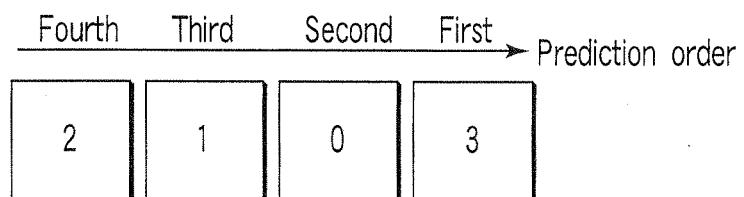
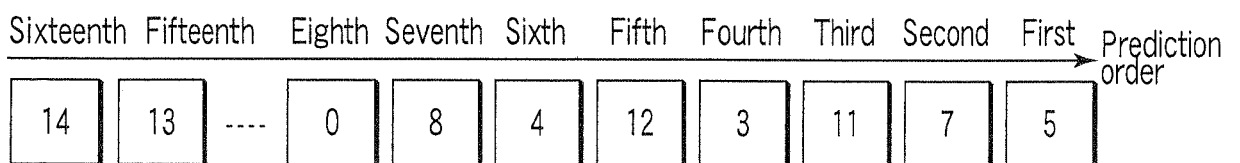
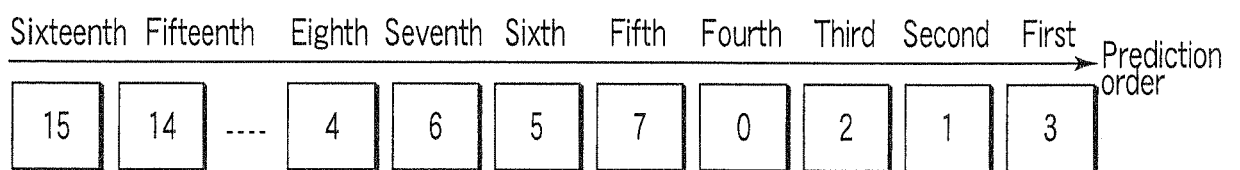
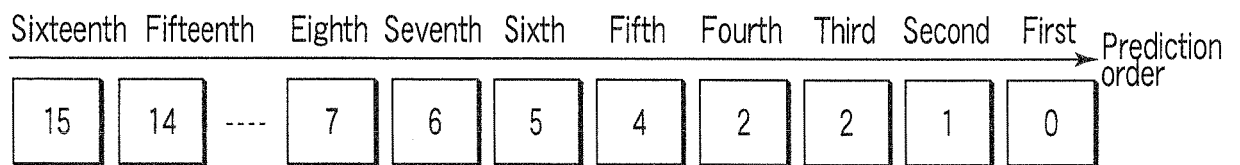
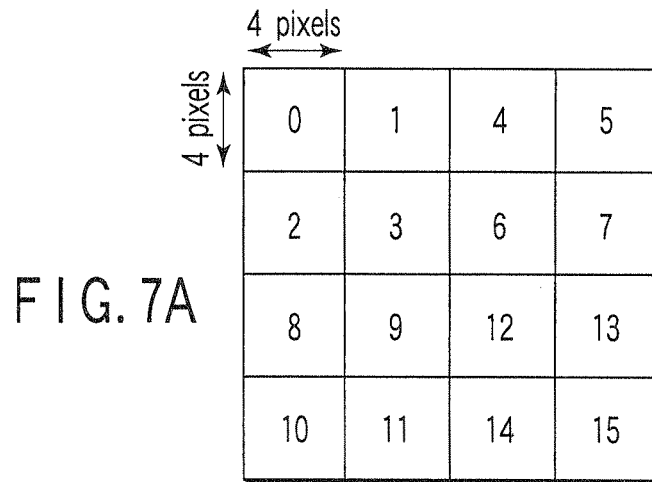


FIG. 6D



idx	blkConv[0][idx]	blkConv[1][idx]
0	0	3
1	1	1
2	2	2
3	3	0
4	4	7
5	5	5
6	6	6
7	7	4
8	8	11
9	9	9
10	10	10
11	11	8
12	12	15
13	13	13
14	14	14
15	15	12

FIG. 8

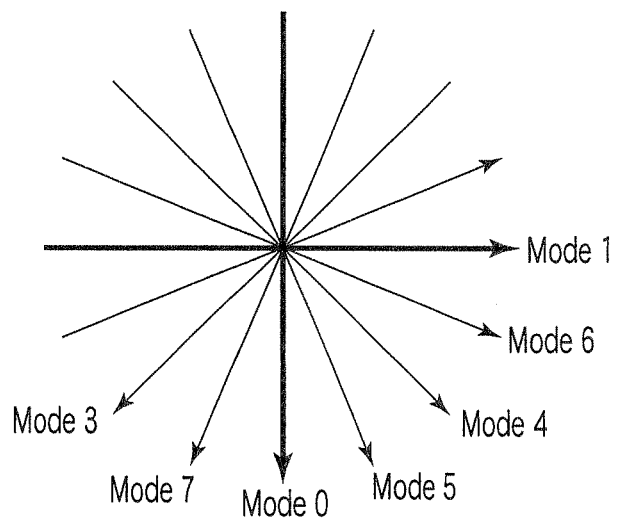


FIG. 9A

M	A	B	C	D	E	F	G	H
I	a	b	c	d				
J	e	f	g	h				
K	i	j	k	l				
L	m	n	o	p				

FIG. 9B

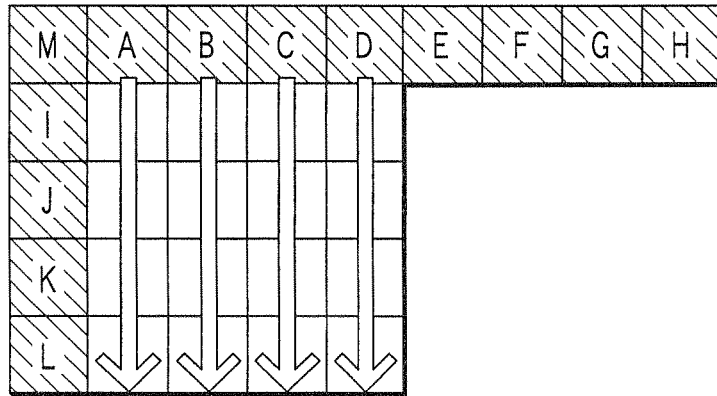


FIG. 9C

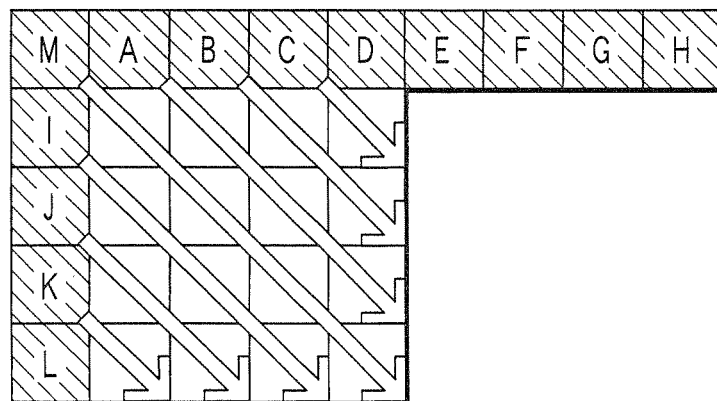


FIG. 9D

FIG. 10

Mode index	Unidirectional prediction name
0	Vertical prediction
1	Horizontal prediction
2	DC prediction
3	Diagonal-down-left prediction
4	Diagonal-down-right prediction
5	Vertical-right prediction
6	Horizontal-down prediction
7	Vertical-left prediction
8	Horizontal-upper prediction

Mode index	Bidirectional prediction name	Mode index	Bidirectional prediction name
01	Vertical/horizontal prediction	26	DC/horizontal-down prediction
02	Vertical/DC prediction	27	DC/vertical-left prediction
03	Vertical/diagonal-down-left prediction	28	DC/horizontal-upper prediction
04	Vertical/diagonal-down-right prediction	34	Diagonal-down-left/orthogonal lower-right prediction
05	Vertical/right prediction	35	Diagonal-down-left/vertical-down-right prediction
06	Vertical/horizontal-down prediction	36	Diagonal-down-left/horizontal-down prediction
07	Vertical/vertical-left prediction	37	Diagonal-down-left/vertical-left prediction
08	Vertical/horizontal-upper prediction	38	Diagonal-down-left/horizontal-upper prediction
12	Horizontal/DC prediction	45	Diagonal-down-right/vertical-right prediction
13	Horizontal/diagonal-down-left prediction	46	Diagonal-down-right/horizontal-down prediction
14	Horizontal/diagonal-down-right prediction	47	Diagonal-down-right/vertical-left prediction
15	Horizontal/vertical-right prediction	48	Diagonal-down-right/horizontal-upper prediction
16	Horizontal/horizontal-down prediction	56	Vertical-right/horizontal-down prediction
17	Horizontal/vertical-left prediction	57	Vertical-right/vertical-left prediction
18	Horizontal/horizontal-upper prediction	58	Vertical-right/horizontal-upper prediction
23	DC/diagonal-down-left prediction	67	Horizontal-down/vertical left prediction
24	DC/diagonal-down-right prediction	68	Horizontal-down/horizontal-upper prediction
25	DC/vertical-right prediction	78	Vertical-left/horizontal-upper prediction

FIG. 11

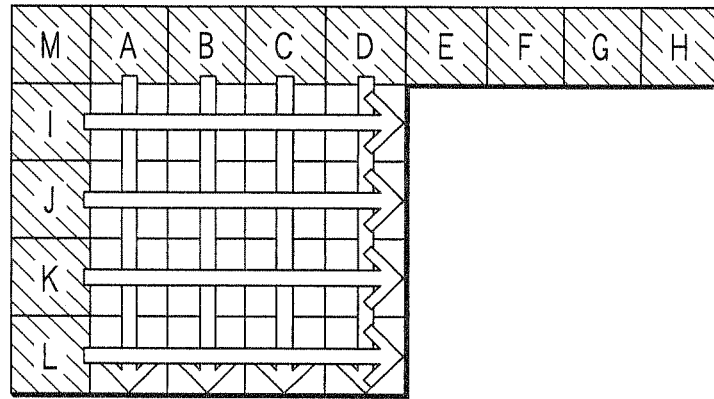


FIG. 12A

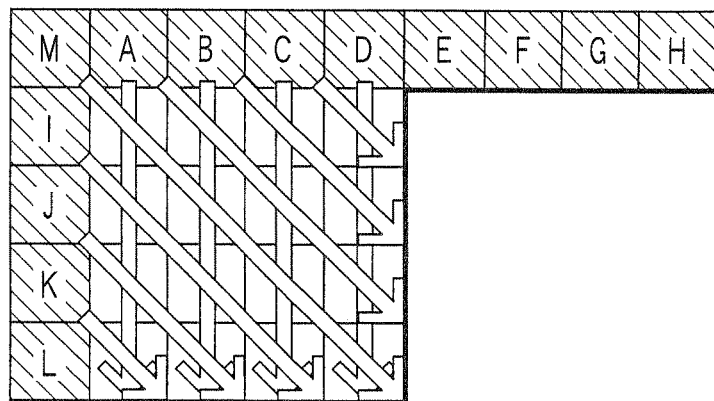


FIG. 12B

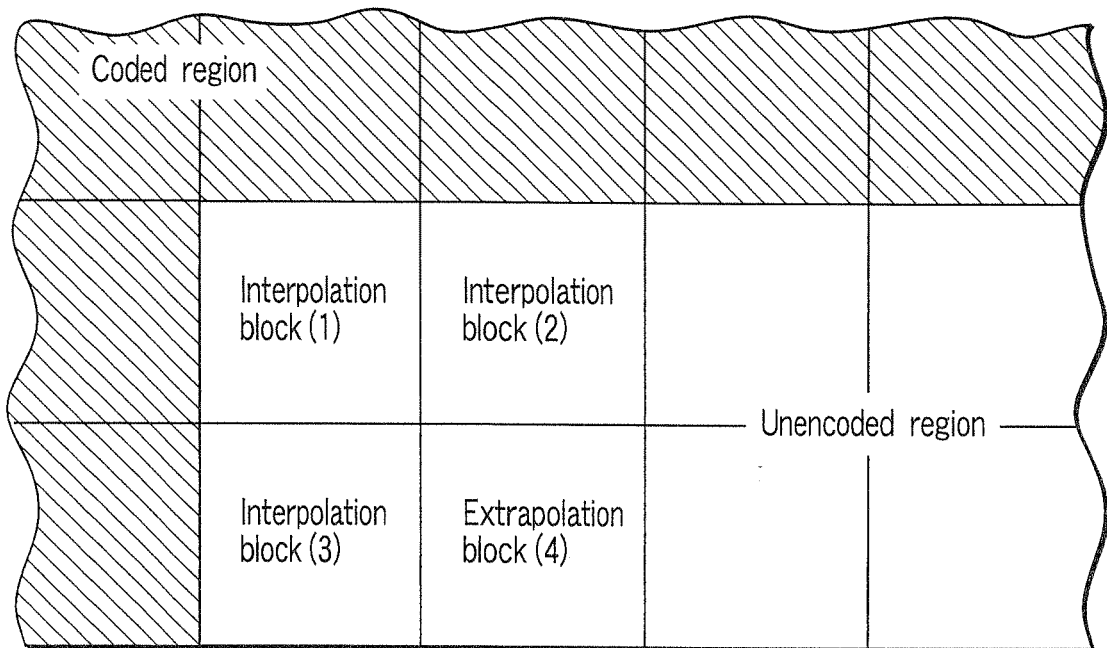


FIG. 13A

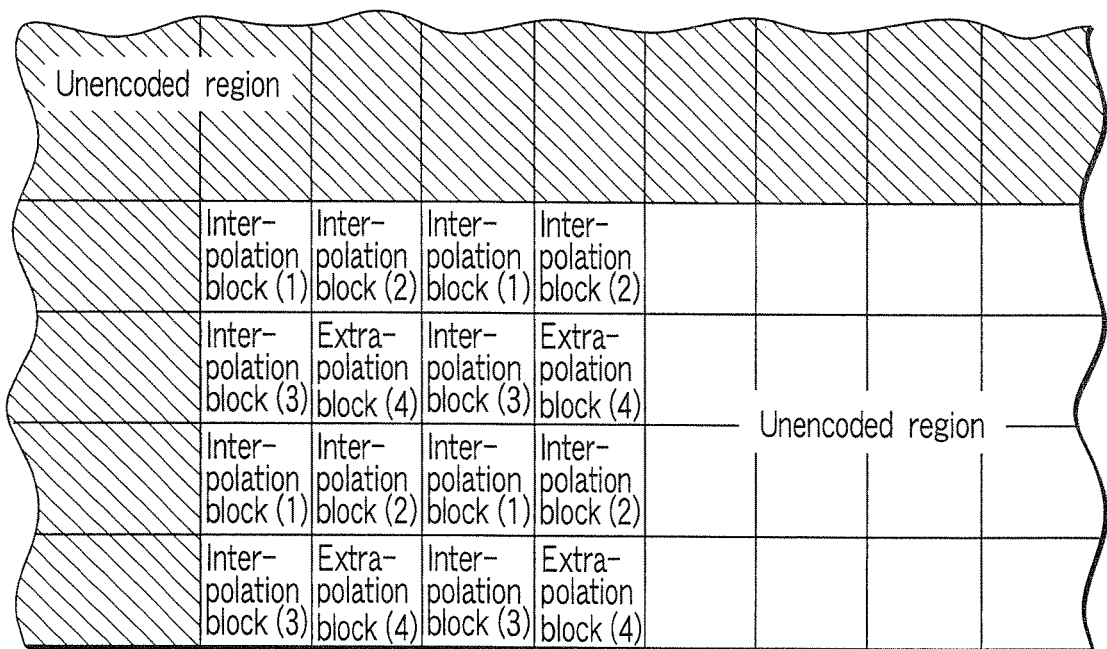


FIG. 13B

Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Q																
R	Unencoded block				Unencoded block											
S																
T																
U					a	b	c	d								
V	Unencoded block				e	f	g	h								
W					i	j	k	l								
X					m	n	o	p								

FIG. 14A

Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Q					a	b	c	d								
R	Unencoded block				e	f	g	h								
S					i	j	k	l								
T					m	n	o	p								
U					RA	RB	RC	RD								
V	Unencoded block															
W																
X																

FIG. 14B

Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Q					RA											
R	Unencoded block				RB	Encoded block										
S					RC											
T					RD											
U	a	b	c	d	RE											
V	e	f	g	h	RF	Encoded block										
W	i	j	k	l	RG											
X	m	n	o	p	RH											

FIG. 14C

Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Q	a	b	c	d	RE											
R	e	f	g	h	RF	Encoded block										
S	i	j	k	l	RG											
T	m	n	o	p	RH											
U	RA	RB	RC	RD	RI											
V																
W		Encoded block				Encoded block										
X																

FIG. 14D

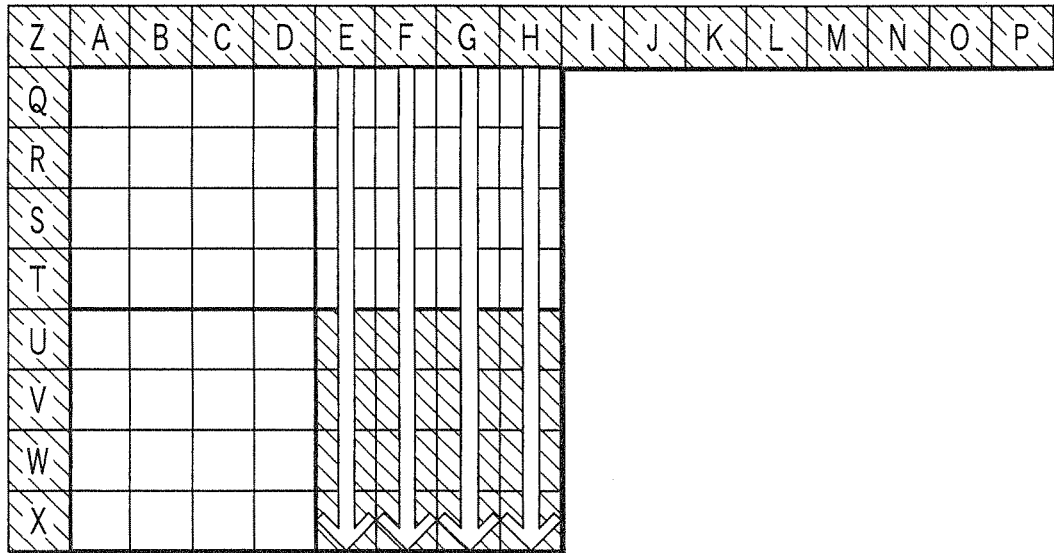


FIG. 15A

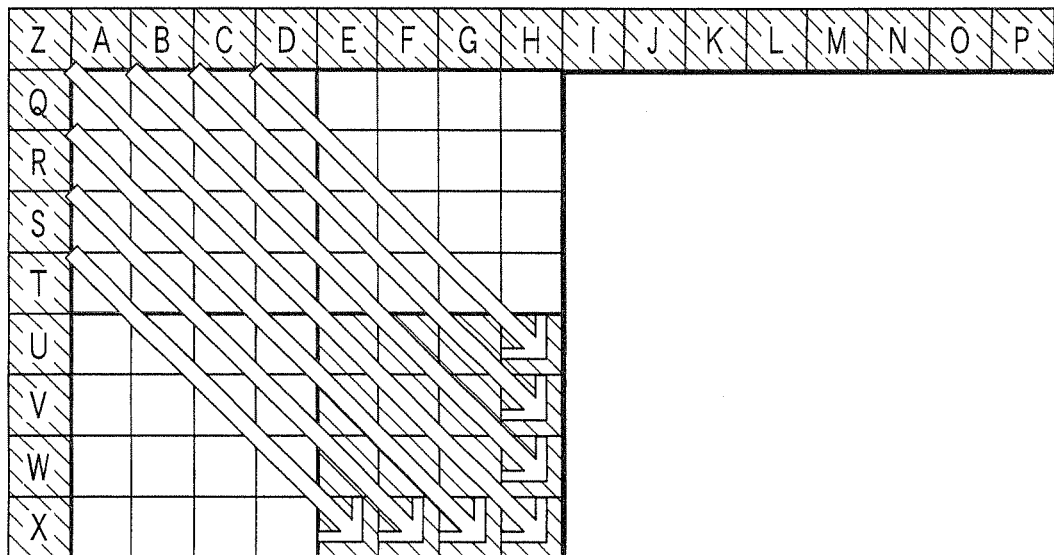


FIG. 15B

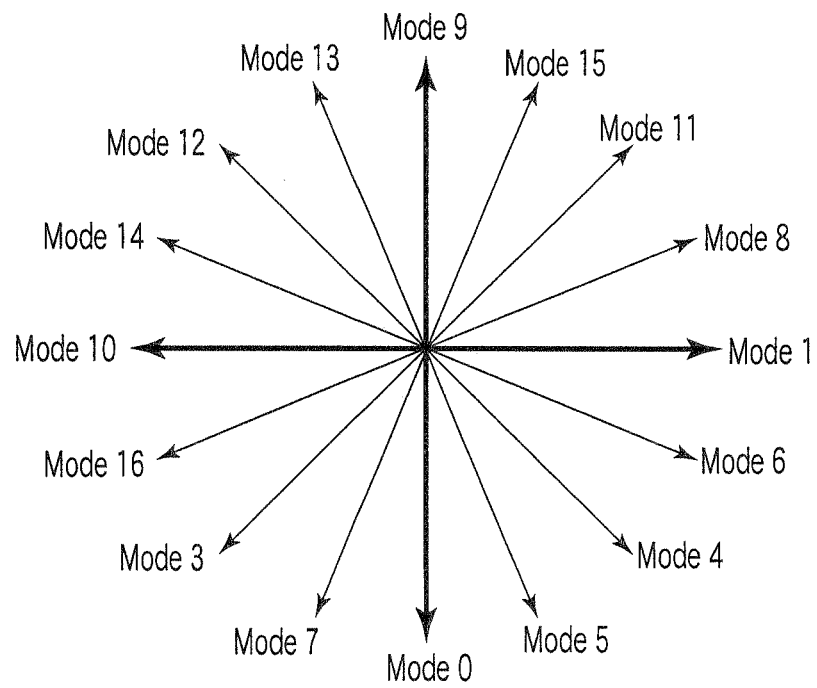


FIG. 16

Mode index	Unidirectional prediction name
00	Vertical prediction
01	Horizontal prediction
02	DC prediction
03	Diagonal-down-left prediction
04	Diagonal-down-right prediction
05	Vertical-right prediction
06	Horizontal-down prediction
07	Vertical-left prediction
08	Horizontal-upper prediction
09	Inverse-vertical prediction
10	Inverse-horizontal prediction
11	Diagonal-upper-right prediction
12	Diagonal-upper-left prediction
13	Inverse-vertical-left prediction
14	Inverse-horizontal-upper prediction
15	Inverse-vertical-right prediction
16	Inverse-horizontal-down prediction

FIG. 17

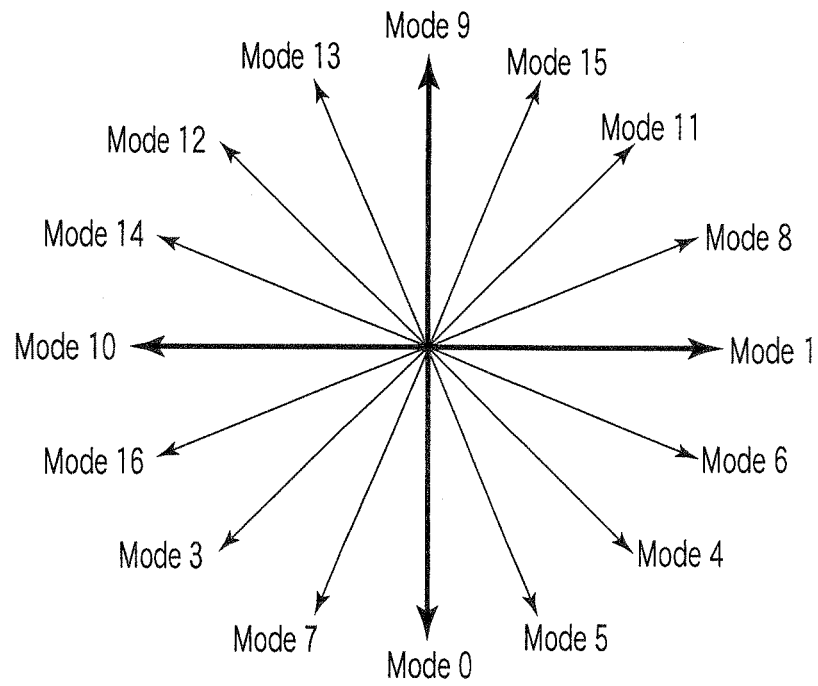


FIG. 18A

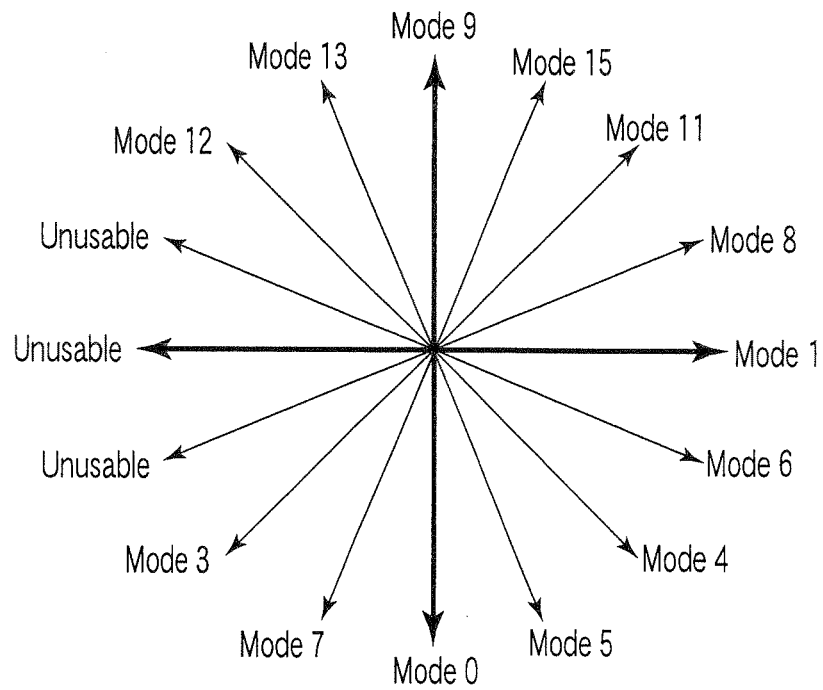


FIG. 18B

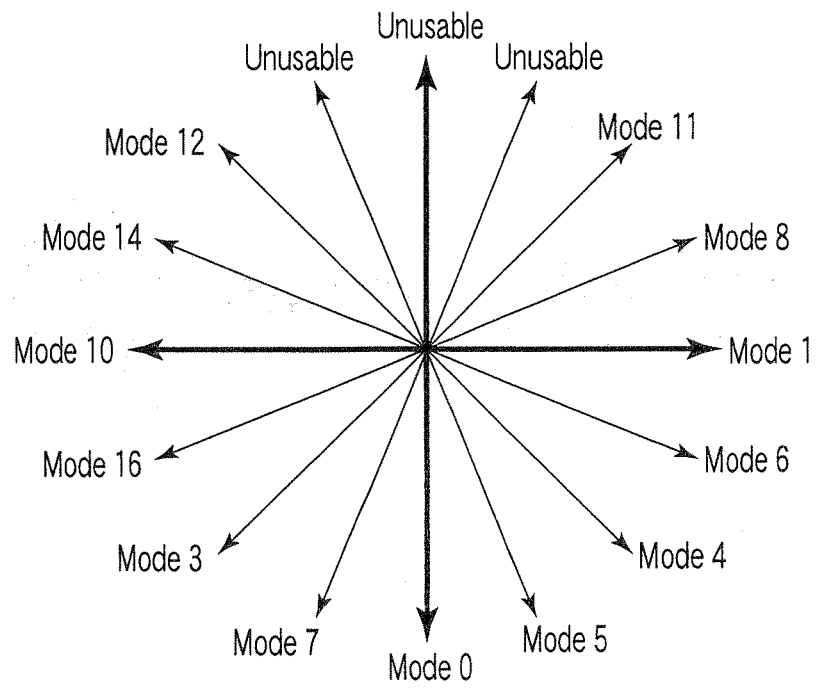


FIG. 18C

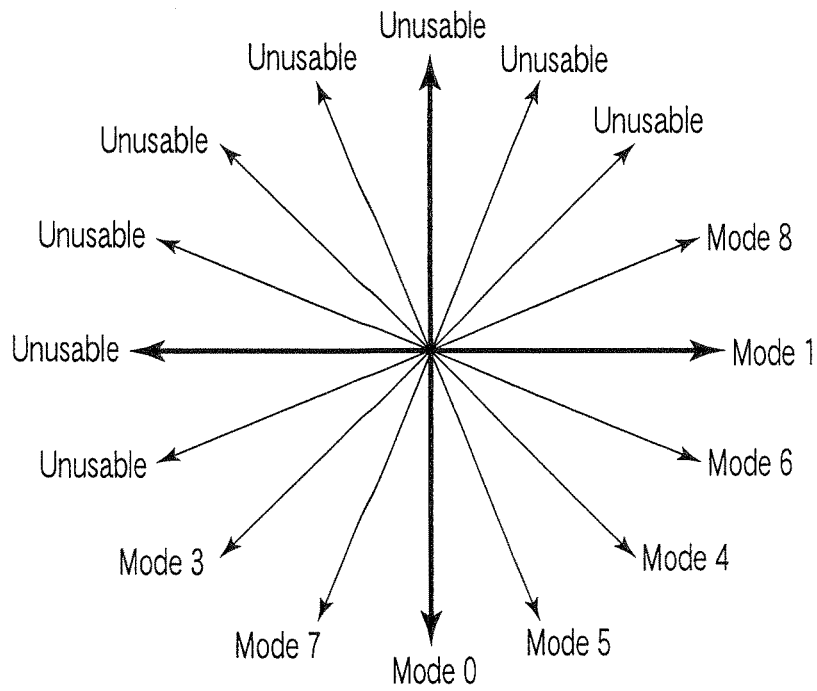


FIG. 18D

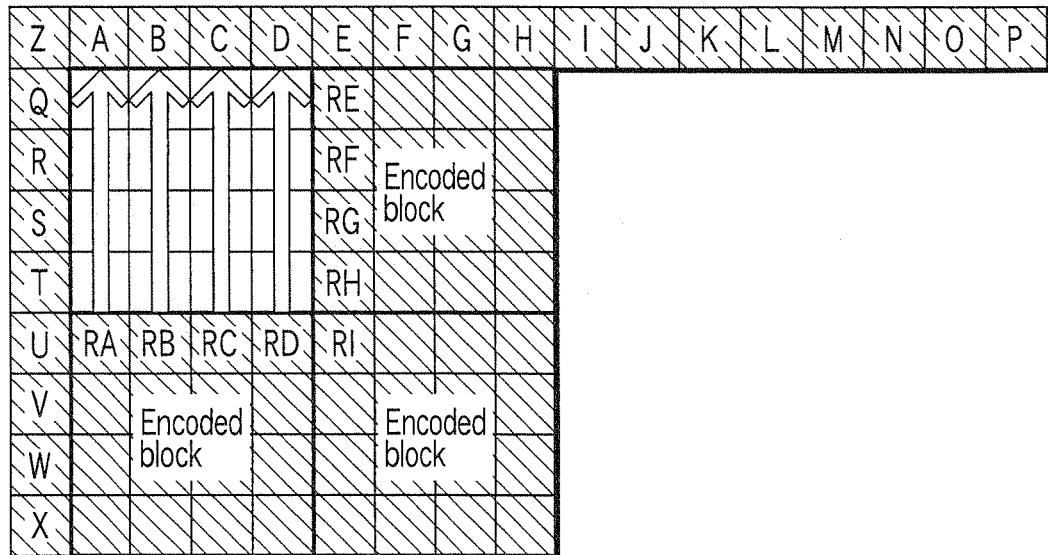


FIG. 19A

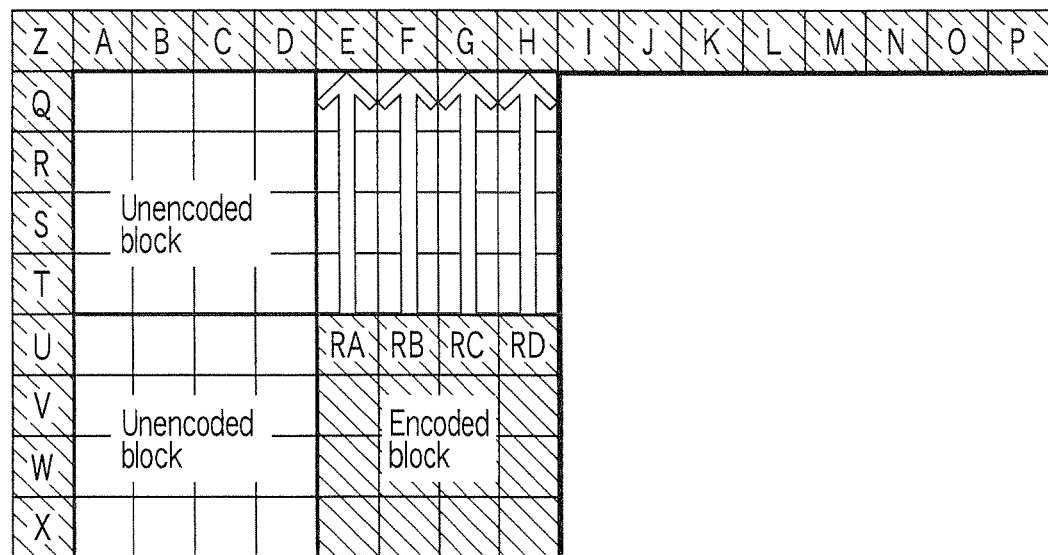


FIG. 19B

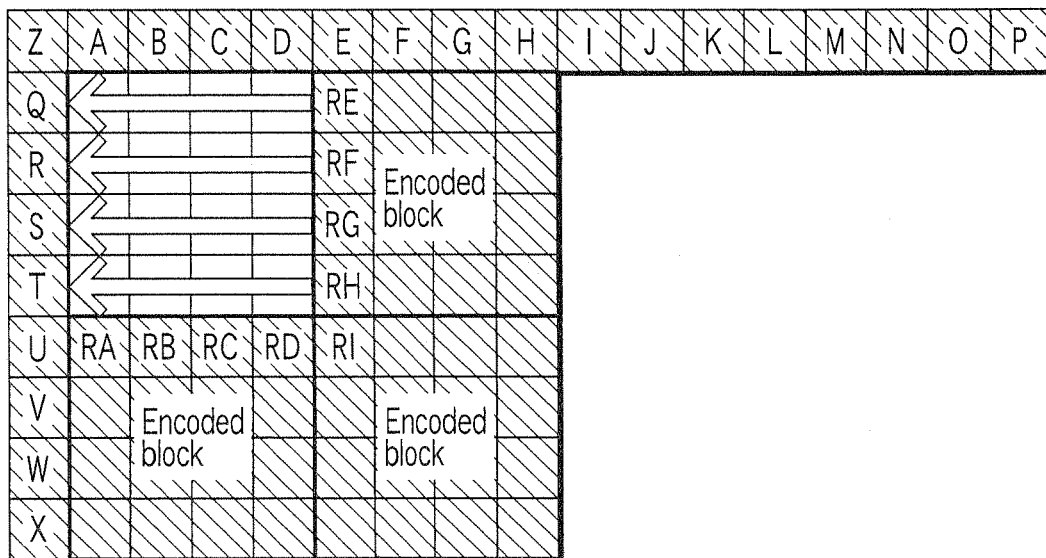


FIG. 20A

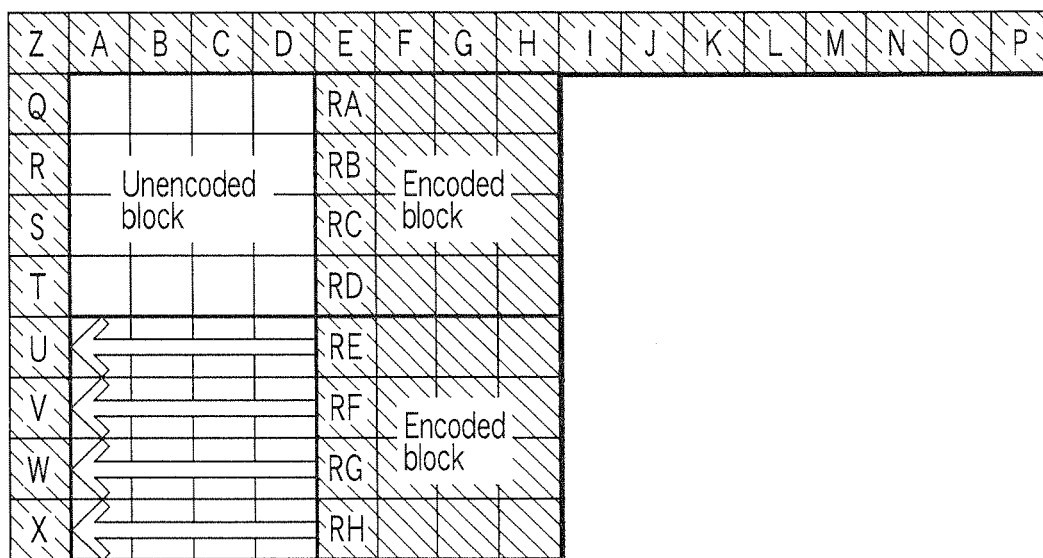


FIG. 20B

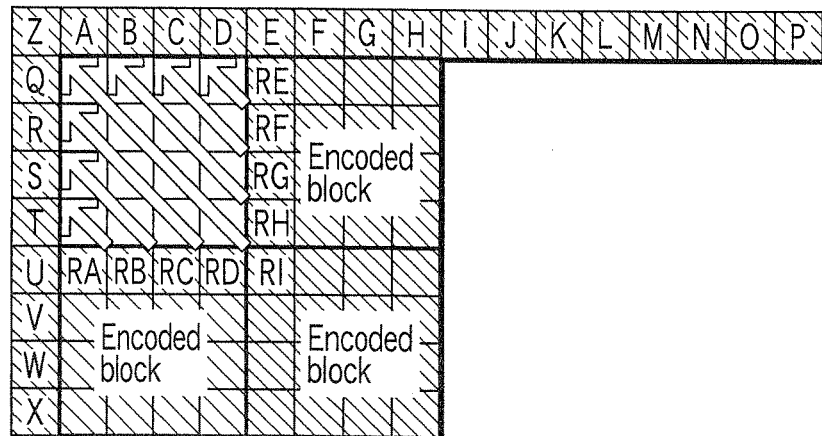


FIG. 21A

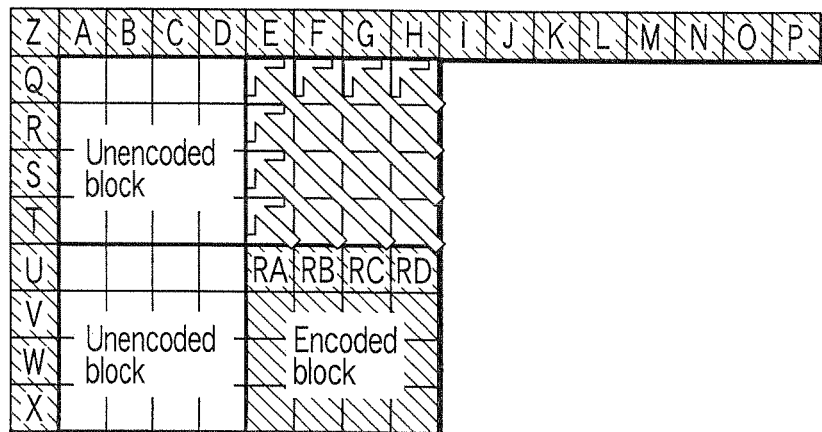


FIG. 21B

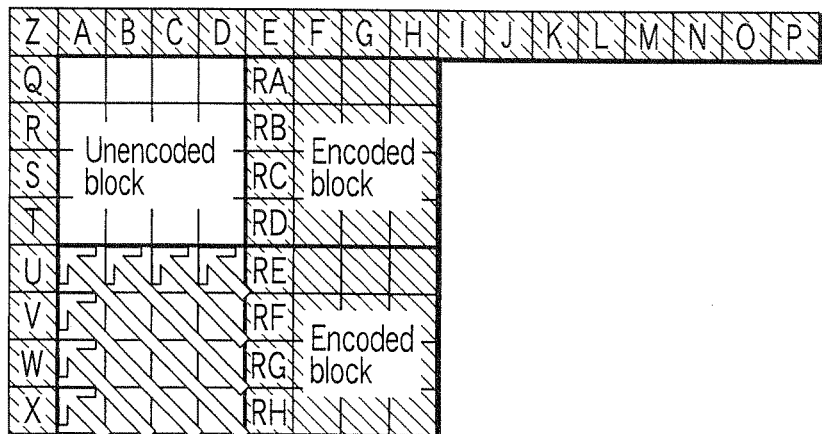


FIG. 21C

Mode index	Bidirectional prediction name	Mode index	Bidirectional prediction name
0001	Vertical/horizontal prediction	-----	-----
0002	Vertical/DC prediction	1015	Inverse-horizontal/inverse-vertical-right prediction
0003	Vertical/diagonal-down-left prediction	1016	Inverse-horizontal/inverse-horizontal-down prediction
0004	Vertical/diagonal-down-right prediction	1112	Diagonal-upper-right/diagonal-upper-left prediction
0005	Vertical/right prediction	1113	Diagonal-upper-right/inverse-vertical left prediction
0006	Vertical/horizontal-down prediction	1114	Diagonal-upper-right/inverse-horizontal-upper prediction
0007	Vertical/vertical-left prediction	1115	Diagonal-upper-right/inverse-vertical-right prediction
0008	Vertical/horizontal-upper prediction	1116	Diagonal-upper-right/inverse-horizontal-down prediction
0009	Vertical/inverse-vertical prediction	1213	Diagonal-upper-left/inverse-vertical-left prediction
0010	Vertical/inverse-horizontal prediction	1214	Diagonal-upper-left/inverse-horizontal-upper prediction
0011	Vertical/diagonal-upper-right prediction	1215	Diagonal-upper-left/inverse-vertical-right prediction
0012	Vertical/diagonal-upper-left prediction	1216	Diagonal-upper-left/inverse-horizontal-down prediction
0013	Vertical/inverse-vertical-left prediction	1314	Inverse-vertical-left/inverse-horizontal-upper prediction
0014	Vertical/inverse-horizontal-upper prediction	1315	Inverse-vertical-left/inverse-vertical-right prediction
0015	Vertical/inverse-vertical-right prediction	1316	Inverse-vertical-left/inverse-horizontal-down prediction
0016	Vertical/ inverse-horizontal-down prediction	1415	Inverse-horizontal-upper/inverse-vertical-right prediction
0102	Horizontal/DC prediction	1416	Inverse-horizontal-upper/inverse-horizontal down prediction
-----	-----	1516	Inverse-horizontal-down/inverse-horizontal down prediction

FIG. 22

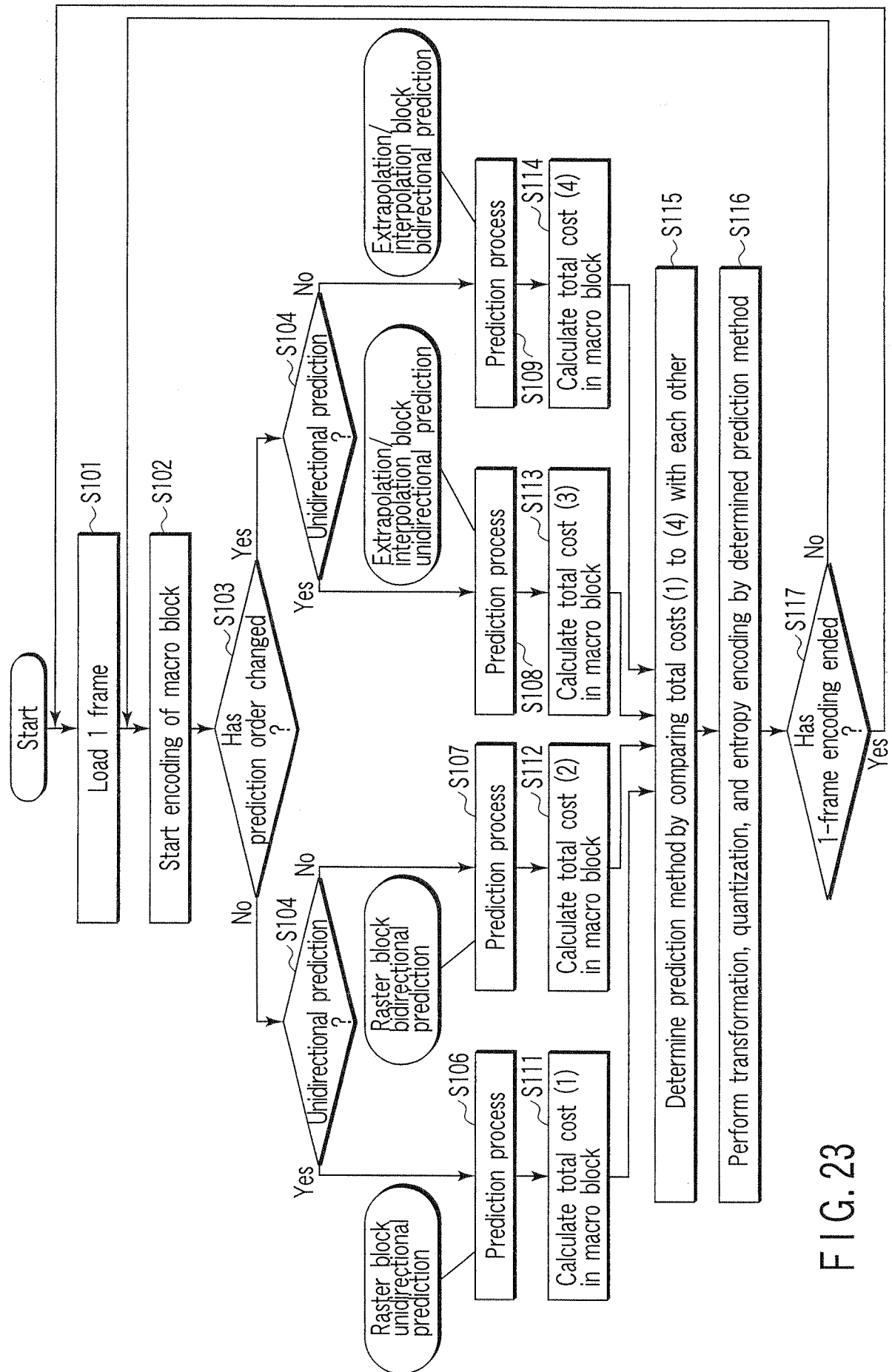


FIG. 23

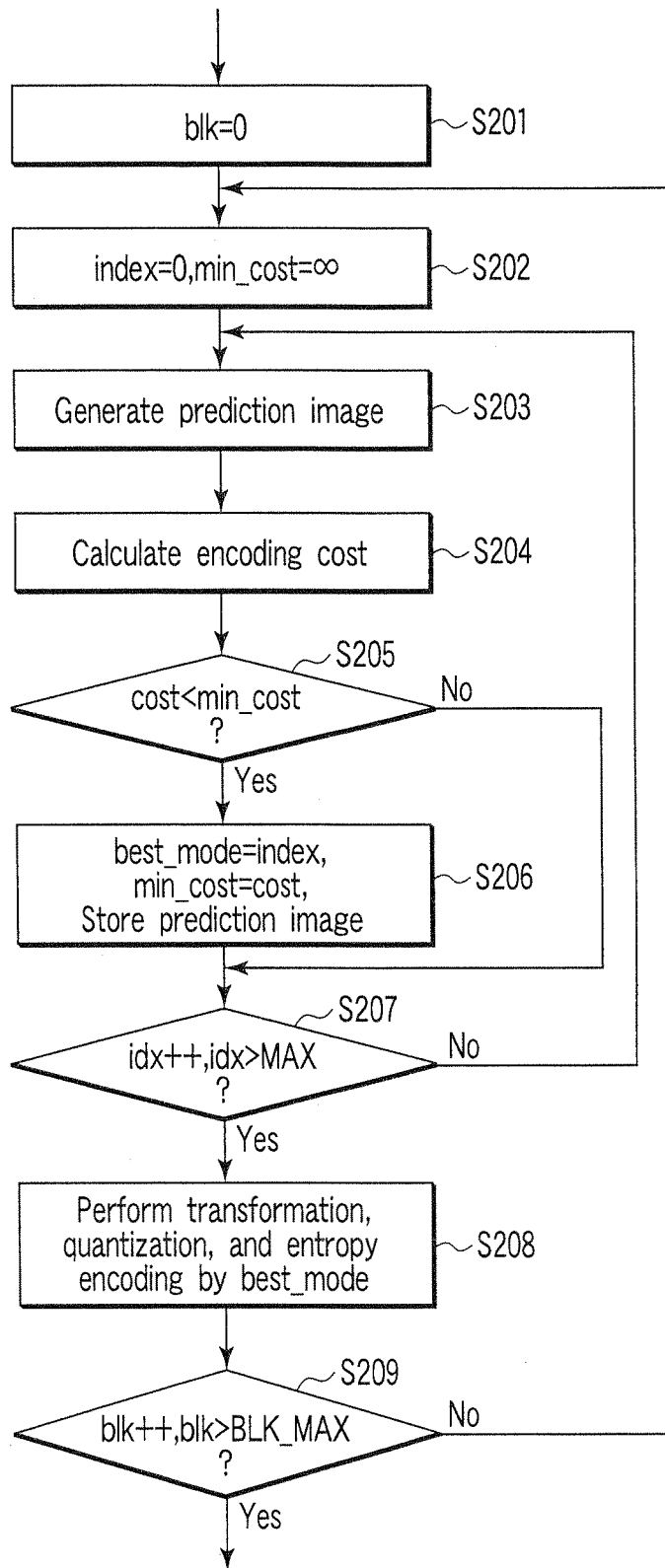


FIG. 24

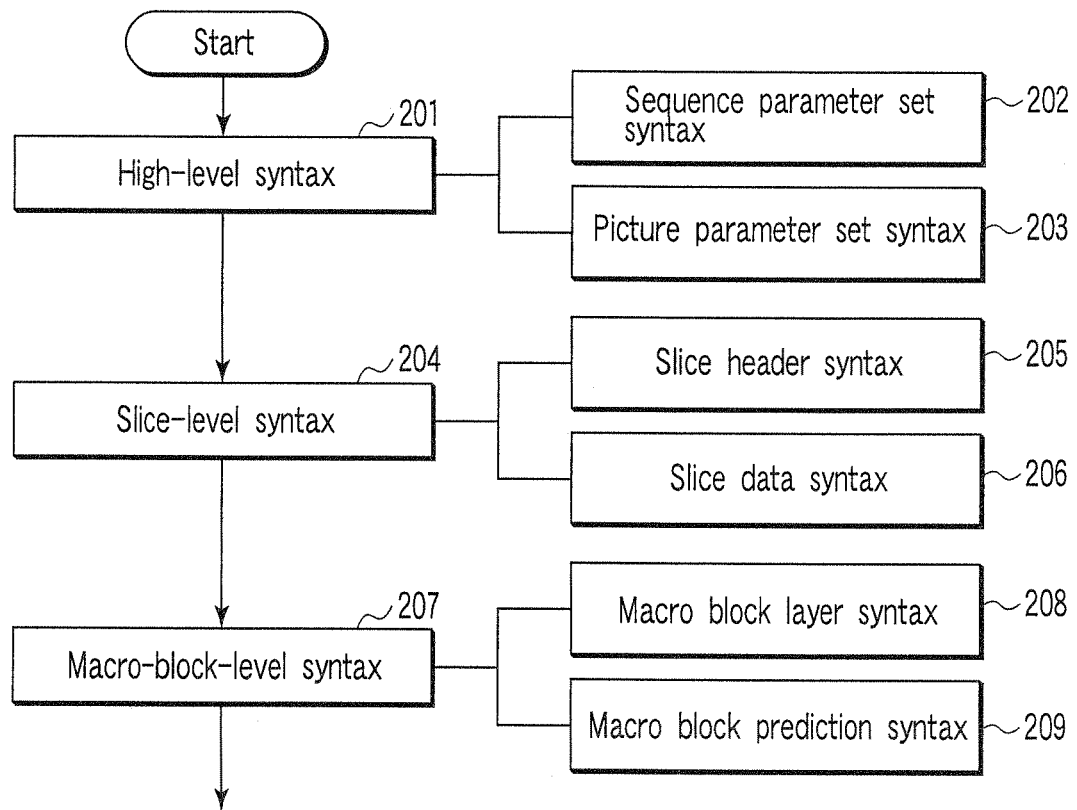


FIG. 25

macroblock_layer() {

mb_type
block_order_flag

}

FIG. 26

mb_pred(mb_type,block_order_flag){

if(MbPartPredMode(mb_type,0) == Intra_4x4
MbPartPredMode(mb_type,0) == Intra_8x8
MbPartPredMode(mb_type,0) == Intra_16x16){
if(MbPartPredMode(mb_type,0) == Intra_4x4){
for(luma4x4BlkIdx=0;luma4x4BlkIdx<16;luma4x4BlkIdx++){
order=blkConv[block_order_flag][luma4x4BlkIdx]
intra4x4_pred_mode_I0[block_order_flag][order]
intra4x4_bi_pred_flag[order]
if(intra4x4_bi_pred_frag[order]){
intra4x4_pred_mode_I1[block_order_flag][order]
}
}
}
if(MbPartPredMode(mb_type,0) == Intra_8x8){
for(luma8x8BlkIdx=0;luma8x8BlkIdx<4;luma8x8BlkIdx++){
order=blkConv[block_order_flag][luma8x8BlkIdx]
intra8x8_pred_mode_I0[block_order_flag][order]
intra8x8_bi_pred_flag[order]
if(intra8x8_bi_pred_frag[order]){
intra8x8_pred_mode_I1[block_order_flag][order]
}
}
}
}

FIG. 27

intra4x4_pred_mode_I0[block_order_flag][order] =modeConv[intra4x4_pred_mode_I0_org[block_order_flag][order%4]]

FIG. 28

intra4x4_pred_mode_10(1)_org/ intra8x8_pred_mode_10(1)_org							intra4x4_pred_mode_10(1)/ intra8x8_pred_mode_10(1)
modeConv [1][0]	modeConv [1][1]	modeConv [1][2]	modeConv [1][2]	modeConv [1][2]	modeConv [0][order]		
Interpolation block (1)	Interpolation block (2)	Interpolation block (3)	Interpolation block (4)	Interpolation block (4)		Transformation →	
0	0	0	0	0	0		0
1	1	1	1	1	1		1
2	2	2	2	2	2		2
3	3	3	3	3	3		3
4	4	4	4	4	4		4
5	5	5	5	5	5		5
6	6	6	6	6	6		6
7	7	7	7	7	7		7
8	8	8	8	8	8		8
9	9	10	10	10	10		9
10	11	11	11	11	11		10
11	12	12	12	12	12		11
12	13	14	14	14	14		12
13	15	16	16	16	16		13
14	----	----	----	----	----		14
15	----	----	----	----	----		15
16	----	----	----	----	----		16
17	14	14	14	9	9		

FIG. 29

Mode	Mode name	Interpolation block (1)	Interpolation block (2)	Interpolation block (3)	Interpolation block (4)
0	Vertical prediction	○	○	○	○
1	Horizontal prediction	○	○	○	○
2	DC prediction	○	○	○	○
3	Diagonal-down-left prediction	○	○	○	○
4	Diagonal-down-right prediction	○	○	○	○
5	Vertical-right prediction	○	○	○	○
6	Horizontal-down prediction	○	○	○	○
7	Vertical-left prediction	○	○	○	○
8	Horizontal-upper prediction	○	○	○	○
9	Inverse-horizontal prediction	○	○	×	×
10	Inverse-horizontal prediction	○	×	○	×
11	Diagonal-upper- right prediction	○	○	○	×
12	Diagonal-upper- left prediction	○	○	○	×
13	Inverse-vertical-left prediction	○	○	×	×
14	Inverse-horizontal- upper prediction	○	×	○	×
15	Inverse-vertical-right prediction	○	○	×	×
16	Inverse-horizontal- down prediction	○	×	○	×
(○: mode usable ×: mode unusable)					

FIG. 30

mb_pred(mb_type, block_order_flag){

if (MbPartPredMode(mb_type, 0) == Intra_4x4
MbPartPredMode(mb_type, 0) == Intra_8x8
MbPartPredMode(mb_type, 0) == Intra_16x16){
if (MbPartPredMode(mb_type, 0) == Intra_4x4){
for (luma4x4BlkIdx=0; luma4x4BlkIdx<16; luma4x4BlkIdx++){
order=blkConv[block_order_flag][luma4x4BlkIdx]
prev_intra4x4_pred_mode_l0_flag[block_order_flag][order]
if (!prev_intra4x4_pred_mode_l0_flag[block_order_flag][order])
rem_intra4x4_pred_mode_l0[block_order_flag][order]
intra4x4_bi_pred_flag[order]
if (intra4x4_bi_pred_flag[order]){
intra4x4_pred_mode_l1[block_order_flag][order]
}
}
}
}
if (MbPartPredMode(mb_type, 0) == Intra_8x8){
for (luma8x8BlkIdx=0; luma8x8BlkIdx<4; luma8x8BlkIdx++){
order=blkConv[block_order_flag][luma8x8BlkIdx]
prev_intra8x8_pred_mode_l0_flag[block_order_flag][order]
if (!prev_intra8x8_pred_mode_l0_flag[block_order_flag][order])
rem_intra8x8_pred_mode_l0[block_order_flag][order]
intra8x8_bi_pred_flag[order]
if (intra8x8_bi_pred_flag[order]){
intra8x8_pred_mode_l1[block_order_flag][order]
}
}
}
}
}

FIG. 31

ref_pred_mode=min(ref_blkA_mode_I0, ref_blkB_mode_I0)
if(pred_mode==intra4x4_pred_mode_I0[block_order_flag][order]){
prev_intra4x4_pred_mode_I0_flag[block_order_flag][order]=TRUE
}else{
prev_intra4x4_pred_mode_I0_flag[block_order_flag][order]=FALSE
}

FIG. 32

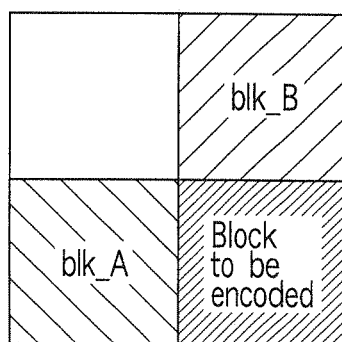


FIG. 33

macroblock_layer(){

mb_type
block_order_flag
if(block_order_flag){
block_order_in_mb_mode
if(block_order_in_mb_mode == 1)
block_order_idx
if(block_order_in_mb_mode == 2){
if(MbPartPredMode(mb_type,0) == Intra_4x4){
for(luma4x4BlkIdx=0;luma4x4BlkIdx<16;
luma4x4BlkIdx++){
block_order4x4[luma4x4BlkIdx]
}
}
if(MbPartPredMode(mb_type,0) == Intra_8x8){
for(luma8x8BlkIdx=0;luma8x8BlkIdx<4;luma8x8BlkIdx++)
{
block_order8x8[luma8x8BlkIdx]
}
}
}

}

FIG. 34

seq_parameter_set_rbsp(){

block_order_in_seq_flag
intra_bi_pred_in_seq_flag

}

FIG. 35

pic_parameter_set_rbsp(block_order_in_seq_flag, intra_bi_pred_in_seq_flag){

if(block_order_change_in_seq_flag)
block_order_in_pic_flag

if(intra_bi_pred_in_seq_flag)
intra_bi_in_pred_in_pic_flag

}

FIG. 36

slice_header(block_order_in_pic_flag,intra_bi_pred_in_pic_flag){

if(block_order_change_in_pic_flag)
block_order_in_slice_flag

if(intra_bi_pred_in_pic_flag)
intra_bi_pred_in_slice_flag

}

FIG. 37

macroblock_layer(block_order_in_slice_flag,intra_bi_pred_in_slice_flag){

if(mb_type == I_NxN){
if(block_order_change_in_slice_flag){
block_order_flag
}

if(intra_bi_pred_in_seq_flag){
intra_bi_pred_in_seq_in_mb_flag
}

}

}

FIG. 38

mb_pred(mb_type,block_order_flag,intra_bi_pred_in_mb_flag){

if(MbPartPredMode(mb_type,0) == Intra_4x4
MbPartPredMode(mb_type,0) == Intra_8x8
MbPartPredMode(mb_type,0) == Intra_16x16){
if(MbPartPredMode(mb_type,0) = Intra_4x4){
for(luma4x4BlkIdx=0;luma4x4BlkIdx<16;luma4x4BlkIdx++){
{
order=blkConv[block_order_flag][luma4x4BlkIdx]
intra4x4_pred_mode_I0 [block_order_flag][order]
if(intra_bi_pred_in_mb_flag){
intra4x4_bi_pred_flag [order]
if(intra4x4_bi_pred_flag[order]){
intra4x4_pred_mode_I1 [block_order_flag][order]
}
}
}
}
if(MbPartPredMode(mb_type,0) == Intra_8x8){
for(luma8x8BlkIdx=0;luma8x8BlkIdx<4;luma8x8BlkIdx++){
order=blkConv[block_order_flag][luma8x8BlkIdx]
intra8x8_pred_mode_I0 [block_order_flag][order]
if(intra_bi_pred_in_mb_flag){
intra8x8_bi_pred_flag [order]
if(intra8x8_bi_pred_flag[order]){
intra8x8_pred_mode_I1 [block_order_flag][order]
}
}
}
}
}

FIG. 39

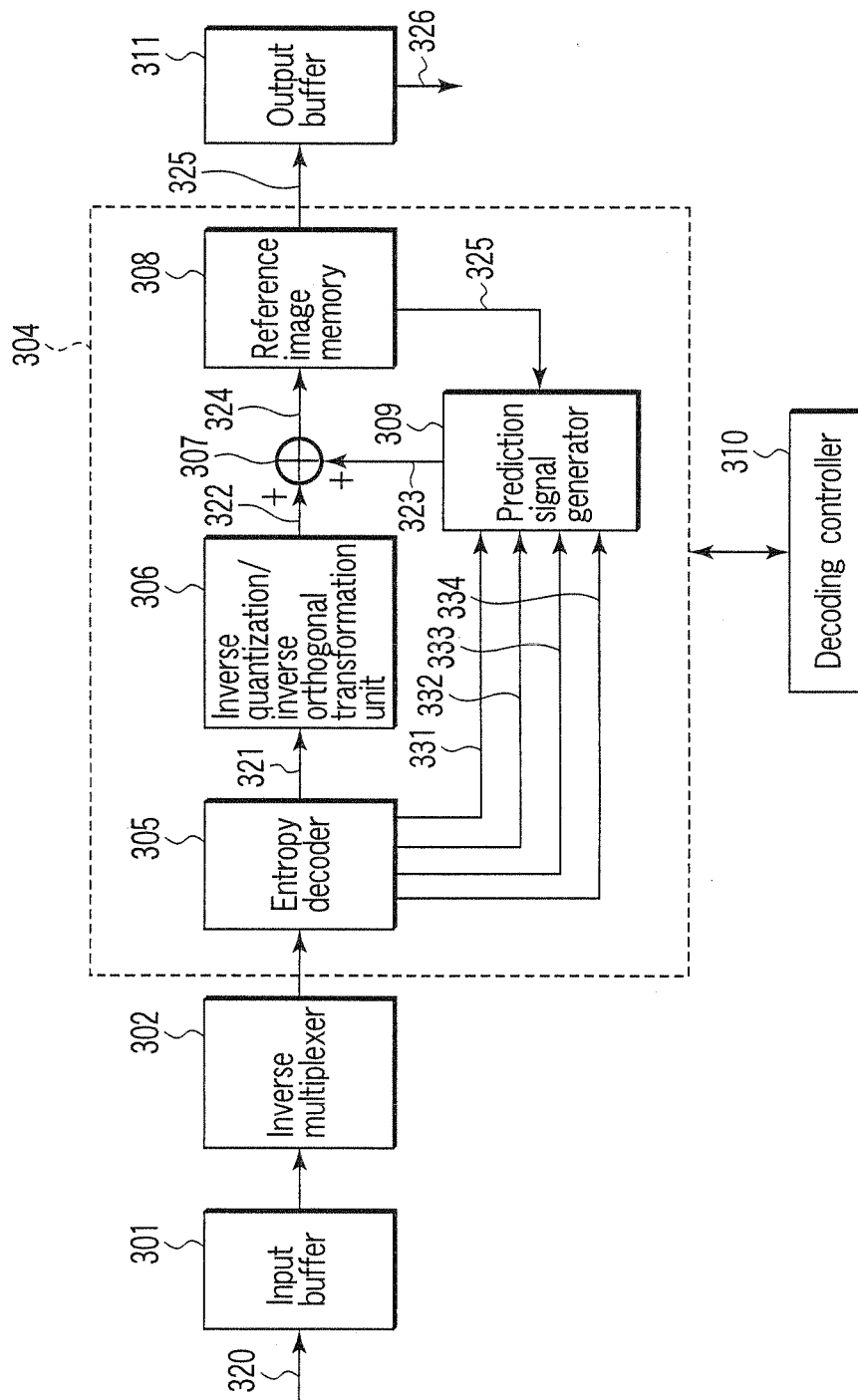


FIG. 40

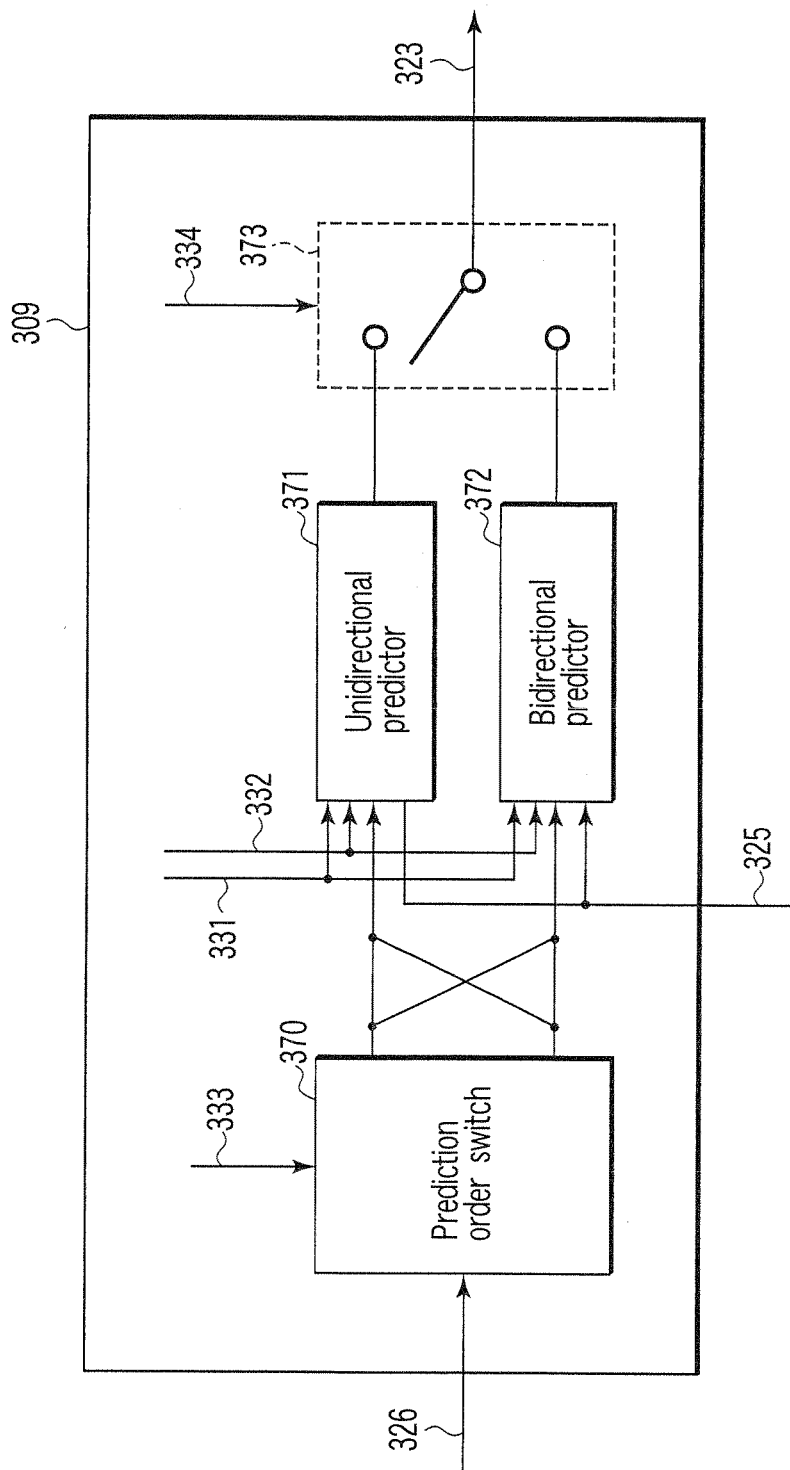


FIG. 41

```
intra4x4_pred_mode_l0_org[block_order_flag][order]  
=modeInv[intra4x4_pred_mode_l0[block_order_flag][order%4]]
```

FIG. 42

intra4x4_pred_mode_l0(l1)/ intra8x8_pred_mode_l0(l1)	intra4x4_pred_mode_l0(l1)_org/ intra8x8_pred_mode_l0(l1)_org				
	modelInv [1][0]	modelInv [1][1]	modelInv [1][2]	modelInv [1][3]	modelInv [0][order]
0	Interpolation block (1)	Interpolation block (2)	Interpolation block (3)	Interpolation block (4)	
1	0	0	0	0	0
2	1	1	1	1	1
3	2	2	2	2	2
4	3	3	3	3	3
5	4	4	4	4	4
6	5	5	5	5	5
7	6	6	6	6	6
8	7	7	7	7	7
9	8	8	8	8	8
10	9	9	10	----	----
11	10	11	11	----	----
12	11	12	12	----	----
13	12	13	14	----	----
14	13	15	16	----	----
15	14	----	----	----	----
16	15	----	----	----	----
17	16	----	----	----	----
18	17	14	14	9	9

intra4x4_pred_mode_l0(l1)/
intra8x8_pred_mode_l0(l1)

0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16

Inverse
transformation

FIG. 43

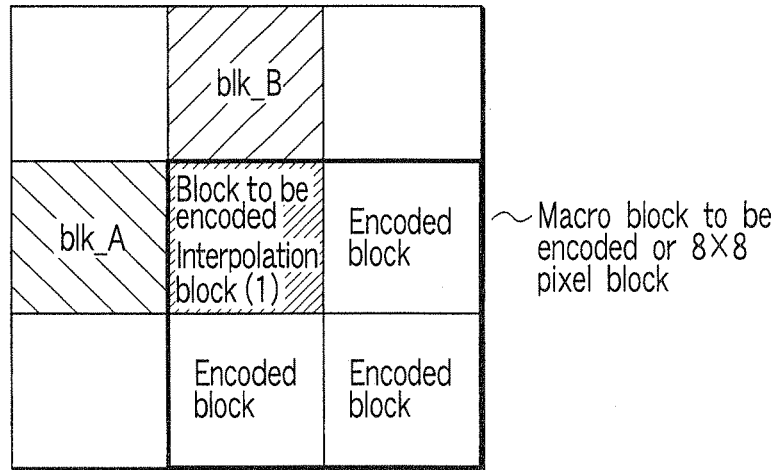


FIG. 44A

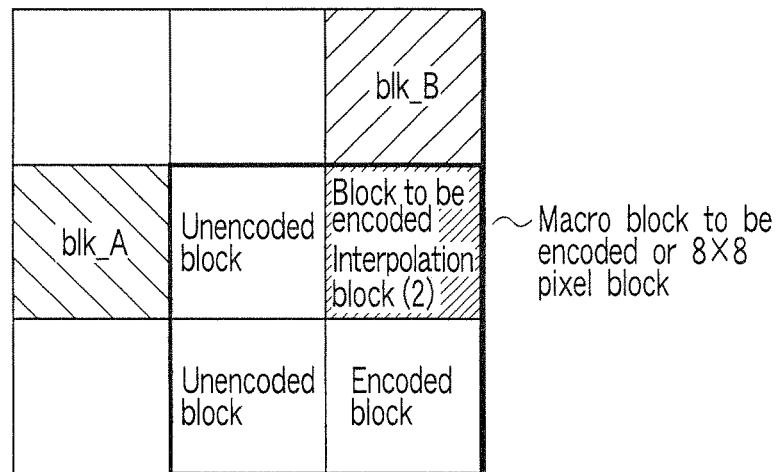


FIG. 44B

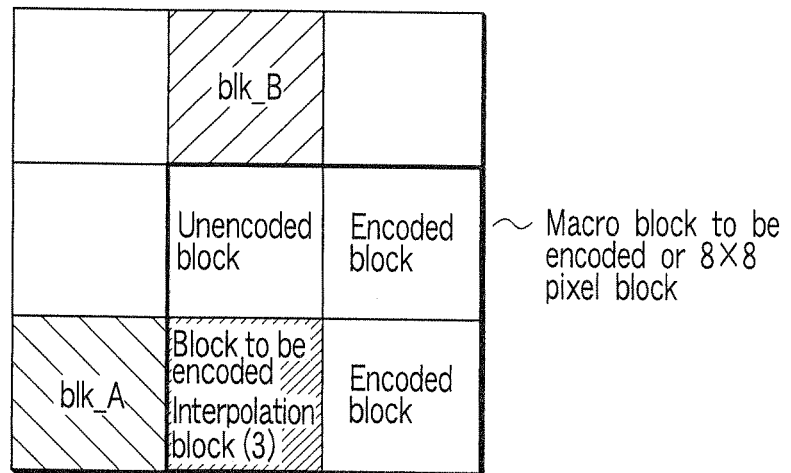


FIG. 44C

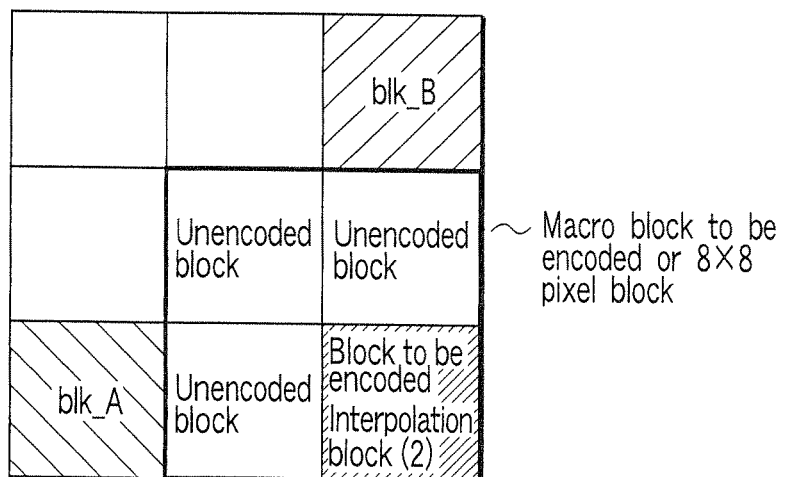


FIG. 44D