Fig.1

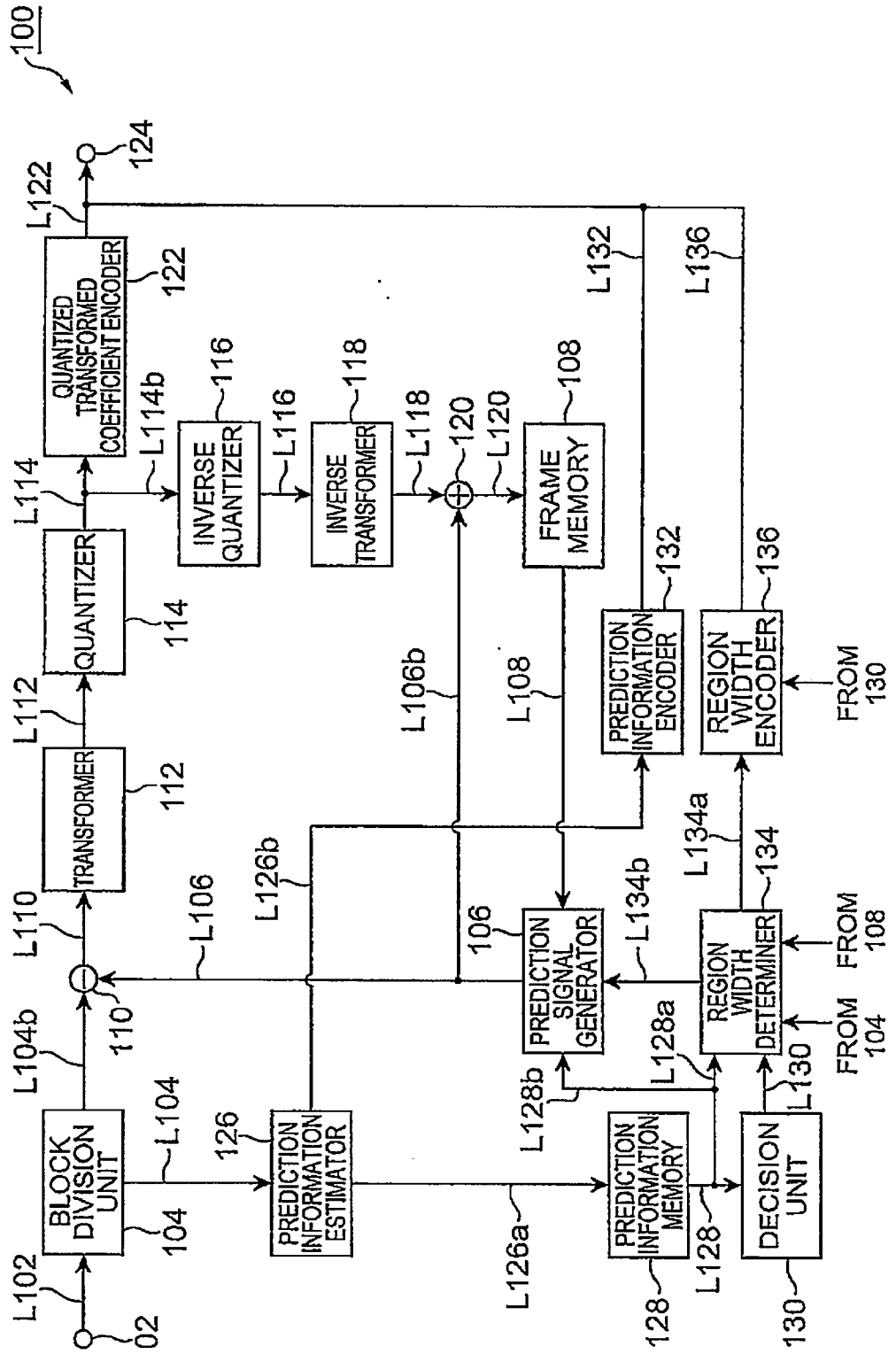

100
102
L102
BLOCK DIVISION UNIT
104
L104
L104b
PREDICTION INFORMATION ESTIMATOR
126
L126a
L126b
110
L110
TRANSFORMER
112
L112
QUANTIZER
114
L114
L114b
QUANTIZED TRANSFORMED COEFFICIENT ENCODER
122
124
L122
INVERSE QUANTIZER
116
L116
INVERSE TRANSFORMER
118
L118
120
L120
FRAME MEMORY
108
L106
L106b
L108
PREDICTION SIGNAL GENERATOR
106
L134b
PREDICTION INFORMATION MEMORY
128
L128
L128b
PREDICTION INFORMATION ENCODER
132
L132
REGION WIDTH DETERMINER
134
L134a
L128a
REGION WIDTH ENCODER
136
L136
DECISION UNIT
130
L130
FROM 130
FROM 108
FROM 104

Fig.2

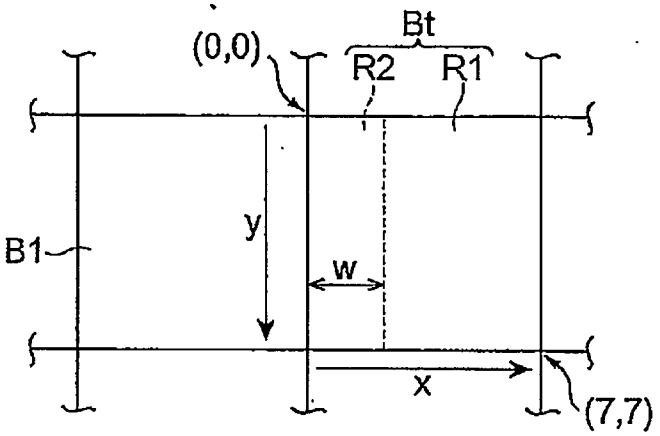


Fig.3

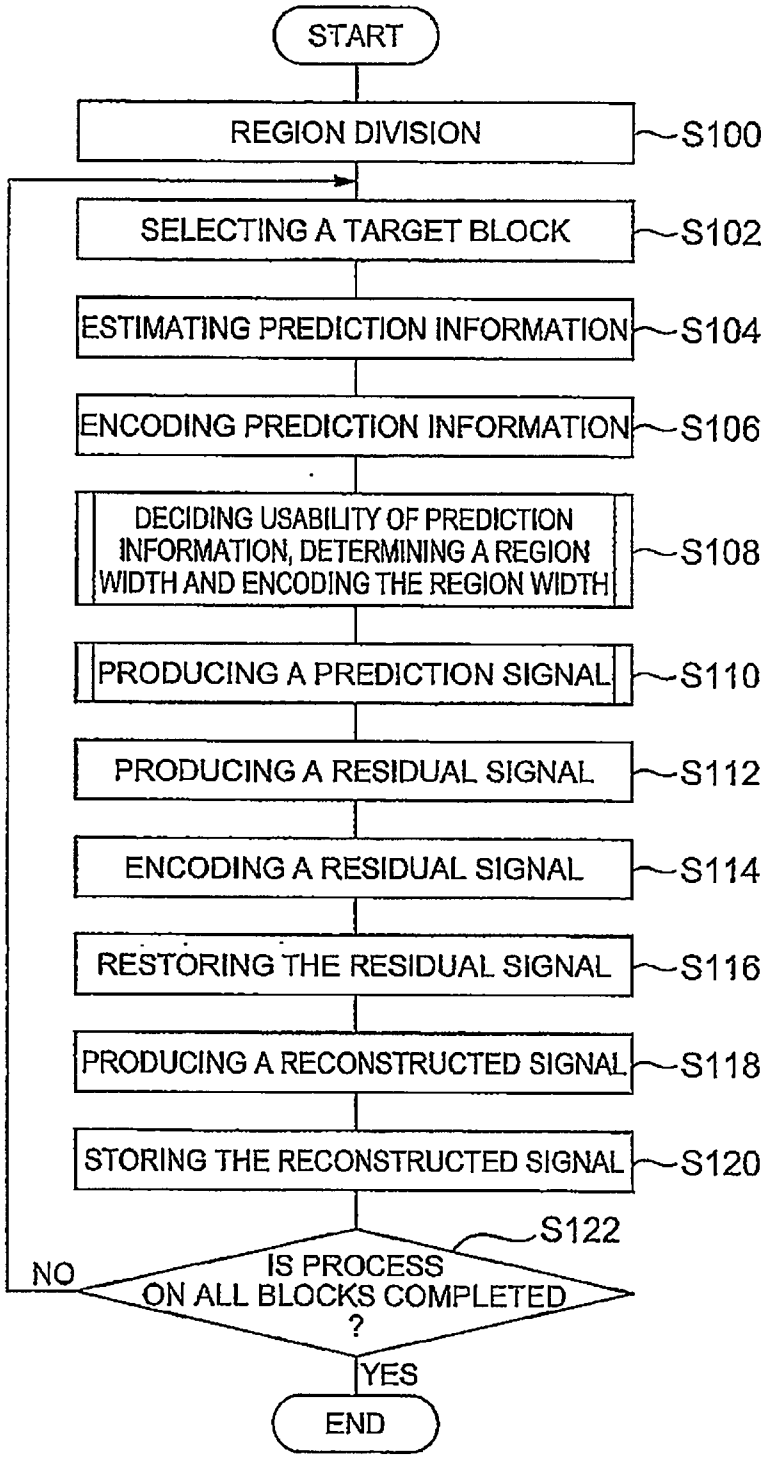

START
REGION DIVISION
S100
SELECTING A TARGET BLOCK
S102
ESTIMATING PREDICTION INFORMATION
S104
ENCODING PREDICTION INFORMATION
S106
DECIDING USABILITY OF PREDICTION INFORMATION, DETERMINING A REGION WIDTH AND ENCODING THE REGION WIDTH
S108
PRODUCING A PREDICTION SIGNAL
S110
PRODUCING A RESIDUAL SIGNAL
S112
ENCODING A RESIDUAL SIGNAL
S114
RESTORING THE RESIDUAL SIGNAL
S116
PRODUCING A RECONSTRUCTED SIGNAL
S118
STORING THE RECONSTRUCTED SIGNAL
S120
S122
IS PROCESS ON ALL BLOCKS COMPLETED ?
NO
YES
END

Fig.4

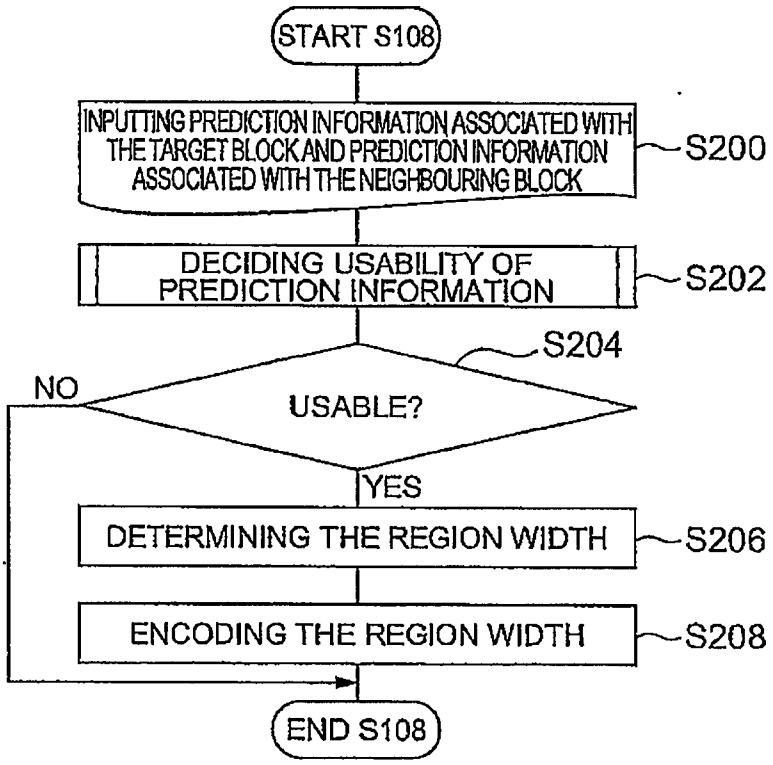

START S108
INPUTTING PREDICTION INFORMATION ASSOCIATED WITH THE TARGET BLOCK AND PREDICTION INFORMATION ASSOCIATED WITH THE NEIGHBOURING BLOCK
S200
DECIDING USABILITY OF PREDICTION INFORMATION
S202
S204
USABLE?
NO
YES
DETERMINING THE REGION WIDTH
S206
ENCODING THE REGION WIDTH
S208
END S108

Fig.5

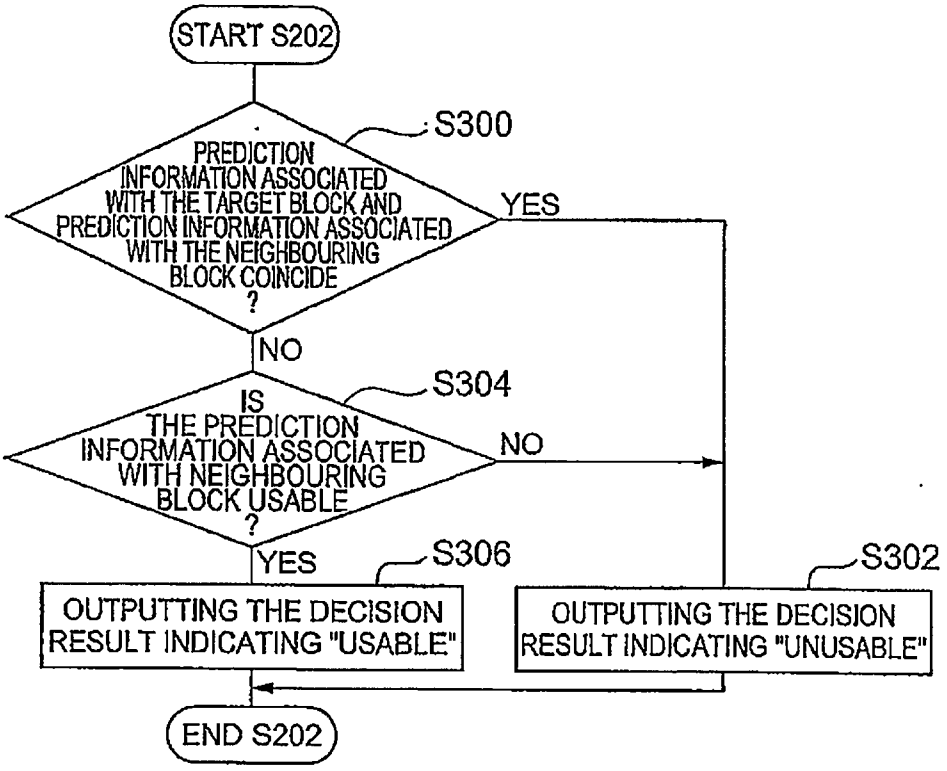

START S202
S300
PREDICTION INFORMATION ASSOCIATED WITH THE TARGET BLOCK AND PREDICTION INFORMATION ASSOCIATED WITH THE NEIGHBOURING BLOCK COINCIDE ?
YES
NO
S304
IS THE PREDICTION INFORMATION ASSOCIATED WITH NEIGHBOURING BLOCK USABLE ?
NO
YES
S306
OUTPUTTING THE DECISION RESULT INDICATING "USABLE"
S302
OUTPUTTING THE DECISION RESULT INDICATING "UNUSABLE"
END S202

Fig.6

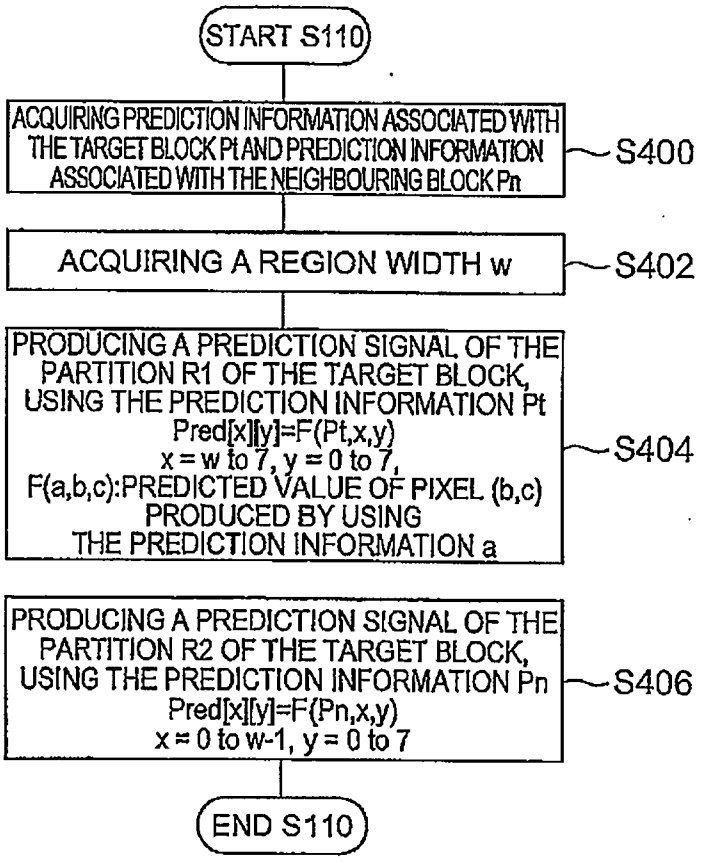

START S110
ACQUIRING PREDICTION INFORMATION ASSOCIATED WITH THE TARGET BLOCK Pt AND PREDICTION INFORMATION ASSOCIATED WITH THE NEIGHBOURING BLOCK Pn
S400
ACQUIRING A REGION WIDTH w
S402
PRODUCING A PREDICTION SIGNAL OF THE PARTITION R1 OF THE TARGET BLOCK, USING THE PREDICTION INFORMATION Pt
Pred[x][y]=F(Pt,x,y)
x = w to 7, y = 0 to 7,
F(a,b,c):PREDICTED VALUE OF PIXEL (b,c) PRODUCED BY USING THE PREDICTION INFORMATION a
S404
PRODUCING A PREDICTION SIGNAL OF THE PARTITION R2 OF THE TARGET BLOCK, USING THE PREDICTION INFORMATION Pn
Pred[x][y]=F(Pn,x,y)
x = 0 to w-1, y = 0 to 7
S406
END S110

Fig.7

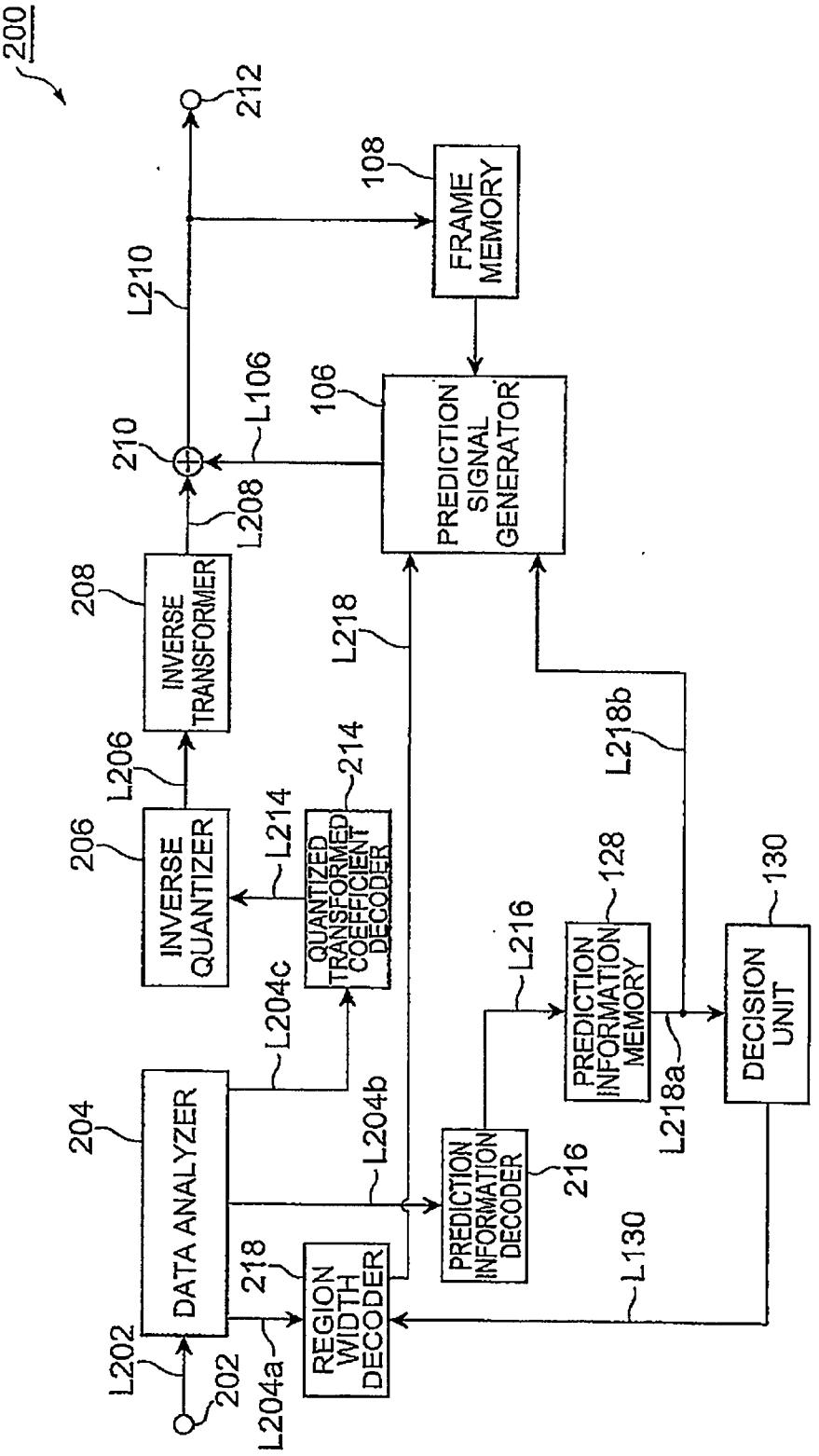

200
212
108
FRAME MEMORY
L210
L106
106
PREDICTION SIGNAL GENERATOR
210
L208
208
INVERSE TRANSFORMER
L218
L218b
L206
214
206
INVERSE QUANTIZER
L214
QUANTIZED TRANSFORMED COEFFICIENT DECODER
L216
128
PREDICTION INFORMATION MEMORY
130
DECISION UNIT
L204c
204
DATA ANALYZER
L204b
PREDICTION INFORMATION DECODER
216
L218a
218
REGION WIDTH DECODER
L130
L202
202
L204a

Fig.8

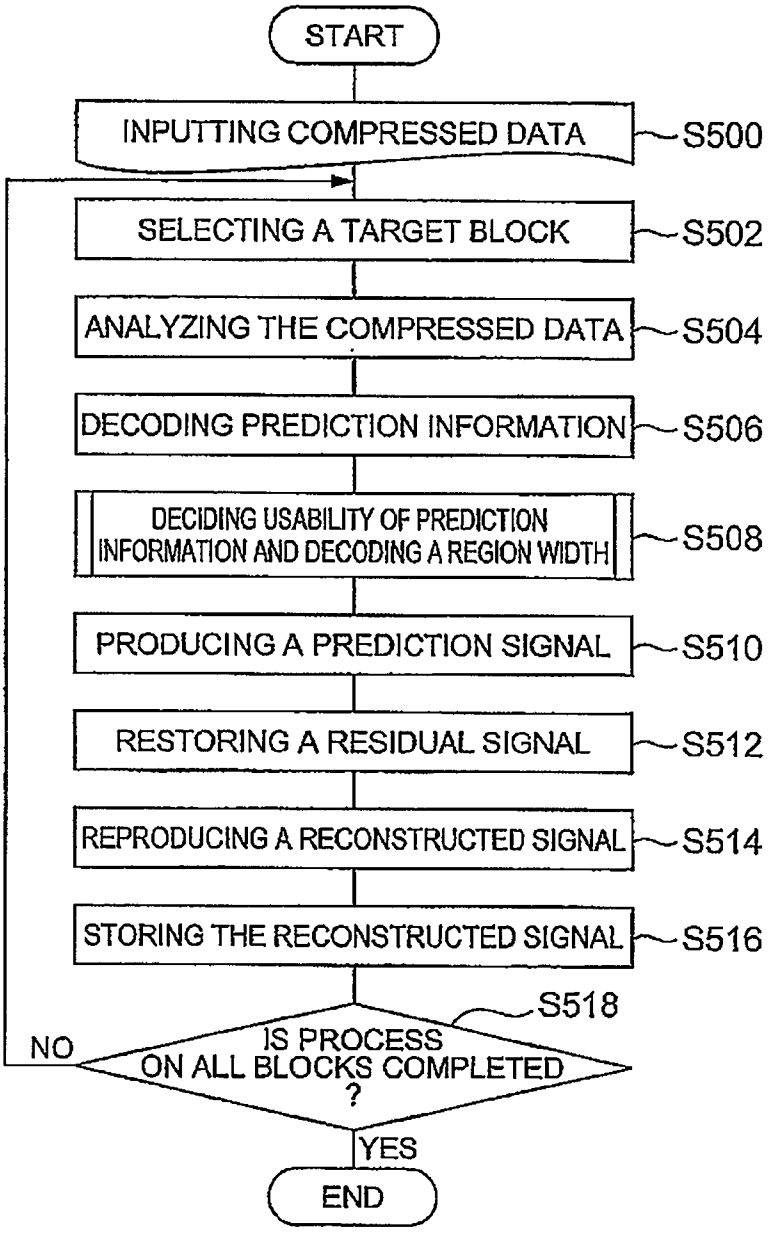

START
INPUTTING COMPRESSED DATA
S500
SELECTING A TARGET BLOCK
S502
ANALYZING THE COMPRESSED DATA
S504
DECODING PREDICTION INFORMATION
S506
DECIDING USABILITY OF PREDICTION INFORMATION AND DECODING A REGION WIDTH
S508
PRODUCING A PREDICTION SIGNAL
S510
RESTORING A RESIDUAL SIGNAL
S512
REPRODUCING A RECONSTRUCTED SIGNAL
S514
STORING THE RECONSTRUCTED SIGNAL
S516
S518
IS PROCESS ON ALL BLOCKS COMPLETED ?
NO
YES
END

Fig.9

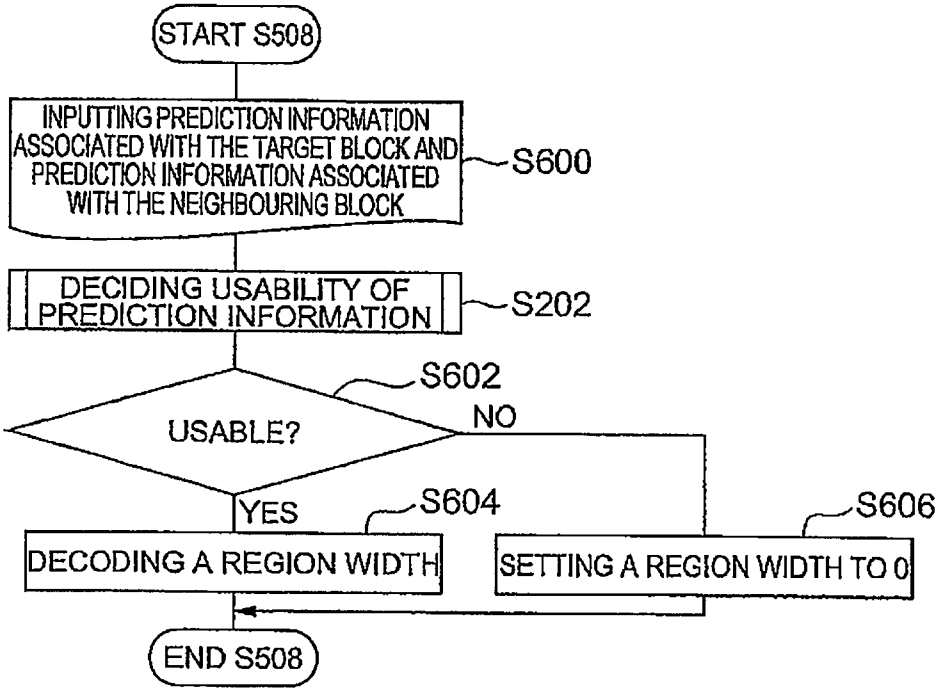

START S508
INPUTTING PREDICTION INFORMATION ASSOCIATED WITH THE TARGET BLOCK AND PREDICTION INFORMATION ASSOCIATED WITH THE NEIGHBOURING BLOCK
S600
DECIDING USABILITY OF PREDICTION INFORMATION
S202
S602
USABLE?
NO
YES
S604
DECODING A REGION WIDTH
S606
SETTING A REGION WIDTH TO 0
END S508

Fig.10

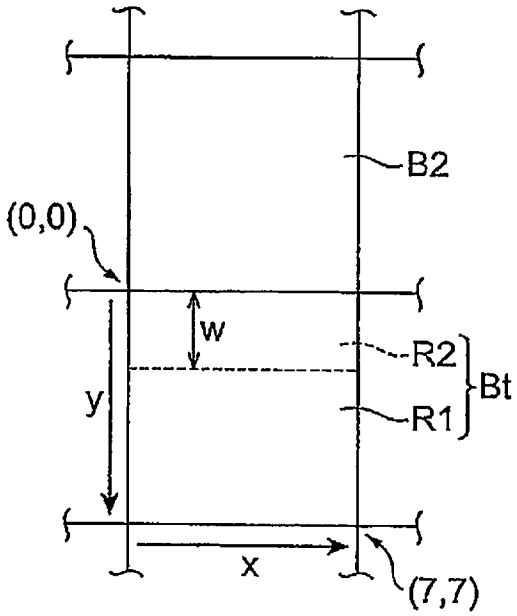


Fig.11

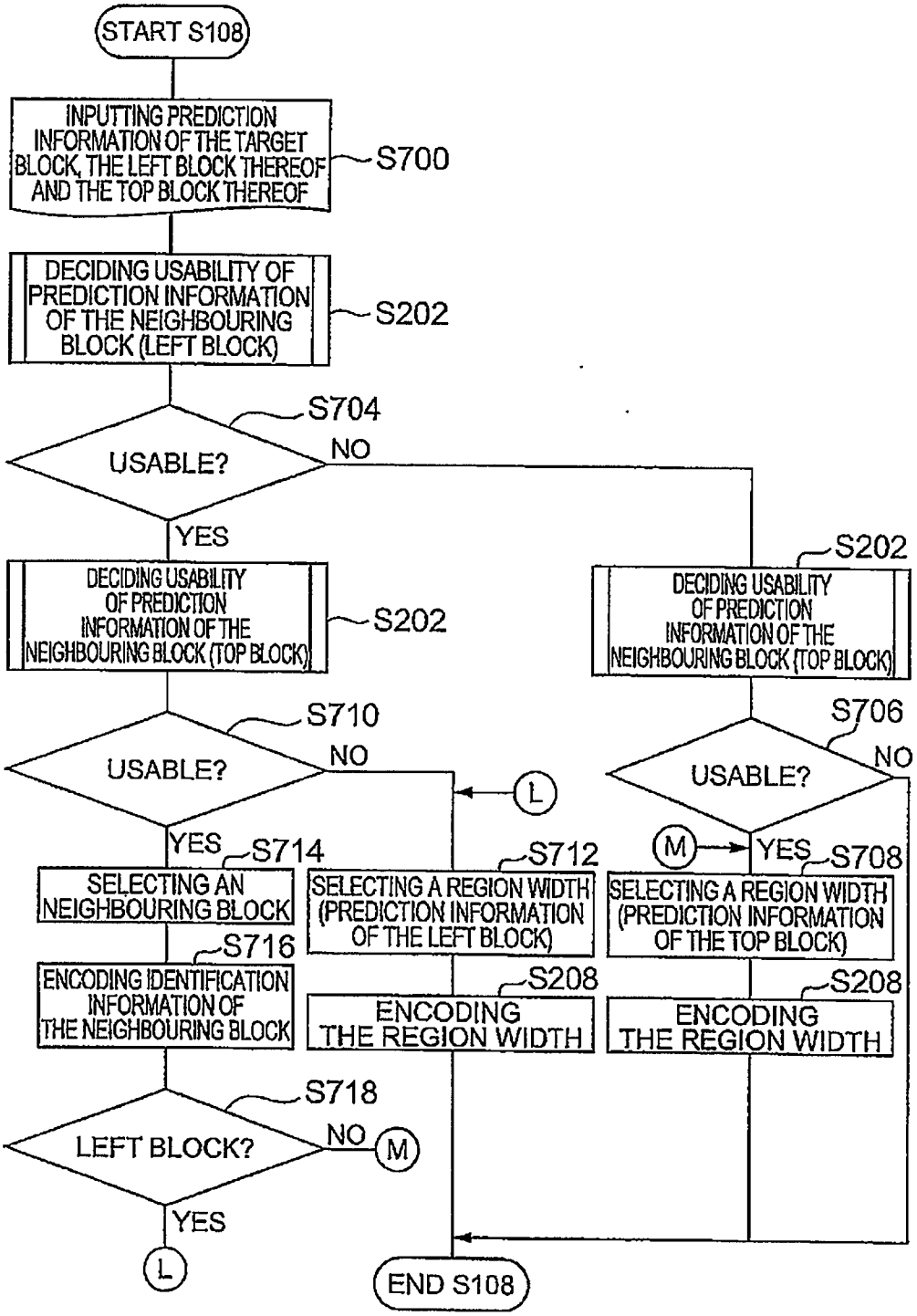

START S108
INPUTTING PREDICTION INFORMATION OF THE TARGET BLOCK, THE LEFT BLOCK THEREOF AND THE TOP BLOCK THEREOF
S700
DECIDING USABILITY OF PREDICTION INFORMATION OF THE NEIGHBOURING BLOCK (LEFT BLOCK)
S202
S704
USABLE?
NO
YES
DECIDING USABILITY OF PREDICTION INFORMATION OF THE NEIGHBOURING BLOCK (TOP BLOCK)
S202
S710
USABLE?
NO
YES
S714
SELECTING AN NEIGHBOURING BLOCK
S716
ENCODING IDENTIFICATION INFORMATION OF THE NEIGHBOURING BLOCK
S718
LEFT BLOCK?
NO
M
YES
L
L
S712
SELECTING A REGION WIDTH (PREDICTION INFORMATION OF THE LEFT BLOCK)
S208
ENCODING THE REGION WIDTH
DECIDING USABILITY OF PREDICTION INFORMATION OF THE NEIGHBOURING BLOCK (TOP BLOCK)
S202
S706
USABLE?
NO
M
YES
S708
SELECTING A REGION WIDTH (PREDICTION INFORMATION OF THE TOP BLOCK)
S208
ENCODING THE REGION WIDTH
END S108

Fig.12

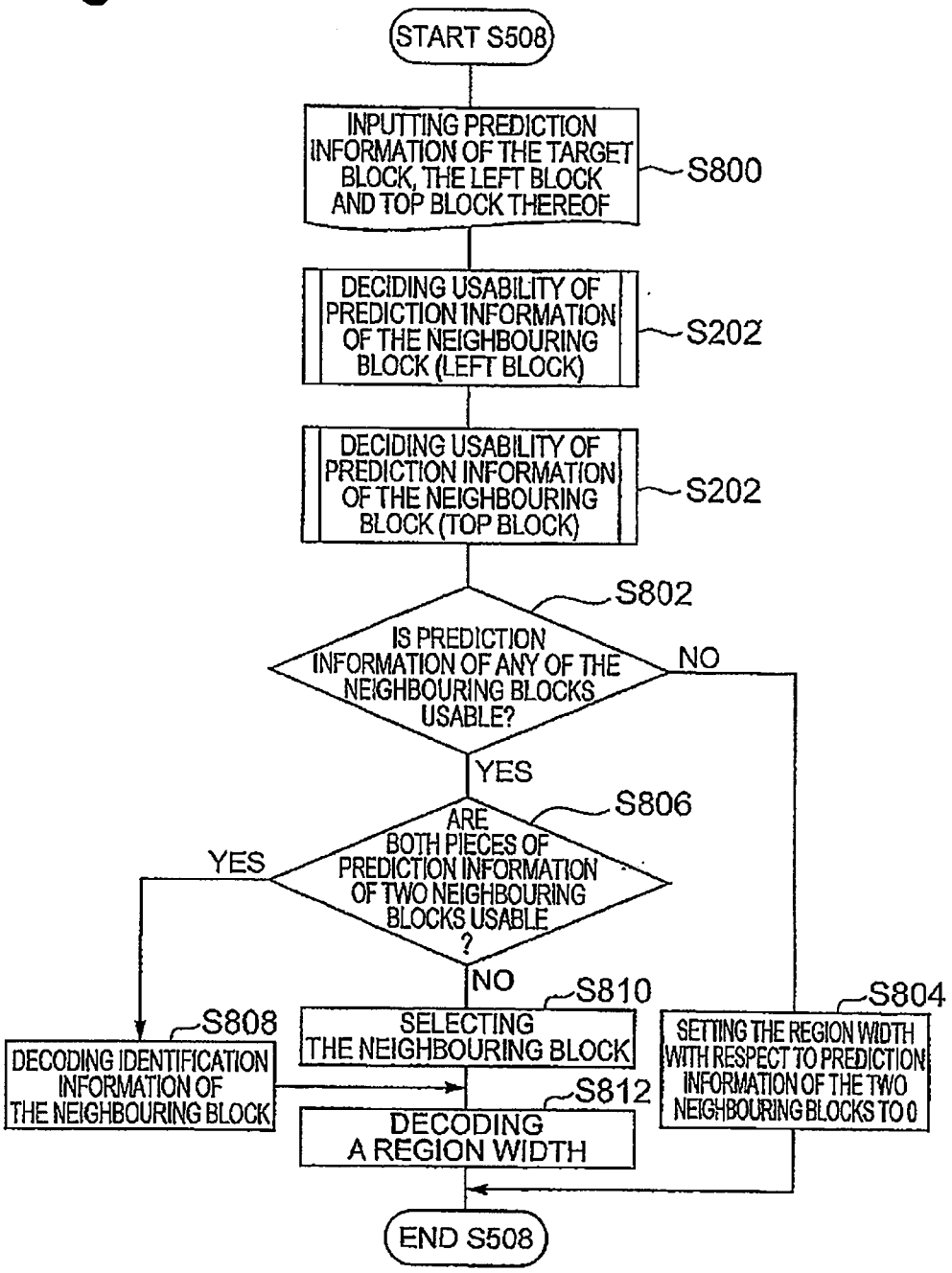

START S508
INPUTTING PREDICTION INFORMATION OF THE TARGET BLOCK, THE LEFT BLOCK AND TOP BLOCK THEREOF
S800
DECIDING USABILITY OF PREDICTION INFORMATION OF THE NEIGHBOURING BLOCK (LEFT BLOCK)
S202
DECIDING USABILITY OF PREDICTION INFORMATION OF THE NEIGHBOURING BLOCK (TOP BLOCK)
S202
S802
IS PREDICTION INFORMATION OF ANY OF THE NEIGHBOURING BLOCKS USABLE?
NO
YES
S806
ARE BOTH PIECES OF PREDICTION INFORMATION OF TWO NEIGHBOURING BLOCKS USABLE ?
YES
NO
S808
DECODING IDENTIFICATION INFORMATION OF THE NEIGHBOURING BLOCK
S810
SELECTING THE NEIGHBOURING BLOCK
S804
SETTING THE REGION WIDTH WITH RESPECT TO PREDICTION INFORMATION OF THE TWO NEIGHBOURING BLOCKS TO 0
S812
DECODING A REGION WIDTH
END S508

Fig.13

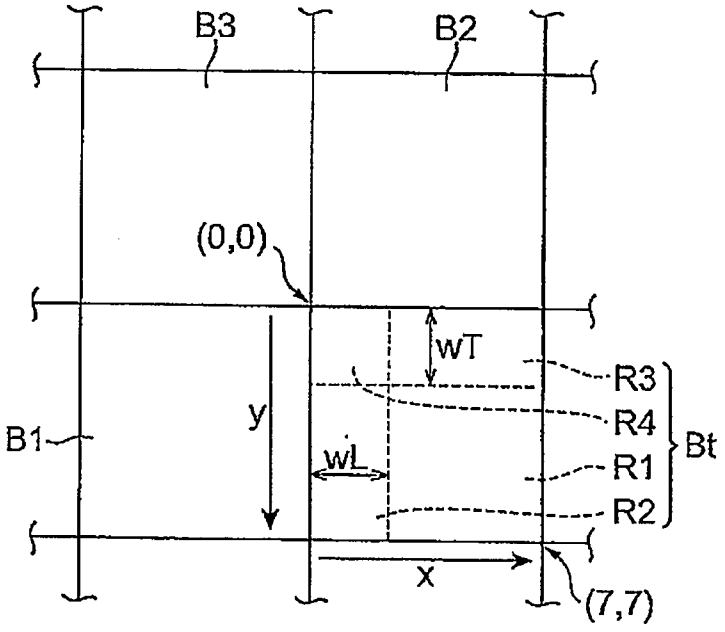
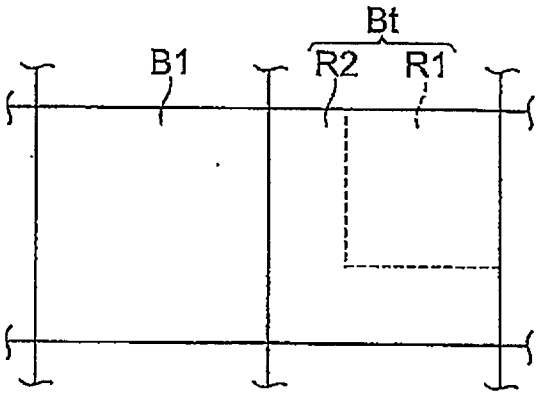


Fig.14

(a)



(b)

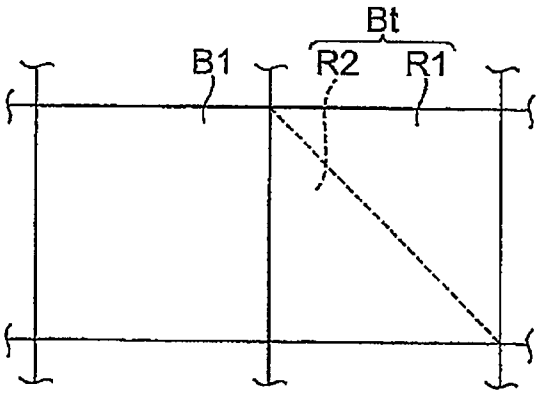
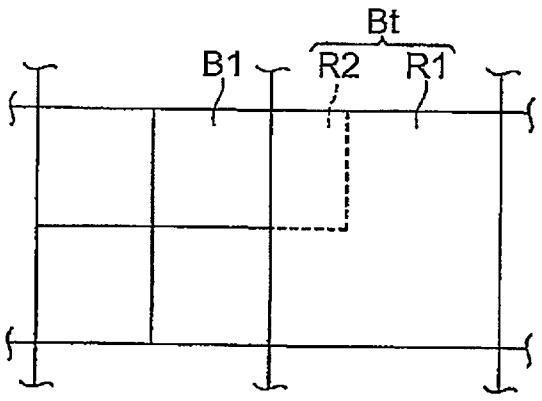
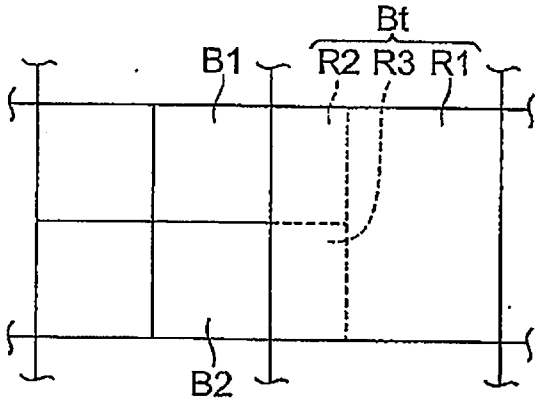


Fig.15

(a)



(b)



(c)

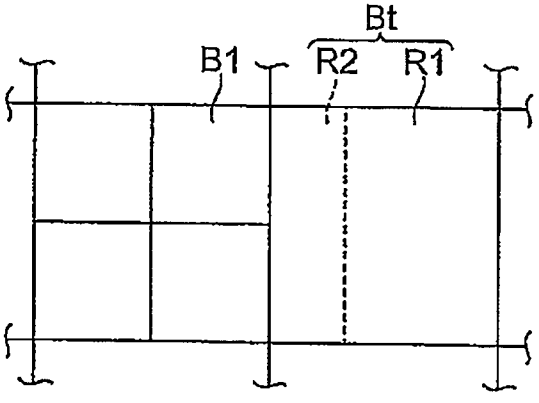


Fig.16

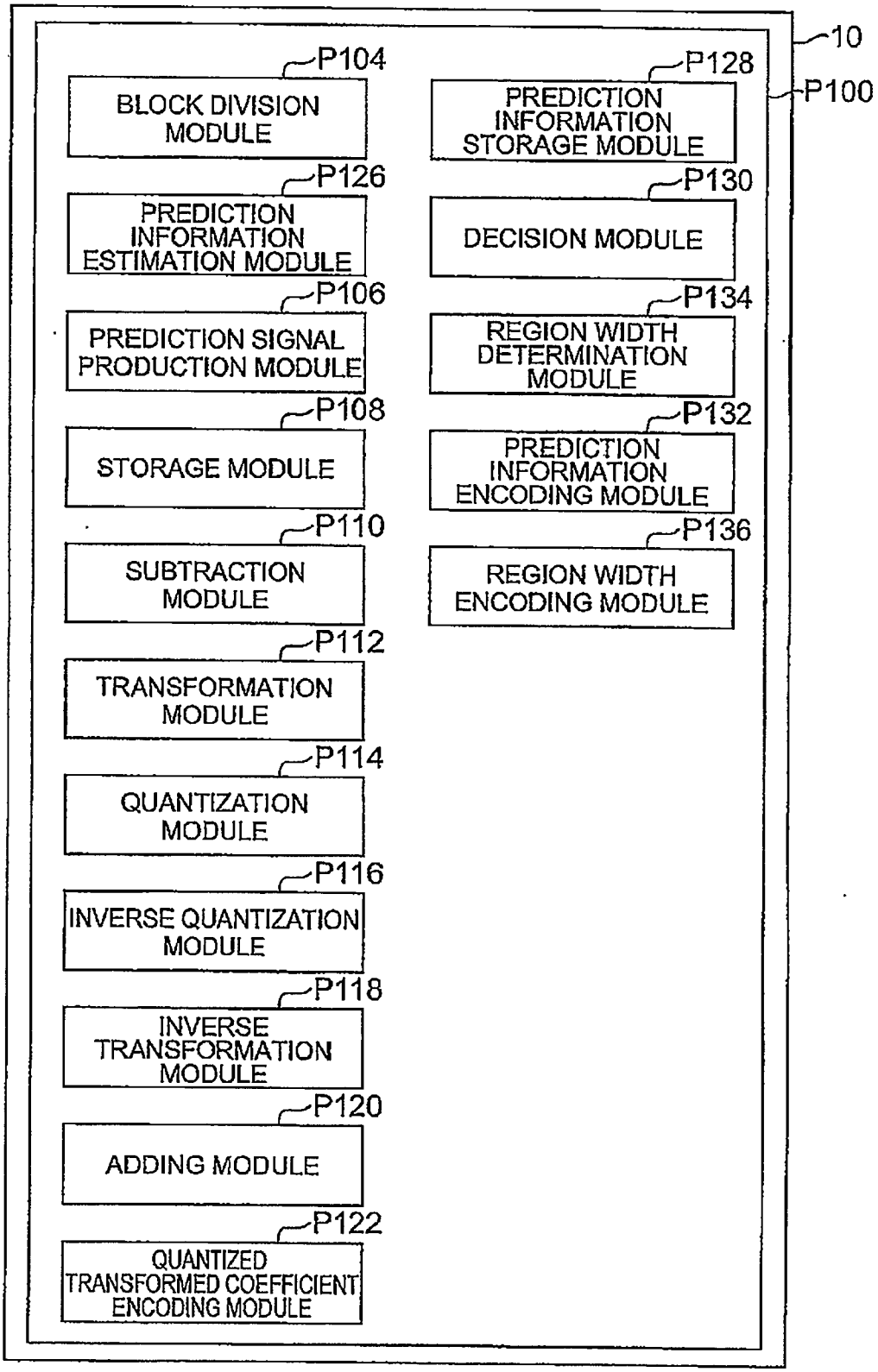

10
P100
P104
BLOCK DIVISION MODULE
P126
PREDICTION INFORMATION ESTIMATION MODULE
P106
PREDICTION SIGNAL PRODUCTION MODULE
P108
STORAGE MODULE
P110
SUBTRACTION MODULE
P112
TRANSFORMATION MODULE
P114
QUANTIZATION MODULE
P116
INVERSE QUANTIZATION MODULE
P118
INVERSE TRANSFORMATION MODULE
P120
ADDING MODULE
P122
QUANTIZED TRANSFORMED COEFFICIENT ENCODING MODULE
P128
PREDICTION INFORMATION STORAGE MODULE
P130
DECISION MODULE
P134
REGION WIDTH DETERMINATION MODULE
P132
PREDICTION INFORMATION ENCODING MODULE
P136
REGION WIDTH ENCODING MODULE

Fig.17

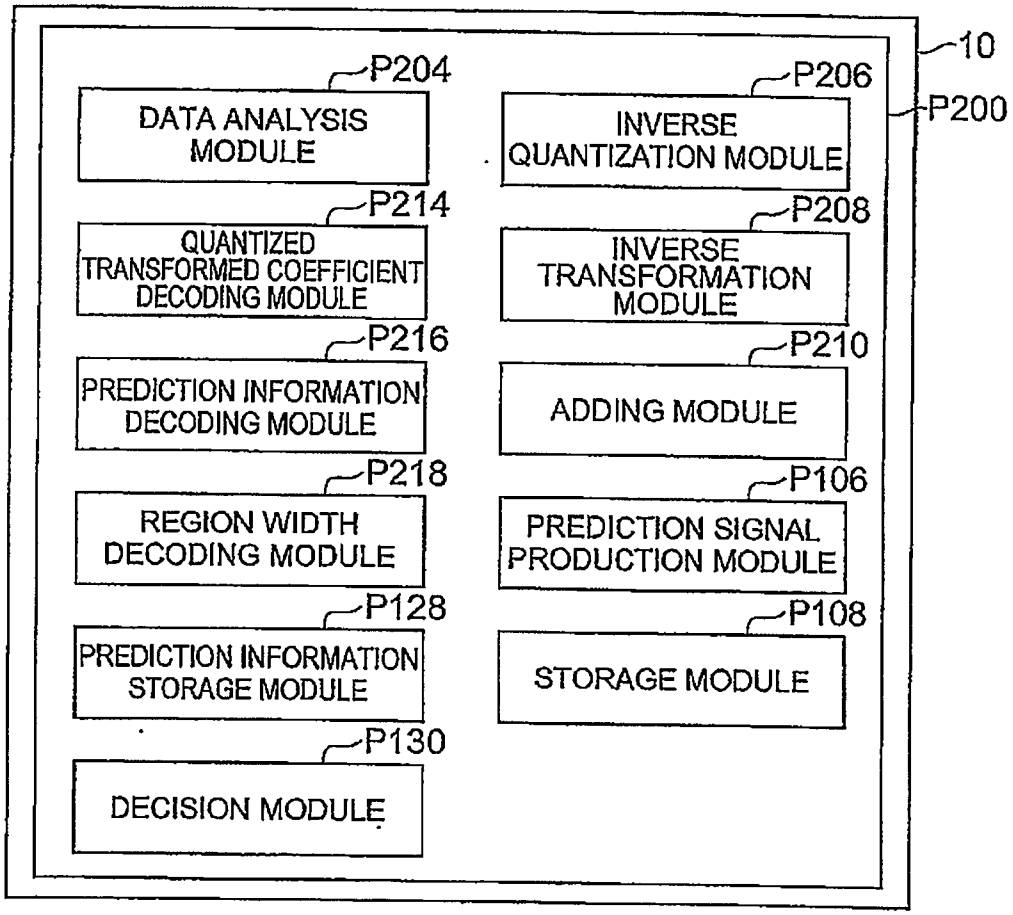

10
P200
P204
DATA ANALYSIS MODULE
P206
INVERSE QUANTIZATION MODULE
P214
QUANTIZED TRANSFORMED COEFFICIENT DECODING MODULE
P208
INVERSE TRANSFORMATION MODULE
P216
PREDICTION INFORMATION DECODING MODULE
P210
ADDING MODULE
P218
REGION WIDTH DECODING MODULE
P106
PREDICTION SIGNAL PRODUCTION MODULE
P128
PREDICTION INFORMATION STORAGE MODULE
P108
STORAGE MODULE
P130
DECISION MODULE

Fig.18

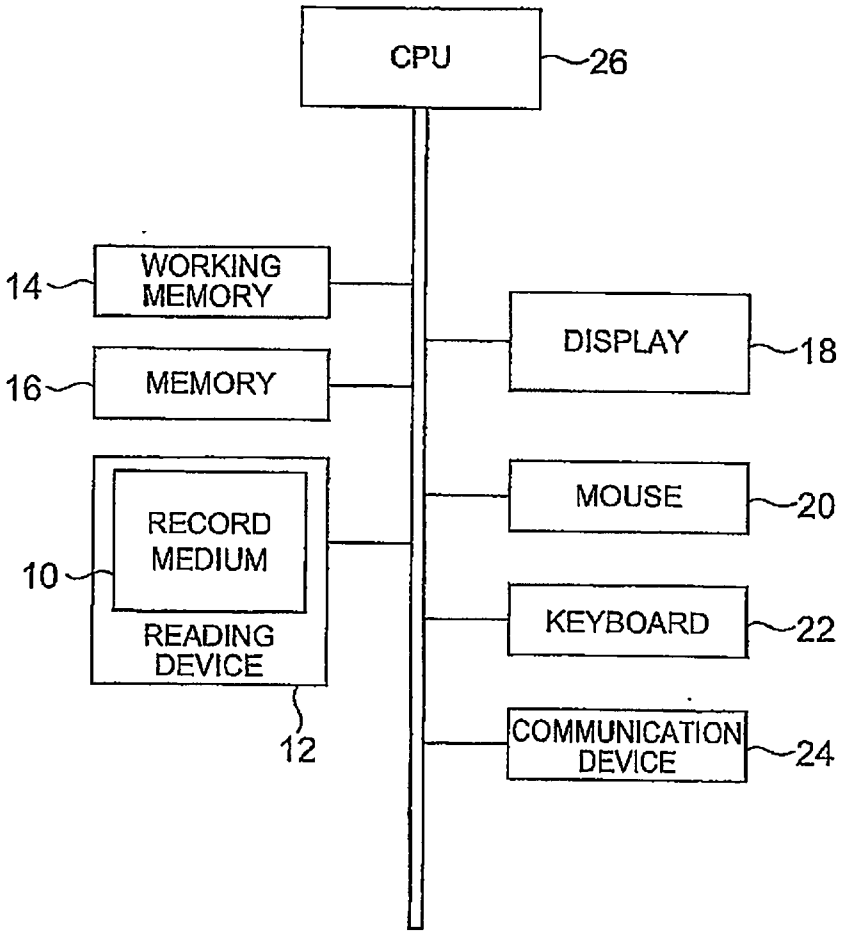

CPU
26
14
WORKING MEMORY
16
MEMORY
10
RECORD MEDIUM
READING DEVICE
12
DISPLAY
18
MOUSE
20
KEYBOARD
22
COMMUNICATION DEVICE
24

Fig.19

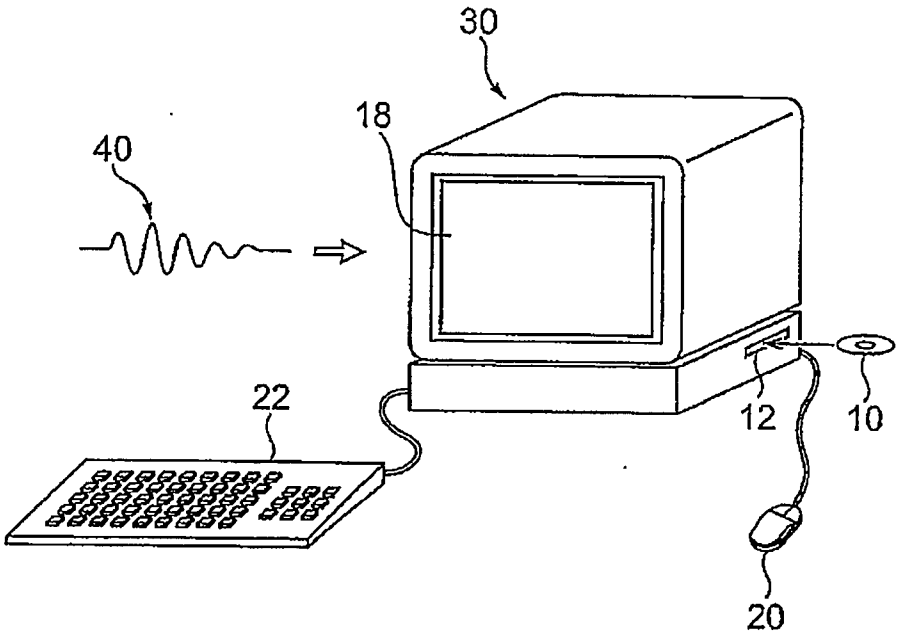


Fig.20

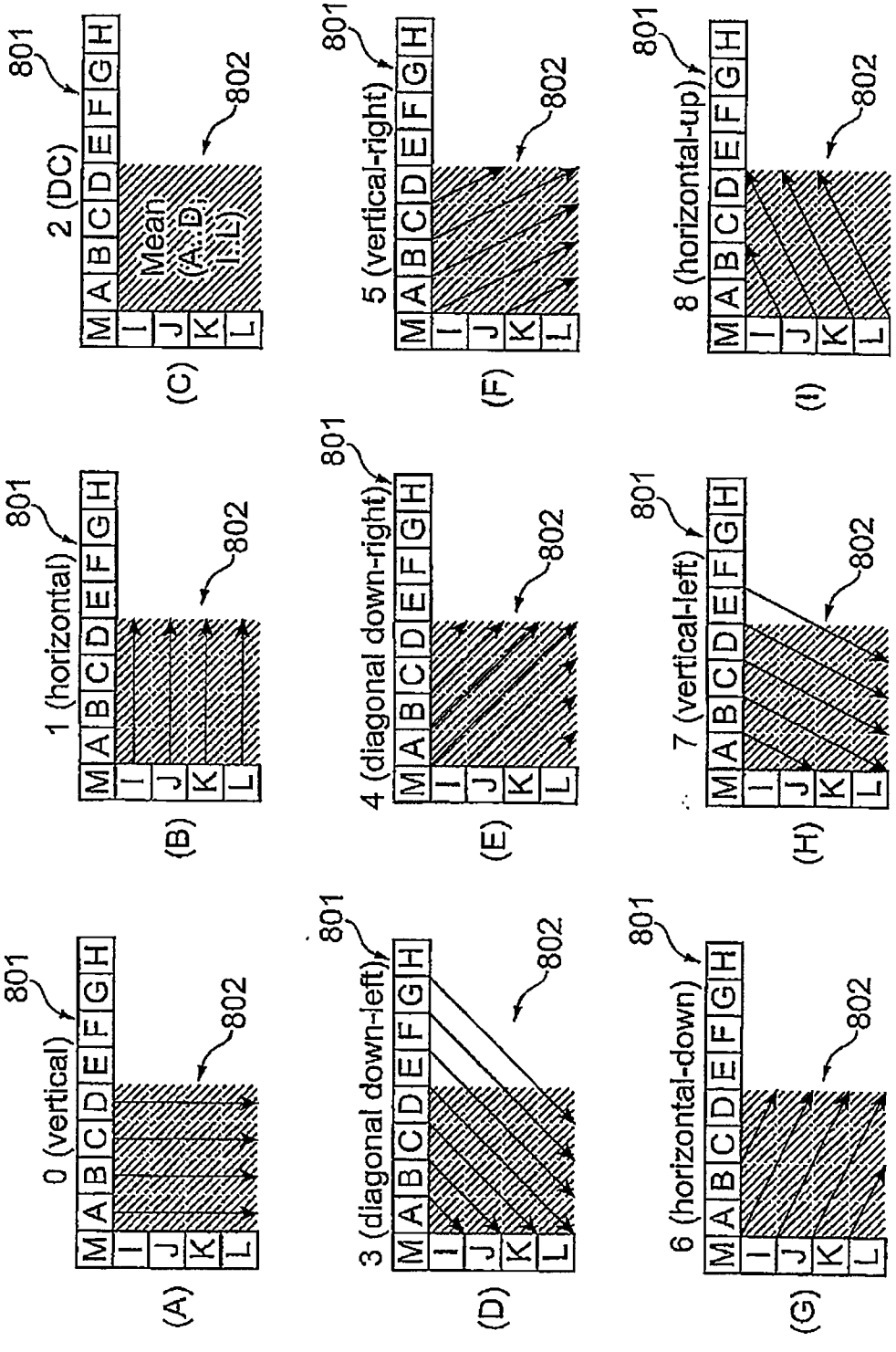

801
0 (vertical)
M A B C D E F G H
I
J
K
L
802
(A)
801
1 (horizontal)
M A B C D E F G H
I
J
K
L
802
(B)
801
2 (DC)
M A B C D E F G H
I
J
K
L
Mean
(A:D;
I:L)
802
(C)
801
3 (diagonal down-left)
M A B C D E F G H
I
J
K
L
802
(D)
801
4 (diagonal down-right)
M A B C D E F G H
I
J
K
L
802
(E)
801
5 (vertical-right)
M A B C D E F G H
I
J
K
L
802
(F)
801
6 (horizontal-down)
M A B C D E F G H
I
J
K
L
802
(G)
801
7 (vertical-left)
M A B C D E F G H
I
J
K
L
802
(H)
801
8 (horizontal-up)
M A B C D E F G H
I
J
K
L
802
(I)

Fig.21

