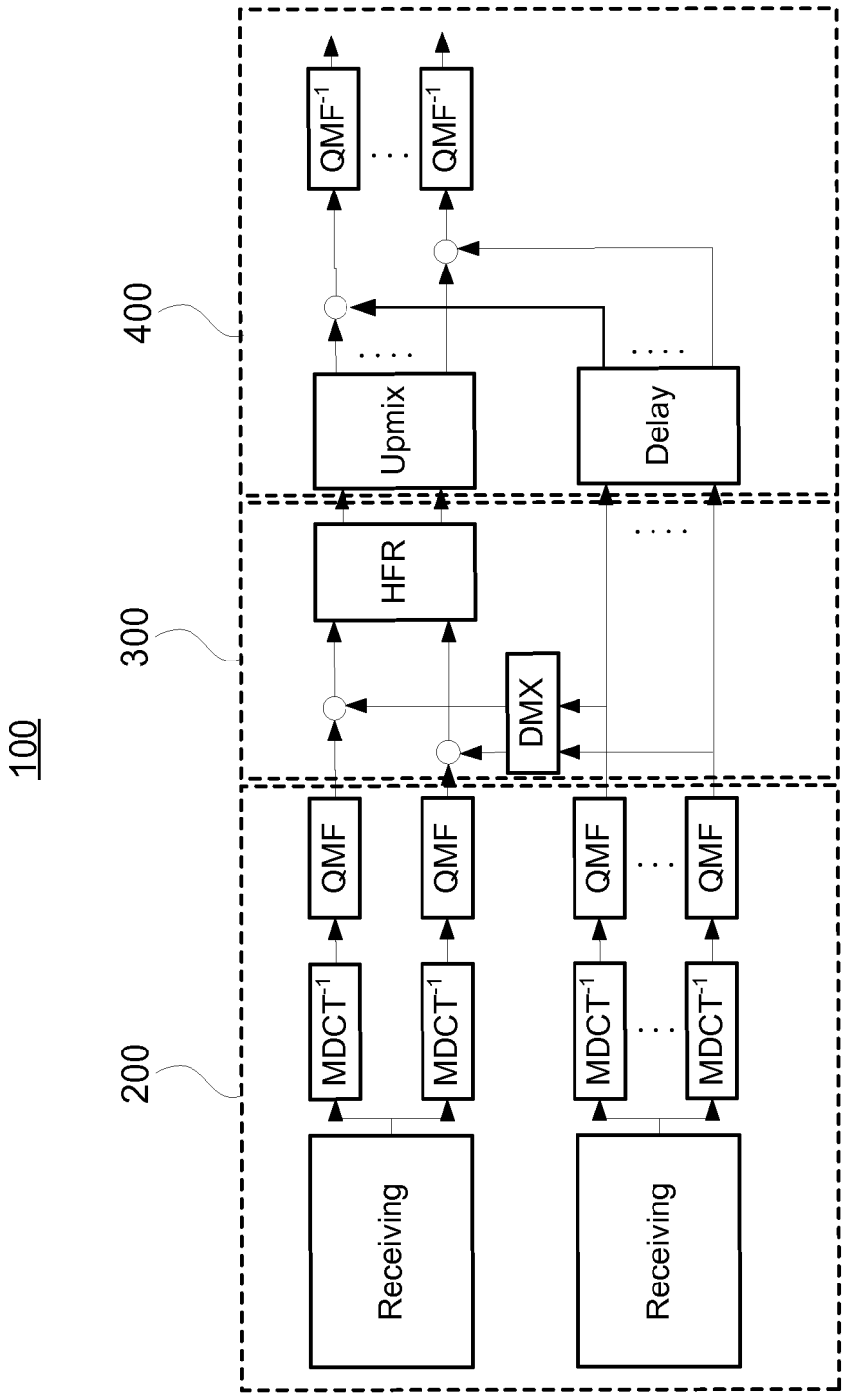

100
200
300
400
Receiving
Receiving
MDCT-1
MDCT-1
MDCT-1
MDCT-1
QMF
QMF
QMF
QMF
DMX
HFR
Upmix
Delay
QMF-1
QMF-1

Fig. 1

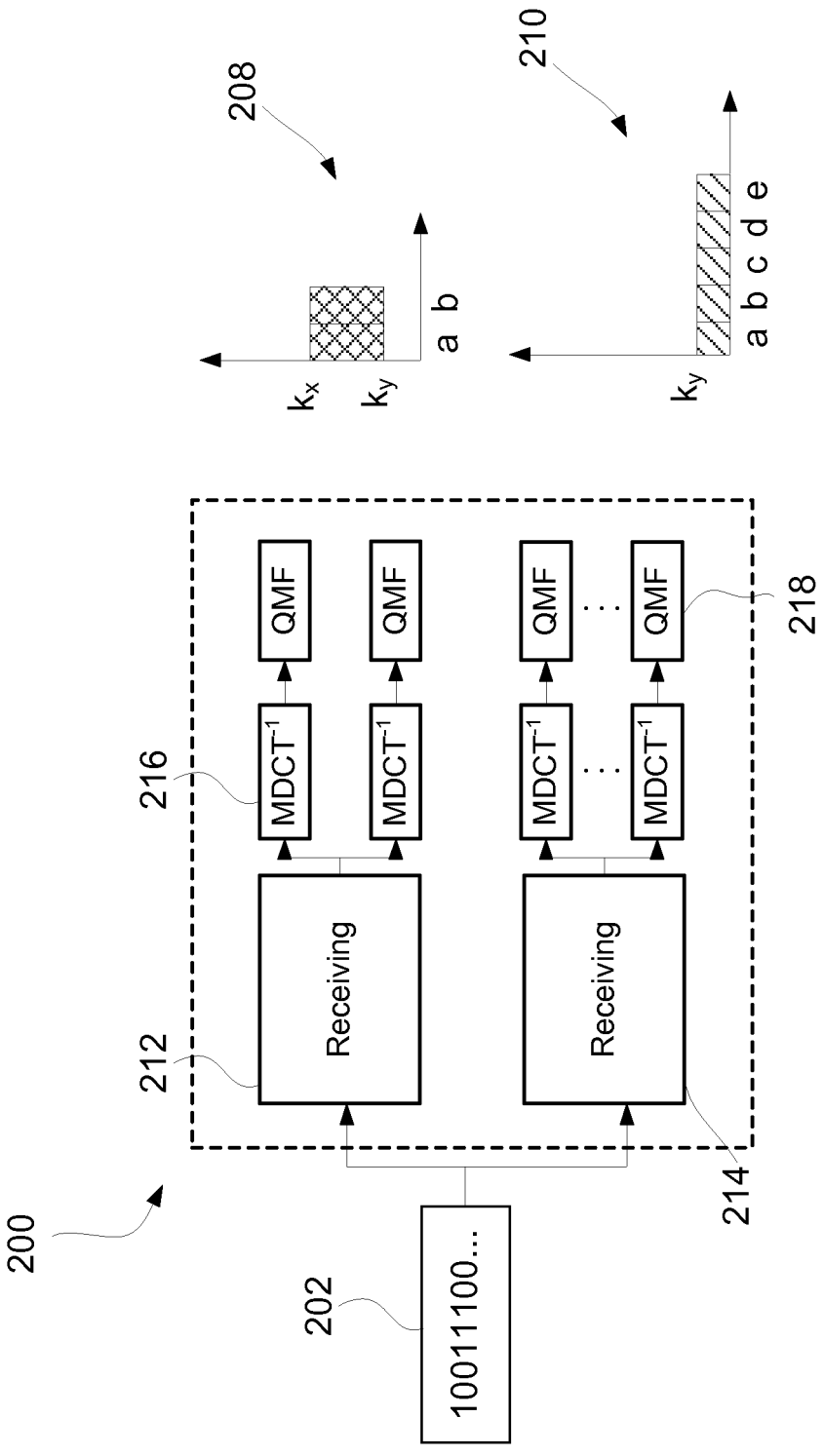

208
210
a b
a b c d e
k_x
k_y
k_y
200
202
10011100...
212
214
216
218
Receiving
Receiving
MDCT^{-1}
MDCT^{-1}
MDCT^{-1}
MDCT^{-1}
QMF
QMF
QMF
QMF

Fig. 2

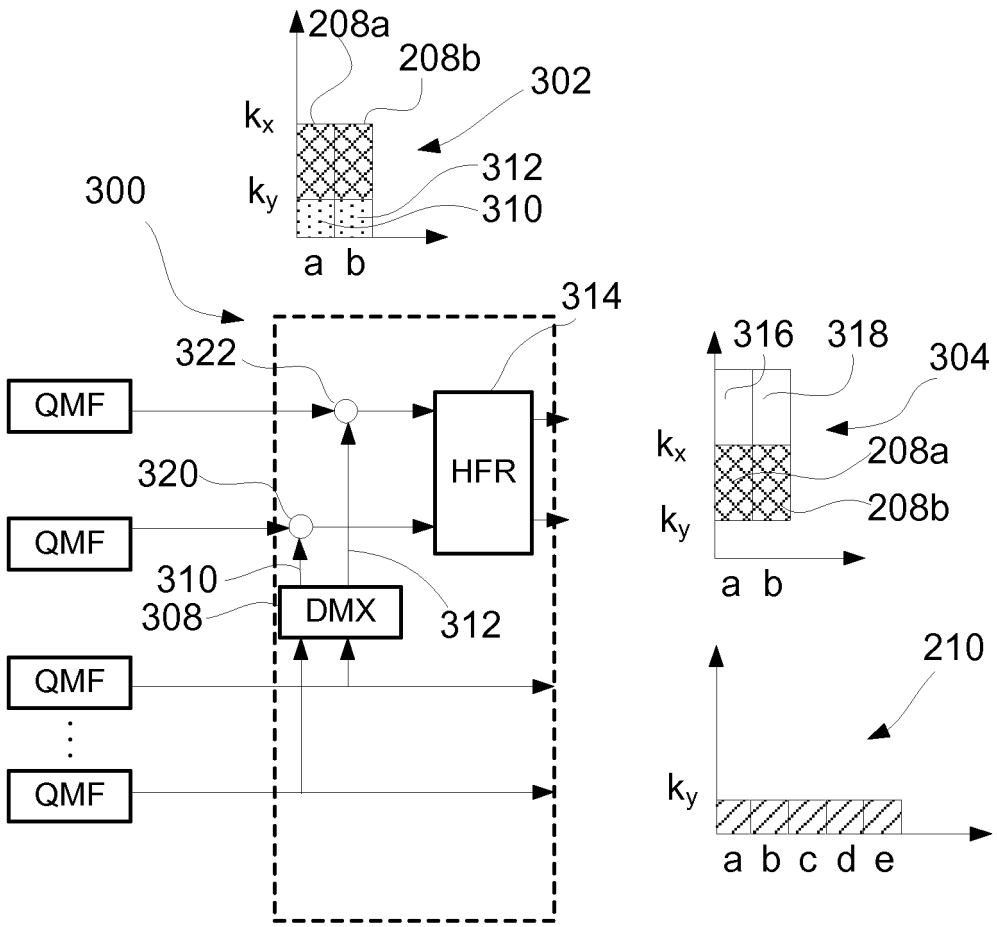

208a
208b
302
k_x
k_y
312
310
a b
300
314
322
QMF
320
QMF
310
308
DMX
312
QMF
QMF
HFR
316
318
304
k_x
208a
k_y
208b
a b
210
k_y
a b c d e

Fig. 3

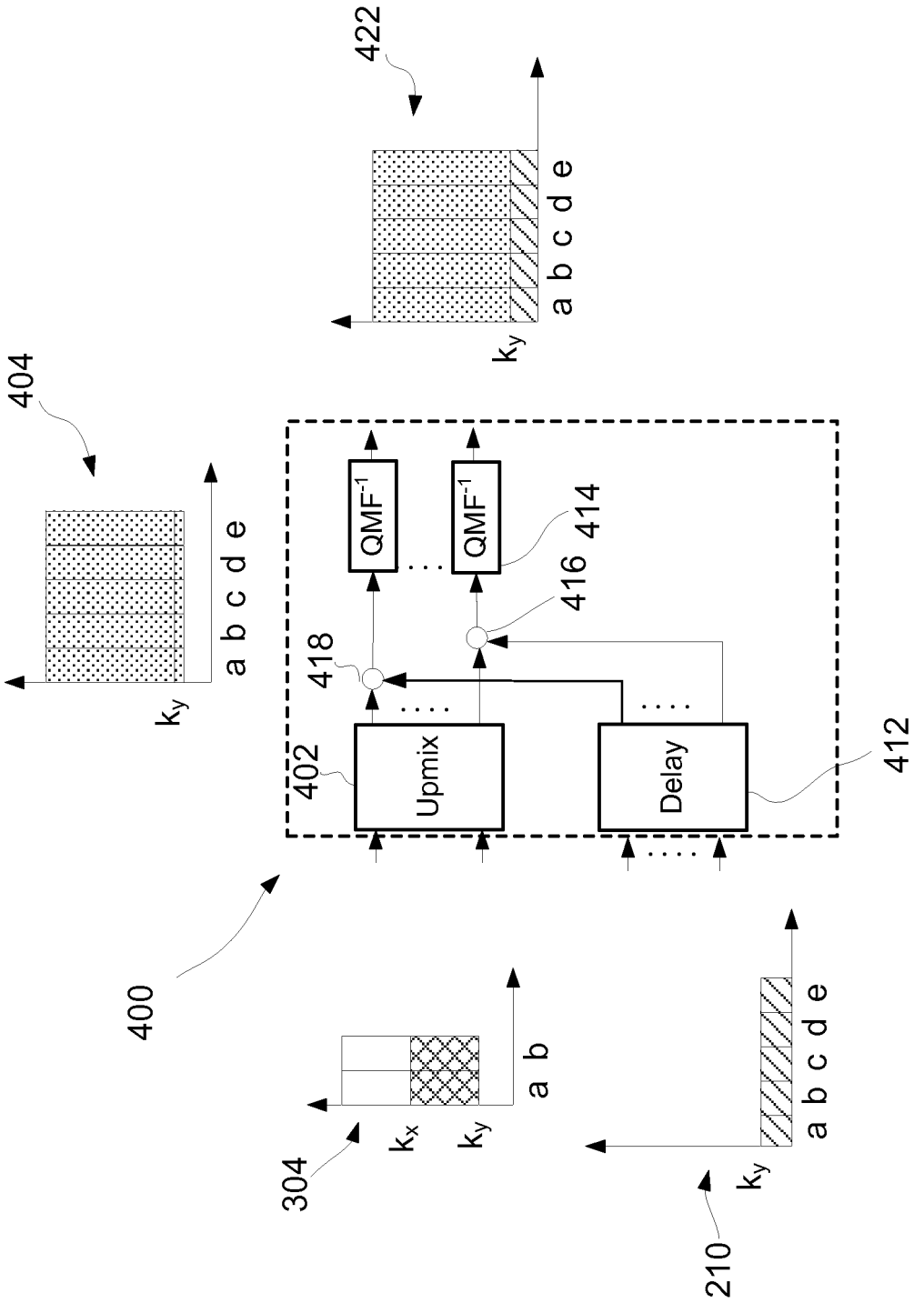

422
a b c d e
k_y
404
a b c d e
k_y
QMF^{-1}
QMF^{-1}
414
416
418
402
Upmix
Delay
412
400
304
a b
k_x
k_y
210
a b c d e
k_y

Fig. 4

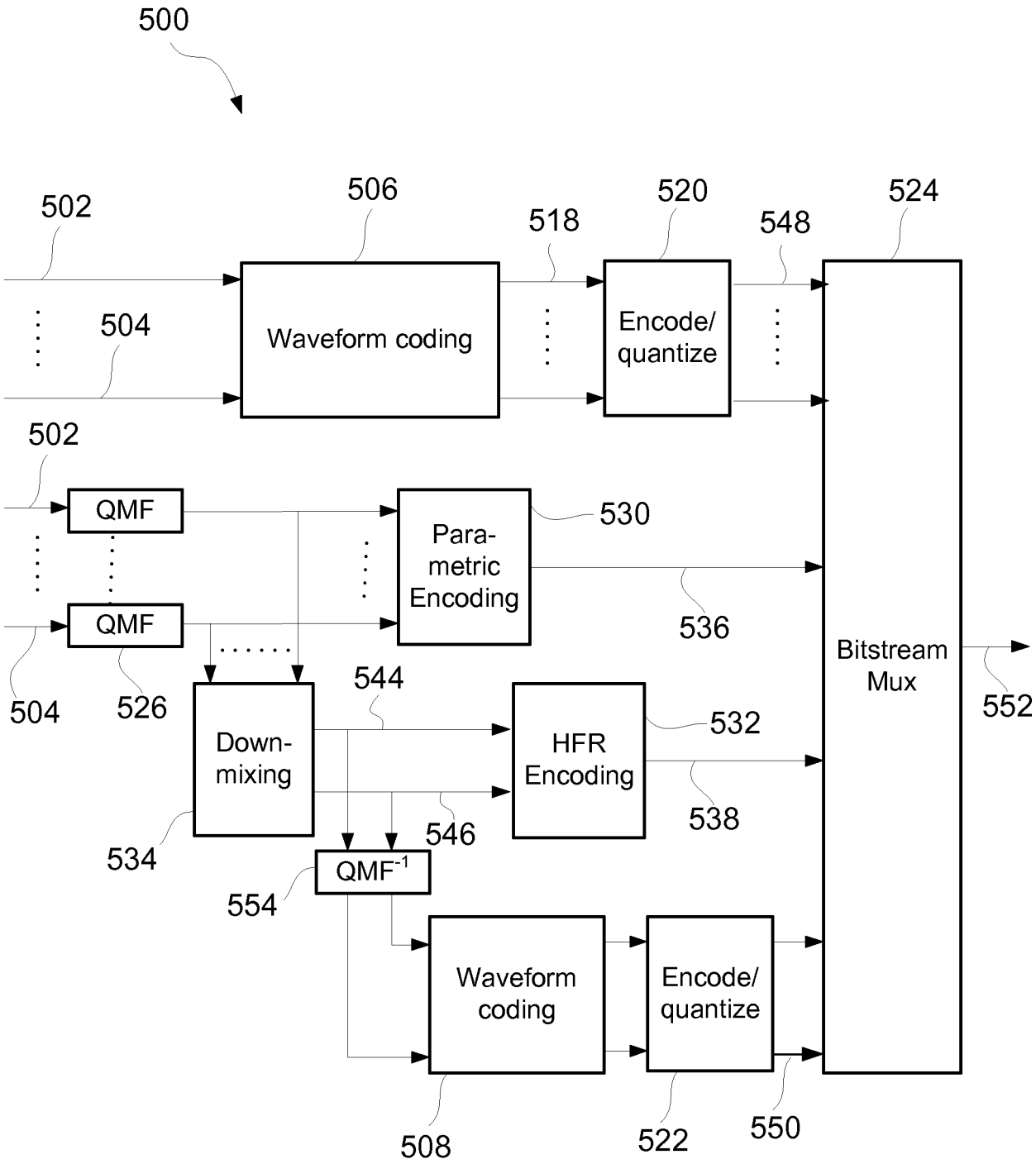

500
502
506
518
520
548
524
504
Waveform coding
Encode/ quantize
502
QMF
530
Para- metric Encoding
QMF
536
Bitstream Mux
504
526
544
552
Down- mixing
HFR Encoding
532
538
534
546
QMF-1
554
Waveform coding
Encode/ quantize
508
522
550

Fig. 5

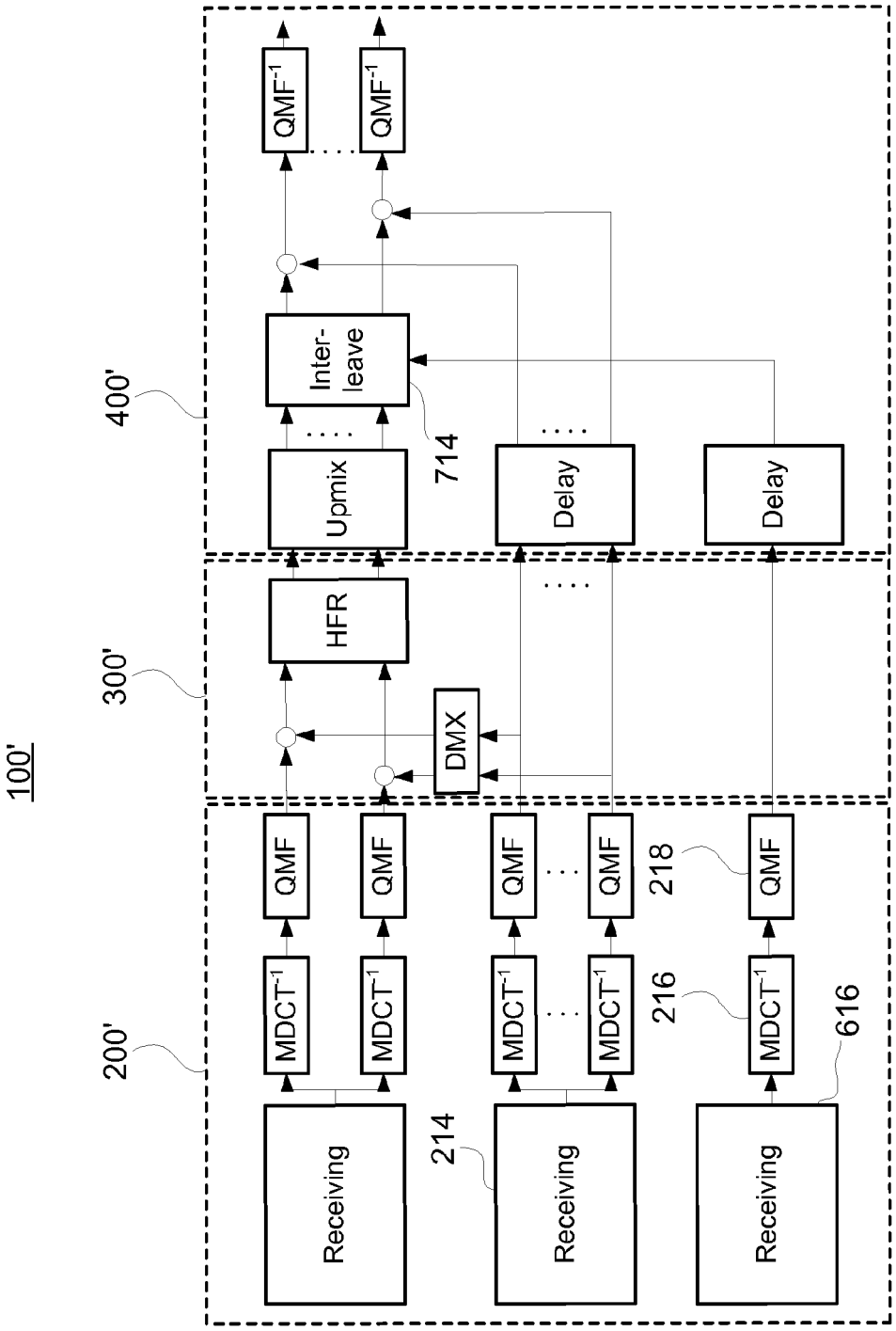

100'
200'
300'
400'
Receiving
MDCT-1
QMF
DMX
HFR
Upmix
Inter-leave
QMF-1
Delay
214
216
218
616
714

Fig. 6

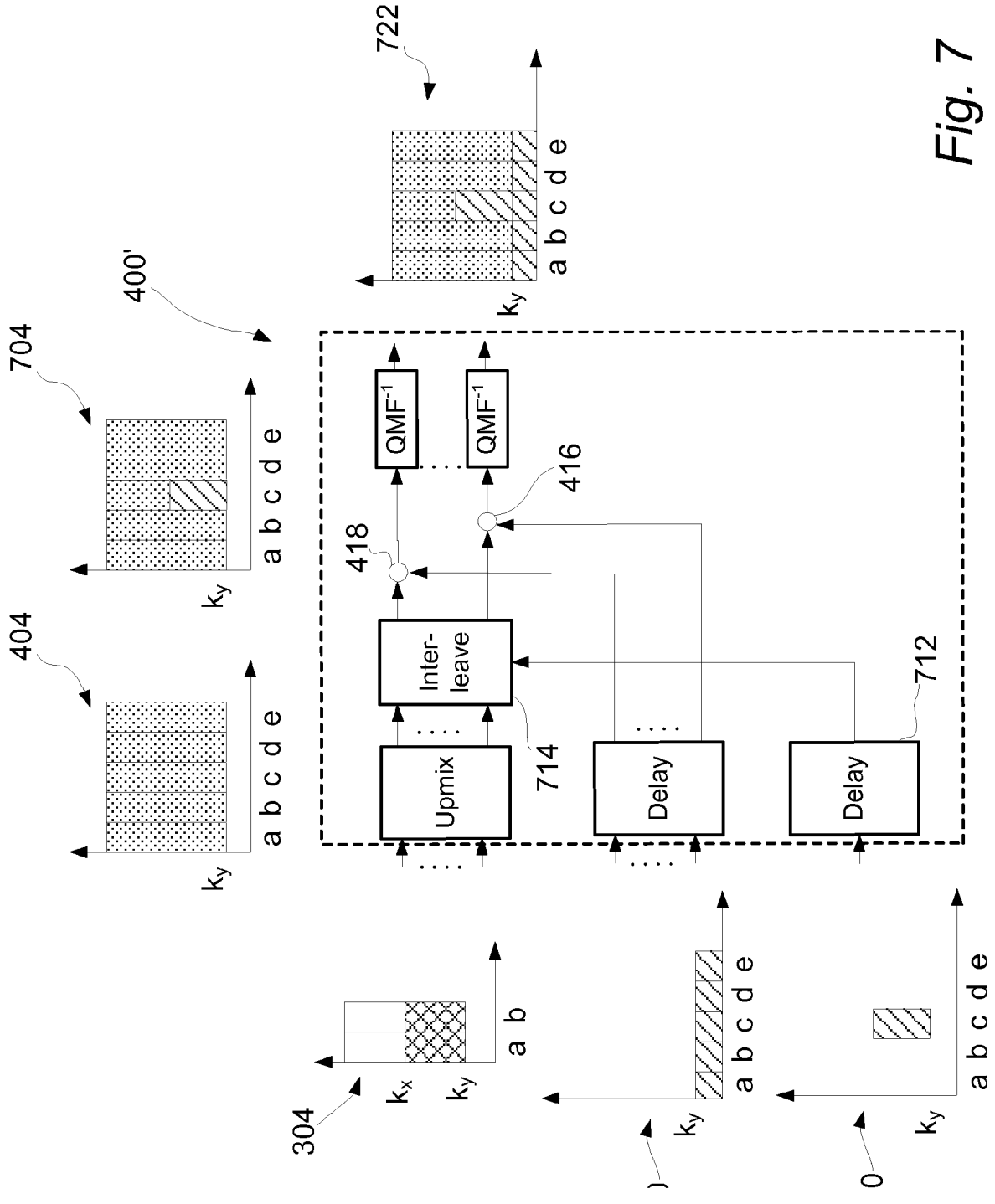

722
a b c d e
k_y
400'
704
404
a b c d e
k_y
QMF^{-1}
QMF^{-1}
416
418
Inter-
leave
714
Upmix
Delay
Delay
712
304
k_x
k_y
a b
a b c d e
k_y
0
a b c d e
k_y

Fig. 7

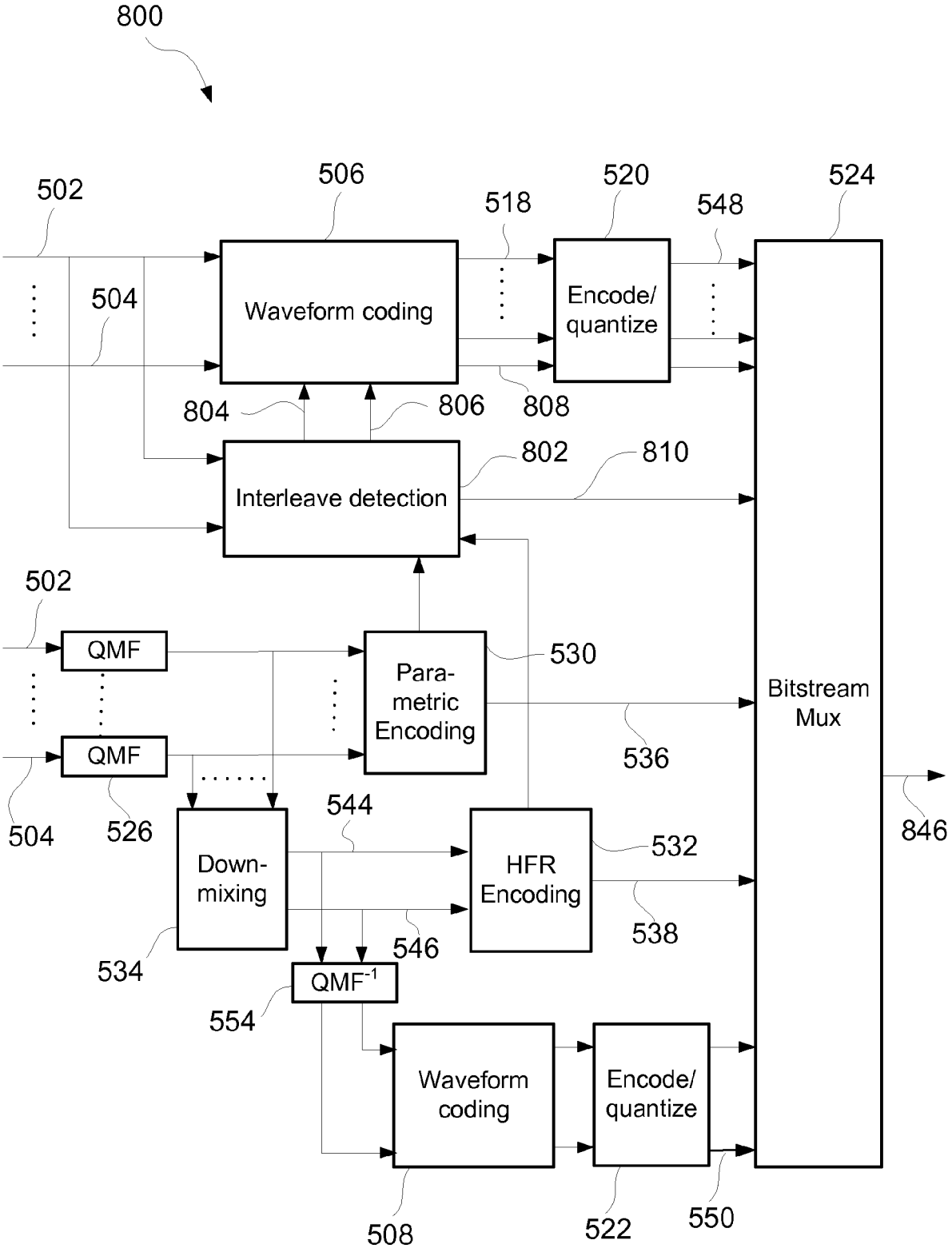

800
502
506
518
520
548
524
504
Waveform coding
Encode/ quantize
804
806
808
802
810
Interleave detection
502
QMF
QMF
530
Para- metric Encoding
Bitstream Mux
536
504
526
544
532
846
Down- mixing
HFR Encoding
538
534
546
QMF-1
554
Waveform coding
Encode/ quantize
508
522
550

Fig. 8