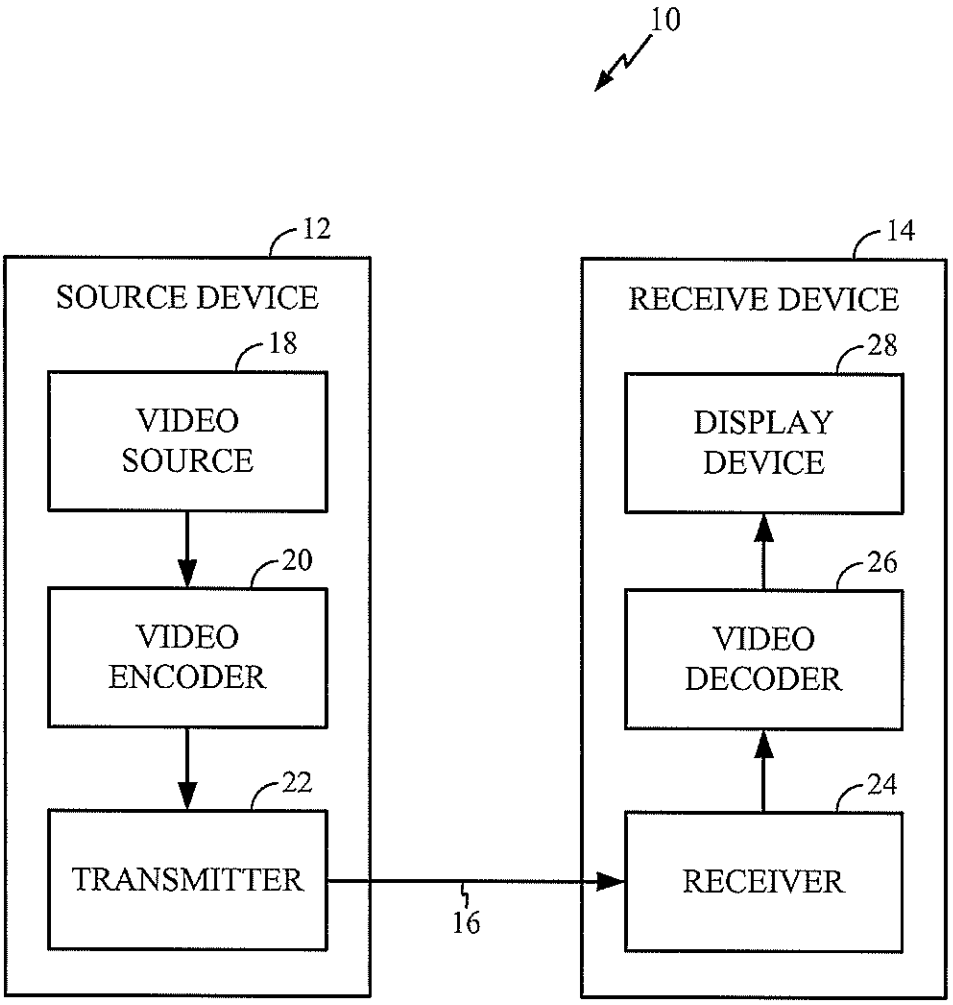

10
12
SOURCE DEVICE
18
VIDEO SOURCE
20
VIDEO ENCODER
22
TRANSMITTER
16
14
RECEIVE DEVICE
28
DISPLAY DEVICE
26
VIDEO DECODER
24
RECEIVER

FIG. 1

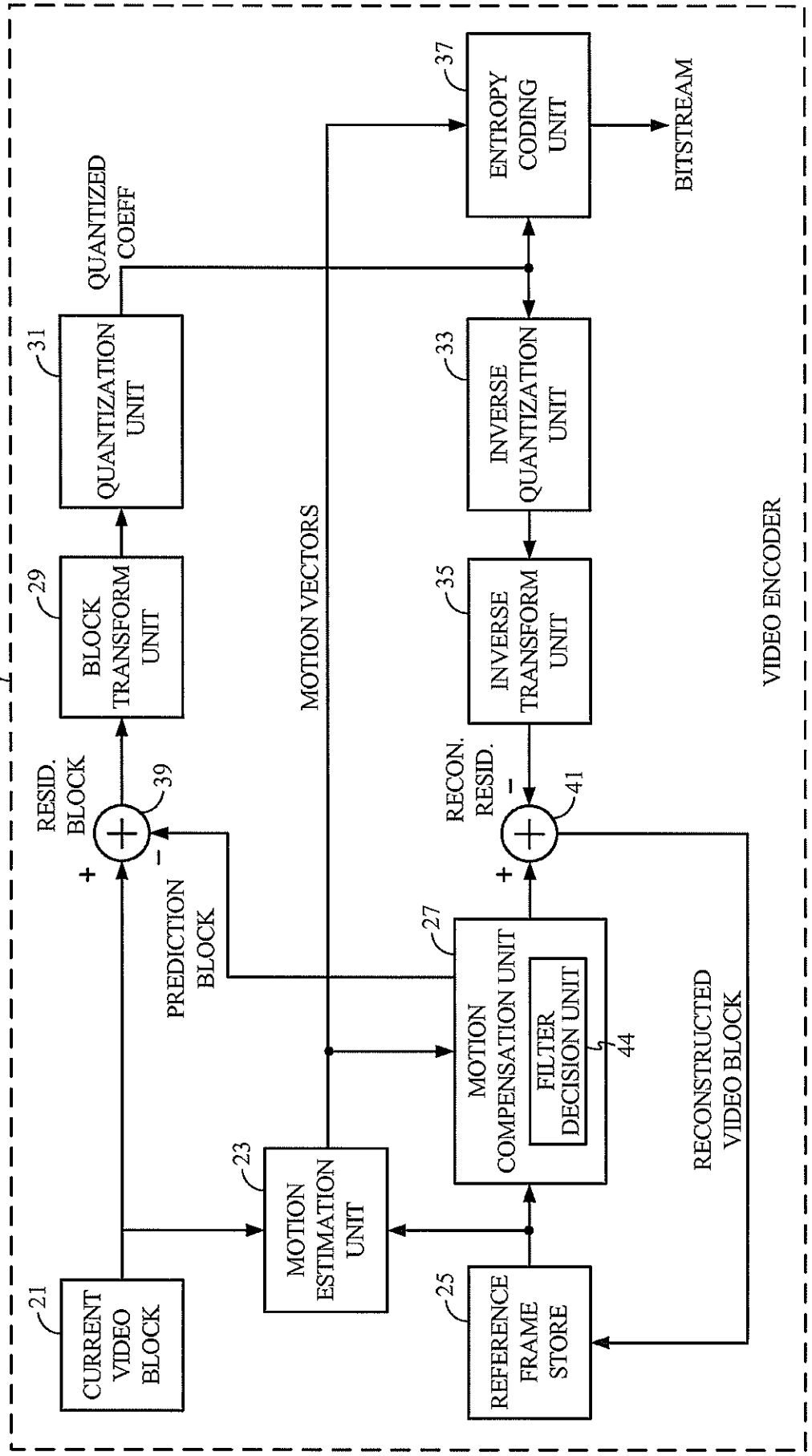

20
VIDEO ENCODER
21
CURRENT VIDEO BLOCK
23
MOTION ESTIMATION UNIT
25
REFERENCE FRAME STORE
27
MOTION COMPENSATION UNIT
FILTER DECISION UNIT
44
29
BLOCK TRANSFORM UNIT
31
QUANTIZATION UNIT
QUANTIZED COEFF
33
INVERSE QUANTIZATION UNIT
35
INVERSE TRANSFORM UNIT
37
ENTROPY CODING UNIT
BITSTREAM
MOTION VECTORS
RESID. BLOCK
39
PREDICTION BLOCK
RECON. RESID.
41
RECONSTRUCTED VIDEO BLOCK

FIG. 2

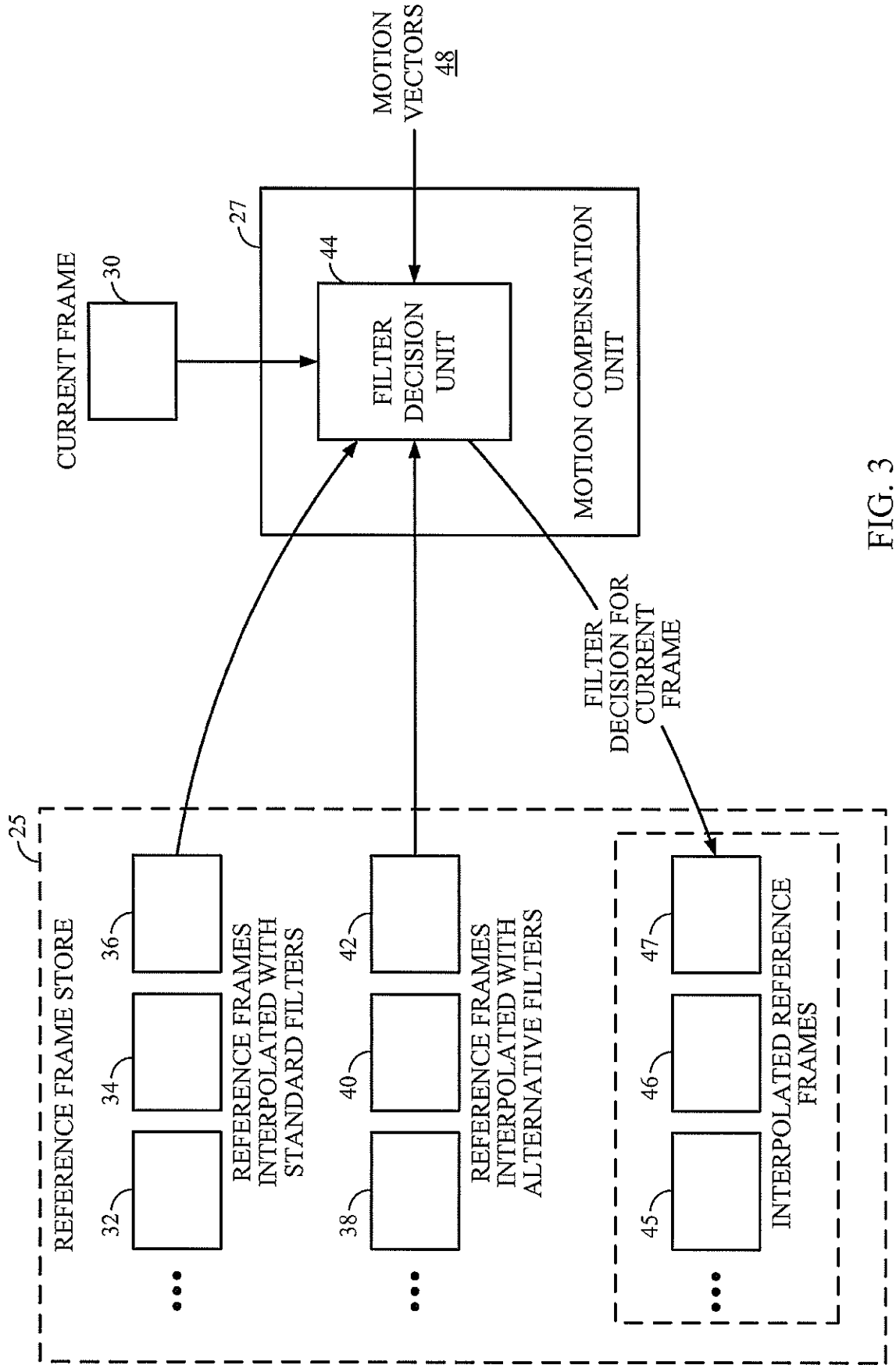

MOTION VECTORS 48
27
44
CURRENT FRAME
30
FILTER DECISION UNIT
MOTION COMPENSATION UNIT
FILTER DECISION FOR CURRENT FRAME
25
REFERENCE FRAME STORE
36
34
32
REFERENCE FRAMES INTERPOLATED WITH STANDARD FILTERS
42
40
38
REFERENCE FRAMES INTERPOLATED WITH ALTERNATIVE FILTERS
47
46
45
INTERPOLATED REFERENCE FRAMES

FIG. 3

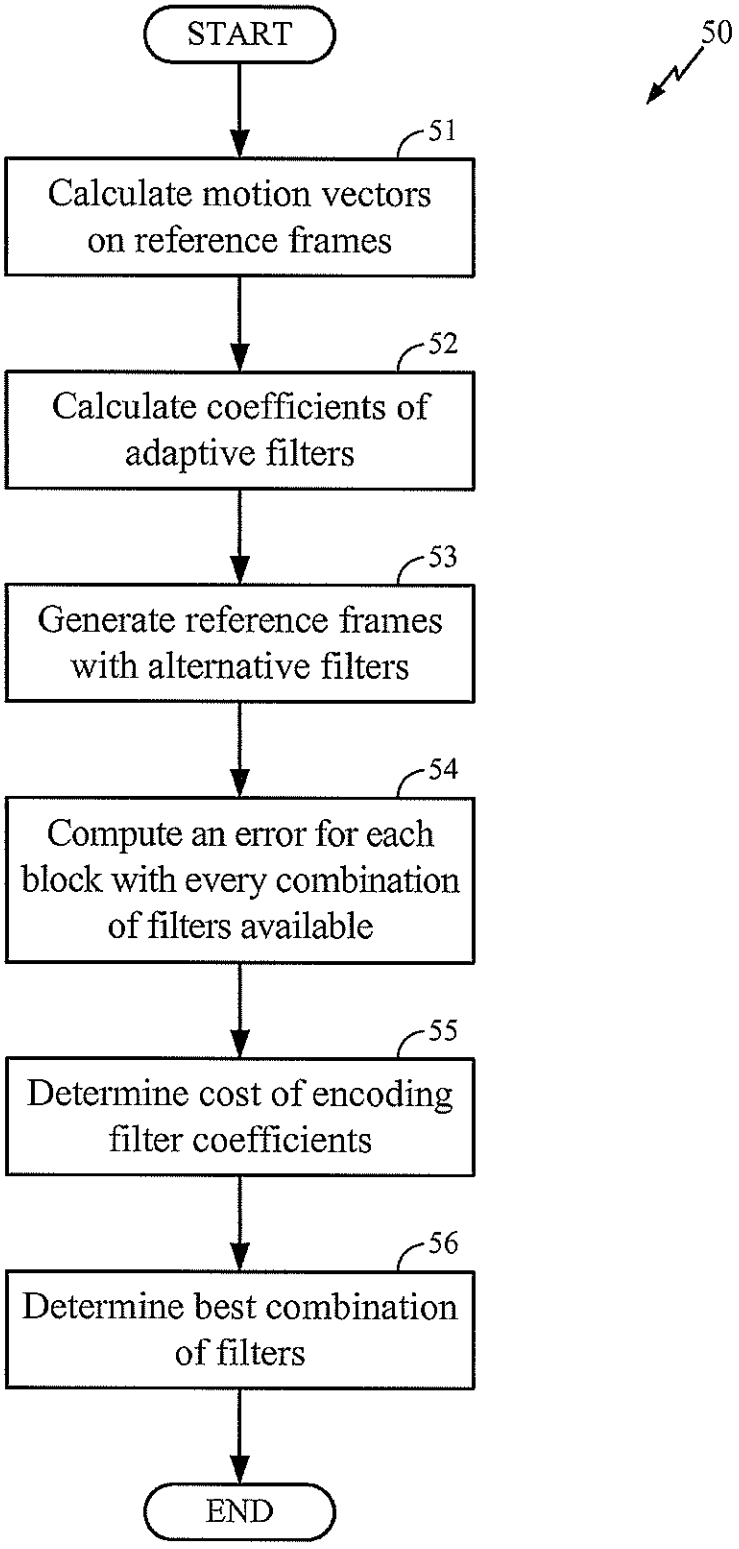

START
50
51
Calculate motion vectors on reference frames
52
Calculate coefficients of adaptive filters
53
Generate reference frames with alternative filters
54
Compute an error for each block with every combination of filters available
55
Determine cost of encoding filter coefficients
56
Determine best combination of filters
END

FIG. 4

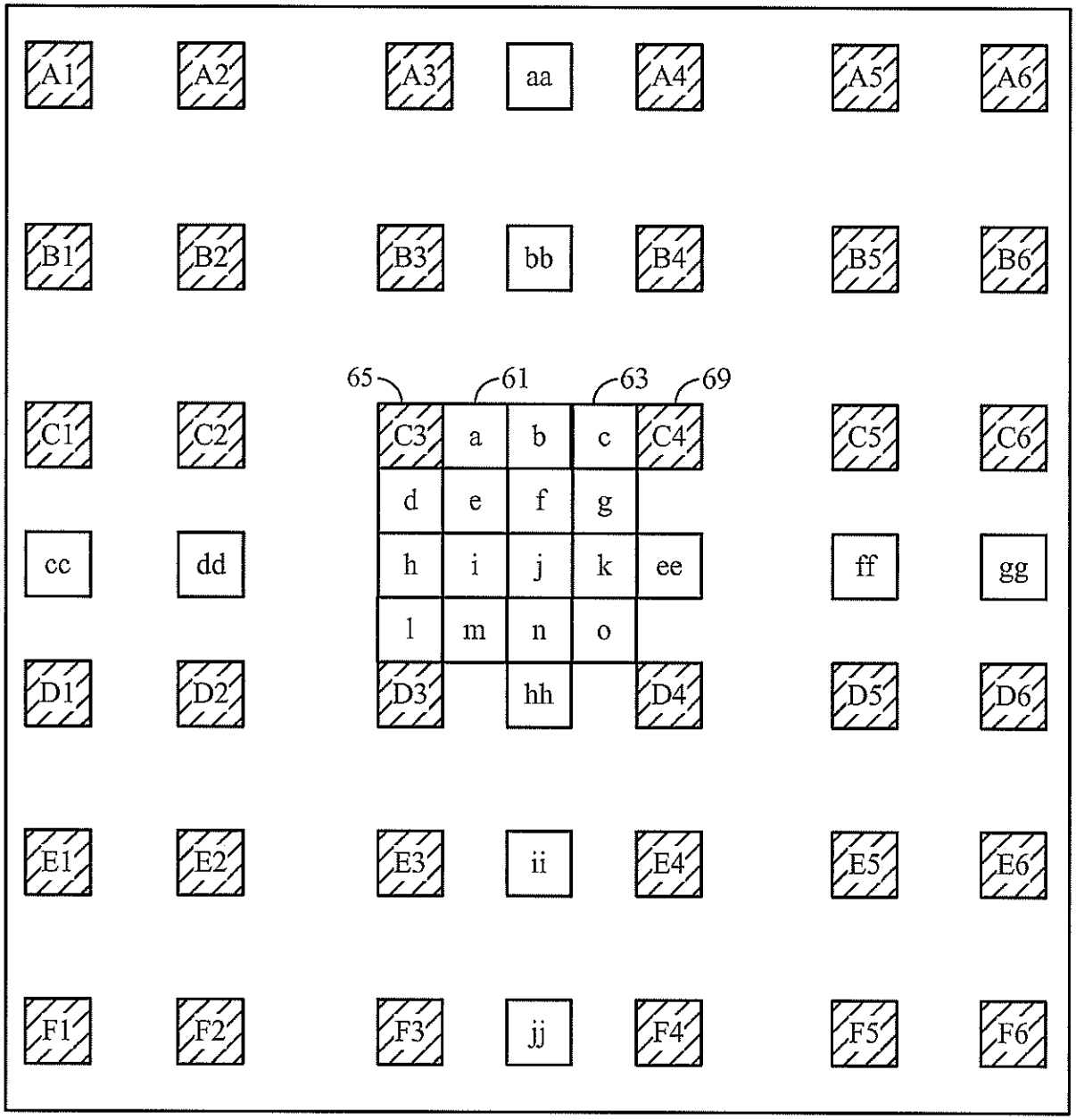

A1
A2
A3
aa
A4
A5
A6
B1
B2
B3
bb
B4
B5
B6
65
61
63
69
C1
C2
C3
a
b
c
C4
C5
C6
d
e
f
g
cc
dd
h
i
j
k
ee
ff
gg
l
m
n
o
D1
D2
D3
hh
D4
D5
D6
E1
E2
E3
ii
E4
E5
E6
F1
F2
F3
jj
F4
F5
F6

FIG. 5

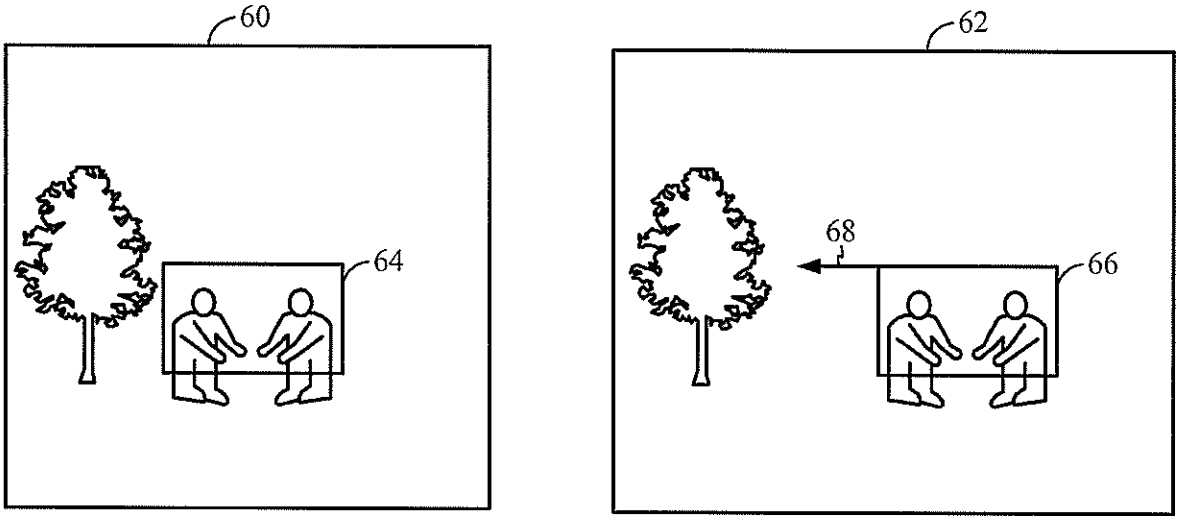


FIG. 6

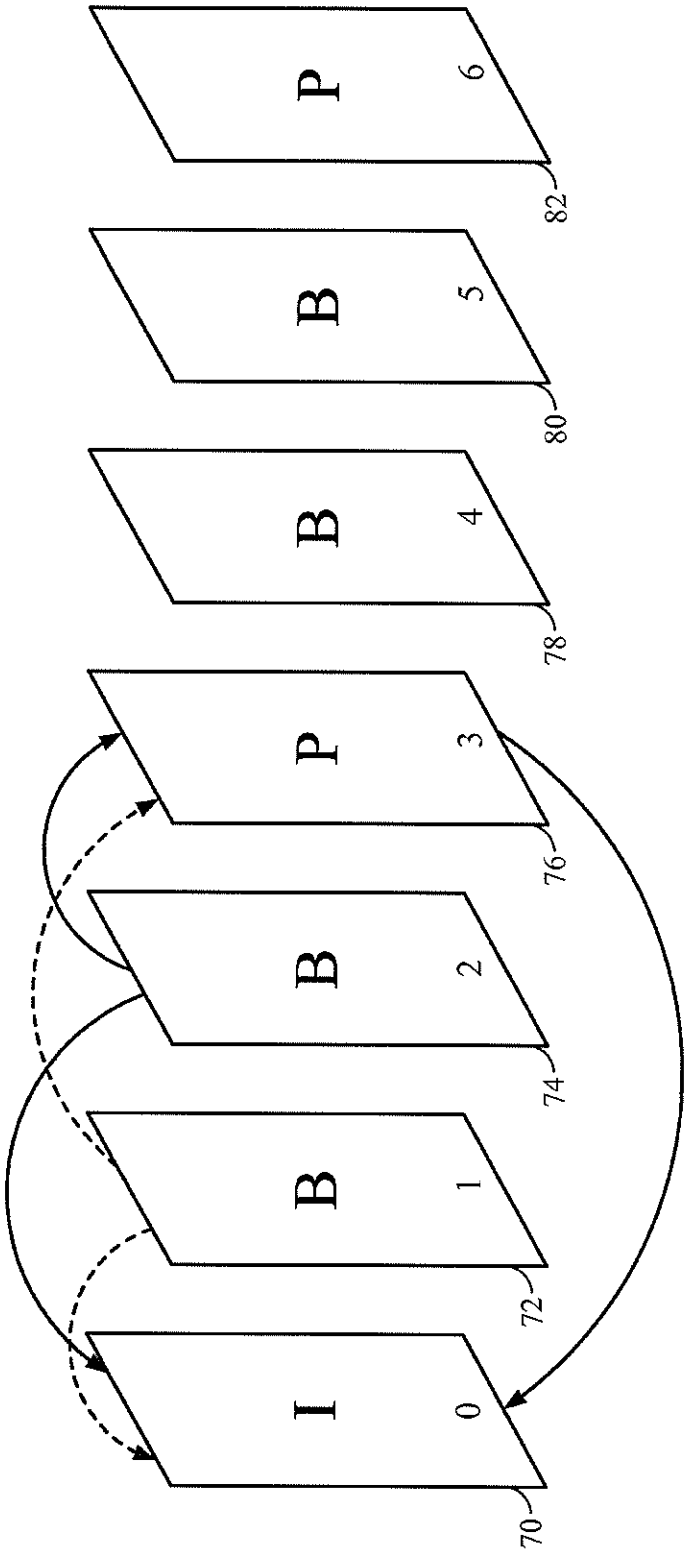
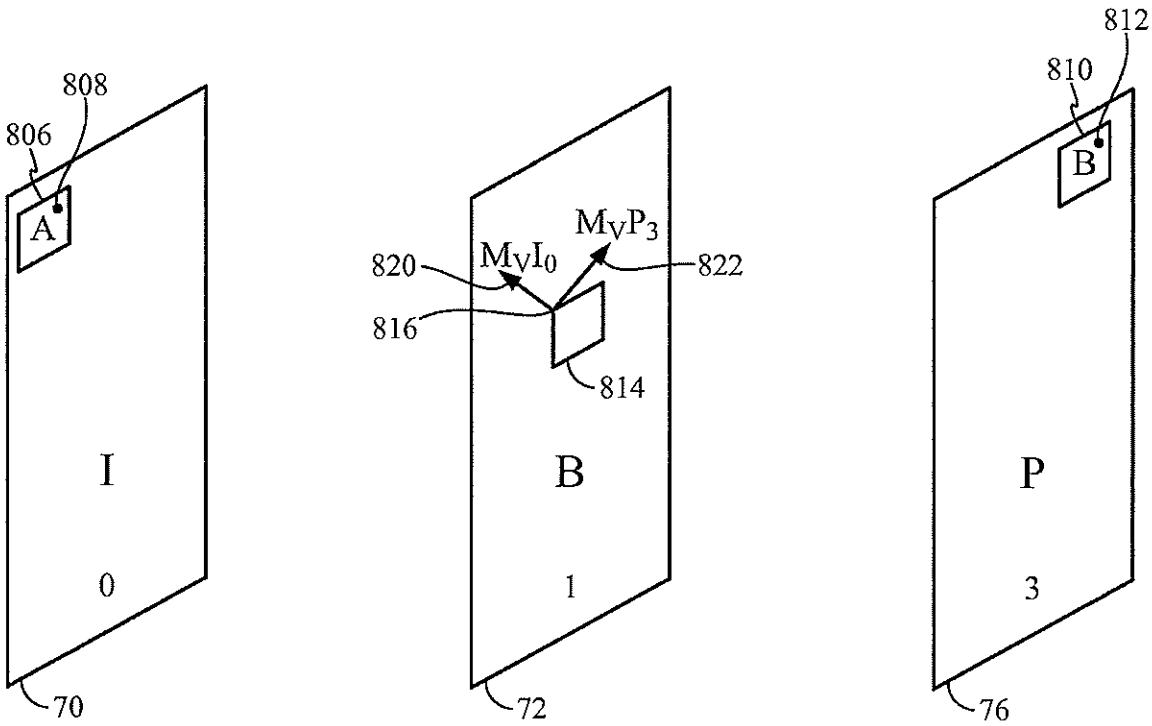


FIG. 7



I FRAME B FRAME P FRAME

FIG. 8

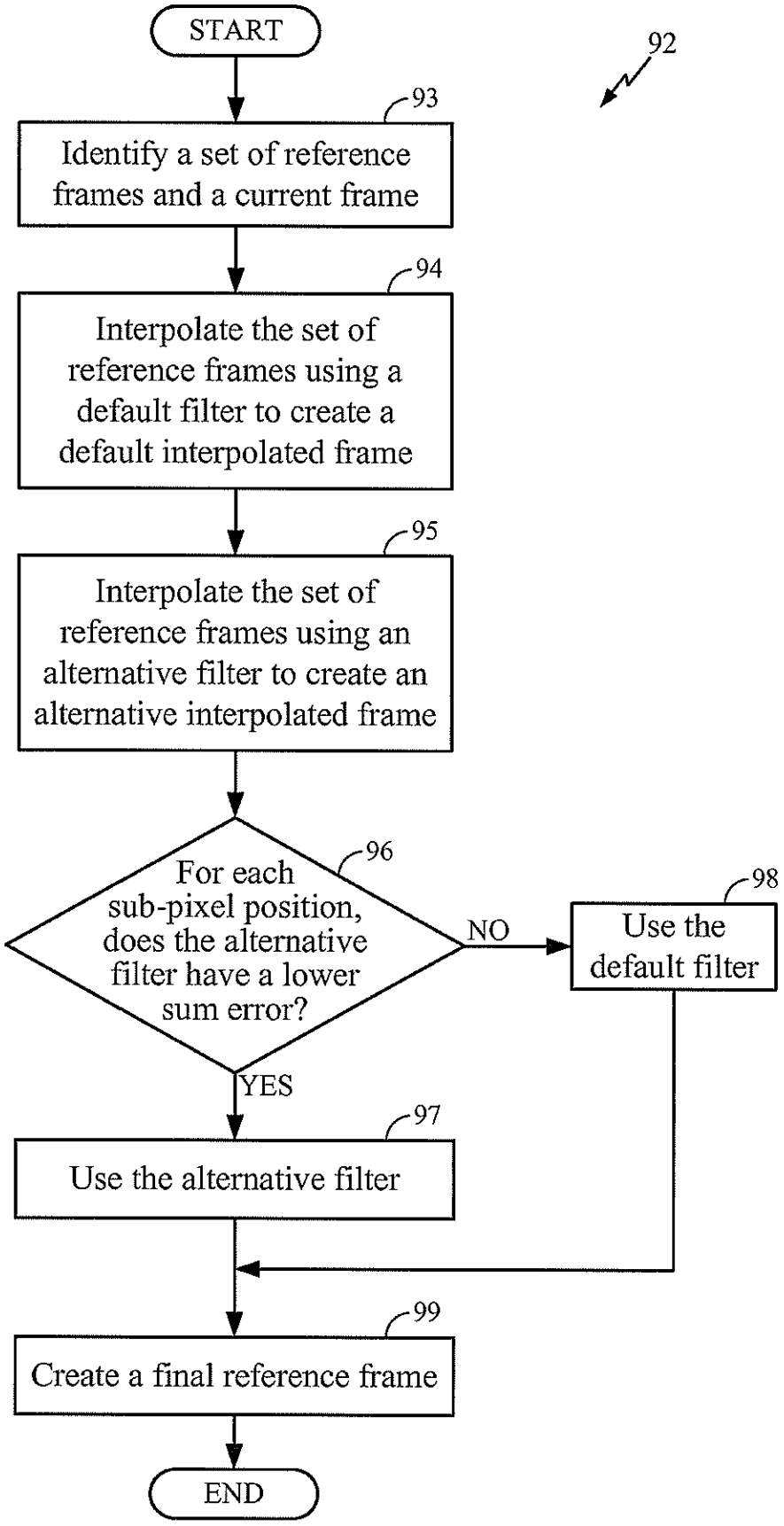

START
92
93
Identify a set of reference frames and a current frame
94
Interpolate the set of reference frames using a default filter to create a default interpolated frame
95
Interpolate the set of reference frames using an alternative filter to create an alternative interpolated frame
96
For each sub-pixel position, does the alternative filter have a lower sum error?
NO
98
Use the default filter
YES
97
Use the alternative filter
99
Create a final reference frame
END

FIG. 9