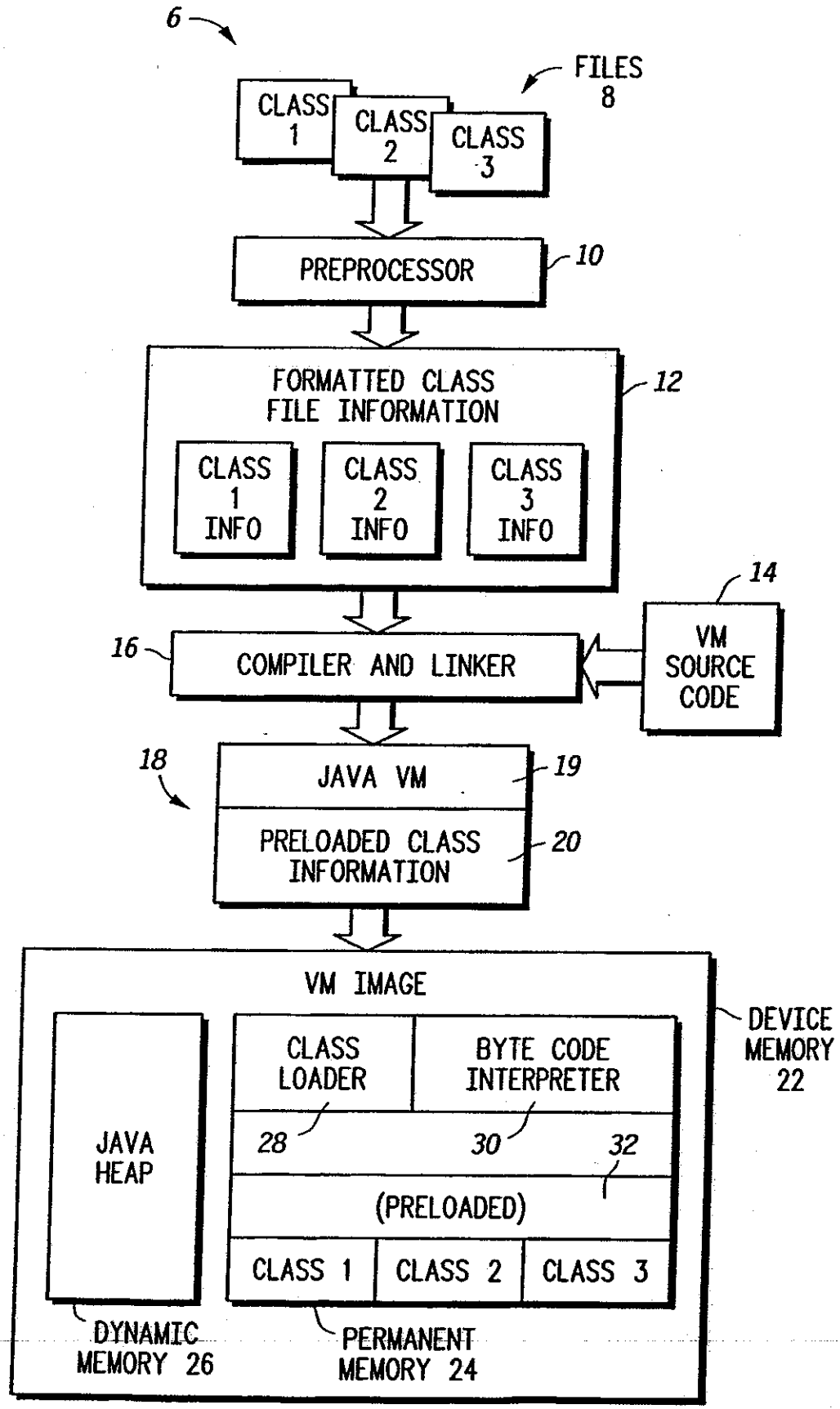


FIG.1
-PRIOR ART-

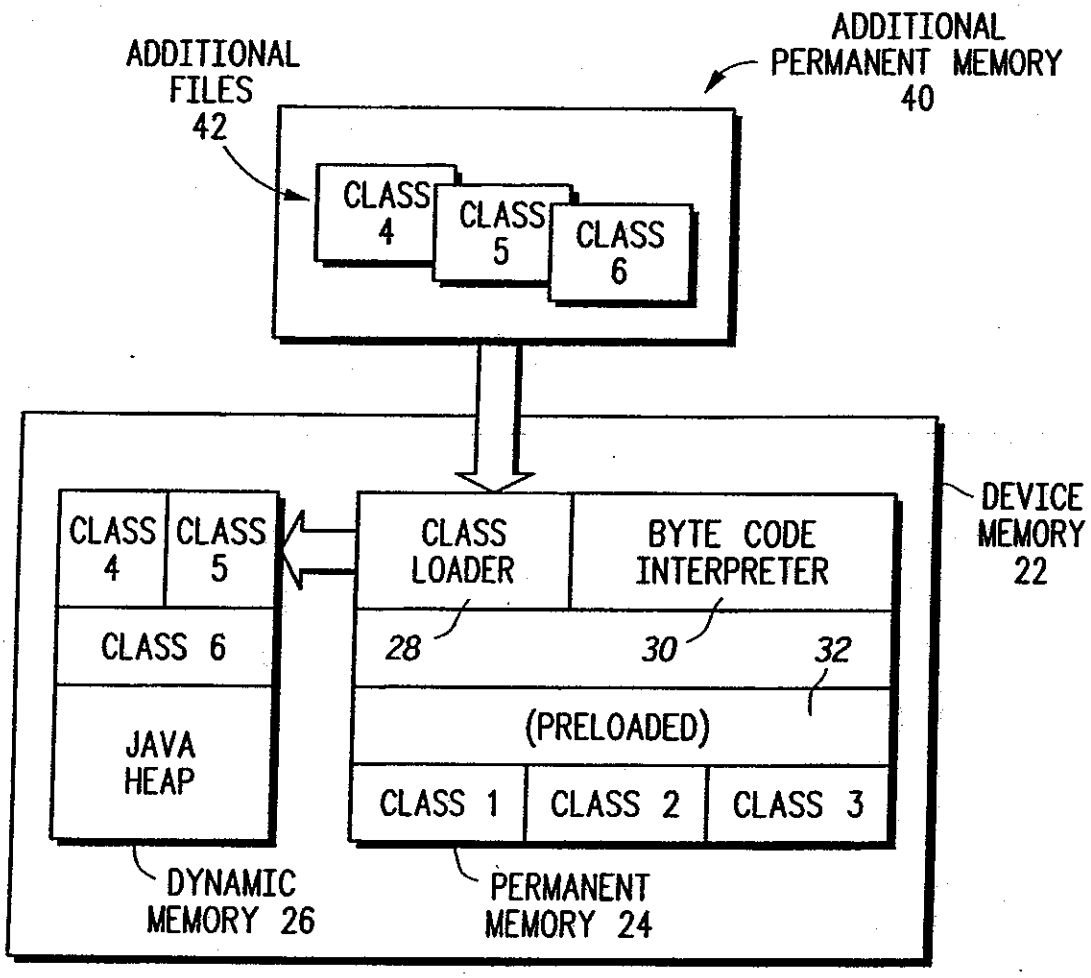


FIG.2
-PRIOR ART-

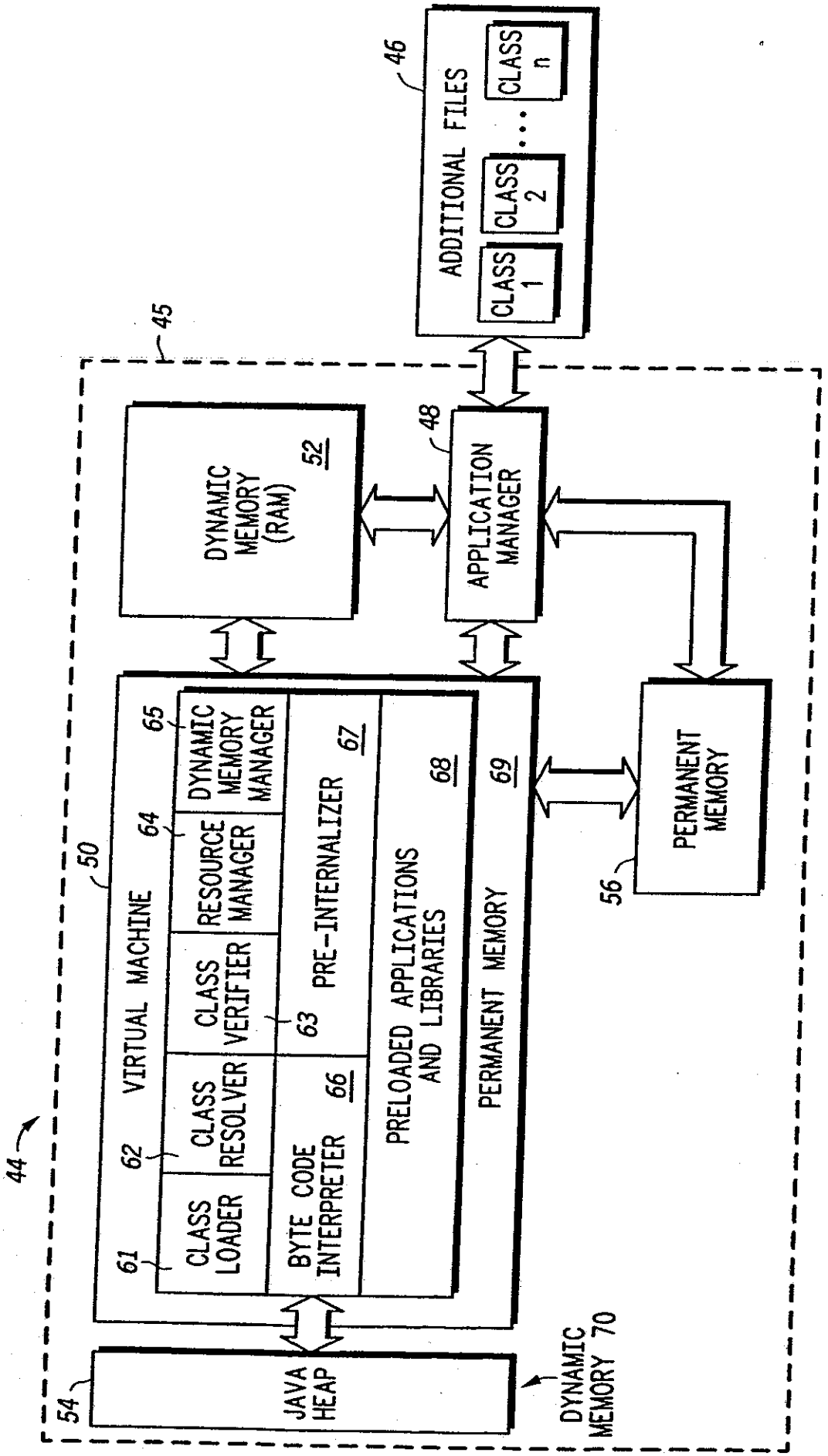

ADDITIONAL FILES
CLASS 1
CLASS 2
CLASS n
46
45
DYNAMIC MEMORY (RAM)
52
48
APPLICATION MANAGER
VIRTUAL MACHINE
50
64
65
DYNAMIC MEMORY MANAGER
RESOURCE MANAGER
CLASS VERIFIER
63
PRE-INTERNALIZER
67
CLASS RESOLVER
66
BYTE CODE INTERPRETER
PRELOADED APPLICATIONS AND LIBRARIES
68
PERMANENT MEMORY
69
62
CLASS LOADER
61
44
PERMANENT MEMORY
56
JAVA HEAP
54
DYNAMIC MEMORY 70

FIG.3

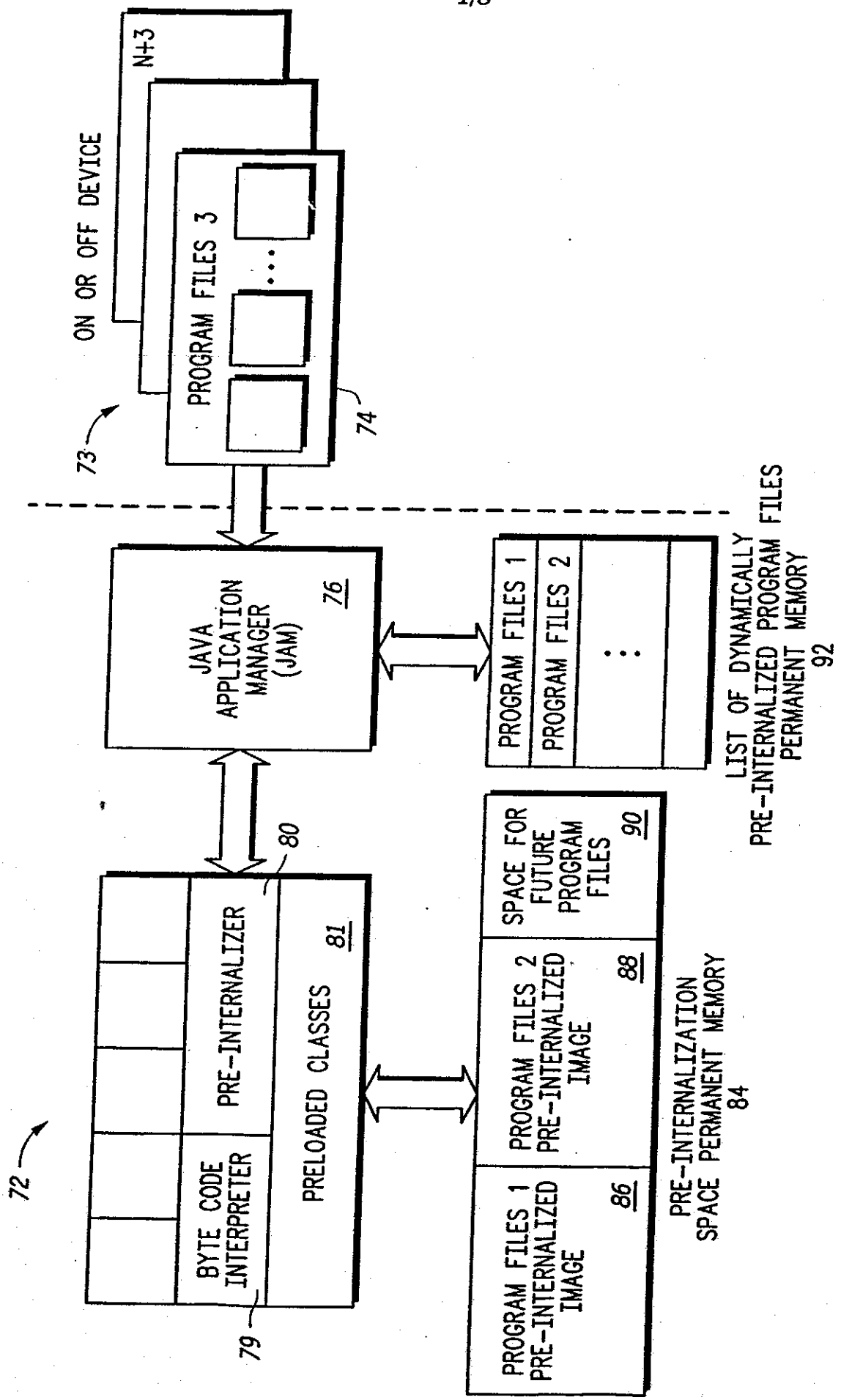

ON OR OFF DEVICE
N+3
PROGRAM FILES 3
73
74
JAVA APPLICATION MANAGER (JAM)
76
PROGRAM FILES 1
PROGRAM FILES 2
LIST OF DYNAMICALLY PRE-INTERNALIZED PROGRAM FILES PERMANENT MEMORY
92
72
80
BYTE CODE INTERPRETER
PRE-INTERNALIZER
PRELOADED CLASSES
81
79
SPACE FOR FUTURE PROGRAM FILES
90
PROGRAM FILES 2 PRE-INTERNALIZED IMAGE
88
PROGRAM FILES 1 PRE-INTERNALIZED IMAGE
86
PRE-INTERNALIZATION SPACE PERMANENT MEMORY
84

FIG. 4

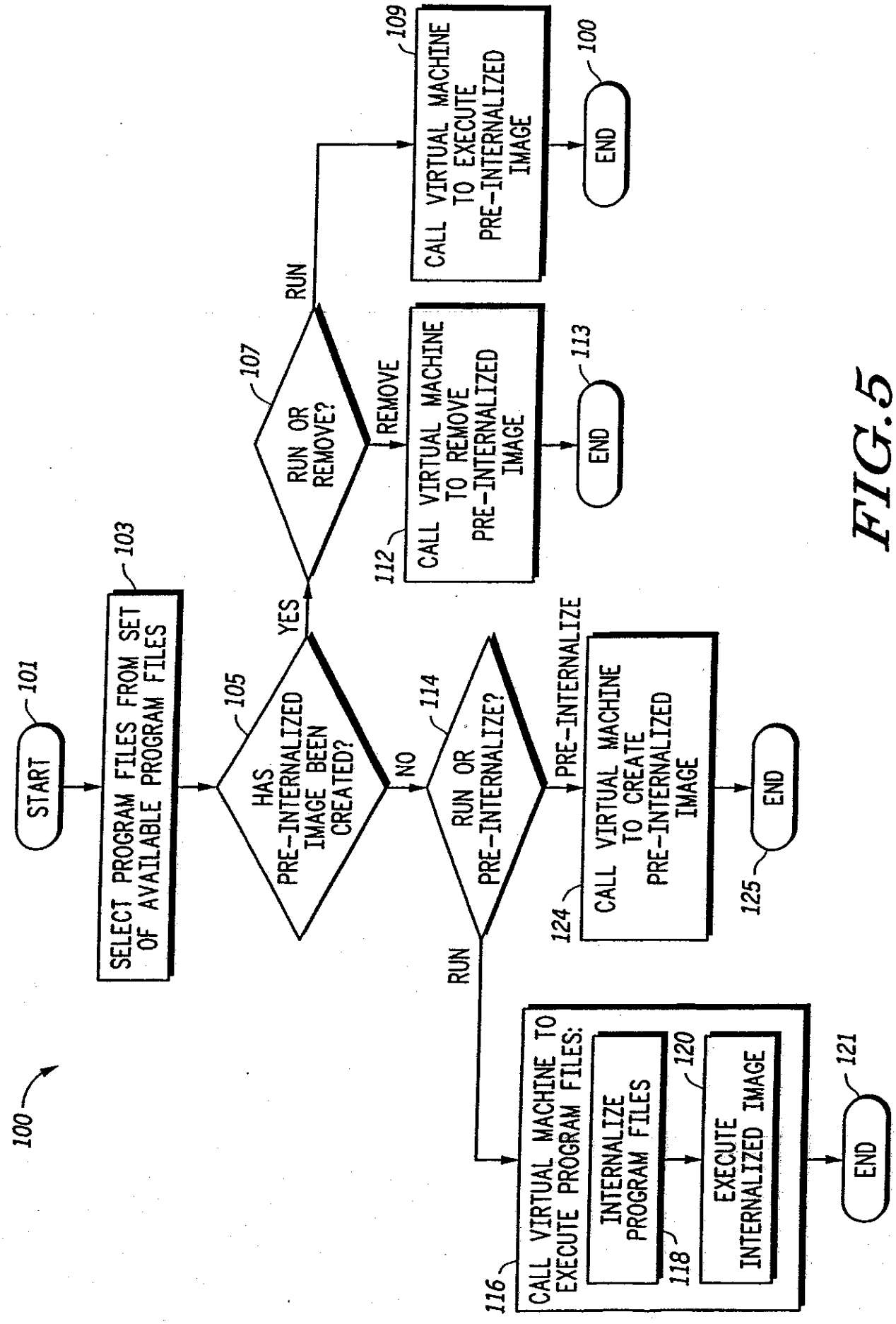
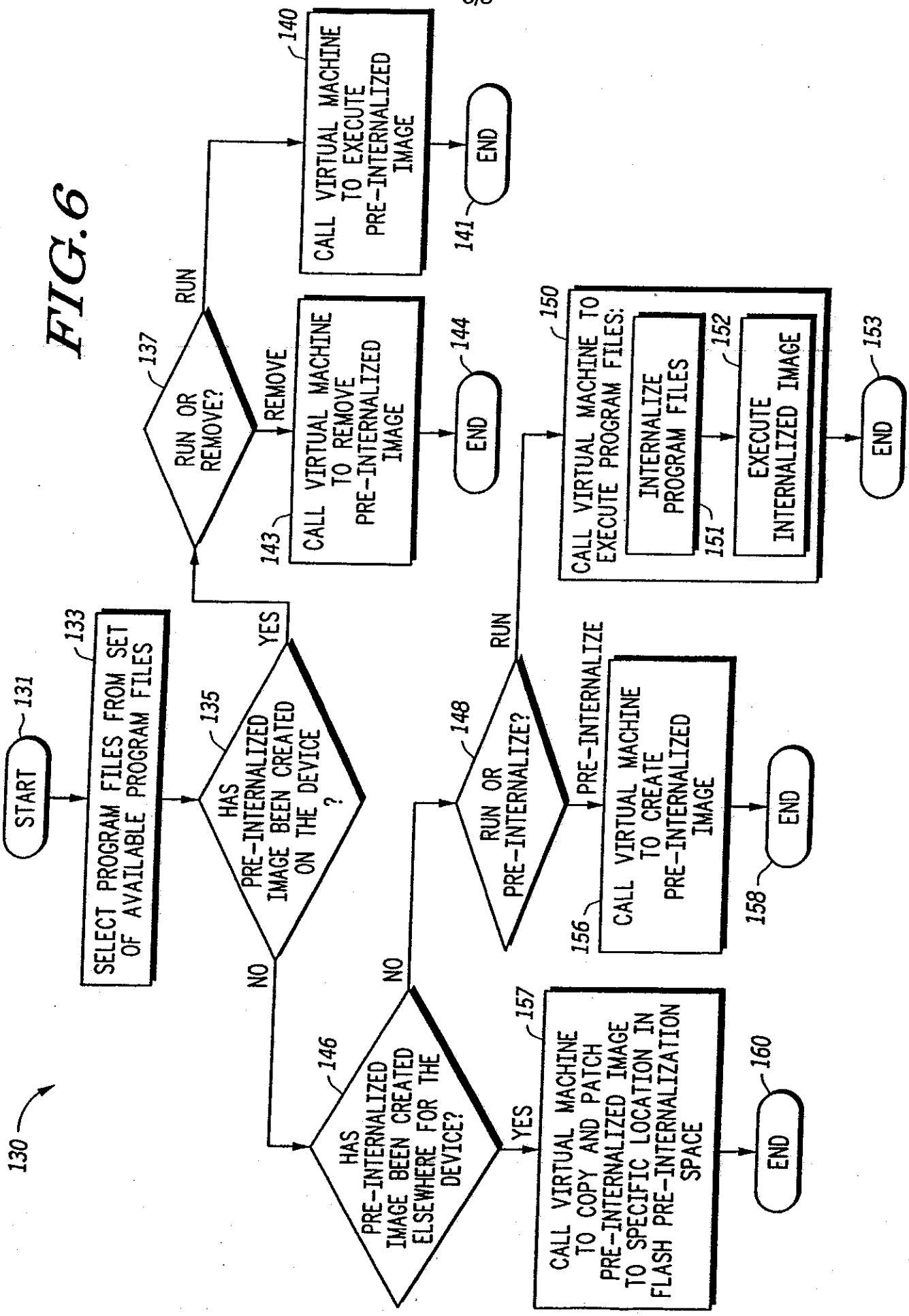

100
START
101
SELECT PROGRAM FILES FROM SET OF AVAILABLE PROGRAM FILES
103
HAS PRE-INTERNALIZED IMAGE BEEN CREATED?
105
YES
NO
RUN OR REMOVE?
107
RUN
REMOVE
CALL VIRTUAL MACHINE TO EXECUTE PRE-INTERNALIZED IMAGE
109
END
100
CALL VIRTUAL MACHINE TO REMOVE PRE-INTERNALIZED IMAGE
112
END
113
RUN OR PRE-INTERNALIZE?
114
PRE-INTERNALIZE
CALL VIRTUAL MACHINE TO CREATE PRE-INTERNALIZED IMAGE
124
END
125
RUN
CALL VIRTUAL MACHINE TO EXECUTE PROGRAM FILES:
116
INTERNALIZE PROGRAM FILES
118
EXECUTE INTERNALIZED IMAGE
120
END
121

FIG.5

FIG. 6


130
START
131
SELECT PROGRAM FILES FROM SET OF AVAILABLE PROGRAM FILES
133
HAS PRE-INTERNALIZED IMAGE BEEN CREATED ON THE DEVICE ?
135
YES
RUN OR REMOVE?
137
RUN
REMOVE
CALL VIRTUAL MACHINE TO EXECUTE PRE-INTERNALIZED IMAGE
140
END
141
CALL VIRTUAL MACHINE TO REMOVE PRE-INTERNALIZED IMAGE
143
END
144
NO
HAS PRE-INTERNALIZED IMAGE BEEN CREATED ELSEWHERE FOR THE DEVICE?
146
YES
CALL VIRTUAL MACHINE TO COPY AND PATCH PRE-INTERNALIZED IMAGE TO SPECIFIC LOCATION IN FLASH PRE-INTERNALIZATION SPACE
157
END
160
NO
RUN OR PRE-INTERNALIZE?
148
RUN
PRE-INTERNALIZE
CALL VIRTUAL MACHINE TO CREATE PRE-INTERNALIZED IMAGE
156
END
158
CALL VIRTUAL MACHINE TO EXECUTE PROGRAM FILES:
150
INTERNALIZE PROGRAM FILES
151
EXECUTE INTERNALIZED IMAGE
152
END
153

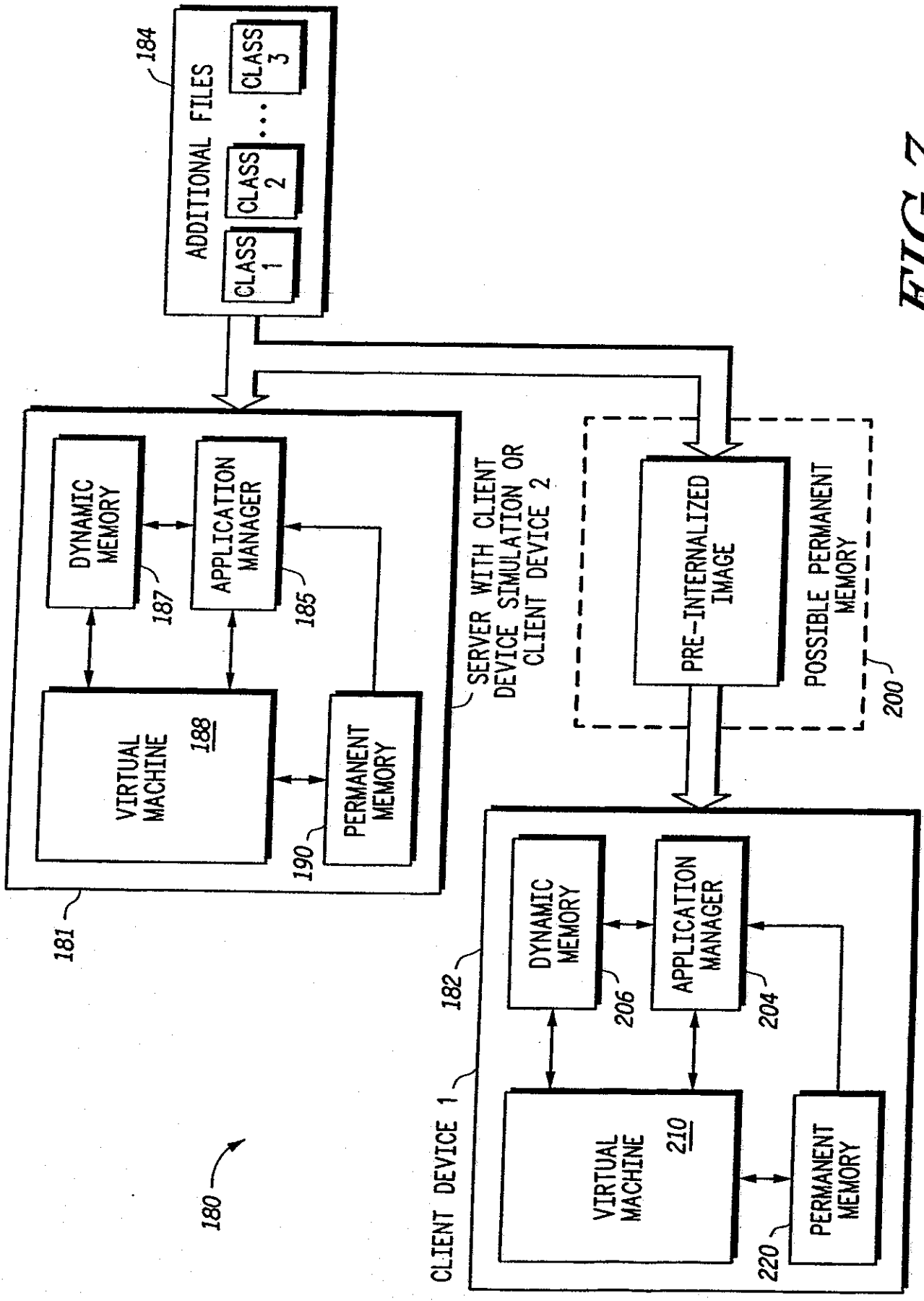

184
ADDITIONAL FILES
CLASS 1
CLASS 2
CLASS 3
DYNAMIC MEMORY
187
APPLICATION MANAGER
185
VIRTUAL MACHINE
188
PERMANENT MEMORY
190
SERVER WITH CLIENT DEVICE SIMULATION OR CLIENT DEVICE 2
181
PRE-INTERNALIZED IMAGE
POSSIBLE PERMANENT MEMORY
200
CLIENT DEVICE 1
182
DYNAMIC MEMORY
206
APPLICATION MANAGER
204
VIRTUAL MACHINE
210
PERMANENT MEMORY
220
180

FIG. 7

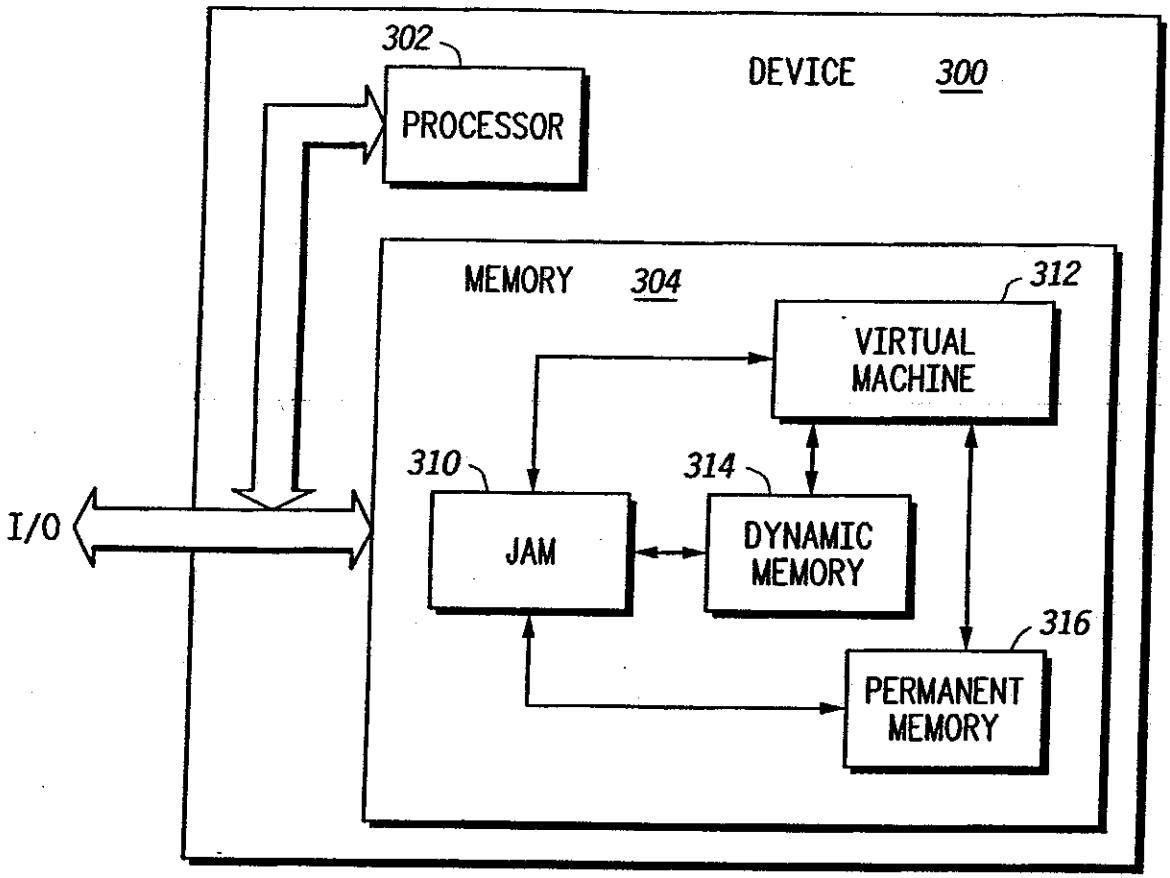

302
PROCESSOR
DEVICE 300
MEMORY 304
312
VIRTUAL MACHINE
310
314
I/O
JAM
DYNAMIC MEMORY
316
PERMANENT MEMORY

FIG.8