FIG. 1

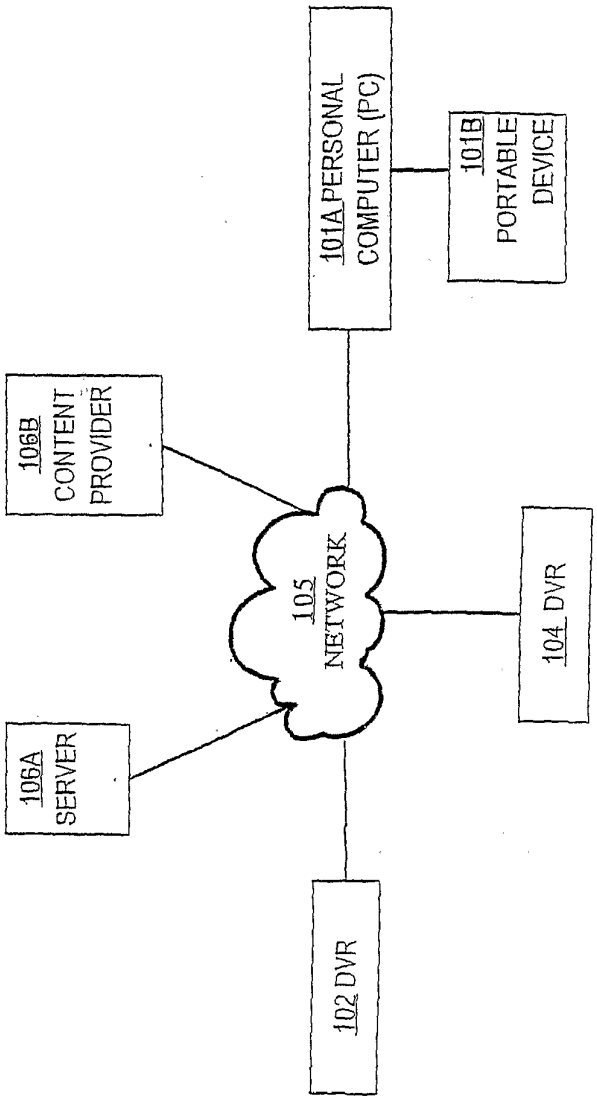

101A PERSONAL COMPUTER (PC)
101B PORTABLE DEVICE
106B CONTENT PROVIDER
105 NETWORK
104 DVR
106A SERVER
102 DVR

FIG. 2

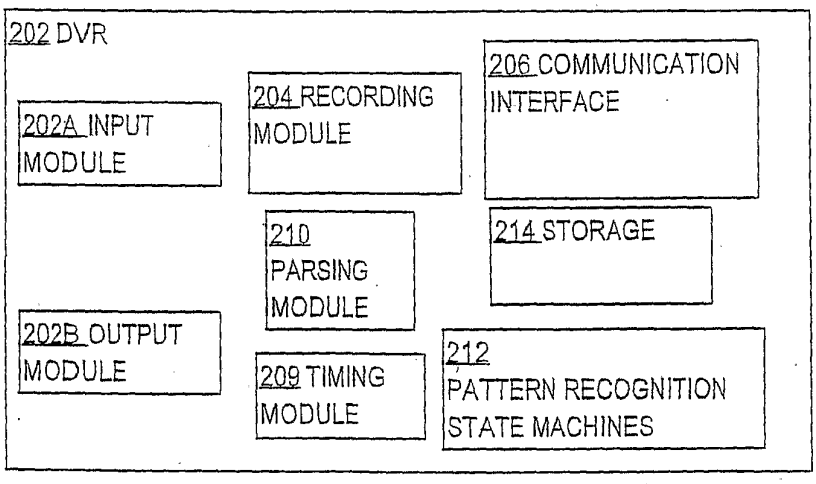

202 DVR
202A INPUT MODULE
204 RECORDING MODULE
206 COMMUNICATION INTERFACE
210 PARSING MODULE
214 STORAGE
202B OUTPUT MODULE
209 TIMING MODULE
212 PATTERN RECOGNITION STATE MACHINES

FIG. 3A

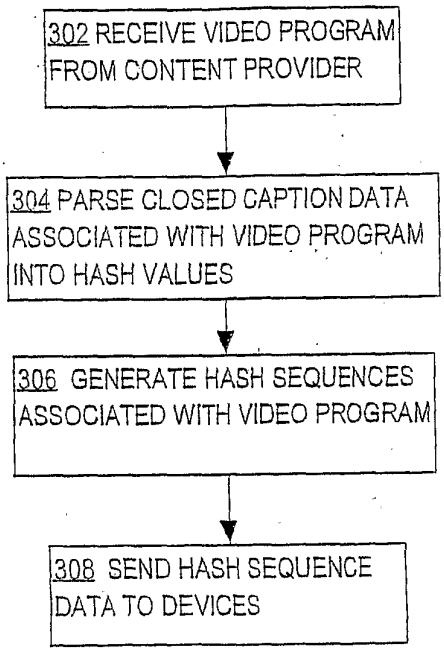

302 RECEIVE VIDEO PROGRAM FROM CONTENT PROVIDER
304 PARSE CLOSED CAPTION DATA ASSOCIATED WITH VIDEO PROGRAM INTO HASH VALUES
306 GENERATE HASH SEQUENCES ASSOCIATED WITH VIDEO PROGRAM
308 SEND HASH SEQUENCE DATA TO DEVICES

FIG. 3B

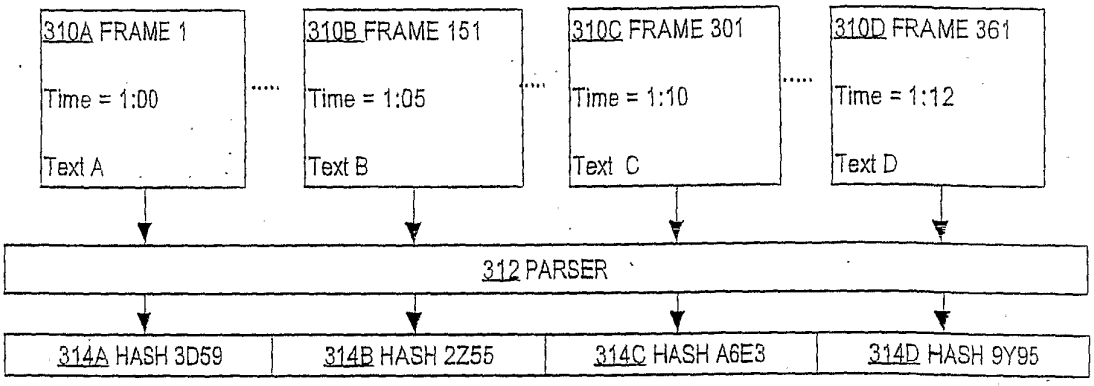


Table 320

Hash Value	Time	Time Offset
3D59	1:00	--
2Z55	1:05	:05
A6E3	1:10	:05
9Y95	1:12	:02

Table 330

Hash Sequence	Metadata
3D59, 2Z55, A6E3, 9Y95	EVENT 1
A6E3, 9Y95, E4E9, 9F4U	ACTION 1

FIG. 3C

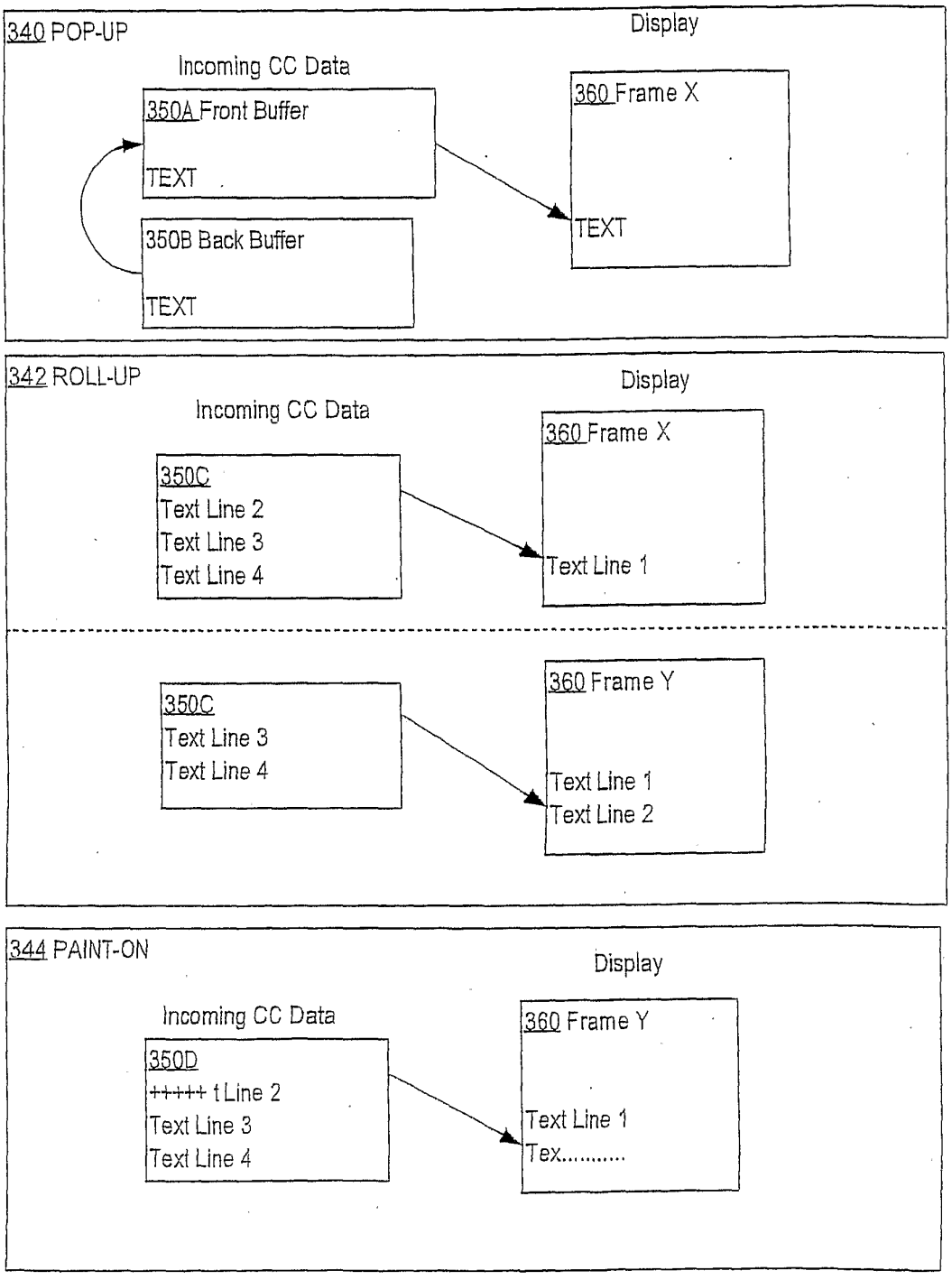

340 POP-UP
Display
Incoming CC Data
350A Front Buffer
TEXT
360 Frame X
TEXT
350B Back Buffer
TEXT
342 ROLL-UP
Display
Incoming CC Data
360 Frame X
350C
Text Line 2
Text Line 3
Text Line 4
Text Line 1
360 Frame Y
350C
Text Line 3
Text Line 4
Text Line 1
Text Line 2
344 PAINT-ON
Display
Incoming CC Data
360 Frame Y
350D
+++++ t Line 2
Text Line 3
Text Line 4
Text Line 1
Tex.....

FIG. 3D

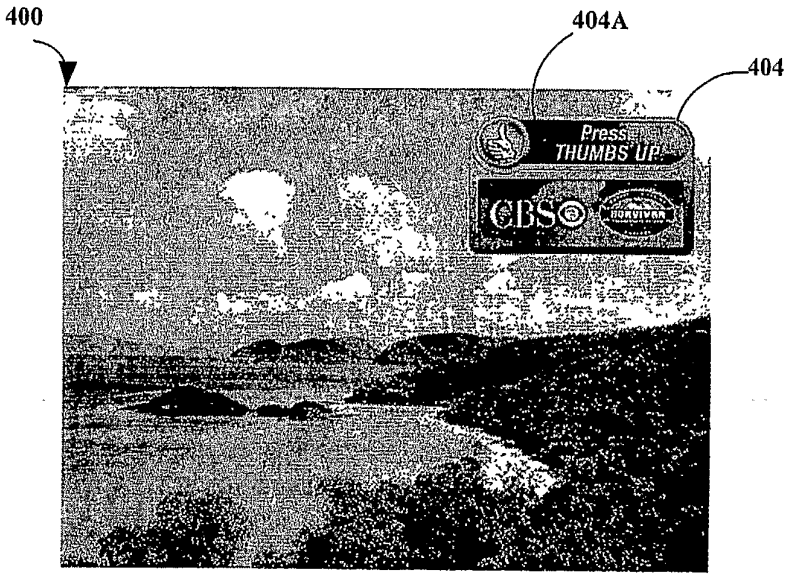


FIG. 4

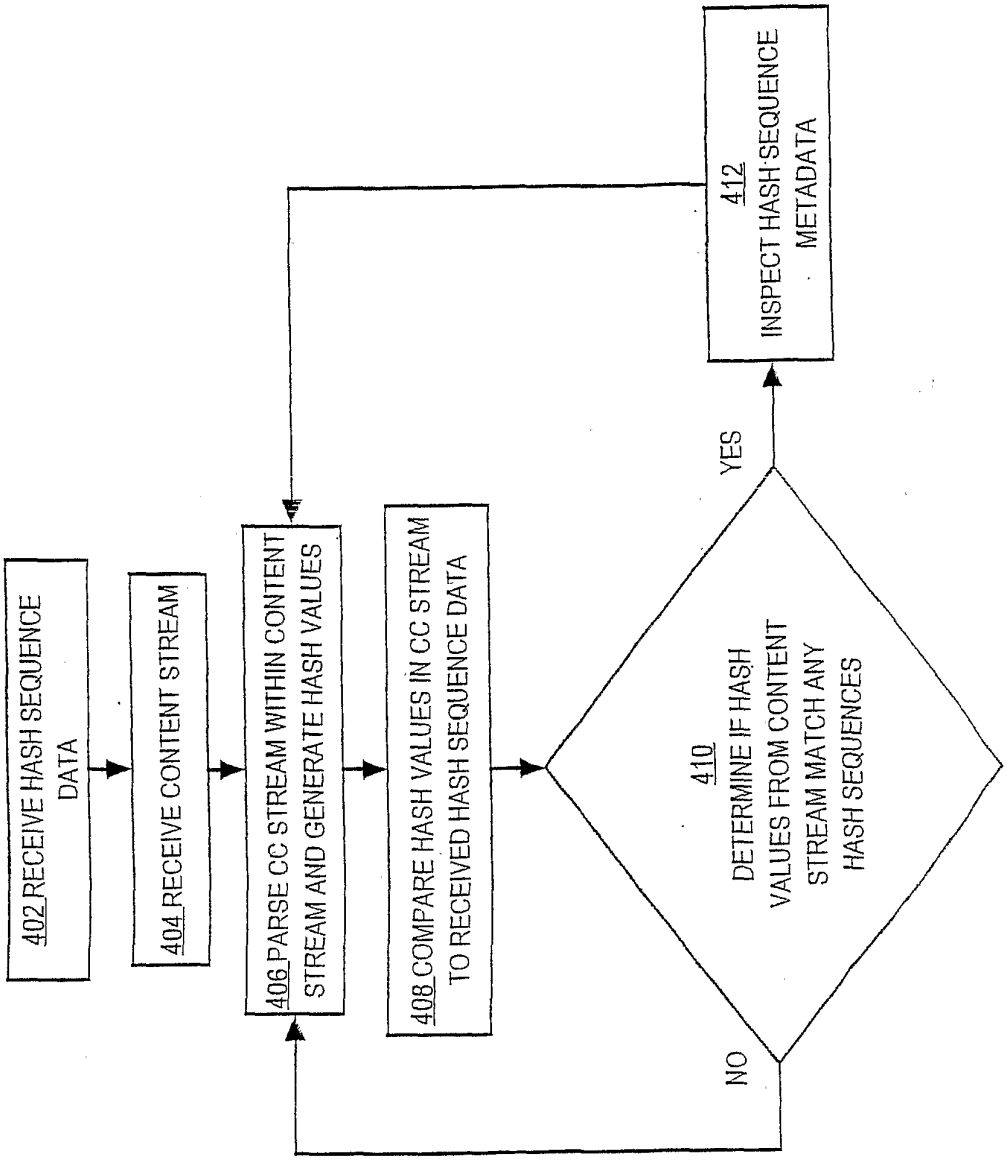

402 RECEIVE HASH SEQUENCE DATA
404 RECEIVE CONTENT STREAM
406 PARSE CC STREAM WITHIN CONTENT STREAM AND GENERATE HASH VALUES
408 COMPARE HASH VALUES IN CC STREAM TO RECEIVED HASH SEQUENCE DATA
410 DETERMINE IF HASH VALUES FROM CONTENT STREAM MATCH ANY HASH SEQUENCES
YES
NO
412 INSPECT HASH SEQUENCE METADATA

FIG. 5A

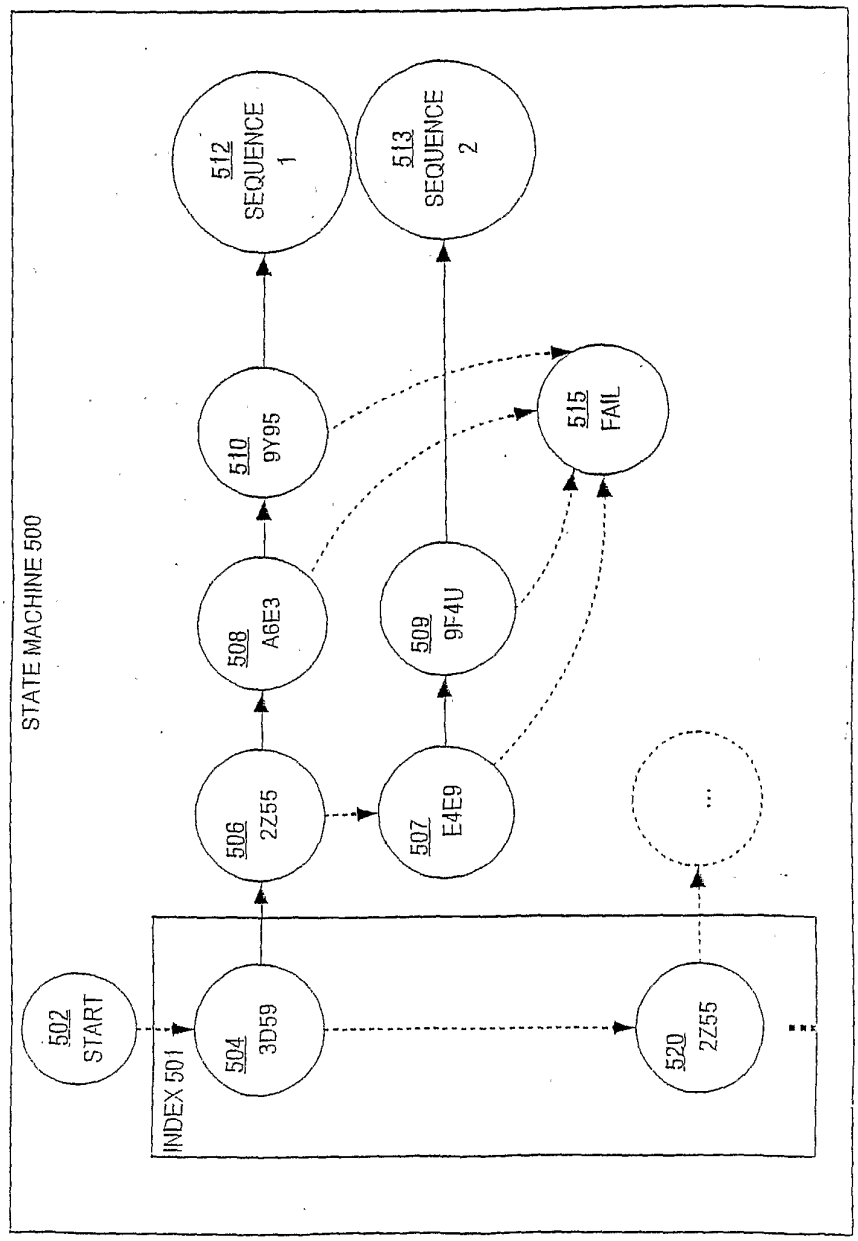

STATE MACHINE 500
INDEX 501
502 START
504 3D59
506 2Z55
507 E4E9
508 A6E3
509 9F4U
510 9Y95
512 SEQUENCE 1
513 SEQUENCE 2
515 FAIL
520 2Z55
...

FIG. 5B

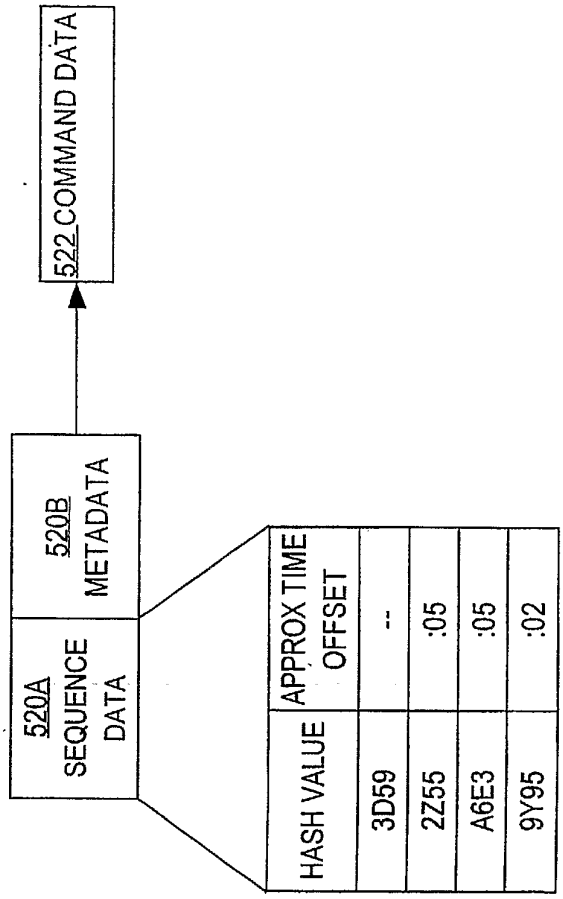

522 COMMAND DATA
520B METADATA
520A SEQUENCE DATA
HASH VALUE
APPROX TIME OFFSET
3D59
--
2Z55
:05
A6E3
:05
9Y95
:02

FIG. 6

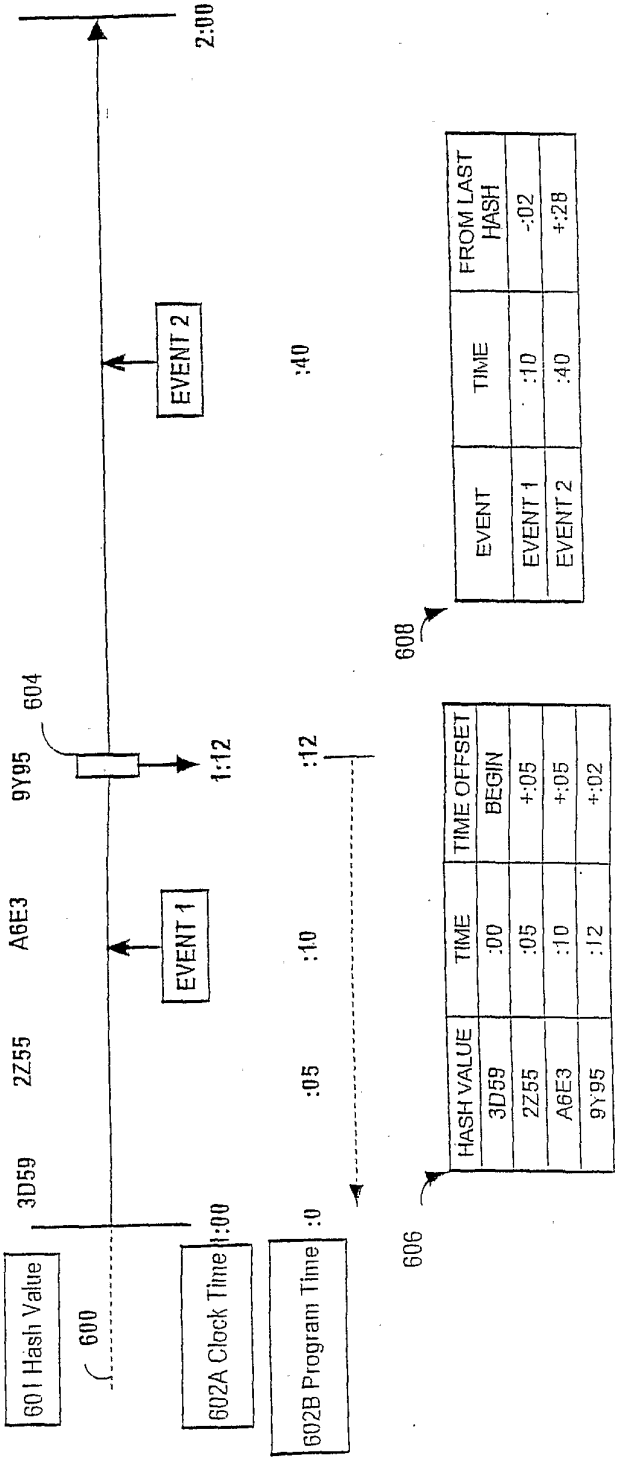
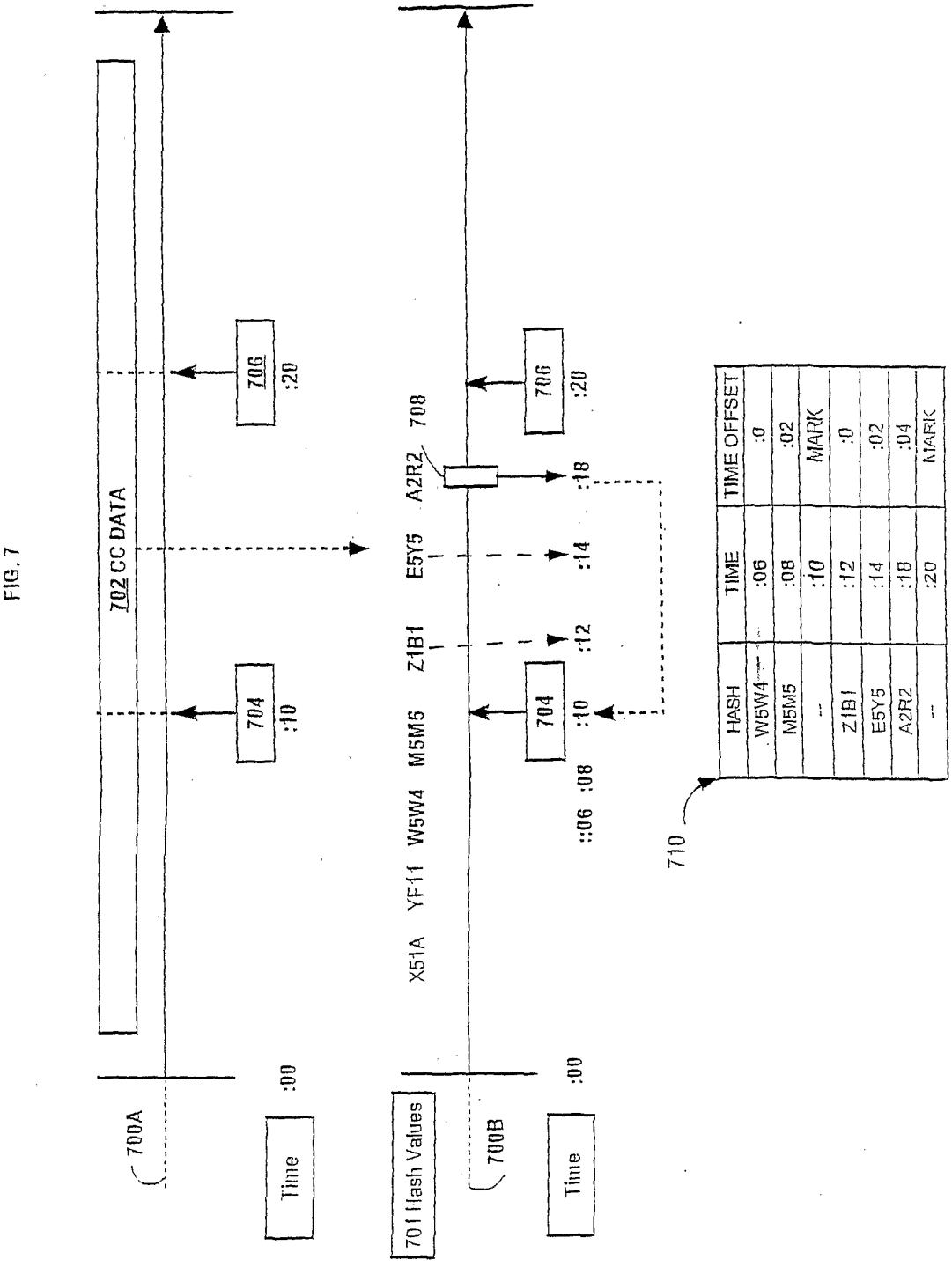

601 Hash Value
600
602A Clock Time
602B Program Time
1:00
:0
3D59
2Z55
A6E3
9Y95
604
:05
:10
:12
1:12
:40
2:00
EVENT 1
EVENT 2
606
HASH VALUE
TIME
TIME OFFSET
3D59
:00
BEGIN
2Z55
:05
+:05
A6E3
:10
+:05
9Y95
:12
+:02
608
EVENT
TIME
FROM LAST HASH
EVENT 1
:10
-:02
EVENT 2
:40
+:28

FIG. 7


702 CC DATA
700A
Time
:00
704
:10
706
:20
701 Hash Values
X51A
YF11
W5W4
M5M5
Z1B1
E5Y5
A2R2
708
::06
:08
:10
:12
:14
:18
700B
Time
:00
704
706
:20
710
HASH
TIME
TIME OFFSET
W5W4
:06
:0
M5M5
:08
:02
--
:10
MARK
Z1B1
:12
:0
E5Y5
:14
:02
A2R2
:18
:04
--
:20
MARK

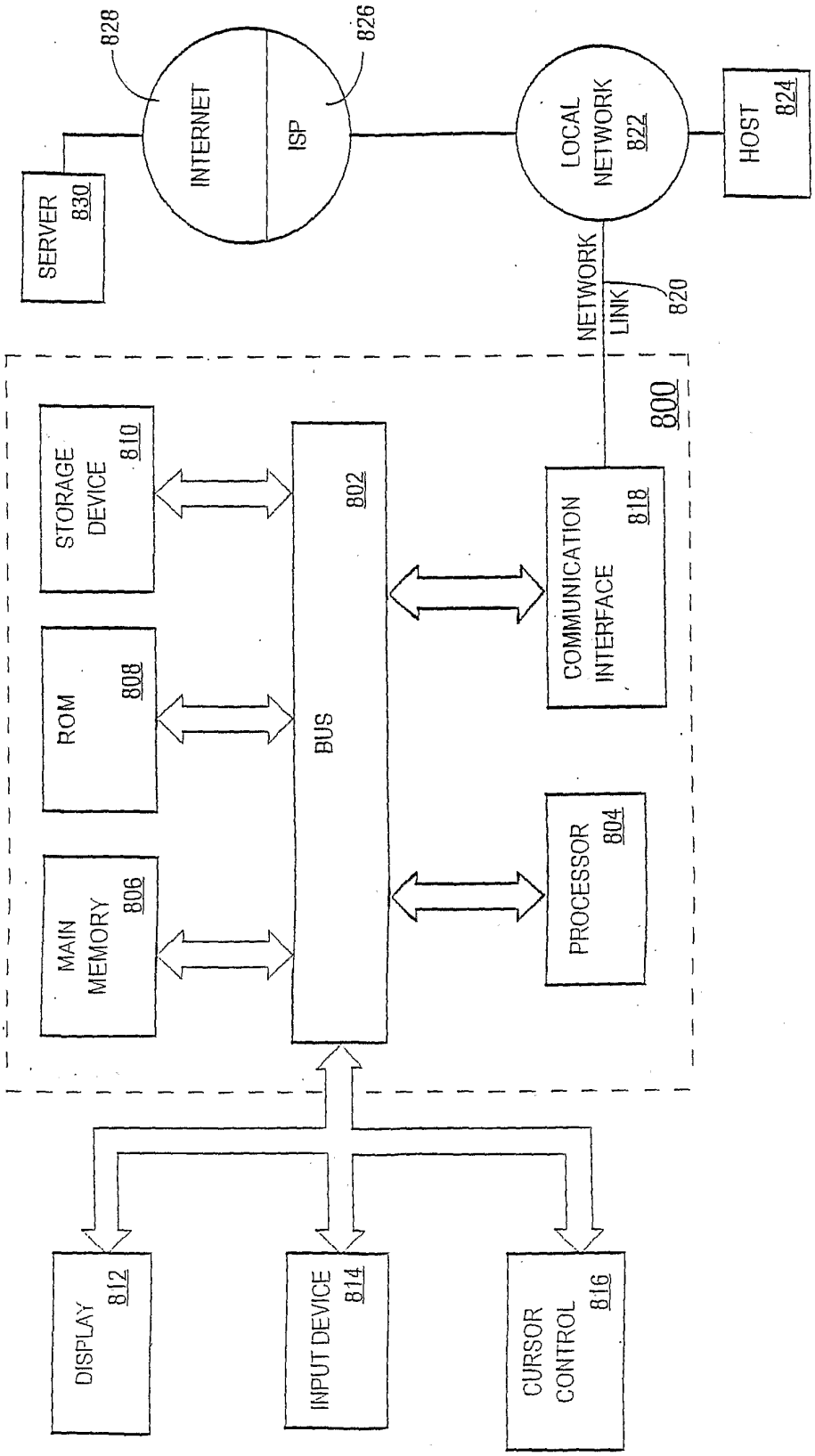

828
INTERNET
826
ISP
LOCAL NETWORK 822
HOST 824
SERVER 830
NETWORK LINK 820
800
STORAGE DEVICE 810
ROM 808
MAIN MEMORY 806
BUS 802
COMMUNICATION INTERFACE 818
PROCESSOR 804
DISPLAY 812
INPUT DEVICE 814
CURSOR CONTROL 816

FIG. 8