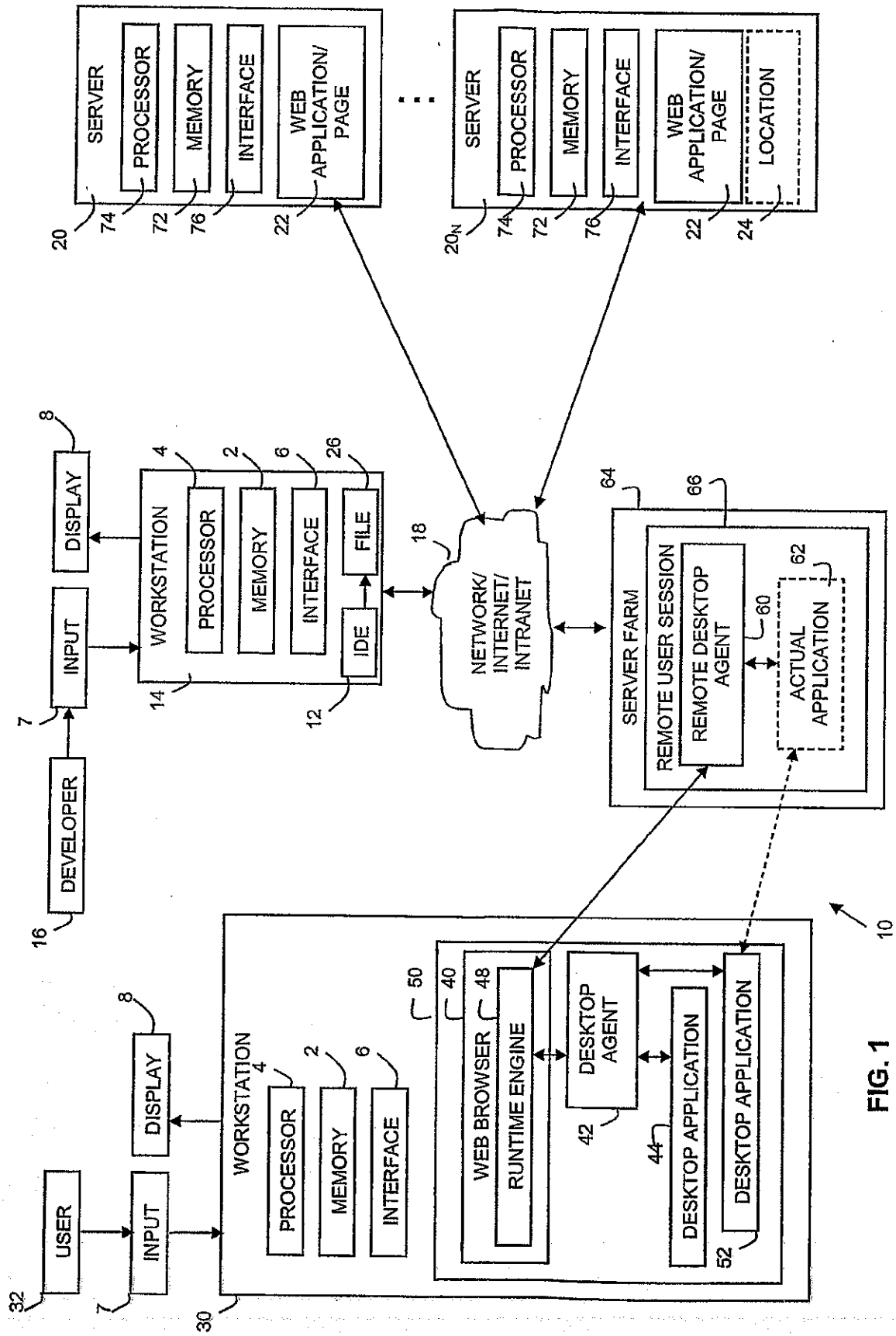

SERVER
PROCESSOR
MEMORY
INTERFACE
WEB APPLICATION/ PAGE
LOCATION
20
74
72
76
22
24
20_N
DISPLAY
INPUT
WORKSTATION
PROCESSOR
MEMORY
INTERFACE
IDE
FILE
DEVELOPER
NETWORK/ INTERNET/ INTRANET
SERVER FARM
REMOTE USER SESSION
REMOTE DESKTOP AGENT
ACTUAL APPLICATION
USER
WEB BROWSER
RUNTIME ENGINE
DESKTOP AGENT
DESKTOP APPLICATION
7
8
14
12
16
18
26
2
4
6
10
30
32
40
42
44
48
50
52
60
62
64
66

FIG. 1

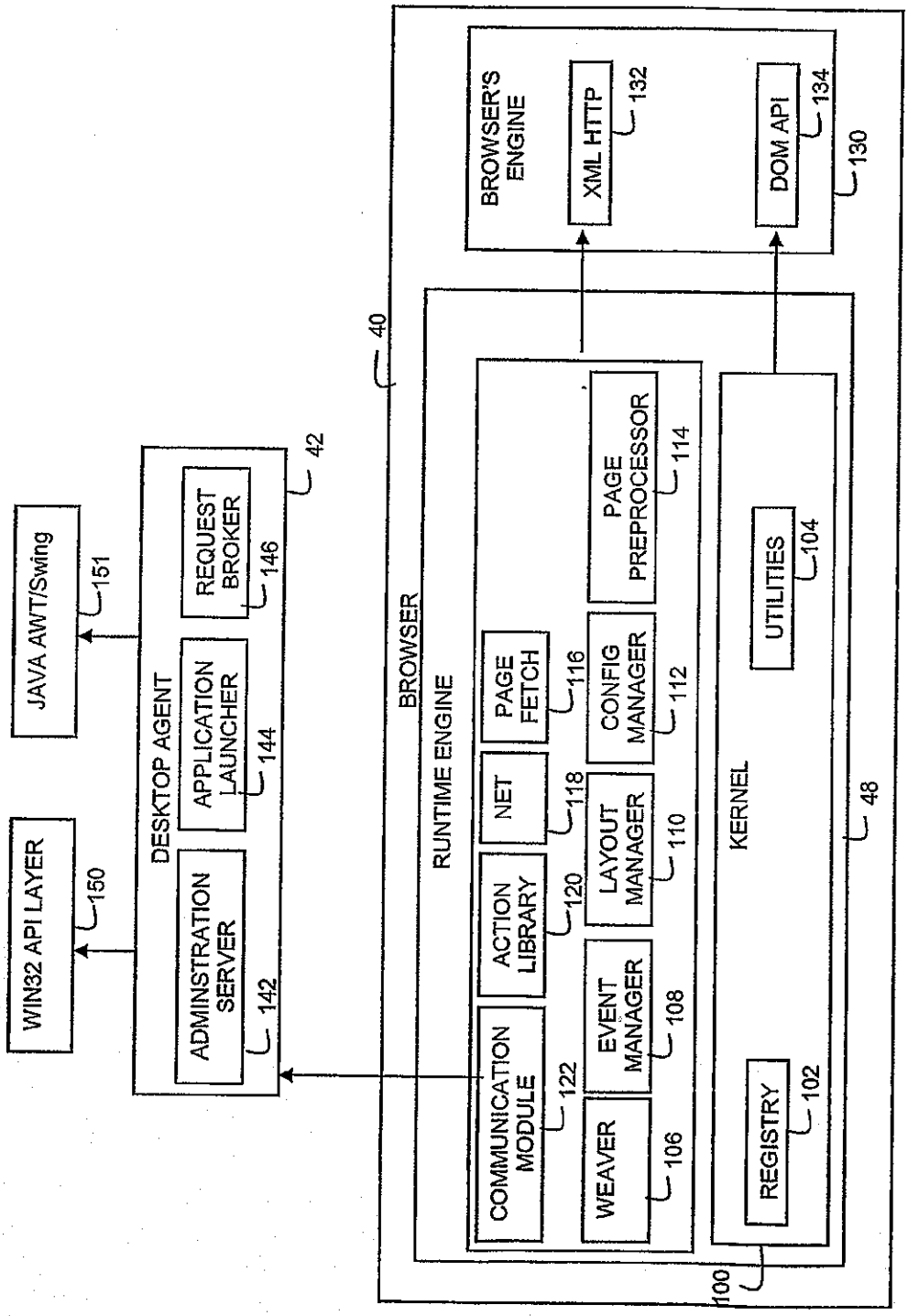

WIN32 API LAYER
150
JAVA AWT/Swing
151
DESKTOP AGENT
ADMINSTRATION SERVER
142
APPLICATION LAUNCHER
144
REQUEST BROKER
146
42
40
BROWSER
RUNTIME ENGINE
COMMUNICATION MODULE
122
ACTION LIBRARY
120
NET
118
PAGE FETCH
116
WEAVER
106
EVENT MANAGER
108
LAYOUT MANAGER
110
CONFIG MANAGER
112
PAGE PREPROCESSOR
114
KERNEL
REGISTRY
102
UTILITIES
104
48
BROWSER'S ENGINE
XML HTTP
132
DOM API
134
130
100

FIG. 2

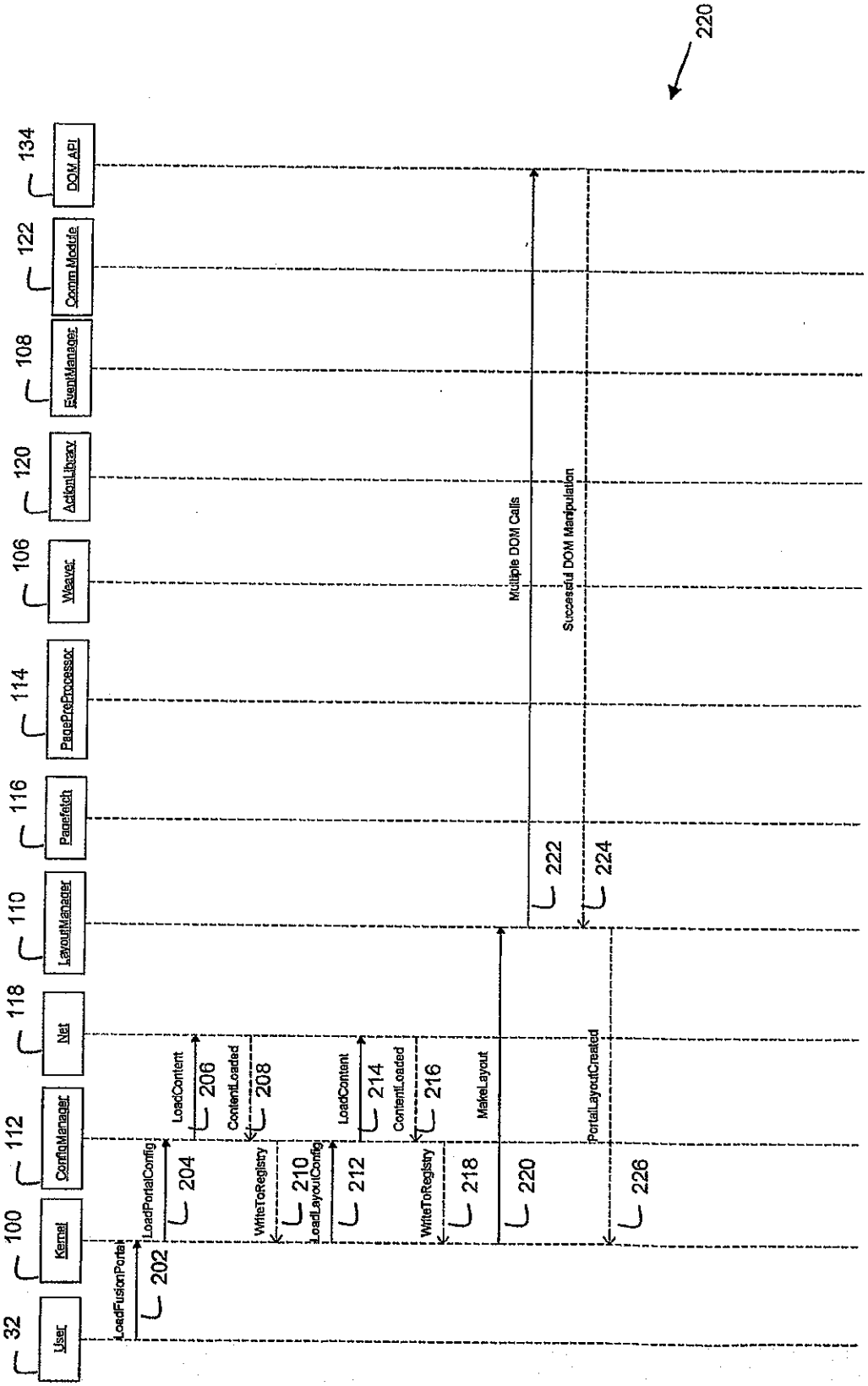

220
32 User
100 Kernel
112 ConfigManager
118 Net
110 LayoutManager
116 Pagefetch
114 PagePreProcessor
106 Weaver
120 ActionLibrary
108 EventManager
122 Comm Module
134 DOM API
LoadFusionPortal
202
LoadPortalConfig
204
LoadContent
206
ContentLoaded
208
WriteToRegistry
210
LoadLayoutConfig
212
LoadContent
214
ContentLoaded
216
WriteToRegistry
218
MakeLayout
220
Multiple DOM Calls
222
Successful DOM Manipulation
224
PortalLayoutCreated
226

FIG. 3A

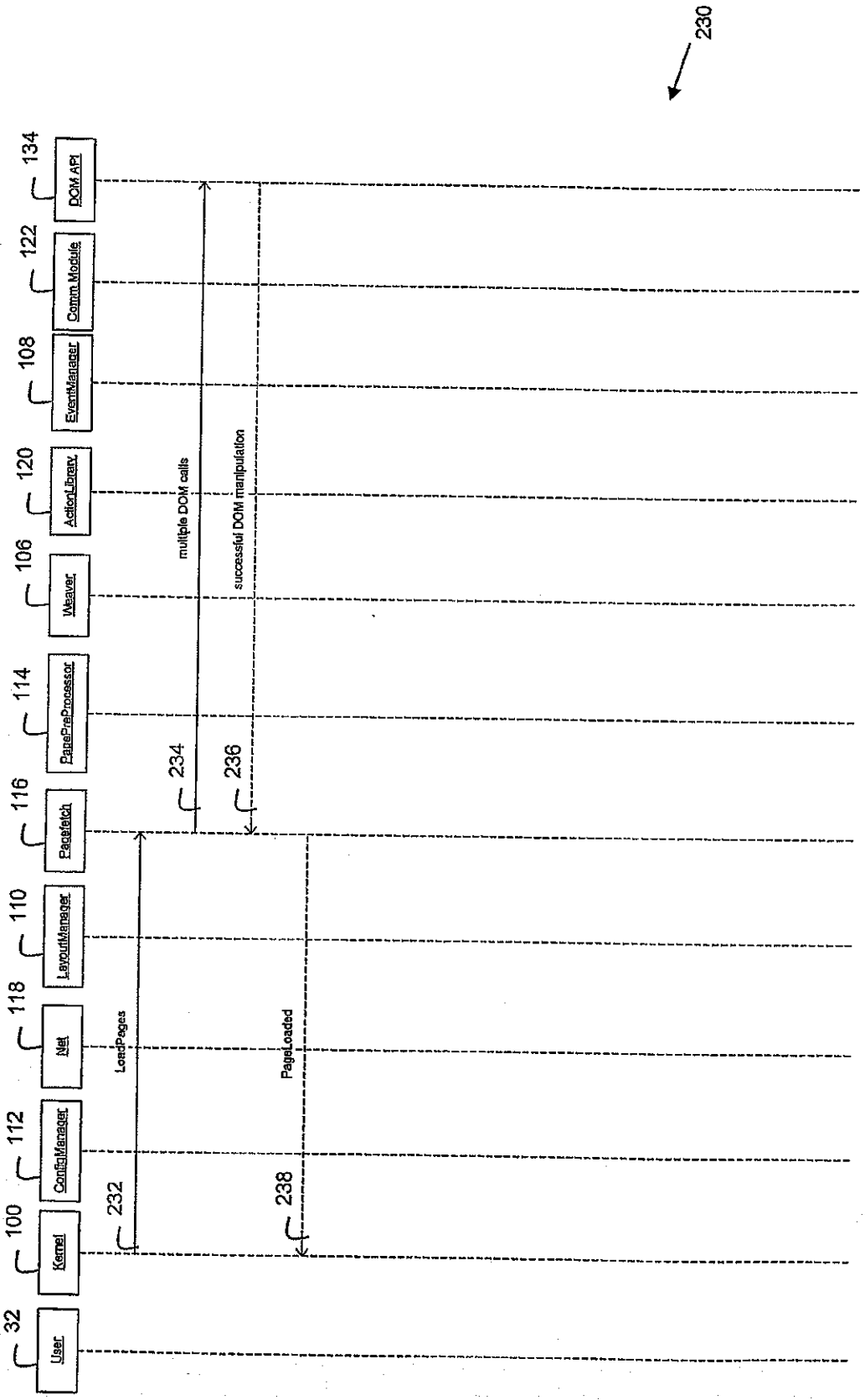

230
134
DOM API
122
Comm Module
108
EventManager
120
ActionLibrary
106
Weaver
114
PanePreProcessor
116
PaneFetch
110
LayoutManager
118
Net
112
ConfigManager
100
Kernel
32
User
multiple DOM calls
successful DOM manipulation
234
236
LoadPages
PageLoaded
232
238

FIG. 3B

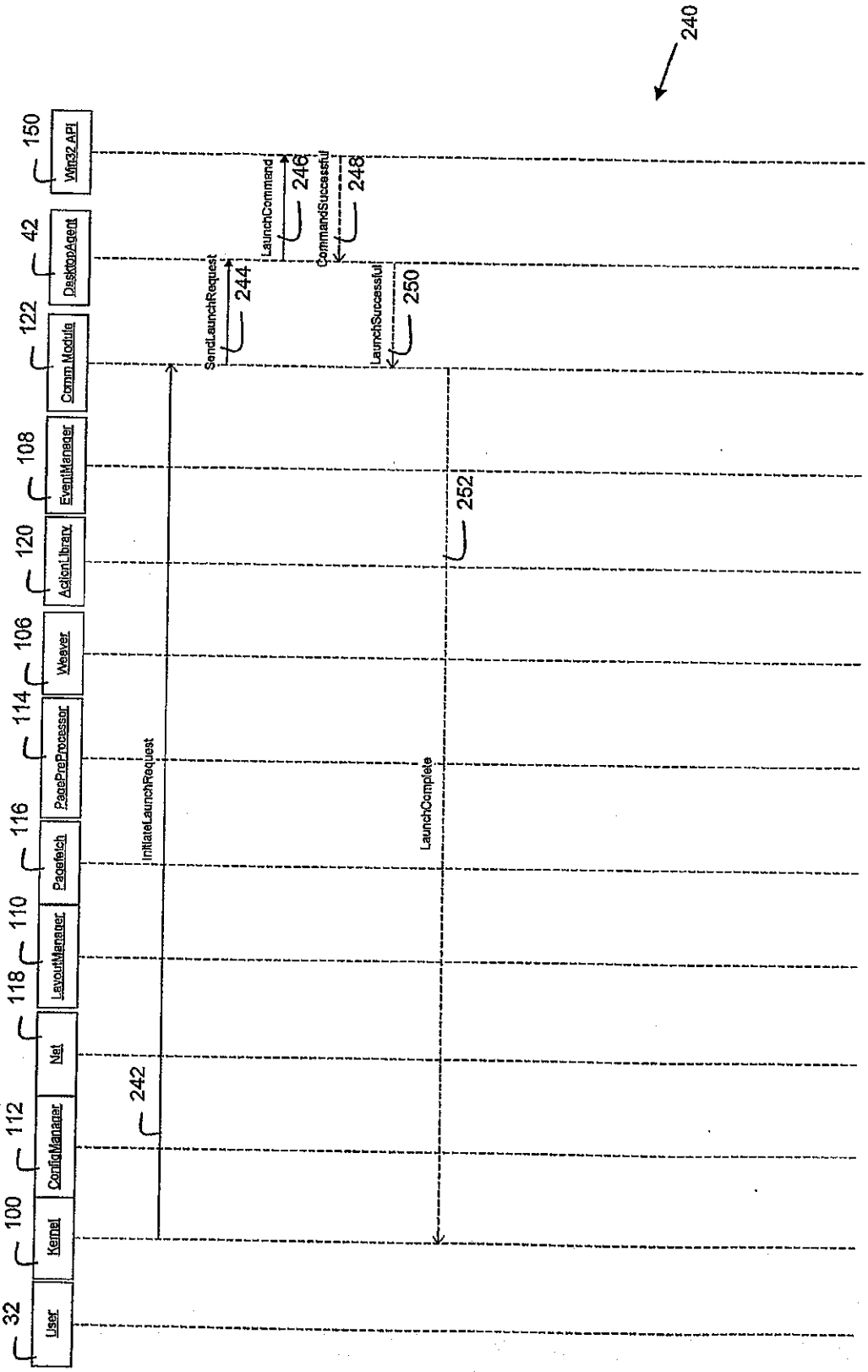

240
User
32
Kernel
100
ConfigManager
112
Net
118
LayoutManager
110
PageFetch
116
PagePreProcessor
114
Weaver
106
ActionLibrary
120
EventManager
108
Comm Module
122
DesktopAgent
42
Win32 API
150
242
InitiateLaunchRequest
SendLaunchRequest
244
LaunchCommand
246
CommandSuccessful
248
LaunchSuccessful
250
252
LaunchComplete

FIG. 3C

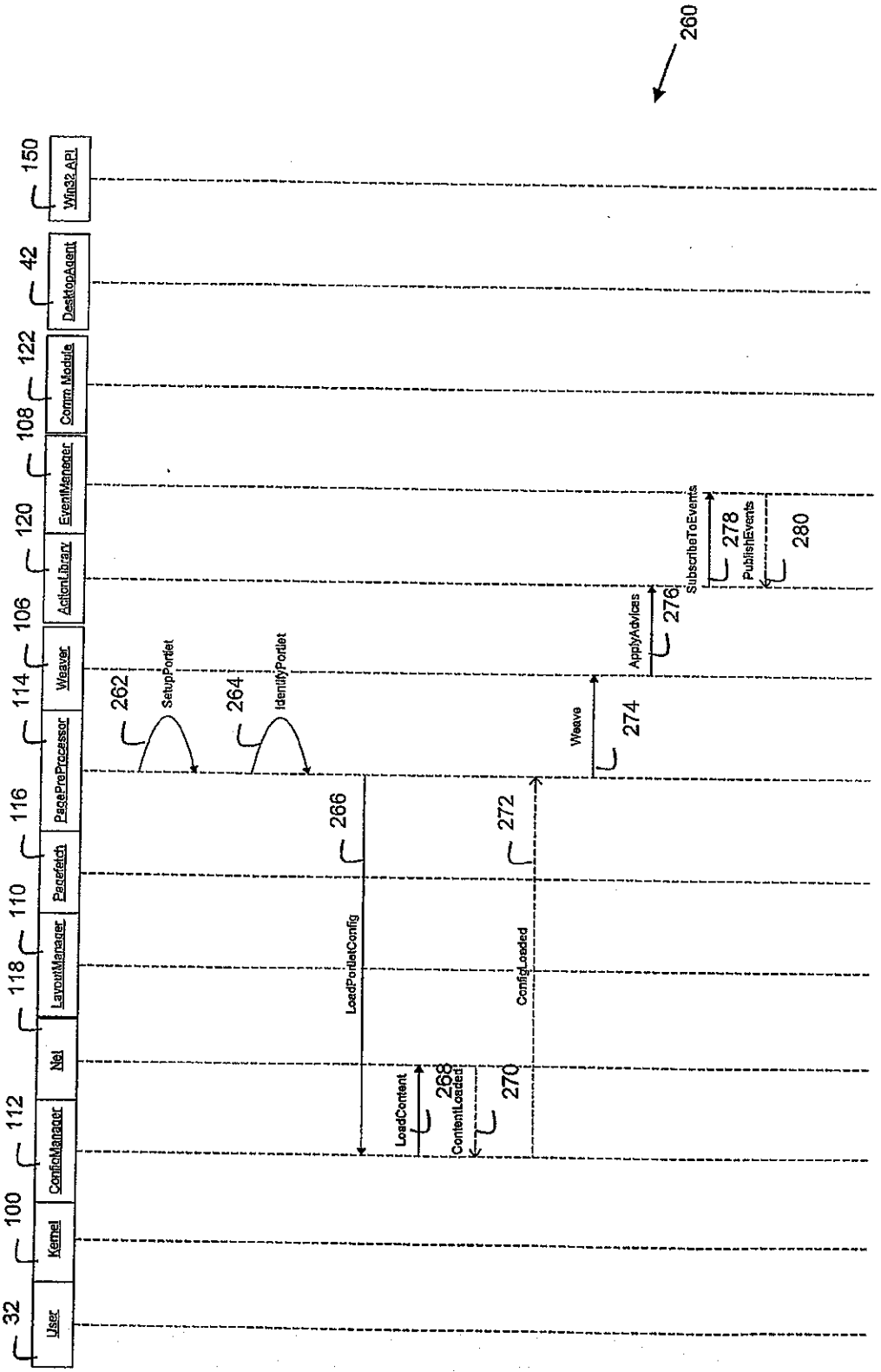

260
User
32
Kernel
100
ConfigManager
112
Net
118
LayoutManager
110
Pacefetch
116
PacePreProcessor
114
Weaver
106
ActionLibrary
120
EventManager
108
Comm Module
122
DesktopAgent
42
Win32 API
150
SetupPortlet
262
IdentifyPortlet
264
LoadPortletConfig
266
LoadContent
ContentLoaded
268
270
ConfigLoaded
272
Weave
274
ApplyAdvices
276
SubscribeToEvents
278
PublishEvents
280

FIG. 3D

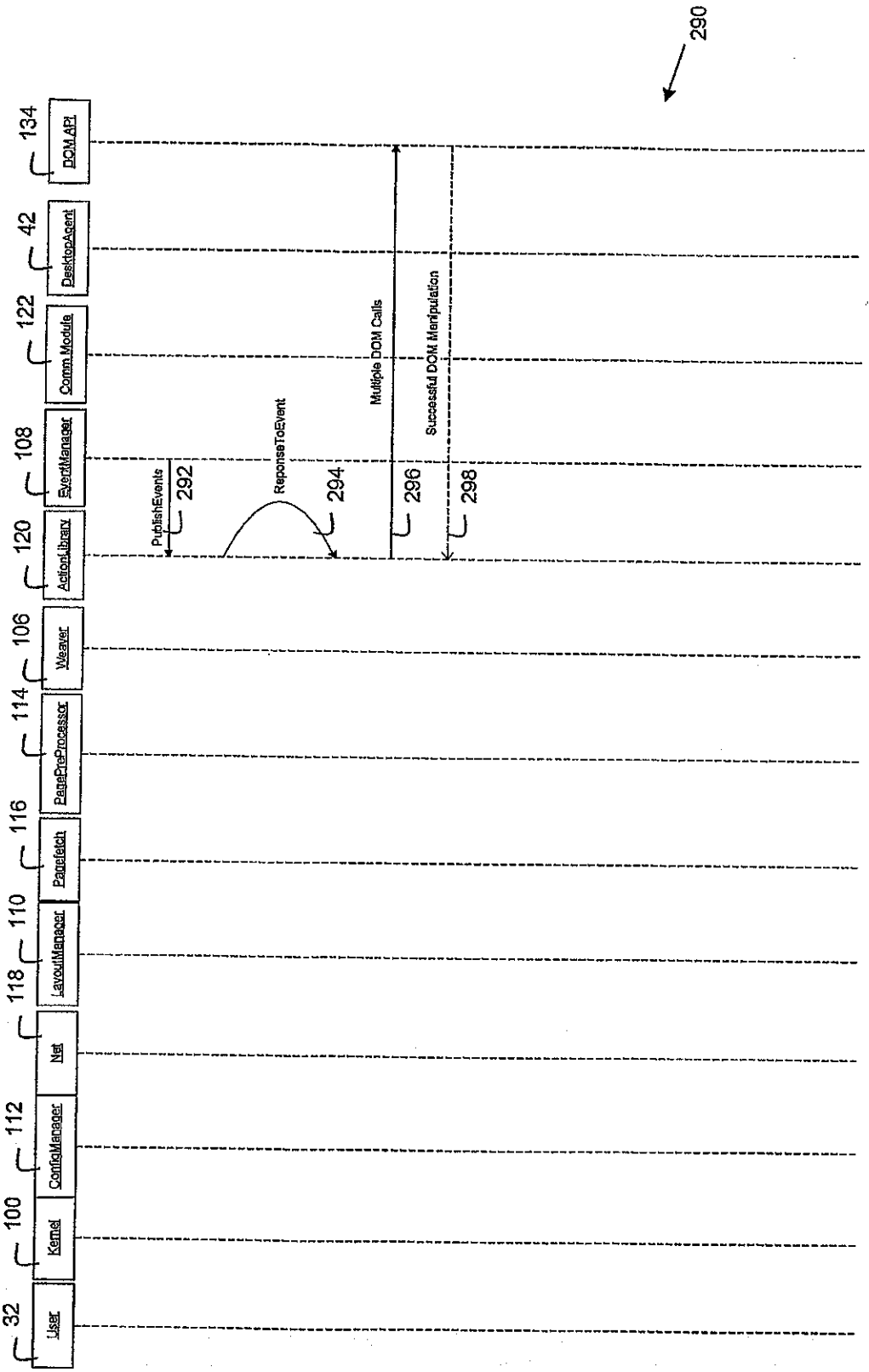

290
134
DOM API
42
DesktopAgent
122
Comm Module
108
EventManager
120
ActionLibrary
106
Weaver
114
PagePreProcessor
116
Pagefetch
110
LayoutManager
118
Net
112
ConfigManager
100
Kernel
32
User
PublishEvents
292
ReponseToEvent
294
Multiple DOM Calls
296
Successful DOM Manipulation
298

FIG. 3E

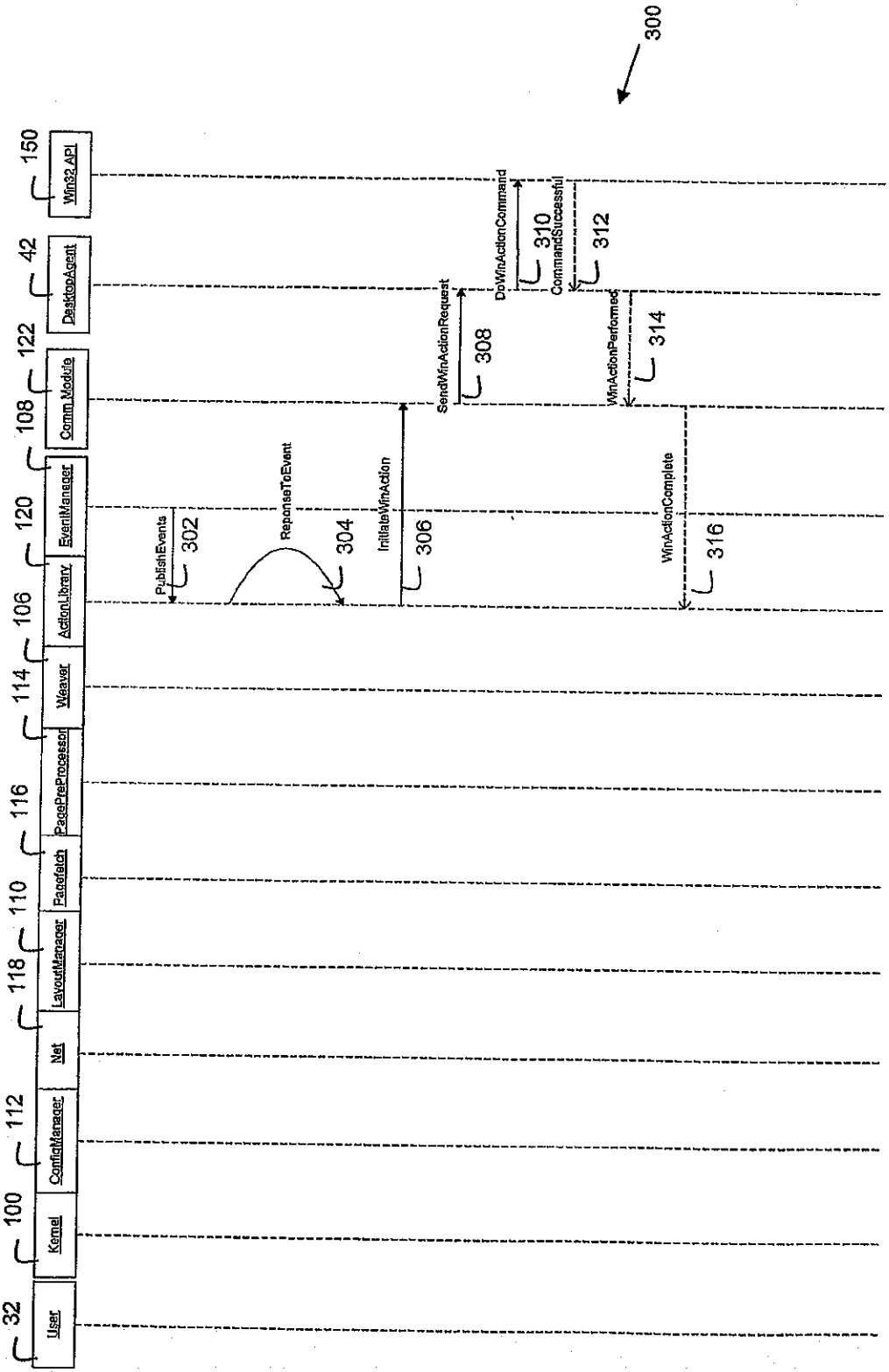

300
32
User
100
Kernel
112
ConflictManager
118
Net
110
LayoutManager
116
PageFetch
114
PagePreProcessor
106
Weaver
120
ActionLibrary
108
EventManager
122
Comm Module
42
DesktopAgent
150
Win32 API
PublishEvents
302
ResponseToEvent
304
InitiateWinAction
306
SendWinActionRequest
308
DoWinActionCommand
310
CommandSuccessful
312
WinActionPerformed
314
WinActionComplete
316

FIG. 3F

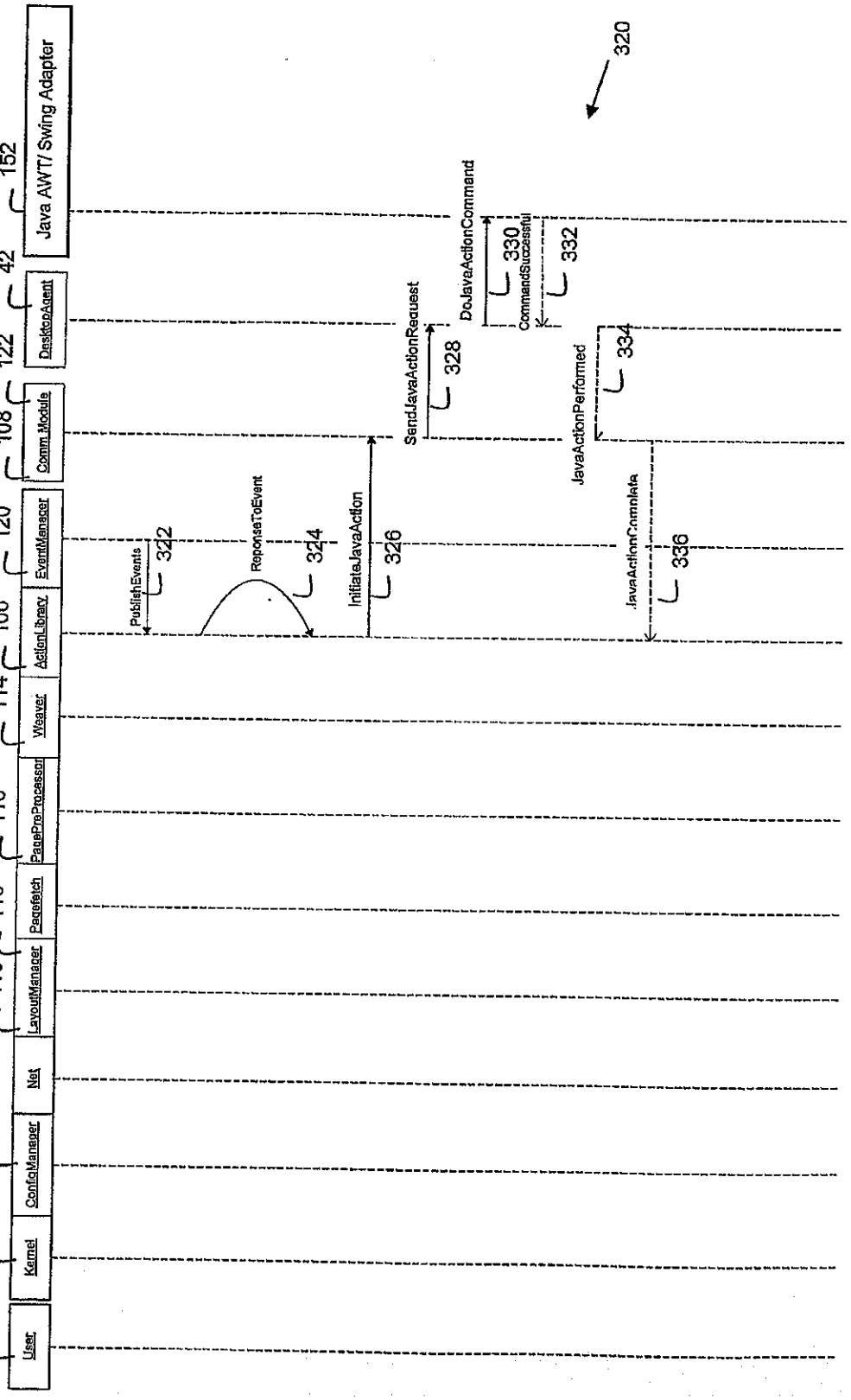

320
User
32
Kernel
100
ConfigManager
112
Net
LayoutManager
118
PageFetch
110
PagePreProcessor
116
Weaver
114
ActionLibrary
106
EventManager
120
Comm Module
108
DesktopAgent
122
Java AWT/ Swing Adapter
152
PublishEvents
322
ReponseToEvent
324
InitiateJavaAction
326
SendJavaActionRequest
328
DoJavaActionCommand
330
CommandSuccessful
332
JavaActionPerformed
334
JavaActionCommData
336

FIG. 3G

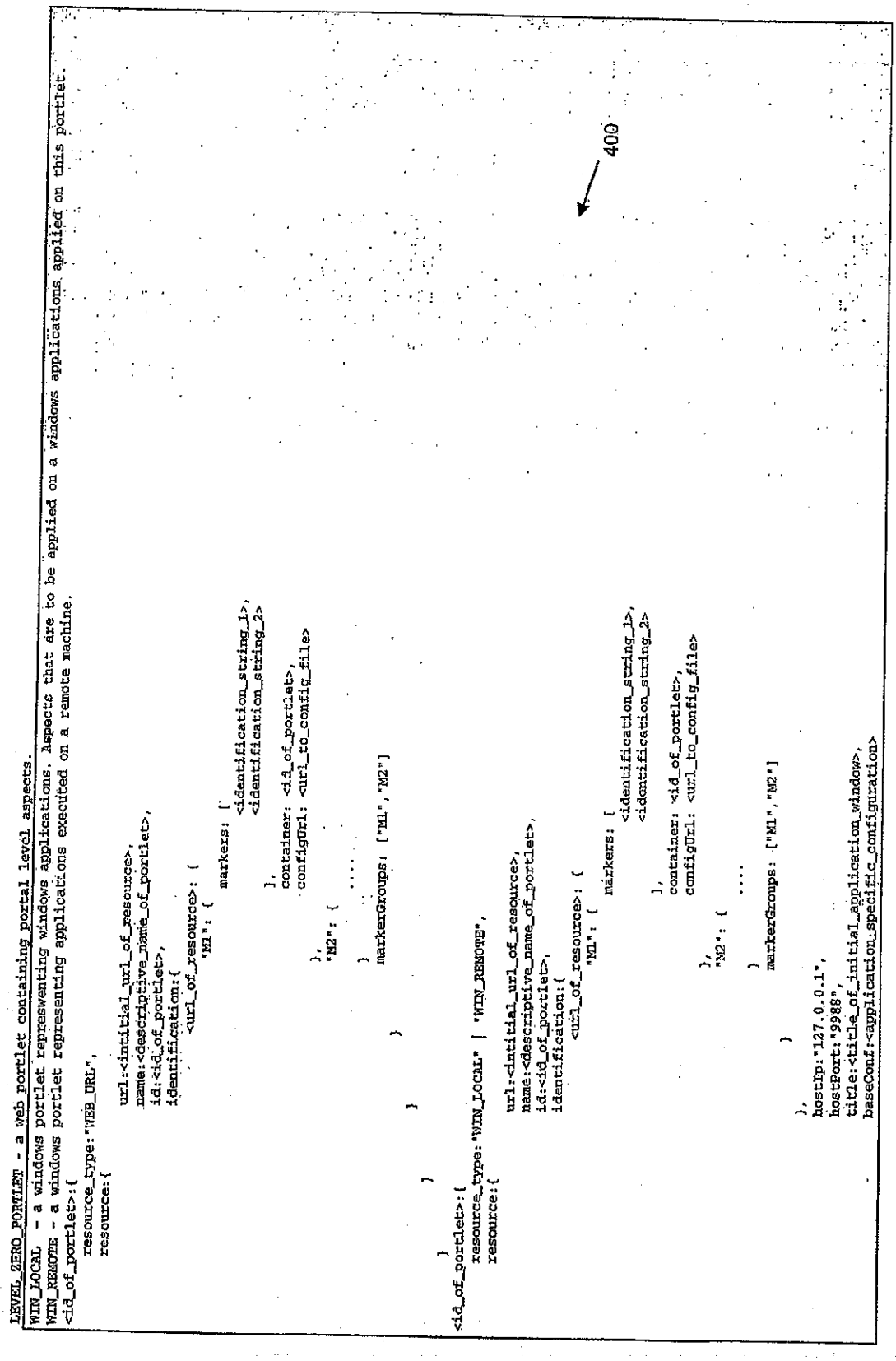

LEVEL_ZERO_PORTLET - a web portlet containing portal level aspects.
WIN_LOCAL - a windows portlet repreawenting windows applications. Aspects that are to be applied on a windows applications applied on this portlet.
WIN_REMOTE - a windows portlet representing applications executed on a remote machine.
<id_of_portlet>:{
resource_type:"WEB_URL",
resource:{
url:<initial_url_of_resource>,
name:<descriptive_name_of_portlet>,
id:<id_of_portlet>,
identification:{
<url_of_resource>: {
"M1": {
markers: [
<identification_string_1>,
<identification_string_2>
],
container: <id_of_portlet>,
configUrl: <url_to_config_file>
},
"M2": {
.....
}
markerGroups: ["M1","M2"]
}
}
}
}
<id_of_portlet>:{
resource_type:"WIN_LOCAL" | "WIN_REMOTE",
resource:{
url:<initial_url_of_resource>,
name:<descriptive_name_of_portlet>,
id:<id_of_portlet>,
identification:{
<url_of_resource>: {
"M1": {
markers: [
<identification_string_1>,
<identification_string_2>
],
container: <id_of_portlet>,
configUrl: <url_to_config_file>
},
"M2": {
.....
}
markerGroups: ["M1","M2"]
}
},
hostIp:"127.0.0.1",
hostPort:"9988",
title:<title_of_initial_application_window>,
baseConf:<application_specific_configuration>
400

FIG. 4A

```
portlets:[<portlet_1>,<portlet_2>],
layout:{
style:<layout_type>,
definition:<layout_specific_configuration>
},

"portlet_1":{
                    prefs:<portlet_specific_layout_data_as_object>
},
    "portlet_2":{
                    ...
    }
}
```

450

FIG. 4B

```
/* File format of configuration to be applied on a portlet*/
/*=================================================*/
aspects:{

  point_cuts:{

    <POINTCUT_KEY_1>:<POINTCUT_VALUE_1>,
    <POINTCUT_KEY_2>:<POINTCUT_VALUE_2>,

  },

  advices:{

      bind_to:<POINTCUT_KEY_1>
      advice_object:<OBJECT_NAME>
      advice_method:<METHOD_NAME>
      advice_msg:  <ARGUMENTS_IN_OBJECT_FORM>
  }

}
```

460

FIG. 4C