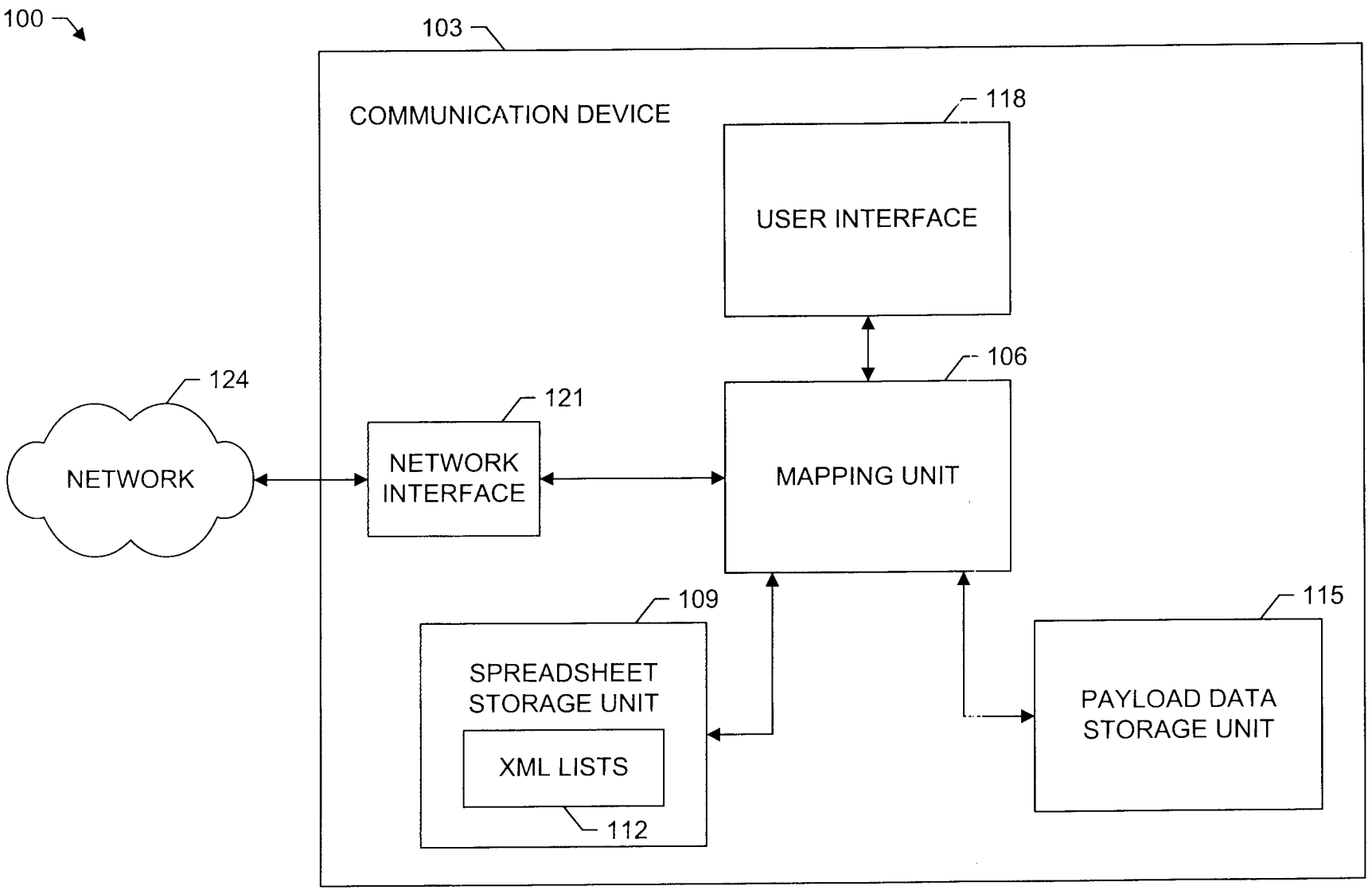

100
103
COMMUNICATION DEVICE
118
USER INTERFACE
106
MAPPING UNIT
124
NETWORK
121
NETWORK INTERFACE
109
SPREADSHEET STORAGE UNIT
XML LISTS
112
115
PAYLOAD DATA STORAGE UNIT

FIG. 1

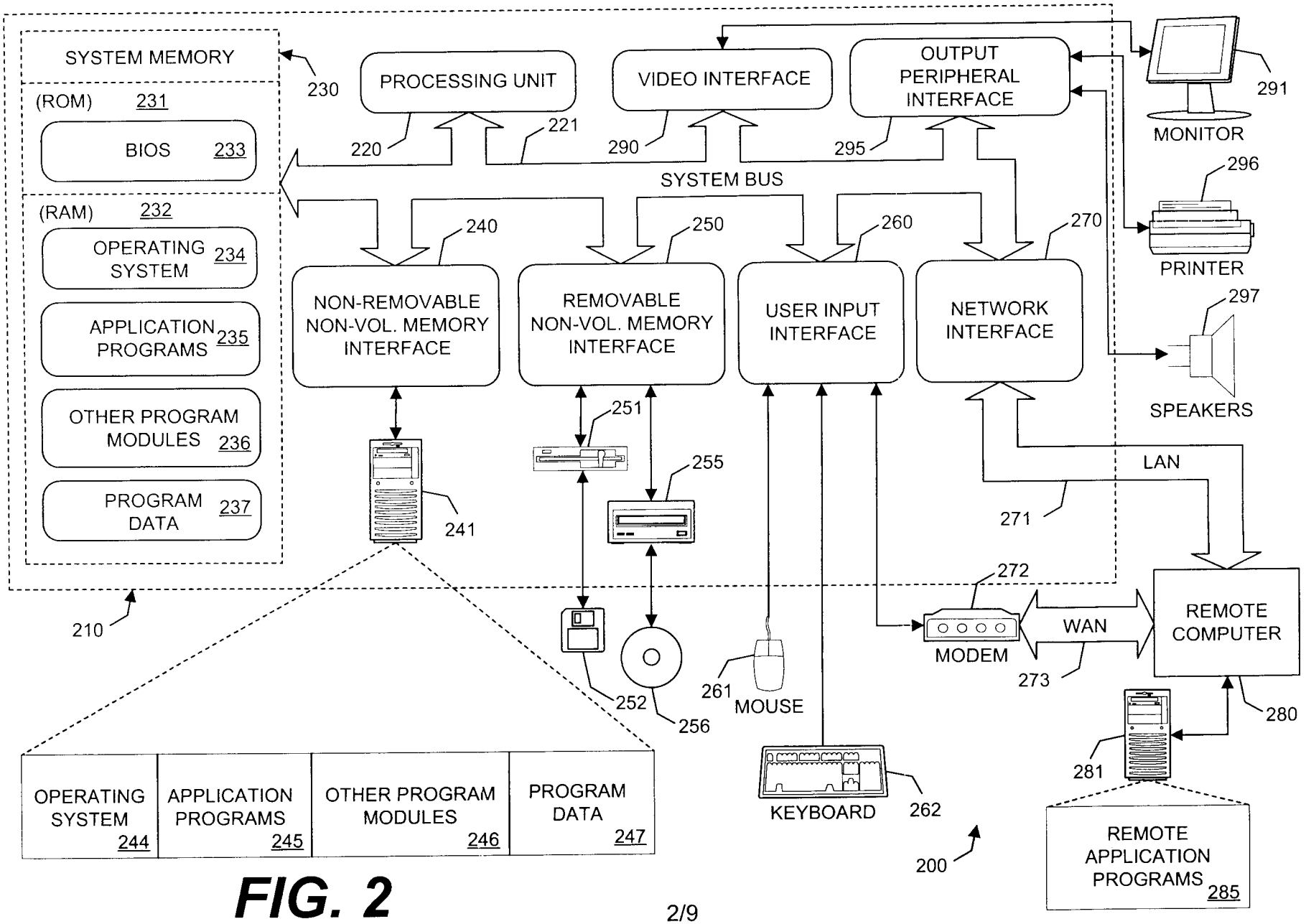

SYSTEM MEMORY
230
(ROM) 231
BIOS 233
(RAM) 232
OPERATING SYSTEM 234
APPLICATION PROGRAMS 235
OTHER PROGRAM MODULES 236
PROGRAM DATA 237
PROCESSING UNIT
VIDEO INTERFACE
OUTPUT PERIPHERAL INTERFACE
220
221
290
295
SYSTEM BUS
MONITOR
291
296
PRINTER
297
SPEAKERS
240
250
260
270
NON-REMOVABLE NON-VOL. MEMORY INTERFACE
REMOVABLE NON-VOL. MEMORY INTERFACE
USER INPUT INTERFACE
NETWORK INTERFACE
241
251
255
LAN
271
272
MODEM
WAN
REMOTE COMPUTER
273
280
210
252
256
261
MOUSE
KEYBOARD
262
281
200
REMOTE APPLICATION PROGRAMS 285
OPERATING SYSTEM 244
APPLICATION PROGRAMS 245
OTHER PROGRAM MODULES 246
PROGRAM DATA 247

FIG. 2

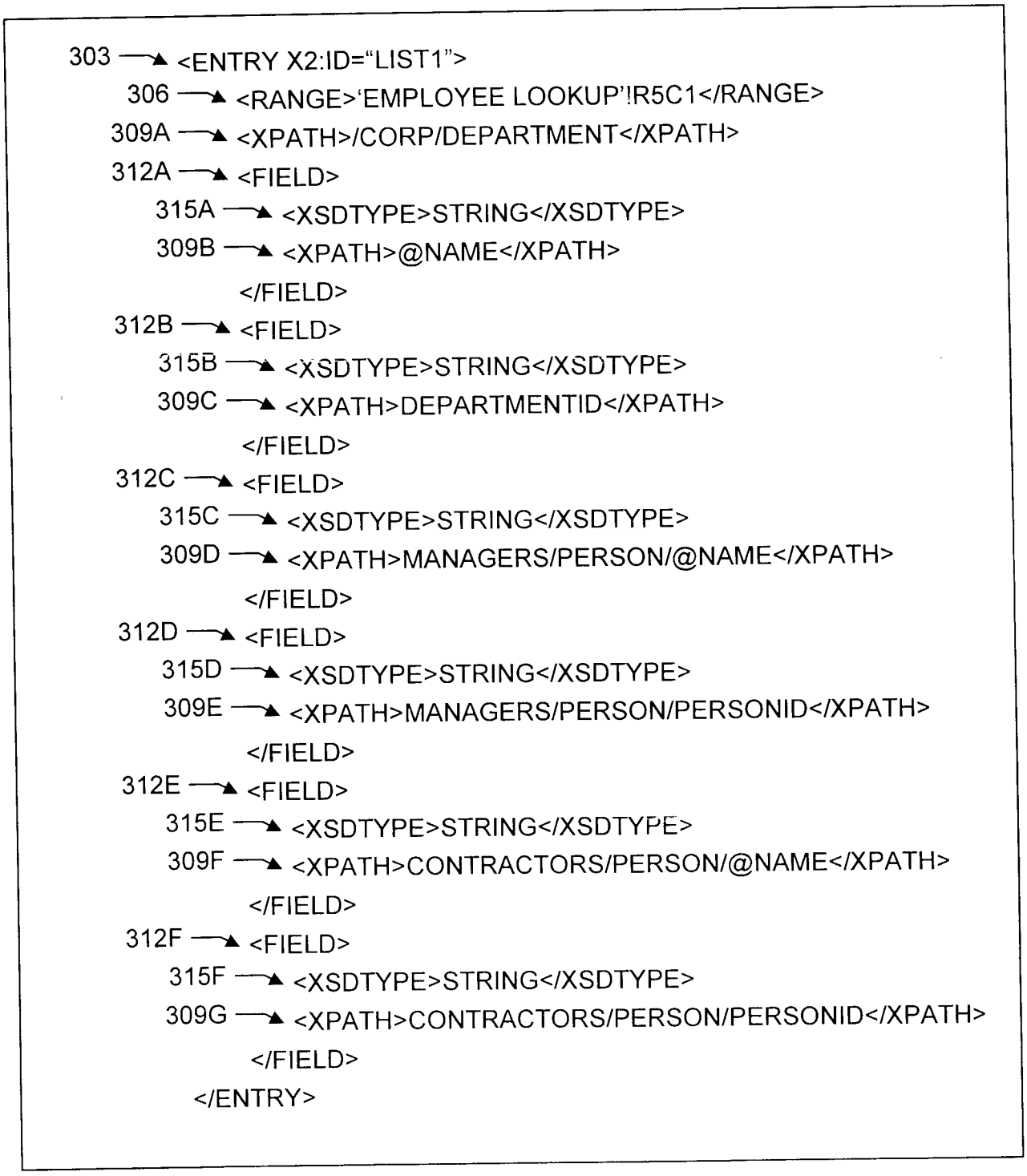

300
303 <ENTRY X2:ID="LIST1">
306 <RANGE>'EMPLOYEE LOOKUP'!R5C1</RANGE>
309A <XPATH>/CORP/DEPARTMENT</XPATH>
312A <FIELD>
315A <XSDTYPE>STRING</XSDTYPE>
309B <XPATH>@NAME</XPATH>
</FIELD>
312B <FIELD>
315B <XSDTYPE>STRING</XSDTYPE>
309C <XPATH>DEPARTMENTID</XPATH>
</FIELD>
312C <FIELD>
315C <XSDTYPE>STRING</XSDTYPE>
309D <XPATH>MANAGERS/PERSON/@NAME</XPATH>
</FIELD>
312D <FIELD>
315D <XSDTYPE>STRING</XSDTYPE>
309E <XPATH>MANAGERS/PERSON/PERSONID</XPATH>
</FIELD>
312E <FIELD>
315E <XSDTYPE>STRING</XSDTYPE>
309F <XPATH>CONTRACTORS/PERSON/@NAME</XPATH>
</FIELD>
312F <FIELD>
315F <XSDTYPE>STRING</XSDTYPE>
309G <XPATH>CONTRACTORS/PERSON/PERSONID</XPATH>
</FIELD>
</ENTRY>

FIG. 3

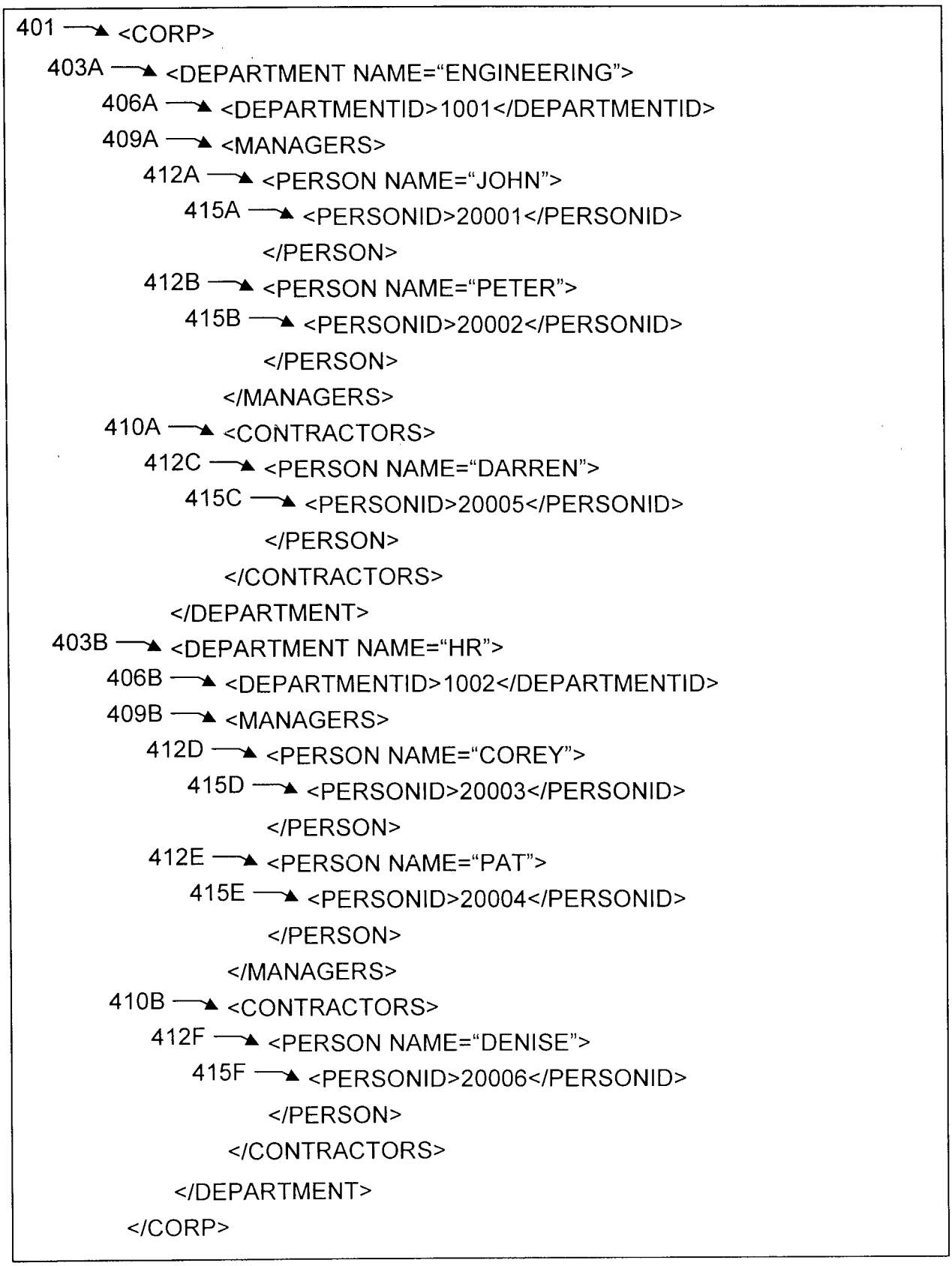

401 <CORP>
403A <DEPARTMENT NAME="ENGINEERING">
406A <DEPARTMENTID>1001</DEPARTMENTID>
409A <MANAGERS>
412A <PERSON NAME="JOHN">
415A <PERSONID>20001</PERSONID>
</PERSON>
412B <PERSON NAME="PETER">
415B <PERSONID>20002</PERSONID>
</PERSON>
</MANAGERS>
410A <CONTRACTORS>
412C <PERSON NAME="DARREN">
415C <PERSONID>20005</PERSONID>
</PERSON>
</CONTRACTORS>
</DEPARTMENT>
403B <DEPARTMENT NAME="HR">
406B <DEPARTMENTID>1002</DEPARTMENTID>
409B <MANAGERS>
412D <PERSON NAME="COREY">
415D <PERSONID>20003</PERSONID>
</PERSON>
412E <PERSON NAME="PAT">
415E <PERSONID>20004</PERSONID>
</PERSON>
</MANAGERS>
410B <CONTRACTORS>
412F <PERSON NAME="DENISE">
415F <PERSONID>20006</PERSONID>
</PERSON>
</CONTRACTORS>
</DEPARTMENT>
</CORP>
400

FIG. 4

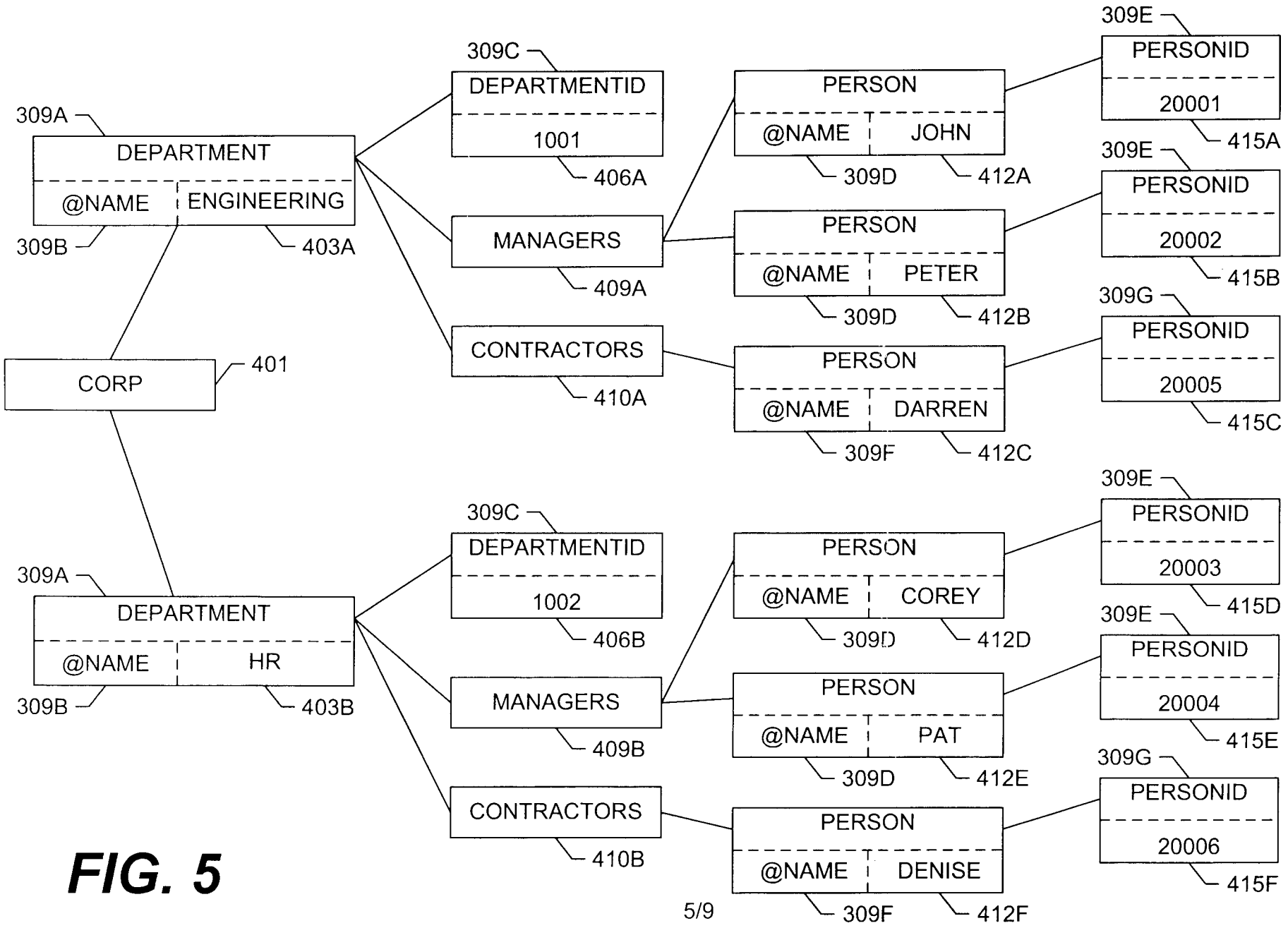
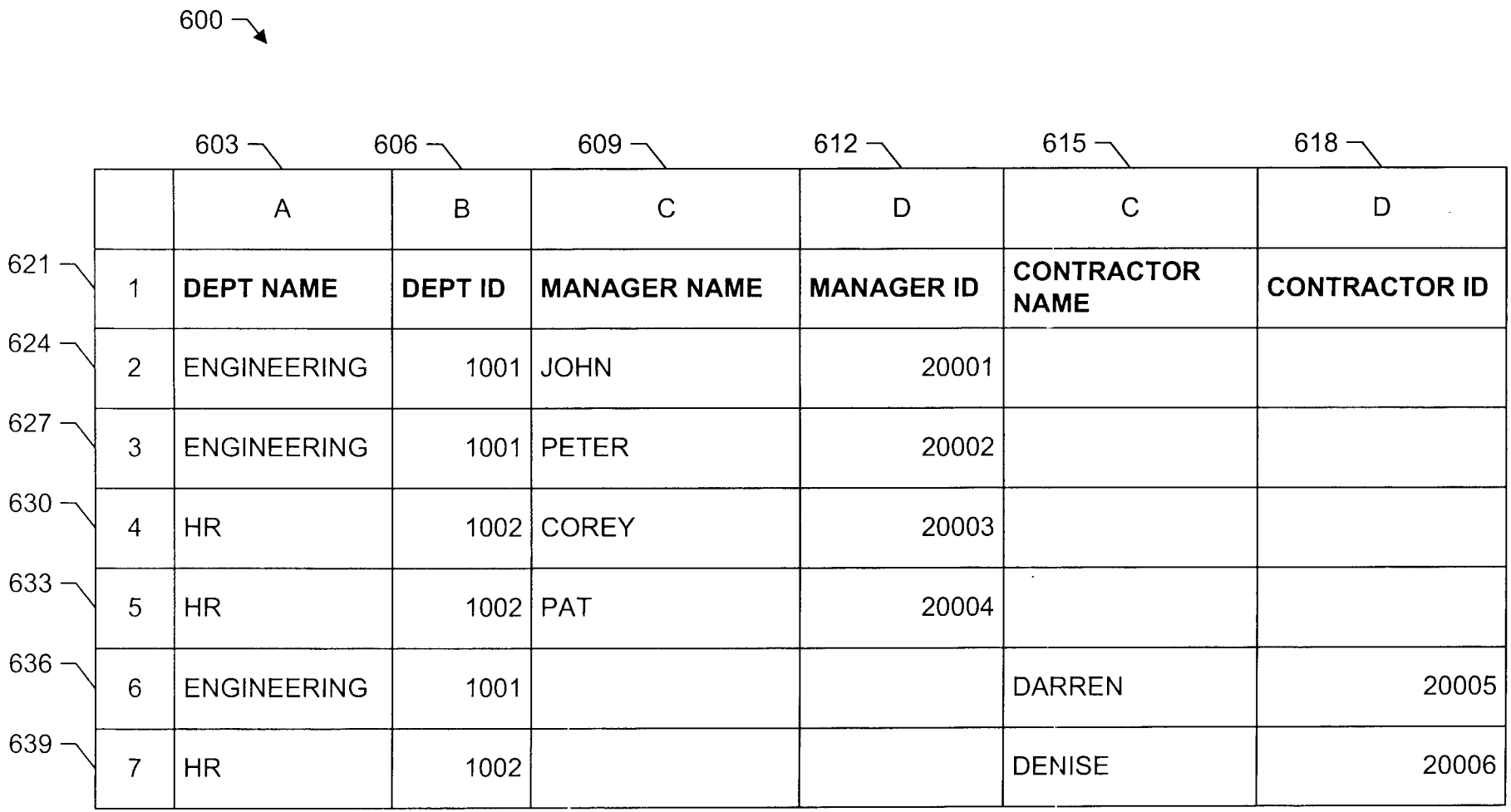

CORP
401
309A
DEPARTMENT
@NAME
ENGINEERING
309B
403A
309C
DEPARTMENTID
1001
406A
MANAGERS
409A
CONTRACTORS
410A
PERSON
@NAME
JOHN
309D
412A
PERSON
@NAME
PETER
309D
412B
PERSON
@NAME
DARREN
309F
412C
309E
PERSONID
20001
415A
309E
PERSONID
20002
415B
309G
PERSONID
20005
415C
309A
DEPARTMENT
@NAME
HR
309B
403B
309C
DEPARTMENTID
1002
406B
MANAGERS
409B
CONTRACTORS
410B
PERSON
@NAME
COREY
309D
412D
PERSON
@NAME
PAT
309D
412E
PERSON
@NAME
DENISE
309F
412F
309E
PERSONID
20003
415D
309E
PERSONID
20004
415E
309G
PERSONID
20006
415F

FIG. 5



	A	B	C	D	C	D
1	**DEPT NAME**	**DEPT ID**	**MANAGER NAME**	**MANAGER ID**	**CONTRACTOR NAME**	**CONTRACTOR ID**
2	ENGINEERING	1001	JOHN	20001		
3	ENGINEERING	1001	PETER	20002		
4	HR	1002	COREY	20003		
5	HR	1002	PAT	20004		
6	ENGINEERING	1001			DARREN	20005
7	HR	1002			DENISE	20006

FIG. 6

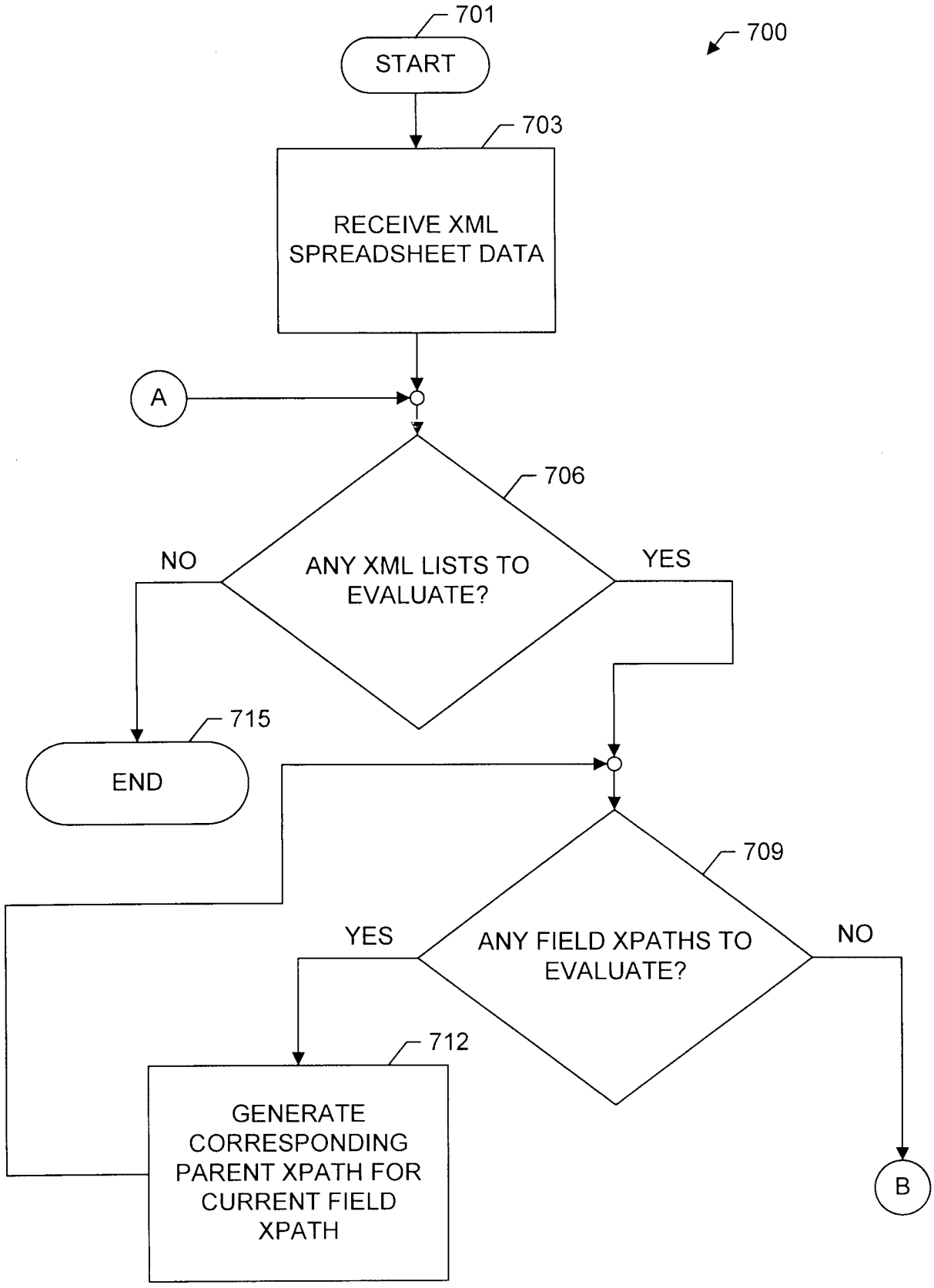

700
701
START
703
RECEIVE XML SPREADSHEET DATA
A
706
ANY XML LISTS TO EVALUATE?
NO
YES
715
END
709
ANY FIELD XPATHS TO EVALUATE?
YES
NO
712
GENERATE CORRESPONDING PARENT XPATH FOR CURRENT FIELD XPATH
B

FIG. 7A

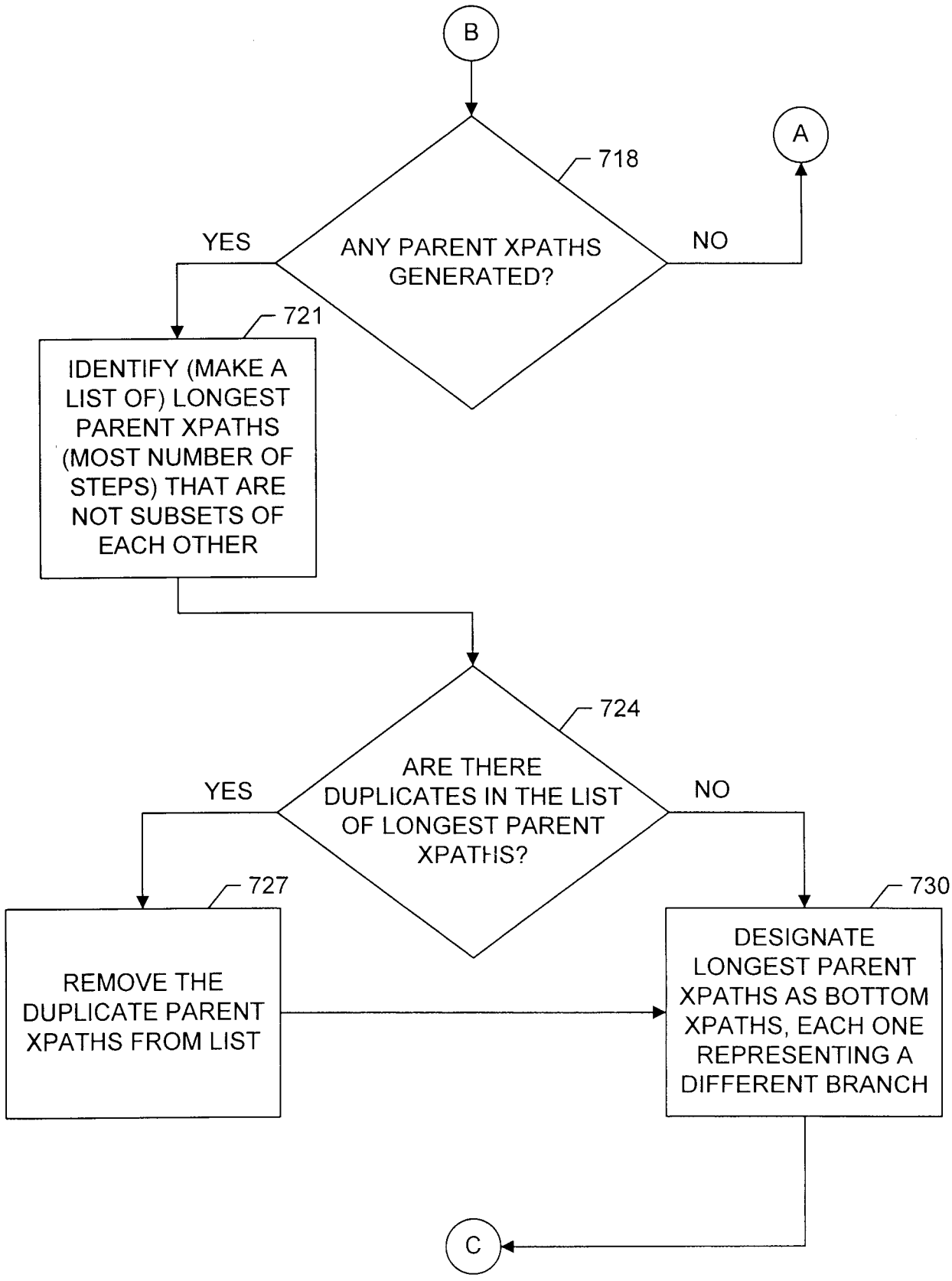

B
A
718
ANY PARENT XPATHS GENERATED?
YES
NO
721
IDENTIFY (MAKE A LIST OF) LONGEST PARENT XPATHS (MOST NUMBER OF STEPS) THAT ARE NOT SUBSETS OF EACH OTHER
724
ARE THERE DUPLICATES IN THE LIST OF LONGEST PARENT XPATHS?
YES
NO
727
REMOVE THE DUPLICATE PARENT XPATHS FROM LIST
730
DESIGNATE LONGEST PARENT XPATHS AS BOTTOM XPATHS, EACH ONE REPRESENTING A DIFFERENT BRANCH
C

FIG. 7B

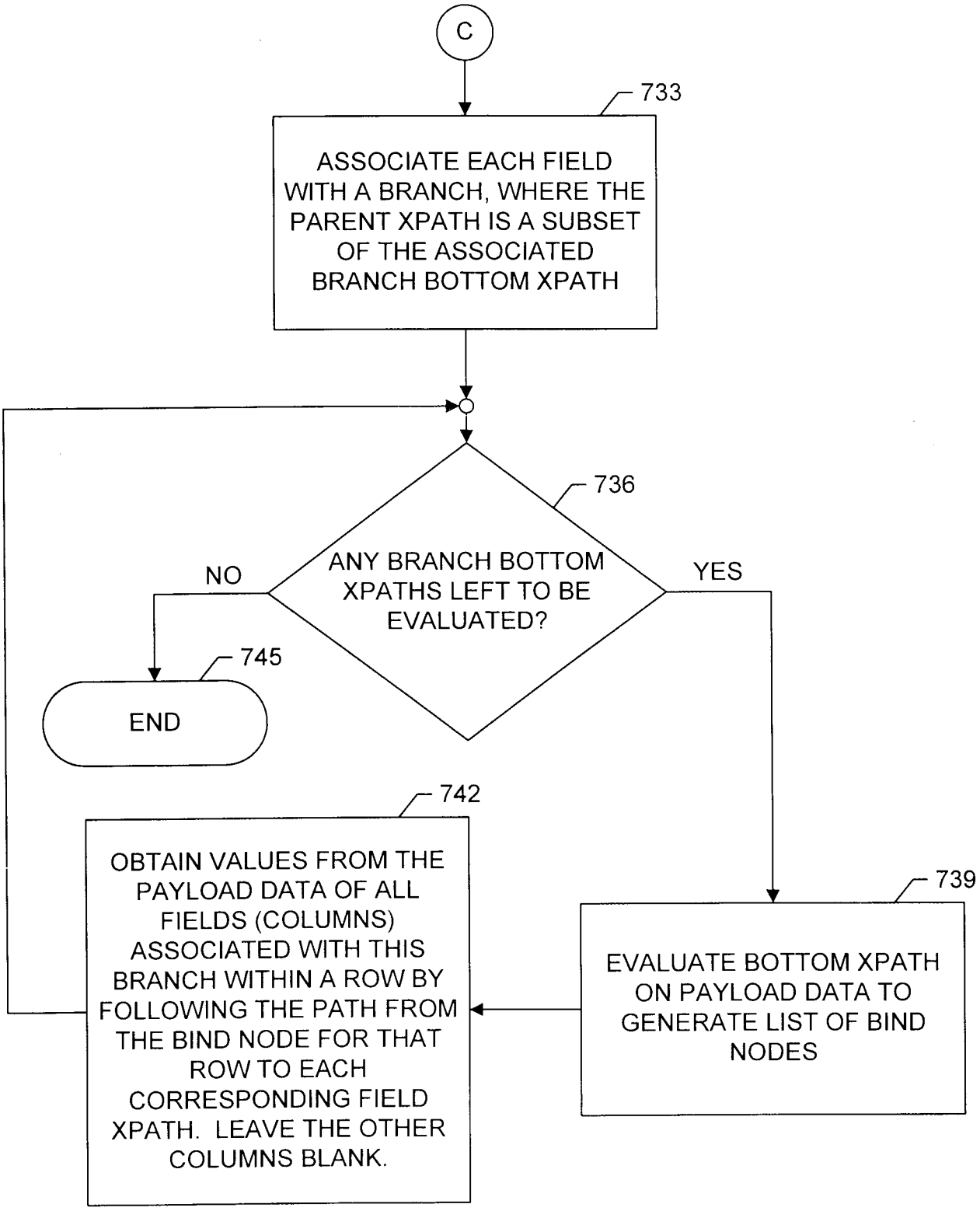

C
733
ASSOCIATE EACH FIELD WITH A BRANCH, WHERE THE PARENT XPATH IS A SUBSET OF THE ASSOCIATED BRANCH BOTTOM XPATH
736
ANY BRANCH BOTTOM XPATHS LEFT TO BE EVALUATED?
NO
YES
745
END
742
OBTAIN VALUES FROM THE PAYLOAD DATA OF ALL FIELDS (COLUMNS) ASSOCIATED WITH THIS BRANCH WITHIN A ROW BY FOLLOWING THE PATH FROM THE BIND NODE FOR THAT ROW TO EACH CORRESPONDING FIELD XPATH. LEAVE THE OTHER COLUMNS BLANK.
739
EVALUATE BOTTOM XPATH ON PAYLOAD DATA TO GENERATE LIST OF BIND NODES

FIG. 7C