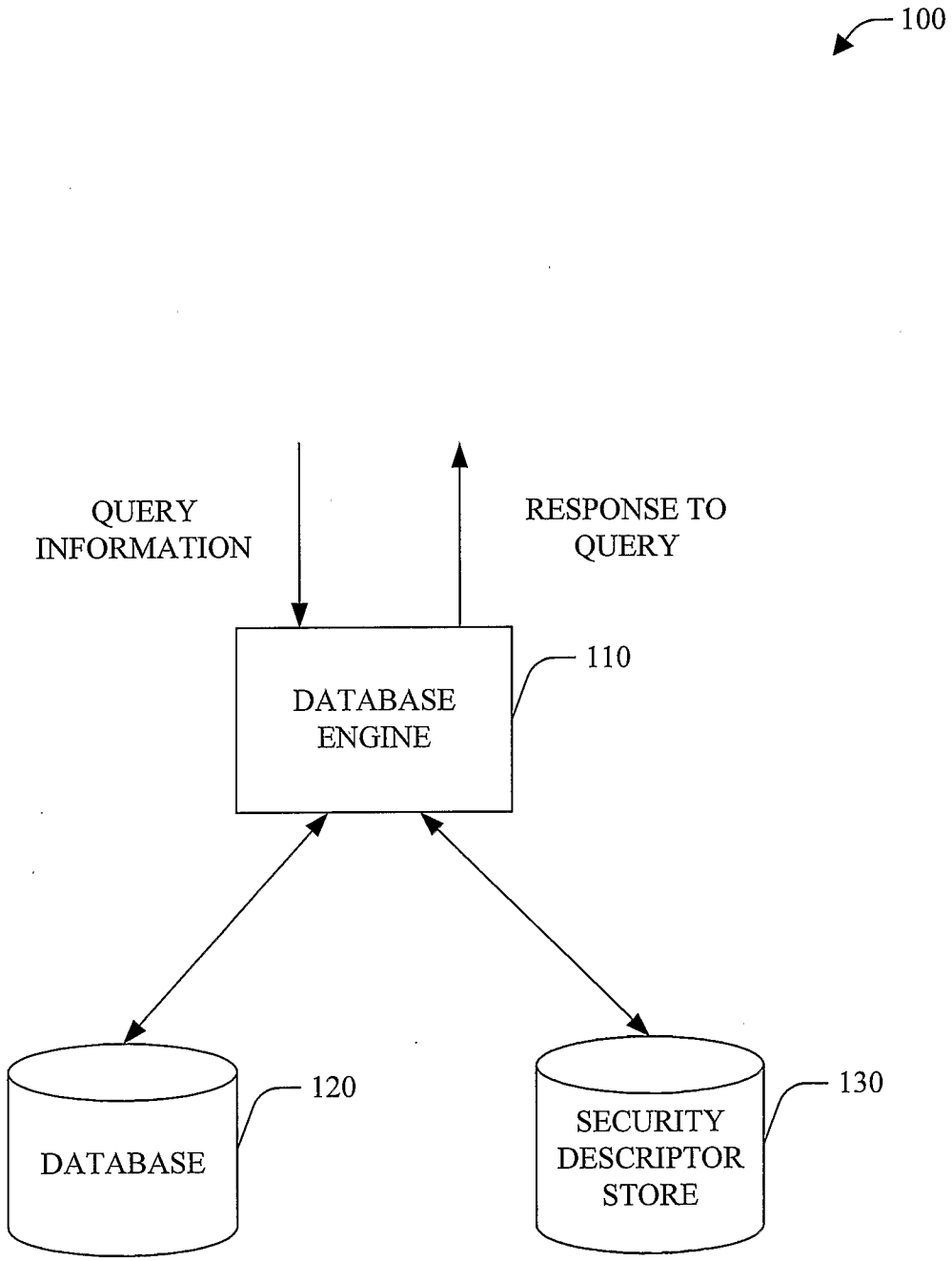

100
QUERY INFORMATION
RESPONSE TO QUERY
DATABASE ENGINE
110
DATABASE
120
SECURITY DESCRIPTOR STORE
130

FIG. 1

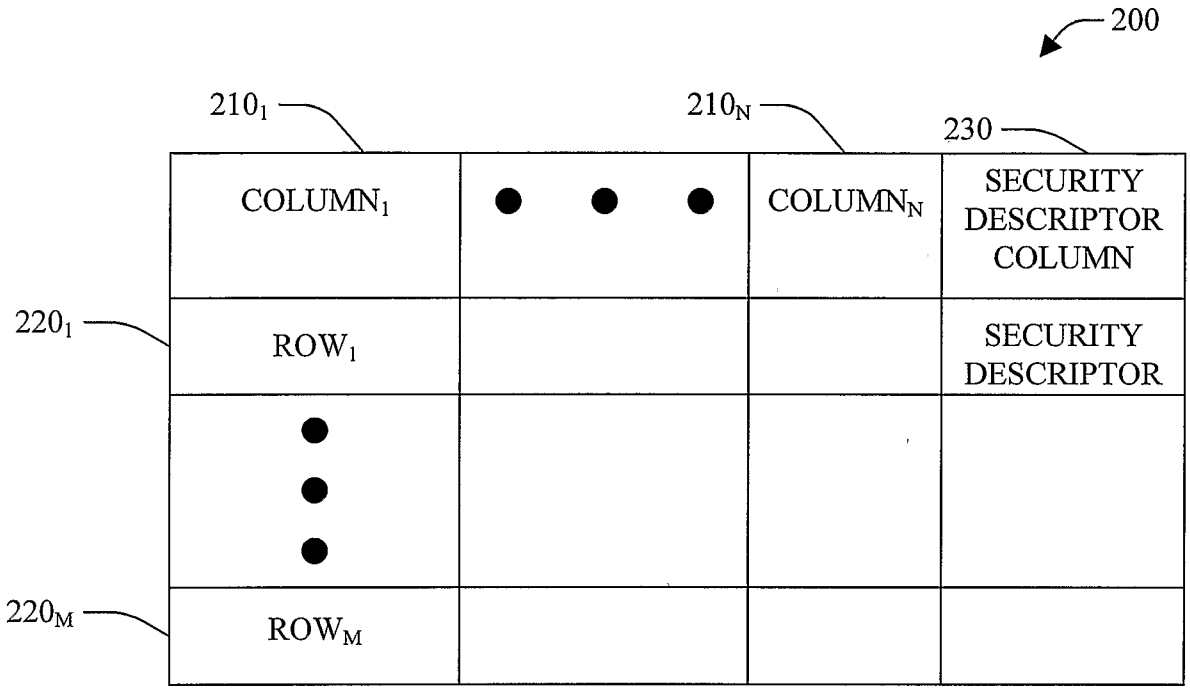

200
210$_1$
210$_N$
230
COLUMN$_1$
COLUMN$_N$
SECURITY DESCRIPTOR COLUMN
220$_1$
ROW$_1$
SECURITY DESCRIPTOR
220$_M$
ROW$_M$

FIG. 2

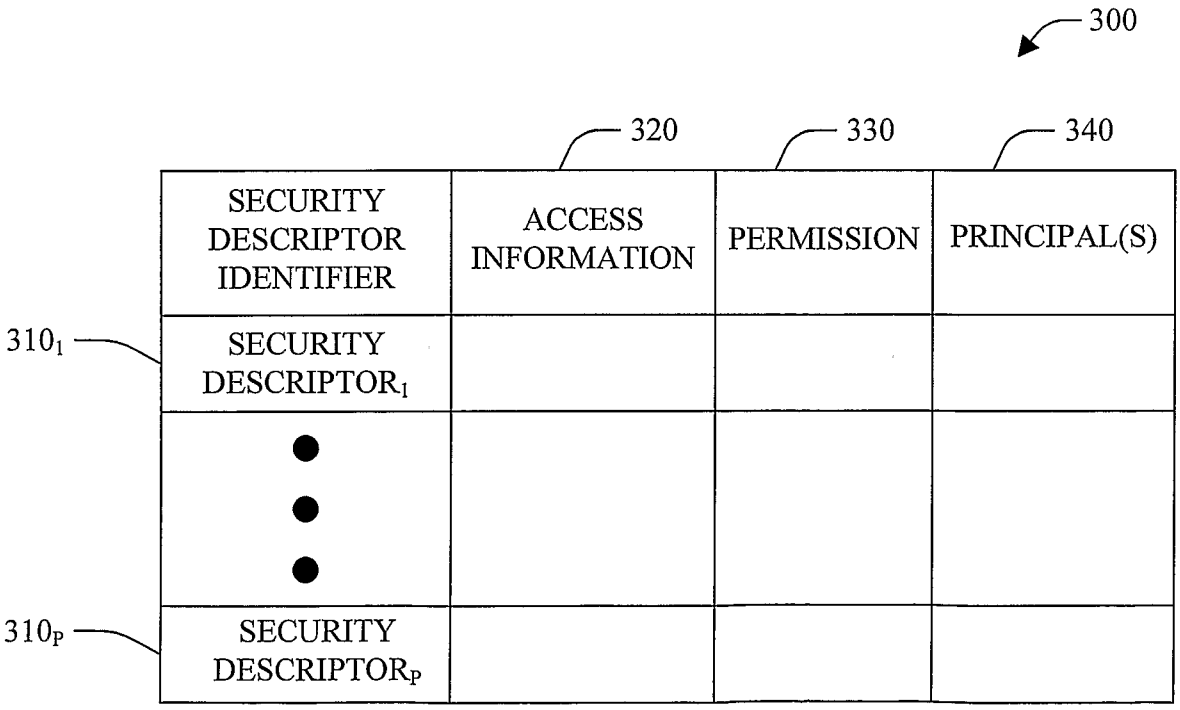

300
320
330
340
SECURITY DESCRIPTOR IDENTIFIER
ACCESS INFORMATION
PERMISSION
PRINCIPAL(S)
310$_1$
SECURITY DESCRIPTOR$_1$
310$_P$
SECURITY DESCRIPTOR$_P$

FIG. 3

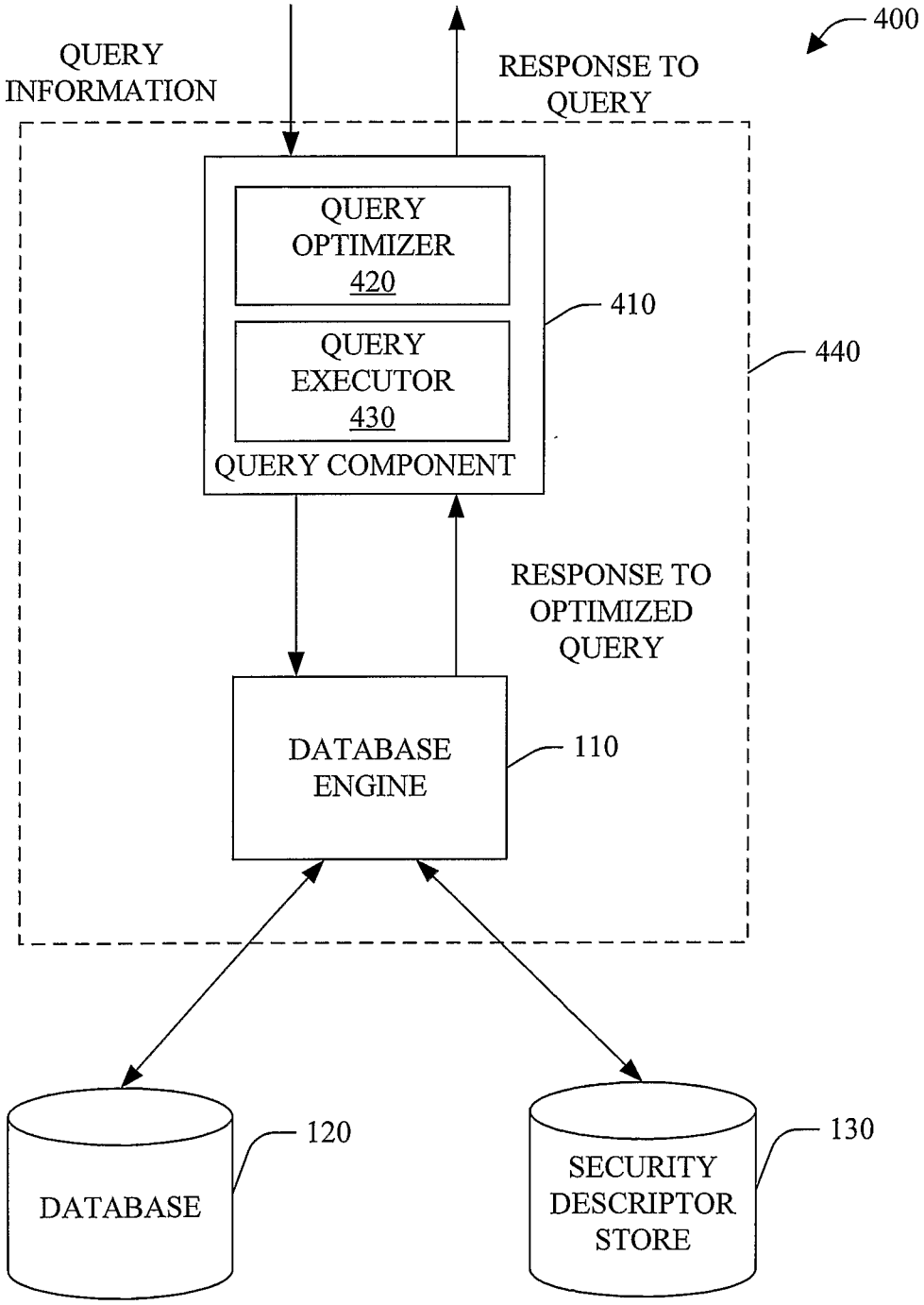

400
QUERY INFORMATION
RESPONSE TO QUERY
QUERY OPTIMIZER 420
QUERY EXECUTOR 430
QUERY COMPONENT
410
440
RESPONSE TO OPTIMIZED QUERY
DATABASE ENGINE
110
DATABASE
120
SECURITY DESCRIPTOR STORE
130

FIG. 4

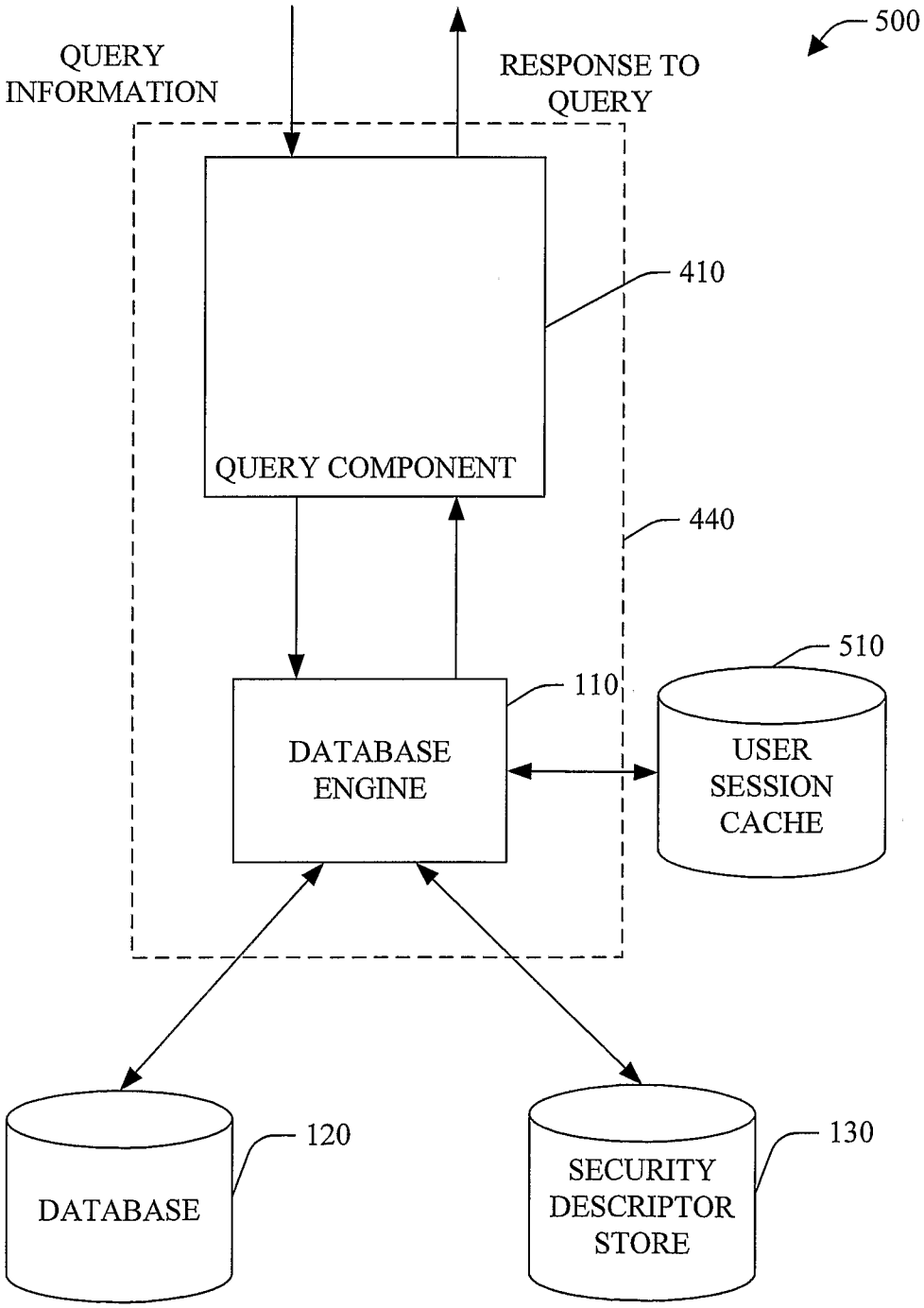

500
QUERY INFORMATION
RESPONSE TO QUERY
410
QUERY COMPONENT
440
510
110
DATABASE ENGINE
USER SESSION CACHE
120
DATABASE
130
SECURITY DESCRIPTOR STORE

FIG. 5

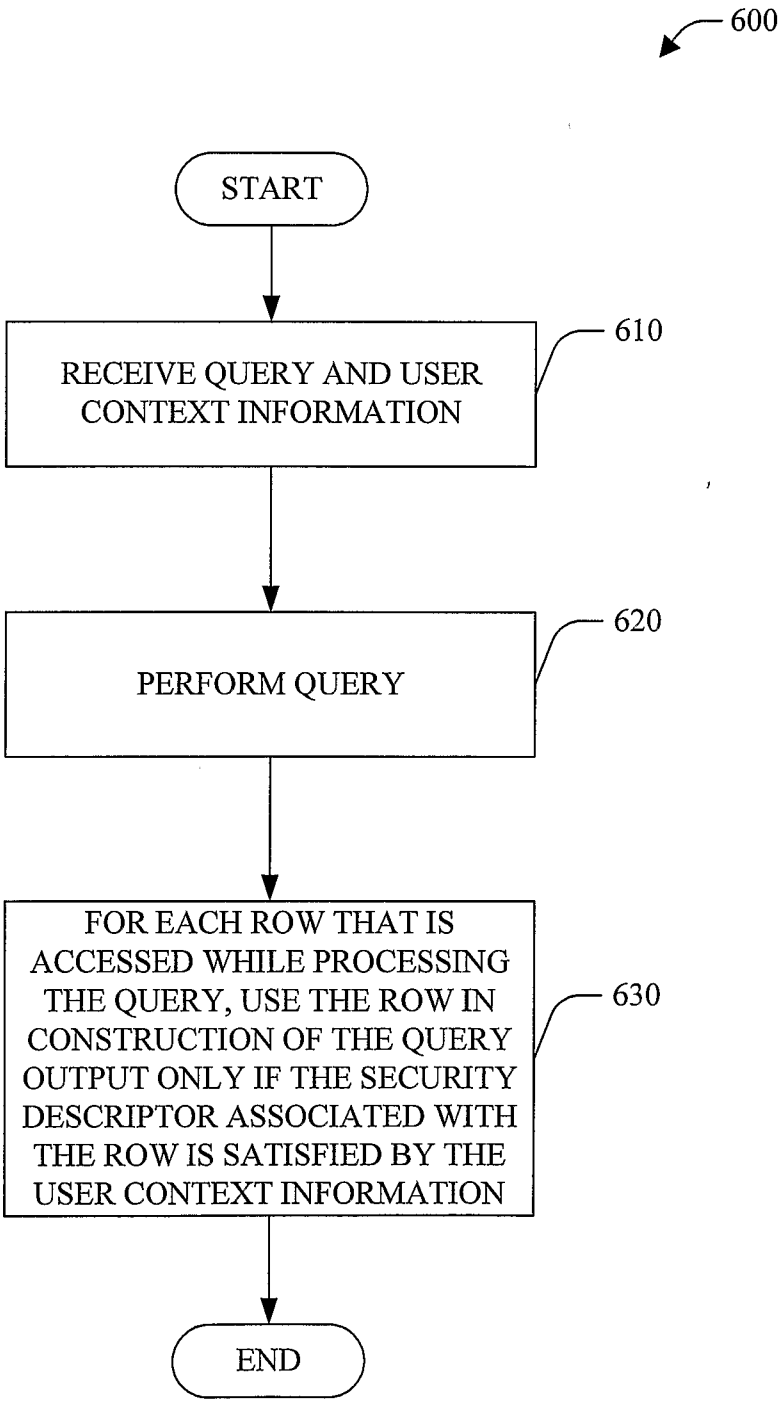

600
START
RECEIVE QUERY AND USER CONTEXT INFORMATION
610
PERFORM QUERY
620
FOR EACH ROW THAT IS ACCESSED WHILE PROCESSING THE QUERY, USE THE ROW IN CONSTRUCTION OF THE QUERY OUTPUT ONLY IF THE SECURITY DESCRIPTOR ASSOCIATED WITH THE ROW IS SATISFIED BY THE USER CONTEXT INFORMATION
630
END

FIG. 6

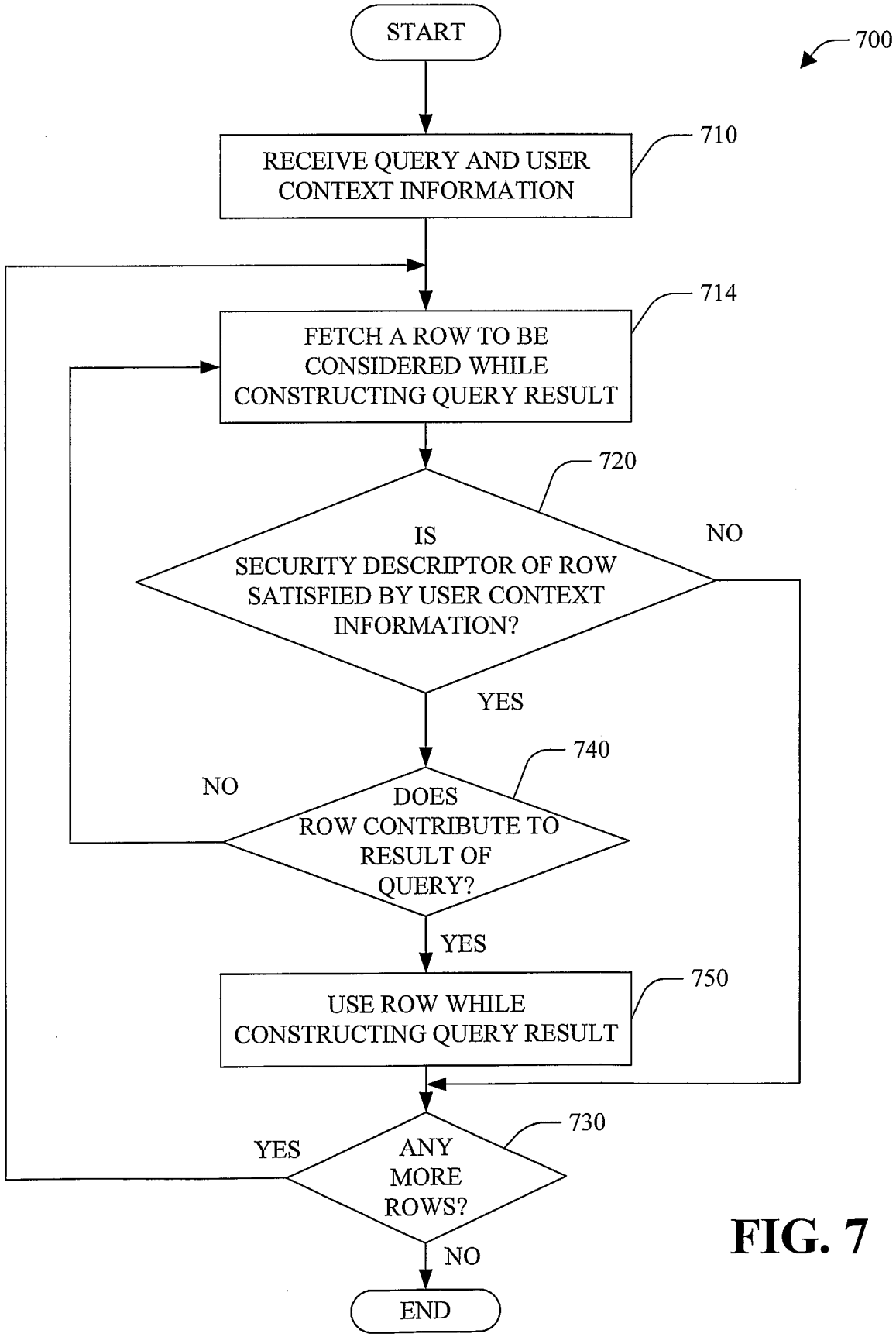

START
700
RECEIVE QUERY AND USER CONTEXT INFORMATION
710
FETCH A ROW TO BE CONSIDERED WHILE CONSTRUCTING QUERY RESULT
714
IS SECURITY DESCRIPTOR OF ROW SATISFIED BY USER CONTEXT INFORMATION?
720
NO
YES
DOES ROW CONTRIBUTE TO RESULT OF QUERY?
740
NO
YES
USE ROW WHILE CONSTRUCTING QUERY RESULT
750
ANY MORE ROWS?
730
YES
NO
END

FIG. 7

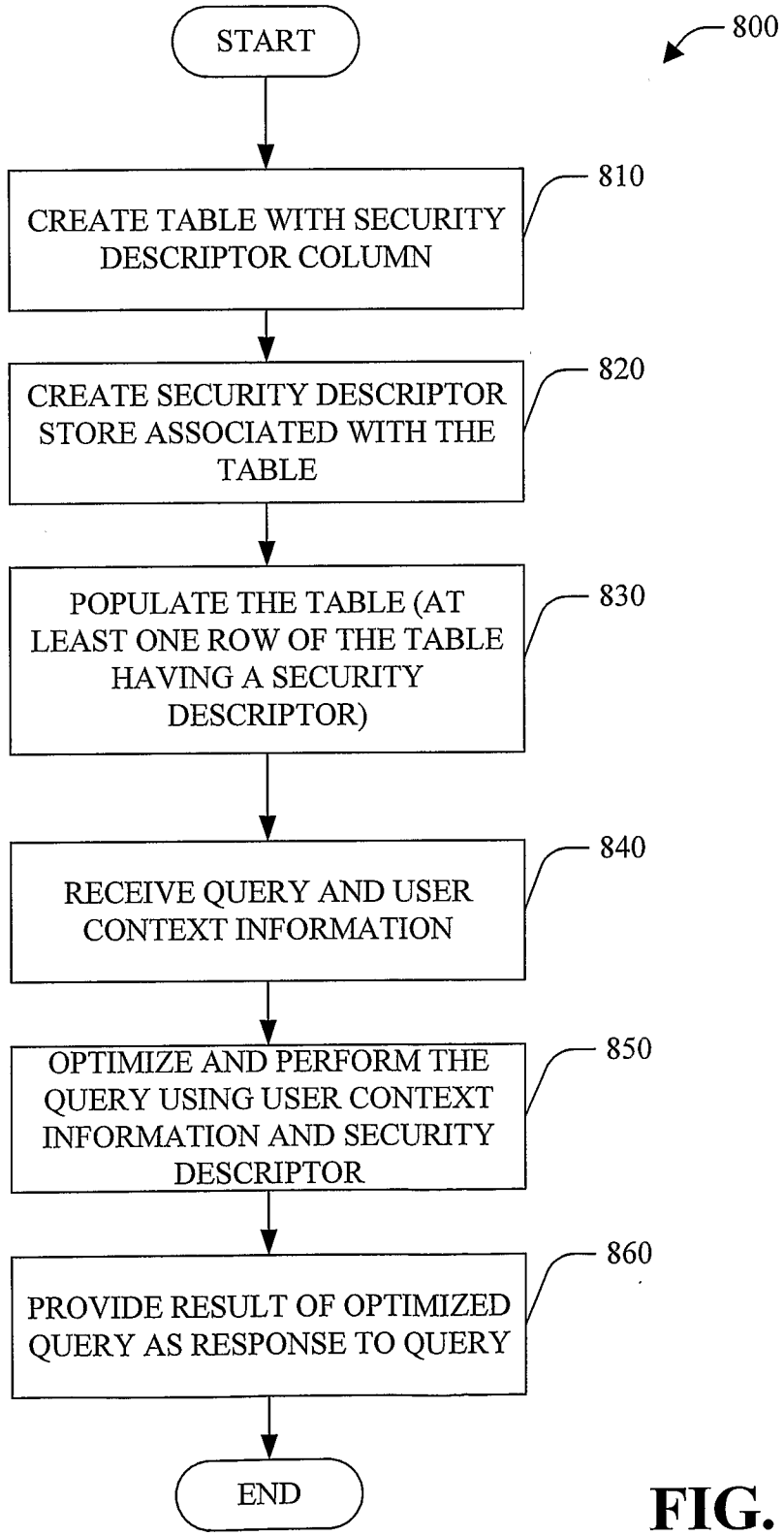

START
800
CREATE TABLE WITH SECURITY DESCRIPTOR COLUMN
810
CREATE SECURITY DESCRIPTOR STORE ASSOCIATED WITH THE TABLE
820
POPULATE THE TABLE (AT LEAST ONE ROW OF THE TABLE HAVING A SECURITY DESCRIPTOR)
830
RECEIVE QUERY AND USER CONTEXT INFORMATION
840
OPTIMIZE AND PERFORM THE QUERY USING USER CONTEXT INFORMATION AND SECURITY DESCRIPTOR
850
PROVIDE RESULT OF OPTIMIZED QUERY AS RESPONSE TO QUERY
860
END

FIG. 8

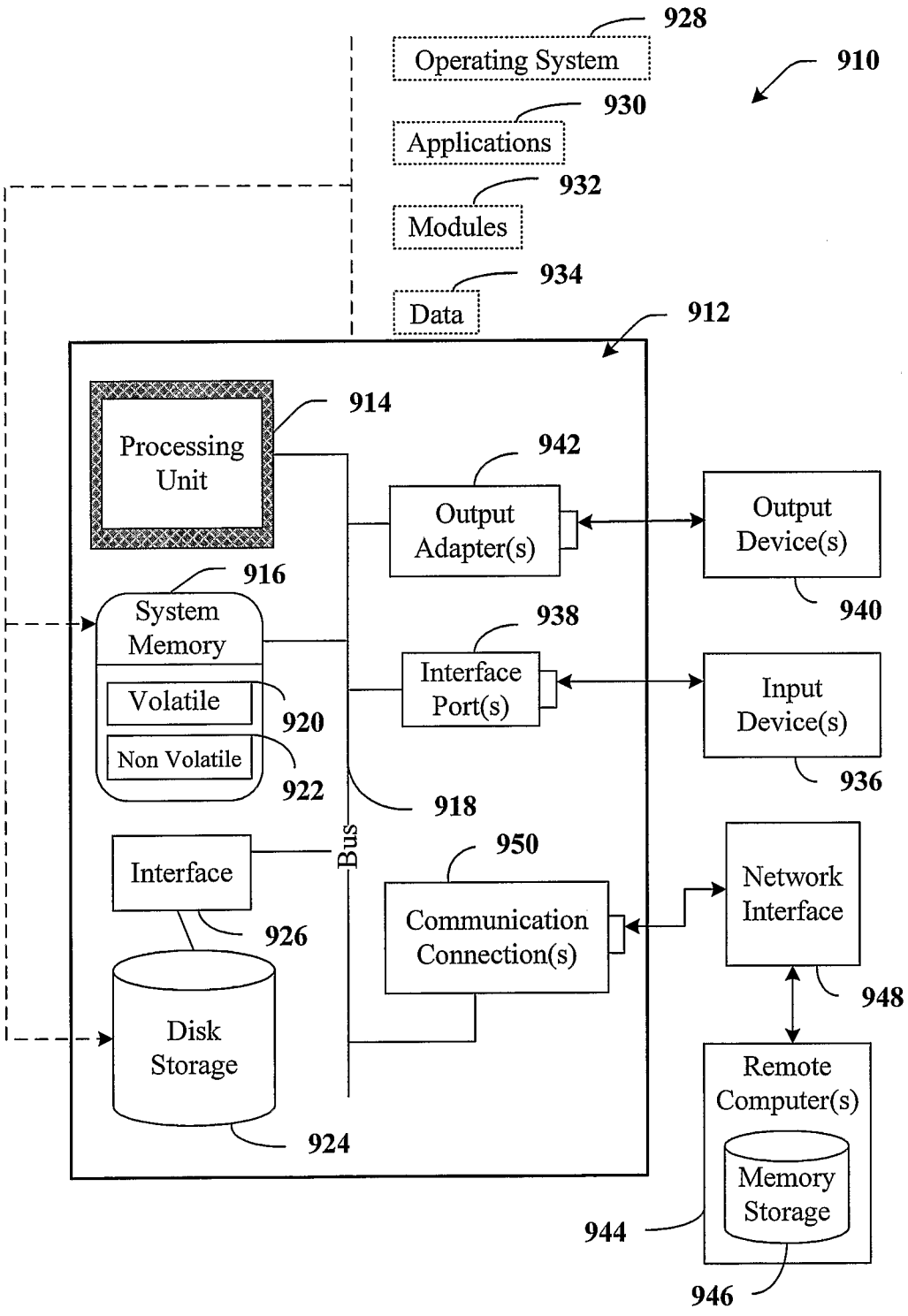

928
Operating System
910
930
Applications
932
Modules
934
Data
912
914
Processing Unit
942
Output Adapter(s)
Output Device(s)
940
916
System Memory
Volatile
920
Non Volatile
922
938
Interface Port(s)
Input Device(s)
936
918
Bus
950
Interface
926
Communication Connection(s)
Network Interface
948
Disk Storage
924
Remote Computer(s)
Memory Storage
944
946

FIG. 9