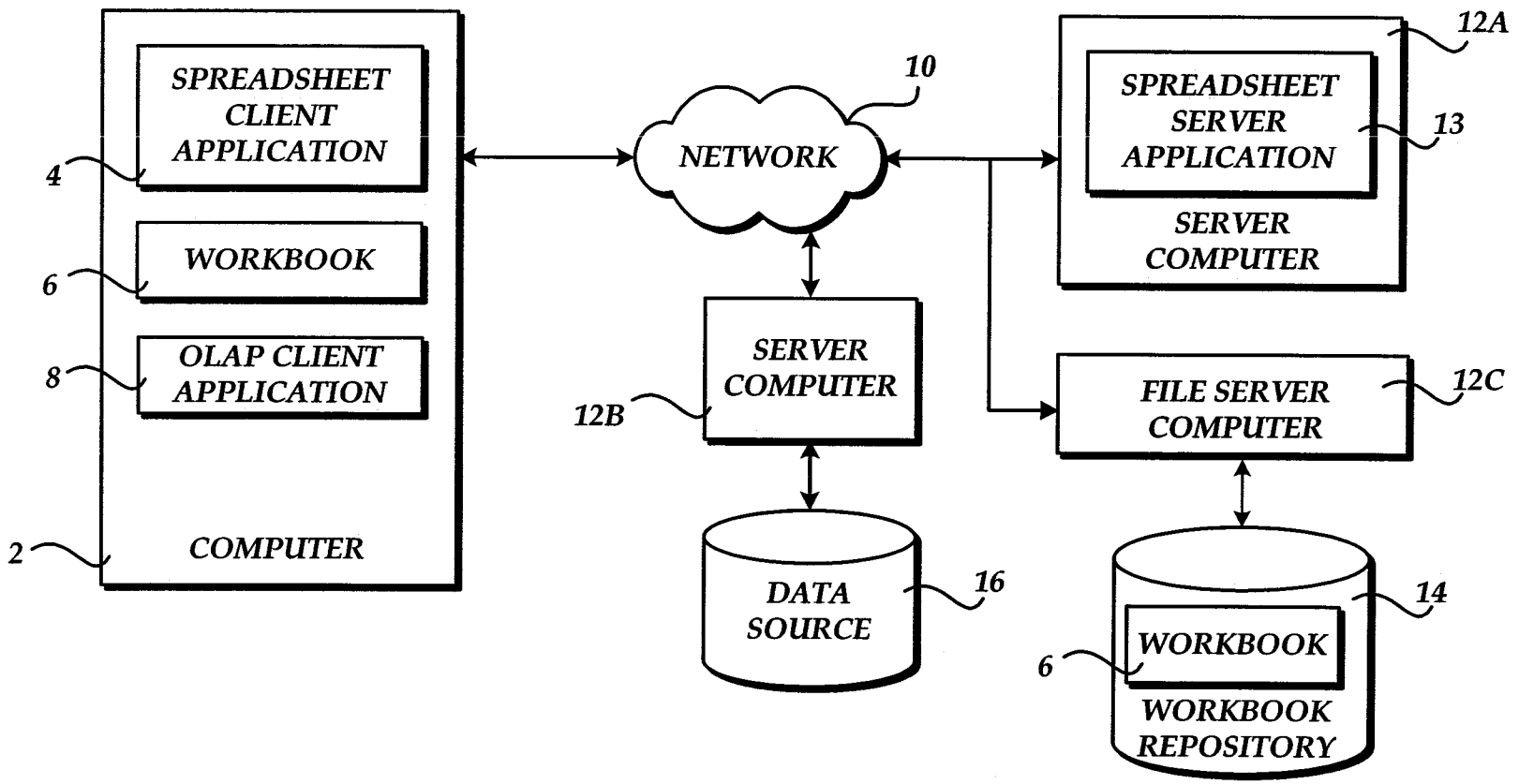

SPREADSHEET CLIENT APPLICATION
4
WORKBOOK
6
OLAP CLIENT APPLICATION
8
COMPUTER
2
NETWORK
10
SERVER COMPUTER
12B
DATA SOURCE
16
SPREADSHEET SERVER APPLICATION
13
SERVER COMPUTER
12A
FILE SERVER COMPUTER
12C
WORKBOOK
6
WORKBOOK REPOSITORY
14

*Fig.1.*

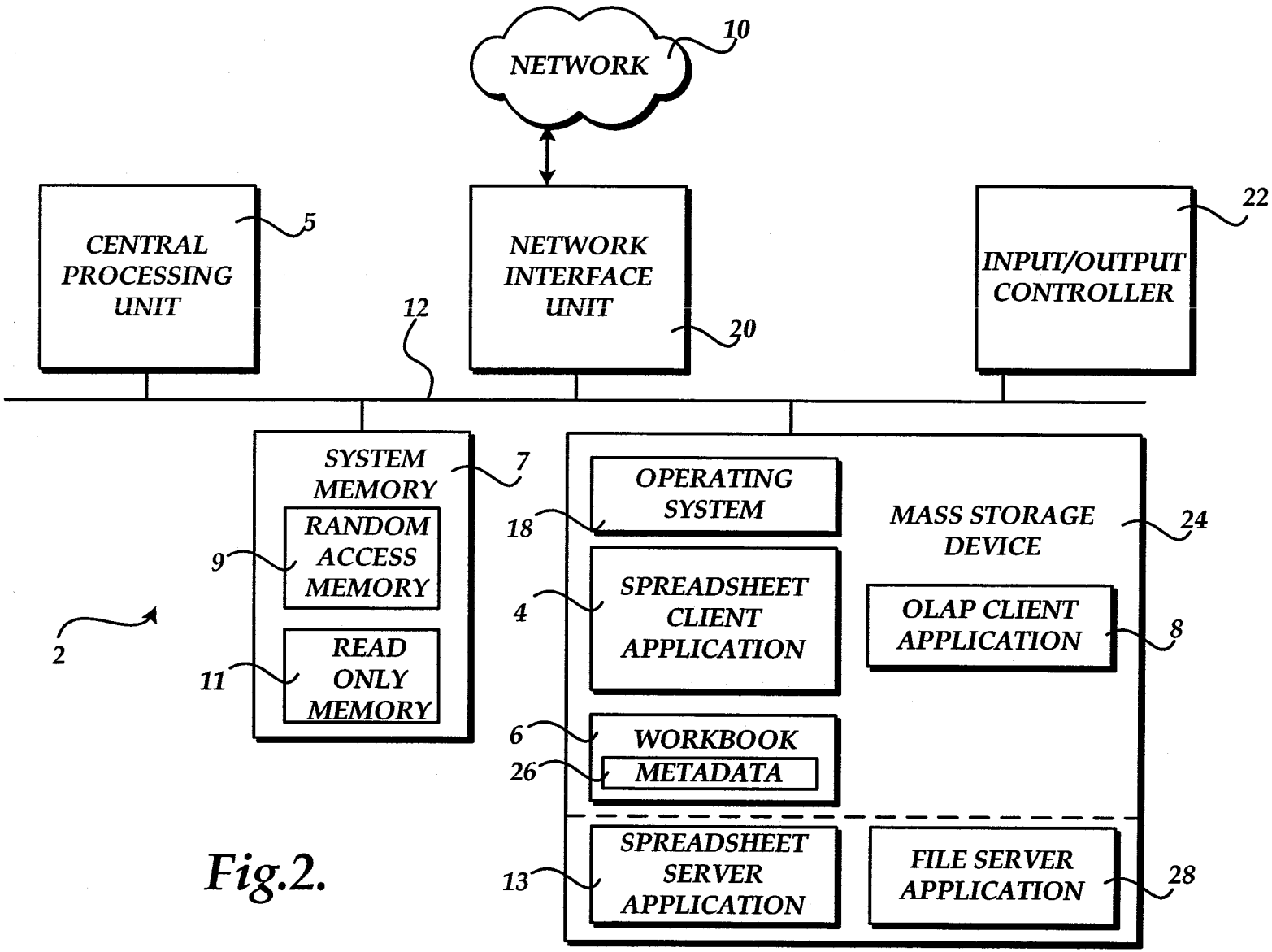

NETWORK
10
CENTRAL PROCESSING UNIT
5
NETWORK INTERFACE UNIT
20
INPUT/OUTPUT CONTROLLER
22
12
SYSTEM MEMORY
7
RANDOM ACCESS MEMORY
9
READ ONLY MEMORY
11
2
OPERATING SYSTEM
18
SPREADSHEET CLIENT APPLICATION
4
WORKBOOK
6
METADATA
26
MASS STORAGE DEVICE
24
OLAP CLIENT APPLICATION
8
SPREADSHEET SERVER APPLICATION
13
FILE SERVER APPLICATION
28

*Fig.2.*

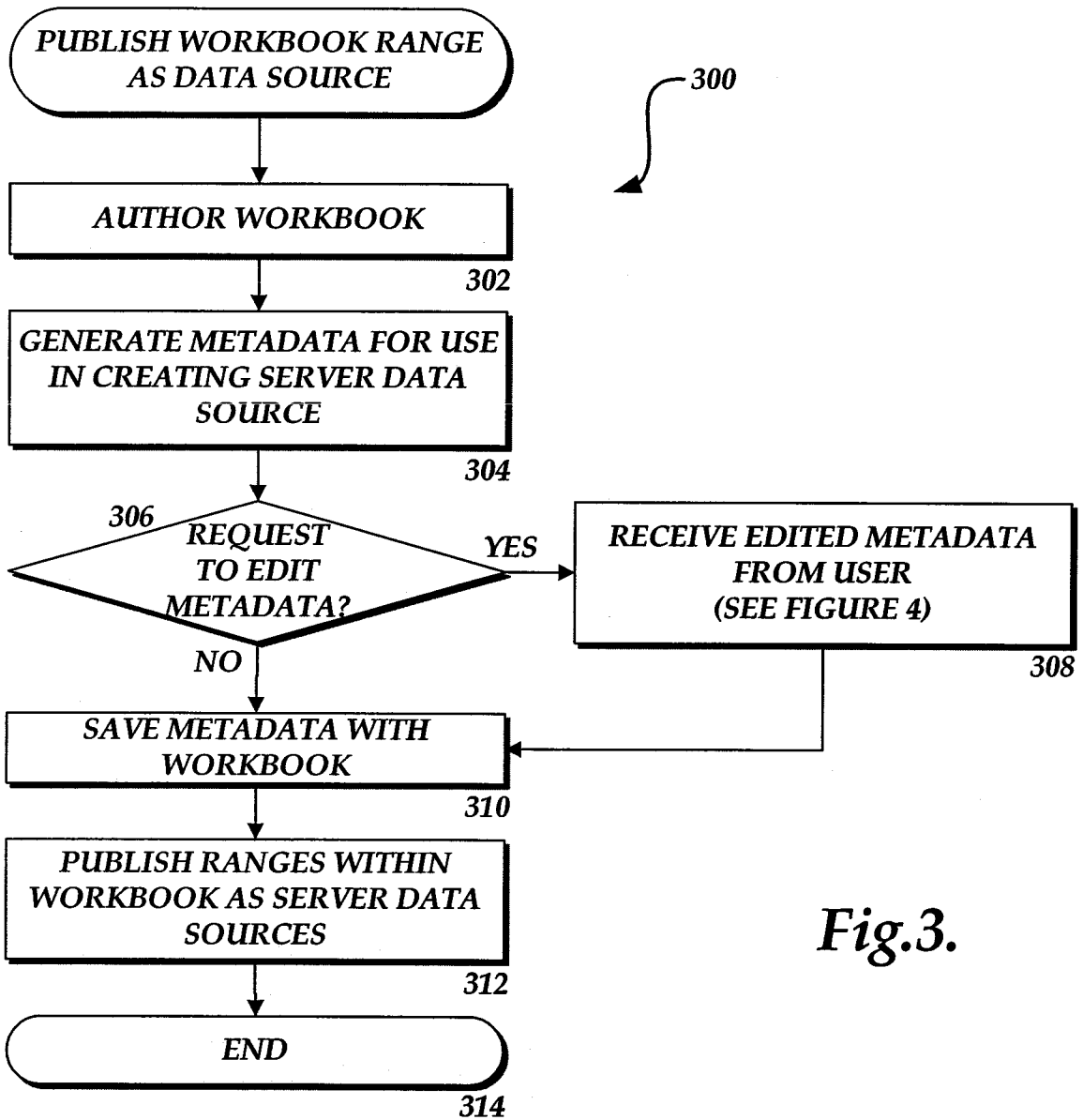

PUBLISH WORKBOOK RANGE AS DATA SOURCE
300
AUTHOR WORKBOOK
302
GENERATE METADATA FOR USE IN CREATING SERVER DATA SOURCE
304
306
REQUEST TO EDIT METADATA?
YES
RECEIVE EDITED METADATA FROM USER (SEE FIGURE 4)
308
NO
SAVE METADATA WITH WORKBOOK
310
PUBLISH RANGES WITHIN WORKBOOK AS SERVER DATA SOURCES
312
END
314

*Fig.3.*

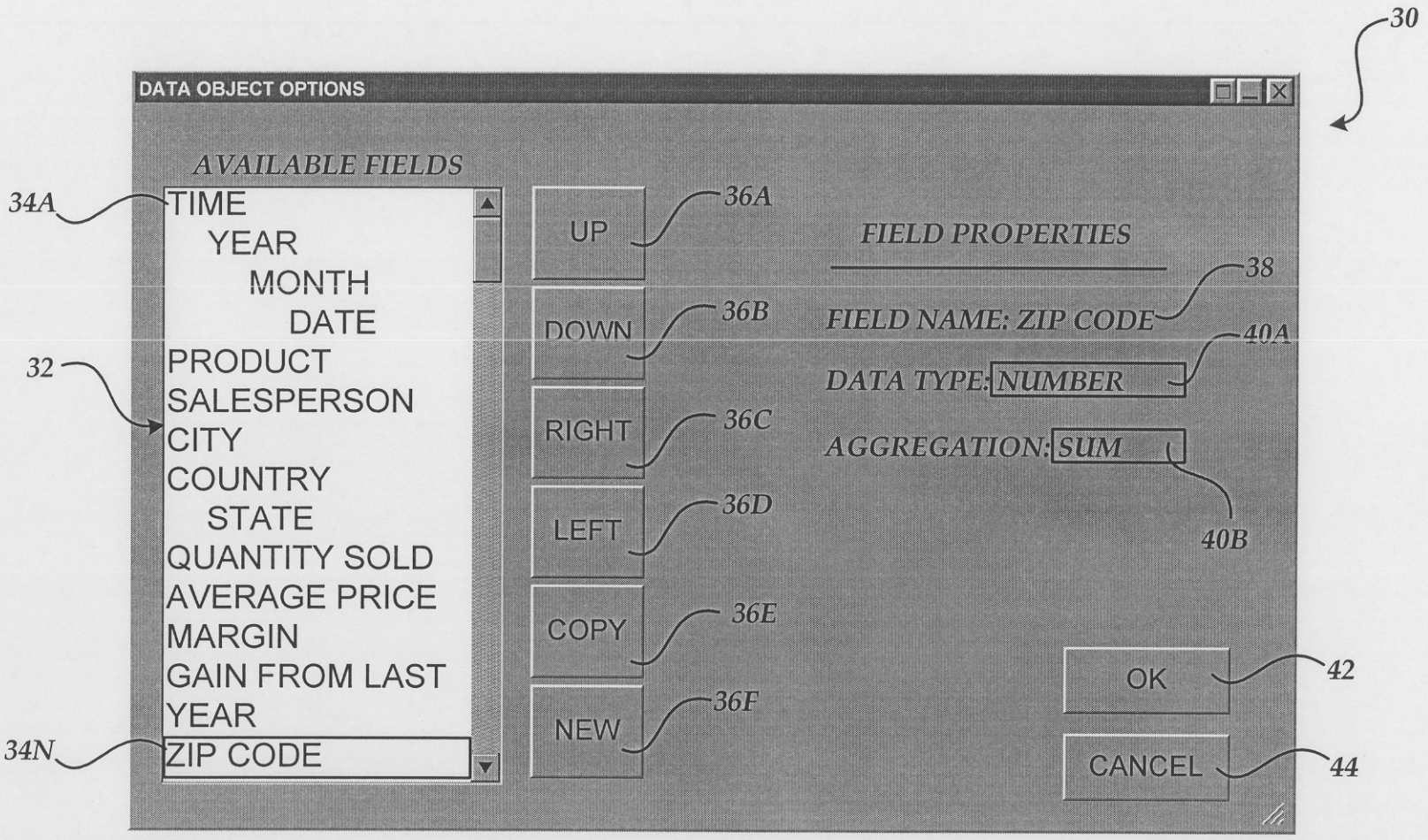

30
DATA OBJECT OPTIONS
AVAILABLE FIELDS
34A
TIME
YEAR
MONTH
DATE
32
PRODUCT
SALESPERSON
CITY
COUNTRY
STATE
QUANTITY SOLD
AVERAGE PRICE
MARGIN
GAIN FROM LAST YEAR
34N
ZIP CODE
UP
36A
DOWN
36B
RIGHT
36C
LEFT
36D
COPY
36E
NEW
36F
FIELD PROPERTIES
38
FIELD NAME: ZIP CODE
40A
DATA TYPE: NUMBER
AGGREGATION: SUM
40B
OK
42
CANCEL
44

*Fig.4.*

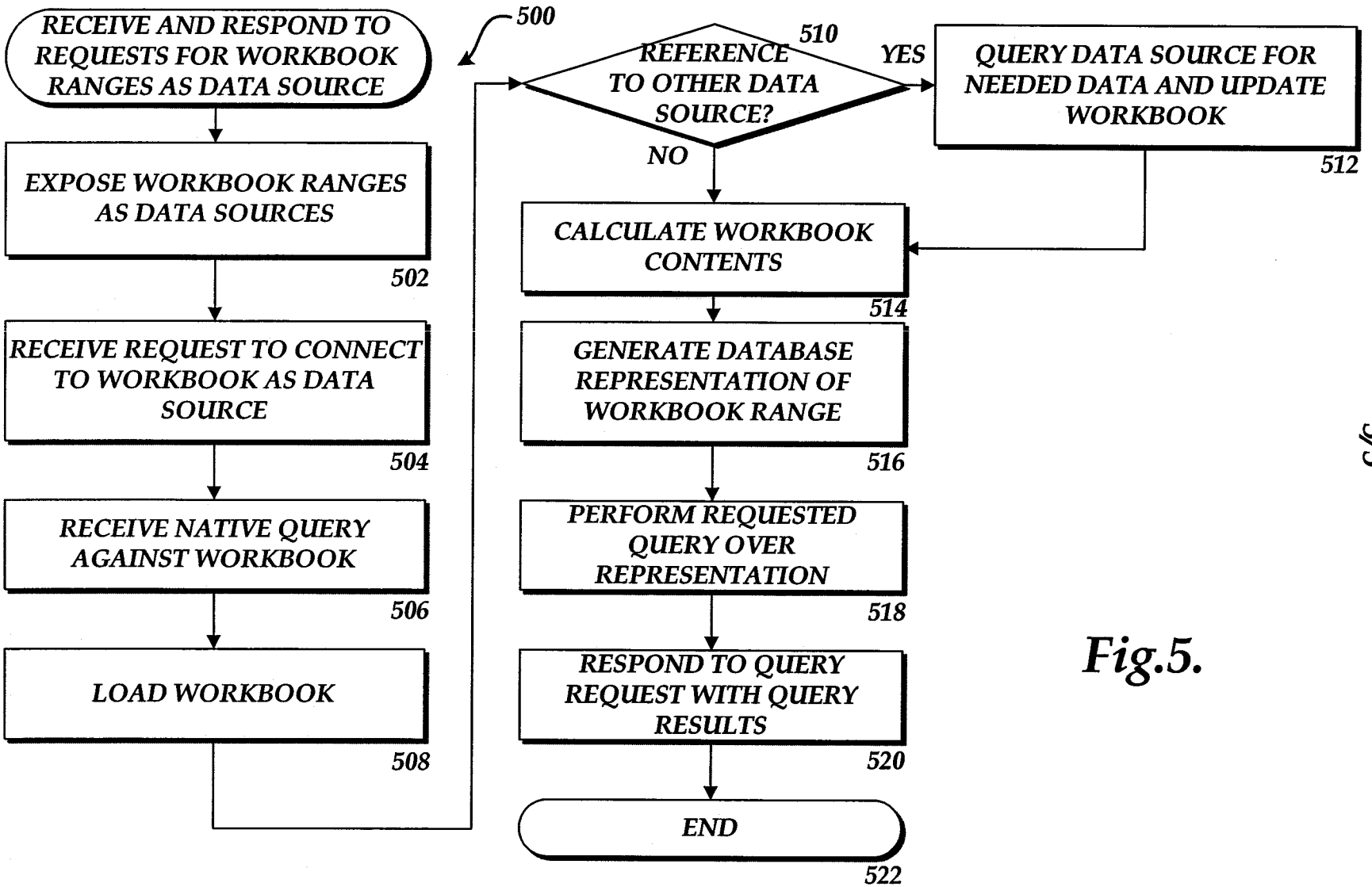

RECEIVE AND RESPOND TO REQUESTS FOR WORKBOOK RANGES AS DATA SOURCE
500
EXPOSE WORKBOOK RANGES AS DATA SOURCES
502
RECEIVE REQUEST TO CONNECT TO WORKBOOK AS DATA SOURCE
504
RECEIVE NATIVE QUERY AGAINST WORKBOOK
506
LOAD WORKBOOK
508
REFERENCE TO OTHER DATA SOURCE?
510
YES
QUERY DATA SOURCE FOR NEEDED DATA AND UPDATE WORKBOOK
512
NO
CALCULATE WORKBOOK CONTENTS
514
GENERATE DATABASE REPRESENTATION OF WORKBOOK RANGE
516
PERFORM REQUESTED QUERY OVER REPRESENTATION
518
RESPOND TO QUERY REQUEST WITH QUERY RESULTS
520
END
522

*Fig.5.*