US 20080077571A1

(19) United States

(12) Patent Application Publication

(10) Pub. No.: US 2008/0077571 A1

(43) Pub. Date: Mar. 27, 2008

Harris et al.

(54) METHODS, SYSTEMS, AND COMPUTER-READABLE MEDIUMS FOR PROVIDING PERSISTING AND CONTINUOUSLY UPDATING SEARCH FOLDERS

(75) Inventors: **Jensen M. Harris**, Kirkland, WA (US); **Richard Hank Leukart**, Seattle, WA (US); **Jiaxin (Jesse) Wang**, Redmond, WA (US); **Jesse Clay Satterfield**, Seattle, WA (US); **Julia Cai**, Issaquah, WA (US); **Jason V. Morse**, Bellevue, WA (US)

Correspondence Address:
MERCHANT & GOULD (MICROSOFT)
P.O. BOX 2903
MINNEAPOLIS, MN 55402-0903 (US)

(73) Assignee: **Microsoft Corporation**, Redmond, WA

(21) Appl. No.: **11/782,059**

(22) Filed: **Jul. 24, 2007**

Related U.S. Application Data

(63) Continuation of application No. 10/741,407, filed on Dec. 19, 2003.

(60) Provisional application No. 60/484,437, filed on Jul. 1, 2003.

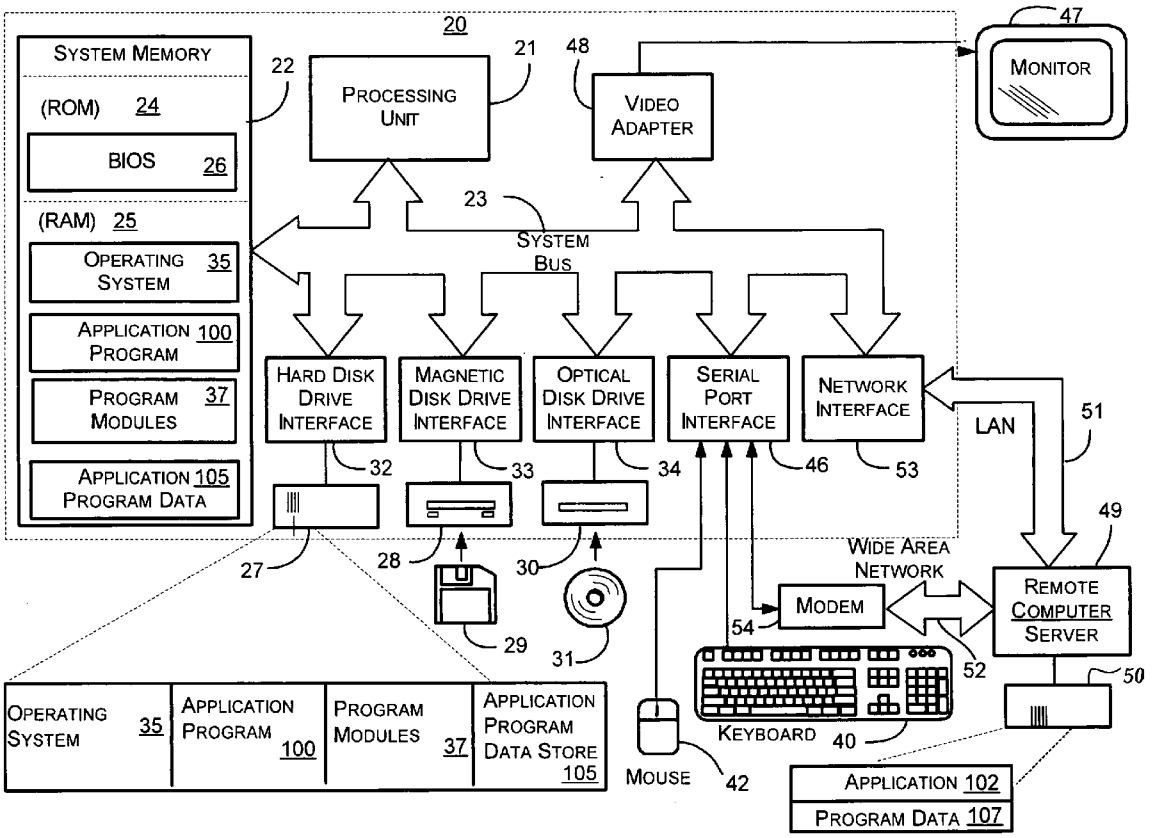
Publication Classification

(51) **Int. Cl.**
G06F 17/30 (2006.01)

(52) **U.S. Cl.** **707/5**; 707/E17

(57) **ABSTRACT**

Providing persisting search folders within a computer that continuously identify data items having metadata matching a query of search criteria. A query of search criteria formulated via a graphical user interface is applied to a search filter to create a search folder. When the search folder is made live, the search filter is used to search one or more data stores for data items having metadata matching the query of search criteria. Upon finding these data items, the search folder is populated with a link to each data item having metadata matching the query of search criteria. The search folder detects when any new data items are added to a data store and when a change occurs to any metadata of data items previously stored in a data store. Upon detection, the search folder store links to matching new or changed data items.



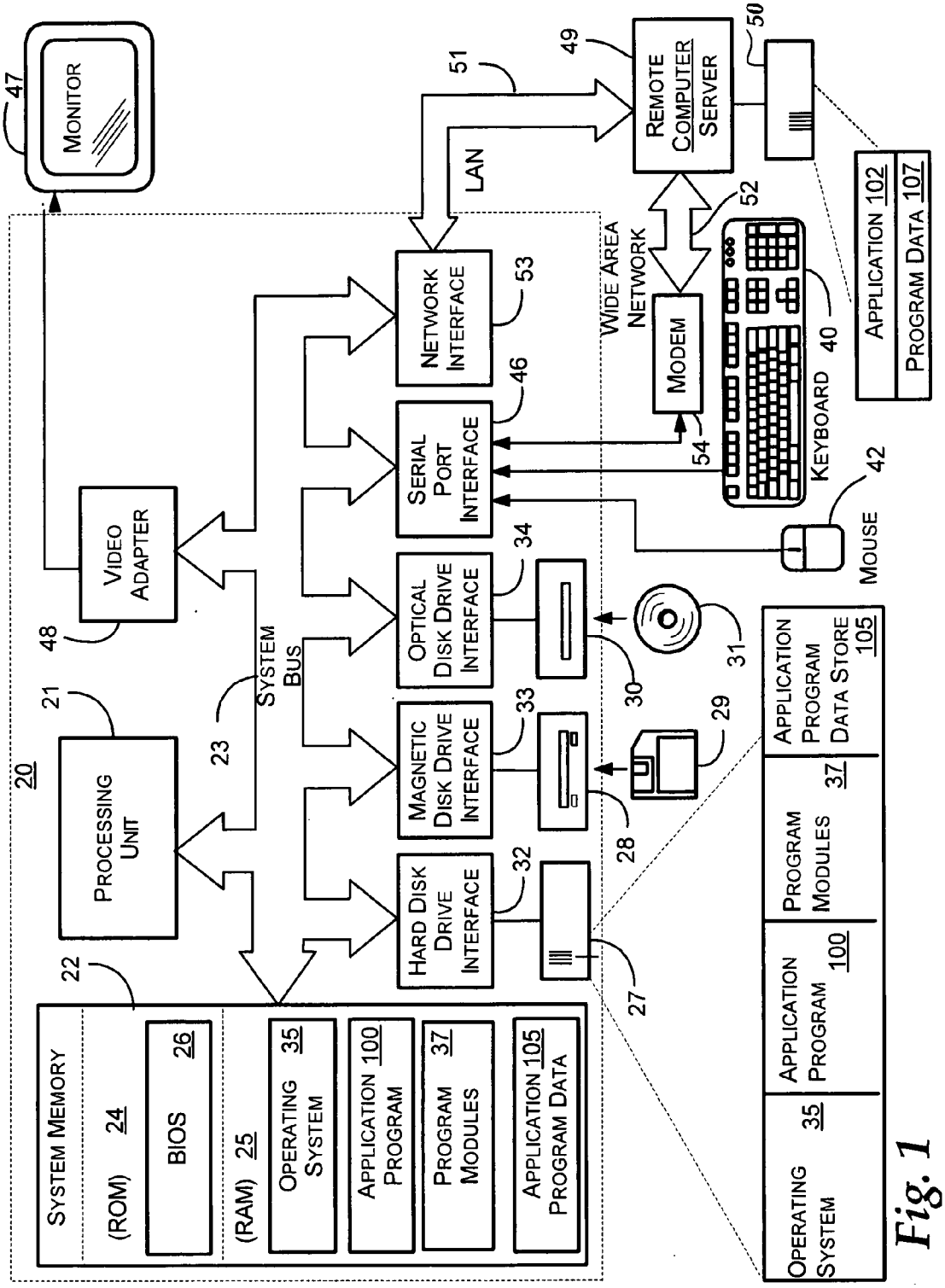

20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
37
40
42
46
47
48
49
50
51
52
53
54
100
102
105
107
MONITOR
VIDEO ADAPTER
PROCESSING UNIT
SYSTEM BUS
SYSTEM MEMORY
(ROM)
BIOS
(RAM)
OPERATING SYSTEM
APPLICATION PROGRAM
PROGRAM MODULES
APPLICATION PROGRAM DATA
HARD DISK DRIVE INTERFACE
MAGNETIC DISK DRIVE INTERFACE
OPTICAL DISK DRIVE INTERFACE
SERIAL PORT INTERFACE
NETWORK INTERFACE
LAN
WIDE AREA NETWORK
MODEM
REMOTE COMPUTER SERVER
KEYBOARD
MOUSE
APPLICATION PROGRAM DATA STORE
APPLICATION
PROGRAM DATA

Fig. 1

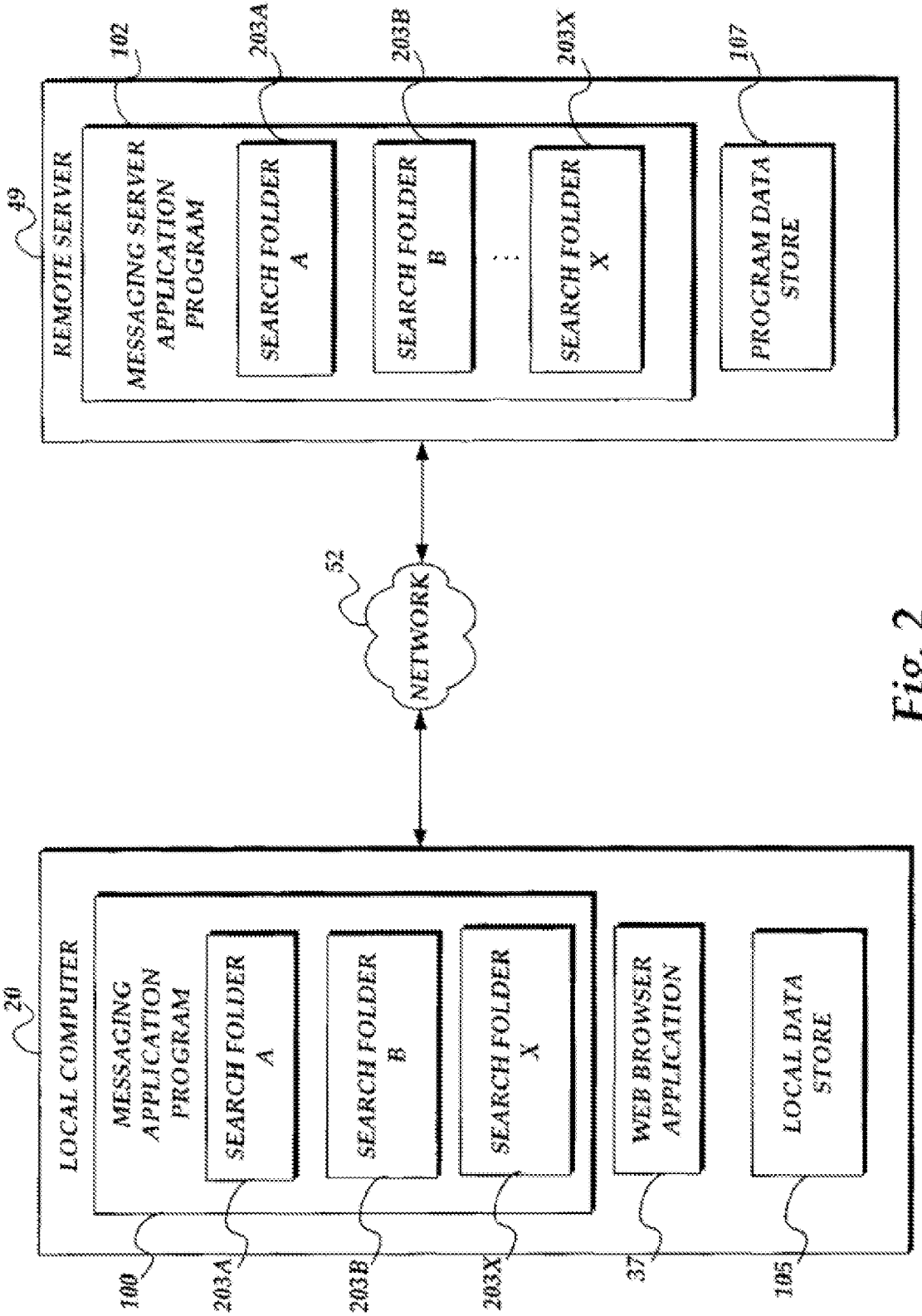

49
REMOTE SERVER
102
MESSAGING SERVER APPLICATION PROGRAM
203A
SEARCH FOLDER A
203B
SEARCH FOLDER B
203X
SEARCH FOLDER X
107
PROGRAM DATA STORE
52
NETWORK
20
LOCAL COMPUTER
100
MESSAGING APPLICATION PROGRAM
203A
SEARCH FOLDER A
203B
SEARCH FOLDER B
203X
SEARCH FOLDER X
37
WEB BROWSER APPLICATION
105
LOCAL DATA STORE

Fig. 2

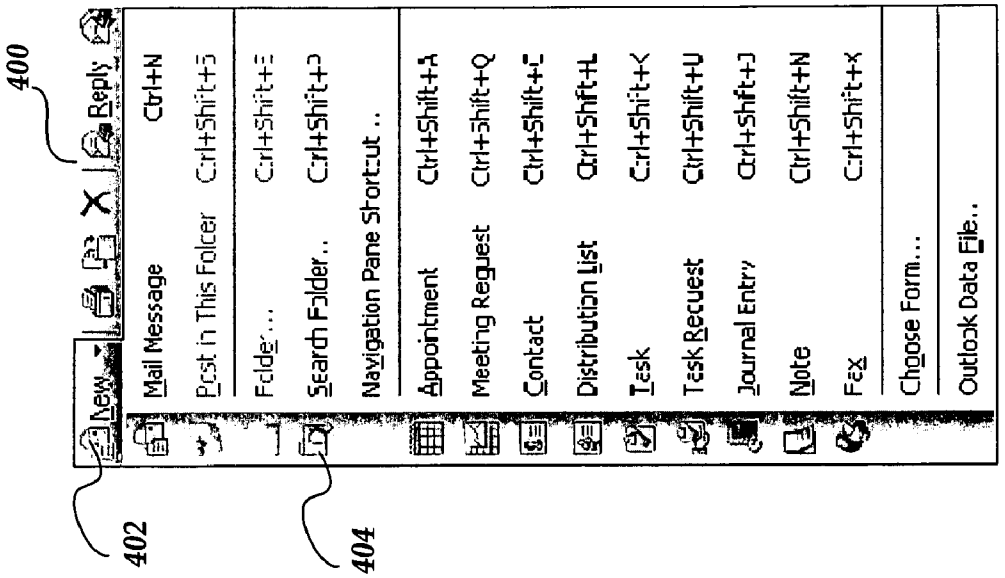

400
402
404
New
Reply
Mail Message Ctrl+N
Post in This Folder Ctrl+Shift+S
Folder... Ctrl+Shift+E
Search Folder... Ctrl+Shift+P
Navigation Pane Shortcut...
Appointment Ctrl+Shift+A
Meeting Request Ctrl+Shift+Q
Contact Ctrl+Shift+C
Distribution List Ctrl+Shift+L
Task Ctrl+Shift+K
Task Request Ctrl+Shift+U
Journal Entry Ctrl+Shift+J
Note Ctrl+Shift+N
Fax Ctrl+Shift+X
Choose Form...
Outlook Data File...

Fig. 4

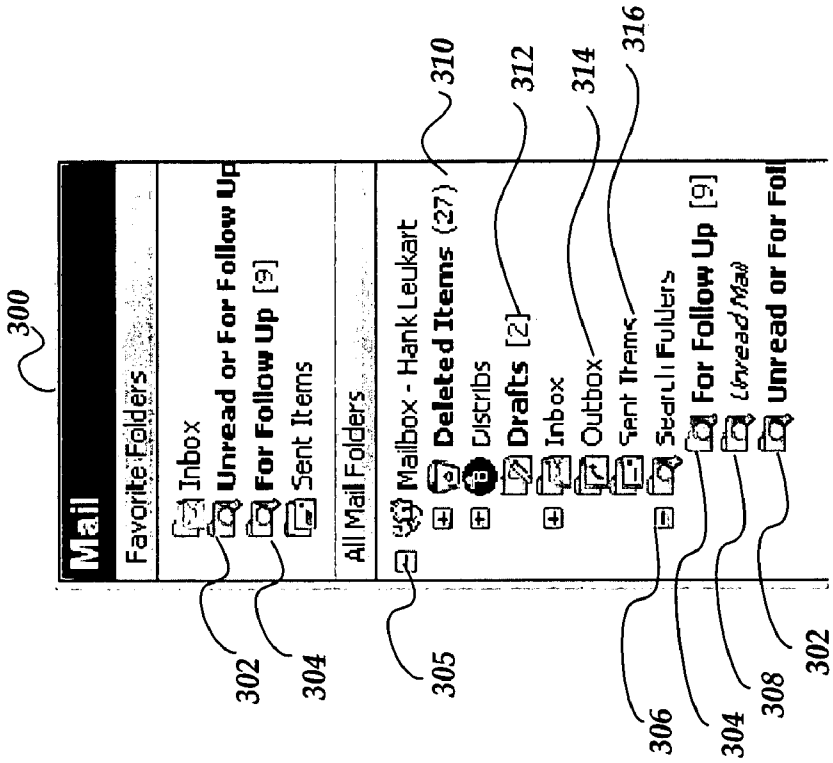

300
Mail
Favorite Folders
Inbox
Unread or For Follow Up
For Follow Up [9]
Sent Items
All Mail Folders
Mailbox - Hank Leukart
Deleted Items (27)
Distribs
Drafts [2]
Inbox
Outbox
Sent Items
Search Folders
For Follow Up [9]
(Unread Mail)
Unread or For Foll
302
304
305
306
308
310
312
314
316

Fig. 3

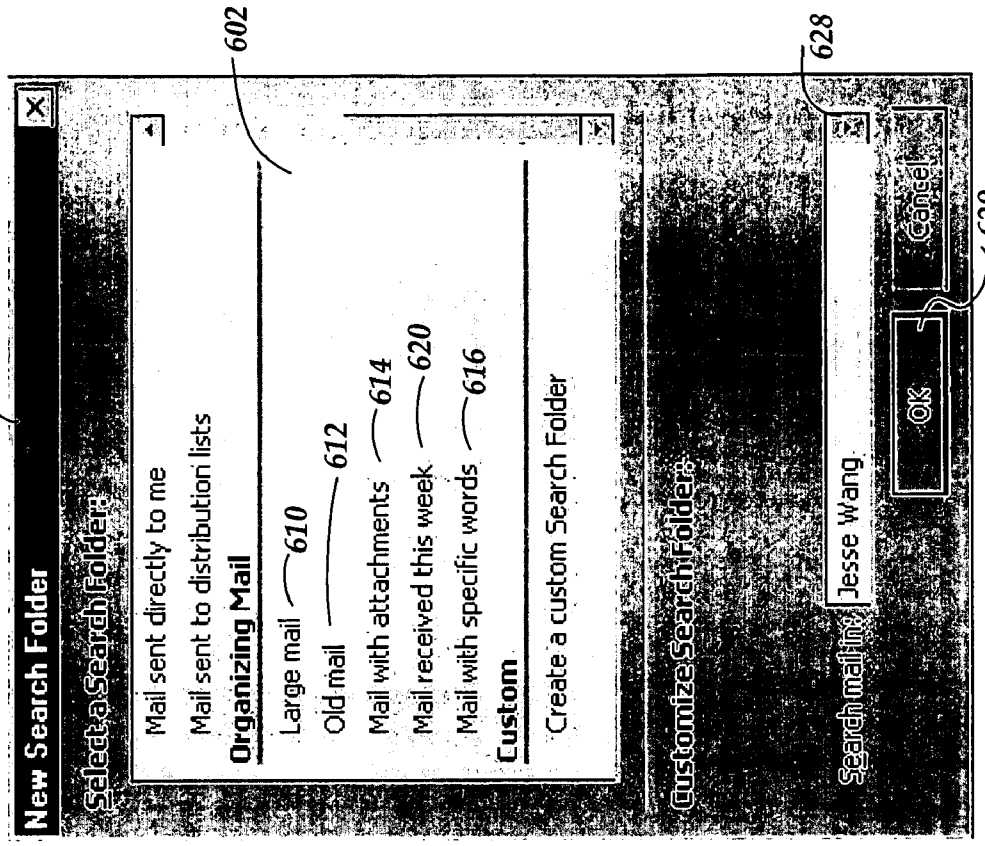

New Search Folder
Select a Search Folder:
Mail sent directly to me
Mail sent to distribution lists
Organizing Mail
Large mail
Old mail
Mail with attachments
Mail received this week
Mail with specific words
Custom
Create a custom Search Folder
Customize Search Folder:
Search mail in:
Jesse Wang
OK
Cancel
600
602
610
612
614
616
620
628
629

Fig. 6

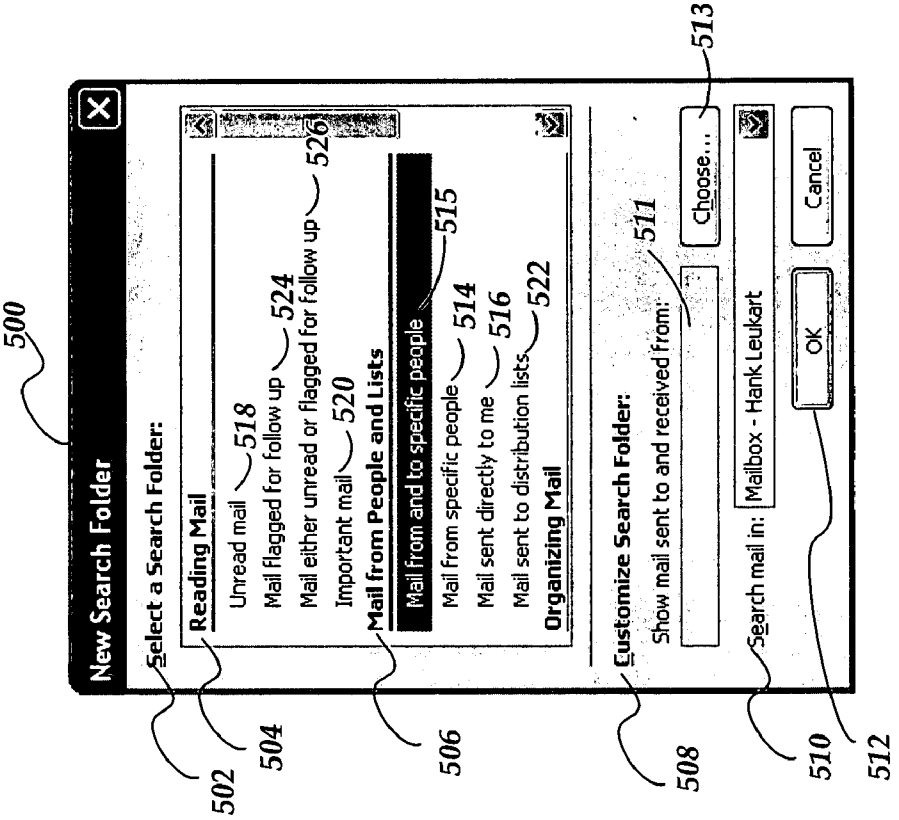

New Search Folder
Select a Search Folder:
Reading Mail
Unread mail
Mail flagged for follow up
Mail either unread or flagged for follow up
Important mail
Mail from People and Lists
Mail from and to specific people
Mail from specific people
Mail sent directly to me
Mail sent to distribution lists
Organizing Mail
Customize Search Folder:
Show mail sent to and received from:
Choose...
Search mail in:
Mailbox - Hank Leukart
OK
Cancel
500
502
504
506
508
510
512
513
511
515
514
516
522
524
526
518
520

Fig. 5

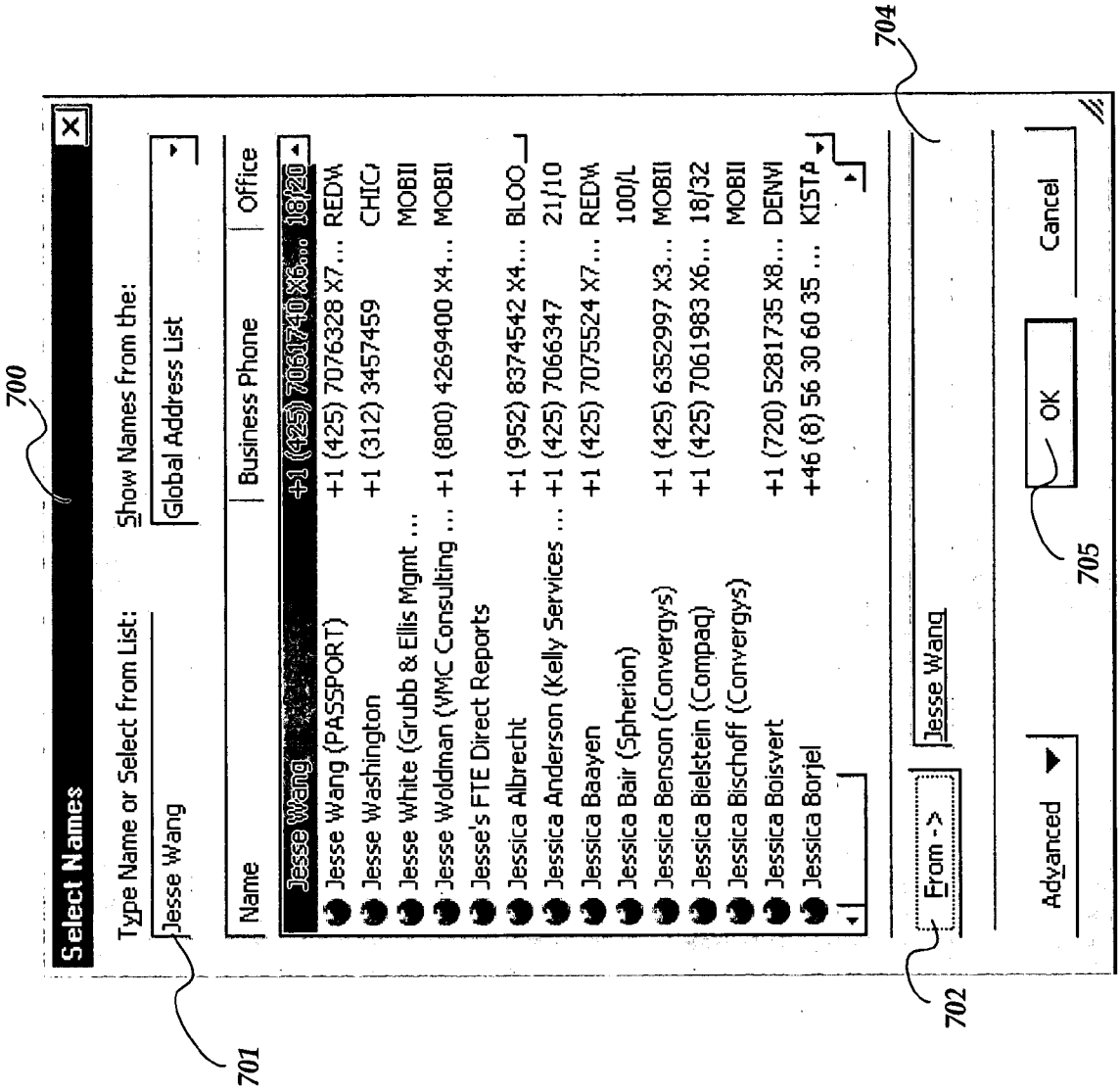

700
Select Names
Type Name or Select from List:
Jesse Wang
Show Names from the:
Global Address List
Name
Business Phone
Office
Jesse Wang
+1 (425) 7061740 X6...
18/20
Jesse Wang (PASSPORT)
+1 (425) 7076328 X7...
REDW
Jesse Washington
+1 (312) 3457459
CHIC
Jesse White (Grubb & Ellis Mgmt ...
MOBII
Jesse Woldman (WMC Consulting ...
+1 (800) 4269400 X4...
MOBII
Jesse's FTE Direct Reports
Jessica Albrecht
+1 (952) 8374542 X4...
BLOO
Jessica Anderson (Kelly Services ...
+1 (425) 7066347
21/10
Jessica Baayen
+1 (425) 7075524 X7...
REDW
Jessica Bair (Spherion)
100/L
Jessica Benson (Convergys)
+1 (425) 6352997 X3...
MOBII
Jessica Bielstein (Compaq)
+1 (425) 7061983 X6...
18/32
Jessica Bischoff (Convergys)
MOBII
Jessica Boisvert
+1 (720) 5281735 X8...
DENW
Jessica Borjel
+46 (8) 56 30 60 35 ...
KISTA
From ->
Jesse Wang
Advanced
OK
Cancel
701
702
704
705

Fig. 7

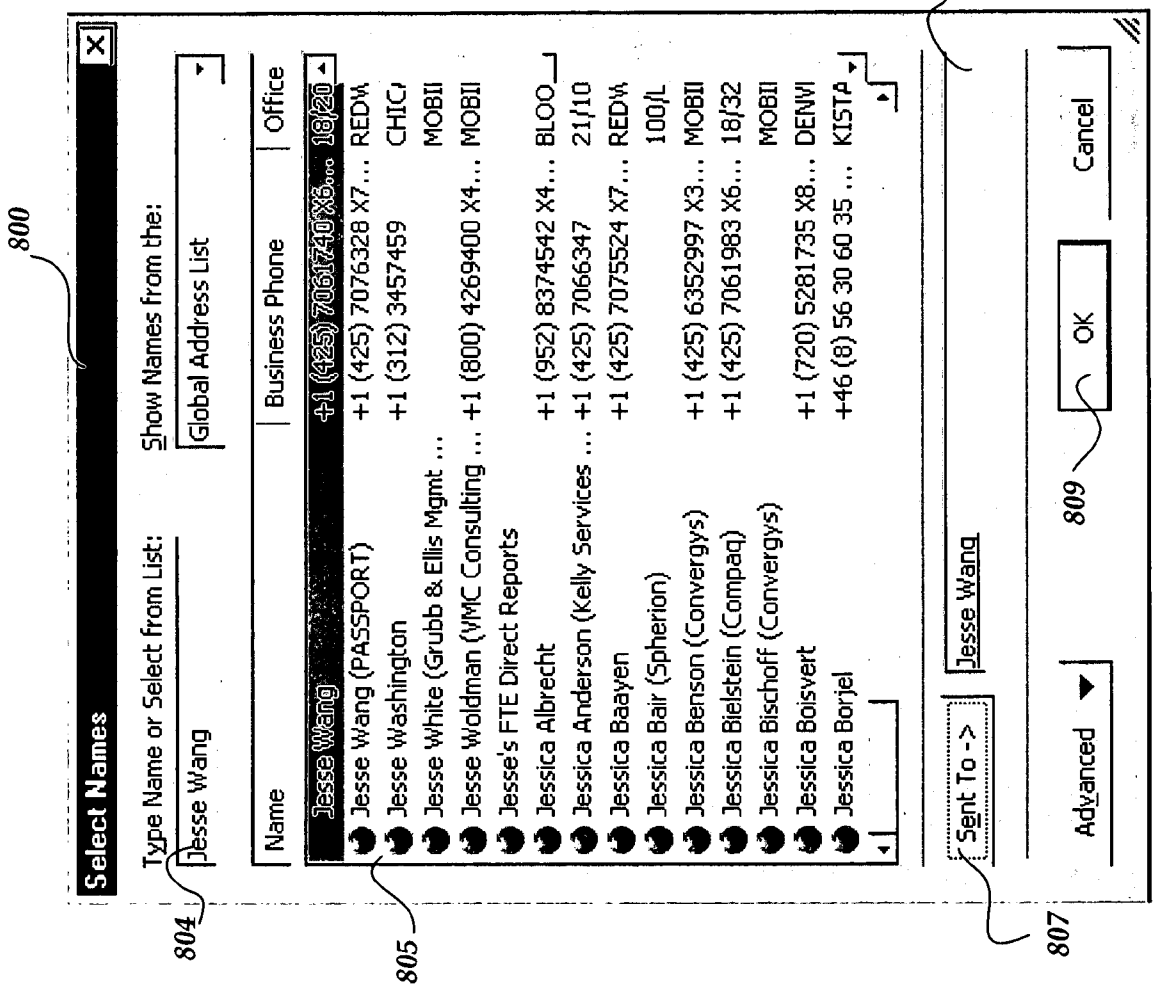

800
Select Names
Type Name or Select from List:
Show Names from the:
Jesse Wang
Global Address List
804
Name
Business Phone
Office
Jesse Wang +1 (425) 7061740 X6... 18/20
Jesse Wang (PASSPORT) +1 (425) 7076328 X7... REDW
Jesse Washington +1 (312) 3457459 CHIC
Jesse White (Grubb & Ellis Mgmt ... MOBII
Jesse Woldman (WMC Consulting ... +1 (800) 4269400 X4... MOBII
Jesse's FTE Direct Reports
Jessica Albrecht +1 (952) 8374542 X4... BLOO
Jessica Anderson (Kelly Services ... +1 (425) 7066347 21/10
Jessica Baayen +1 (425) 7075524 X7... REDW
Jessica Bair (Spherion) 100/L
Jessica Benson (Convergys) +1 (425) 6352997 X3... MOBII
Jessica Bielstein (Compaq) +1 (425) 7061983 X6... 18/32
Jessica Bischoff (Convergys) MOBII
Jessica Boisvert +1 (720) 5281735 X8... DENWI
Jessica Borjel +46 (8) 56 30 60 35 ... KISTA
805
Sent To ->
Jesse Wang
807
808
Advanced
OK
Cancel
809

Fig. 8

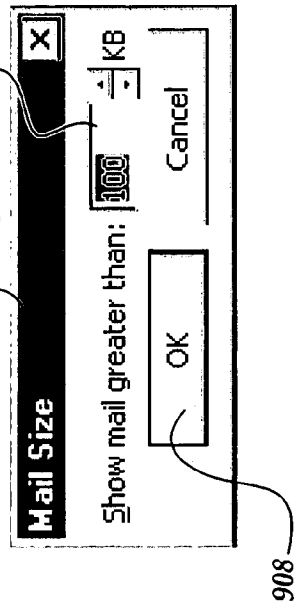

Mail Size
Show mail greater than: 100 KB
OK
Cancel
904
907
908

Fig. 9B

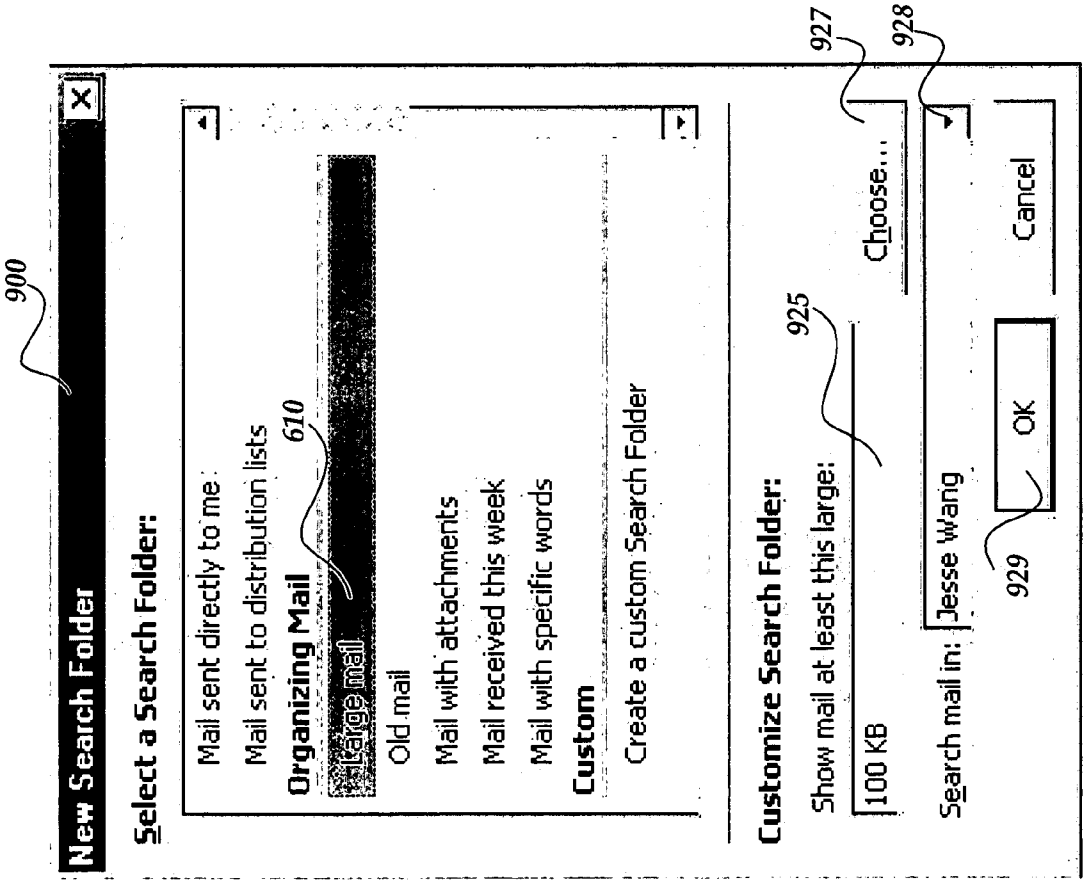

New Search Folder
Select a Search Folder:
Mail sent directly to me
Mail sent to distribution lists
Organizing Mail
Large mail
Old mail
Mail with attachments
Mail received this week
Mail with specific words
Custom
Create a custom Search Folder
Customize Search Folder:
Show mail at least this large:
100 KB
Choose...
Search mail in: Jesse Wang
OK
Cancel
900
610
925
927
928
929

Fig. 9A

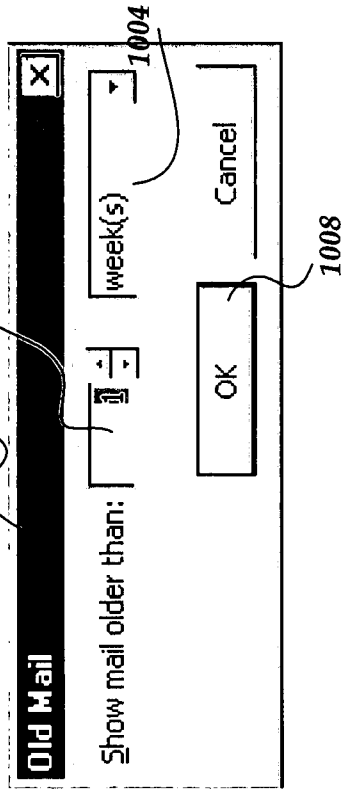


Fig. 10B

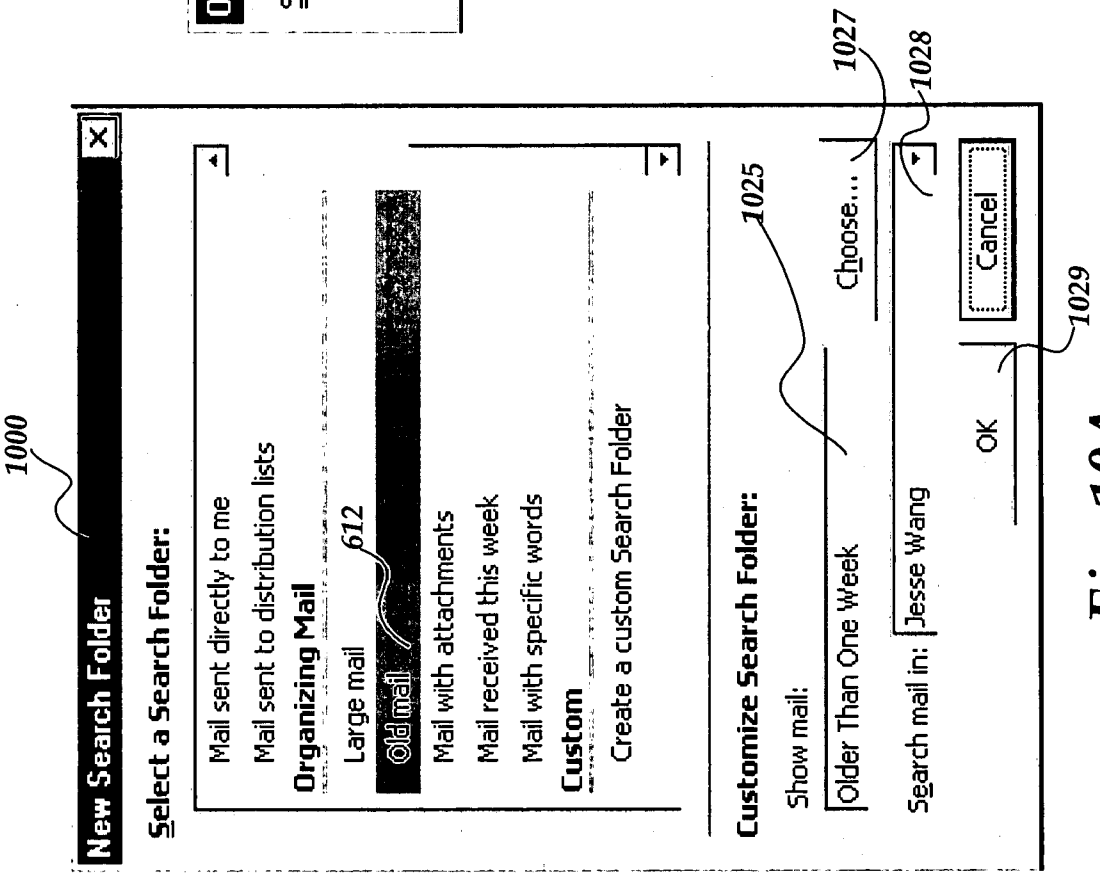


Fig. 10A

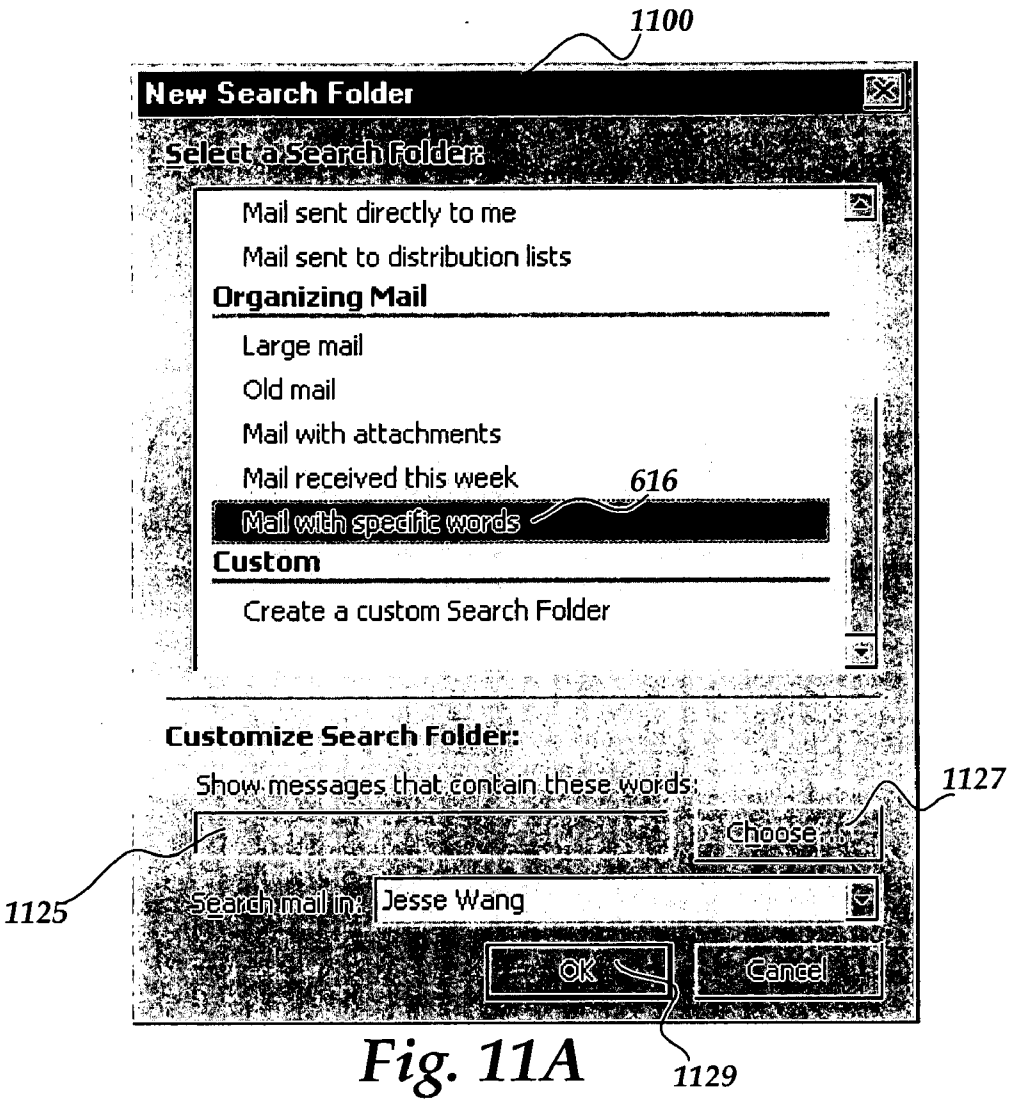


Fig. 11A

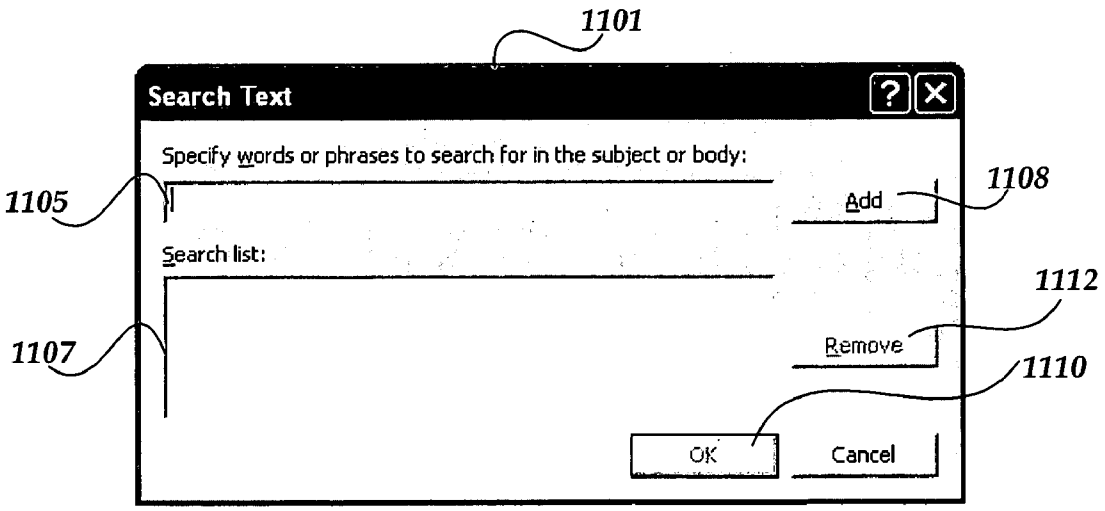


Fig. 11B

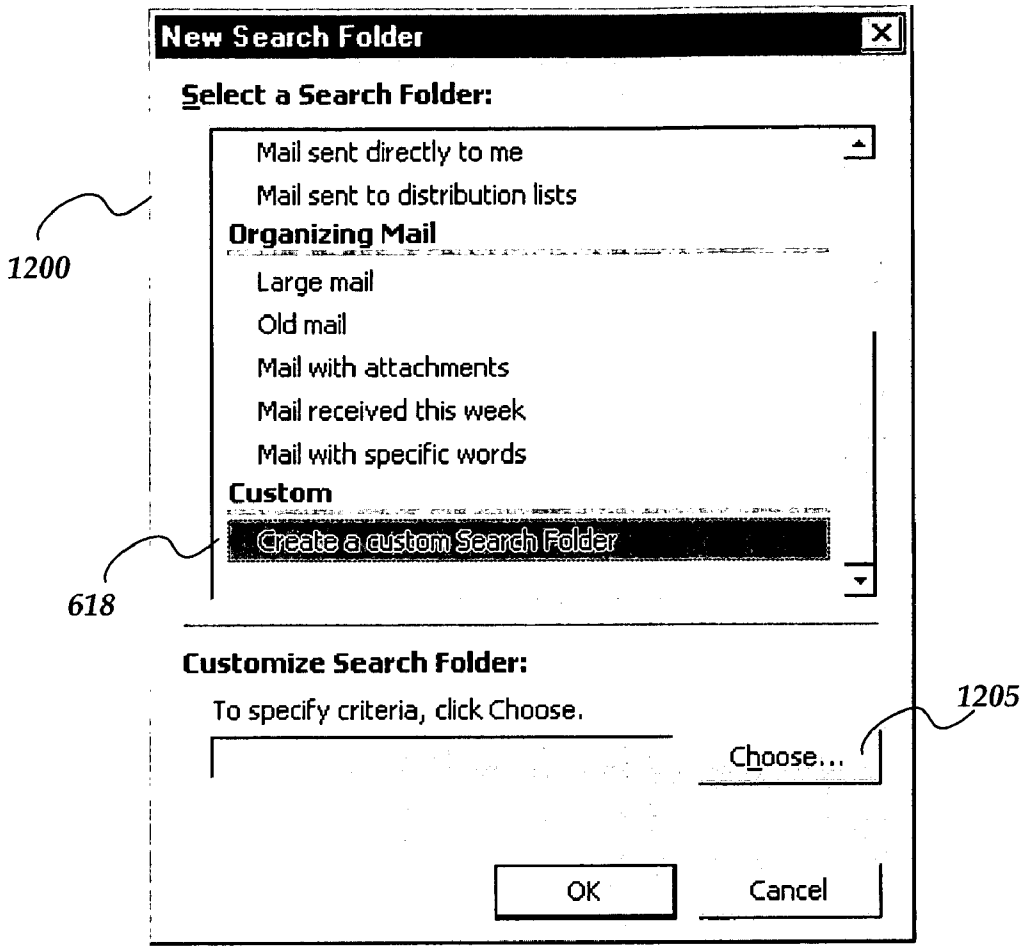


Fig. 12A

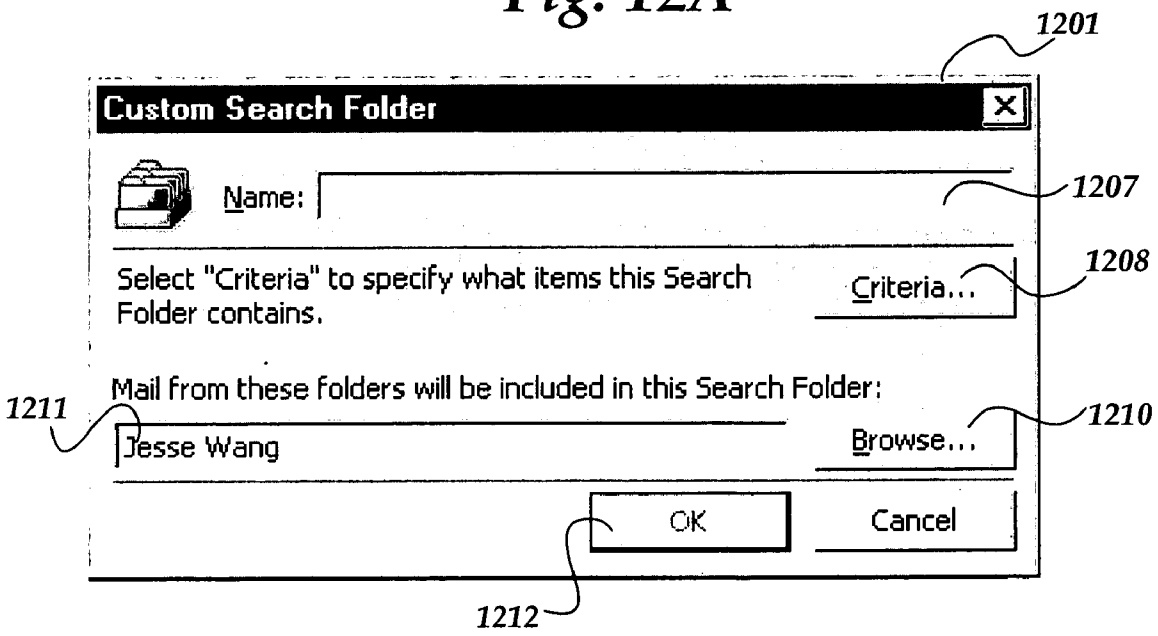


Fig. 12B

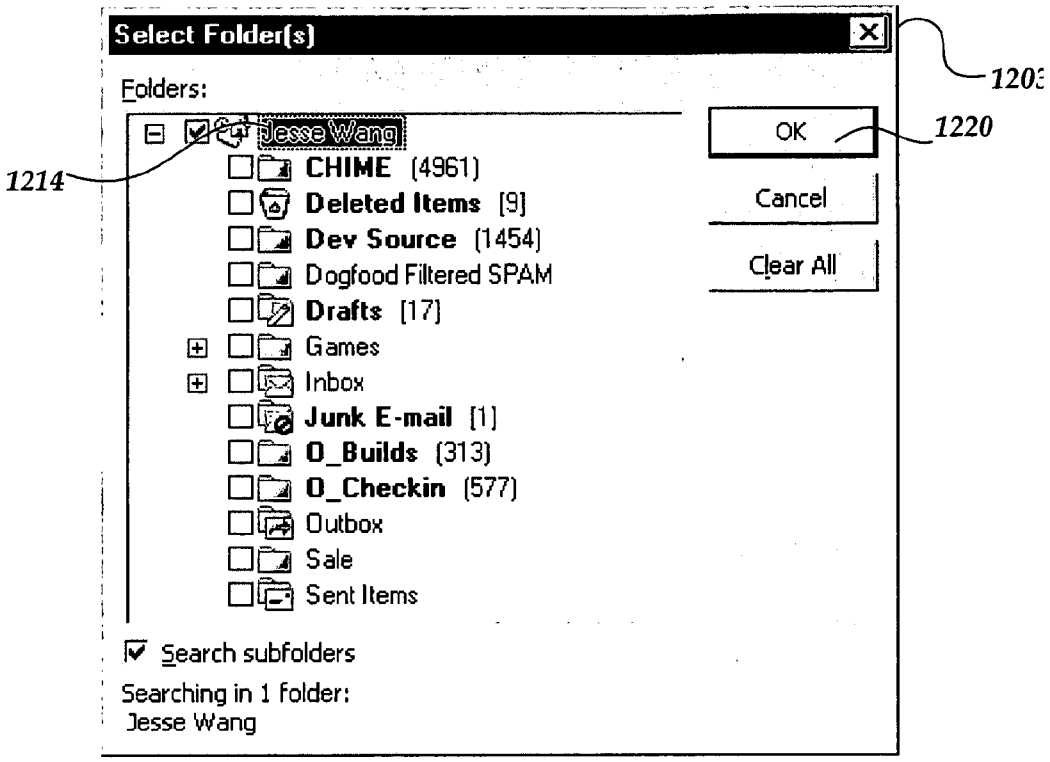


Fig. 12C

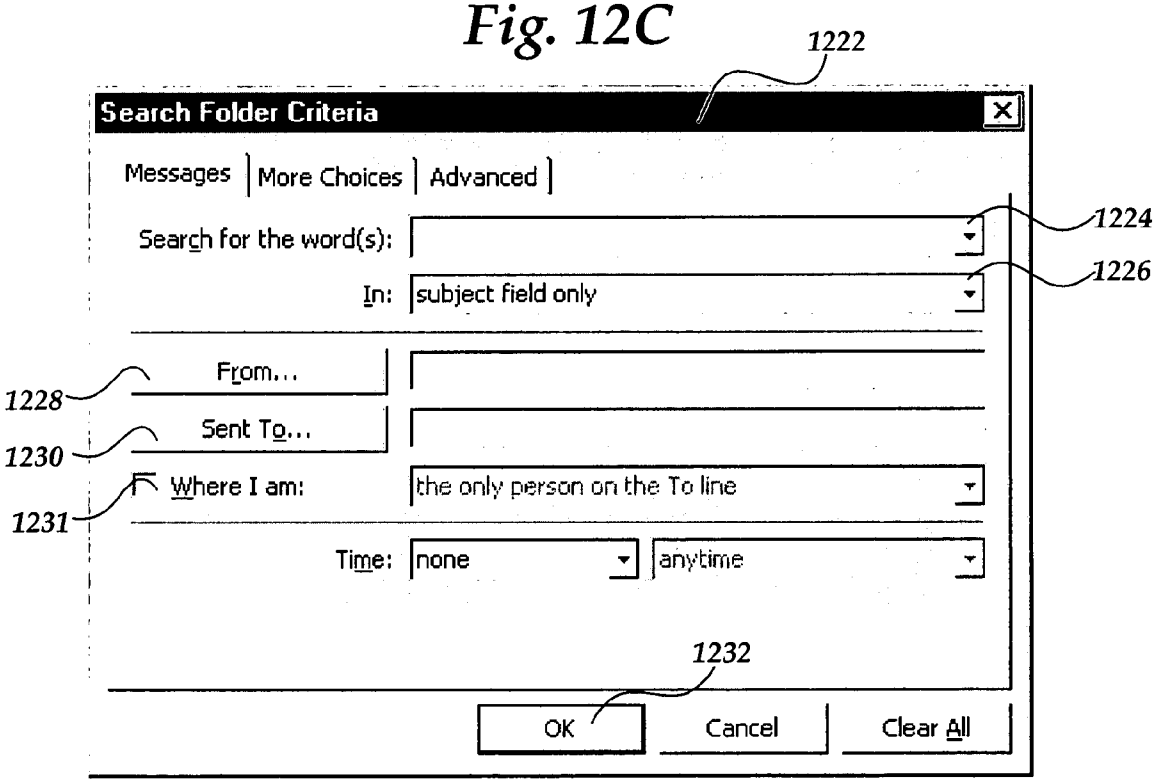


Fig. 12D

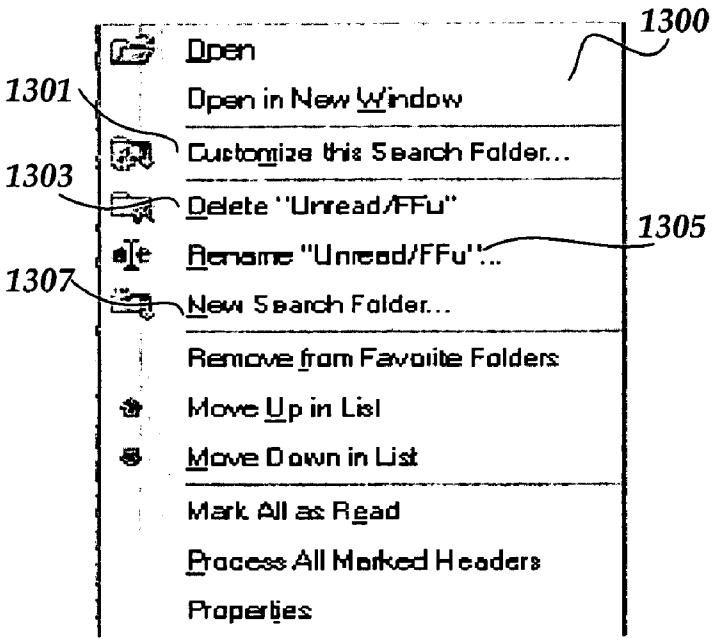

1300
1301
1303
1305
1307
Open
Open in New Window
Customize this Search Folder...
Delete "Unread/FFu"
Rename "Unread/FFu"...
New Search Folder...
Remove from Favorite Folders
Move Up in List
Move Down in List
Mark All as Read
Process All Marked Headers
Properties

Fig. 13

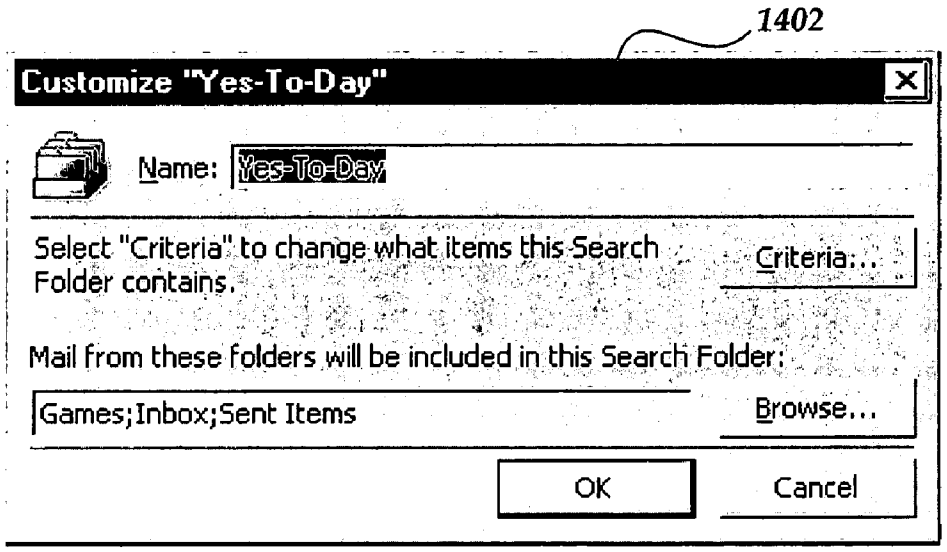

1402
Customize "Yes-To-Day"
Name: Yes-To-Day
Select "Criteria" to change what items this Search Folder contains.
Criteria...
Mail from these folders will be included in this Search Folder:
Games;Inbox;Sent Items
Browse...
OK
Cancel

Fig. 14

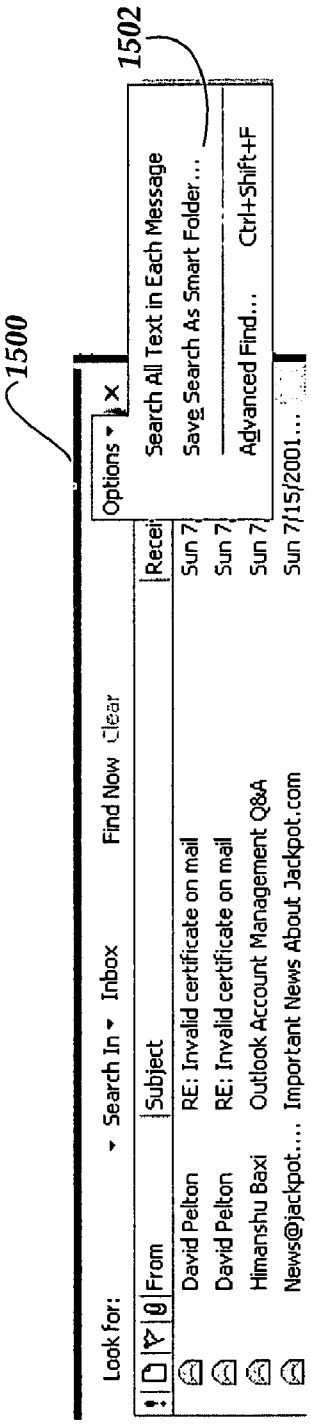


Fig. 15A

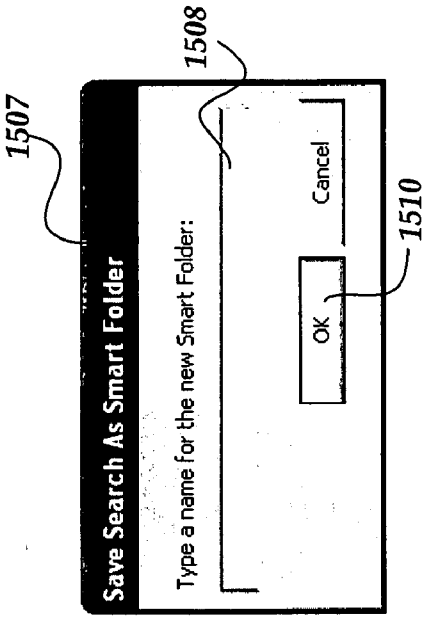


Fig. 15B

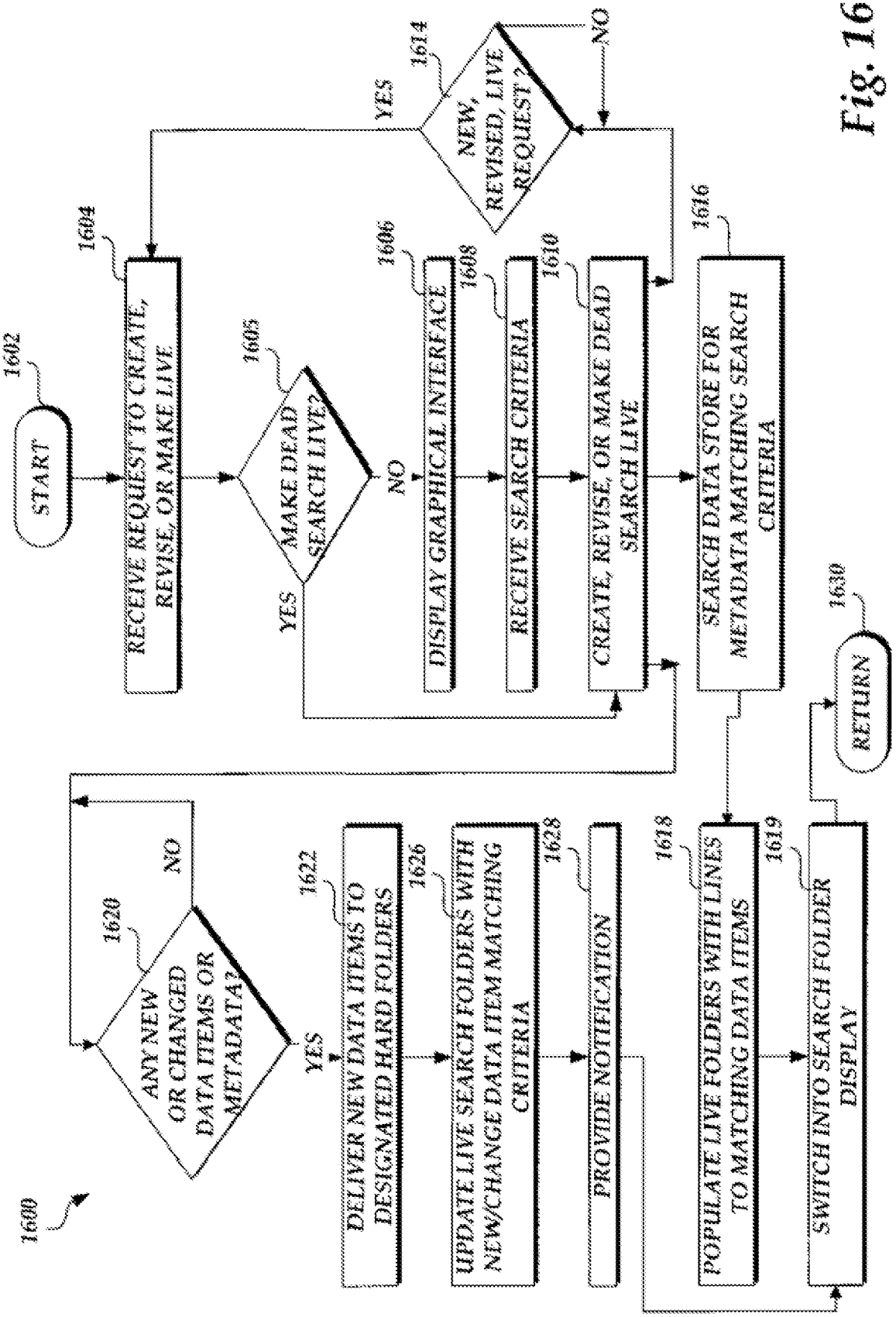

1600
1602
START
1604
RECEIVE REQUEST TO CREATE, REVISE, OR MAKE LIVE
1605
MAKE DEAD SEARCH LIVE?
YES
NO
1606
DISPLAY GRAPHICAL INTERFACE
1608
RECEIVE SEARCH CRITERIA
1610
CREATE, REVISE, OR MAKE DEAD SEARCH LIVE
1614
NEW, REVISED, LIVE REQUEST?
YES
NO
1616
SEARCH DATA STORE FOR METADATA MATCHING SEARCH CRITERIA
1620
ANY NEW OR CHANGED DATA ITEMS OR METADATA?
YES
NO
1622
DELIVER NEW DATA ITEMS TO DESIGNATED HARD FOLDERS
1626
UPDATE LIVE SEARCH FOLDERS WITH NEW/CHANGE DATA ITEM MATCHING CRITERIA
1628
PROVIDE NOTIFICATION
1618
POPULATE LIVE FOLDERS WITH LINES TO MATCHING DATA ITEMS
1619
SWITCH INTO SEARCH FOLDER DISPLAY
1630
RETURN

Fig. 16

METHODS, SYSTEMS, AND COMPUTER-READABLE MEDIUMS FOR PROVIDING PERSISTING AND CONTINUOUSLY UPDATING SEARCH FOLDERS

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application is a continuation of co-pending U.S. application Ser. No. 10/741,407 entitled "Methods, Systems, and Computer-Readable Mediums for Providing Persisting and Continuously Updating Search Folders" filed Dec. 19, 2003, which claims priority to U.S. Provisional Application No. 60/484,437 entitled "Combined Outlook Bar and Folder List; Automatic Grouping; Adaptive Multi-Line View; Threaded View with Easier Access to All New Email; Search Folders" filed on Jul. 1, 2003, both of which are incorporated herein by reference.

FIELD OF THE INVENTION

[0002] The present invention relates to the field of routing electronic messages. More particularly the present invention relates to the storage and retrieval of electronic messages through links stored in search folders.

BACKGROUND

[0003] Among the most useful developments in modern times is the use of electronic mail or messages (email) for efficient correspondence around the world. As numerous email items accumulate in the inbox or data store for a user, attempts are made to sort the items by priority, follow-up, alphabetically, or by filing the emails in folders for future reference or follow-up. Manually filing emails in folders can be an undesirable and costly activity yielding fruitless results. Frequently emails sought for retrieval cannot be found easily or at all because a user may not remember where the email is filed or located.

[0004] Previous email applications have the capability to auto-file and search for email items meeting user specified search criteria, however auto-file rules scatter a user's messages to different folders before they have been viewed. Furthermore, the search filters have complicated dialogs and the searches are time consuming and costly when run repeatedly. This process of sorting, filing, and retrieving emails is labor intensive and time consuming thereby hindering the utility of existing email applications. This problem is further complicated by the incapability of email items to exist in more than one folder without copying the item to multiple folders. When email items are copied to multiple folders and one copy is updated or deleted the other copies are stored in their original form thereby leading to confusion and a waste of memory.

[0005] Accordingly, there is a need for a method, system, and computer-readable medium for providing persisting and continuously updating search folders that allow for efficient, consistent, and user-friendly organization and reorganization of email items. It is with respect to these and other considerations that the present invention has been made.

SUMMARY

[0006] Embodiments of the present invention are directed to methods, systems, and computer-readable mediums for providing a persisting search folder within a computer that continuously identifies data items that have metadata matching a query of search criteria. The data items may include emails, computer program files, electronic journal entries, electronic task lists, meeting requests, appointments, electronic contacts, and electronic notes. A search folder is created by applying a query of search criteria, selected or formulated via a graphical user interface, to a search filter. Once the search folder has been created, the search folder is made live by default or by a user requesting access by clicking on a search folder icon. When the search folder is made live, the search filter is used to populate the search folder by searching one more data stores for data items having metadata matching the query of search criteria. When these data items are identified, a link to each data item having matching metadata is stored in the search folder to populate the search folder. Links to the same data item may coexist in multiple search folders as long as the data item has metadata matching the queries of search criteria for each search folder.

[0007] According to other aspects of the present invention, upon detecting new data items added to a data store or a change to the metadata of data items previously stored in the data store, the search folder continuously applies the search filter to the new or changed data items. Upon identifying new or changed data items having metadata matching the query of search criteria for the search folder, the search folder is updated by storing links to these data items in the search folder. Also, upon identifying a previously stored data item having changed metadata that no longer matches the query of search criteria, the search filter removes the link to these data items from the search folder. This persistent application of a search filter allows for a continuous update to the contents of a live search folder.

[0008] According to still other aspects of the present invention when a user requests access to the search folder, each link stored in the search folder is displayed via the graphical user interface. The user may then select links from the display by clicking on a link to retrieve the data item matching the query of search criteria populating the search folder. Also, each search folder is represented by a search folder icon and a search folder title in the graphical user interface displayed on the computer. When a search folder is made live, the text of the search folder title is changed from italic, representing that the search folder is dead, to non-italic representing that the search folder is live. Search folders that are created but remain dead are not populated and are thus, prevented from utilizing computer processor cycles to search and populate until being made live. Search filters of dead search folders are also prevented from being continuously applied to new electronic messages arriving and previously stored electronic messages having changed metadata.

[0009] According to another aspect of the present invention, queries of search criteria may be ready-made and selected by the user selecting a template via a graphical user interface listing templates. Each template represents a query of search criteria for a search folder that may be a ready-made query of search criteria or a ready-made query of search criteria having specified inputs. In the case of email data items, a specialized input may be the names of email senders or the memory size of an email. It should be appreciated that when multiple specified inputs are received in the query of search criteria, the multiple specified inputs

may be queried in an 'or' format or an 'and' format. Furthermore in the email context, in addition to having a link stored in the search folder, new emails having metadata matching a query of search criteria are also identified and delivered to an inbox of the user. It should also be appreciated that a search folder created on one client computer may roam with a profile of the user when the user logs on to a different client computer.

[0010] According to still other aspects a search may be conducted within the search folder. When the search within the search folder is stored as a new search folder, the new search folder contains links to emails having metadata matching the search criteria of at least two queries. The queries are combined in the new search folder thereby presenting at least two views of the data store via the new search folder. Additionally, emails may be moved from a current search folder to a hard folder in the data store. When emails are moved, the search filter still detects whether the email continues to have metadata matching the query of search criteria for the current search folder. In response to the email continuing to have metadata matching the query of search criteria, the current search folder retains a link to the email. It should also be appreciated that in response to the deletion of a link to an email from the search folder, the email and any links to the email are deleted from the data store by which the search folder was populated.

[0011] These and other features and advantages, which characterize the present invention, will be apparent from a reading of the following detailed description and a review of the associated drawings. It is to be understood that both the foregoing general description and the following detailed description are exemplary and explanatory only and are not restrictive of the invention as claimed.

BRIEF DESCRIPTION OF THE DRAWINGS

[0012] FIG. **1** is a block diagram showing the architecture of a personal or server computer that provides an illustrative environment for an embodiment of the present invention.

[0013] FIG. **2** is a simplified block diagram showing interaction between a local computer and a remote server computer in an embodiment of the present invention.

[0014] FIG. **3** is a computer screen display showing an illustrative folder tree in an email navigation pane including a persisting list of search folders available to a user for viewing according to an embodiment of the present invention.

[0015] FIG. **4** is a computer screen display showing an illustrative user interface menu for initiating the creation of a search folder according to an embodiment of the present invention.

[0016] FIG. **5** is a computer screen display showing an illustrative graphical user interface for selecting search folder templates that aid in the creation of search folders according to an embodiment of the present invention.

[0017] FIG. **6** is a computer screen display showing another view of the illustrative user interface of FIG. **5** for a different user selecting search folder templates that aid in the creation of search folders according to an embodiment of the present invention.

[0018] FIG. **7** is a computer screen display showing an illustrative user interface for selecting or inputting one or more names, email addresses, or distribution lists in a 'Mail from specific people and lists' search filter according to an embodiment of the present invention.

[0019] FIG. **8** is a computer screen display showing illustrative user interface for selecting or inputting one or more names, email addresses, or distribution lists in a 'Mail sent to a distribution list or person' search folder according to an embodiment of the present invention.

[0020] FIGS. **9**A-**9**B are computer screen displays showing illustrative user interfaces for creating a 'Large mail messages' search folder according to an embodiment of the present invention.

[0021] FIGS. **10**A-**10**B are computer screen displays showing illustrative user interfaces for creating an 'Old mail messages' search folder according to an embodiment of the present invention.

[0022] FIGS. **11**A-**11**B are computer screen displays showing illustrative user interfaces for creating a 'Mail with specific words' search folder according to an embodiment of the present invention.

[0023] FIGS. **12**A-**12**D are computer screen displays showing illustrative user interfaces for creating a custom search folder according to an embodiment of the present invention.

[0024] FIG. **13** is a computer screen display showing an illustrative user interface menu for manipulating the contents of smart folders according to an embodiment of the present invention.

[0025] FIG. **14** is a computer screen display showing the illustrative user interface of FIG. **12**B modified for changing a search folder according to an embodiment of the present invention.

[0026] FIGS. **15**A-**15**B are computer screen displays showing illustrative user interfaces for creating search folders from 'Find' and/or 'Advanced Find' search results according to an embodiment of the present invention.

[0027] FIG. **16** is an operational flow diagram illustrating a routine for creating and updating search folders according to an embodiment of the present invention.

DETAILED DESCRIPTION

[0028] As described briefly above, embodiments of the present invention are directed to methods, systems, and computer-readable mediums for providing persisting and continuously updating search folders. Search folders are also referred to as smart or virtual folders. In the following detailed description, references are made to the accompanying drawings that form a part hereof, and in which are shown by way of illustrations, specific embodiments or examples. These embodiments may be combined, other embodiments may be utilized, and structural changes may be made without departing from the spirit or scope of the present invention. The following detailed description is, therefore, not to be taken in a limiting sense and a scope of the present invention is defined by the appended claims and their equivalents.

[0029] Referring now to the drawings in which like numerals represent like elements throughout the several figures, aspects of the present invention and the exemplary operating environment will be described. FIG. **1** and the following discussion are intended to provide a brief, general description of a suitable computing environment in which the invention may be implemented. While the invention will be described in the general context of an application program that runs on an operating system in conjunction with a personal computer, those skilled in the art will recognize that the invention also may be implemented in combination with other program modules. Generally, program modules include routines, programs, components, data structures, etc. that perform particular tasks or implement particular abstract data types. Moreover, those skilled in the art will appreciate that the invention may be practiced with other computer system configurations, including hand-held devices, multiprocessor systems, microprocessor-based or programmable consumer electronics, cell phones, minicomputers, mainframe computers, and the like. The invention may also be practiced in distributed computing environments where tasks are performed by remote processing devices that are linked through a communications network. In a distributed computing environment, program modules may be located in both local and remote memory storage devices.

[0030] With reference to FIG. **1**, an exemplary system for implementing the invention includes a conventional personal or client computer **20**, including a processing unit **21**, a system memory **22**, and a system bus **23** that couples the system memory to the processing unit **21**. The system memory **22** includes read-only memory (ROM) **24** and random access memory (RAM) **25**. A basic input/output system **26** (BIOS), containing the basic routines that help to transfer information between elements within the personal computer **20**, such as during start-up, is stored in ROM **24**. The personal computer **20** further includes data stores such as a hard disk **27**, a magnetic disk drive **28**, e.g., to read from or write to a removable disk **29**, and an optical disk drive **30**, e.g., for reading a CD-ROM disk **31** or to read from or write to other optical media. The hard disk **27**, magnetic disk drive **28**, and optical disk drive **30** are connected to the system bus **23** by a hard disk drive interface **32**, a magnetic disk drive interface **33**, and an optical drive interface **34**, respectively. The drives and their associated computer-readable media provide non-volatile storage for the personal computer **20**. Although the description of computer-readable media above refers to a hard disk, a removable magnetic disk and a CD-ROM disk, it should be appreciated by those skilled in the art that other types of media which are readable by a computer, such as magnetic cassettes, flash memory cards, digital video disks, Bernoulli cartridges, and the like, may also be used in the exemplary operating environment.

[0031] By way of example, and not limitation, computer-readable media may comprise computer-storage media and communication media. Computer storage media includes volatile and non-volatile, removable and non-removable media implemented in any method or technology for storage of information such as computer-readable instructions, data structures, program modules or other data. Computer storage media includes, but is not limited to, RAM, ROM, EPROM, EEPROM, flash memory or other solid state memory technology, CD-ROM, DVD, or other optical storage, magnetic cassettes, magnetic tape, magnetic disk storage or other magnetic storage devices, or any other medium which can be used to store the desired information and which can be accessed by the computer.

[0032] Communication media typically embodies computer-readable instructions, data structures, program modules or other data in a modulated data signal such as carrier wave or other transport mechanism and includes any information delivery media. The term "modulated data signal" means a signal that has one or more of its characteristics set or changed in such a manner as to encode information in the signal. By way of example, and not limitation, communication media includes wired media such as a wired network or direct-wired connection, and wireless media such as acoustic, RF, infrared, and other wireless media. Combinations of any of the above should also be included within the scope of computer-readable media. Computer-readable media may also be referred to as computer program product.

[0033] A number of program modules may be stored in the drives and RAM **25**, including an operating system **35**, one or more application programs **100**, such as an electronic messaging application program, a web browser application program module **37**, such as INTERNET EXPLORER from MICROSOFT CORPORATION of Redmond, Wash., (or other type of program module), application program data **107**, such as stored emails, and other program modules (not shown).

[0034] A user may enter commands and information into the personal computer **20** through a keyboard **40** and pointing device, such as a mouse **42**. Other input devices (not shown) may include a microphone, joystick, game pad, satellite dish, scanner, or the like. These and other input devices are often connected to the processing unit **21** through a serial port interface **46** that is coupled to the system bus, but may be connected by other interfaces, such as a game port or a universal serial bus (USB). A monitor **47** or other type of display device is also connected to the system bus **23** via an interface, such as a video adapter **48**. In addition to the monitor, personal computers typically include other peripheral output devices (not shown), such as speakers or printers.

[0035] The personal computer **20** may operate in a networked environment using logical connections to one or more remote computers, such as a remote computer **49**. The remote computer **49** may be a server, a router, a peer device or other common network node, and typically includes many or all of the elements described relative to the personal computer **20**, although only a memory storage device **50** has been illustrated in FIG. **1**. The logical connections depicted in FIG. **1** include a local area network (LAN) **51** and a wide area network (WAN) **52**. Such networking environments are commonplace in offices, enterprise-wide computer networks, intranets and the Internet.

[0036] When used in a LAN networking environment, the personal computer **20** is connected to the LAN **51** through a network interface **53**. When used in a WAN networking environment, the personal computer **20** typically includes a modem **54** or other means for establishing communications over the WAN **52**, such as the Internet. The modem **54**, which may be internal or external, is connected to the system bus **23** via the serial port interface **46**. In a networked environment, program modules and data depicted relative to the personal computer **20**, or portions thereof, may be stored

in the remote memory storage device **50**. It will be appreciated that the network connections shown are exemplary and other means of establishing a communications link between the computers may be used.

[**0037**] FIG. **2** is a simplified block diagram showing interaction between a local client computer **20** and a remote server computer **49** in an embodiment of the present invention. The messaging application program **100**, such as MICROSOFT OUTLOOK from MICROSOFT CORPORATION of Redmond, Wash. and the messaging server application program **102** such as MICROSOFT EXCHANGE from MICROSOFT CORPORATION of Redmond, Wash., are computer software applications having sufficient computer executable instructions for supporting email messaging activity and for providing, populating, and updating search folders. According to an embodiment of the present invention, the search folders **203** may be created and stored on the client computer **20** and/or on the server computer **49**. The search folders **203** are virtual messaging application program interface (MAPI) folders that contain links to all data items that meet or match a specific query of search criteria with a data store **105** and/or a data store **107**. The data store **105** contains a cached version of data items stored in the data store **107** and associated with a user of the client computer **20**, such as in MICROSOFT OUTLOOK offline files and offline personal folders from MICROSOFT CORPORATION of Redmond, Wash. Thus, search folders may access either or both data stores **105** and **107** to conduct populating queries.

[**0038**] For example, in an offline scenario a search folder **203**A may be created on the client computer **20**. In response to a user seeking access to the search folder **203**A, a search filter will automatically populate the search folder **203**A by sorting the data items in the local data store **105**. The data items, such as emails, are sorted based on contents or metadata found in one or more of the data item fields. Links to the data items matching the query of search criteria applied to the search filter for the search folder **203**A will populate the search folder **203**A. Additionally, the search filter continues to filter links to any new or changed data items matching the search criteria into the search folder **203**A.

[**0039**] Alternatively, in an online scenario, the same search folder **203**A may be created on the remote server computer **49**. When a user requests access to the search folder **203**A via the client computer **20**, a search filter for search folder **203**A sorts the data items stored in the data store **107** that are associated with the user. Links to the data items matching the search query automatically populate the search folder **203**A. Although the user interfaces with the search folder **203**A from the client computer **20**, the searching and updating takes place on the remote server computer **49**.

[**0040**] FIG. **3** is a computer screen display **300** (hereinafter display **300**) showing an illustrative folder tree in an email navigation pane including a list of search folders available to a user for viewing according to an embodiment of the present invention. A user may view and navigate through a current search folder inventory from the display **300**. A section for favorite or frequently accessed folders may include search folders. For instance, both an 'Unread or For Follow Up' search folder **302**, containing links to emails marked as unread or marked for follow up, and a 'For Follow Up' search folder **304** are displayed in the 'Favorite Folders' section of the display **300** and in the 'All Mail Folders' section of the display **300**.

[**0041**] As shown in FIG. **3**, each search folder has a distinctive icon and a title that identifies the type, contents, and status of the folder. For instance, the 'For Follow up' search folder **304**, containing links to emails marked for follow up, has the distinctive search folder icon and the title is in a bold non-italic text indicating that the folder is live and populated with links to emails of the user marked for follow up. The number nine (9) next to the title may indicate the number of unread links in the search folder **304** or the number of links stored in the search folder **304**. A main search folder listing **306** is available inside the folder tree of a mailbox **305** belonging to a user. Opening the main search folder listing **306**, gives a user access to a list of all the search folders created in the user's email profile. It should be appreciated that the search folders listed in a user's profile roam with the user when the user logs on to a different client computer.

[**0042**] Search folders with italic titles, such as the 'Unread Mail' search folder **308**, are created but inactive or dead because a user has not requested access to view the contents of the search folder. A created search folder is made live by a request for access to its contents by clicking on the icon. After the search folder is made live the folder is populated and the title text is changed to non-italic text, in this case bold. Bold text may indicate that there are unread contents in the search folder or that there are contents in the search folder. When links to new or changed data items arrive at the search folder the distinctive search folder icon animates and the quantity of unread data items or data items in the folder increments as notification to the user.

[**0043**] FIG. **4** is a computer screen display **400** showing an illustrative user interface menu for initiating the creation of a search folder according to an embodiment of the present invention. A user can create a search folder by selecting the menu commands File, New **402**, and search folder **404**. In the alternative, a search folder may be created by saving an 'Advanced Find' as a search folder or from a context menu on an existing search folder. Additional details regarding the creation of search folders will be described below with respect to FIGS. **14**A and **15**A-B.

[**0044**] FIG. **5** is a computer screen display showing an illustrative graphical user interface **500** for selecting search folder templates that aid in the creation of search folders according to an embodiment of the present invention. The user interface **500** is displayed in response to a user making a request to create a search folder as described in FIG. **4**. Instead of displaying a complicated search filter to the user, a set of easy, ready-made templates are displayed to help the user set up search folders for the most common data items (emails) a user may want to view. The search folder templates may be sorted within the user interface **500** by category. One category may be a 'Reading Mail' category **502** that includes search folders for emails especially marked for reading, importance, or follow up. For instance, when the 'Unread Mail' template **518** is selected by a user the messaging application creates a search folder with a search filter that may query the data stores **105**/**55** for emails marked as unread and store links the those emails in the

search folder **308**. The search folder **308** is where all unread emails may be viewed in one place.

[**0045**] Similarly, when the 'For Follow Up' template **524** is selected, the messaging application **100/102** creates a search folder **304** that stores links to emails marked for follow up. Additionally, a 'Mail either unread or flagged for follow up' template **526** may be selected. This template combines the templates **518** and **524** in an 'OR' query to store both links to emails marked for follow up and links to emails marked as unread in the search folder **302**. Other reading mail templates include an 'Important mail' template **520** that creates a place to view all emails sent to the user and marked as important.

[**0046**] Another category may include a 'Mail from People and Lists' category **502** which includes templates that aid in the creation of search folders that query emails to and/or from specifically named people, email addresses, and/or distribution lists. The templates listed in this category may require additional information besides just selecting the template. For instance, the 'Mail from or to specific people' template **515**, also known as the 'Conversations with specific people' template **515**, requires an input of the names or email addresses of the one or more people desired in the conversation. The template **515** is highlighted in FIG. **5** as an indication of being selected. The 'Choose' button **513**, the edit box **511** and the static text above the edit box **511** are shown or hidden depending on the selected template. The static text above the edit box **511** is different for every template. The 'Choose' button **513** is the same for all templates but retrieve varied dialog screens for each template.

[**0047**] Referring back to template **515**, when the 'Choose' button **513** is selected to input or change the necessary information that formulates the query that will eventually appear in the edit box **511**, another user interface is presented to the user. Template **515** combines the 'Mail from specific people' template **514**, and the 'Mail sent to distribution lists' template **522** in an 'OR' query. Turning now to FIG. **7** a computer screen display showing an illustrative user interface **700** for selecting or inputting one or more names, email addresses, or distribution lists in a 'Mail from specific people and lists' search filter according to an embodiment of the present invention will be described. The user interface **700** is presented in response to selecting the 'Choose' button **513** after selecting templates **515** or **514**. The user may then select or input names, email addresses, and/or distribution lists in the name box **701**. Once a name, address, or list has been selected it is placed in the sender box **704** by clicking the 'From' button **702**. After the sender box **704** has been populated, the 'OK' button **705** may be selected to return to templates **514** or **515** in FIG. **5** where the edit box **511** is filled in with the selected names, email address, and distribution lists. When more than one name is selected the names are 'OR'ed together in the query and listed in the edit box **511**. Additionally, when a distribution list is selected the individual email addresses of the list are placed in the query and listed in the edit box **511**.

[**0048**] Turning now to FIG. **8** a computer screen display showing an illustrative user interface for selecting or inputting one or more names, email addresses, or distribution lists in a 'Mail sent to a distribution list or person' search folder according to an embodiment of the present invention will be described. The user interface **800** is presented in response to selecting the 'Choose' button **513** after selecting templates **515** or **522**. Template **522** creates a query for a search folder links to emails to a specific person, email address, or distribution list. Once the user interface **800** is presented, the user may then select or input names, email addresses, and/or distribution lists in the name box **804**. Once a name, address, or list has been selected it is placed in the sender box **808** by clicking the 'To' button **807**. After the sender box **808** has been populated, the 'OK' button **809** may be selected to return to templates **522** or **515** in FIG. **5** where the search criteria edit box **511** is filled in with the selected names, email address, and distribution lists. When more than one name, address, or list is selected they are 'OR'ed together in the query and listed in the search criteria edit box **511**.

[**0049**] The 'Mail sent directly to me' template **516** creates a search folder to view all email sent directly to the email address of the user. The search filter for template **516** queries all the emails to sort data items where the user's name or email address is in a 'TO' or copy 'CC' field. Because no additional information is required for the template **516** query, the 'OK' button **512** is automatically enabled for template **516**. The 'OK' button **512** may be grayed out until a template is selected and the necessary information has been filled out. In some templates, such as templates **516**, **518**, **524**, **526**, and **520**, no extra information is necessary and the 'OK' button **512** is enabled once the template is selected. Once the 'OK' button **512** is selected, a search folder is created based on the selected template criteria. It should be appreciated that the given titles of the search folders remain by default, however, as will be described below with respect to FIG. **13**, a user may change or rename a title of a search folder.

[**0050**] A customized search folder may be created by selecting the 'Customize Search Folder' link **508**, shown in FIG. **5**, which returns a user interface dialog that aids the user in formulating custom search query criteria. Additional information regarding custom search folders is described below with respect to FIGS. **12**A-**12**D. The 'Search mail in' dropdown **510** contains a list of the user's folder stores and has a default setting. The setting for dropdown **510** determines the folders that will be queried to populate the search folder created. Referring back to FIG. **3**, it should be appreciated that for functionality purposes the 'Drafts'**312**, 'Outbox'**314**, 'Sent Items'**316**, and 'Deleted Items'**310** folders, although part of the mailbox **305**, may be excluded from a query when appropriate. However in some cases, for example with templates **515** and **522**, the 'Sent Items' folder **316** may be included in the query.

[**0051**] FIG. **6** is a computer screen display showing another view of the illustrative user interface of FIG. **5** for a different user selecting search folder templates that aid in the creation of search folders according to an embodiment of the present invention. As described above with respect to FIG. **5**, a list of ready-made templates is presented to the user for selection. Other available ready-made templates include: a 'Large mail messages' template **610**, an 'Old mail messages' templates **612**, a 'Mail with attachments' template **614**, a 'Mail with specific words' template **616**, and a 'Mail received this week' template **620**. The user interface **600** operates in the same manner as the user interface **500** described above.

[0052] Turning now to FIGS. **9**A-**9**B, computer screen displays showing illustrative user interfaces for creating a 'Large mail messages' search folder according to an embodiment of the present invention will be described. The template **610** creates a search folder to view all email messages in the selected data store box **928** that are larger than the size specified in the criteria edit box **925**. The user interface **600** converts to the user interface **900**, shown in FIG. **9**A, upon selection of the template **610**. A default value for the size of the messages to sort in the query is displayed in the criteria edit box **925**. Thus, the 'OK' button **929** is enabled upon selection of the template **610**. When the user wants to change the default size, the 'Choose' button **927** is selected.

[0053] In response to selecting the 'Choose' button **927**, the user interface **904** (shown if FIG. **9**B) is displayed to the user. The interface **904** shows the value of memory size selected for the search criteria in the size entry box **907**. After the size has been input, the user may select the 'OK' button **908**, to return to the interface **900** where the edit criteria box **925** changes to reflect the size selected in the interface **904**.

[0054] Returning to FIG. **6**, in response to the selection of the 'Old mail' template **612**, the descriptive text below the template selection box **602** changes according to the template selected. Turning now to FIGS. **10**A-**10**B, computer screen displays showing illustrative user interfaces for creating an 'Old mail' search folder according to an embodiment of the present invention will be described. The template **612** creates a search folder to view all email messages in the selected data store **1028** that are older than the range of time specified in the criteria edit box **1025**. The user interface **600** converts to the user interface **1000**, shown in FIG. **10**A, upon selection of the template **612**. In order to specify the range of time, the 'Choose' button **1027** is selected.

[0055] In response to selecting the 'Choose' button **1027**, the user interface **1002** (shown if FIG. **10**B) is displayed to the user. The interface **1002** receives inputs for the range of time selected for the search criteria in the quantity entry box **1003** and the time entry dropdown **1004**. The time entry dropdown **1004** may include: 'at least X days old', at least X months old, and 'at least X week(s) old, where X is the value entered in the quantity entry box **1003**. After the range of time has been input, the user may select the 'OK' button **1008**, to return to the interface **1000** where the edit criteria box **1025** changes to reflect the range of time selected in the user interface **1002**. The 'OK' button **1029** may then be selected to create the 'Old mail' search folder.

[0056] Returning to FIG. **6**, the 'Mail with attachments' template **614** aids in the creation of a search folder where email messages in the selected data store having attachments may be accessed. Also the 'Mail received the same week' template **620** aids in the creation of a search folder where emails in the selected or default data store and received in the current week may be accessed. Because no additional information is required for the templates **614** and **620**, the 'OK' button **629** is enabled, upon selecting these templates.

[0057] In response to the selection of the 'Mail with specific words' template **616**, the descriptive text below the template selection box **602** changes according to the template selected. Turning now to FIGS. **11**A-**11**B, computer screen displays showing illustrative user interfaces for creating a 'Mail with specific words' search folder according to an embodiment of the present invention will be described. The template **616** creates a search folder to view all email messages in the selected data store **628** that have the specified words displayed the criteria edit box **1125** as metadata in the body or subject fields of the email. The user interface **600** converts to the user interface **1100**, shown in FIG. **11**A, upon selection of the template **616**. In order to specify the search criteria words, the 'Choose' button **1127** is selected.

[0058] In response to selecting the 'Choose' button **1127**, the user interface **1101** (shown if FIG. **11**B) is displayed to the user. The interface **1101** receives input for the specific words or phrases selected for the search criteria in the add entry box **1105**. Once an input has been entered, the 'Add' button **1108** is selected to add the entered words to the search list area **1107**. Once added to the search list area **1107**, words or phrases may be removed by highlighting the words or phrases and selecting the 'Remove' button **1112**. Once a desired search list has been added to the search list area **1107**, the user may select the 'OK' button **1110**, to return to the interface **1100** where the edit criteria box **1125** changes to reflect the words or phrases selected in the user interface **1101**. When more than one word or phrase is entered, they are 'OR'ed together in the query. The 'OK' button **1129** may then be selected to create a 'Mail with specific words' search folder.

[0059] As described briefly above with respect to FIG. **5**, a customized search folder may be created by selecting the 'Customize Search Folder' link **508** or the template **618** of FIG. **6** which returns a user interface dialog that aids the user in formulating custom search query criteria. When the template **618** is selected the 'Custom Search Folder' dialog shown in FIGS. **12**A-**12**D becomes accessible. FIGS. **12**A-**12**D are computer screen displays showing illustrative user interfaces for creating custom search folders according to an embodiment of the present invention. The user interface **600** becomes the user interface **1200** upon selecting the template **618**. Upon selecting the choose button **1205**, the user interface **1201** appears.

[0060] The 'Custom Search Folder' user interface **1201** shown in FIG. **12**B is utilized to formulate custom queries to populate custom search folders. The 'Name edit' box **1207** is operative to receive an input naming the custom search folder. When the user selects the 'Browse' button **1210**, a 'Folder selection' user interface **1203**, shown in FIG. **12**C, is presented. The user interface **1203** facilitates the choice of data store folders to include in the query of search criteria displayed in the 'Folder selection' box **1211** shown in FIG. **12**B. As shown in the 'Folder selection' box **1211**, the selected folder chosen in the interface **1203** a user's folder **1214**. It should be appreciated that folders without the distinctive search folder icon are 'hard' folders that contain the actual emails or copies of emails and not simply a link to the actual email as is the case for search folders.

[0061] When the user selects the 'Criteria' button **1208**, shown in FIG. **12**B, the 'Search folder criteria' user interface **1222**, shown if FIG. **12**D, is presented to allow the user to formulate the criteria for the custom search folder. The user may select and input various criteria for the custom search folder including specific search words in a particular field of the email as illustrated with dropdowns **1224** and **1226**.

Custom queries may also include names, email addresses, and distribution lists queried in the 'From' and 'To' fields of the emails as illustrated by the 'From' input **1228** and the 'Sent To' input **1230**. The user may also include specifies concerning where and how their name is located in the queried emails, as illustrate by check box **1231**. After entering the criteria, the user may select the 'OK' button **1232** to return to the 'Custom Search folder' interface **1201** shown in FIG. **12**B. Once the user specifies a name for the custom folder and the criteria, a click of the 'OK' button **1212** returns the user to the 'New Search Folder' user interface **600** shown in FIG. **6**. When the user selects or clicks the 'OK' button **612** in the custom folder dialog, the custom search folder is created and added to the list of search folders described with respect to FIG. **3**.

[**0062**] FIG. **13** is a computer screen display showing an illustrative user interface context menu **1300** for manipulating the context of smart folders according to an embodiment of the present invention. When a user right-clicks on a search folder, the user interface context menu **1300** is displayed. As shown in the menu, the current name of the search folder is 'Unread/FFu'. By selecting the 'delete' menu function **1303**, a user may delete the search folder. When a search folder is deleted, the underlying or source emails are not deleted, just the search folder. In the alternative, a search folder may be dragged to the deleted items folder to permanently delete the search folder.

[**0063**] Additionally, by selecting 'Rename' menu function **1305**, a user may rename a search folder. Each search folder **203** may have a unique name per data store on which the search folder queries. Upon selection of the menu function **1305** and edit box is displayed so the user may type in a new name. A user may also initiate the creation of a new search folder from the context of an existing search folder by selecting the 'New Search Folder' menu function **1307**. This opens the 'new Search Folder' user interface **600** described above with respect to FIG. **6** to allow the use to create a new search folder. Further a user may change the search criteria of a search folder by selecting the 'Customize this Search Folder' menu function **1301**. Choosing this context menu option renders a 'Custom Search Folder' user interface **1402** described below with respect to FIG. **14**.

[**0064**] FIG. **14** is a computer screen display showing the illustrative user interface **1402** of FIG. **12**B modified for changing a search folder according to an embodiment of the present invention. The 'Custom Search Folder' user interface **1402** is the same interface used to create a custom search folder and is rendered even when the search folder was originally created using a template. Operation of the user interface **1402** for changing search criteria and the name of the search folder is described above with respect to FIGS. **12**B-**12**D.

[**0065**] FIGS. **15**A-**15**B are computer screen displays showing illustrative user interfaces for creating search folders from 'Find' and/or 'Advanced Find' search results according to an embodiment of the present invention. Another way of creating a search folder is for a user to conduct a search using a 'Find' or 'Advanced Find' functionality and then save the search as a persisting search in the form of a search folder. Menu functions are made available from both the 'Find' strip **1500**, shown in FIG. **15**A, and the 'Advanced Find' menu (not shown). A 'Save Search as Search Folder' menu function **1502**, when selected, will render the user interface **1507** shown in FIG. **15**B. The user will type a name in the 'Name' box **1508** to enable the 'OK' Button **1510**. When the user clicks the 'OK' button **1510**, a persisting and continuously updating search folder is created with the search criteria set by the user in the 'Find' or 'Advanced Find' search. The default data store folders are applied to this new search folder until changed.

[**0066**] The logical operations of the various embodiments of the present invention are implemented (1) as a sequence of computer implemented acts or program modules running on a computing system and/or (2) as interconnected machine logic circuits or circuit modules within the computing system. The implementation is a matter of choice dependent on the performance requirements of the computing system implementing the invention. Accordingly, the logical operations making up the embodiments of the present invention described herein are referred to variously as operations, structural devices, acts or modules. It will be recognized by one skilled in the art that these operations, structural devices, acts and modules may be implemented in software, in firmware, in special purpose digital logic, and any combination thereof without deviating from the spirit and scope of the present invention as recited within the claims attached hereto.

[**0067**] FIG. **16** is an operational flow diagram illustrating a routine for creating and updating search folders according to an embodiment of the present invention. The routine **1600** begins at start operation **1602** and proceeds to operation **1604** where a request to create, revise, or make live a search folder is received. For example, a user of an electronic messaging application may select File/New/Search Folder, may click on a dead search folder, or may right click on an existing search folder to revise the search folder as described in FIG. **13**. The routine **1600** then continues to operation **1605** where a determination is made to whether a dead search folder is being made live. If a dead search folder is being made live, the routine **1600** continues from operation **1605** to operation **1610** described below. If at operation **1605**, a dead search folder is not being made live, the routine **1600** continues to operation **1606**.

[**0068**] At operation **1606** a template graphical interface **500** or **600** is displayed to the user. The template graphical interface presents ready-made and custom queries of search criteria to the user for selection. The routine **1600** then continues to operation **1608** where a selection of search criteria is received via the graphical interface. Once a selection of search criteria is received, the routine **1600** continues to operation **1610** where the selection of search criteria is applied to a search filter to create, revise, or make live a search folder.

[**0069**] Next, the routine **1600** asynchronously continues to operations **1620**, **1616**, and **1614**. At operation **1616**, search filters are used to search a data store for data items, such as emails, that have metadata matching the selection of search criteria for the live search folder. The routine **1600** then proceeds to operation **1618**.

[**0070**] At operation **1618**, search folders that have been made live are populated with links to data items matching the query of search criteria applied to the search folder's search filter. Links to the same data item may exist concurrently in more than one search folder when the data item

matches the search criteria for the multiple search folders. For example, an email that is marked as unread and marked as important will have a link stored in the 'unread mail' search folder and the 'important mail' search folder. Next, the routine **1600** continues to operation **1619** where the folder tree display **300** is displayed and updated to reflect new, revised, or live search folder changes. The routine **1600** then returns control to other operations at return operation **1630**.

[**0071**] At operation **1620** the routine **1600** detects whether any new data items or data items having change metadata have been added to the data store. If there are no new or changed data items the routine **1600** branches back to operation **1620**. When new or changed data items are added to the data store, the routine **1600** continues to operation **1622**. In the case of email data items, operation **1622** delivers new emails to an inbox or designated hard folder of the user. The routine **1600** then proceeds to operation **1624**.

[**0072**] At operation **1626**, new or changed data items are evaluated and used to update live search folders by storing links to new or changed data items that match the query of search criteria for the live search folder. It should also be appreciated that at operation **1626**, links to changed data items that no longer match the query of search criteria for a search folder are removed from the search folder. For example, an email that was delivered more than a week ago will have changed metadata and will be automatically removed from the 'mail received this week' search folder upon becoming more than one week old. Next the routine **1600** continues to operation **1628**.

[**0073**] At operation **1628**, notification of a new or changed data item link being added or removed from a search folder is given. Notification may be in the form of an animated search folder icon, an incrementing or decrementing count of total or unread links contained in the folder, or a sound that notifies a user of delivery. The routine **1600** then continues to operation **1619** described above.

[**0074**] At operation **1614**, a determination is made as to whether a request to create a new search folder, revise an existing search folder, or make live a dead search folder has been made. Request may be made in the forms described above with regard to operation **1604**. If a request has been made, the routine **1600** returns to operation **1604** described above. If such request has not been made, the routine **1600** loops back to operation **1614**.

[**0075**] Thus, the present invention is presently embodied as a method, system, and computer-readable medium encoding a computer program for providing persisting and continuously updating search folders.

[**0076**] It will be apparent to those skilled in the art that various modifications or variations may be made in the present invention without departing from the scope or spirit of the invention. Other embodiments of the invention will be apparent to those skilled in the art from consideration of the specification and practice of the invention disclosed herein.

1.-**31**. (canceled)

32. A method of providing a virtual folder within at least one computer, the method comprising:

continuously identifying data items in a datastore that satisfy a first query;

providing a first virtual folder, the virtual folder comprising a collection of links to the data items that satisfy the first query;

continuously identifying data items in a datastore that satisfy a second query;

providing a second virtual folder comprising a collection of links to the data items that satisfy the second query wherein at least one link in the second virtual folder refers to a data item that is also referred to by a link in the first virtual folder; and

storing a modified version of the data item referred to by a link.

33. The method of claim 32 further comprising updating the collection of at least one link to include a new data item and its associated link, the new data item being placed in the datastore that satisfies the query of search criteria.

34. The method of claim 32 wherein modifying the at least one of the identified data items includes deleting the at least one of the data items from the datastore, and in response to deleting the at least one of the data items, the method further comprising updating at least one of the collection of links that contain the at least one of the data items to remove the link to the deleted at least one of the data items.

35. The method of claim 32 further comprising providing a MAPI interface to the virtual folder.

36. The method of claim 32 further comprising displaying to the user the collection of at least one links as a list of datastore items.

37. The method of claim 32 wherein the data items contain at least one email having a body and subject wherein identifying includes matching the search criteria with a specific word in the body or the subject of the email.

38. The method of claim 32 further comprising deleting the collection of at least one link; and

not deleting the data items referenced by the one or more links.

39. A computer-readable medium which stores a set of instructions which when executed performs a method for saving search criteria from an email search, the method executed by the set of instructions comprising:

receiving a query specifying metadata search parameters;

associating the query with a first virtual folder;

continuously updating the first virtual folder to store links to data items that currently satisfy the search criteria; and

modifying at least one of the data items that satisfy the search criteria via the links in the virtual folder.

40. The computer-readable medium of claim 39 wherein receiving the query includes receiving a find operation.

41. The computer-readable medium of claim 39 further comprising creating the first virtual folder as a MAPI folder.

42. The computer-readable medium of claim 39 further comprising populating a second virtual folder with at least one link that references the data item in the datastore;

43. The computer-readable medium of claim 42 further comprising deleting the second virtual folder and the links contained therein; and

maintaining the data items referenced by the links in the first virtual folder.

44. The computer-readable medium of claim 39 wherein the steps of receiving, saving and modifying occur on a remote computer, and the method further comprising sending the query of search criteria from a local computer.

45. A system for searching a datastore, the system comprising:

a memory storage; and

a processing unit coupled to the memory storage, wherein the processing unit is operative to:

provide a first user interface element capable of being continuously updated to display a search folder which contains links to data items in a datastore that satisfy at least one search criterion,

provide a second user interface element capable of displaying a search criteria which controls the search criteria for the search folder, and

provide a third user interface element capable of instructing a datastore to modify a data item referred to by a link contained in the search folder.

46. The system of claim 45 wherein the datastore resides on a first memory storage coupled to a processing unit, and the first, second, and third user interface elements resides on a second memory storage coupled to a processing unit different than the first memory storage coupled to a processing unit.

47. The system of claim 45 wherein the system is further operative to provide a search user interface element that indicates to the user that the current search criteria is to be saved as a search folder.

48. The system of claim 45 wherein the system is further operative to provide a MAPI folder that stores the links.

49. The system of claim 45 wherein the datastore contains one or more email data items.

50. The system of claim 45 wherein the system is further operative to provide a fourth user interface element capable of deleting the search folder and the links without deleting the data items stored in the datastore.

51. The system of claim 45 wherein the system is further operative to provide:

a search user interface element that indicates to the user that the current search criteria is to be saved as a search folder,

a MAPI folder that stores the links, and

wherein the datastore contains one or more email data items.

* * * * *