

INVENTOR(S)					
Given Name (first and middle [if any])		Family Name or Surname		Residence (City and either State or Foreign Country)	
Gary B. Mike H.		Rohrbaugh McMullen II		Bellingham Washington Bellingham Washington	
☐ Additional inventors are being named on the _____ separately numbered sheets attached hereto					
TITLE OF THE INVENTION (280 characters max) Method and system for selection, retrieval, and conversion of computer content to vector format for resolution independent display.					
CORRESPONDENCE ADDRESS					
Direct all correspondence to:					
☐ Customer Number → Place Customer Number Bar Code Label here					
OR Type Customer Number here					
☒ Firm or Individual Name		SoftSource L.L.C.			
Address		301 West Holly Street M4			
Address					
City		Bellingham	State	WA	ZIP 98225
Country		USA	Telephone	360 676 0999	Fax 360 671 1131
ENCLOSED APPLICATION PARTS (check all that apply)					
☒ Specification Number of Pages		5	☒ Small Entity Statement		
☒ Drawing(s) Number of Sheets		4	☐ Other (specify)		
METHOD OF PAYMENT OF FILING FEES FOR THIS PROVISIONAL APPLICATION FOR PATENT (check one)					
☒ A check or money order is enclosed to cover the filing fees					FILING FEE AMOUNT (\$)
☐ The Commissioner is hereby authorized to charge filing fees or credit any overpayment to Deposit Account Number:					75 ⁰⁰
The invention was made by an agency of the United States Government or under a contract with an agency of the United States Government.					
☒ No.					
☐ Yes, the name of the U.S. Government agency and the Government contract number are: _____					

Respectfully submitted,

SIGNATURE Gary B Rohrbaugh
TYPED or PRINTED NAME Gary B Rohrbaugh
TELEPHONE 360 676 0999

Date 07/11/2000

REGISTRATION NO.
(if appropriate)
Docket Number:

USE ONLY FOR FILING A PROVISIONAL APPLICATION FOR PATENT

This collection of information is required by 37 CFR 1.51. The information is used by the public to file (and by the PTO to process) a provisional application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 8 hours to complete, including gathering, preparing, and submitting the complete provisional application to the PTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, Washington, D.C., 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Box Provisional Application, Assistant Commissioner for Patents, Washington, D.C., 20231.

Please type a plus sign (+) inside this box → ☐

PTO/SB/05 (4/98)
Approved for use through 09/30/2000. OMB 0651-0032
Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

UTILITY PATENT APPLICATION TRANSMITTAL (Only for new nonprovisional applications under 37 C.F.R. § 1.53(b))	Attorney Docket No.
	First Inventor or Application Identifier <u>Gary B. Rohrabough</u>
	Title <u>Method and System for Selecting the Retrieval and Conversion of Computer Content to Vector Format for resolution and display</u>
	Express Mail Label No. <u>EE 40315852545</u>

APPLICATION ELEMENTS See MPEP chapter 600 concerning utility patent application contents.	ADDRESS TO: Assistant Commissioner for Patents Box Patent Application Washington, DC 20231
1. ☒ * Fee Transmittal Form (e.g., PTO/SB/17) (Submit an original and a duplicate for fee processing)	5. ☐ Microfiche Computer Program (Appendix)
2. ☒ Specification [Total Pages <u>5</u>] (preferred arrangement set forth below) - Descriptive title of the Invention - Cross References to Related Applications - Statement Regarding Fed sponsored R & D - Reference to Microfiche Appendix - Background of the Invention - Brief Summary of the Invention - Brief Description of the Drawings (if filed) - Detailed Description - Claim(s) - Abstract of the Disclosure	6. Nucleotide and/or Amino Acid Sequence Submission (if applicable, all necessary) a. ☐ Computer Readable Copy b. ☐ Paper Copy (identical to computer copy) c. ☐ Statement verifying identity of above copies
3. ☒ Drawing(s) (35 U.S.C. 113) [Total Sheets <u>4</u>]	ACCOMPANYING APPLICATION PARTS
4. Oath or Declaration [Total Pages <u> </u>] a. ☐ Newly executed (original or copy) b. ☐ Copy from a prior application (37 C.F.R. § 1.63(d)) (for continuation/divisional with Box 16 completed) i. ☐ DELETION OF INVENTOR(S) Signed statement attached deleting inventor(s) named in the prior application, see 37 C.F.R. §§ 1.63(d)(2) and 1.33(b).	7. ☐ Assignment Papers (cover sheet & document(s)) 8. ☐ 37 C.F.R. § 3.73(b) Statement of Power of Attorney (when there is an assignee) 9. ☐ English Translation Document (if applicable) 10. ☐ Information Disclosure Statement (IDS)/PTO-1449 [Copies of IDS Citations] 11. ☐ Preliminary Amendment 12. ☒ Return Receipt Postcard (MPEP 503) (Should be specifically itemized) * Small Entity Statement(s) ☒ Statement filed in prior application, Status still proper and desired (PTO/SB/09-12) 13. ☐ Certified Copy of Priority Document(s) (if foreign priority is claimed) 14. ☐ Other: _____ 15. ☐ Other: _____
* NOTE FOR ITEMS 1 & 13: IN ORDER TO BE ENTITLED TO PAY SMALL ENTITY FEES, A SMALL ENTITY STATEMENT IS REQUIRED (37 C.F.R. § 1.27), EXCEPT IF ONE FILED IN A PRIOR APPLICATION IS RELIED UPON (37 C.F.R. § 1.28).	

16. If a CONTINUING APPLICATION, check appropriate box, and supply the requisite information below and in a preliminary amendment:

☐ Continuation ☐ Divisional ☐ Continuation-in-part (CIP) of prior application No: _____

Prior application information: Examiner _____ Group / Art Unit: _____

For CONTINUATION or DIVISIONAL APPS only: The entire disclosure of the prior application, from which an oath or declaration is supplied under Box 4b, is considered a part of the disclosure of the accompanying continuation or divisional application and is hereby incorporated by reference. The incorporation can only be relied upon when a portion has been inadvertently omitted from the submitted application parts.

17. CORRESPONDENCE ADDRESS

☐ Customer Number or Bar Code Label (Insert Customer No. or Attach bar code label here) or ☐ Correspondence address below

Name	<u>Gary B Rohrabough</u>				
Address	<u>301 West Holly Street M4</u>				
City	<u>Bellingham</u>	State	<u>WA</u>	Zip Code	<u>98225</u>
Country	<u>USA</u>	Telephone	<u>3606760999</u>	Fax	<u>3606711131</u>

Name (Print/Type)	<u>Gary B Rohrabough</u>	Registration No. (Attorney/Agent)	
Signature	<u>Gary B Rohrabough</u>	Date	<u>07-11-2000</u>

Burden Hour Statement: This form is estimated to take 0.2 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Box Patent Application, Washington, DC 20231.

**STATEMENT CLAIMING SMALL ENTITY STATUS
(37 CFR 1.9(f) & 1.27(c))--SMALL BUSINESS CONCERN**

Docket Number (Optional)

Applicant, Patentee, or Identifier: Gary B Rohrabough

Application or Patent No.: _____

Filed or Issued: _____

Title: Method and System for selection, retrieval, and conversion of computer content to vector format for resolution independent display.

I hereby state that I am

- ☒ the owner of the small business concern identified below:
☐ an official of the small business concern empowered to act on behalf of the concern identified below:

NAME OF SMALL BUSINESS CONCERN Soft Source L.L.C.

ADDRESS OF SMALL BUSINESS CONCERN 301 West Holly Street M4, Bellingham WA 98225
USA

I hereby state that the above identified small business concern qualifies as a small business concern as defined in 13 CFR Part 121 for purposes of paying reduced fees to the United States Patent and Trademark Office. Questions related to size standards for a small business concern may be directed to: Small Business Administration, Size Standards Staff, 409 Third Street, SW, Washington, DC 20416.

I hereby state that rights under contract or law have been conveyed to and remain with the small business concern identified above with regard to the invention described in:

- ☒ the specification filed herewith with title as listed above.
☐ the application identified above.
☐ the patent identified above.

If the rights held by the above identified small business concern are not exclusive, each individual, concern, or organization having rights in the invention must file separate statements as to their status as small entities, and no rights to the invention are held by any person, other than the inventor, who would not qualify as an independent inventor under 37 CFR 1.9(c) if that person made the invention, or by any concern which would not qualify as a small business concern under 37 CFR 1.9(d), or a nonprofit organization under 37 CFR 1.9(e).

Each person, concern, or organization having any rights in the invention is listed below:

- ☐ no such person, concern, or organization exists.
☒ each such person, concern, or organization is listed below.

Separate statements are required from each named person, concern or organization having rights to the invention stating their status as small entities. (37 CFR 1.27)

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 CFR 1.28(b))

NAME OF PERSON SIGNING Gary B Rohrabough

TITLE OF PERSON IF OTHER THAN OWNER _____

ADDRESS OF PERSON SIGNING 3112 Maple Ridge Court, Bellingham WA 98226

SIGNATURE Gary B Rohrabough DATE 07-11-2000

SoftSource L.L.C.
Gary B. Rohrbaugh
301 West Holly Street M4
Bellingham, WA 98225

Cover letter for:

Application for patent

TO ALL WHOM IT MAY CONCERN:

Be it known that we, Gary B. Rohrbaugh of 301 West Holly Street M4, Bellingham Washington 98225, and Mike H. McMullen II of 800 West Maryland Street, Bellingham Washington 98225, have invented an improvement in Internet display of computer content of which the following is a method and system for conversion of computer content to vector format for resolution independent zoom and pan enabled display.

0 TITLE OF INVENTION

Method and system for selection, retrieval, and conversion of
5 computer content to vector format for resolution independent display.

FIELD OF INVENTION

10 The present invention relates to selection and conversion of computer content to vector representation for resolution independent display and more particularly to systems and methods for selection, retrieval, and conversion of CAD drawings, graphic files, spreadsheets, text documents, and other computer content to
15 vector representations for resolution independent zoom and pan enabled display.

COPYRIGHT NOTICE

20 A portion of the disclosure of this patent document contains material which is subject to copyright protection. The copyright owner has no objection to the facsimile reproduction by anyone of the patent document or patent disclosure as it appears in the
25 Patent and Trademark Office patent file or records, but otherwise reserves all copyright rights whatsoever.

BACKGROUND OF THE INVENTION

30 Most computer content is displayed as fixed resolution text and bitmaps. Some programs like CAD systems and bitmap graphic editors provide the ability to zoom displayed data on desktop computers. Plug ins for Internet browsers like Adobe's Acrobat and
35 SoftSource's SVF viewer allow zoom enabled display of PDF and SVF files. Plug ins have been successful in expanding the use of zoom enabled documents on the Internet.

40 The fixed resolution approach is good solution for displaying most computer content. It does present a daunting technical problem for technologies like cell phones, wireless hand held computers, very large, and high resolution display systems. Resolution independent vector display of computer content solves these problems.

45 Embodied in this invention is the solution to displaying data in a vector format that allows the user to zoom on the content. Computer content on cell phones, hand held computers, wireless Internet devices, displays with very high resolution, and very large displays. Cell phone users can view documents they are use
50 to from their desktop computers. Hand held computers, with different display aspect ratios, display computer content scaled to fit their display. Next generation high-resolution displays

will also have problems with computer content. The high resolution will cause computer fixed resolution content like bitmaps to display very small. Vector based content will scale up display content to readable useful resolutions. Very large displays using vector scaling can display building size images, advertising, educational, and any content.

BRIEF SUMMARY OF INVENTION

This invention is a method and system for creating resolution independent Internet vector display of computer content such as CAD drawings, graphic files, spreadsheets, and other computer content. Application of vector technology allows scaling of computer content to fit any resolution or screen size. The content can be zoomed (scaled larger and smaller) for better viewing.

To accomplish this, computer content is rendered to a vector format. The client requests computer content from a universal vector translator. The universal vector translator retrieves the computer content and converts it to a vector format. The vector-formatted content is then sent back to the client for display.

BRIEF DESCRIPTION OF THE DRAWINGS

The process and advantages of the invention may be better understood by referring to the accompanying drawings in which like reference numbers represent like parts, in which:

FIG. 1 is a schematic representation of the process whereby a client system requests computer content and receives and displays a vector representation of that content.

FIG. 2 illustrates one embodiment of the invention where various computer devices request and acquire computer content, convert that content to vector format, and display vector representations of computer content on client devices.

FIG. 3 illustrates the client to server and server to client information flow. The client requests computer content and transfers the computer content in vector format for display.

FIG. 4 illustrates the server to computer source, in this case the Internet, and the computer content is its original format transferred to the server. The computer content is then converted to vector format the sent on to the requesting client for display.

DETAILED DESCRIPTION OF THE INVENTION

One embodiment of the process involved in the invention is illustrated in FIG. 1. The client device 100 is a system such as a computer or phone. The client makes a request 101 for computer content from a server. This content may be a CAD drawing, graphic file, spreadsheet, text based document, or other computer content. The computer content vector converter can work on a server system across a network connection or as a software agent present on the client system. The server retrieves the Internet content 102, which may reside anywhere on a network, the Internet or on the server itself. The server based universal vector translator converts the Internet content into scaleable vector information 103. The server then sends this vector information back to the client 104. The vector content is then displayed on the client device 105. The client can then zoom and pan on the vector representation to more clearly view details in the document.

FIG. 2 is an illustration of the preferred embodiment of the invention. A user of a computer device, such as a personal computer 120, wireless hand held computer 121 or cell phone 122 requests to view computer content. As stated above, the computer content may be in the form of a CAD drawing, graphic file, spreadsheet, text based document, or other computer content. The request is sent across a network, for instance the Internet, using a protocol such as HTTP (HyperText Transfer Protocol) 130, 131 or WAP (Wireless Access Protocol) 132. The server 150 receives the request and fetches the actual content 140 Internet ULR (Uniform Resource Locator), 141 FTP (File Transfer Protocol) using ULI (Uniform Resource Identifier), 142 from the network, local machine, or other source. The server based universal vector translator then converts the content into scaleable vector information that is sent back to the client 160, 161, 162. The vector representation of the computer content is displayed on the client device. At this point the user can take advantage of the benefits of vector information to zoom and pan in order to better view the information. The user may select a hyperlink from the content, which starts the process over again.

FIG. 3 is an illustration of the preferred embodiment of the client side of the invention. A user of a computer device, such as a personal computer 120, requests to view computer content. The request is sent across a network, for instance the Internet, using a protocol such as HTTP (HyperText Transfer Protocol) 130. The converted the content is sent back to the client 160 for display.

FIG. 4 is an illustration of the preferred embodiment of the server side of the invention. The request is sent across a network, for instance the Internet, using a protocol such as HTTP (HyperText Transfer Protocol) 170. The computer content is then transferred to the server in its original format 171. The computer content is converted into vector format. The converted computer content is then transferred to the requesting client for display.

0	The client may be a personal computer or other high resolution display device. Much of the computer content is designed for lower resolution displays (for example 640x480 pixels). Modern computer systems, projector, and wall size displays can have resolutions
5	measured in the millions of pixels. Allowing users to magnify the computer content allows them to overcome the original contents design limitations. Alternately, the client may be a small device, such as a hand held computer or a cell phone, which have a smaller display area. A scaleable vector representation enables access any
10	computer content on any resolution display device.
15	As mentioned above, the server based universal vector translator may be a server as understood in the network and Internet domain. The server based universal vector translator may also be software that resides on the client system or on the same server as the computer content.
20	The vector information created by the server based universal vector translator is understood to be a reasonable representation of the computer content. It may contain vector and text and layout information. It may contain bitmaps or references to bitmaps. Hyperlinks that point to other computer content may be present in the vector representation. The user may select a hyperlink in order to view other content. Lines and other graphic information may also be present in order to represent the content reasonably.
25	
30	
35	
40	
45	
50	

0
ABSTRACT OF THE DISCLOSURE

5 Method and system for creating and accessing a zoom enabled vector representation of data from CAD drawings, other graphic files, text files, and other content. The client requests content such as AutoCAD drawing or other document from a server or URL. The retrieved file is converted to a zoom enabled vector file by the universal vector translator then is sent back to the client for display. This invention can be used to view converted data on Internet enabled devices.

10 The following drawings are submitted to illustrate but not to limit this invention.

15

20

25

30

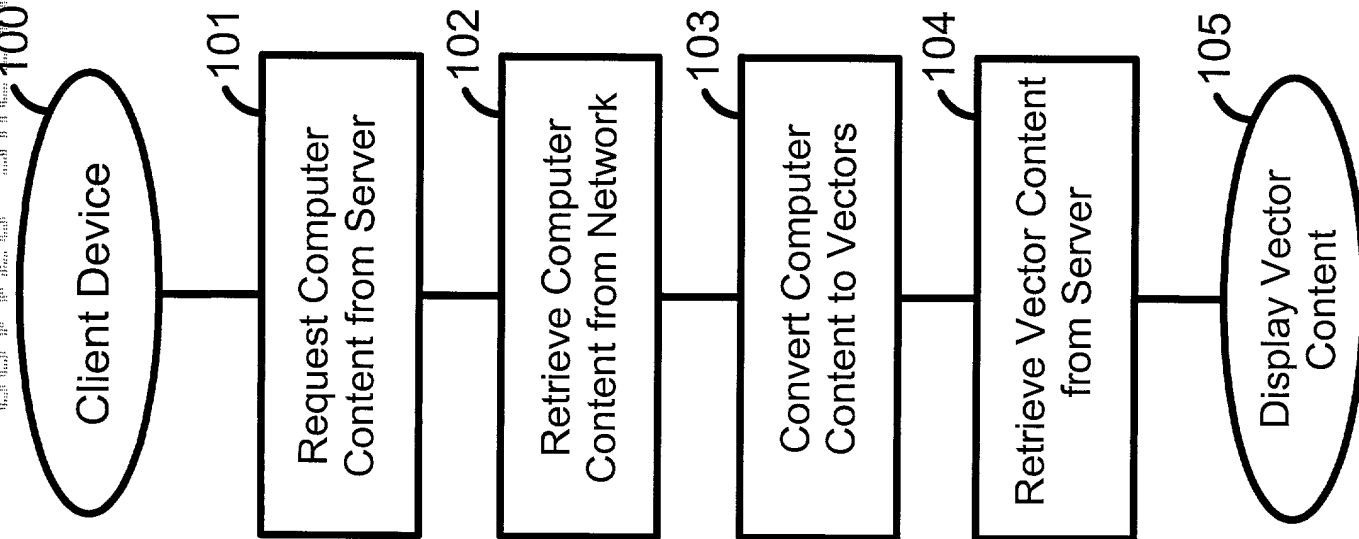
35

40

45

50

Fig. 1



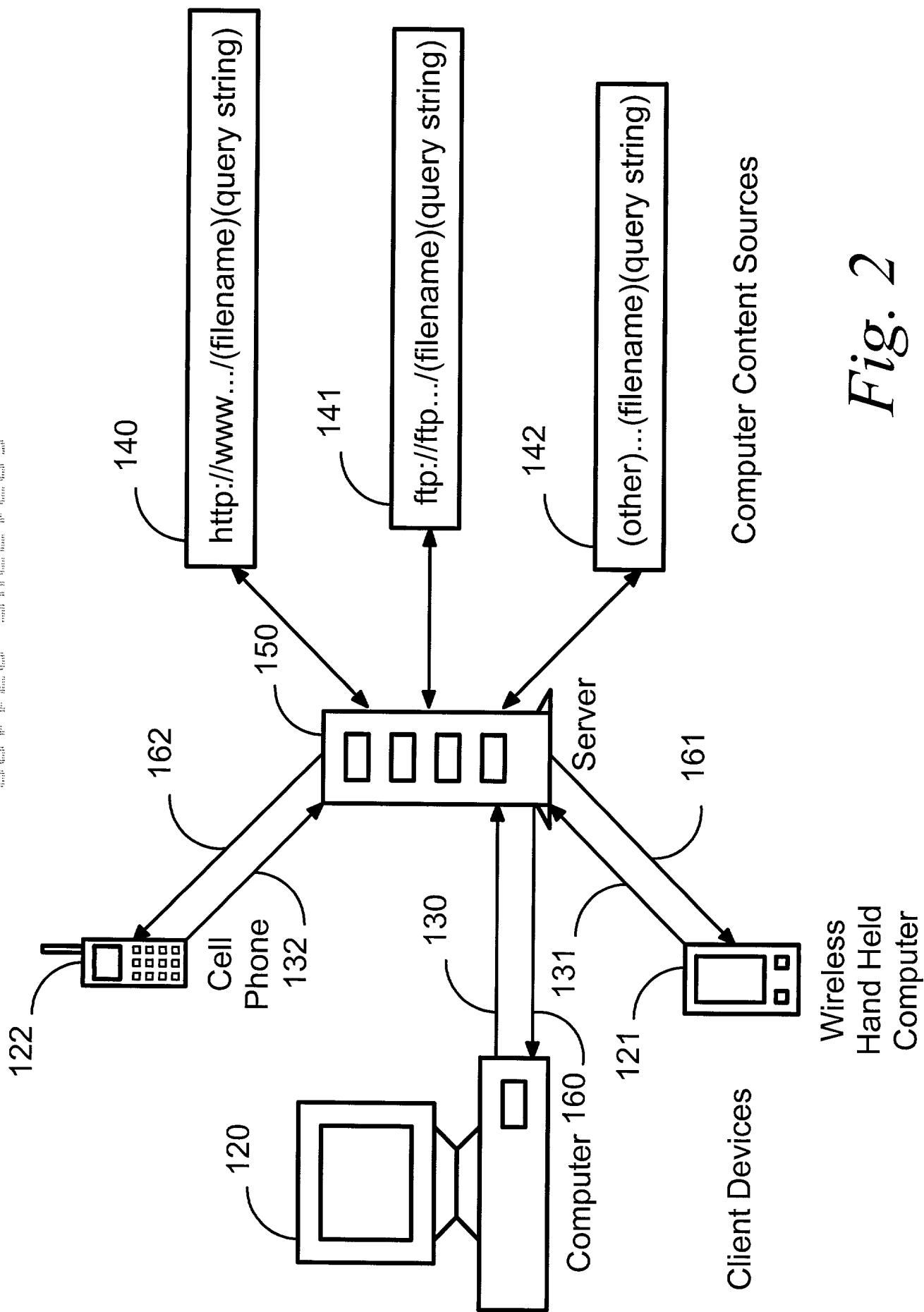


Fig. 2

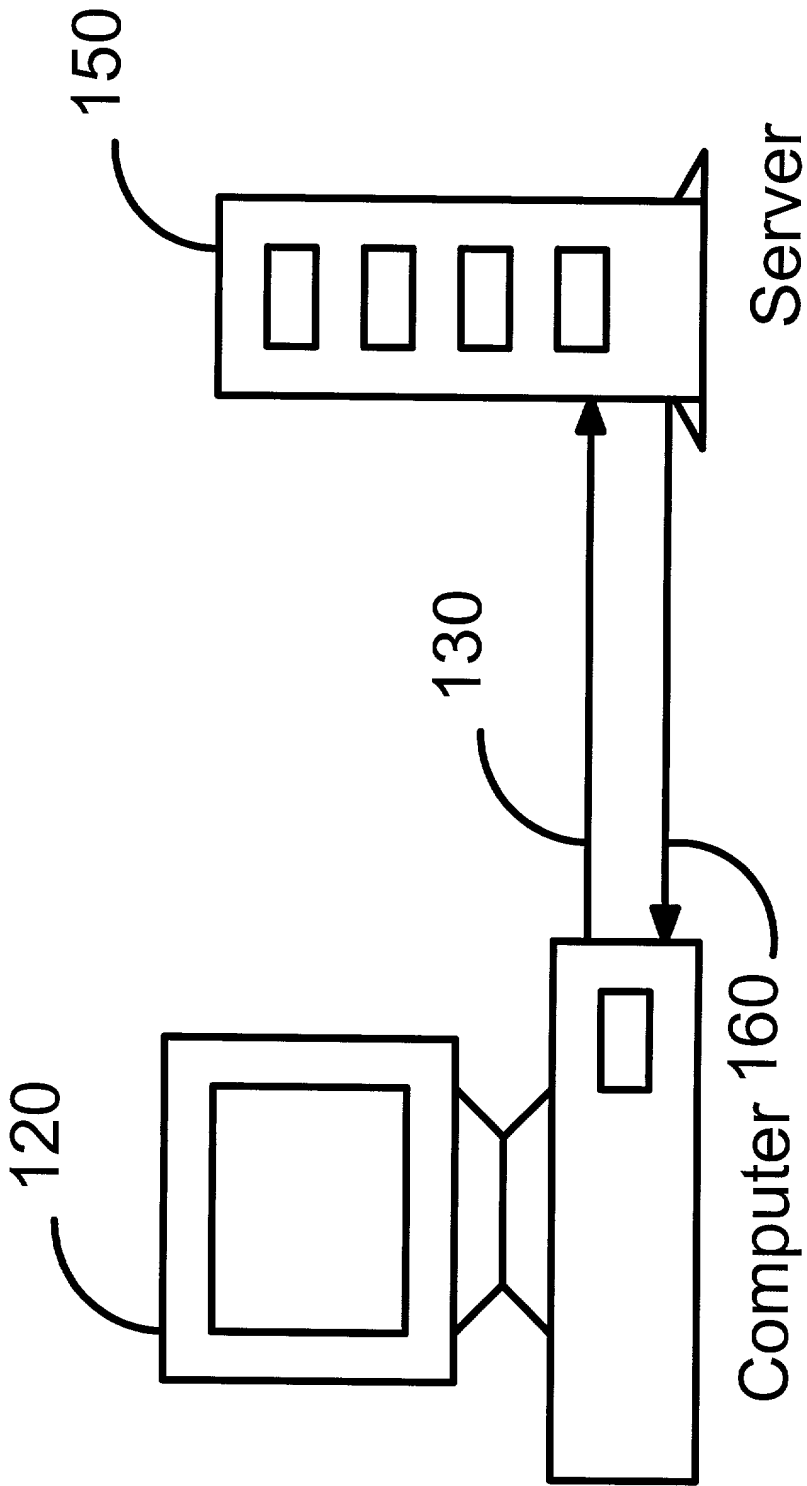


Fig. 3

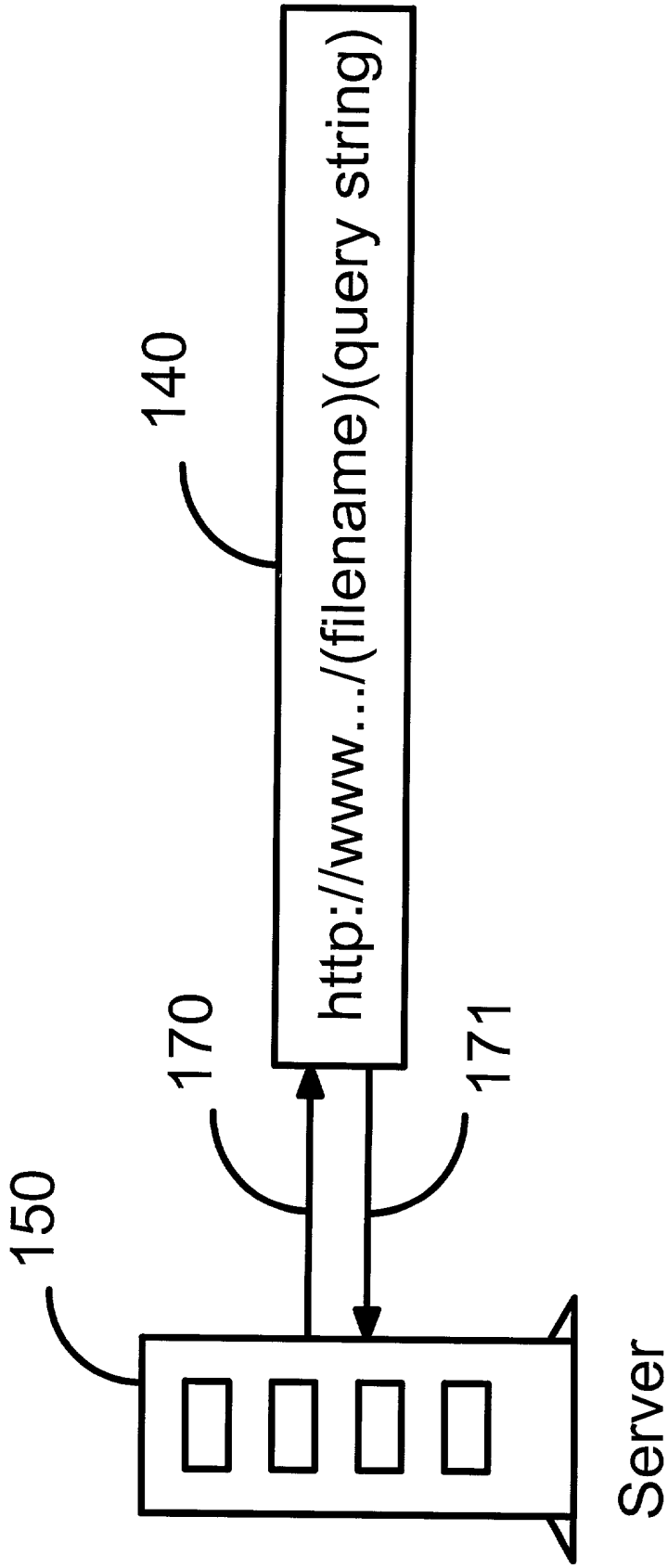


Fig. 4