A / PROV

jc660 U.S. PTO 05/21/99

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PTO/SB/16 (3-97)
Approved for use through 1/31/98. OMB 0651-0037
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PROVISIONAL APPLICATION FOR PATENT COVER SHEET

This is a request for filing a PROVISIONAL APPLICATION FOR PATENT under 37 CFR 1.53 (b)(2).

jc541 U.S. PTO 60/135521 05/21/99

INVENTOR(S)

Given Name (first and middle [if any])	Family Name or Surname	Residence (City and either State or Foreign Country)
Nancy	Benovich Gilby	
Charles	Evett	
Peter	Fearey	

[XX] *Additional inventors are being named on the* 1 *separately numbered sheets attached hereto* (back)

TITLE OF THE INVENTION (280 characters max)

CUSTOMER LEAD MANAGEMENT SYSTEM

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Address	225 Franklin Street				
Address					
City	Boston	State	MA	ZIP	02110
Country	USA	Telephone	617-542-5070	Fax	617-542-8906

ENCLOSED APPLICATION PARTS *(check all that apply)*

[X] Specification *Number of Pages* 14 [ ] Small Entity Statement

[X] Drawing(s) *Number of Sheets* 5 [X] Other (specify) Appendix A (190 pgs)

METHOD OF PAYMENT OF FILING FEES FOR THIS PROVISIONAL APPLICATION FOR PATENT *(check one)*

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The invention was made by an agency of the United States Government or under a contract with an agency of the United States Government.

[X] No.

[ ] Yes, the name of the U.S. Government agency and the Government contract number are: _____

Respectfully submitted,

SIGNATURE J. Robin Rohlicek

Date 5/21/99

TYPED or PRINTED NAME J. Robin Rohlicek

REGISTRATION NO. *(if appropriate)* 43,349

TELEPHONE 617-542-5070

Docket Number: 10844/002001

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PROVISIONAL APPLICATION COVER SHEET
Additional Page

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INVENTOR(S)/APPLICANT(S)		
Given Name (first and middle [if any])	Family or Surname	Residence (City and either State or Foreign Country)
Gregory	Erman	
David	Tiu	
John	Mandel	

SCANNED

Number 1 of 1

PROVISIONAL APPLICATION

UNDER 37 CFR 1.53(b)(2)

TITLE: **CUSTOMER LEAD MANAGEMENT SYSTEM**

APPLICANTS: **NANCY BENOVICH GILBY, CHARLES EVETT, PETER FEAREY, GREGORY ERMAN, DAVID TIU and JOHN MANDEL**

"EXPRESS MAIL" Mailing Label Number **EL266438027US**

Date of Deposit **May 21, 1999**

I hereby certify under 37 CFR 1.10 that this correspondence is being deposited with the United States Postal Service as **"Express Mail Post Office To Addressee"** with sufficient postage on the date indicated above and is addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231.

Lisa G. Gray

CUSTOMER LEAD MANAGEMENT SYSTEM

Background

This invention relates to a system for processing customer leads.

Today, lead management is largely a paper-based manual process in which customer leads are received as a result of marketing activities, and distributed to particular sales organizations. For example, names and other information about customer leads may be obtained at a trade show. A subset of these leads may then be selected and passed to sales groups based on the geographic region of the lead, the product or service involved, or other lead-related criteria. In general, there is little or no automated feedback regarding the outcome of the lead, such as whether a sale actually occurred or if the lead was not properly routed.

Summary

In a general aspect, the invention provides an automated system for accepting, prioritizing and routing customer leads. The system provides feedback regarding the routing and ultimate outcome of a lead, thereby allowing lead tracking and performance measurement. The invention can feature a hierarchical delegation approach in which users specify rules according to which leads routed to them are processed, for example, by routing the lead to other users. The invention can also feature a distributed architecture in which several servers are coupled, for example, over the Internet. Leads are provided from one

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server to another, and feedback regarding the disposition of the lead is provided in return.

In one aspect, in general, the invention is a method for processing customer leads. The method includes accepting a lead that includes a number of data fields, such as the lead name, the lead's address, or a marketing campaign associated with the lead. The method also includes inputting, or otherwise accepting, a number of rule specification for each of a number of users. The lead is routed to a first of the users, and one or more of the rules that were inputted for that user are applied to the lead. Based on application of those rules, the lead is routed to a second of the users. The second user is notified of the routed lead. Then an acceptance of the lead is received from the second user.

The invention has the advantage of providing feedback regarding the processing of a lead, thereby allowing tracking and, if necessary, re-routing of a lead that is not being handled effectively.

The hierarchical delegation of rule specification allows users to more precisely tailor the rule for their particular circumstances, rather than relying only on a centralized administration approach.

Coupling of multiple servers allows different servers to be administered by different organization, such as a vendor and multiple resellers. When leads are passed from one server to another, the configurable amount of feedback provides desirable security and privacy to the organizations which maintaining efficient processing of the leads. By maintaining the leads on multiple servers administered by different organizations, each organization can make use of its own leads database, while maintaining a degree of sharing of information between the organizations.

Other features and advantages are apparent from the following description and from the claims.

Description of Drawings

FIG. **1** is block diagram of load management system;

FIG. **2** shows the interconnection of computers used to implement the lead management system over the Internet;

FIG. **3** is a block diagram showing logical modules of a lead management server;

FIG. **4** shows a set of lead boxes coupled to user interfaces and to a rules engine; and

FIG. **5** illustrates exemplary handling of leads through the system.

Description

Referring to FIG. **1**, a lead management system includes a lead management server **100** that accepts leads **162** from one or more lead sources **160**, and routes those leads to particular users through user interfaces **110**. Lead sources **160** can include email, Web forms, telephone call centers, business card or badge scanners at trade shows, or purchased mailing lists. In the description that follows, leads **162** refer to customer lead that relate to potential purchases of products or services offered by a commercial organization, and the users are typically sales representatives, or managers of organizations that include sales representatives. The organization makes use of the lead management system to direct the leads to appropriate users, such as sales representatives, who interact with the potential customers for the purpose of actually selling the products or services. Although the description that follows refers to such customer leads, in alternative embodiments, rather than leads, other types of records or

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requests are routed to appropriate individuals using such a system.

Lead management server **100** routes a lead **162** to a particular user based on an internal configuration, which includes, for instance, rules for handling leads with different attributes and preferences for particular users.

In this embodiment, the lead management server is configured in a decentralized manner. That is, an administrator of the server may set global configurations using administration interface **105**, while individual users set individual configurations using user interfaces **110**. The global configuration typically handles a first level of routing of leads to particular users. When a lead is routed to a particular user, the configuration provided by that user generally determines how the lead is further handled. For instance, in the case that the user is a sales representative, the user may have specified a preferred method of being notified of a new lead, for example notification by email or by pager. Some users may also have configured the lead management system to automatically route some or all leads sent to them to other users. For example, a sales manager may configure his lead box to automatically route leads to particular sales representations based on the geographic region of the lead.

When a lead is sent to a user, the user must in generally provide feedback to the lead management system indicating that the lead is accepted, that it is rejected, or that it should be forwarded to another user. Various approaches are used to encourage a user to provide this feedback. For example, some information related to the lead may be withheld until the user provides feedback that indicates that the user is accepting the lead. The status of each lead is tracked by lead management server **100** and this status can be accessed by the users of the system.

In addition to routing leads when they arrive, lead management server **100** has the capability of re-routing leads after they have been routed to a particular user. For example, the server can periodically re-route leads that have been sent to particular users but have not yet been accepted or rejected. Also, the lead management server can adaptively modify its routing of leads based, for example, one the number of outstanding leads assigned to a particular user, or based on a statistical criterion, such as the responsiveness of a particular user, of their success in obtaining actual sales from leads that have been assigned to them.

In one mode of routing leads, lead management server **100** assigns a lead to a class of users, and then chooses a particular user in that class in a round robin manner such that successive leads assigned to the class are routed to different users. In another mode, leads are routed to multiple users, or multiple secondary servers (e.g., corresponding to multiple resellers), in an "up for grabs" mode. In this mode, although multiple users are initially assigned a lead, only the first to accept the lead keeps it. The others then receive notifications that the lead is no longer available.

Lead management server maintains a history of activity related to a lead, and in particular maintains a history of the rules applied to a lead, the sequence of users to whom the lead has been routed, and changes of state of a lead. This history is used to "progressively close the loop" by associating the progress of a lead, for example its generation of an actual sale, with its history. For example, this allows sales to be associated with particular marketing activities. In addition, the history is used to optimize the rules by determining the effectiveness of routing leads with particular attributes to particular

users. Also, in alternative embodiments, the history is used to determine statistics that are used to affect further lead routing.

A user that has accepted a lead may update the status of the lead as he or she interacts with the lead. In some instances, a lead does not result in a sale, but the user indicates that the lead should be reactivated after an "incubation" period. After the lead is later reactivated, it is re-routed in the same manner as a new lead entering the system.

Referring still to FIG. **1**, lead management server **100** is also optionally coupled to one or more secondary lead management servers **150**. These servers are similar to lead management server **100**, and optionally may be restricted to received leads only from the lead management server, and not directly from other lead sources. After the lead is routed to the secondary server, it is essentially replicated in the lead storage of both servers, although the fields of the two stored leads may not be identical, since some details regarding the lead may be withheld by the secondary server. The lead management server updates the lead based on feedback from the secondary server when it updates its copy of the lead, for example when the lead is assigned to a user. An exemplary application of the lead management system has a vendor operating lead management server **100** and resellers operating secondary lead management servers **150**. The vendor has users **100**, such as direct sales representatives, who receive leads directly from lead management server **100**. Some leads are sent to a reseller by transferring lead information to the secondary server. The secondary server may provide some feedback information regarding the status of the lead to the lead management server **100**. However, for example for competitive business reasons, some information such as the

identity of a particular user assigned a lead by secondary lead management server **150** or contact information related to the lead may be kept private to the secondary system.

Leads may also be routed to users by lead management server **100** through other information systems **130**. For example, lead management server **100** can route leads to a opportunity management tool provided by Siebel Systems Inc.

Lead management system **100** is also coupled to a secondary information source **120**. This information source is used to augment the information associated with a lead **162** that it receives from lead source **160**. For example, Dunn and Bradstreet information, product literature, or sales tools may be associated with a lead and routed to a user along with the lead.

Referring still to FIG. **1**, a user interacts with lead management server **100** though a user interface **110**, which may include a computer, a pager, or a telephone. In general, a user provides configuration **112** to the server, for example specifying rules for routing leads provided to that user, and configuring the method for notifying that user when leads are available. The user receives notifications and leads **114** from the server, and in return provides explicit acceptances **116** for the leads back to the server.

Referring to FIG. **2**, the lead management system is implemented using a number of computers coupled to one another through Internet **210**. In alternative embodiments, other communication interconnections are also feasible, for example, relying on dedicated or "dial-up" connections between computers. Lead management server **100** is implemented on a lead management server computer **200** that is coupled to Internet **210**. Lead management server computer **200** executes a number of software processes. In particular, server computer **200** executes a Web client **211**

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for accessing other computers over Internet **210** using the http (hyper-text transport protocol) application protocol, a Web server **202** for providing other computer access to it over Internet **210** using the http protocol, and a mail interface **203** for accessing users at other computers using electronic mail that is transferred over the Internet. In addition, lead management server computer **200** is coupled to batch input/output devices **204**, for example magnetic tape drives, that are used to import or export data from the server computer. The lead management server computer is optionally coupled to other systems over other communication links **205**, for example over dedicate data connections.

Each user typically interacts with the system using a user computer **210**. For instance, user computer **210** executes a mail interface **212** that accepts messages from mail interface **203** at lead management server computer **200** and that is used to send messages back to the lead management server computer. User computer **210** also includes a Web browser **211** for accessing Web server **202** at lead management server computer **200**. In some embodiments, user computer **210** may include only a mail interface or a Web browser, rather than both. In other embodiments, client computer **210** is coupled to lead management server computer **200** in any of a number of well-known techniques, for example using a dedicated client application which executes on the client computer and which communicates with a server application at the lead management server computer.

In this embodiment, users can also be notified using a wireless paging system. In this case, lead management server computer **200** sends a electronic mail message through its mail interface **203** to a pager server **218** over the

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Internet, and the pager server sends a wireless message to the user's pager **215**.

Lead management server computer **200** can also communicate with other lead management systems **230** over the Internet, for example to route leads to those systems, or to accept leads from those systems. Lead management server computer **200** can also communicate with secondary lead management server computers **250** over the Internet, for instance using the http protocol, for the purpose of passing leads to the secondary servers and for receiving feedback regarding the status of leads that it previously passed.

Referring to FIG. **3**, lead management server **100** logically has several modules which are implemented using physical storage devices, or as processes executing on a computer processor according to a program stored on program storage **310**. Leads **162** are accepted by a lead import module **310**. Lead import module **310** performs initial processing functions to input the lead into the system. Leads are passed to a data cleansing and enhancement module **320**, which corrects errors in the imported lead, for instance based on secondary information sources **120**, and augments the lead, for example by attaching company information from a secondary information source.

The lead is then passed to rules engine **330** and the lead is stored in lead storage **340**. Lead storage **340** is logically implemented as an object database, which is then actually implemented using relational database techniques. Rules engine **330** is also coupled to a rules and profile storage **350** that hold rules specified by an administrator to the system as a whole, or by users for leads that are delivered to them. Rules engine **330** makes use of the rules in rules and profile storage **350** to modify the leads in lead storage **340**, thereby logically routing the lead to

particular users. Lead management system **100** includes a notification, delivery, and tracking module **370** that notifies users of leads, provides lead information to the users, and accepts responses, such as acceptances, rejections, and rerouting of the leads provided to the user. When rules engine **330** routes a lead to a secondary lead management system, the lead is passed to a server-server lead module **380** which provides the lead information to the secondary server, and accept notifications regarding routing and changes of state of the lead from the secondary system.

Referring to FIG. **4**, logically, the leads stored in lead storage **340** (FIG. **3**) logically flow through a succession of lead boxes, which are somewhat analogous to mail boxes. Initially, a lead is placed in a system lead box **410**, and as it is routed to the final user, the lead may pass through a succession of user lead boxes **420**. Each lead box is associated with configuration data, which includes rules to apply to leads that are routed to that lead box. Each lead has a number of attributes, such as the name of the lead, the lead's organization, the organization's address, the product involved, the marketing campaign involved, and the likelihood of a sale. Rules are defined in terms of the attributes. There are several types of rules that are applied to a lead.

A prioritization rule assigns a numeric or categorical priority to a lead based on other attributes of the lead. Note that this prioritization may be different in different lead boxes. An assignment rule determines which next lead box the lead should be routed to, again based on the attributes associated with the lead. An attachment rule, which is also based on the particular attributes of a lead, determines what additional information should be attached to the lead prior to routing it further. For example,

product specifications can be attached and delivered to a user with the lead. Note that the information attached to the lead may be provided to enable a user to better service a lead, rather than simply provide more information about the lead itself. An example of such information is documentation of a promotional program that could be used to encourage a customer to buy a product or service. Other examples include training presentations (e.g., video presentations) to better prepare the user for selling a particular product, order forms, or rebate information. These attachments may be provides as references to documents (e.g., URLs) that the user then accesses over the Internet, rather than being provided in their entirety.

A user specifies a particular rule to apply to leads in his or her lead box **420** through user interface **110**. This specification is typically based on a selection from a small number of types of rules, and selection from a constrained set of parameters for the rule. The system includes a "wizard" mode that specifies a rule by presenting a sequence of selections to be made or questions to be answered by the user, for example having the user select which attribute to use in determining where to route leads. The system holds definitions for these types (or classes) of rules, and specifications of the wizard modes for rule selection. A user with appropriate access privileges can specify the types of rules that another user may choose from, and the wizard mode that the other user can use to select a particular rule. The wizard is specified using XML (eXtensible Markup Language) and essentially forms a template for the particular rules that the users that make use of the wizard can choose. In some embodiments, the users are arranged in a hierarchy or tree and a user has the privilege to specify a wizard for the users branching from that user's node in the tree (i.e.,

below that user's node if the root of the tree is at the top). For example, a user who supervises a set of other users may configure their lead boxes with a wizard that allows those users to specify particular rules from a class of rules specified by that supervisor.

Referring to FIG. **5**, logically, based on an exemplary application of rules by rules engine **330** (FIGS. **3**, **4**) a lead passes through a branching tree of lead boxes. Initially at system lead box **410**, leads are routed based on system-wide routing rules to a user lead box **420**, for instance by routing the lead to a lead box associated with a geographic region, such as the eastern US. Based on the rules at that lead box, the lead may be routed again to another lead box **410**, for instance one associated with a smaller geographic region, such as a particular state in the US, and finally to a user interface **110**, for instance associated with a sales representative for that state. Alternatively, in another exemplary application of the rules, a lead may be passed to a system lead box **410** at a secondary lead management system, where it is passed through user lead boxes **420** an finally to a user interface **110**.

Each lead is tracked by lead management system **100** as it is routed from lead box to lead box, and as it is provided and then later accepted or rejected by a user. Therefore, users can determine the status of leads. Referring back to FIG. **1**, lead management server **100** is coupled to a reporting interface **140**. Based on the information regarding routing and status of lead in the lead management system, detailed reports regarding aspects of sets of leads can be directly determined. For example, statistics regarding completion of sales from a particular marketing campaign, or in a particular geographic region can be prepared. These reports provide feedback from sales

activities, for example, to determine the effectiveness of particular marketing campaigns or the effectiveness of particular rules in the system.

The following additional documents are attached as an appendix to this description:

1. Press release, dated May 24, 1999 (4 sheets)
2. "Marketsoft Corporation Architectural Overview," viewgraphs dated May 18, 1999 (24 sheets)
3. "Navigating Through Marketsoft," a user manual, including images of a graphical user interface (36 sheets)
4. "Rule Explanation," a document describing types of rules with examples (13 sheets)
5. "Marketsoft Architectural Blueprint," (7 sheets)
6. "Launch Product Plan 5/6/99" (2 sheets)
7. "Feature Profiles M2.1 Pilot," (8 sheets)
8. "Feature Profiles M2.2," (22 sheets)
9. "Feature Profiles M3: V1.0 / FCS," (24 sheets)
10. Database schema, (50 sheets)

It is to be understood that the foregoing description is intended to illustrate and not to limit the scope of the invention, which is defined by the scope of the appended claims. Other embodiments are within the scope of the following claims.

What is claimed is:

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1. A method for processing customer leads comprising:

accepting a lead that includes a plurality of data fields;

for each of a plurality of users, accepting a plurality of rule specification for that users;

routing the lead to a first of the users;

applying one or more of the rules that were accepted for that user to the lead;

routing the lead to a second of the users based on the application of the rules;

notifying the second of the users of the routed lead; and

receiving from the second user an acceptance of the routed lead.

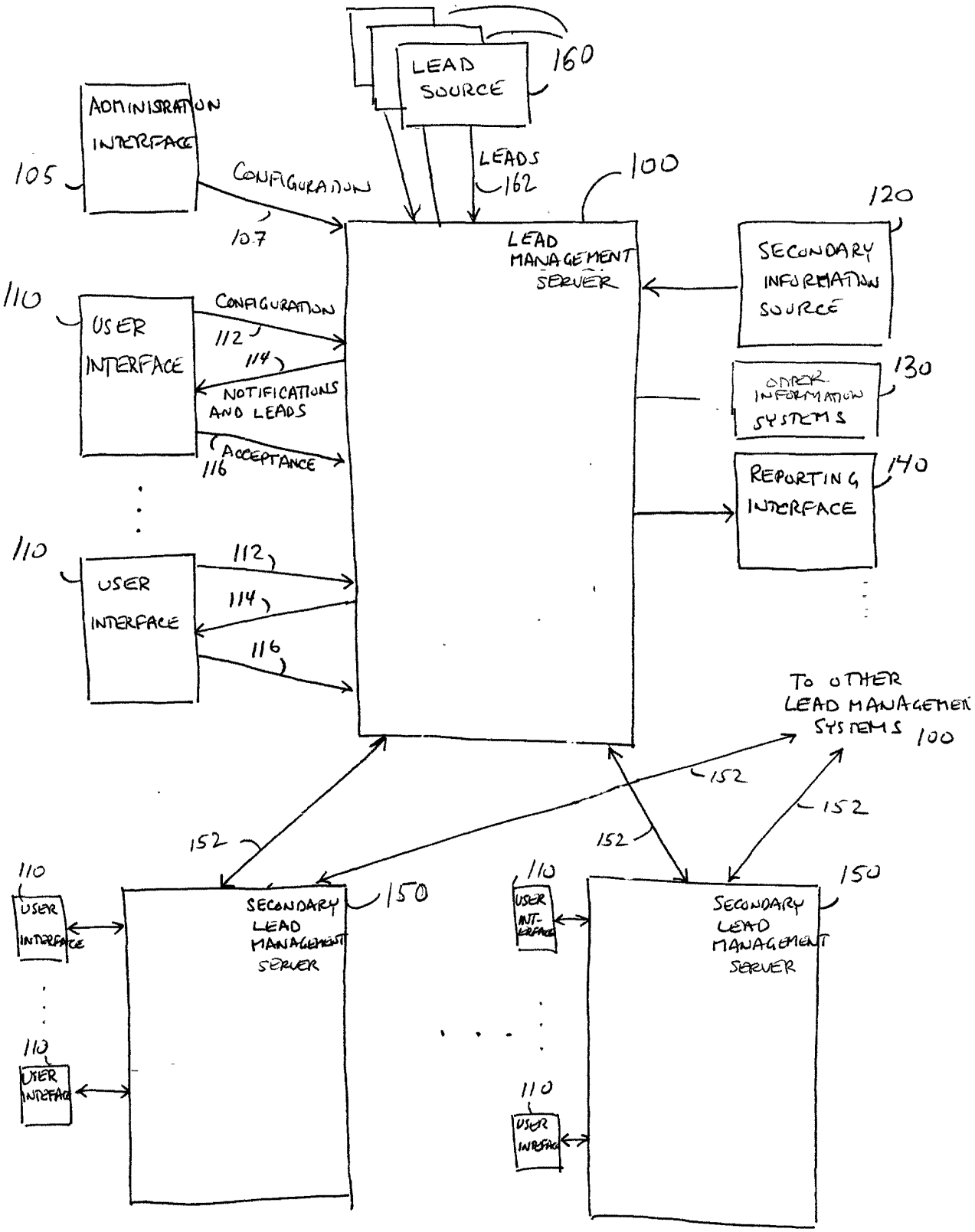
LEAD SOURCE
160
ADMINISTRATION INTERFACE
105
CONFIGURATION
107
LEADS
162
100
LEAD MANAGEMENT SERVER
120
SECONDARY INFORMATION SOURCE
110
USER INTERFACE
CONFIGURATION
112
114
NOTIFICATIONS AND LEADS
116
ACCEPTANCE
130
OTHER INFORMATION SYSTEMS
140
REPORTING INTERFACE
110
USER INTERFACE
112
114
116
TO OTHER LEAD MANAGEMENT SYSTEMS
100
152
152
152
152
110
USER INTERFACE
SECONDARY LEAD MANAGEMENT SERVER
150
110
USER INTERFACE
110
USER INTERFACE
110
USER INTERFACE
SECONDARY LEAD MANAGEMENT SERVER
150

FIG. 1

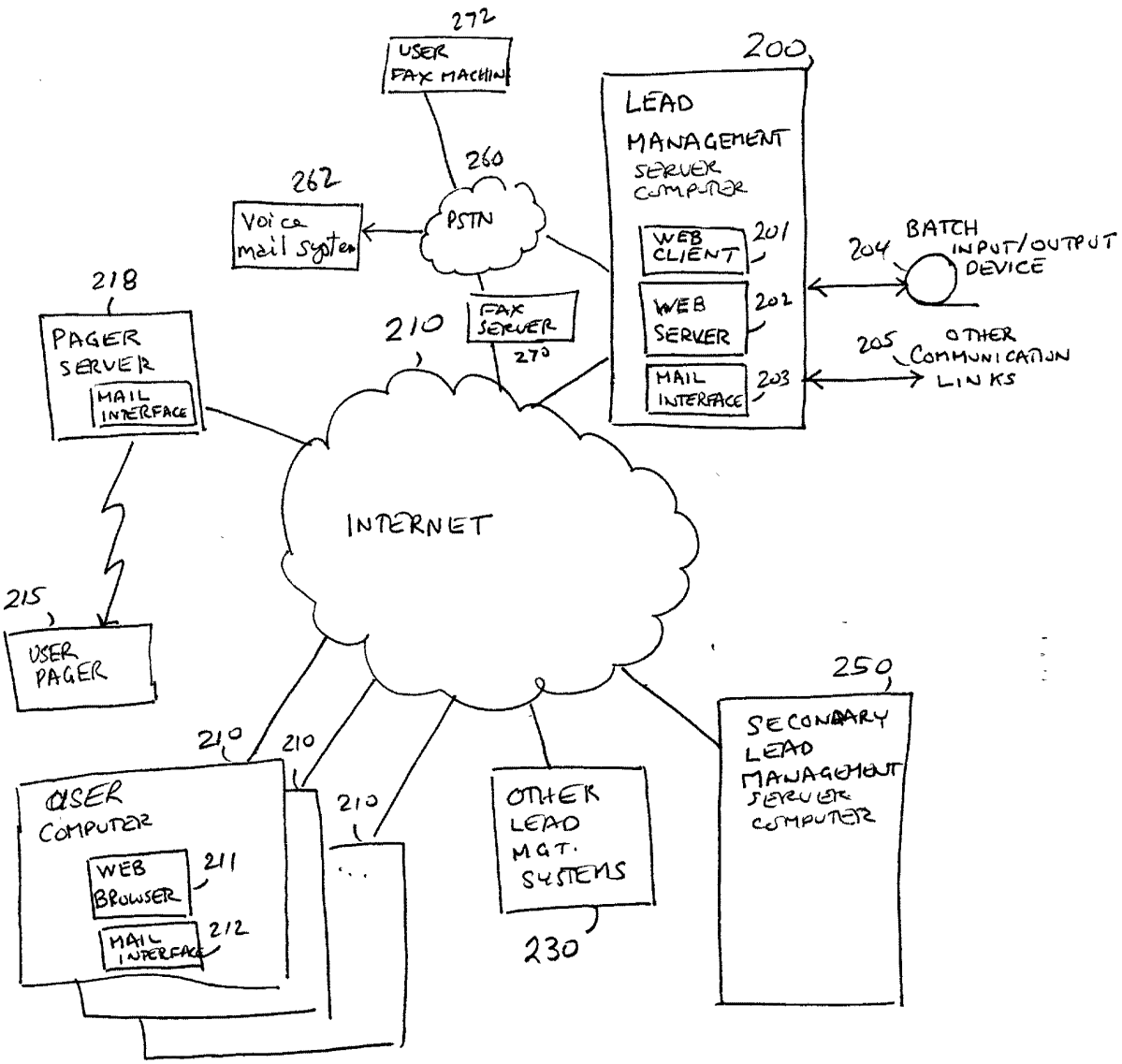
272
USER FAX MACHIN
200
LEAD MANAGEMENT SERVER COMPUTER
260
262
Voice mail system
PSTN
WEB CLIENT
201
204
BATCH INPUT/OUTPUT DEVICE
218
PAGER SERVER
MAIL INTERFACE
210
FAX SERVER
270
WEB SERVER
202
205
OTHER COMMUNICATION LINKS
MAIL INTERFACE
203
INTERNET
215
USER PAGER
250
SECONDARY LEAD MANAGEMENT SERVER COMPUTER
210
210
210
USER COMPUTER
WEB BROWSER
211
MAIL INTERFACE
212
OTHER LEAD MGT. SYSTEMS
230

FIG. 2

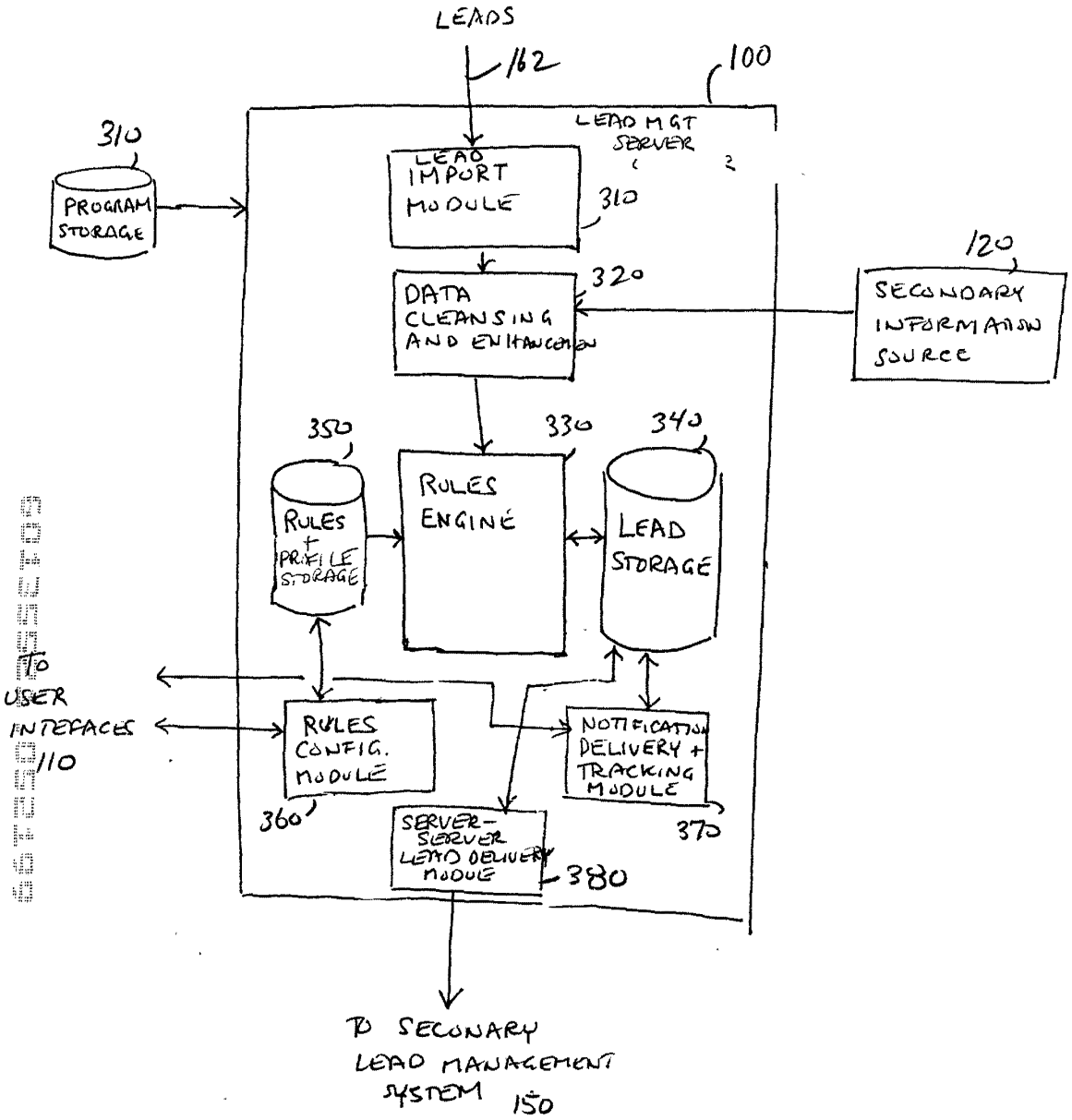
LEADS
162
100
LEAD MGT SERVER
310
PROGRAM STORAGE
LEAD IMPORT MODULE
310
DATA CLEANSING AND ENHANCEMENT
320
120
SECONDARY INFORMATION SOURCE
350
330
340
RULES + PROFILE STORAGE
RULES ENGINE
LEAD STORAGE
TO USER INTERFACES
110
RULES CONFIG. MODULE
360
NOTIFICATION DELIVERY + TRACKING MODULE
370
SERVER-SERVER LEAD DELIVERY MODULE
380
TO SECONDARY LEAD MANAGEMENT SYSTEM
150

FIG. 3

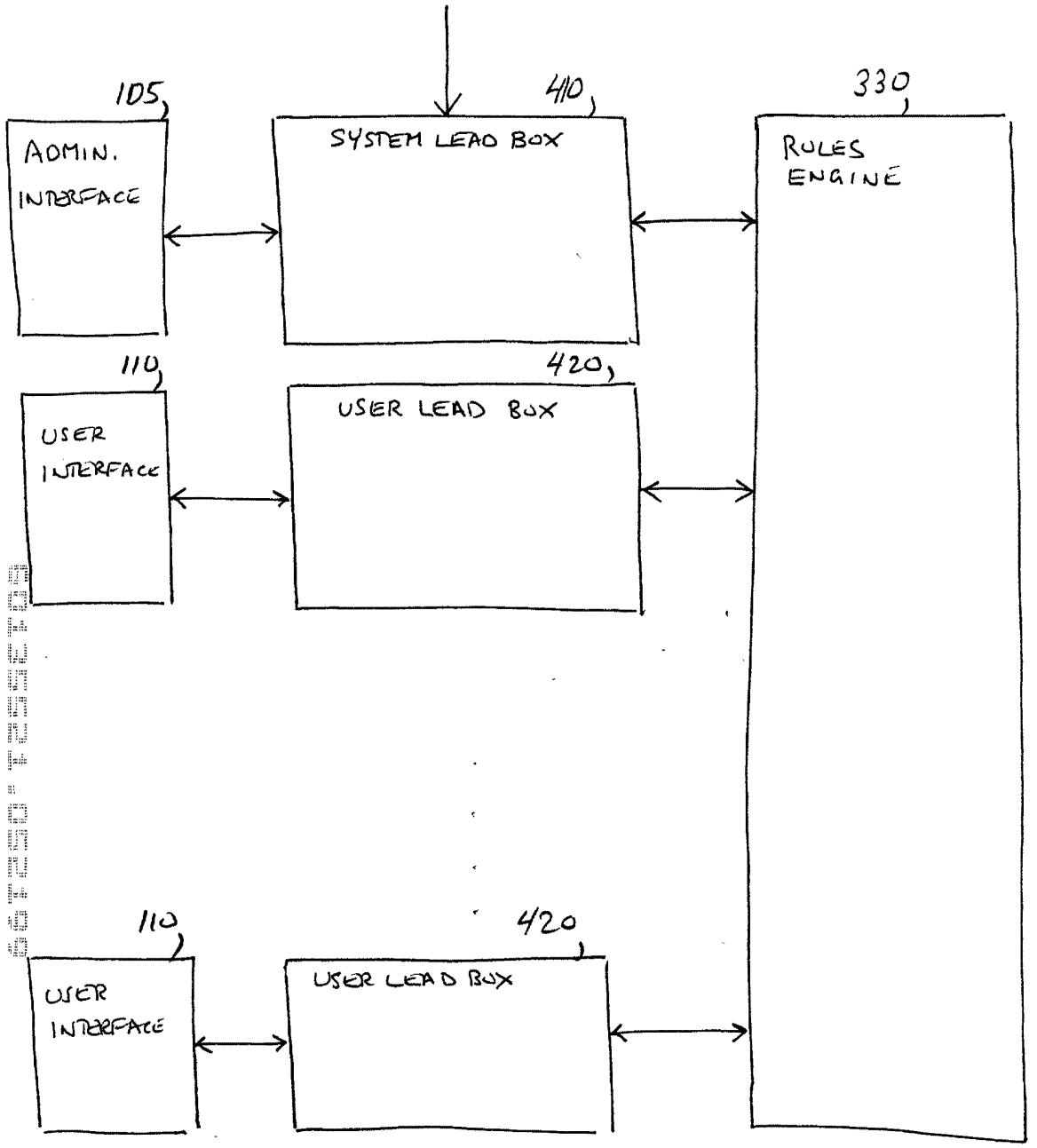
105
ADMIN. INTERFACE
410
SYSTEM LEAD BOX
330
RULES ENGINE
110
USER INTERFACE
420
USER LEAD BOX
110
USER INTERFACE
420
USER LEAD BOX

FIG. 4

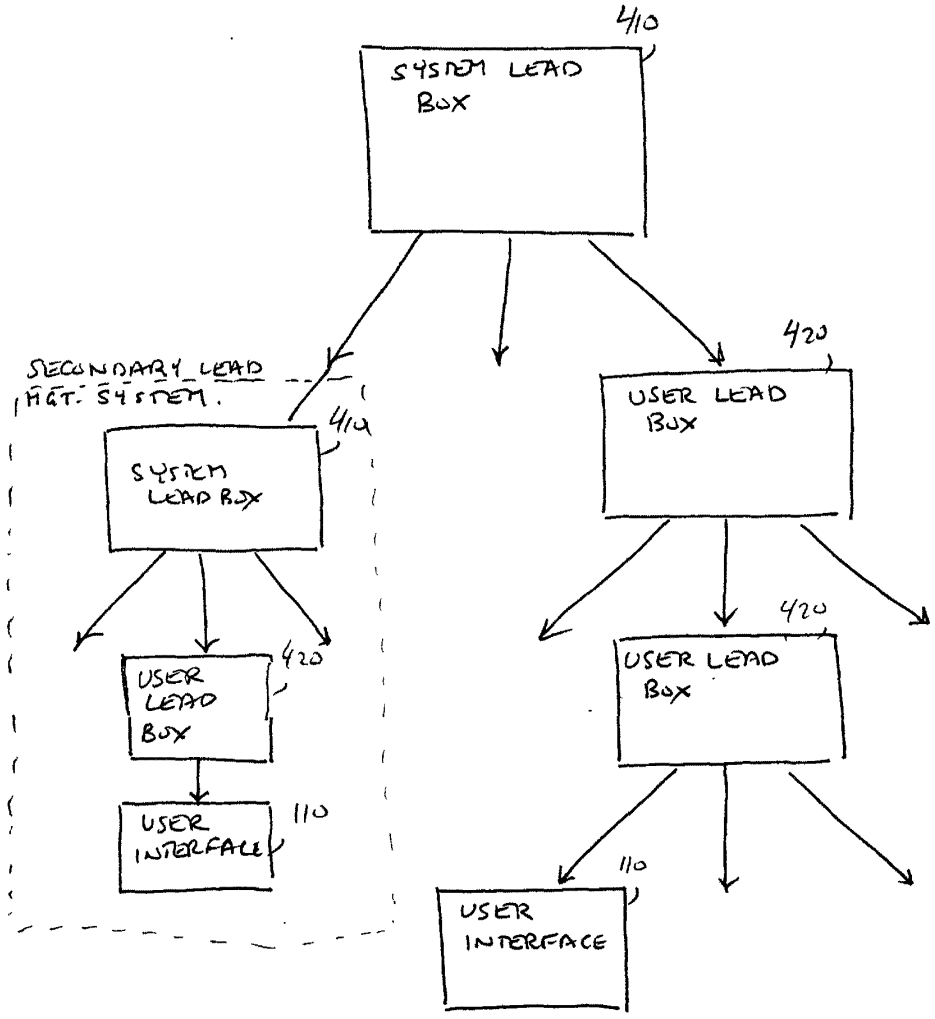
410
SYSTEM LEAD BOX
SECONDARY LEAD MGT. SYSTEM.
410
SYSTEM LEAD BOX
420
USER LEAD BOX
110
USER INTERFACE
420
USER LEAD BOX
420
USER LEAD BOX
110
USER INTERFACE

FIG. 5