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Hammond

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(54) **METHOD AND SYSTEM FOR ENHANCING RELIABILITY OF COMMUNICATION WITH ELECTRONIC MESSAGES**

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(58) **Field of Search** 719/313; 709/206, 709/207, 200, 313, 310, 204

(56) **References Cited**

U.S. PATENT DOCUMENTS

4,962,532 A	*	10/1990	Kasiraj et al.	713/166
5,057,935 A	*	10/1991	Williams	358/402
5,325,310 A	*	6/1994	Johnson et al.	709/206
5,396,537 A	*	3/1995	Schwendeman	340/7.23
5,487,100 A	*	1/1996	Kane	340/7.23

(List continued on next page.)

FOREIGN PATENT DOCUMENTS

JP	04282934 A	*	10/1992	H04L/12/54
JP	08130554 A	*	5/1996	H04L/12/54
JP	11252164 A	*	9/1999	H04L/12/54

OTHER PUBLICATIONS

Fulton, Jennifer et al. "Netscape Navigator 6 in 1". Que Corporation. 1996. p. 177-188.*

Cox, Nancy. "Messaging's next blockbuster hit". Computer Select, Apr. 15, 1997.*

Microsoft. "Messaging Client API". MAPI Version 1.0. Apr. 15, 1992.*

Drummond, Rik. "Save and secure electronic commerce." Computer Select. Dec. 1, 1996.*

Moore, K. "An Extensible Message Format for Delivery Status Notification." RFC 1894. Jan. 1996.*

Fleming, S.T. "Electronic mail: case study in task-oriented restructuring of application domain." IEEE, Mar. 1994.*

(List continued on next page.)

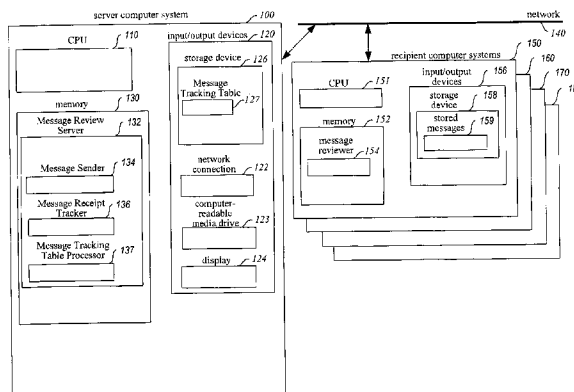
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(57) **ABSTRACT**

A system for enhancing the reliability of communicating with electronic messages. The system sends an electronic message to designated recipients, and then automatically helps ensure that each message has been successfully delivered within a specified period of time and that each message has been reviewed within a specified period of time. In addition, the system automatically performs specified activities after review of a message takes place. The sender of an electronic message initiates reliability-enhanced messaging by specifying message delivery information and message review information. The sender can specify that if delivery or review notifications are not received within specified periods of time, the message will be resent to the recipient or a reminder message will be sent to the recipient or to another user. The message information can include various frequency and duration options, such as resending a message only once or resending it every 2 hours for a week. Message information can also specify to resend the message with a higher transmission priority or review urgency so that its delivery and review is more likely, or could specify to use a different recipient system for the recipient (e.g., to a second email address if a first address fails, or to a pager if a cellular phone is not available). Each recipient of a message can have individualized message delivery information. The system tracks whether each message has been delivered to each recipient, and uses the message delivery information to resend the messages whose delivery and review was not confirmed.

96 Claims, 7 Drawing Sheets



U.S. PATENT DOCUMENTS

5,740,231 A * 4/1998 Cohn et al. 370/401
 5,742,668 A * 4/1998 Pepe et al. 455/415
 5,764,899 A * 6/1998 Eggleston et al. 709/203
 5,790,639 A * 8/1998 Ranalli et al. 358/407
 5,793,973 A * 8/1998 Birdwell et al. 709/223
 5,819,110 A * 10/1998 Motoyama 710/15
 5,842,195 A * 11/1998 Peters et al. 707/1
 5,893,099 A * 4/1999 Schreiber et al. 707/10
 5,923,848 A * 7/1999 Goodhand et al. 709/219
 5,930,471 A * 7/1999 Milewski et al. 709/204
 5,940,823 A * 8/1999 Schreiber et al. 707/200
 5,978,836 A * 11/1999 Ouchi 709/203
 6,002,852 A * 12/1999 Birdwell et al. 709/203
 6,038,601 A * 3/2000 Lambert et al. 709/226
 6,108,688 A * 8/2000 Nielsen 709/206
 6,108,709 A * 8/2000 Shinomura et al. 709/228
 6,157,945 A * 12/2000 Balma et al. 709/206
 6,175,859 B1 * 1/2001 Mohler 709/206
 6,185,603 B1 * 2/2001 Henderson et al. 709/206
 6,208,996 B1 * 3/2001 Ben-Shachar et al. 345/963
 6,272,532 B1 * 8/2001 Feinleib 709/206
 6,314,454 B1 * 11/2001 Wang et al. 709/206
 6,327,046 B1 * 12/2001 Miyamoto et al. 358/1.15
 6,370,567 B1 * 4/2002 Ouchi 709/206
 6,427,164 B1 * 7/2002 Reilly 709/206
 6,453,341 B1 * 9/2002 Miloslavsky 709/206
 6,603,389 B1 * 8/2003 Murray 340/7.2
 6,618,747 B1 * 9/2003 Flynn et al. 709/206
 2002/0055898 A1 * 5/2002 Burakoff et al. 705/35
 2002/0144154 A1 * 10/2002 Tomkow 713/201

OTHER PUBLICATIONS

“Conferencing Tools,” http://www.cio.com/WebMaster/wm_conferencing.html, p. 1 [Accessed Jan. 22, 1998].

“What is HyperNews?,” <http://www.cer.ch/WebOfficialDoc/HyperNews/WhatIsHN.html>, pp. 1–4 [Accessed Jan. 22, 1998].

“The Right Work Environment for Network–Centric Computing,” http://esuite.lotus.com/eSuite/eSuite_Site.nsf/b9160abf61cf14e38525653b006a4e99/2d227cfb1f91d8dc85256541002254, p. 1 [Accessed Jan. 22, 1998].

“Project Cyrus: Overview of Technologies Chosen,” <http://andrew2.andrew.cmu.edu/cyrus/cyrustechoverview.fm.html>, pp. 1–2 [Accessed Jan. 22, 1998].

“Multiple–reply ‘SPAR’ Service,” DataBack Systems, <http://www2.databack.com/mailback/multispar.htm>, pp. 1–2 [Accessed Jan. 28, 1998].

“Conferencing Systems,” Collaborative Conferencing, <http://www.hypernews.org/HyperNews/get/www.collab/conferencing.html>, pp. 1–4 [Accessed Jan. 22, 1998].

“AutoResponder/AutoMailer/Autobot Comparisons,” <http://www.makura.com/auto/autocomp.html>, pp. 1–18 [Accessed Jan. 28, 1998].

“Lotus cc:Mail Release 8.1,” <http://www.ccmil.com/overview/r81specsheat.htm>, pp. 1–3 [Accessed Jan. 22, 1998].

“Lotus cc:Mail Technical Overview,” <http://www.ccmil.com/overview/overview.htm>, pp. 1–43 [Accessed Jan. 22, 1998].

“GroupWise 5: Detailed Information,” Novell GroupWise 5 Product Details, <http://www.sisnema.com.br/novell/ngw5/ngw5.1/informativo/infoing.htm>, pp. 1–9 [Accessed Jan. 28, 1998].

* cited by examiner

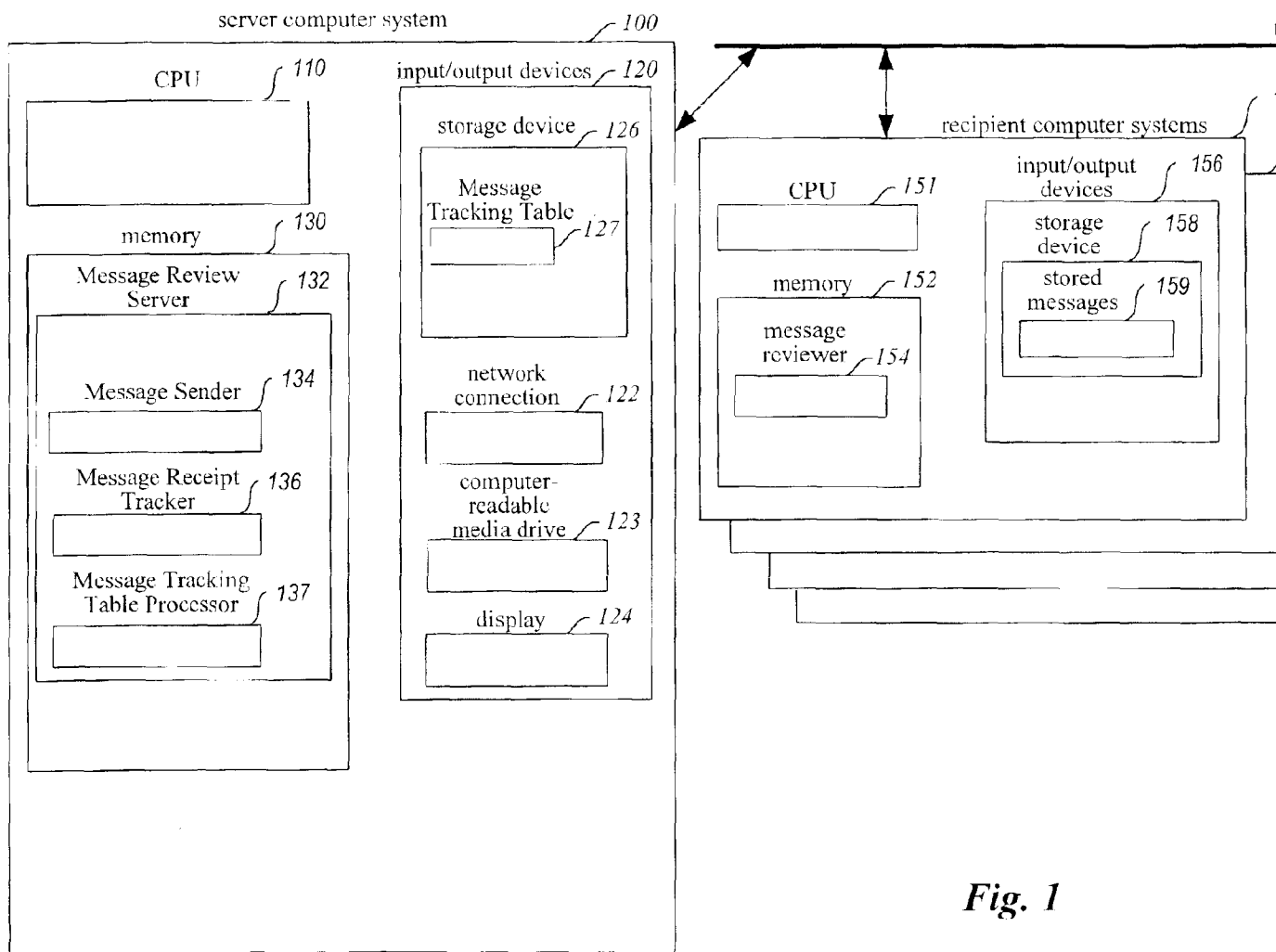


Fig. 1

Message Tracking Table

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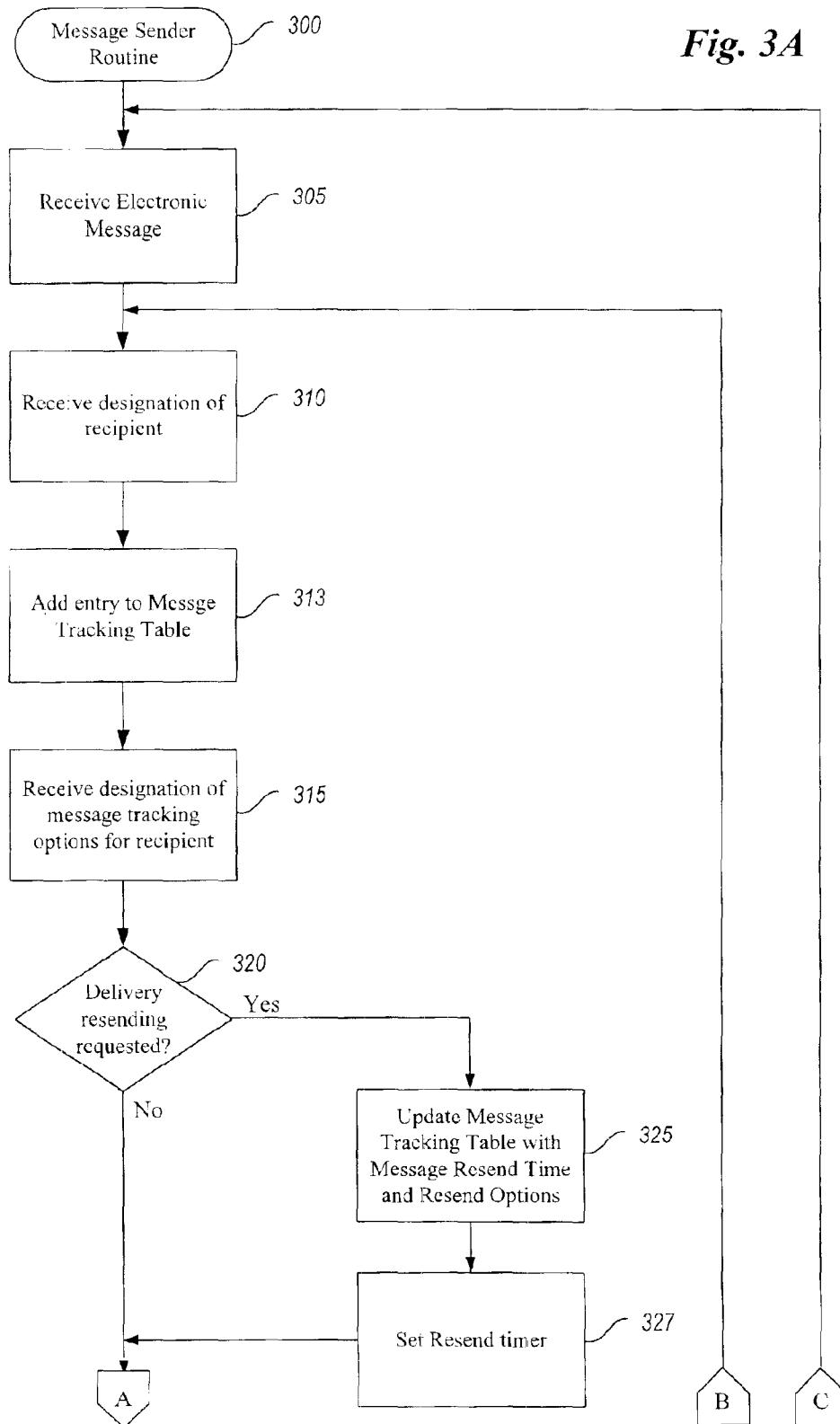
Row/ Column	1 Message ID	2 Recipient ID	3 Send Time	4 Delivery Time	5 Review Time	6 Resend Time Period	7 Review Reminder Time Period	8 Post- Review Time Period
1	1	ABC	07/26/XX 18:26:33	07/26/XX 18:28:15	07/28/XX 10:12:33	1 hour	1 day	1 hour
2	1	BCD	07/26/XX 18:26:33	07/27/XX 00:15:12	07/27/XX 11:33:37	2 hours	18 hours	
3	2	CDE	07/28/XX 10:05:10		07/30/XX 09:08:13		2 days	1 day
4	3	ABC	08/10/XX 09:10:13	08/10/XX 09:10:17		1 minute		
⋮								

Message Tracking Table (continued)

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Row/ Column	9 Resend Record	10 Review Reminder Record	11 Post- Review Record	12 Resend Options	13 Review Reminder Options	14 Post- Review Options
1		07/27/XX 18:30:10	07/28/XX 11:13:00	High Priority	High Urgency	Message Y
2	07/26/XX 20:26:45 07/26/XX 22:28:13			Max 3 times	Template X	
3			07/31/XX 09:10:00 08/01/XX 09:10:10		Supervisor	Template R Template S
4						
⋮						

Fig. 2



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