



US009338111B2

(12) **United States Patent**  
**Collins et al.**

(10) **Patent No.:** **US 9,338,111 B2**  
(45) **Date of Patent:** **\*May 10, 2016**

(54) **ELECTRONIC MESSAGE RECIPIENT  
HANDLING SYSTEM AND METHOD WITH  
MEDIA COMPONENT AND HEADER  
INFORMATION SEPARATION**

(71) Applicant: **Vaporstream, Inc.**, Chicago, IL (US)  
(72) Inventors: **Joseph Collins**, Chicago, IL (US); **Amit  
Jindas Shah**, Chicago, IL (US)  
(73) Assignee: **VAPORSTREAM, INC.**, Chicago, IL  
(US)

(\*) Notice: Subject to any disclaimer, the term of this  
patent is extended or adjusted under 35  
U.S.C. 154(b) by 0 days.

This patent is subject to a terminal dis-  
claimer.

(21) Appl. No.: **14/572,976**

(22) Filed: **Dec. 17, 2014**

(65) **Prior Publication Data**

US 2015/0106744 A1 Apr. 16, 2015

**Related U.S. Application Data**

(63) Continuation of application No. 14/133,875, filed on  
Dec. 19, 2013, now Pat. No. 8,935,351, which is a

(Continued)

(51) **Int. Cl.**  
**G06F 3/00** (2006.01)  
**G06F 7/04** (2006.01)

(Continued)

(52) **U.S. Cl.**  
CPC ..... **H04L 51/10** (2013.01); **G06F 3/0482**  
(2013.01); **G06F 3/04842** (2013.01);  
(Continued)

(58) **Field of Classification Search**  
CPC ..... H04L 63/04; H04L 51/063; H04L 51/18;  
H04L 51/22; H04L 51/10; H04L 51/34;  
H04L 63/0428; H04L 51/02; H04L 51/28;  
H04L 67/02; H04L 51/08; G06Q 10/00;  
G06Q 10/107; G06F 21/10; G06F 2221/0737;  
G06F 2221/2101; G06F 2221/2119; G06F  
3/0482; G06F 3/04842

USPC ..... 709/206; 715/752; 726/26  
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

4,803,703 A 2/1989 DeLuca et al.  
5,255,356 A \* 10/1993 Michelman ..... G06F 17/246  
715/212

(Continued)

FOREIGN PATENT DOCUMENTS

AU 2006276974 2/2012  
AU 2006276974 8/2012

(Continued)

OTHER PUBLICATIONS

U.S. Appl. No. 13/651,909, Jun. 8, 2015, Office Action.

(Continued)

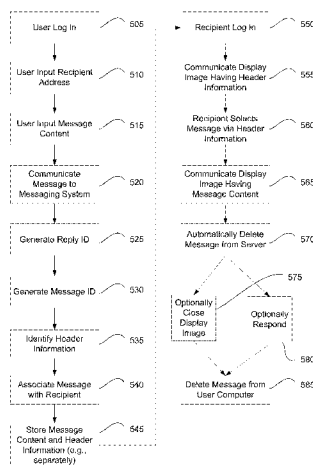
*Primary Examiner* — Daniel C Murray

(74) *Attorney, Agent, or Firm* — Birch Tree IP Law &  
Strategy PLLC

(57) **ABSTRACT**

An electronic messaging system and method with reduced  
traceability. Separate displays are provided at a recipient user  
device for separately displaying via the user device header  
information of an electronic message and message content  
including a media component. The message content and the  
header information are correlated with a unique identifier.  
The header information is displayed in a message list via a  
first display. The message content including a media compo-  
nent is displayed via a second display. The display of the  
header information via the first display does not include a  
display of the media component. Methods, systems, and com-  
puter readable media with separation of the display of media  
component and header information in various implementa-  
tions may provide for reduced traceability of an electronic  
message.

**37 Claims, 10 Drawing Sheets**



**Related U.S. Application Data**

continuation of application No. 13/651,909, filed on Oct. 15, 2012, now abandoned, which is a continuation of application No. 12/605,885, filed on Oct. 26, 2009, now Pat. No. 8,291,026, which is a continuation of application No. 11/401,148, filed on Apr. 10, 2006, now Pat. No. 7,610,345.

- (60) Provisional application No. 60/703,367, filed on Jul. 28, 2005.

**(51) Int. Cl.**

**G06F 15/16** (2006.01)  
**H04L 12/58** (2006.01)  
**H04L 29/06** (2006.01)  
**H04L 29/08** (2006.01)  
**G06F 21/10** (2013.01)  
**G06Q 10/00** (2012.01)  
**G06Q 10/10** (2012.01)  
**G06F 3/0482** (2013.01)  
**G06F 3/0484** (2013.01)

**(52) U.S. Cl.**

CPC ..... **G06F 21/10** (2013.01); **G06Q 10/00**  
 (2013.01); **G06Q 10/107** (2013.01); **H04L**  
**51/02** (2013.01); **H04L 51/063** (2013.01);  
**H04L 51/08** (2013.01); **H04L 51/18** (2013.01);  
**H04L 51/22** (2013.01); **H04L 51/34** (2013.01);  
**H04L 63/04** (2013.01); **H04L 63/0428**  
 (2013.01); **H04L 67/02** (2013.01); **G06F**  
**2221/0737** (2013.01); **G06F 2221/2101**  
 (2013.01); **G06F 2221/2119** (2013.01); **H04L**  
**51/28** (2013.01)

**(56)****References Cited****U.S. PATENT DOCUMENTS**

5,457,454 A 10/1995 Sugano  
 5,560,033 A 9/1996 Doherty et al.  
 5,598,279 A 1/1997 Ishii et al.  
 5,608,786 A 3/1997 Gordon  
 5,675,507 A \* 10/1997 Bobo, II ..... H04L 29/06  
 348/14.12  
 5,680,551 A 10/1997 Martino, II  
 5,742,905 A 4/1998 Pepe  
 5,754,778 A 5/1998 Shoujima  
 5,768,503 A 6/1998 Olkin  
 5,781,741 A 7/1998 Imamura et al.  
 5,848,410 A 12/1998 Walls et al.  
 5,857,201 A 1/1999 Wright, Jr.  
 5,870,605 A 2/1999 Bracho  
 5,874,960 A 2/1999 Mairs et al.  
 5,889,942 A 3/1999 Orenshteyn  
 5,896,301 A 4/1999 Barrientos  
 5,903,472 A 5/1999 Barrientos  
 5,930,479 A 7/1999 Hall  
 5,949,348 A 9/1999 Kapp et al.  
 5,951,636 A 9/1999 Zerber  
 5,956,521 A 9/1999 Wang  
 5,958,005 A \* 9/1999 Thorne ..... G06Q 10/107  
 380/51  
 6,006,206 A 12/1999 Smith et al.  
 6,008,807 A 12/1999 Bretschneider et al.  
 6,018,801 A 1/2000 Palage et al.  
 6,038,601 A 3/2000 Lambert et al.  
 6,044,395 A 3/2000 Costales et al.  
 6,071,347 A 6/2000 Ogawa et al.  
 6,073,174 A 6/2000 Montgomerie  
 6,076,101 A 6/2000 Kamakura et al.  
 6,134,432 A 10/2000 Holmes et al.  
 6,161,129 A 12/2000 Rochkind  
 6,178,331 B1 1/2001 Holmes et al.

6,209,100 B1 3/2001 Robertson et al.  
 6,233,318 B1 5/2001 Picard et al.  
 6,268,855 B1 7/2001 Mairs et al.  
 6,271,839 B1 8/2001 Mairs et al.  
 6,285,363 B1 9/2001 Mairs et al.  
 6,288,704 B1 9/2001 Flack et al.  
 6,289,212 B1 9/2001 Stein et al.  
 6,289,450 B1 9/2001 Pensak et al.  
 6,298,446 B1 10/2001 Schreiber et al.  
 6,324,569 B1 11/2001 Ogilvie et al.  
 6,339,825 B2 1/2002 Pensak et al.  
 6,353,892 B2 3/2002 Schreiber et al.  
 6,357,010 B1 3/2002 Viets et al.  
 6,370,656 B1 4/2002 Olarig et al.  
 6,411,684 B1 6/2002 Cohn  
 6,434,702 B1 8/2002 Maddalozzo, Jr. et al.  
 6,438,594 B1 8/2002 Bowman-Amuah  
 6,442,592 B1 8/2002 Alumbaugh  
 6,449,721 B1 9/2002 Pensak et al.  
 6,487,586 B2 11/2002 Ogilvie et al.  
 6,516,416 B2 2/2003 Gregg et al.  
 6,529,500 B1 3/2003 Pandharipande  
 6,549,194 B1 4/2003 McIntyre et al.  
 6,556,586 B1 4/2003 Sipila  
 6,563,800 B1 5/2003 Salo  
 6,591,291 B1 7/2003 Gabber et al.  
 6,601,088 B1 7/2003 Kelley et al.  
 6,606,659 B1 8/2003 Hegli et al.  
 6,609,148 B1 8/2003 Salo  
 6,629,138 B1 9/2003 Lambert et al.  
 6,631,398 B1 10/2003 Klein  
 6,651,185 B1 11/2003 Sauvage  
 6,671,732 B1 12/2003 Weiner  
 6,697,806 B1 2/2004 Cook  
 6,701,346 B1 3/2004 Klein  
 6,701,347 B1 \* 3/2004 Ogilvie ..... G06Q 10/107  
 709/202  
 6,711,608 B1 3/2004 Ogilvie  
 6,721,784 B1 4/2004 Leonard et al.  
 6,724,370 B2 4/2004 Dutta et al.  
 6,728,714 B1 4/2004 Doganata et al.  
 6,730,863 B1 5/2004 Gerpheide et al.  
 6,732,150 B1 5/2004 Thrane  
 6,732,368 B1 5/2004 Michael  
 6,741,855 B1 5/2004 Martin et al.  
 6,742,032 B1 5/2004 Castellani et al.  
 6,748,422 B2 6/2004 Morin et al.  
 6,757,713 B1 6/2004 Ogilvie et al.  
 6,779,022 B1 8/2004 Horstmann  
 6,804,675 B1 10/2004 Knight et al.  
 6,826,688 B1 11/2004 Westerman et al.  
 6,829,599 B2 12/2004 Chidlovskii  
 6,829,631 B1 12/2004 Forman et al.  
 6,832,354 B2 12/2004 Kawano et al.  
 6,834,372 B1 12/2004 Becker et al.  
 6,851,049 B1 2/2005 Price, III  
 6,922,693 B1 7/2005 Rubin et al.  
 6,978,376 B2 12/2005 Giroux et al.  
 6,993,662 B2 1/2006 Rubin et al.  
 7,010,566 B1 3/2006 Jones et al.  
 7,020,783 B2 3/2006 Vange et al.  
 7,035,912 B2 4/2006 Arteaga  
 7,043,563 B2 5/2006 Vange et al.  
 7,062,454 B1 6/2006 Giannini et al.  
 7,062,533 B2 6/2006 Brown et al.  
 7,062,563 B1 6/2006 Lewis  
 7,072,934 B2 7/2006 Helgeson  
 7,076,085 B1 7/2006 Sah  
 7,076,469 B2 7/2006 Schreiber et al.  
 7,080,077 B2 7/2006 Ramamurthy  
 7,111,006 B2 9/2006 Vange et al.  
 7,120,615 B2 10/2006 Sullivan et al.  
 7,120,662 B2 10/2006 Vange et al.  
 7,123,609 B2 10/2006 Glasser et al.  
 7,124,189 B2 10/2006 Summers  
 7,127,518 B2 10/2006 Vange et al.  
 7,130,831 B2 10/2006 Howard et al.  
 7,143,195 B2 11/2006 Vange et al.  
 7,155,539 B2 12/2006 Vange et al.

(56)

## References Cited

## U.S. PATENT DOCUMENTS

7,155,743 B2	12/2006	Goodman et al.	2002/0002602 A1	1/2002	Vange et al.
7,155,744 B2	12/2006	Schreiber et al.	2002/0002603 A1	1/2002	Vange
7,162,014 B2	1/2007	Skladman	2002/0002611 A1	1/2002	Vange
7,162,471 B1	1/2007	Knight et al.	2002/0002618 A1	1/2002	Vange
7,162,508 B2	1/2007	Messina	2002/0002622 A1	1/2002	Vange et al.
7,162,649 B1	1/2007	Ide	2002/0002625 A1	1/2002	Vange et al.
7,171,620 B2	1/2007	Castellani et al.	2002/0002636 A1	1/2002	Vange et al.
7,171,693 B2	1/2007	Tucker et al.	2002/0002686 A1	1/2002	Vange et al.
7,174,453 B2	2/2007	Lu	2002/0002688 A1	1/2002	Gregg et al.
7,185,359 B2	2/2007	Schmidt et al.	2002/0004796 A1	1/2002	Vange et al.
7,185,364 B2	2/2007	Knouse et al.	2002/0004816 A1	1/2002	Vange et al.
7,191,219 B2	3/2007	Udell et al.	2002/0016918 A1	2/2002	Tucker et al.
7,194,547 B2	3/2007	Moreh	2002/0019853 A1	2/2002	Vange et al.
7,194,764 B2	3/2007	Martherus et al.	2002/0023159 A1	2/2002	Vange et al.
7,200,635 B2	4/2007	Yashchin et al.	2002/0024506 A1	2/2002	Flack et al.
7,213,249 B2	5/2007	Tung Loo	2002/0026487 A1	2/2002	Ogilvie et al.
7,219,148 B2	5/2007	Rounthwaite et al.	2002/0026495 A1	2/2002	Arteaga
7,222,157 B1	5/2007	Sutton, Jr. et al.	2002/0029248 A1	3/2002	Cook et al.
7,266,779 B2 *	9/2007	Back ..... H04L 63/10 709/229	2002/0029249 A1	3/2002	Campbell et al.
7,281,272 B1	10/2007	Rubin et al.	2002/0032742 A1	3/2002	Anderson
7,305,069 B1	12/2007	Day	2002/0049749 A1	4/2002	Helgeson
7,340,518 B1	3/2008	Jenkins	2002/0054120 A1	5/2002	Kawano et al.
7,356,564 B2	4/2008	Hartselle et al.	2002/0056006 A1	5/2002	Vange et al.
7,366,760 B2	4/2008	Warren et al.	2002/0059170 A1	5/2002	Vange
7,386,590 B2	6/2008	Warren et al.	2002/0059381 A1	5/2002	Cook et al.
7,433,949 B2	10/2008	Xu et al.	2002/0065892 A1	5/2002	Malik
7,451,359 B1	11/2008	Coekaerts	2002/0069365 A1	6/2002	Howard et al.
7,496,631 B2	2/2009	Austin-Lane et al.	2002/0078343 A1	6/2002	Rubin et al.
7,532,913 B2	5/2009	Doulton	2002/0078361 A1	6/2002	Giroux et al.
7,539,755 B2	5/2009	Li et al.	2002/0083016 A1	6/2002	Dittrich et al.
7,562,118 B2	7/2009	Fellenstein et al.	2002/0087720 A1	7/2002	Davis et al.
7,590,693 B1	9/2009	Chan et al.	2002/0091745 A1	7/2002	Ramamurthy
7,610,345 B2	10/2009	Collins et al.	2002/0091775 A1	7/2002	Morehead et al.
7,620,688 B2	11/2009	Warren et al.	2002/0095399 A1	7/2002	Devine
7,657,759 B2	2/2010	Rubin et al.	2002/0098831 A1	7/2002	Castell et al.
7,664,956 B2	2/2010	Goodman	2002/0099826 A1	7/2002	Summers
7,676,767 B2 *	3/2010	Hofmeister ..... G06F 3/0483 345/173	2002/0107950 A1	8/2002	Lu
7,730,150 B2	6/2010	Warren et al.	2002/0112155 A1	8/2002	Martherus et al.
7,760,662 B2	7/2010	Maeda	2002/0120646 A1	8/2002	Dutta et al.
7,765,285 B2	7/2010	Yoshida et al.	2002/0129140 A1	9/2002	Peled et al.
7,765,483 B2 *	7/2010	Schmieder ..... G06F 9/54 715/751	2002/0143865 A1	10/2002	Tung Loo
7,774,414 B2	8/2010	Shah	2002/0149569 A1	10/2002	Dutta et al.
7,783,715 B2	8/2010	Muller	2002/0194470 A1	12/2002	Grupe
7,814,158 B2	10/2010	Malik	2003/0009672 A1	1/2003	Goodman
7,836,301 B2	11/2010	Harris	2003/0023580 A1	1/2003	Braud et al.
7,860,932 B2	12/2010	Fried	2003/0028809 A1	2/2003	Goodman et al.
7,899,872 B2	3/2011	Warren et al.	2003/0050046 A1	3/2003	Conneely et al.
7,962,654 B2	6/2011	Vange et al.	2003/0054810 A1	3/2003	Chen et al.
7,966,376 B2	6/2011	Kelso et al.	2003/0055897 A1	3/2003	Brown et al.
7,975,066 B2	7/2011	Vange et al.	2003/0061215 A1	3/2003	Messina
8,171,286 B2	5/2012	Harris	2003/0074248 A1	4/2003	Braud
8,200,971 B2	6/2012	Edwards	2003/0074397 A1	4/2003	Morin et al.
8,255,465 B2	8/2012	Edwards	2003/0074552 A1	4/2003	Olkin et al.
8,291,026 B2	10/2012	Collins et al.	2003/0074580 A1	4/2003	Knouse et al.
8,364,764 B2	1/2013	Hartselle et al.	2003/0078890 A1	4/2003	Schmidt et al.
8,386,641 B2	2/2013	Vange et al.	2003/0100292 A1	5/2003	Kynast et al.
8,417,770 B2	4/2013	Vange et al.	2003/0120948 A1	6/2003	Schmidt et al.
8,463,935 B2	6/2013	Vange et al.	2003/0126215 A1	7/2003	Udell et al.
8,725,809 B2	5/2014	Hartselle et al.	2003/0126259 A1	7/2003	Yoshida et al.
8,886,739 B2	11/2014	Collins et al.	2003/0131055 A1	7/2003	Yashchin et al.
8,935,351 B2	1/2015	Collins et al.	2003/0131060 A1	7/2003	Hartselle et al.
9,054,870 B2 *	6/2015	Gassi ..... H04L 9/28	2003/0147378 A1	8/2003	Glasser et al.
9,076,231 B1 *	7/2015	Hill ..... G06T 3/4023	2003/0149737 A1	8/2003	Lambert et al.
9,147,050 B2 *	9/2015	Park ..... G06F 21/10	2003/0154249 A1	8/2003	Crockett et al.
9,154,926 B1 *	10/2015	Steele ..... H04W 4/12	2003/0154292 A1	8/2003	Spiestersbach et al.
2001/0000265 A1	4/2001	Schreiber et al.	2003/0163538 A1	8/2003	Yeh et al.
2001/0000359 A1	4/2001	Schreiber et al.	2003/0167350 A1	9/2003	Davis et al.
2001/0000541 A1	4/2001	Schreiber et al.	2003/0224810 A1	12/2003	Enzmann et al.
2001/0006551 A1	7/2001	Masaki	2004/0002903 A1	1/2004	Stolfo et al.
2001/0034791 A1	10/2001	Clubb et al.	2004/0015729 A1	1/2004	Elms et al.
2001/0037316 A1	11/2001	Shiloh	2004/0019846 A1	1/2004	Castellani et al.
2001/0044831 A1	11/2001	Yamazaki	2004/0024788 A1	2/2004	Hill et al.
			2004/0030918 A1	2/2004	Karamchedu et al.
			2004/0049436 A1	3/2004	Brand et al.
			2004/0051736 A1	3/2004	Daniell
			2004/0051897 A1	3/2004	Kakiuchi et al.
			2004/0059790 A1 *	3/2004	Austin-Lane ..... H04L 51/04 709/207
			2004/0068486 A1	4/2004	Chidlovskii

(56)

## References Cited

## U.S. PATENT DOCUMENTS

2004/0121762 A1	6/2004	Chou	2007/0063999 A1	3/2007	Park
2004/0133599 A1	7/2004	Warren et al.	2007/0071222 A1	3/2007	Flockhart et al.
2004/0133643 A1	7/2004	Warren et al.	2007/0074018 A1	3/2007	Edwards
2004/0133644 A1	7/2004	Warren et al.	2007/0077921 A1	4/2007	Hayashi et al.
2004/0177110 A1	9/2004	Rounthwaite et al.	2007/0078675 A1	4/2007	Kaplan
2004/0188151 A1	9/2004	Gerpheide et al.	2007/0083675 A1	4/2007	Vemulapelli et al.
2004/0189616 A1	9/2004	Gerpheide et al.	2007/0083929 A1	4/2007	Sprosts et al.
2004/0189617 A1	9/2004	Gerpheide et al.	2007/0113287 A1	5/2007	Blumenau
2004/0193591 A1	9/2004	Winter	2007/0113288 A1	5/2007	Blumenau
2004/0193695 A1	9/2004	Salo	2007/0113289 A1	5/2007	Blumenau
2004/0210632 A1	10/2004	Carlson et al.	2007/0113293 A1	5/2007	Blumenau
2004/0210796 A1	10/2004	Largman et al.	2007/0116001 A1	5/2007	Kobayashi et al.
2004/0234046 A1	11/2004	Skladman	2007/0130329 A1	6/2007	Shah
2004/0243679 A1	12/2004	Tyler	2007/0133034 A1	6/2007	Jindal et al.
2004/0249892 A1 *	12/2004	Barriga ..... H04L 12/583 709/206	2007/0136428 A1	6/2007	Boutboul et al.
2005/0010643 A1	1/2005	Fellenstein et al.	2007/0143423 A1	6/2007	Kieselbach et al.
2005/0027846 A1	2/2005	Wolfe et al.	2007/0177568 A1	8/2007	Clontz et al.
2005/0064883 A1	3/2005	Heck	2007/0217393 A1	9/2007	Lee et al.
2005/0071178 A1	3/2005	Beckstrom et al.	2007/0233790 A1	10/2007	Agarwal et al.
2005/0071282 A1	3/2005	Lu et al.	2007/0250619 A1	10/2007	Li et al.
2005/0086186 A1	4/2005	Sullivan et al.	2008/0077704 A1	3/2008	Shah et al.
2005/0091501 A1	4/2005	Osthoff et al.	2008/0126496 A1	5/2008	Warren et al.
2005/0120230 A1	6/2005	Waterson	2008/0201440 A1	8/2008	Shah et al.
2005/0130631 A1	6/2005	Maguire	2008/0208998 A1	8/2008	Warren et al.
2005/0132010 A1	6/2005	Muller	2008/0281930 A1	11/2008	Hartselle et al.
2005/0132013 A1	6/2005	Karstens	2008/0313296 A1	12/2008	Muller
2005/0132372 A1	6/2005	Vargas et al.	2008/0320092 A1	12/2008	Campbell et al.
2005/0144246 A1	6/2005	Malik	2009/0116492 A1	5/2009	Maeda
2005/0193068 A1	9/2005	Brown et al.	2009/0254994 A1	10/2009	Waterson
2005/0198365 A1	9/2005	Wei	2010/0064016 A1	3/2010	Collins et al.
2005/0204005 A1	9/2005	Purcell et al.	2010/0077360 A1	3/2010	Nason et al.
2005/0204008 A1	9/2005	Shinbrood	2010/0082979 A1	4/2010	Edwards
2005/0204130 A1	9/2005	Harris	2010/0131868 A1 *	5/2010	Chawla ..... G06F 3/044 715/759
2005/0209903 A1	9/2005	Hunter et al.	2010/0157998 A1	6/2010	Vange et al.
2005/0229258 A1	10/2005	Pigin	2011/0030052 A1	2/2011	Harris
2005/0240666 A1	10/2005	Xu et al.	2011/0061099 A1	3/2011	Jiang et al.
2005/0240759 A1	10/2005	Rubin et al.	2011/0161448 A1	6/2011	Warren et al.
2005/0251399 A1	11/2005	Agarwal et al.	2011/0238860 A1	9/2011	Vange et al.
2005/0256929 A1	11/2005	Bartol et al.	2011/0246665 A1	10/2011	Vange et al.
2005/0266836 A1	12/2005	Shan	2011/0302321 A1	12/2011	Vange et al.
2005/0277431 A1	12/2005	White	2012/0036452 A1 *	2/2012	Coleman ..... G06F 21/55 715/751
2005/0283621 A1	12/2005	Sato et al.	2012/0054308 A1	3/2012	Vange et al.
2005/0289601 A1	12/2005	Park et al.	2012/0059907 A1	3/2012	Vange et al.
2006/0010215 A1	1/2006	Clegg et al.	2012/0203849 A1	8/2012	Collins et al.
2006/0020714 A1	1/2006	Girouard et al.	2013/0159436 A1	6/2013	Hartselle et al.
2006/0031483 A1	2/2006	Lund et al.	2013/0290443 A1	10/2013	Collins et al.
2006/0041751 A1	2/2006	Rogers et al.	2014/0074981 A1	3/2014	Vange et al.
2006/0046758 A1	3/2006	Emami-Nouri	2014/0181689 A1	6/2014	Collins et al.
2006/0047748 A1	3/2006	Kelso et al.	2014/0201295 A1	7/2014	Collins et al.
2006/0075473 A1	4/2006	Moreh	2014/0207887 A1	7/2014	Hartselle et al.
2006/0095502 A1	5/2006	Lewis et al.	2015/0100657 A1	4/2015	Collins et al.
2006/0129697 A1	6/2006	Vange et al.	2015/0106459 A1	4/2015	Collins et al.
2006/0129823 A1	6/2006	McCarthy et al.	2015/0106460 A1	4/2015	Collins et al.
2006/0140347 A1	6/2006	Kaji	2015/0106461 A1	4/2015	Collins et al.
2006/0168058 A1	7/2006	Midgley	2015/0106743 A1	4/2015	Collins et al.
2006/0177007 A1	8/2006	Vaghar	2015/0106744 A1	4/2015	Collins et al.
2006/0208871 A1	9/2006	Hansen	2015/0180905 A1 *	6/2015	Ruppin ..... G06F 21/10 726/1
2006/0212561 A1	9/2006	Feng	2015/0180938 A1 *	6/2015	Ruppin ..... G06F 21/10 726/30
2006/0217126 A1	9/2006	Sohm et al.	2015/0215359 A1 *	7/2015	Bao ..... H04L 65/605 709/219
2006/0223554 A1	10/2006	Fried	2015/0237021 A1 *	8/2015	Sovio ..... H04L 63/0428 713/168
2006/0229899 A1	10/2006	Hyder et al.	2015/0244664 A1 *	8/2015	Kendal ..... H04L 51/14 709/206
2006/0234680 A1	10/2006	Doulton	2015/0248557 A1 *	9/2015	Sallam ..... G06F 21/554 726/23
2006/0235824 A1	10/2006	Cheung et al.			
2006/0236095 A1	10/2006	Smith			
2006/0248599 A1	11/2006	Sack			
2006/0259492 A1	11/2006	Jun et al.			
2006/0265453 A1	11/2006	Kaminsky et al.			
2006/0282426 A1	12/2006	Spears			
2006/0284852 A1 *	12/2006	Hofmeister ..... G06F 3/0483 345/173			
2007/0013662 A1	1/2007	Fauth	CA	2616911	2/2013
2007/0038715 A1	2/2007	Collins et al.	CA	2616911	8/2013
2007/0061399 A1 *	3/2007	Schmieder ..... G06F 9/54 709/204	CN	2006-80035550	1/2010
			CN	2006-80035550	12/2011
			CN	2006-80035550	7/2012
			DE	102004031677 A1	1/2006

## FOREIGN PATENT DOCUMENTS

(56)

**References Cited****FOREIGN PATENT DOCUMENTS**

EP	899918	A2	3/1999
EP	918420	A2	5/1999
EP	994608	A2	4/2000
EP	1113631	A2	4/2001
EP	1388986	A1	2/2004
EP	EU06750321.9		4/2010
EP	EU06750321.9		7/2010
EP	EU06750321.9		12/2011
EP	EU06750321.9		6/2012
GB	2430591	B	9/2010
IN	382/KOLNP/2008		5/2014
JP	H11-163923		6/1999
JP	2000/10879		1/2000
JP	2003/114852		4/2003
JP	2004/038407		2/2004
JP	2004/126973		4/2004
JP	2004/341813	A	12/2004
JP	2008-523868		4/2011
JP	2008-523868		11/2011
KR	7004841/2008		11/2012
TW	095119990		10/2012
TW	095119990		5/2013
WO	98/59456	A2	12/1998
WO	2004/095814	A1	11/2004
WO	2006/088915	A1	8/2006
WO	2006/114135	A1	11/2006
WO	2007/018636	A2	2/2007
WO	PCT/US2006/014254		10/2007
WO	2008/036971	A2	3/2008
WO	PCT/US2007/079299		3/2008
WO	PCT/US2008/054093		7/2008
WO	2008/101165	A2	8/2008
WO	2010/151873	A1	12/2010
WO	PCT/US2013/036723		8/2013
WO	2013/158603	A1	10/2013
WO	2013/158764	A1	10/2013
WO	2014/047489	A2	3/2014

**OTHER PUBLICATIONS**

U.S. Appl. No. 13/447,932, May 21, 2015, Office Action.

Henry, Paul and Luo, Hui. "Off the record Email System" (document and presentation). Presentation at IEEE Conference on Computer Communications (Infocom) Apr. 2001, Anchorage, Alaska, USA; last found at [http://www.research.att.com:9000/~macsbug/Other\\_Cool\\_Stuff/OTREM/otrem.html](http://www.research.att.com:9000/~macsbug/Other_Cool_Stuff/OTREM/otrem.html) on Apr. 7, 2006.

Bass, Steve. "50 fixes for the biggest PC annoyances: Windows gone wacky? Hardware gone haywire? Software gone screwy? Take a deep breath—help is here." [online] Oct. 1, 2003. [retrieved on Mar. 8, 2009] PC-World. [Retrieved from [http://www.accessmylibrary.com/coms2/summary\\_0286-24479177\\_TTM](http://www.accessmylibrary.com/coms2/summary_0286-24479177_TTM)] p. 3 Paragraph 5-7.

Gulco, Ceci and Tsudik, Gene. "Mixing E-mail with Babel." Proceedings of the Symposium on Network and Distributed System Security, XP-002086536, Jan. 1, 1996, pp. 2-16.

Elkins, Michael. "The Mutt E-mail Client." <ftp://ftp.nluug.nl/pub/mail/mutt/historic/mutt-1.0pre2.tar.gz>, XP-002245042, Sep. 1, 1999.

U.S. Appl. No. 11/401,148, Mar. 13, 2009, First Office Action, U.S. Pat. No. 7,610,345.

U.S. Appl. No. 11/401,148, Jun. 10, 2009, Interview Summary, U.S. Pat. No. 7,610,345.

U.S. Appl. No. 11/401,148, Jun. 15, 2009, Response to Office Action, U.S. Pat. No. 7,610,345.

U.S. Appl. No. 11/401,148, Aug. 25, 2009, Notice of Allowance, U.S. Pat. No. 7,610,345.

U.S. Appl. No. 11/401,148, Aug. 25, 2009, Rule 312 Amendment, U.S. Pat. No. 7,610,345.

U.S. Appl. No. 11/401,148, Oct. 7, 2009, Issue Notification, U.S. Pat. No. 7,610,345.

U.S. Appl. No. 11/859,777, Aug. 19, 2009, Office Action.

U.S. Appl. No. 12/031,845, Sep. 29, 2010, Office Action.

U.S. Appl. No. 12/605,885, Jan. 25, 2011, Office Action, U.S. Pat. No. 8,291,026.

U.S. Appl. No. 12/605,885, May 25, 2011, Response to Office Action, U.S. Pat. No. 8,291,026.

U.S. Appl. No. 12/605,885, Jun. 14, 2011, Examiner Interview Summary, U.S. Pat. No. 8,291,026.

U.S. Appl. No. 12/605,885, Aug. 4, 2011, Final Office Action, U.S. Pat. No. 8,291,026.

U.S. Appl. No. 12/605,885, Nov. 23, 2011, Examiner Interview Summary, U.S. Pat. No. 8,291,026.

U.S. Appl. No. 12/605,885, Jan. 4, 2012, Response to Final Office Action and RCE, U.S. Pat. No. 8,291,026.

U.S. Appl. No. 12/605,885, Jun. 11, 2012, Notice of Allowance, U.S. Pat. No. 8,291,026.

U.S. Appl. No. 13/447,932, Jan. 9, 2014, Response to Office Action.

U.S. Appl. No. 13/447,932, Sep. 9, 2014, Office Action.

U.S. Appl. No. 13/447,932, Mar. 19, 2015, Notice of Allowance.

U.S. Appl. No. 14/133,875, May 21, 2014, Office Action, U.S. Pat. No. 8,935,351.

U.S. Appl. No. 14/133,875, May 28, 2014, Supplemental Office Action, U.S. Pat. No. 8,935,351.

U.S. Appl. No. 14/133,875, Jun. 9, 2014, Examiner Interview Summary, U.S. Pat. No. 8,935,351.

U.S. Appl. No. 14/133,875, Jun. 23, 2014, Examiner Interview Summary, U.S. Pat. No. 8,935,351.

U.S. Appl. No. 14/133,875, Jul. 14, 2014, Response to Office Action, U.S. Pat. No. 8,935,351.

U.S. Appl. No. 14/133,875, Jul. 23, 2014, Resubmission of Terminal Disclaimers, U.S. Pat. No. 8,935,351.

U.S. Appl. No. 14/133,875, Aug. 15, 2014, Notice of Allowance, U.S. Pat. No. 8,935,351.

U.S. Appl. No. 14/133,875, Dec. 23, 2014, Issue Notification, U.S. Pat. No. 8,935,351.

U.S. Appl. No. 14/133,897, May 28, 2014, Office Action, U.S. Pat. No. 8,886,739.

U.S. Appl. No. 14/133,897, Jun. 9, 2014, Examiner Interview Summary, U.S. Pat. No. 8,886,739.

U.S. Appl. No. 14/133,897, Jun. 23, 2014, Examiner Interview Summary, U.S. Pat. No. 8,886,739.

U.S. Appl. No. 14/133,897, Jul. 14, 2014, Response to Office Action, U.S. Pat. No. 8,886,739.

U.S. Appl. No. 14/133,897, Jul. 23, 2014, Resubmission of Terminal Disclaimers, U.S. Pat. No. 8,886,739.

U.S. Appl. No. 14/133,897, Aug. 5, 2014, Notice of Allowance, U.S. Pat. No. 8,886,739.

U.S. Appl. No. 14/133,897, Oct. 22, 2014, Issue Notification, U.S. Pat. No. 8,886,739.

U.S. Appl. No. 11/859,777, filed Sep. 23, 2007.

U.S. Appl. No. 12/031,845, filed Feb. 15, 2008.

U.S. Appl. No. 12/605,885, filed Oct. 26, 2009.

U.S. Appl. No. 13/447,932, filed Apr. 16, 2012.

U.S. Appl. No. 13/651,909, filed Oct. 15, 2012.

U.S. Appl. No. 13/864,930, filed Apr. 17, 2013.

U.S. Appl. No. 14/033,135, filed Sep. 20, 2013.

U.S. Appl. No. 14/133,875, filed Dec. 19, 2013.

U.S. Appl. No. 14/133,897, filed Dec. 19, 2013.

U.S. Appl. No. 14/572,920, filed Dec. 17, 2014.

U.S. Appl. No. 14/572,932, filed Dec. 17, 2014.

U.S. Appl. No. 14/572,942, filed Dec. 17, 2014.

U.S. Appl. No. 14/572,952, filed Dec. 17, 2014.

U.S. Appl. No. 14/572,966, filed Dec. 17, 2014.

U.S. Appl. No. 14/572,976, filed Dec. 17, 2014.

U.S. Appl. No. 13/447,932, Dec. 11, 2015, Response to Office Action with.

U.S. Appl. No. 14/572,932, Dec. 17, 2015, Office Action.

U.S. Appl. No. 14/572,942, Dec. 17, 2015, Preliminary Amendment.

U.S. Appl. No. 14/572,952, Dec. 17, 2015, Preliminary Amendment.

U.S. Appl. No. 13/651,909, Dec. 21, 2015, Notice of Abandonment.

U.S. Appl. No. 14/572,942, Dec. 22, 2015, Office Action.

U.S. Appl. No. 14/572,952, Dec. 23, 2015, Office Action.

U.S. Appl. No. 14/572,966, Dec. 23, 2015, Office Action.

U.S. Appl. No. 13/447,932, Jan. 11, 2016, Examiner Interview Summary.

(56)

**References Cited**

## OTHER PUBLICATIONS

U.S. Appl. No. 14/572,920, Jan. 15, 2016, Response to Office Action with.

U.S. Appl. No. 14/572,932, Jan. 15, 2016, Response to Office Action with.

U.S. Appl. No. 14/572,942, Jan. 15, 2016, Response to Office Action with.

U.S. Appl. No. 14/572,952, Jan. 15, 2016, Response to Office Action with.

U.S. Appl. No. 14/572,966, Jan. 15, 2016, Response to Office Action with.

Eide, Kristian. "The Next Generation of Mail Clients." LWN.net. Feb. 25, 2004. Retrieved from <https://lwn.net/Articles/72937/>, last visited Dec. 11, 2015.

Garrett, Jesse James. "Yahoo! Mail: Simplicity Holds Up Over Time." BoxesandArrows.com. Mar. 11, 2002. Retrieved from <http://boxesandarrows.com/yahoo-mail-simplicity-holds-up-over-time/>, last visited Dec. 11, 2015.

Garrett, Jesse James. "Yahoo! Mail." Dec. 28, 2001. From BoxesandArrows.com.

GSM Application Style Guide. Openwave Systems Inc. Feb. 2001.

Jarrett, Caroline. "Designing Usable Forms: The Three Layer Model of the Form." Effortmark. Excerpt from St. Francis Leprosy Guild Forms. 2000.

Klensin, J. (ed.). Request for Comment 2821: "Simple Mail Transfer Protocol." The Internet Society. Apr. 2001. Retrieved from <https://www.ietf.org/rfc/rfc2821.txt>, last visited Dec. 11, 2015.

Spolsky, Joel. "User Interface Design for Programmers." Apress. 2001.

Starling, Andrew. "Usability and HTML Forms." ecommerce-guide.com. Dec. 11, 2001. Retrieved from <http://www.ecommerce-guide.com/solutions/building/article.php/938071/Usability-and-HTML-Forms.htm>, last visited Dec. 11, 2015.

Wroblewski, Luke. "Web Application Form Design." Jan. 22, 2005. Retrieved from <http://www.lukew.com/ff/entry.asp?1502>, last visited Dec. 11, 2015.

U.S. Appl. No. 13/447,932, Jun. 24, 2015, Applicant Initiated Interview Summary.

U.S. Appl. No. 13/447,932, Jul. 16, 2015, Office Action (Supplemental).

U.S. Appl. No. 13/447,932, Dec. 11, 2015, Applicant Initiated Interview Summary.

U.S. Appl. No. 13/864,930, Nov. 6, 2015, Office Action.

U.S. Appl. No. 14/572,966, Dec. 3, 2015, Office Action.

U.S. Appl. No. 14/572,920, Dec. 11, 2015, Preliminary Amendment.

U.S. Appl. No. 14/572,932, Dec. 9, 2015, Preliminary Amendment.

U.S. Appl. No. 14/572,976, Dec. 10, 2015, Preliminary Amendment.

U.S. Appl. No. 13/447,932, filed Jan. 11, 2016, Examiner Initiated Interview Summary

U.S. Appl. No. 13/447,932, filed Jan. 22, 2016, Notice of Allowance.

U.S. Appl. No. 14/572,290, filed Feb. 18, 2016, Notice of Allowance.

U.S. Appl. No. 14/572,932, filed Feb. 17, 2016, Notice of Allowance.

U.S. Appl. No. 14/572,942, filed Feb. 17, 2016, Notice of Allowance.

U.S. Appl. No. 14/572,952, filed Feb. 18, 2016, Notice of Allowance.

U.S. Appl. No. 14/572,966, filed Feb. 18, 2016, Notice of Allowance.

U.S. Appl. No. 13/447,932, filed Feb. 17, 2016, Issue Notification.

U.S. Appl. No. 14/572,920, filed Feb. 18, 2016, 1.312 Amendment after Notice of.

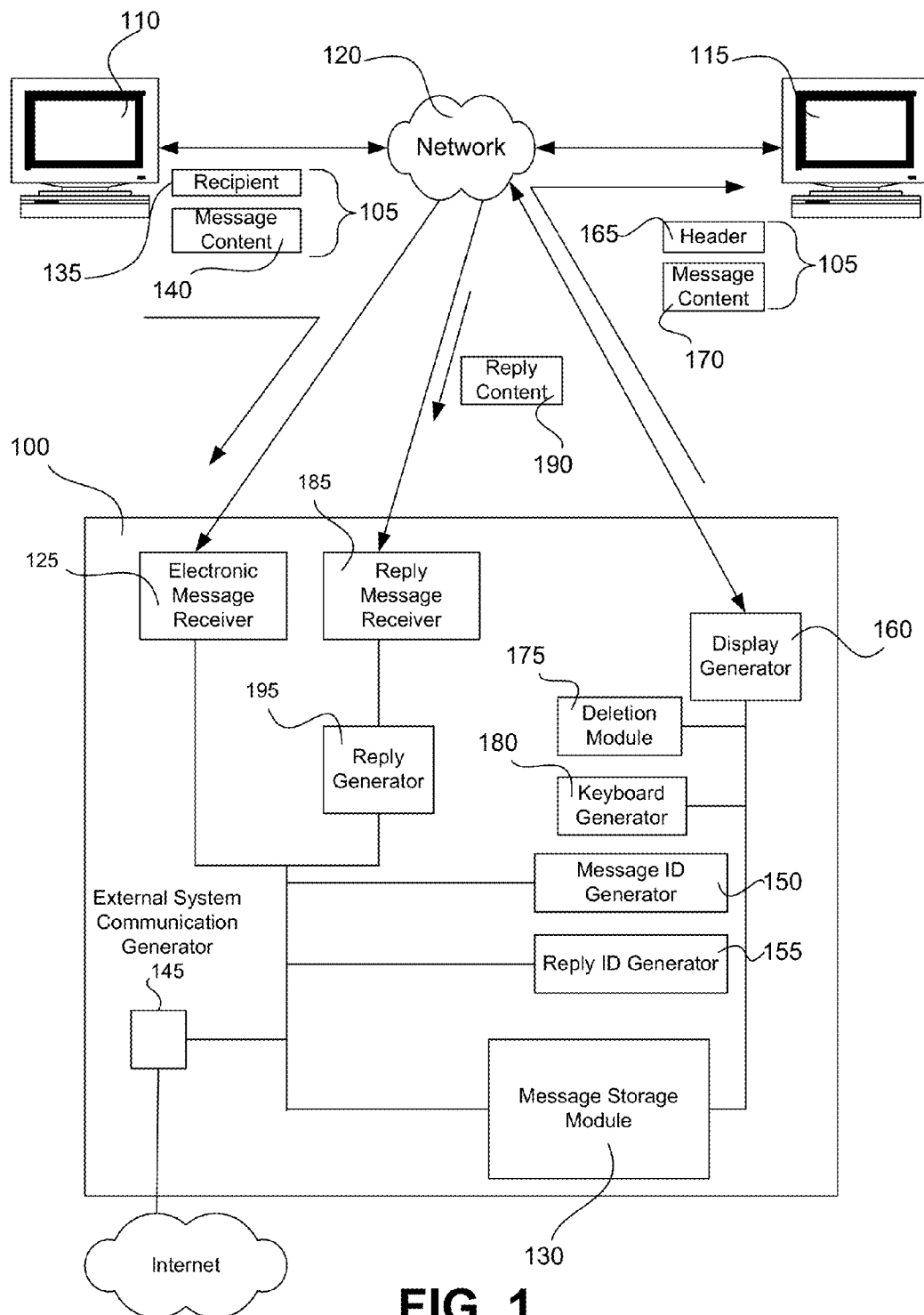
U.S. Appl. No. 14/572,932, filed Feb. 18, 2016, 1.312 Amendment after Notice of.

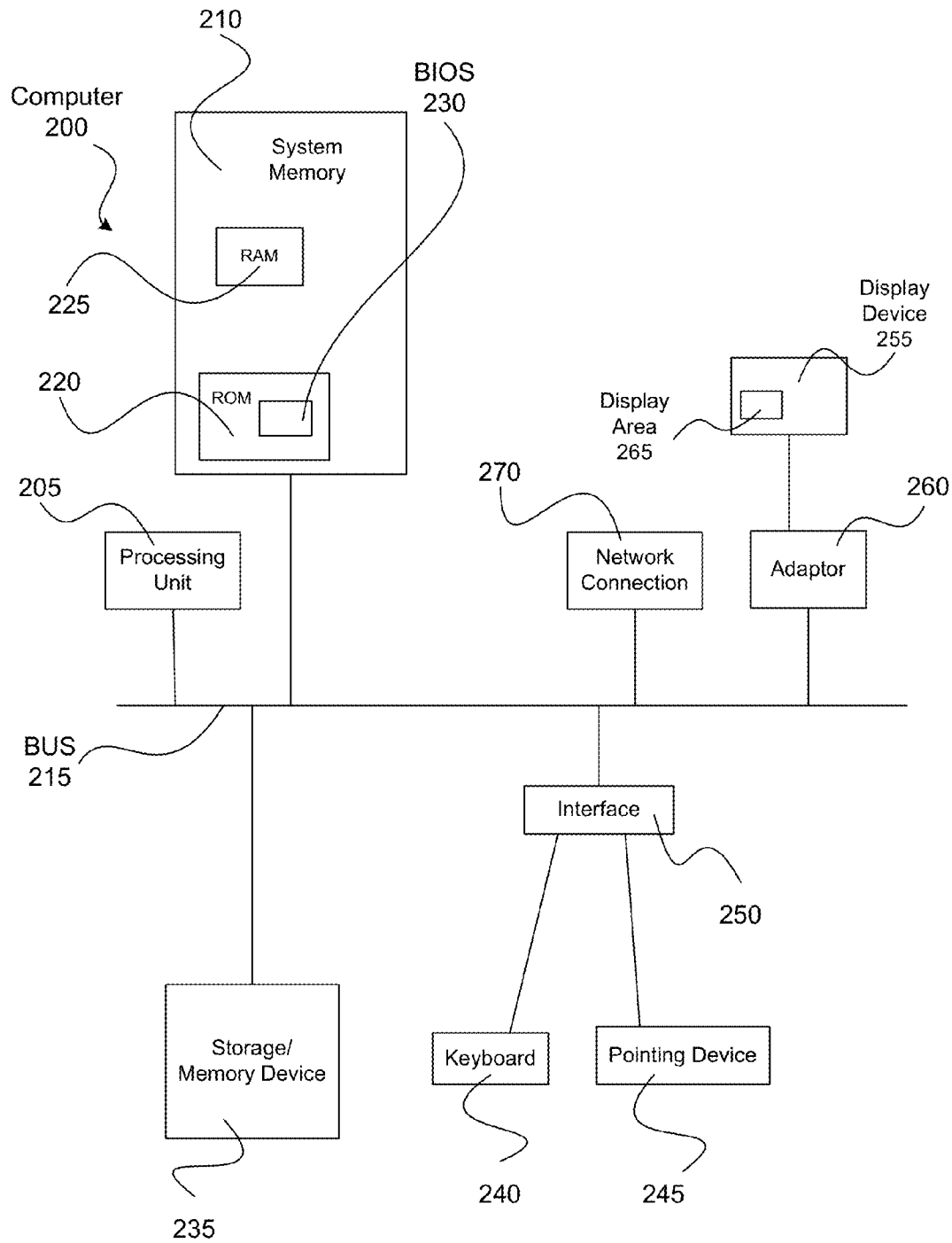
U.S. Appl. No. 14/572,942, filed Feb. 18, 2016, 1.312 Amendment after Notice of.

U.S. Appl. No. 14/572,952, filed Feb. 18, 2016, 1.312 Amendment after Notice of.

U.S. Appl. No. 14/572,966, filed Feb. 18, 2016, 1.312 Amendment after Notice of.

\* cited by examiner



**FIG. 2**



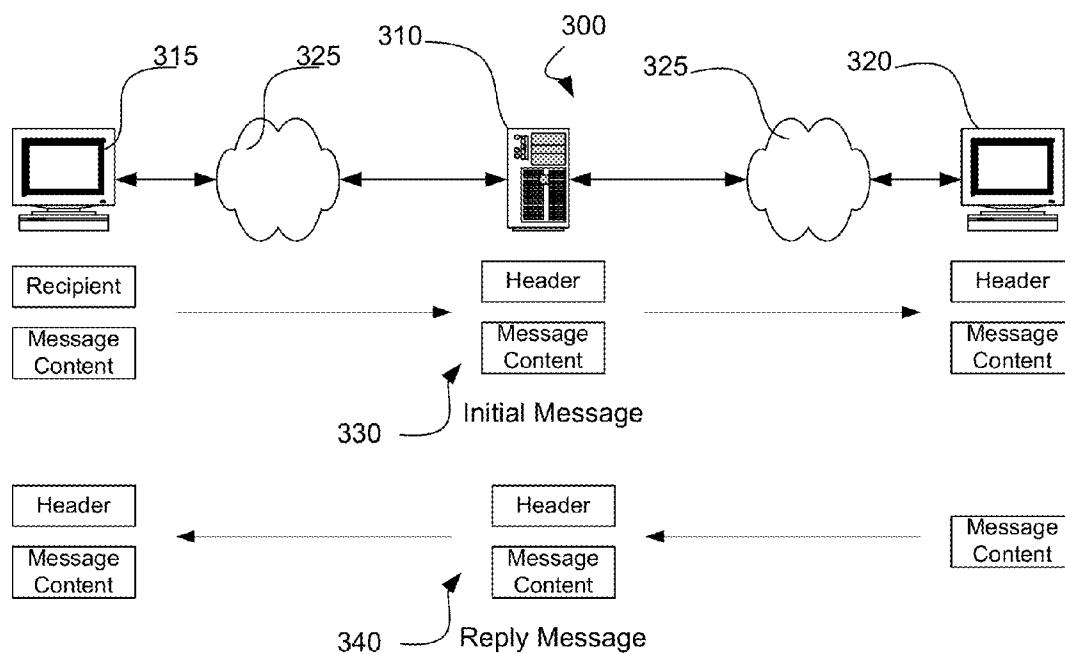


FIG. 3

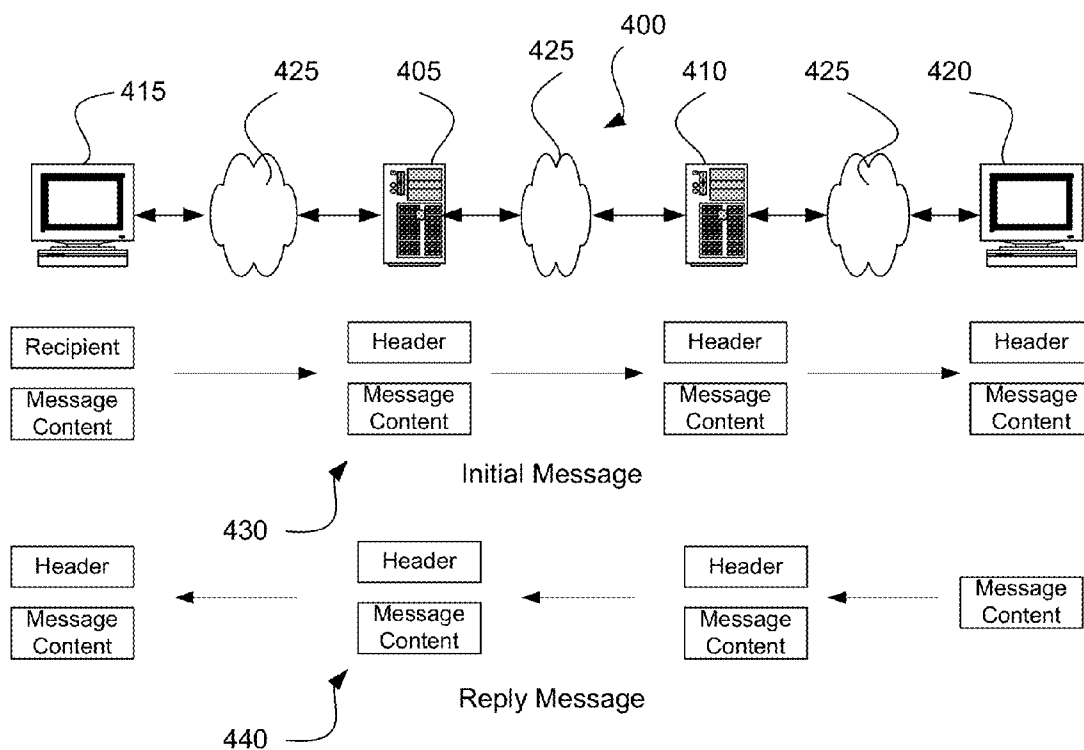


FIG. 4

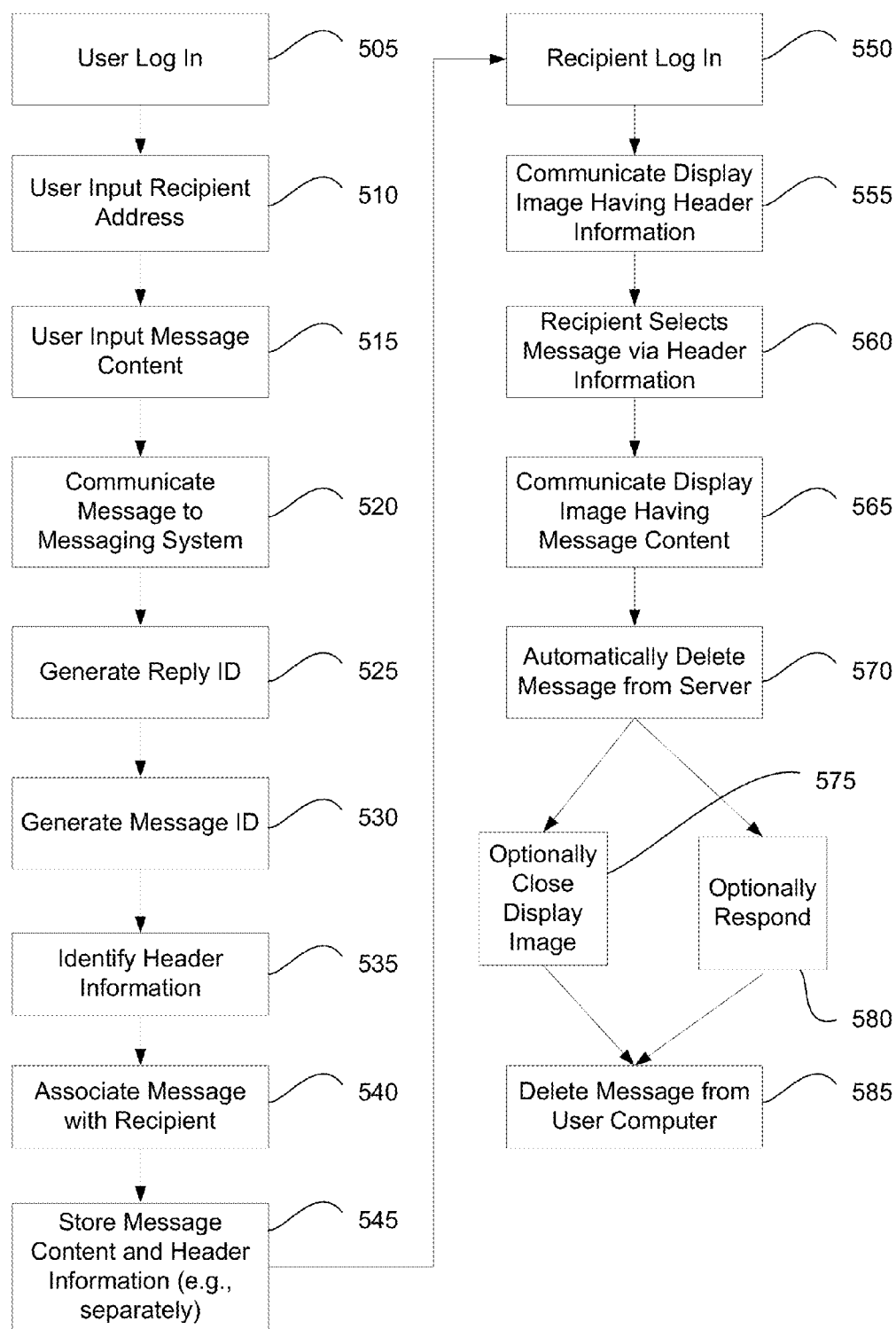
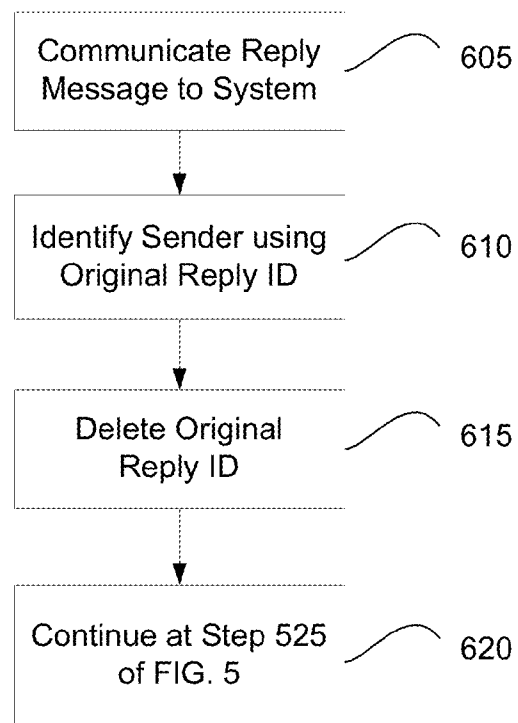


FIG. 5

**FIG. 6**

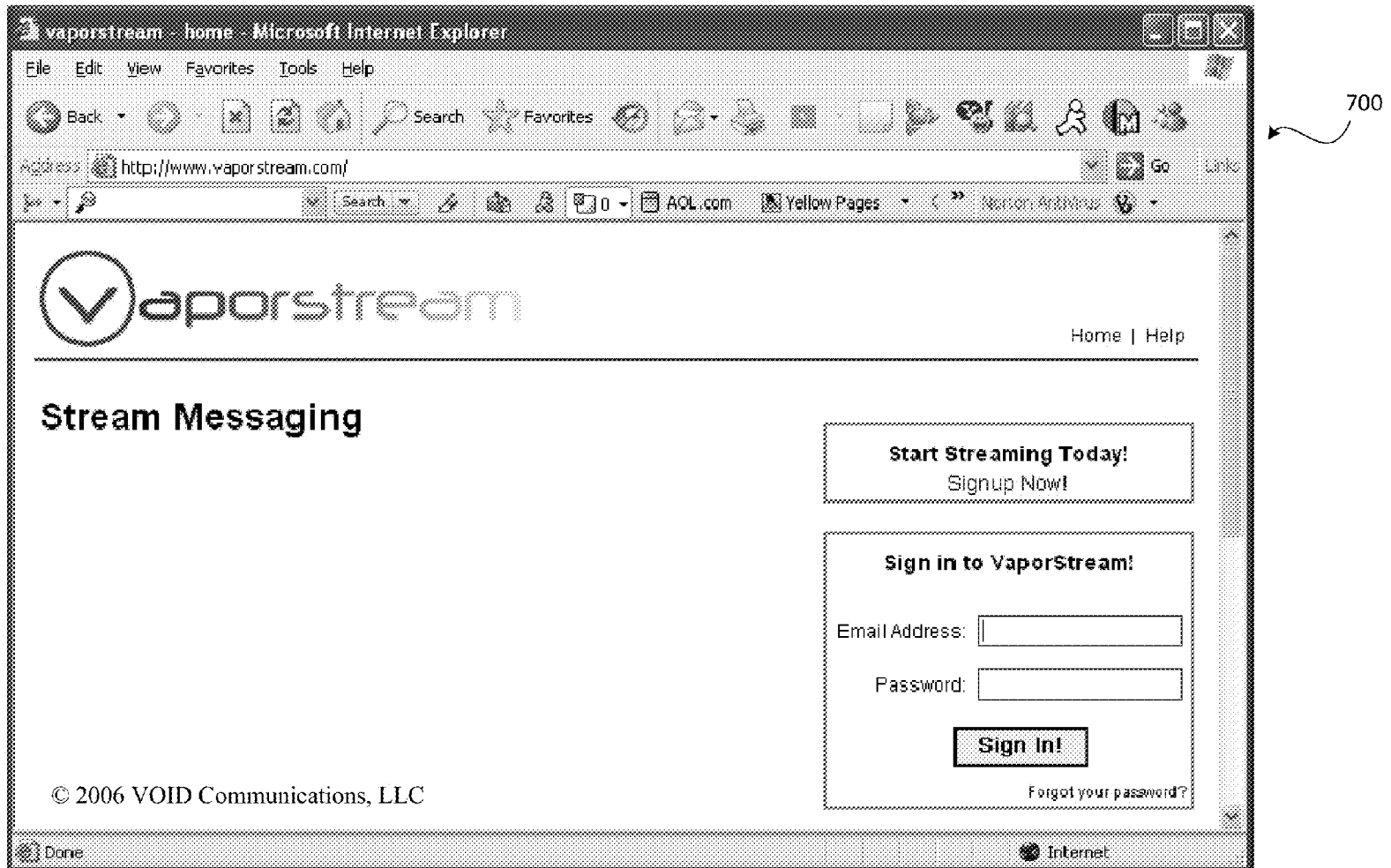


FIG. 7

FIG. 8

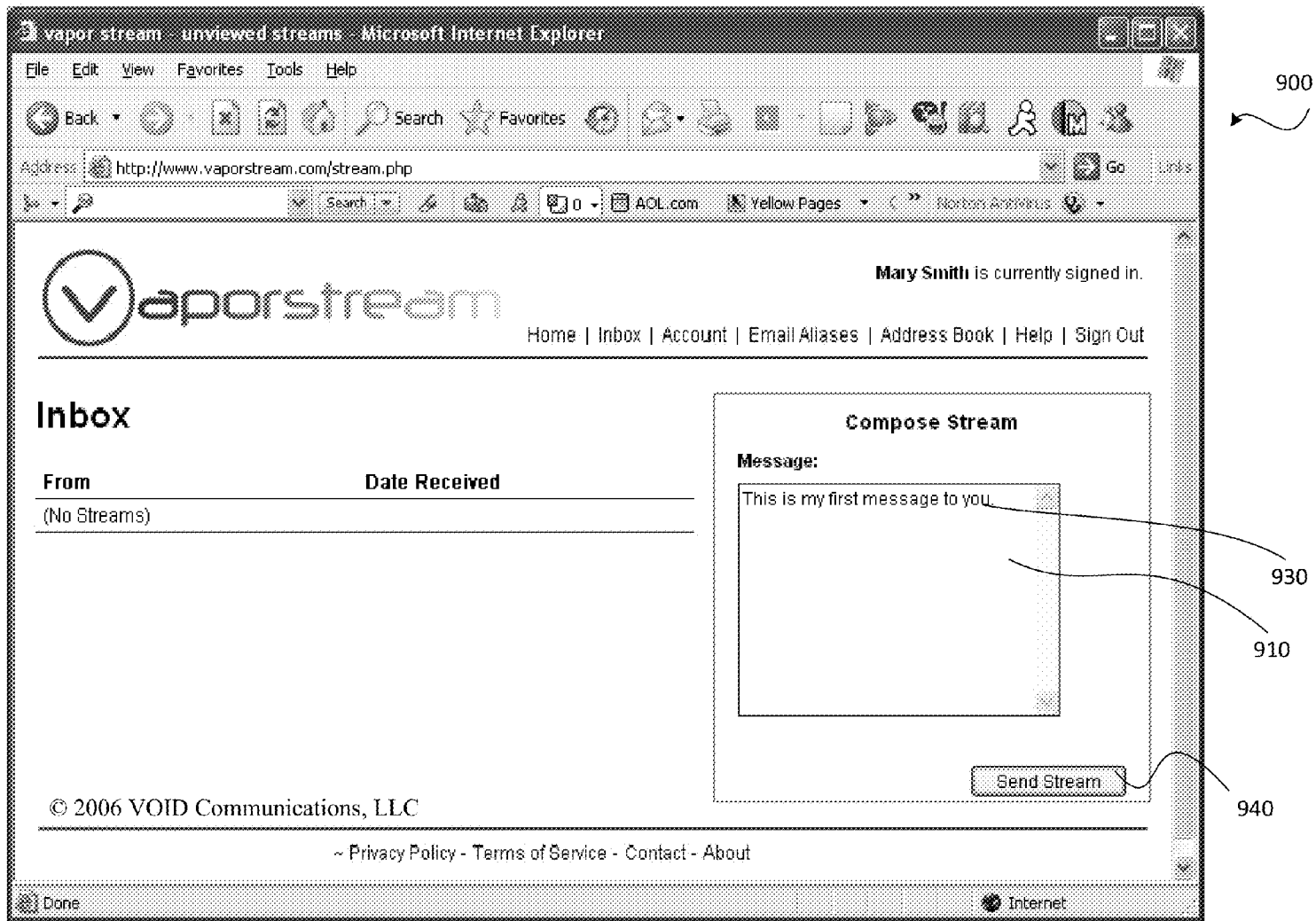


FIG. 9

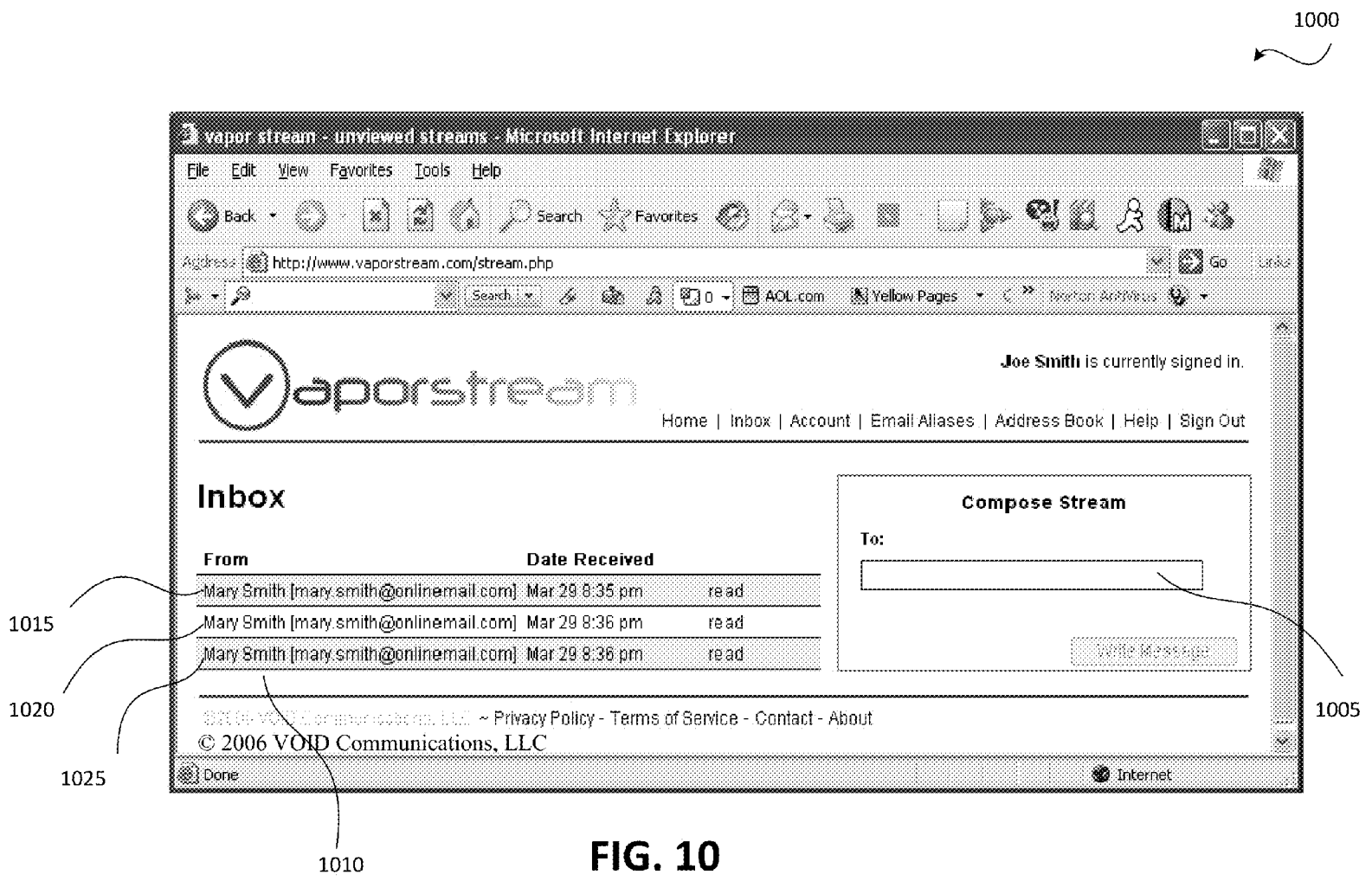


FIG. 10

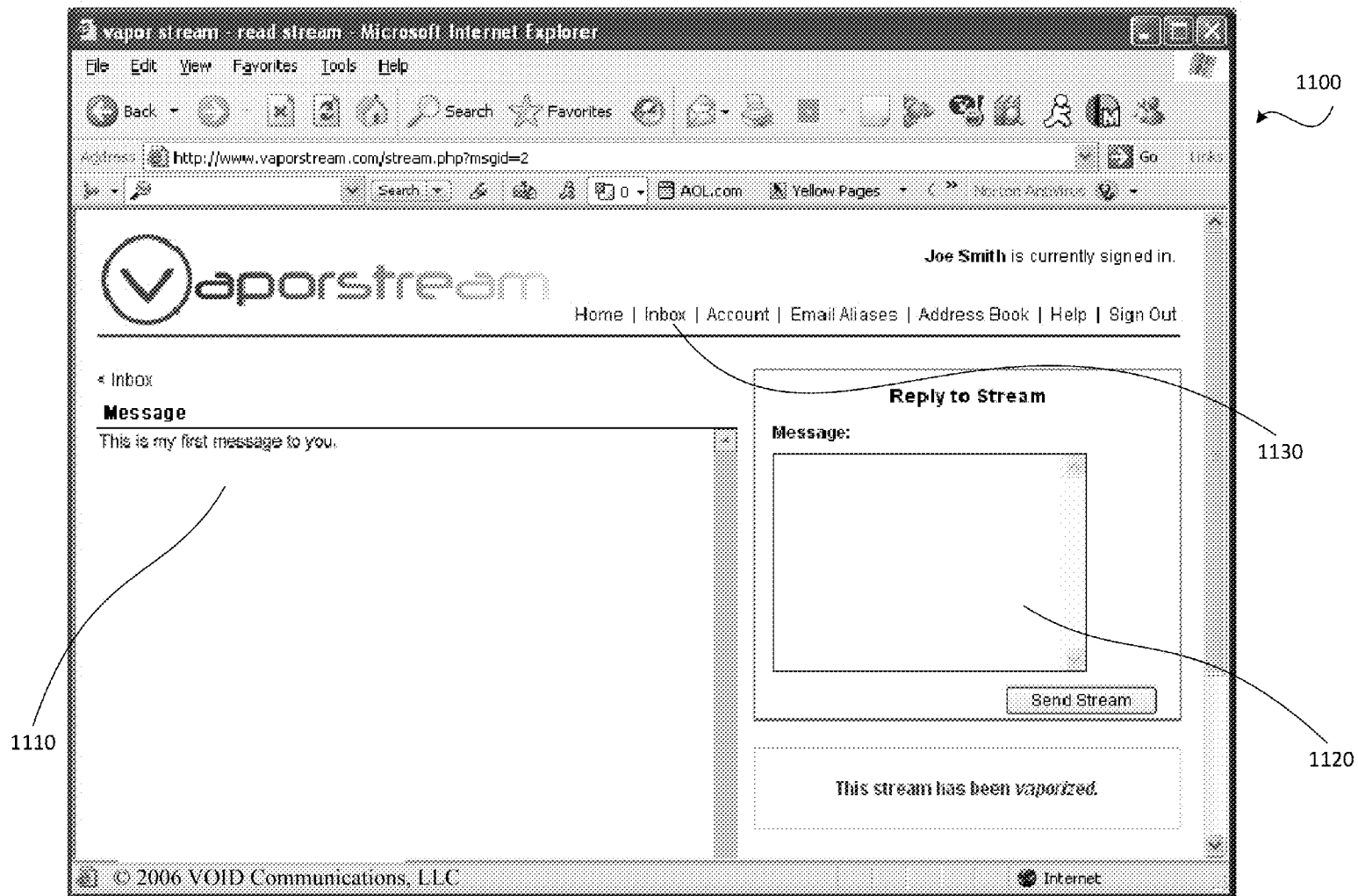


FIG. 11



1

# **ELECTRONIC MESSAGE RECIPIENT HANDLING SYSTEM AND METHOD WITH MEDIA COMPONENT AND HEADER INFORMATION SEPARATION**

## **RELATED APPLICATION DATA**

This application is a continuation application of U.S. patent application Ser. No. 14/133,875, filed Dec. 19, 2013, and titled "Electronic Message Content and Header Restrictive Recipient Handling System and Method," which is a continuation application of U.S. patent application Ser. No. 13/651,909, filed Oct. 15, 2012, and titled "Disassociated Content Electronic Message System and Method," which is a continuation application of U.S. patent application Ser. No. 12/605,885, filed Oct. 26, 2009, and titled "Reduced Traceability Electronic Message System and Method For Sending Header Information Before Message Content," now U.S. Pat. No. 8,291,026, which is a continuation application of U.S. patent application Ser. No. 11/401,148, filed Apr. 10, 2006, and titled "Reduced Traceability Electronic System and Method," now U.S. Pat. No. 7,610,345, each of which is incorporated by reference herein in its entirety. This application also claims the benefit of priority of U.S. Provisional Patent Application Ser. No. 60/703,367, filed Jul. 28, 2005, and titled "Method and System for Reducing Traceability of Electronic Messages," which is incorporated by reference herein in its entirety.

This application is also related to the following commonly-owned applications: U.S. patent application Ser. No. 14/572,920, filed Dec. 17, 2014, and titled "Electronic Message Send Device Handling System and Method with Separation of Message Content and Header Information," U.S. patent application Ser. No. 14/572,932, filed Dec. 17, 2014, and titled "Electronic Message Send Device Handling System and Method with Separated Display and Transmission of Message Content and Header Information," U.S. patent application Ser. No. 14/572,942, filed Dec. 17, 2014, and titled "Electronic Message Send Device Handling System and Method with Media Component and Header Information Separation," U.S. patent application Ser. No. 14/572,952, filed Dec. 17, 2014, and titled "Electronic Message Recipient Handling System and Method with Separation of Message Content and Header Information," U.S. patent application Ser. No. 14/572,966, filed Dec. 17, 2014, and titled "Electronic Message Recipient Handling System and Method with Separated Display of Message Content and Header Information," U.S. patent application Ser. No. 13/447,932, filed Apr. 16, 2012, and titled "Reduced Traceability Electronic Message System and Method," and U.S. patent application Ser. No. 14/133,897, filed Dec. 19, 2013, and titled "Electronic Message Content and Header Restrictive Send Device Handling System and Method," now U.S. Pat. No. 8,886,739, each of which is incorporated by reference herein in its entirety.

## **COPYRIGHT NOTICE**

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 the patent disclosure, as it appears in the U.S. Patent and Trademark Office patent files or records, but otherwise reserves all copyright rights whatsoever.

## **FIELD OF THE INVENTION**

The present invention generally relates to the field of electronic messaging. In particular, the present invention is

2

directed to an electronic message recipient handling system and method with media component and header information separation.

## **BACKGROUND**

Typically, an electronic message between two people is not private. It may travel along a public network, such as the Internet, and be susceptible to interception by unintended third parties. Messages are also logged and archived by the communication systems themselves. They may also be copied, cut, pasted, printed, forwarded, blind copied, or otherwise manipulated. This may give a message a "shelf-life" that is often uncontrollable by the sender or even the recipient. Surreptitious logging (e.g., by keystroke and message recording software) may occur by third parties that have gained unauthorized access to either the computer of the sender and/or the recipient. Electronic messages include the message content itself coupled to identifying information regarding the sender, the recipient, the location of the message, times and dates associated with the message, etc. This allows a third party that is logging messages, intercepting messages, or simply gaining access to the messaging system's logs or inbox archives to associate the potentially important identifying information (typically referred to as header information) with the message content. These are only some of the ways in which electronic messages can be misused. There is a demand for a system and method for reducing the traceability of electronic messages.

## **SUMMARY OF THE DISCLOSURE**

In one implementation, a computer-implemented method of handling an electronic message is provided. The method includes receiving at a recipient user device a header information corresponding to a message content that includes a media component; providing a first display via the recipient user device, the first display including the header information in a message list, the first display not displaying the media component; receiving at the recipient user device the message content including the media component, wherein the message content including the media component and the header information are correlated by a unique identifier; receiving a selection by the recipient user via the first display, the selection directed to a portion of the message list corresponding to the header information; and in response to the selection, providing a second display via the recipient user device, the second display displaying the message content including the media component.

In another implementation, a machine readable hardware storage medium containing machine executable instructions implementing a method of handling an electronic message is provided. The instructions include a set of instructions for receiving at a recipient user device a header information corresponding to a message content that includes a media component; a set of instructions for providing a first display via the recipient user device, the first display including the header information in a message list, the first display not displaying the media component; a set of instructions for receiving at the recipient user device the message content including the media component, wherein the message content including the media component and the header information are correlated by a unique identifier; a set of instructions for receiving a selection by the recipient user via the first display, the selection directed to a portion of the message list corresponding to the header information; and a set of instructions for providing, in response to the selection, a second display

3

via the recipient user device, the second display displaying the message content including the media component.

In yet another implementation, a system for handling an electronic message is provided. The system includes a means for receiving at a recipient user device a header information corresponding to a message content that includes a media component; a means for providing a first display via the recipient user device, the first display including the header information in a message list, the first display not displaying the media component; a means for receiving at the recipient user device the message content including the media component, wherein the message content including the media component and the header information are correlated by a unique identifier; a means for receiving a selection by the recipient user via the first display, the selection directed to a portion of the message list corresponding to the header information; and a means for providing, in response to the selection, a second display via the recipient user device, the second display displaying the message content including the media component.

### BRIEF DESCRIPTION OF THE DRAWINGS

For the purpose of illustrating the invention, the drawings show aspects of one or more embodiments of the invention. However, it should be understood that the present invention is not limited to the precise arrangements and instrumentalities shown in the drawings, wherein:

FIG. 1 illustrates one example of a schematic diagram of an exemplary system for electronic messaging depicting an initial electronic message being communicating from one user to another;

FIG. 2 illustrates one example of a computer environment that may be utilized to implement various aspects of the present disclosure;

FIG. 3 illustrates another example of a schematic diagram of another exemplary system and method of the present disclosure;

FIG. 4 illustrates another example of a schematic diagram of another exemplary system and method of the present disclosure;

FIG. 5 illustrates one example of a flow chart depicting one exemplary method according to the present disclosure;

FIG. 6 illustrates another example of a flow chart depicting another exemplary method according to the present disclosure;

FIG. 7 depicts an exemplary login display image;

FIG. 8 depicts an exemplary display image including a recipient address input portion;

FIG. 9 depicts an exemplary display image including an electronic message content input portion;

FIG. 10 depicts an exemplary display image including an electronic message listing portion; and

FIG. 11 depicts an exemplary display image including a reply message input portion.

### DETAILED DESCRIPTION

The present disclosure provides a system and method reducing traceability of an electronic message. In one embodiment, header information and message content of an electronic message are displayed by a system and method of the present disclosure so that header information and message content are not displayed at the same time. As will be clear to one skilled in the art from the disclosure below, separation of header information from message content reduces the traceability of the electronic message. To further reduce traceability of an electronic message, header information may be

4

automatically deleted at a first predetermined time and message content may be automatically deleted at a second predetermined time (e.g., after message content is viewed). In one example, the first and second predetermined times may occur sequentially (e.g., deleting header information upon displaying message content and deleting message content upon closing a display of message content), simultaneously (e.g., deleting message content and associated header information upon closing a display of message content), or out of order such that the second predetermined time occurs before the first predetermined time (e.g., displaying message content first, deleting message content, displaying header information, then deleting header information). These and other aspects of the present disclosure will be described in greater detail below with respect to various exemplary embodiments illustrated in FIGS. 1 to 11.

FIG. 1 illustrates one embodiment of a system 100 for electronic messaging depicting an electronic message 105 being sent from one user to another. System 100 may include any number of computers, such as the two user computers 110 and 115, coupled to a network 120. Network 120 facilitates communication between computer 110 and computer 115. In one example, system 100 may be a closed system that may utilize open network structures (e.g., the Internet) for communication with users, but that does not utilize open or third-party messaging systems (e.g., industry standard email) that may increase the chance of message logging and impact the recordless nature of an electronic message of the present disclosure. System 100 allows users of computers 110 and 115 to communicate with each other via one or more electronic messages, such as electronic message 105 over network 120. As will be described in further detail hereinafter, several aspects of system 100 reduce traceability of electronic messages, such as electronic message 105. In one example, electronic message 105 is automatically deleted from system 100 after it is viewed by the recipient to ensure that electronic message 105 cannot be forensically recreated and to ensure there is no record of electronic message 105 ever existing on system 100 thereafter.

Although computers 110 and 115 are illustrated as workstation computers, any well known computer may be utilized in creating and/or viewing electronic messages. Example computers include, but are not limited to, a personal computer, a workstation computer, a server computer, a laptop computer, a handheld device, a mobile telephone, a personal digital assistant (PDA), another computing device capable of communicating an electronic message via network 120, and any combinations thereof. System 100 may include one or more server computers. In one example, system 100 may reside substantially on a single server computer. In another example, system 100 may be distributed across two or more server computers. In yet another example, system 100 may be distributed across a plurality of user computers without a server computer, such as in a peer-to-peer environment. In one such example, components of a messaging system according to the present disclosure and/or their functionality (e.g., storage of header information and message content, display generation, reply generation, etc.) may occur at a recipient's user computer. In still another example, system 100 may be distributed across one or more server computers and one or more user computers. One or more relay servers or other systems may be utilized between server computers and/or user computers.

FIG. 2 illustrates one example of a computing environment in the exemplary form of a computer 200 within which a set of instructions, for causing the computer to perform any one of the methodologies of the present disclosure, may be executed.

## 5

Computer **200** may include a processing unit **205**, a system memory **210**, and a system bus **215** that couples various components including system memory **210** to processing unit **205**. System bus **215** may be any of several types of bus structures including, but not limited to, a memory bus, a memory controller, a peripheral bus, a local bus, and any combinations thereof, using any of a variety of bus architectures. System memory **210** may include a read only memory (ROM) **220** and a random access memory (RAM) **225**.

A basic input/output system **230** (BIOS), including basic routines that help to transfer information between elements within computer **200**, such as during start-up, may be stored in ROM **220**. Computer **200** may also include a storage/memory device **235** for reading and/or writing information. Example storage devices include, but are not limited to, a hard disk drive for reading from and/or writing to a hard disk, a magnetic disk drive for reading from and/or writing to a removable magnetic disk, an optical disk drive for reading from and/or writing to an optical media (e.g., a compact disc), and any combinations thereof. Storage/memory device **235** may be connected to bus **215** by an interface. In one example, storage/memory device **235** and associated computer-readable media provide nonvolatile storage of computer readable instructions, data structures, program modules, and/or other data for computer **200**. It will be appreciated by those skilled in the art that other types of computer-readable media that can store data that is accessible by a computer in a volatile and/or non-volatile manner may also be used in an example operating environment. Examples of other types of computer-readable media include, but are not limited to, a magnetic cassette, a flash memory media (e.g., a card and a thumb-drive), a digital video disk, a Bernoulli cartridge, a random access memory (RAM), a read only memory (ROM), and any combinations thereof. A computer-readable medium, as used herein, is intended to include a single medium as well as a collection of physically separate media, such as, for example, a collection of compact disks or one or more hard disk drives in combination with a computer memory.

A number of program modules can be stored on storage/memory device **235**, including, but not limited to, an operating system, one or more application programs, other program modules, program data, computer implemented instructions for carrying out the system and methodologies of the present disclosure, and any combinations thereof. A user may enter commands and information into computer **200** through one or more input devices, such as a keyboard **240** and/or a pointing device **245**. Other examples of an input device include, but are not limited to a microphone, a joystick, a game pad, a satellite dish, a scanner, and any combinations thereof. These and other input devices may be connected to processing unit **205** through an interface **250** that is coupled to bus **215**. Example interfaces for connecting an input device include, but are not limited to, a serial interface, a parallel interface, a game port, a universal serial bus (USB), an IEEE 1394 (Firewire) interface, a direct interface to system bus **215**, and any combinations thereof.

A display device **255** may be connected to system bus **215** via an interface, such as a display generator/video adaptor **260**. Example display devices include, but are not limited to, a cathode-ray tube (CRT) monitor, a plasma display, an LCD display, and any combinations thereof. In addition to a display device, a computer may include one or more other peripheral output devices, such as a speaker and a printer. A pen digitizer and an accompanying pen/stylus may be included in order to digitally capture freehand input. A pen digitizer may be separately configured or coextensive with a display area **265** of display device **255**. Accordingly, a pen digitizer may be inte-

## 6

grated with display device **255**, or may exist as a separate device overlaying or otherwise appended to display device **255**.

Computer **200** may include a network connection **270** for connecting to one or more of a variety of networks, such as network **120** of FIG. 1, and remote computer devices thereon. Example network connections may include, but are not limited to, a network interface card, a modem, and any combinations thereof. Example networks include, but are not limited to, a wide area network (e.g., the Internet, an enterprise network), a local area network (e.g., a network associated with an office, a building, a campus or other relatively small geographic space), a telephone network, a direct connection between two computing devices, and any combinations thereof. A network, such as network **120** may employ a wired and/or a wireless mode of communication. In general, any network topology may be used. It will be appreciated that FIG. 1 depicts only one instance of a system **100**, and that other instances may be created where one or more computers utilize system **100**. One or more communication protocols may be utilized with system **100** and/or with network **120**. Example protocols include, but are not limited to, TCP/IP, Ethernet, FTP, HTTP, HTTPS, and any combinations thereof. In one example, a user of a computer, such as computers **110**, **115** may access system **100** (e.g., on one or more server computers) utilizing a secure protocol as is well-known. A user computer, such as computers **110**, **115** may utilize one or more software applications and/or one or more system based applications in communicating with system **100**. Example software applications include, but are not limited to, a web browser (e.g., INTERNET EXPLORER, MOZILLA, and NETSCAPE), Java (e.g., J2ME), BREW, a direct access client (e.g., CITRIX), and any combinations thereof. Example system applications include, but are not limited to, MICROSOFT WINDOWS, UNIX, LINUX, APPLE operating system, X-WINDOWS, COCOA, POCKETPC, and PALM.

Referring to FIG. 1 an exemplary electronic message **105** is communicated by a sending user utilizing computer **110** to system **100** for further communication to a recipient user. Exemplary system **100** includes an electronic message receiver **125** for receiving one or more electronic messages, such as electronic message **105**. Electronic message receiver **125** is in communication with an electronic message storage module **130**. An electronic message storage module, such as electronic message storage module **130**, stores electronic messages received by electronic message receiver **125** utilizing one or more particular data storage methodologies. Many data storage methodologies will be recognized by those skilled in the art and those chosen for use with an electronic message storage module according to the present disclosure may be based on the particular implementation of the messaging system and method. Example data storage methodologies may include, but are not limited to, one or more tables, a database, a file system, and any combinations thereof. In one example, as will be described in greater detail below, electronic message storage module **130** stores header ("container") information and message content separate from each other to minimize correlation by a third party between identifying information regarding the electronic message (e.g., identification of sender, recipient, date/time of message, location of message) in the header information and the content of the message. In an alternate example, message content and header information may be stored together and separated during display. In one embodiment of the present disclosure, header information and message content are never stored or displayed together. In such a case, a correlation (e.g., a non-

identifying message ID described in detail below) may be utilized to associate the two components.

Electronic message **105** as communicated to system **100** in the example of FIG. **1** includes a recipient address **135** and a message content **140**. A recipient address, such as recipient address **135** may be an indicator that identifies a particular desired recipient of an electronic message, such as electronic message **105**. In one example, a recipient address may be a unique identifier (e.g., a screen name, a login name, a messaging name, etc.) established specifically for use with system **100** at user registration with the system. In another example, a recipient address may be a pre-established electronic mail (email) address, text messaging address, instant messaging address, Short Messaging Service (SMS) address, a telephone number (e.g., a home, work, mobile telephone number), BLACKBERRY personal identification number (PIN), or the like, that is associated with the recipient and provided by a third-party provider. Example third-party providers include, but are not limited to, a web-based commercial fee and fee-free provider (e.g., YAHOO, HOTMAIL, AMERICA ONLINE, etc.), an Internet service provider (e.g., AMERICA ONLINE, MSN, cable operator, telephone company, etc.), a telephone provider (e.g., VERIZON, CINGULAR, etc.), BLACKBERRY provider, an employer, an educational institution, and other email providers. The third-party address may be chosen by a user as their unique identifier at registration. In an alternative embodiment, a sending user may know a third-party address of an intended recipient and use it as a recipient address when generating electronic message **105**. In such an embodiment, it is possible that the intended recipient is not a registered user of system **100**. In one example, system **100** may optionally include an external system communication generator **145** configured to send a notification message to the third-party system associated with the recipient address used with electronic message **105**. External system communication generator **145** is in communication with the appropriate network for communication with the corresponding third-party address for delivering the notification message. In one example shown in FIG. **1**, external system communication generator **145** is shown connected to the Internet. In one example, a notification message may include an indication that someone has sent the desired recipient an electronic message on system **100** and that the intended recipient may register to use system **100**. The notification message may include directions (e.g., a hyperlink) to a publicly available portion of system **100** for registration.

An electronic message may be any electronic file, data, and/or other information transmitted between one or more user computers. An electronic message may include (e.g., as part of a message content) any of a wide variety of information including, but not limited to, text, an image, video (e.g., single play video utilizing an application, such as MACROMEDIA FLASH), binary, tabular data (e.g., a spreadsheet), rich text including variable font color, tables, etc.), audio (e.g., single play audio utilizing an application, such as MACROMEDIA FLASH), other types of data, and any combinations thereof. In one example, a message content of an electronic message may include embedded information. In another example, a message content of an electronic message may include an attached and/or linked file. In such an example with an attached and/or linked file, the attached and/or linked file may be automatically deleted from the messaging system after being viewed by a recipient. Typically, a message content, such as message content **140** does not include informa-

tion that in itself identifies the message sender, recipient, location of the electronic message, or time/date associated with the electronic message.

System **100** may optionally include a message ID generator **150**. As described in further detail below, message ID generator **150** may generate a message ID for each electronic message received by system **100**. The message ID is associated with the corresponding message. A message ID is used to associate a container (i.e., header) information with a corresponding separately-stored message content. In one example, a message ID may be created using a unique 128 bit, randomly generated number. System **100** may include a correlation between header information and message content in a variety of ways including, but not limited to, a database, a lookup table, an entry in a file system, and any combinations thereof. Utilizing a message ID associated with an electronic message, such as electronic message **105**, system **100** may handle (e.g., store, deliver, display, etc.) a header information and a message content of a particular electronic message separately with the ability to correlate the two at a later time. Thus, a message content may be handled without any of the identifying header information. A message ID may contain unique and/or non-unique information. For example, a message ID may include a sequence number (e.g., 1, 2, 3, 4, etc.) identifying a number of a message amongst a group of messages. A sequence number may be re-used. For example, when an electronic message with a sequence number of "1" is viewed and subsequently deleted, sequence numbers for remaining electronic messages may be adjusted so that the electronic message having sequence number "2" is renumbered to number "1" and so forth. In another example, a message ID may include a sequence number and a unique user identifier (e.g., a user ID, a login ID, etc.).

System **100** may optionally include a reply ID generator **155**. As described further below, reply ID generator **155** generates a reply ID for each electronic message received by system **100**. The reply ID associates an electronic message, such as electronic message **105**, with the sender of the electronic message. In one example, a reply ID may include no information that in itself would identify a sender of an electronic message to a third party that does not have access to the correlation maintained by the messaging system. System **100** may include a correlation between a reply ID and a corresponding message sender in a variety of ways, including, but not limited to, a database, a lookup table, an entry in a file system, and any combinations thereof. In one aspect, a reply ID associated with an electronic message allows the header information and/or the message content of the electronic message to include no information about the sender of the message that itself provides a traceable identity of the sender. As described in more detail below, a recipient may still send a reply electronic message to the original sender. Additionally, a third-party that may intercept, log, or otherwise come in possession of the header information and/or the message content will not be able to trace the electronic message to the sender without also gaining access to the correlation maintained by system **100**. A reply ID may include a variety of different identifiers that allow a messaging system, such as system **100**, to direct a reply electronic message back to a sender of the original electronic message. In one example, a reply ID may be created using a randomly generated number (e.g., a 128 bit, randomly generated number).

System **100** includes a display generator **160** in communication with electronic message storage module **130**. Display generator **160** is configured to provide information representing a display image for display on a user computer, such as user computers **110**, **115**. Example display images include,

but are not limited to, a user login display, a display listing information representing available electronic messages for viewing, a display for entering an electronic message, a display of a message content of an electronic message, a display for entering a reply electronic message, and any combinations thereof. In one example, display generator **160** may be configured to utilize a message ID in generating a first information **165** representing a first display image including at least some of the header information for electronic message **105**. Display generator **160** may also be configured to generate a second information **170** representing a second display image including message content **140** of electronic message **105**. FIG. 1 illustrates first and second information **165**, **170** communicated with computer **115** for display to a recipient user. In this example, display generator **160** generates first and second information **165**, **170** in a manner that does not allow the first and second display images to be displayed at the same time. Separate display of header information and message content for an electronic message reduces traceability of the electronic message. In one aspect, screenshot logging at a computer, such as computer **115**, may not capture both header information and message content simultaneously. Additionally, separation of header information and message content physically and/or temporally during communication to a user computer over an open network, such as the Internet, can thwart misuse of the electronic message by reducing the ability of intercepting both components of the electronic message.

Display generator **160** may utilize any of a variety of well known display generation methodologies and/or protocols for creating information representing a displayable image. Example methodologies/protocols include, but are not limited to, hypertext markup language (HTML), extensible markup language (XML), direct graphic generation, and any combinations thereof. In one example, system **100** resides on one or more server computers and display generator **160** includes and/or utilizes a web server application to generate information representing web-browser-displayable images that may be viewed by a user computer including a web browser. In another example, display generator **160** may be configured to instruct a browser or other application of a user computer displaying a display image according to the present invention to not cache any of the information related to the display image.

System **100** may further include a deletion module **175** in communication with electronic message storage module **130**. Deletion module **175** is configured to delete header information and/or message content from system **100** after a predetermined amount of time. In one example, deletion module **175** is configured to automatically delete header information and corresponding message content immediately after the message content is displayed. In another example, a deletion module (e.g., deletion module **175**) is configured to automatically delete header information upon display of a corresponding message content. In yet another example, a deletion module (e.g., deletion module **175**) is configured to automatically delete message content upon a display of the message content being closed. In still another example, a deletion module is configured to automatically delete header information and/or message content, whether or not they have been viewed, after a predetermined time (e.g., twenty-four hours after being received). In still yet another example, a deletion module is configured to automatically delete header information and/or message content a predetermined time (e.g., twenty-four hours) after first being displayed. In a further example, a predetermined amount of time may include a predetermined number of viewings (other than a single viewing) of a par-

ticular electronic message (e.g., an electronic message is deleted after 20 views). In still a further example, a deletion module (e.g., deletion module **175**) is configured to automatically delete header information upon display of a corresponding message content and to automatically delete message content upon a display of the message content being closed. Combinations of deletion protocols, such as these examples, are also contemplated.

In an alternate embodiment, system **100** may include a display-based keyboard generator **180**. Display-based keyboard generator **180** is configured to generate a display-based keyboard that may be included with a display image generated by display generator **160**. A display-based keyboard can be utilized by a user (e.g., through mouse click or touch screen depression) to input information (e.g., username, password, recipient address, message content) without the use of the standard keyboard associated with the user computer. In this way interception by keyboard (keystroke) logging hardware and/or software resident on the user computer, such as computers **110**, **115**, can be avoided. In one example, a display-based keyboard generator may utilize FLASH technology commercially available from Macromedia Inc. In another example, a display-based keyboard generator may utilize Java technology commercially available from Sun Microsystems. In one aspect a FLASH-based keyboard may randomly place spaces between characters in the on-screen keyboard to further prevent interception of the message. Although this is a relatively slow data entry method, a user can be more assured that their information is not being logged and/or intercepted.

System **100** may also optionally include a reply message receiver **185**. Reply message receiver **185** is configured to receive a reply message to one or more original electronic messages viewed by a recipient. In one aspect, a sender of an original electronic message may be determined from an identifying characteristic included, or associated, with the electronic message. Example identifying characteristics include, but are not limited to, a reply ID, an email address, a username, a display name, login ID, and any combination thereof. In one example, a reply ID of the original electronic message may be utilized in generating a reply message. In one example, a reply message as communicated by computer **115** to system **100** need only include a message content **190**. System **100** may include a reply generator **195**. Reply generator **195** may be configured to utilize the original reply ID to associate message content **190** and any corresponding header information with the original electronic message sending user. Message ID generator **150** may be configured to generate a message ID for the reply electronic message (i.e., message content **190** and corresponding header information). Reply ID generator **155** may be configured to generate a new reply ID for the reply message and electronic message storage module **130** may store message content **190** and corresponding header information separately for later display to the user (original sender).

FIG. 1 illustrates only an exemplary embodiment of a messaging system and networking environment according to the present disclosure. As will be appreciated by those skilled in the art and as described herein, variations to system **100** and the network environment may be utilized in implementing the various aspects and methodologies of the present disclosure. FIGS. 3 and 4 illustrate alternate computing environments. FIG. 3 illustrates one embodiment of a messaging system **300** according to the present disclosure. System **300** includes a computing environment having a single server computer **310**. User computers **315** and **320** communicate with server computer **310** via network **325**. An electronic message **330** is communicated utilizing system **300**. A reply electronic mes-

## 11

sage 340 is also illustrated. FIG. 4 illustrates another embodiment of a messaging system 400 according to the present disclosure. System 400 includes a computing environment having two server computers 405, 410. User computers 415 and 420 communicate with server computers 405, 410 via network 425. An electronic message 430 is communicated utilizing system 400. A reply electronic message 440 is also illustrated. Server computers 405, 410 together perform the functionality of the single server computer 310 of FIG. 3.

Referring to FIGS. 3 and 5, an exemplary operation of a messaging system according to the present disclosure, such as system 300, can be described. A user may log into system 300 at computer 315 (step 505 of FIG. 5). For example, a user may access a web site or other networked interface associated with server 310. Server 310 may then provide information representing a display image (e.g., a web page) for display on computer 315 that allows the user to log into the system. In one aspect, a user of system 300 may have associated therewith a login ID and password for logging into system 300. FIG. 7 depicts an example login display 700 that may be used. In one aspect, system 300 may provide an instruction to a browser or other application on computer 315, or other computer viewing a display image according to the present disclosure, to not cache the information contained in the display image. Upon entry of a valid login ID and password, server 310 establishes a communications link with computer 315 (e.g., a key infrastructure, secure sockets layer (SSL), secure HTTP (HTTPS) or other secure or non-secure communications link). In one example, system 300 may utilize an email address as a login ID.

In one aspect, while a user is logged into system 300, a session may be established including the establishment of a session ID. A session and a corresponding memory may be utilized by system 300 to maintain certain information regarding the session and the user (e.g., user's identification information, a reply ID).

Upon proper login, the user may be presented with a session starting display image. One of skill in the art will appreciate that a variety of starting display images (i.e., pages) may be available for display to a user upon initial login to system 300. In one example, a display image for inputting an electronic message may be displayed. FIG. 8 illustrates one example of a starting display image 800. Display image 800 includes a first portion 805 for entering a recipient address or other identifier for one or more recipients of a message. Display image 800 also illustrates an "inbox" portion 810 for listing unread electronic messages on the system for the logged in user. In this example, an optional display name 815, "Mary Smith" for the logged in user is displayed. A display name may be the same or different from a corresponding login name and/or user address, and may or may not include identifying information regarding the user.

Upon entering a recipient address (step 510 of FIG. 5) and activating a button 820 or other trigger, a message content display screen, such as message content display screen 900 of FIG. 9 may be displayed. Display screen 900 includes a first portion 910 for inputting (step 515 of FIG. 5) a message content corresponding to the recipient address input at portion 805 of FIG. 8. In this example, the recipient address and the message content are entered on separate display screens. In another example, the recipient address and message content may be input on a single display image screen. Separation of the entry of the recipient address and message content further reduces the traceability of an electronic message by, in part, reducing the ability of logging at computer 315.

In an alternative embodiment, a display-based keyboard (as discussed above) may be included in an electronic mes-

## 12

sage input displays, such as display images 700, 800, and 900. A user may use a mouse or other pointing device (e.g., a touchscreen display) to select characters being entered.

FIG. 9 illustrates an example message content 930 having been entered in portion 910. Upon completion of message content entry, a user may select button 940, or other indicator, to communicate message content 930 to server 310 (step 520 of FIG. 5). In one example, the recipient address may be communicated to server 310 separately from a corresponding message content at the time of entry. This may reduce the ability to intercept the entire electronic message during communication to server 310. In another example, the recipient address may be retained at computer 315 until the entry of corresponding message content in a subsequent display image. In one example, upon communication of the recipient address and message content 930, computer 315 retains no trace of the either the recipient address or message content 930. For example, each may exist only in random access memory (RAM), and possibly in virtual memory (e.g., a page file) established in a disk drive, at computer 315 from the time the user types the information until the loading of the next display image at computer 315, after which the information is effectively deleted. Referring to FIG. 3, electronic message 330 is illustrated as including a recipient address and message content that is communicated from computer 315 to server 310.

In an alternate embodiment, upon server 310 receiving electronic message 330, instructions associated with system 300 (e.g., instruction stored at server 310) generates a reply ID and associates the reply ID with electronic message 330 (step 525 of FIG. 5). Server 310 maintains a correspondence between the reply ID and the sending user. In one example, a new reply ID is created for each electronic message regardless of whether the sending user is the same as another electronic message. This enhances the reduced traceability of the electronic message.

In another alternate embodiment, at step 530, system 300 generates a message ID for associating the separated message content and header information of electronic message 330. Server 310 maintains a correspondence between the message content and header information.

At step 535, header information associated with electronic message 330 is identified for separation from message content 930. In one aspect, separation of information that identifies the sending user, recipient user, location of the electronic message, timing of electronic message from the message content may be implemented by associating such information with a container or header information component of the electronic message. In one example, utilization of a reply ID and a message ID can further facilitate the removal of information that itself identifies a sending user or recipient. A display name for the sending user may be generated and associated with the header information. The display name for the user need not be unique, thus maintaining the anonymity of the user when electronic message 330 is ultimately communicated to computer 320 or otherwise viewed by the recipient. In one example, system 300 replaces all information associated with electronic message 330 that could itself identify the sending user. In one embodiment, a predetermined display name for the sending user that does not provide unique identification of the sending user may be generated and associated with corresponding header information. In another example, system 300 may utilize a display name that includes information that uniquely identifies the sending user (e.g., login name, email address, etc.).

In one example, header information for a particular electronic message, such as header information, may include, but

## 13

is not limited to, a reply ID, a message ID, a date/time associated with the electronic message (e.g., date/time of creation, date/time of delivery, etc.), a display name representing a sender of the electronic message, and any combinations thereof.

At step 540, an electronic message 330 is associated with a recipient represented by the recipient address. In one example, a location of the recipient is determined. As used herein, a location may include a message mailbox, a message server associated with the recipient, a computer associated with the recipient, an electronic address of the recipient, a display name for the recipient in system 300, or the like. For example, system 300 may identify a user by a variety of identities (e.g., display name, login ID, associated email address, text messaging address, instant messaging address, SMS address, mobile number, BLACKBERRY PIN, or the like) to determine a routing for electronic message 330. As discussed above, if the recipient is not a registered user of system 300, a notification may be sent to a third-party system of the existence of electronic message 330. For example, if the recipient is identified by a third-party email address, a notification may go to the email recipient over the third-party email network. Similarly, if the recipient is identified by a Blackberry PIN, a notification may go to the recipient over the Blackberry network.

At step 545, header information and message content are stored. In one example, header information and message content are stored separately from each other (e.g., in separate files, in separate databases, in separate tables, etc.). A message ID may be used to maintain a correspondence between the separated components of electronic message 330. Storage may occur in a variety of ways including, but not limited to, storage at a location of the recipient and storage at server 310. In one example, the header information and message content of electronic message 330 are stored in a storage medium of server 310 in separate tables.

In another example, each user of system 310 is assigned a storage directory (e.g., on a server, on a user computer such as in a peer-to-peer arrangement, etc.). Upon association of a user with the recipient address, the message content and header information for any electronic messages to that user may be stored in that user's storage directory. The following XML file definition illustrates an example of header information for two electronic messages stored in a user storage directory.

---

```
<?xml version="1.0" encoding="UTF-8" ?>
<streams>
<streamsummary id="8C515D3B6A3A99C6C1A1F1DE019C7AB0"
  from="user one" datereceived="1143660969"
  replyid="6C04279318E53F61A9D7984ADD4C3E1A" />
<streamsummary id="98F78AD49BFC35B36357850C107460DF" from=
  "user four [mike.smith@onlinemail.com]" datereceived="1143665437"
  replyid="0648B99BE6F9E5AB21F3A163AD242173" />
</streams>
```

---

The above file definition includes a message ID ("stream-summary id"), a display name ("from"), date received, and reply ID for each message in the recipients storage directory. Note that as an implementation variation, the sending user of the second message has associated therewith a display name, "user four", which includes a reference to an email address, mike.smith@onlinemail.com. This email address may or may not be associated with an actual email account of a third-party system, and may or may not provide actual identifying information related to the sending user. The following

## 14

message content XML file is stored separately in the storage directory from the above header information.

---

```
<?xml version="1.0" encoding="UTF-8" ?>
<message id="8C515D3B6A3A99C6C1A1F1DE019C7AB0" subject="">
<text>This is my first message to you.</text>
</message>
```

---

The following second message content XML file is stored separately in the storage directory from the header information.

---

```
<?xml version="1.0" encoding="UTF-8" ?>
<message id="98F78AD49BFC35B36357850C107460DF" subject="">
<text>This is a reply message to your message from Monday.</text>
</message>
```

---

Each of the message content XML files includes the corresponding message ID for correlation back to the corresponding header information. Each message content XML file also includes the message content. One skilled in the art would recognize other storage methodologies for separating header information from message content that are consistent with the present disclosure.

Referring again generally to FIG. 5 at step 550 to describe the retrieval of an electronic message by a user, a recipient user logs into system 300 using computer 320. A display image similar to that in FIG. 7 may be utilized as a login display. In one example, upon entry of a valid login ID and password, a communication link between computer 320 and server 310 is established. At step 555 of FIG. 5, a display image having header information is communicated (e.g., from server 310 to computer 320. System 300 provides a display image to computer 320 representing at least some of the header information associated with any electronic messages associated with the recipient user. FIG. 10 illustrates an example display image 1000 including a recipient address input portion 1005 and a message listing portion 1010. Message listing portion 1010 includes a list of header information 1015, 1020, 1025 of three electronic messages. Message listing portion 1010 includes a display name and a date/time received for each of header information 1015, 1020, 1025. Each message container (or header information) 1015, 1020, 1025 may also include an association to a message ID and an association to a reply ID (although, not displayed in display image 1000). Message content for each electronic message is not displayed via display image 1000.

FIG. 3 illustrates header information and a message content for electronic message 330 being communicated to computer 320. In this example, header information 1015 represents electronic message 330.

In an alternate embodiment, the header information communicated to computer 320 may include a sequence number (ex: 1, 2, 3, etc.) assigned to each electronic message associated with a particular user and/or sent to a particular computer. In such an embodiment, each sequence number may be associated in system 300 with the corresponding message ID. The message ID may be removed from the corresponding header information and/or message content. In this manner, system 300 may avoid sending a message ID to a user computer and instead may send the sequence number, which may be reused when a message is deleted and is, therefore, less traceable from the user computer.

At step 560, a user may select one of the electronic messages indicated by header information 1015, 1020, 1025 (e.g.,



15

by selecting a corresponding “read” indicator in message listing **1010**). At the time of selection, the message content for each electronic message may not have been communicated to computer **320**. In one example, message content may be communicated to computer **320** along with corresponding header information (but, not displayed). In another example, message content may be retained at server **310** until a second request from a user is sent to server **310** to view a message content of a particular electronic message. In such an example, computer **320** requests a message content for a selected electronic message (e.g., electronic message **330** via header information **1015**) from server **310**. In response to this action, server **310** may associate a message ID from the selected header information and communicate the message content having the corresponding message ID to computer **320**. Alternatively, where a sequence number is utilized for each electronic message, server **310** associates the sequence number of the selected electronic message with a corresponding message content and communicates the message content to computer **320**.

At step **565**, a display image including the message content, but none of the header information, is provided at computer **320**. FIG. **11** illustrates one example display image **1100** presenting message content, independent of header information, for electronic message **330** upon the selection of header information **1015** in display image **1000** of FIG. **10**. Display image **1100** includes a message content portion **1110** including the message content of electronic message **330**. Display image **1100** also includes a reply message input portion **1120**.

In one alternate embodiment, display image **1100** may employ FLASH technology to display the message content. For example, display image **1100** may require the user to “park” the on-screen cursor in an area in display image **1100** to see the message content, which may be displayed as a Flash movie. Should the cursor be moved, the displayed message content will be hidden from view on the screen to allow the user to quickly prevent the message content from being seen by onlookers. Also, this technology may also be utilized to prevent the message content from being printed using the web browser or application print because the message content will be hidden as soon as the user moves the mouse in attempt to print. In another example, the use of Cascading Style Sheets (CSS) may allow the portion of the display image including the message content to be not shown or hidden during printing.

Referring to FIG. **5**, at step **570**, the electronic message, such as electronic message **330**, is automatically permanently deleted from server **310** at a predetermined time at step **565**. In one example, header information is deleted from server **310** upon its communication to computer **320**, and then the corresponding message content is deleted from server **310** upon its communication to computer **320**. In such an example, once message list **1010** is displayed to a user, the user must view the message content during that session. To achieve the ability to view one message content and return to message list **1010**, the header information for non-viewed electronic messages may be retained in memory at computer **320**. In another example, header information is retained at server **310** until the corresponding message content is viewed, at which point both the header information and the message content is deleted from server **310**. A reply ID for a particular electronic message may be retained in memory of server **310** (e.g., in response to a request for viewing a message content, server **310** may associate a current session ID with the reply ID) until the display image that displays the corresponding message content is closed by the user. This

16

will allow a user to utilize reply message portion **1120** of display image **1100** to reply to the current message content without having to have a unique address for the original sender associated with the message content on computer **320**. FIG. **3** illustrates a server-based system. Deletion from an alternate system, such as a peer-to-peer system, may include deletion of an electronic message from storage at a user computer.

As discussed above, other examples of deletion times for deletion from a system, such as system **300**, include, but are not limited to, automatic deletion of header information and corresponding message content immediately after the message content is displayed, automatic deletion of header information upon display of a corresponding message content, automatic deletion of message content upon a display of the message content being closed, automatic deletion of header information and/or message content (whether or not they have been viewed) after a predetermined time (e.g., twenty-four hours after being received), automatic deletion of header information and/or message content a predetermined time (e.g., twenty-four hours) after first being displayed, and any combinations thereof. In one example, system **300** is configured to require a given deletion scheme (e.g., automatic permanent deletion of an electronic message upon displaying the electronic message and/or one or more of its components) regardless of a desire of a sending and/or recipient user.

One example of a deletion algorithm appropriate for deletion of electronic messages from system **300** include, but is not limited to, US Department of Defense (DoD) clearing and sanitizing standard DoD 5220.22-M. In an alternative embodiment, server computer **310** may delete an electronic message, such as electronic message **330** and the corresponding reply ID from its own memory if the recipient fails to retrieve the electronic message within a predetermined amount of time.

In one example, after viewing the message content, the user may select a link **1130** on display image **1100** to return to the message listing (e.g., message listing **1010** of FIG. **10**), or otherwise close the display image (step **575** of FIG. **5**). In another example, after viewing the message content, the user may choose to respond to electronic message (step **580** of FIG. **5**), as will be described in further detail hereinafter. If the user fails to respond to the message content within a predetermined amount of time (e.g., 1 hour) an associated reply ID may be deleted from server **310**. If the user chooses to return to the listing of messages, the message content may be automatically deleted from the recipient’s computer **320** after viewing (step **585** of FIG. **5**). For example, the message content will exist only in RAM, and possibly in virtual memory established in the disk drive, in computer **320** from the time the user views the message content until the loading of the next screen into computer **320**, after which the message is effectively deleted. Furthermore, in one example, the listing of messages (e.g., message listing **1010** of FIG. **10**), will no longer include the header information for a particular electronic message (e.g., header information **1015** of electronic message **330**) that has been deleted from server **310**, and the session ID will no longer include reference to the reply ID. In other words, the user will not be able to view that message again or reply to the message once it has been deleted.

In an alternative embodiment, electronic messages may be sent, stored, and/or retrieved using encryption technology. Various encryption technologies are known to those skilled in the art. For example, a combination of public and private



17

encryption keys may be utilized by users and the system to further ensure security and reduce traceability of electronic messages until deletion.

Referring to FIGS. 3 and 6, operation of system 310 in optionally sending a reply message 340 from user computer 320 to user computer 315 can be described. As shown for example in FIG. 11, the recipient user of the original electronic message (e.g., electronic message 330) may choose to reply to the message utilizing reply message input portion 1120. Reply message input portion 1120 allows a user to input a message content for a reply message. In this example, there is no need to input a recipient address as an original reply ID may be utilized by system 300 in determining the routing of the reply electronic message. After the user completes reply message input portion 1120, he or she may select the "send stream" button 1140. In response, computer 320 communicates the reply message content to server computer 310 (step 605 of FIG. 6). After the reply message content is communicated, computer 320 retains no trace of the message's existence. For example, the message will exist only in RAM, and possibly in virtual memory established in the disk drive, in computer 320 from the time the user types the message until the loading of the next screen into computer 320, after which the message is effectively deleted. In an alternative embodiment, a display-based keyboard, as discussed above, may be utilized as part of display image 1100 for inputting reply message content.

In one example, upon receipt of the reply message content, server 310 determines the reply ID for the original message (e.g., from the current session ID), and uses the reply ID to associate the electronic message with the user that sent the original message 330 (step 610 of FIG. 6). This may be accomplished in a variety of ways including, but not limited to, a lookup table, a database, or the like, which provides a correlation between the reply ID and the sender of the initial message. At step 615, system 300 then deletes the initial reply ID (e.g., the reply ID for message 330) from server 310's memory. In an alternate embodiment, the identity of the sender of an original electronic message may be determined from another identifier associated with the electronic message (e.g., display name, login ID, associated email address, text messaging address, instant messaging address, SMS address, mobile number, BLACKBERRY PIN, or the like).

Next at step 620, the server 310 may generate another reply ID and associate the reply ID with reply message 340 in a similar fashion as discussed above for electronic message 330. Server 310 may also generate another message ID, which establishes a correlation between the message content of reply message 340 and header information for reply message 340. Header information and message content for reply message 340 are handled and stored similarly as described above with respect to electronic message 330. Reply message 340 may be viewed by its recipient in the same manner as original electronic message 330 was viewed.

Advantageously, the system 300 allows the users of the computers 315 and 320 to have a private conversation over network 325. After messages, such as electronic message 330 and reply message 340, are communicated the sender leaves no proof of the message on his or her computer. In one example, after the recipient views the message (or at another predetermined time), the message no longer exists on system 300, thus ensuring that the message cannot be forensically recreated and ensuring that there is no record of the message remaining on system 300. In another example, no copies of an electronic message are ever delivered to a user computer. In such an example, only non-caching display images of header information and message content are displayed separately.

18

The header information and message content may be immediately, automatically, and permanently deleted from the system upon display. Once each display image is closed, the information is gone forever. Thus, in this example, there is never a copy on the user computer to be archived, forwarded, copied, pasted, etc. In another aspect, separate display of header information and message content prevents a single screen capture at a user computer from creating a complete record of the electronic message. In yet another aspect, a system and method according to the present disclosure may provide an end-to-end recordless electronic messaging system that upon the deletion of the electronic message leaves no trace of the message content, header information, or the fact that it was created, existed, delivered, viewed, etc.

FIG. 4 is a schematic diagram depicting a system 400 having an alternative network topology. The embodiment of FIG. 4 is substantially similar to that of FIG. 3, except that system 400 of FIG. 4 employs two message servers 405 and 410 operably coupled to user computers 415 and 420 by one or more networks 425. In the embodiment of FIG. 4, the two message servers 415 and 420 together perform the tasks previously described for the single message server 310 of FIG. 3. For example, in the method for sending the initial message 330, message server 405 may perform steps 505 to 535 and a portion of step 540 of FIG. 5, while message server 410 acts as the "recipient location" and performs a portion of step 540 and steps 545 to 585 of FIG. 5. It will be appreciated that both servers 405 and 410 may keep track of the reply ID and both servers 405 and 410 delete the message after it has been passed along. This arrangement is particularly useful where message servers 405 and 410 are each associated with a different enterprise, business organization, LAN, or the like.

It is to be noted that the above described aspects and embodiments may be conveniently implemented using a conventional general purpose computer programmed according to the teachings of the present specification, as will be apparent to those skilled in the computer art. Appropriate software coding can readily be prepared by skilled programmers based on the teachings of the present disclosure, as will be apparent to those skilled in the software art.

Such software can be a computer program product which employs a storage medium including stored computer code which is used to program a computer to perform the disclosed function and process of the present invention. The storage medium may include, but is not limited to, any type of conventional floppy disks, optical disks, CD-ROMs, magneto-optical disks, ROMs, RAMs, EPROMs, EEPROMs, magnetic or optical cards, or any other suitable media for storing electronic instructions.

Exemplary embodiments have been disclosed above and illustrated in the accompanying drawings. It will be understood by those skilled in the art that various changes, omissions and additions may be made to that which is specifically disclosed herein without departing from the spirit and scope of the present invention.

What is claimed is:

1. A computer-implemented method of handling an electronic message at a recipient user mobile device in a networked environment, the electronic message including a message content and a header information that corresponds to the message content, the recipient user mobile device having access to electronic instructions, the electronic instructions being stored at the recipient user mobile device and/or at a server, the method comprising:

providing a plurality of reduced traceability displays via the recipient user mobile device using a display genera-

tor that acts upon a display element of the recipient user mobile device to provide the plurality of reduced traceability displays, the display generator including the electronic instructions, the plurality of reduced traceability displays including a first display presenting a header information of an electronic message received at the recipient user mobile device and a second display presenting a message content of the electronic message, the message content including a media component, the first display being generated by the display generator such that the first display does not include a display of the media component via the first display such that a single screen capture of both the header information and the media component is prevented, the first and second displays not being displayed to the user at the same time; receiving a selection by the recipient user via the first display, the selection directed to a portion of a message list corresponding to the header information; and in response to the selection, providing a second display via the recipient user device, the second display displaying the message content including the media component.

2. A computer-implemented method according to claim 1, wherein the message content including a media component does not include information about a sender of the electronic message that itself provides a traceable identity of the sender.

3. A computer-implemented method according to claim 1, wherein the message content including a media component does not include information that in itself identifies a user sending the electronic message, a recipient user of the electronic message, or a date associated with the electronic message.

4. A computer-implemented method according to claim 1, wherein the display generator acts with the display element to generate the second display such that the second display displays the message content including the media component without displaying the header information.

5. A computer-implemented method according to claim 1, wherein the media component includes information selected from the group consisting of an image, video, audio, and any combinations thereof.

6. A computer-implemented method according to claim 1, wherein the media component includes an image.

7. A computer-implemented method according to claim 1, wherein the display generator acts with the display element to generate the second display such that screenshot logging at the recipient user mobile device is prevented from capturing the media component.

8. A computer-implemented method according to claim 1, wherein the display generator acts with the display element to generate the second display such that the simultaneous capture of the media component and the header information via screenshot logging is prevented at the recipient user mobile device.

9. A computer-implemented method according to claim 1, wherein the header information and the message content are received at the recipient user device via a network, wherein the header information and the message content are communicated over the network separately.

10. A computer-implemented method according to claim 1, wherein the message content is received from a server computer and the method further comprises deleting the message content including the media component from the server computer.

11. A computer-implemented method according to claim 10, wherein said deleting the message content including the media component from the server computer occurs after said providing a second display.

12. A computer-implemented method according to claim 10, wherein said deleting the message content including the media component from the server computer occurs upon the second display being closed.

13. A machine readable hardware storage medium containing machine executable instructions implementing a method of handling an electronic message at a recipient user mobile device in a networked environment, the electronic message including a message content and a header information that corresponds to the message content, the instructions comprising:

a set of instructions for providing a plurality of reduced traceability displays via the recipient user mobile device, the set of instructions for providing a plurality of reduced traceability displays including instructions for acting upon a display element of the recipient user mobile device to provide the plurality of reduced traceability displays, the plurality of reduced traceability displays including a first display presenting a header information of an electronic message received at the recipient user mobile device and a second display presenting a message content of the electronic message, the message content including a media component, the first display being generated by the display generator such that the first display does not include a display of the media component via the first display such that a single screen capture of both the header information and the media component is prevented, the first and second displays not being displayed to the user at the same time;

a set of instructions for receiving a selection by the recipient user via the first display, the selection directed to a portion of a message list corresponding to the header information; and

a set of instructions for providing, in response to the selection, a second display via the recipient user device, the second display displaying the message content including the media component.

14. A machine readable hardware storage medium according to claim 13, wherein the message content including a media component does not include information about a sender of the electronic message that itself provides a traceable identity of the sender.

15. A machine readable hardware storage medium according to claim 13, wherein the message content including a media component does not include information that in itself identifies a user sending the electronic message, a recipient user of the electronic message, or a date associated with the electronic message.

16. A machine readable hardware storage medium according to claim 13, wherein the second display displays the message content including the media component without displaying the header information.

17. A machine readable hardware storage medium according to claim 13, wherein said set of instructions for providing a plurality of reduced traceability displays includes a set of instructions for preventing screenshot logging at the recipient user device from capturing the media component.

18. A machine readable hardware storage medium according to claim 13, wherein said set of instructions for providing a plurality of reduced traceability displays includes a set of instructions for preventing the simultaneous capture of the media component and the header information via screenshot logging at the recipient user device.

19. A machine readable hardware storage medium according to claim 13, further comprising a set of instructions for receiving the message content from a server computer and a set of instructions for deleting the message content including

21

the media component from the server computer, wherein said deleting the message content including the media component from the server computer occurs after said providing a second display.

20. A machine readable hardware storage medium according to claim 13, further comprising a set of instructions for receiving the message content from a server computer and a set of instructions for deleting the message content including the media component from the server computer, wherein said deleting the message content including the media component from the server computer occurs upon the second display being closed.

21. A machine readable hardware storage medium according to claim 13, further comprising a set of instructions for receiving the message content from a server computer and a set of instructions for deleting the message content including the media component from the server computer.

22. A machine readable hardware storage medium according to claim 13, wherein the media component includes information selected from the group consisting of an image, video, audio, and any combinations thereof.

23. A machine readable hardware storage medium according to claim 13, wherein the media component includes an image.

24. A machine readable hardware storage medium according to claim 13, wherein said set of instructions for providing a plurality of displays includes a set of instructions for preventing the simultaneous capture of the media component and the header information via screenshot logging at the recipient user device.

25. A machine readable hardware storage medium according to claim 13, further comprising a set of instructions for receiving the header information and the message content at the recipient user device via a network, wherein the header information and the message content are communicated over the network separately.

26. A system for handling an electronic message comprising:

a means for providing a plurality of reduced traceability displays via the recipient user mobile device, the set of instructions for providing a plurality of reduced traceability displays including instructions for acting upon a display element of the recipient user mobile device to provide the plurality of reduced traceability displays, the plurality of reduced traceability displays including a first display presenting a header information of an electronic message received at the recipient user mobile device and a second display presenting a message content of the electronic message, the message content including a media component, the first display being generated by the display generator such that the first display does not include a display of the media component via the first display such that a single screen capture of both the header information and the media component is prevented, the first and second displays not being displayed to the user at the same time;

a means for receiving a selection by the recipient user via the first display, the selection directed to a portion of a message list corresponding to the header information; and

22

a means for providing, in response to the selection, a second display via the recipient user device, the second display displaying the message content including the media component.

27. A system for handling an electronic message according to claim 26, wherein the message content including a media component does not include information about a sender of the electronic message that itself provides a traceable identity of the sender.

28. A system for handling an electronic message according to claim 26, wherein the message content including a media component does not include information that in itself identifies a user sending the electronic message, a recipient user of the electronic message, or a date associated with the electronic message.

29. A system for handling an electronic message according to claim 26, wherein the media component includes information selected from the group consisting of an image, video, audio, and any combinations thereof.

30. A system for handling an electronic message according to claim 26, wherein the media component includes an image.

31. A system for handling an electronic message according to claim 26, wherein said means for providing a plurality of reduced traceability displays includes a means for preventing screenshot logging at the recipient user device from capturing the media component.

32. A system for handling an electronic message according to claim 26, wherein said means for providing a plurality of displays includes a means for preventing the simultaneous capture of the media component and the header information via screenshot logging at the recipient user device.

33. A system for handling an electronic message according to claim 26, further comprising a means for receiving the header information and the message content at the recipient user device via a network, wherein the header information and the message content are communicated over the network separately.

34. A system for handling an electronic message according to claim 26, further comprising a means for receiving the message content from a server computer and a means for deleting the message content including the media component from the server computer.

35. A system for handling an electronic message according to claim 26, further comprising a means for receiving the message content from a server computer and a means for deleting the message content including the media component from the server computer, wherein said deleting the message content including the media component from the server computer occurs after said providing a second display.

36. A system for handling an electronic message according to claim 26, further comprising a means for receiving the message content from a server computer and a means for deleting the message content including the media component from the server computer, wherein said deleting the message content including the media component from the server computer occurs upon the second display being closed.

37. A system for handling an electronic message according to claim 26, wherein the second display displays the message content including the media component without displaying the header information.

\* \* \* \* \*