

Petition for *Inter Partes* Review of  
U.S. Patent No. 10,203,854 B2

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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BUMBLE TRADING, INC.,  
Petitioner

v.

MATCH GROUP, LLC,  
Patent Owner

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Case No. IPR2019-01537

U.S. Patent No. 10,203,854 B2

Filing Date: April 3, 2018  
Issue Date: February 12, 2019

Title: MATCHING PROCESS SYSTEM AND METHOD

**PETITION FOR *INTER PARTES* REVIEW  
OF U.S. PATENT NO. 10,203,854 B2**

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**List of Exhibits**

<b>Exhibit No.</b>	<b>Description of Document</b>
<b>1001</b>	U.S. Patent No. 10,203,854 B2 to Sean Rad, et al. (filed April 3, 2018, issued February 12, 2019 ) (“’854” or “’854 patent”)
<b>1002</b>	Declaration of Chris Schmandt (“Schmandt”)
<b>1003</b>	U.S. Patent Application Publication No. 2012/0143779 A1 to Chia-Ming Chang (filed Apr. 8, 2011, published Jun. 7, 2012) (“Chang”)
<b>1004</b>	U.S. Patent Application Publication No. 2012/0246231 A1 to Sebastian Norena (filed Jan. 12, 2012, published Sept. 27, 2012) (“Norena”)
<b>1005</b>	U.S. Patent No. 9,122,757 B1 to Grant Wernick (filed May 23, 2012, published Sept. 1, 2015) (“Wernick”)
<b>1006</b>	File History of ’854 Patent
<b>1007</b>	U.S. Patent Application Publication No. 2011/0072470 A1 to Scott Morris, et al. (filed Sept. 22, 2009, published Mar. 24, 2011) (“Morris”)
<b>1008</b>	U.S. Patent Application Publication No. 2011/0087974 A1 to Charles Kulas (filed Dec. 17, 2010, published Apr. 14, 2011) (“Kulas”)
<b>1009</b>	Claim Listing
<b>1010</b>	Third Amended Complaint, <i>Match Group, LLC v. Bumble Trading Inc.</i> , Case No. 6:18-cv-00080-ADA (W.D. Tex.) (Mar. 27, 2019)
<b>1011</b>	File History of ’811 Patent
<b>1012</b>	U.S. Patent No. 9,639,901 B2 to David Montoya, et al. (filed Dec. 29, 2011, issued May 2, 2017) (“Montoya”)
<b>1013</b>	U.S. Patent No. 9,294,428 B2 to Christopher Nordstrom, et al. (filed Jan. 17, 2013, issued Mar. 22, 2016) (“Nordstrom”)

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<b>Exhibit No.</b>	<b>Description of Document</b>
<b>1014</b>	Julie Spira, <i>Top 10 Best Mobile Dating Apps of 2012</i> , CYBER-DATING EXPERT, <a href="https://cyberdatingexpert.com/mobiledating2012/">https://cyberdatingexpert.com/mobiledating2012/</a> (last visited Apr. 29, 2019)
<b>1015</b>	Julie Spira, <i>The CyberDating Expert Top 10 Mobile Dating Apps</i> , CYBER-DATING EXPERT (Sept. 23, 2010), <a href="https://web.archive.org/web/20100926124154/http://cyberdatingexpert.com/the-cyberdating-expert-top-10-mobile-dating-apps">https://web.archive.org/web/20100926124154/http://cyberdatingexpert.com/the-cyberdating-expert-top-10-mobile-dating-apps</a>
<b>1016</b>	Charles Newark-French, <i>Mobile Apps Put the Web in Their Rear-view Mirror</i> , FLURRY (June 20, 2011), <a href="https://web.archive.org/web/20110924031931/http://blog.flurry.com/bid/63907/Mobile-Apps-Put-the-Web-in-Their-Read-view-Mirror">https://web.archive.org/web/20110924031931/http://blog.flurry.com/bid/63907/Mobile-Apps-Put-the-Web-in-Their-Read-view-Mirror</a>
<b>1017</b>	Charles Newark-French, <i>Mobile Dating Apps: The Second (Lady) Killer App Category</i> , FLURRY (Aug. 2011), <a href="https://web.archive.org/web/20110811173903/http://blog.flurry.com/bid/68668/Mobile-Dating-Apps-The-Second-Lady-Killer-App-Category">https://web.archive.org/web/20110811173903/http://blog.flurry.com/bid/68668/Mobile-Dating-Apps-The-Second-Lady-Killer-App-Category</a>
<b>1018</b>	Sarah Rense, <i>A Few Things to Know About Sex and Dating Apps Before Jumping in Bed with a Stranger</i> , ESQUIRE (August 1, 2016), <a href="https://web.archive.org/web/20160804043033/http://www.esquire.com/lifestyle/sex/a47241/best-sex-apps/">https://web.archive.org/web/20160804043033/http://www.esquire.com/lifestyle/sex/a47241/best-sex-apps/</a>
<b>1019</b>	Christina Bonnington, <i>32 Awesome Apps for One-Night Stands</i> , REFINERY29 (Feb. 14, 2019, 5:15 PM), <a href="https://www.refinery29.com/en-us/best-apps-for-one-night-stands">https://www.refinery29.com/en-us/best-apps-for-one-night-stands</a>
<b>1020</b>	Gwendolyn Seidman, Ph.D., <i>Is Tinder Really a Hookup App?</i> , PSYCHOLOGY TODAY (June 11, 2017), <a href="https://www.psychologytoday.com/us/blog/close-encounters/201706/is-tinder-really-hookup-app">https://www.psychologytoday.com/us/blog/close-encounters/201706/is-tinder-really-hookup-app</a>
<b>1021</b>	Tara Darrow, <i>Tinder and the Hookup Culture Have Completely Ruined Dating for Millenials</i> , ODYSSEY (Mar. 4, 2018),

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<b>Exhibit No.</b>	<b>Description of Document</b>
	<a href="https://www.theodysseyonline.com/has-the-hook-culture-destroyed-dating">https://www.theodysseyonline.com/has-the-hook-culture-destroyed-dating</a>
<b>1022</b>	Hailey Yowell, <i>Tinder is Ruining College Relationships</i> , THE CAVALIER DAILY (Oct. 23, 2018), <a href="https://web.archive.org/web/20181024053002/http://www.cavalierdaily.com/article/2018/10/yowell-tinder-is-ruining-college-relationships">https://web.archive.org/web/20181024053002/http://www.cavalierdaily.com/article/2018/10/yowell-tinder-is-ruining-college-relationships</a>
<b>1023</b>	U.S. Patent No. 9,733,811 B2 to Rad et al. (filed Oct. 21, 2013, issued Aug. 15, 2017) (“811” or “811 patent”)
<b>1024</b>	Gordon P. Kurtenbach, Abigail J. Sellen & William A.S. Buxton, <i>An Empirical Evaluation of Some Articulatory and Cognitive Aspects of Marking Menus</i> , 8 HUMAN COMPUTER INTERACTION 1 (1993)
<b>1025</b>	U.S. Patent Application Publication No. 2012/0272186 A1 to Joel Kraut (filed Mar. 8, 2012, published Oct. 25, 2012) (“Kraut”)
<b>1026</b>	Michael J. Rosenfeld & Reuben J. Thomas, <i>Searching for a Mate: The Rise of the Internet as a Social Intermediary</i> , 77(4) AMERICAN SOCIOLOGICAL REVIEW 523 (2012)
<b>1027</b>	U.S. Patent Application Publication No. 2006/0026521 A1 to Steve Hotelling, et al. (filed July 30, 2004, published Feb. 2, 2006) (“Hotelling”)
<b>1028</b>	U.S. Patent No. 8,059,101 B2 to Wayne Westerman, et al. (filed June 22, 2007, published Nov. 15, 2011) (“Westerman”)
<b>1029</b>	U.S. Patent No. 7,479,949 B2 to Steven Jobs, et al. (filed Apr. 11, 2008, published Jan. 20, 2009) (“Jobs”)
<b>1030</b>	U.S. Patent Application Publication No. 2013/0047115 A1 to Charles Migos, et al. (filed Aug. 17, 2012, published Feb. 21, 2013) (“Migos”)
<b>1031</b>	U.S. Patent No. 8,095,879 B2 to Magnus Goertz (filed Dec. 10, 2002, issued Jan. 10, 2012) (“Goertz”)

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<b>Exhibit No.</b>	<b>Description of Document</b>
<b>1032</b>	U.S. Patent Application Publication No. 2012/0017180 A1 to Dominic Flik, et al. (filed Jul. 25, 2011, published Jan. 19, 2012) (“Flik”)
<b>1033</b>	U.S. Patent Application Publication No. 2010/0146462 A1 to Mayasuki Ishizawa (filed Nov. 9, 2009, published June 10, 2010) (“Ishizawa”)
<b>1034</b>	U.S. Patent Application Publication No. 2009/0002335 A1 to Imran Chaudhri (filed June 26, 2008, published Jan. 1, 2009) (“Chaudhri”)
<b>1035</b>	U.S. Patent Application Publication No. 2012/0290978 A1 to John Devecka (filed May 14, 2012, published Nov. 15, 2012) (“Devecka”)
<b>1036</b>	Reserved
<b>1037</b>	Julie Spira, <i>The CyberDating Expert Top 10 Mobile Dating Apps in 2011</i> , CYBER-DATING EXPERT (Sept. 20, 2011), <a href="https://web.archive.org/web/20110925022242/http://cyberdatingexpert.com/mobiledating2011">https://web.archive.org/web/20110925022242/http://cyberdatingexpert.com/mobiledating2011</a>
<b>1038</b>	Plaintiff Match Group, LLC’s Disclosure of Asserted Claims and Infringement Contentions, <i>Match Group, LLC v. Bumble Trading Inc.</i> , Case No. 6:18-cv-00080-ADA (W.D. Tex.) (Jan. 21, 2019)
<b>1039</b>	U.S. Provisional Patent Application No. 61/466,394 to Sebastian Norena (filed Mar. 22, 2011)
<b>1040</b>	U.S. Provisional Patent Application No. 61/498,599 to Grant M. Wernick, et al. (filed June 19, 2011)
<b>1041</b>	U.S. Provisional Patent Application No. 61/621,524 to Grant M. Wernick (filed Apr. 8, 2012)
<b>1042</b>	U.S. Provisional Patent Application No. 61/650,868 to Grant M. Wernick (filed May 23, 2012)
<b>1043</b>	Affidavit of C. Butler (Internet Archive)

**List of Exhibits**

<b>Exhibit No.</b>	<b>Description of Document</b>
<b>1044</b>	Lukas Brozovsky & Vaclav Petricek, <i>Recommender System for Online Dating Service</i> (Mar. 9, 2007), available at <a href="https://arxiv.org/pdf/cs/0703042.pdf">https://arxiv.org/pdf/cs/0703042.pdf</a>
<b>1045</b>	Anne McLaughlin, <i>An Introduction to Cupid; Former Lewiston Radio Personality Launches a Social Network for Single Adults Looking for Friends</i> , LEWISTON MORNING TRIBUNE (Apr. 9, 1995)
<b>1046</b>	U.S. Patent No. 8,108,414 B2 to David Stackpole (filed Nov. 28, 2007, issued Jan. 31, 2012) (“Stackpole”)
<b>1047</b>	U.S. Patent No. 7,203,674 B2 to Morgan Cohen (filed Feb. 15, 2002, issued Apr. 10, 2007) (“Cohen”)
<b>1048</b>	U.S. Patent No. 7,545,784 B2 to Richard Mgrdechian & Man-Ho Lawrence Lee (filed Feb. 10, 2005, issued June 9, 2009) (“Mgrdechian”)
<b>1049</b>	Plaintiff Match Group, LLC’s Infringement Contentions for ’854 Patent Claims, <i>Match Group, LLC v. Bumble Trading Inc.</i> , Case No. 6:18-cv-00080-ADA (W.D. Tex.) (Feb. 13, 2019)
<b>1050</b>	Match’s Proposed Constructions
<b>1051</b>	Bumble’s Proposed Constructions
<b>1052</b>	U.S. Patent No. 8,606,297 B1 to Joel Simkhai, et al. (filed Mar. 24, 2011, issued Dec. 10, 2013) (“Simkhai”)
<b>1053</b>	U.S. Patent Application No. 2004/0260781 to Shostack et al. (filed Dec. 18, 2003, published Dec. 23, 2004)
<b>1054</b>	U.S. Patent No. 8,010,556 to Terrill et al. (filed Sept. 24, 2009, issued Aug. 30, 2011)

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<b>Exhibit No.</b>	<b>Description of Document</b>
<b>1055</b>	Transcript of <i>Markman</i> Hearing, <i>Match Group, LLC v. Bumble Trading Inc.</i> , Case No. 6:18-cv-00080-ADA (W.D. Tex.) (June 7, 2019)
<b>1056</b>	Christine Erickson, <i>A Brief History of Text Messaging</i> (Sept. 21, 2012) available at <a href="https://mashable.com/2012/09/21/text-messaging-history/">https://mashable.com/2012/09/21/text-messaging-history/</a>
<b>1057</b>	Scheduling Order, <i>Match Group, LLC v. Bumble Trading Inc.</i> , Case No. 6:18-cv-00080-ADA (W.D. Tex.) (June 17, 2019)
<b>1058</b>	Defendant Bumble Trading, Inc.'s Preliminary Invalidity Contentions Cover Pleading, <i>Match Group, LLC v. Bumble Trading Inc.</i> , Case No. 6:18-cv-00080-ADA (W.D. Tex.) (March 22, 2019)
<b>1059</b>	U.S. Patent Publication Application No. 2009/0164464 (filed December 19, 2008)
<b>1060</b>	U.S. Provisional Patent Application No. 61/793,866 (filed March 15, 2013)
<b>1061</b>	U.S. Patent Application No. 15/676,773 and File History (filed August 14, 2017)

**I. INTRODUCTION**

Petitioner Bumble Trading, Inc. respectfully submits this Petition for *Inter Partes* Review of claims 1-6 (“the Petitioned Claims”) of U.S. Patent No. 10,203,854 (“’854 patent”) (Ex.1001). Petitioner requests institution of *Inter Partes* review (“IPR”) and a finding that all challenged claims are unpatentable.

**II. MANDATORY NOTICES UNDER § 42.8(A)(1)**

**A. Real Parties-In-Interest under § 42.8.(b)(1)**

Bumble Trading, Inc., Bumble Holding Limited, Badoo Software Limited, Badoo Trading Limited, and Badoo Limited are the real parties-in-interest to this IPR petition. For ease of reference, this Petition will refer to Bumble Trading, Inc. as the “Petitioner”.

**B. Related Matters under § 42.8(b)(2)**

Concurrently with the filing of this petition for claims 1-6, Petitioner is filing an IPR Petition (IPR-2019-1121) challenging claims 7-12 of the ’854 patent using the same prior art presented here. Petitioner is unaware of any other IPR petitions filed for the ’854 patent.

The ’854 patent is the subject of pending litigation involving the Petitioner: *Match Group LLC. v. Bumble Trading, Inc.*, Case No. 6:18-cv-00080-ADA (W.D. Tex.). The Third Amended Complaint, filed March 27, 2019, in that action alleges that Petitioner and Bumble Holding Ltd. infringe the ’854 patent. (*See e.g.*, Ex.1010,

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¶¶ 132-170.)

A claim construction hearing occurred on June 7, 2019. The District Court ruled that all disputed claim terms would have their plain and ordinary meaning. (Ex.1055, 21:18 – 22:19, 26:3-5, 33:20-21, 56:21-24, 63:22-23, 68:17-18.) Trial is set to begin on July 20, 2020.

The '854 patent is not the subject of any other pending litigation.

**C. Lead and Back-Up Counsel under § 42.8(b)(3)**

Petitioner provides the following designation of counsel.

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	Joseph Drayton <i>Pro hac vice</i> (application to be filed) jdrayton@cooley.com  COOLEY LLP ATTN: Patent Group 1299 Pennsylvania Ave. NW, Suite 700 Washington D.C. 20004 Tel: (212) 479-6539 Fax: (212) 479-6275
	Rose S. Whelan <i>Pro hac vice</i> (application to be filed)

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	rwhelan@cooley.com  COOLEY LLP ATTN: Patent Group 1299 Pennsylvania Avenue NW Suite 700 Washington D.C. 20004 Tel: (202) 728-7070 Fax: (202) 842-7899

**D. Service Information**

This Petition is being served by Federal Express to the attorney of record for the '854 patent, BAKER BOTTS L.L.P., 2001 Ross Avenue, Suite 900, Dallas, TX 75201-2980. Petitioner consents to electronic service at the addresses provided above for lead and back-up counsel.

**III. FEE PAYMENT UNDER § 42.103**

Petitioner requests review of six claims with a \$30,500 payment.

**IV. REQUIREMENTS UNDER §§ 42.104 AND 42.108**

**A. Grounds for Standing**

Petitioner certifies that the '854 patent is available for IPR and that Petitioner is not barred or otherwise estopped.

**B. Identification of Challenge and Statement of Precise Relief Requested**

Petitioner requests the Board institute IPR of claims 1-6 based on:

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Ground	Claims	Basis for Challenge under § 103(a)
1	1, 4	Chang (Ex.1003) in view of Wernick (Ex.1005)
2	1-6	Chang in view of Wernick and Norena (Ex.1004)
3	1, 4	Chang in view of Morris (Ex.1007)
4	1-6	Chang in view of Morris and Norena
5	1, 4	Chang in view of Morris and Kulas (Ex.1008)
6	1-6	Chang in view of Morris, Kulas, and Norena

Submitted with this Petition is a Declaration of Christopher M. Schmandt. (Ex.1002) (“Schmandt”), a qualified technical expert. (Schmandt, ¶¶1-9, Ex.A.)

**B. Considerations under § 42.102**

This Petition is timely and comports with § 42.102(a)(2). In prosecuting the ’854 patent, Patent Owner (PO”) claimed priority to Provisional App. No. 61/793,866 filed March 15, 2013. (Ex.1060) Petitioner’s technical expert Mr. Schmandt has provided detailed analysis, in chart form, mapping the written description support from the provisional to each claim in the ’854 patent, and the patents and patent applications on the face of that patent. (Schmandt, ¶10, Exs.B-D.) Therefore, despite the filing date of its non-provisional application the ’854 patent is not a patent described in § 3(n)(1) of the Leahy-Smith America Invents Act.

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In the unlikely event that PO argues that the provisional does not provide adequate written description support for those claims, Petitioner reserves the right to request further briefing on this issue.

**C. Considerations Under 35 U.S.C. § 325(d)**

This Petition does not present a situation in which “the same or substantially the same prior art or arguments previously were presented to the Office.” 35 U.S.C. § 325(d). Petitioner has filed a separate petition asserting the same prior art against claims 7-12 of the patent, but only claims 1-6 are challenged here. Excepting Kulas, none of the prior art references in Petitioner’s Grounds were listed during prosecution.

Kulas was identified during prosecution, but was not considered or analyzed by the Examiner. (Ex.1006, MTCH1257, 1390.) Kulas was cited as a secondary reference during prosecution of the related ’811 patent, to illustrate swiping was known, which Applicant acknowledged. (Ex.1011, MTCH608-17, MTCH644-51.) Grounds 5-6 presented herein rely on Kulas as a secondary reference for this admitted disclosure.

Two Wernick patents (9,547,369 and 9,720,570) were included on the list of “References Cited” on the ’854 patent. (Ex.1006, MTCH1268.) While sharing a similar specification with the Wernick that is a secondary reference of Grounds 1-2 below, they were filed in 2013 and 2016 respectively. No Wernick references were

considered or analyzed by the Examiner during prosecution.

**D. The Board Should Not Exercise its Discretion Under 35 U.S.C. § 314(a) to Deny Institution**

The claims challenged in this Petition are presently asserted by PO in the parallel district court litigation. However, PO must reduce its claims in the litigation, making resolution of different claim sets in the two proceedings inevitable. (Ex.1057 at 2.) *3Shape A/S v. Align Tech., Inc.*, IPR2019-00163, 36-39 (P.T.A.B. June 11, 2019) (Paper 8) (“We agree ... that differing claim sets is a factor that weighs against exercise of our discretion under § 314(a)”). The issues, arguments, and evidence presented in this Petition will also be different from those in the litigation.

If PO relies on recently-designated precedential case *NHK Spring* as a basis to deny institution, it is misguided. *NHK Spring Co. Ltd. v. Intri-Plex Techs. Inc.*, IPR2018-00752, 19-20 (P.T.A.B. Sept. 12, 2018) (Paper 8). There the Board found that instituting review “ultimately would be inefficient” not just because trial would conclude prior to any Final Written Decision, but also because the petition relied on the same prior art and arguments as the litigation and expert discovery was nearing its end. *Id.*; see also *E-One, Inc. v. Oshkosh Corp.*, IPR2019-00161, 6-9 (P.T.A.B. May 15, 2019) (Paper 16) (applying *NHK Spring* to deny institution because the judge considered the same arguments and expert testimony in a preliminary injunction hearing). The facts here differ. The district court litigation

is in its early stages. Fact discovery opened on June 14, 2019. Neither party has served its final infringement or invalidity contentions. The only hearing has been on claim construction. (Ex.1057 at 1-2.) Moreover, Petitioner will likely proffer different theories of invalidity in the litigation, relying on system art prohibited in IPR proceedings. (Ex.1058 at 15-23.) Thus, the present situation differs from those in which the Board has previously exercised discretion to deny institution.

Additionally, since, as discussed above, it is highly likely that at least some of the claims challenged in this Petition will not be litigated, the Board should not exercise that discretion for obvious public policy reasons to assure that any non-litigated claims are reviewed.<sup>1</sup>

## **V. OVERVIEW OF THE '854 PATENT**

### **A. Level of Ordinary Skill in the Art**

A person of ordinary skill in the art (“POSITA”) as of June 2012 would have possessed at least a bachelor’s degree in computer science or an equivalent field requiring learning computation principles, and two-years-experience building software applications employing client/server communication architectures, database queries and graphical user interfaces (“GUIs”). Additional education could compensate for less practical experience and vice versa. (Schmandt, ¶14.)

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<sup>1</sup> Petitioner reserves the right to request a reply to address any additional arguments made by PO regarding § 314(a), as arguments here are limited by word count constraints.

**B. Priority Date**

PO has asserted June 6, 2012 as the priority date for the challenged claims.

(Ex.1049, 4.)

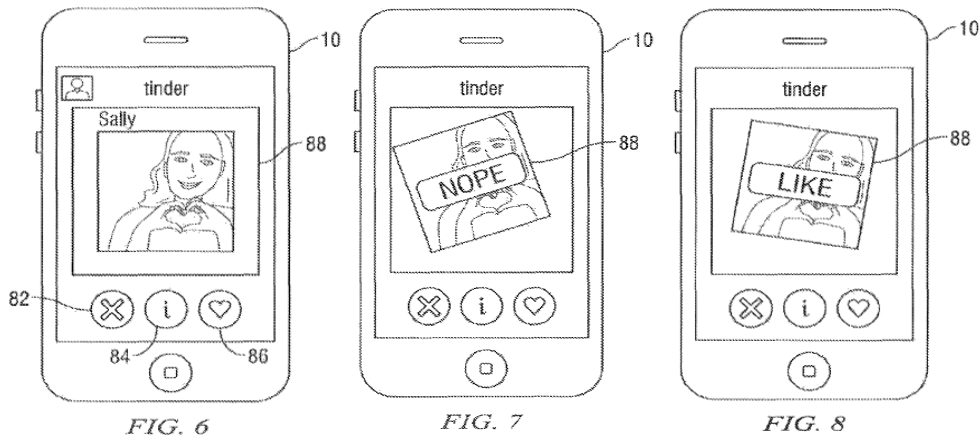
The '854 patent issued from a continuation of Application No. 15/676,773, filed August 14, 2017, which is a continuation of Application No. 14/059,192 (now the '811 patent), filed October 21, 2013, which claims priority to a provisional application filed March 15, 2013. The application that led to the '811 patent was a continuation-in-part of Application No. 12/339/301, filed December 19, 2008; however, each challenged claim is directed to matter not disclosed in the 2008 application. (Schmandt, ¶¶55-57.) For example, “swiping” required by each challenged independent claim is not disclosed in the 2008 application. (Schmandt, ¶56.) During the '811 prosecution, the applicant swore behind Janssens, which claims priority to August 6, 2012, which was acknowledged during the '854 prosecution. (Ex.1006, MTCH1230; Ex.1011, MTCH-641-51, MTCH-173.) Petitioner uses June 6, 2012 as the priority date for this Petition, but does not concede that the claims are entitled to that date.

**C. Specification**

The '854 patent is directed to profile matching on touchscreen electronic devices. ('854, 19:46-60.)

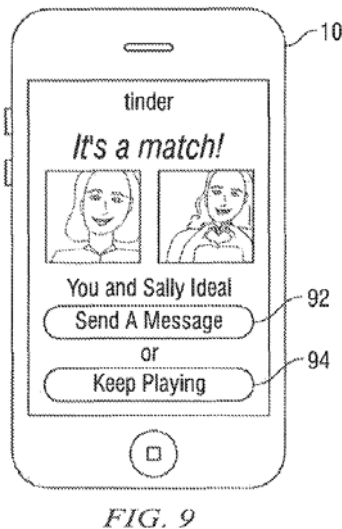
Figures 6-8 depict embodiments where a user swipes through displayed cards

88. ('854, 22:11-12.)



The user performs this “swiping gesture by moving a finger or other suitable object across a screen of terminal 10.” ('854, 22:16-17.)

The “matching server 20 creates a match ... after both users 14 have expressed a preference for each other’s profiles.” ('854, 22:20-21.) The matching server then “present[s] an option to users 14 that have been matched to engage in a communication session” as shown in Figure 9. ('854, 22:28-45.)



If a user expresses disapproval of another user, the “matching server 20 will not allow communication between the two users.” (’854, 23:32-33, *see* Fig. 10.)

#### **D. The Challenged Claims**

This Petition challenges claims 1-6 of the ’854 patent. Claims 1 and 4 are independent. Claims 2-3, and 5-6 are dependent.

#### **E. Claim Listing**

Exhibit 1009 is a claim listing that enumerates each claim element. Bracketed notations (e.g., [a], [b], etc.) are used to refer to individual limitations.

### **VI. CLAIM CONSTRUCTION**

Petitioner does not contend that any term requires express construction here. All terms should be accorded their plain and ordinary meaning. Although plain and ordinary meaning should be applied, Petitioner has also addressed the construction offered by PO in the litigation, which the court declined to adopt, in its analysis here. PO proposed that “graphical representation” should be construed as a “pictorial portrayal” or a “portrayal, including some pictorial component” (Ex.1050, 1.) The plain and ordinary meaning of “graphical representation” is not so limited. (Ex.1055, 23:3-23.) The plain and ordinary meaning of “graphical representation” is broad and is not limited to any embodiment. Consistent with the plain meaning of “graphical representation,” the ’854 patent specification informs that a user picture is not required to practice the purported invention: “User 14 may be presented

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with a summary of information regarding a suggested user. The summary may include **one or more of: a picture, an icon, name, location information, gender, physical attributes, hobbies or other profile information.**” (’854, 21:34-38 (emphasis added).)

## VII. THE CHALLENGED CLAIMS ARE OBVIOUS

As detailed below, claims 1-6 of the ’854 patent are obvious.

### A. Summary and Date Qualification of the Prior Art

#### 1. Chang [Ex.1003] – All Grounds

**“Chang”** is a published application entitled “Online Matchmaking System and Method,” filed April 8, 2011. Chang qualifies as prior art under §102(e).

In Chang, “the matching module 2 is configured to receive a matching condition established by the user 91 and to select at least one candidate member from the member database 5 that satisfies the matching condition.” (Chang, ¶0020.) The matching module “asks whether the user 91 is interested in the target member.” (Chang, ¶0021.) At step S34A in Figure 3, the system confirms “the user and the selected candidate member [are] mutually interested.” (Chang, Fig. 3.)



FIG. 3

If mutual interest, “interaction module 3 provides an option to create a marriage suitability questionnaire” to user 91 so “user 91 may become better acquainted with the user 92.” (Chang, ¶¶0035-37.) For example, user 91 can select the option to “ask [her] a question.” (Chang, ¶0037, Fig. 8.)

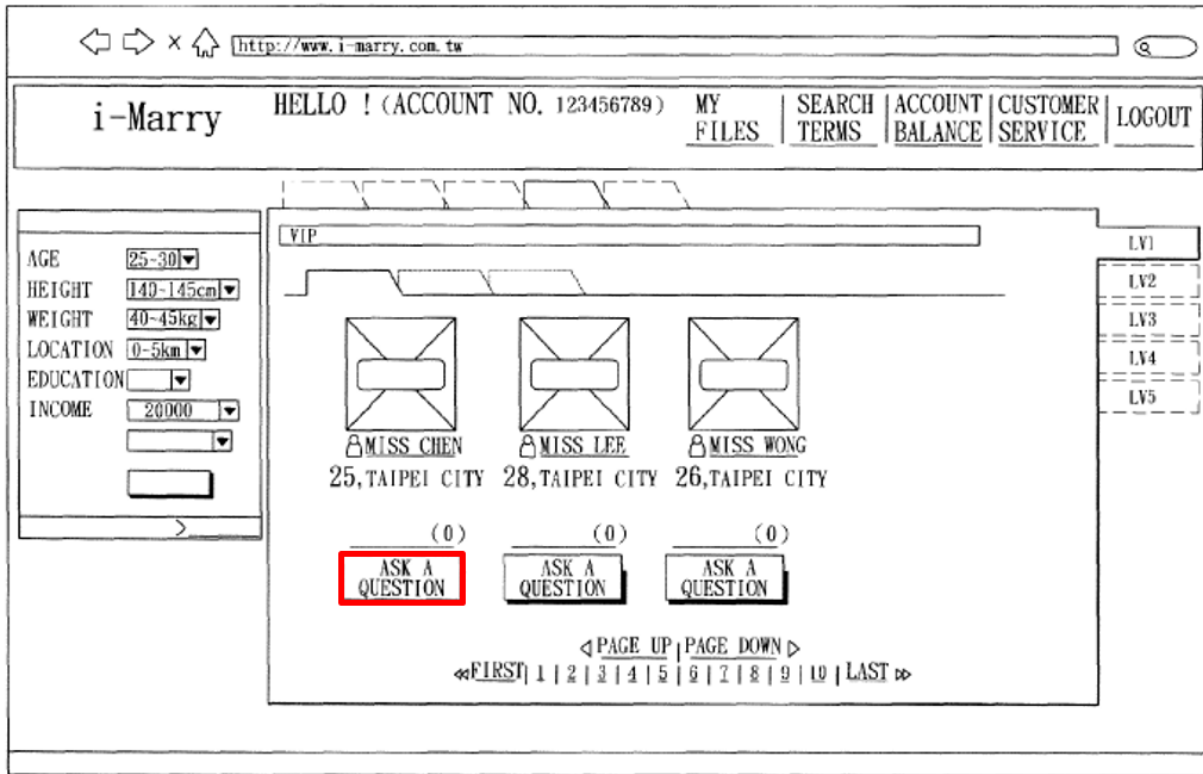
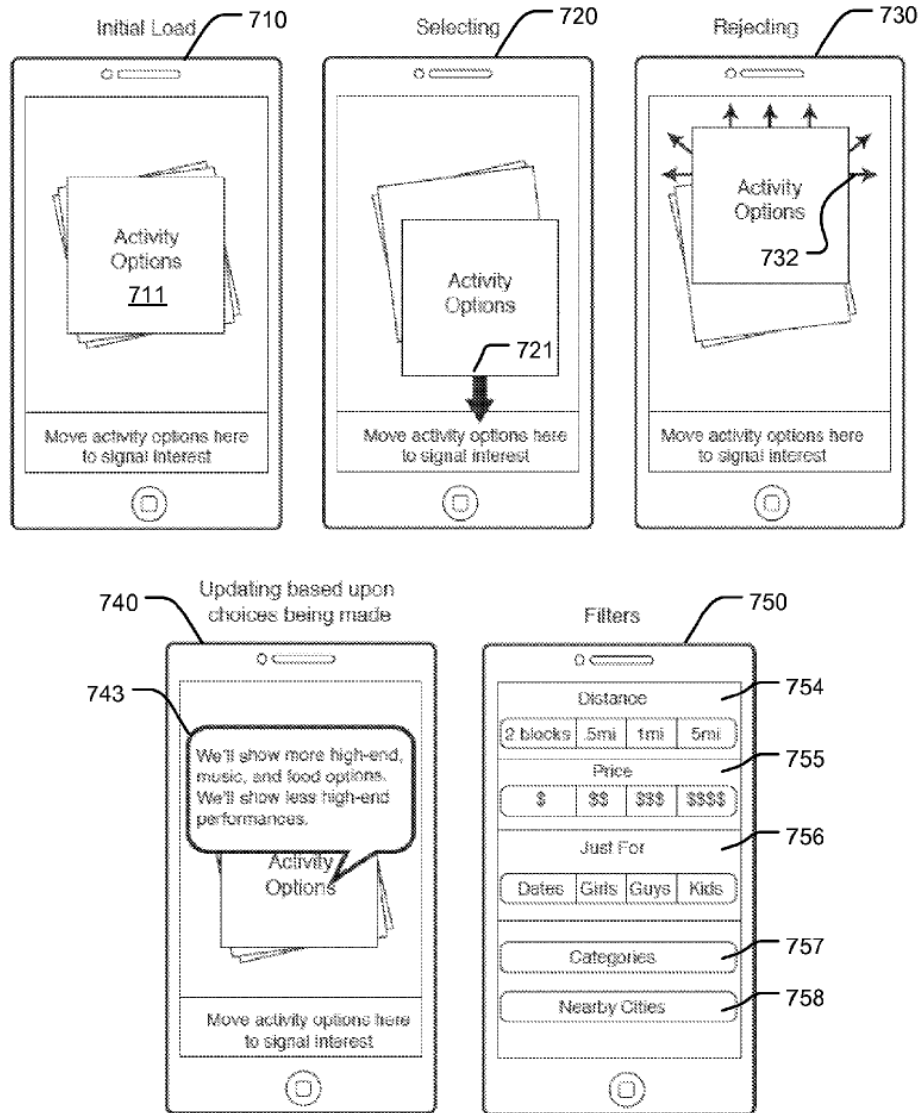


FIG. 8

## 2. Wernick [Ex.1005] – Grounds 1-2

**“Wernick”** is a patent entitled “Personal Concierge Plan and Itinerary Generator,” filed May 23, 2012, and claiming priority to several provisional applications filed June 19, 2011, April 8, 2012, and May 23, 2012. (Exs. 1040-1042.) Wernick qualifies as prior art under §102(e).

Wernick discloses technology “relat[ing] to rapid and convenient sorting through activity options.” (Wernick, 1:44-46.) Activity options can be presented as “a stack of images,” (Wernick, 10:24-26), on “[t]ouchscreens on such mobile devices as smartphones and tablets.” (Wernick, 9:66-67.) Figure 7 depicts this stack of images.



**Fig. 7**

A user interacts with this stack by moving an object with a swipe gesture in a particular direction. (Wernick, 10:4-10.) “The direction of movement acts as a choice or indication of the user’s intent such as ‘I like this’....” (Wernick, 10:10-11.)

### 3. Norena [Ex.1004] – Grounds 2, 4, and 6

**“Norena”** is a published application entitled “System and Method for Matching by Reciprocity Using Hidden Selections,” filed January 12, 2012 and claiming priority to a provisional application filed March 22, 2011. The provisional application includes a nearly identical disclosure to the non-provisional application. (*Compare* Ex.1039 with Ex.1004.) Norena qualifies as prior art under § 102(e).

Norena discloses a system and method for online dating. (Norena, ¶¶0009-10.) Users of the Norena system express interest in other users. (Norena, ¶0024.) The system “finds a match” and “notif[ies] both users about it” only if there is a “reciprocal decision.” (Norena, ¶0025.) Steps 516 and 518 of Figure 5 illustrate these steps.

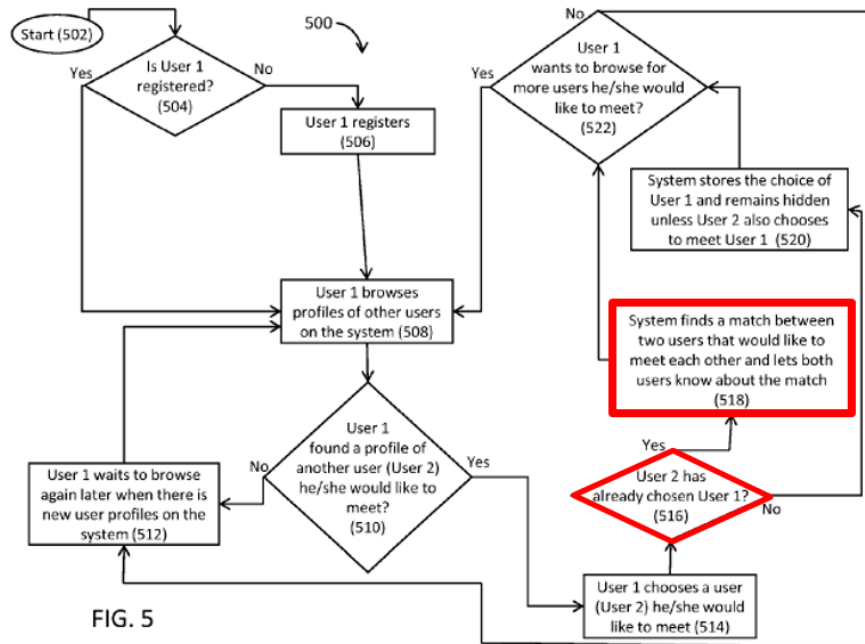
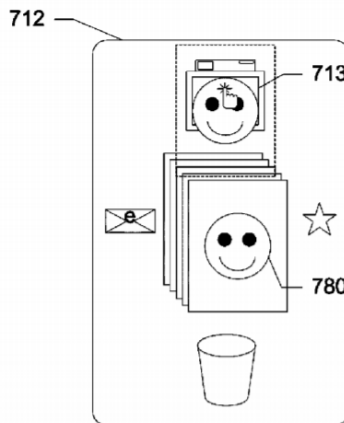


FIG. 5

**4. Morris [Ex.1007] – Grounds 3-6**

**“Morris”** is a published application entitled “Systems and Methods for Remote Web Query and Image Selection Exchange to Video Screen,” filed September 22, 2009 and published March 24, 2011. Morris qualifies as prior art under §102(b).

Morris discloses displaying media search results as a “stack” on a handheld communications device. (Morris, ¶¶0008, 0026.) A user can “select and manipulate the results individually by using their finger or a stylus on a touchscreen.” (Morris, ¶0026.) Figure 7A depicts a stack of images and the user’s ability to manipulate the result at the top of the stack.



**FIG. 7A**

**5. Kulas [Ex.1008] – Grounds 5-6**

**“Kulas”** is a published application entitled “User Interface Controls Including Capturing User Mood in Response to a User Cue,” filed December 17, 2010 and published April 14, 2011. Kulas qualifies as prior art under §102(b).

Kulas discloses controls in a GUI where a user’s touch or swipe of the control indicates the user’s state of mind.” (Ex.1011, MTCH595 (citing Kulas, ¶0005) (Applicant Admission).) For example, a “user may swipe their finger downward to indicate disapproval, or upward to indicate approval.” (Kulas, ¶0027.)

**B. Ground 1: Obviousness of Claims 1 and 4 Based on Chang in View of Wernick**

**1. Claim 1**

**a. Preamble**

The preamble recites “a non-transitory computer-readable medium comprising instructions that, when executed by a processor, are configured” to perform the limitations of claim 1. Chang is implemented in a computer-based system that a POSITA would have understood to necessarily include a non-transitory computer-readable medium comprising instructions executed by a processor. (Schmandt, ¶¶104-107.)

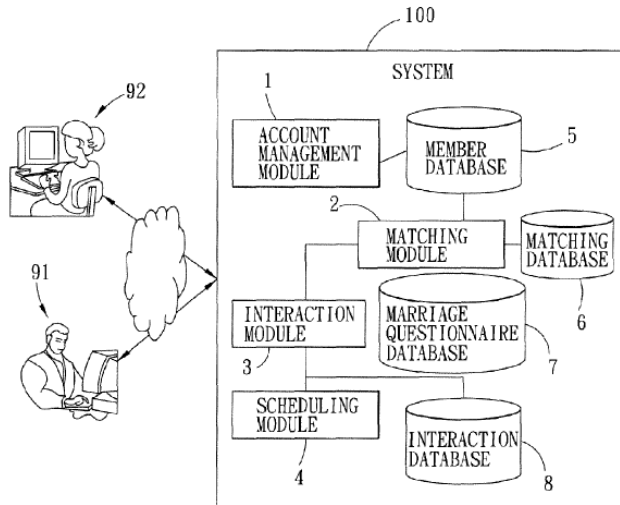


FIG. 1

Figure 1 depicts users 91 and 92 using computers. (Chang, Fig. 1.) The method and system disclosed in Chang includes a backend computer running web server software that stores instructions on a non-transitory medium. (Schmandt, ¶¶106-107.) Thus, Chang renders obvious the preamble of claim 1.

**b. Claim 1[a]**

Chang’s on-line matchmaking system includes a “member database for storing a plurality of member data files” corresponding to the claimed “plurality of user online-dating profiles.” (Chang, ¶0010, Fig. 1.) Users who match with each other may, after meeting certain criteria, go on a date. (Chang, ¶0025.) A POSITA would have understood “plurality of member data files” to disclose the claimed “plurality of user online dating profiles.” (Schmandt, ¶¶109-110.)

Each of these “member data files” includes “basic data of a member,” which

corresponds to the claimed “traits of a respective user.” (Schmandt, ¶¶110-111, 116-117; Chang, ¶0010.) Figures 6-7 show traits of each respective user member, such as age, location, height and weight. (Schmandt, ¶¶116-117; Chang, Figs. 6-7)

Chang discloses “electronically receiv[ing]” these online-dating profiles. (Schmandt, ¶¶118-120.) In Chang, users input information via a computer, which is received electronically by the system 100. (Chang, Fig. 1, Fig. 2, ¶0027; Schmandt, ¶¶118-119.) Thus, Chang discloses this limitation. (Schmandt, ¶¶108-120.)

**c. Claim 1[b]**

Chang discloses “electronically receiv[ing] a first request for matching, the first request electronically submitted by a first user using a first electronic device.” Step S3 in Figure 2 (“perform search . . .”) and related step S31 of Figure 3 (“receive matching conditions of the user”) correspond to the claimed “first request for matching.” (Chang, Figs. 2-3, ¶¶0030-32; Schmandt, ¶¶121-125.)

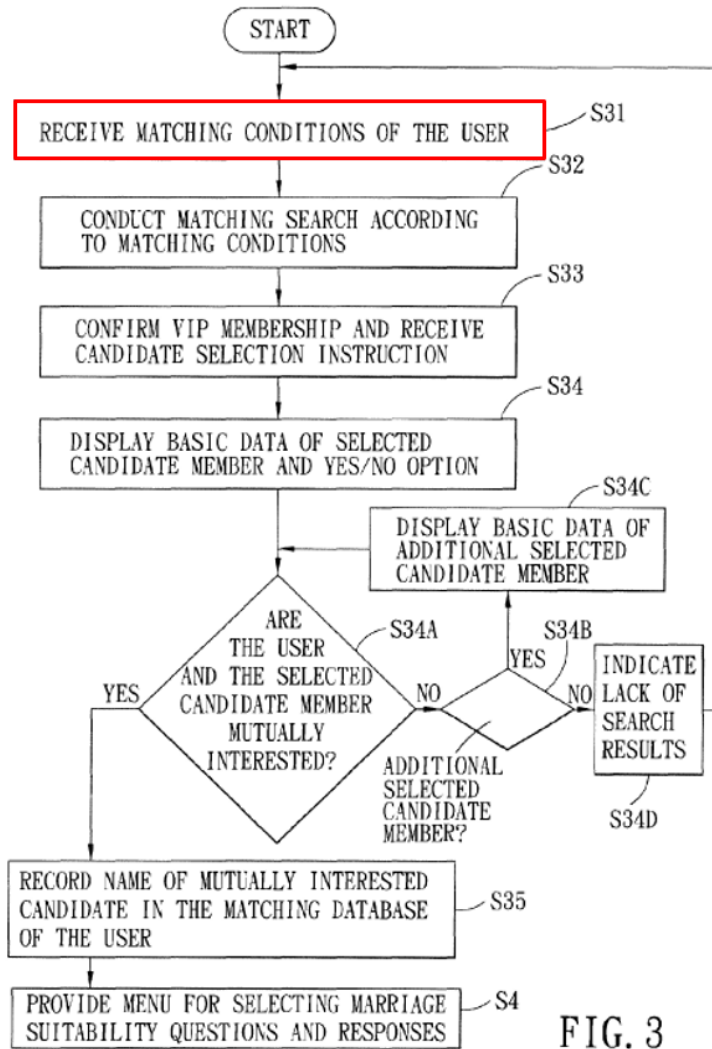


FIG. 3

At step S3, “the user 91 is presented with the interaction interface shown in FIG. 5”:

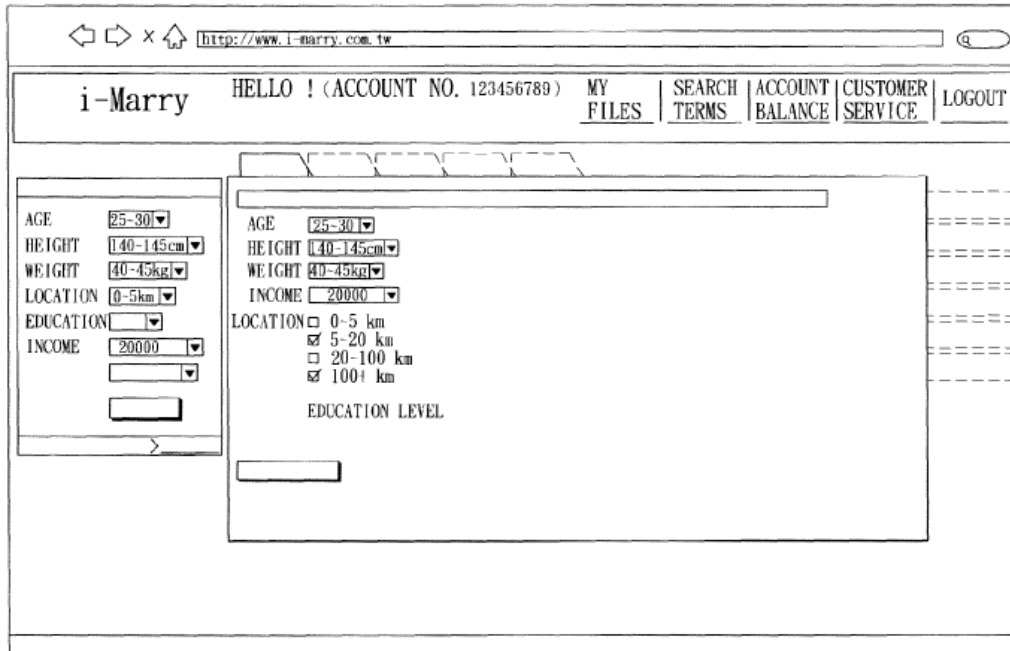


FIG. 5

(Chang, Fig. 5, ¶¶0030.) “The user 91 can therefore determine matching conditions.”

(Chang, ¶¶0030, Fig. 5, Title.) Figure 1 shows user 91 using a computer that corresponds to the claimed first electronic device. (Chang, Fig. 1.) The “request for matching” is submitted by the first user’s electronic device and received by the Chang system. (Schmandt, ¶¶122-124.) Accordingly, Chang discloses claim 1[b]. (Schmandt, ¶¶121-125.)

**d. Claim 1[c]**

Chang discloses element 1[c]. Chang discloses performing a search of matches corresponding to the claimed “determine from the plurality of user online-dating profiles a set of potential matches for the first user.” (Schmandt, ¶¶127-129.)

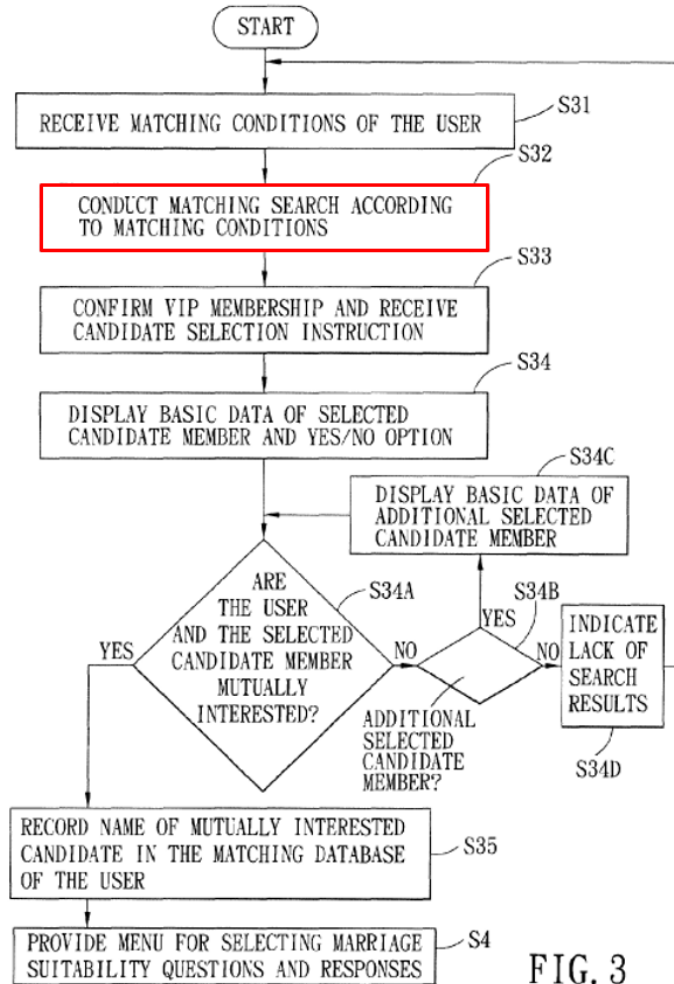


FIG. 3

At Step S32 “matching search is conducted according to the matching conditions, and at least one candidate member who satisfies the matching condition is identified from the member database 5 as a matched candidate. In this embodiment, a plurality of matched candidates are identified.” (Chang, ¶0032.) Chang discloses determining a set of potential matches (“a plurality of matched candidates”) from the plurality of online-dating profiles for the first user (“user 91”). (Schmandt, ¶¶126-129.)

e. **Claim 1[d]**

Chang, Figure 7 shows a “display of a graphical representation of a first potential match” of the set of potential matches shown in Figure 6:

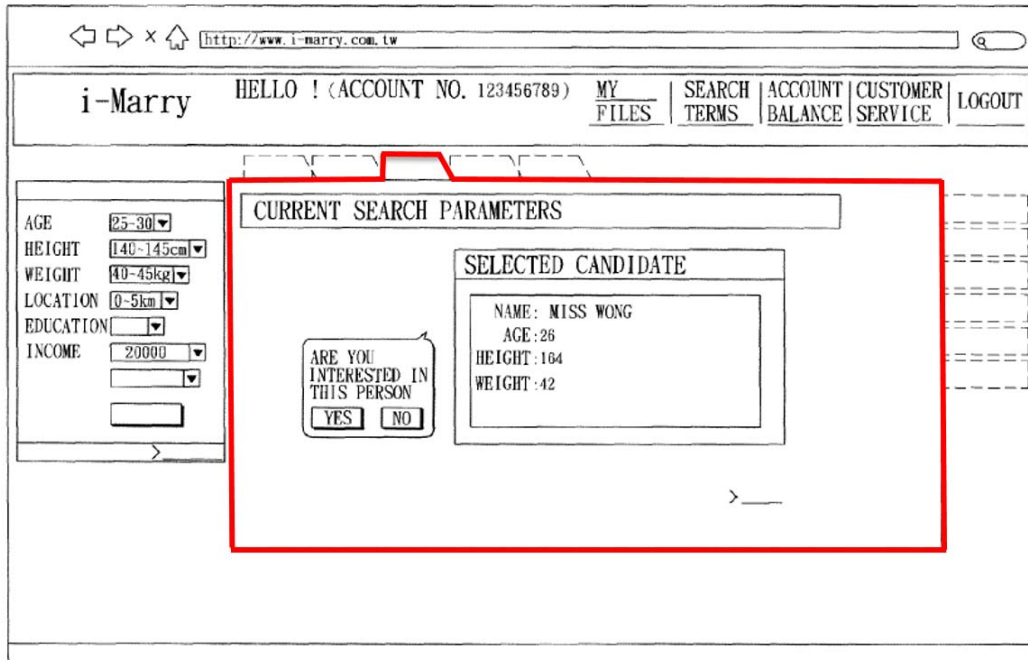


FIG. 7

(Chang, Fig. 6, 7; ¶¶0033-0034; Schmandt, ¶¶133-134.) The software at the Chang server in conjunction with the software at the user’s computer “cause” this display. (Schmandt, ¶133.)

A “graphical representation” of a first potential match includes a summary of information, such as name, age, height and weight, regarding the first potential match displayed on a GUI. (Schmandt, ¶¶134-136.) Even if “graphical representation” requires a “pictorial portrayal” or some “pictorial component,” Figure 7 shows a pictorial portrayal of Miss Wong’s online dating profile as

information on an image of an index card. (Schmandt, ¶135.) Moreover, Figure 6 shows an image of a person to the left of each candidate's name:

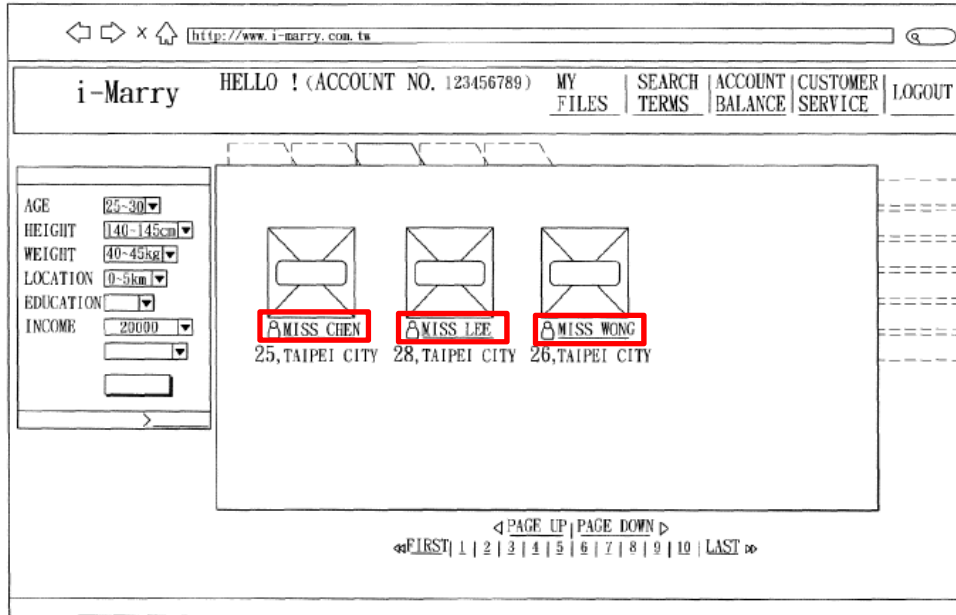


FIG. 6

It would have been obvious to a POSITA that a similar image could be incorporated into Figure 7. (Schmandt, ¶135.)

Figure 7 corresponds to step S34 of Figure 3 where the system displays “the basic data of the selected candidate member (e.g., the user 92)”. (Chang, Fig. 3, ¶0034; Schmandt, ¶136.) User 92, the “first potential match” (e.g., Miss. Wong), corresponds to the second user. (Chang, ¶0034; Schmandt, ¶138.) Chang discloses, “[w]hen the user 91 selects the target member from the one or more candidate members selected by the matching module 2, the matching module 2 presents the basic data of the target member to the user 91 through the interaction module 3....”

(Chang, ¶0021.) This data is the graphical representation of Figure 7, corresponding to the claimed “caus[ing] the display of a graphical representation of a first potential match of the set of potential matches.” (Schmandt, ¶139.)

The graphical representation of the first potential match is displayed to the first user on the user’s electronic device. Figure 7 shows an internet browser window GUI, displayed on the computer of user 91, which is a “first electronic device”. (Chang, Fig. 1, 7, ¶0034; Schmandt, ¶140.) A POSITA would have understood that Chang causes the display on the GUI of Figure 7 to a first user (user 91) on the computer (first electronic device). (Chang, Figs. 1, 7, ¶0034; Schmandt, ¶140.) Chang discloses element 1[d]. (Schmandt, ¶¶130-140.)

**f. Claim 1[e]**

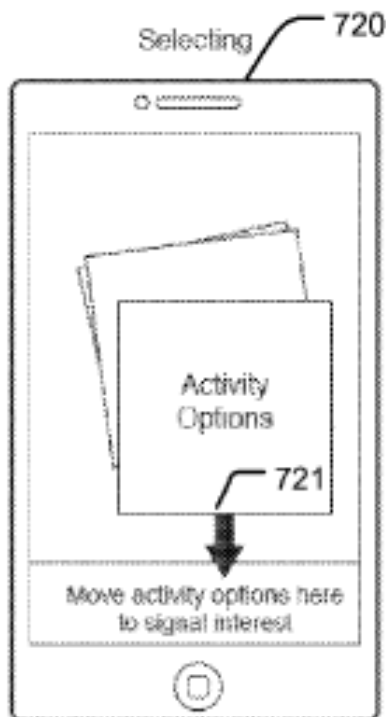
Chang discloses “receiv[ing] from the first electronic device of the first user a first positive preference indication associated with the graphical representation of the second user on the graphical user interface”. As shown in Figures 7 and 3 at Step S34, the dialog box displays “basic data of the selected candidate member (e.g., the user 92)” with “a YES/NO option for the user 91 to indicate interest in the user 92.” (Chang, ¶0034, Figs. 3, 7.)

The “positive preference indication” disclosed in Chang takes the form of a “yes” button on the GUI. (Chang, ¶0034, Fig. 7; Schmandt, ¶¶149-150.) As with element 1[d], the presentation of the selected candidate (Miss Wong) corresponds to

the “graphical representation of the second user” and is displayed to the first user on the GUI. Thus, selecting the “yes” button for Miss Wong in Figure 7, constitutes a “first positive preference indication associated with the graphical representation of the second user on the graphical user interface.” (Schmandt, ¶150.)

When the first user in Chang uses a computer (an “electronic device”), and presses the “yes” button, the “positive preference indication” is “received from the first electronic device of the first user” by the server. (Chang, Figs. 1, 7, 3 ¶0034; Schmandt, ¶151.)

**Combination with Wernick:** Wernick discloses receiving a positive preference indication when a user performs a first swiping gesture. (Wernick, 9:64-10:49, Fig. 7.) Wernick discloses a GUI in which “swiping gestures may be used to select an object and move it in a particular direction.” (Wernick, 10:8-10.) The swiping gesture in Wernick corresponds to the “first gesture compris[ing] a first swiping gesture.” “The direction of movement [on the interface] acts as a choice or indication of the user’s intent such as ‘I like this’”, and corresponds to the claimed “positive preference indication associated with a first gesture performed on the graphical user interface.” (Wernick, 10:10-11.) As shown at interface 720 of Figure 7 in Wernick, a user may swipe down to “select[]” or “signal interest”. (Wernick, Fig. 7.)



**Rationale and Motivation to Combine:** It would have been obvious to a POSITA to combine the GUI and swiping gesture disclosed in Wernick with the online dating systems disclosed in Chang. The predictable result would have been an online dating system where choices regarding interest in a potential match were made using swiping gestures on the interface as in Wernick. (Schmandt, ¶155.)

A POSITA would have been motivated to combine Chang with Wernick given the rise of smartphones and mobile apps in the years preceding the alleged invention. (Schmandt, ¶¶157-159.) The user interface in Figures 4-10 show a traditional computer-based web browser. (Schmandt, ¶157.) By the time of the alleged invention, smartphones were commonly used to navigate web-based content. (Schmandt, ¶158.) Mobile apps were increasingly popular at this time. (Schmandt,

¶¶158-159.) A June 2011 study found that U.S. users' mobile app consumption exceeded traditional and mobile web consumption. (Ex.1016.)

This trend towards mobile applications held true in the online dating space. An August 2011 study indicated, "the number of people using dating apps is growing faster than the number using all apps" and the time users spent on those apps more than doubled from June 2010 to June 2011, surpassing web-based dating for the first time. (Ex.1017 at 4.) In a September 2010 blog post, a cyber-dating commentator wrote "[t]he year 2010 will go down in history for mobile dating becoming mainstream with many of the traditional online dating sites launching their apps." (Ex.1015.)

Given the swift rise in popularity of smartphones and mobile applications, and mobile dating applications in particular, in years prior to the alleged invention, a POSITA would have had strong motivation to combine the online dating principles of Chang with GUI designs directed specifically to the smaller user interface of mobile phones. (Schmandt, ¶¶157-159.) A POSITA would have recognized that traditional computer web-based user interfaces, like that disclosed in Chang, could be difficult to navigate on the smaller screen of a mobile device. (Schmandt, ¶160.) A POSITA, seeking to reach the growing dating app market would look to references, like Wernick, that disclose an easy-to-use GUI specifically designed for a mobile device. (Schmandt, ¶160.)

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Wernick explicitly teaches that the GUI design disclosed in Figure 7 can be applied in other contexts to assess “user attitudes” regarding a displayed item, such as “attitudes towards a candidate.” (Wernick, 10:65-11:15.) Wernick’s teachings about the interface would motivate a POSITA to apply such techniques in the online dating context and in combination with the disclosures of Chang. (Schmandt, ¶163.)

While Chang and Wernick involve expressing an attitude towards a candidate in slightly different contexts: dating for Chang, party invitations for Wernick, users are making judgments on individuals in both. (Wernick, 11:5-11) (Schmandt, ¶¶164-165.)

Furthermore, a POSITA would have understood that the displayed objects in Wernick could correspond to the graphical representations of potential matches in Chang. (Schmandt, ¶165.)

Both Chang and Wernick involve making binary choices. Chang discloses an online dating system in which users make binary decisions regarding a candidate. (Chang, ¶0034, Figs. 3, 7; Schmandt, ¶166.) Wernick discloses a computer-based application where users make binary choices regarding their interest in an activity. A POSITA would have understood that the binary-choice swiping gestures disclosed in Wernick are easily substituted for the buttons for binary choices in Chang. (Schmandt, ¶166.)

Finally, at the time of the alleged invention, a swiping gesture was a known

substitution for a button. For example, Kulas, published on April 14, 2011, disclosed that approval or disapproval may be expressed with a swipe or a button click. (Kulas, ¶¶0022, 0026-0027, Fig. 1.) Accordingly, it would have been obvious to a POSITA at the time of the alleged invention that the Wernick swipe gesture could be substituted for the Chang buttons. (Schmandt, ¶167.) A POSITA would have found element 1[e] to be obvious from the combination of Chang and Wernick. (Schmandt, ¶¶149-167.)

**g. Claim 1[f]**

Chang discloses “caus[ing] the graphical user interface to display a graphical representation of a second potential match of the set of potential matches instead of the graphical representation of the first potential match.” As shown in Figure 3 steps S34A-S34C, if user 91 is interested in a given candidate, but there is no “mutual interest” and additional selected candidate members exist, basic data of an additional candidate member is displayed. (Chang, Fig. 3, ¶0034.) This display of basic data corresponds to “a graphical representation of a second potential match....” (Schmandt, ¶¶207-208; *see also* claim 1[d] *supra* for discussion of “graphical representation”.) The “second potential match” is displayed instead of the graphical representation of the first potential match. A POSITA would have understood that the server software in conjunction with the user computer software of the Chang

system “cause[s]” this change in display and discloses this element. (Schmandt, ¶206.)

**Combination with Wernick:** Wernick also discloses causing the GUI to display a second graphical representation. The objects in Wernick are displayed as a stack of cards shown one at a time. (Wernick, Fig. 7, 8:67-9:5.) Wernick discloses “caus[ing] the graphical user interface” of the user’s electronic device “to display” a second card instead of the first card. (Wernick, Fig. 7; Schmandt, ¶209.) As discussed above, a POSITA would have understood that the cards in Wernick could correspond to the claimed “graphical representation of a first potential match” and “graphical representation of a second potential match” as disclosed in Chang. (Schmandt, ¶210.)

**Rationale and Motivation to Combine:** The same rationale and motivation to combine discussed for element 1[e] applies equally to element 1[f]. Additionally, both Chang and Wernick present choices on the interface in card form. Chang discloses that potential matches (selected candidate members) are represented graphically on a card. (Chang, Fig. 7; Schmandt, ¶214.) Because the graphical representation of matches disclosed in Chang resembles an index card, a POSITA implementing Chang on a mobile-device friendly interface would have been motivated to combine the teachings of Chang with references like Wernick, which disclose an interface where items, such as a potential activity or a friend to invite,

are represented on cards. (Schmandt, ¶214.)

Thus element 1[f] is disclosed in Chang and/or suggested by a combination of Chang and Wernick. (Schmandt, ¶¶206-215.)

**h. Claim 1[g]**

Chang discloses “receiv[ing] from a second electronic device of the second user a positive preference indication regarding the first user.” Chang discloses that a second user can indicate a positive preference regarding the first user by selecting the “yes” button regarding the first user (user 91). (Chang, ¶¶034, Schmandt, ¶227.) As with element 1[e], this second positive preference is received by the server from the second electronic device of the second user. Chang discloses element 1[g]. (Chang, ¶0034; Schmandt, ¶227.)

**i. Claim 1[h]**

The Chang system determines to allow the first user to communicate with the second user in response to receiving two users’ positive preferences for each other. (Chang, ¶¶0021-0023, 0035-0039, Figs. 2-3.) This is illustrated by steps outlined below.

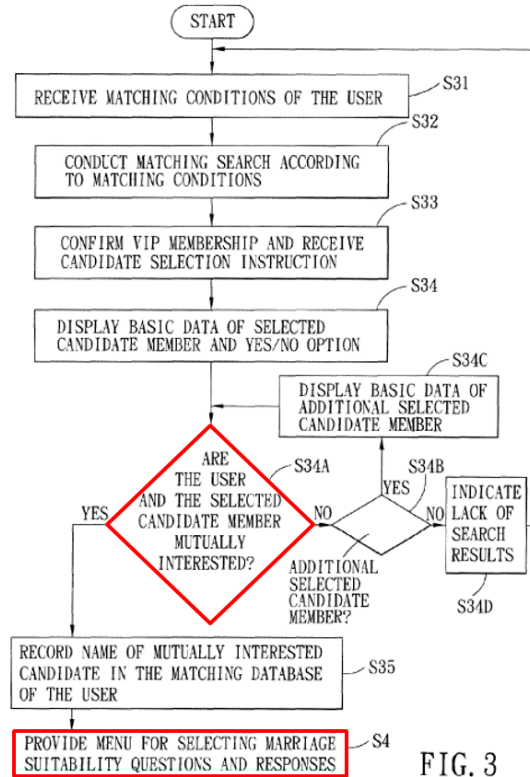


FIG. 3

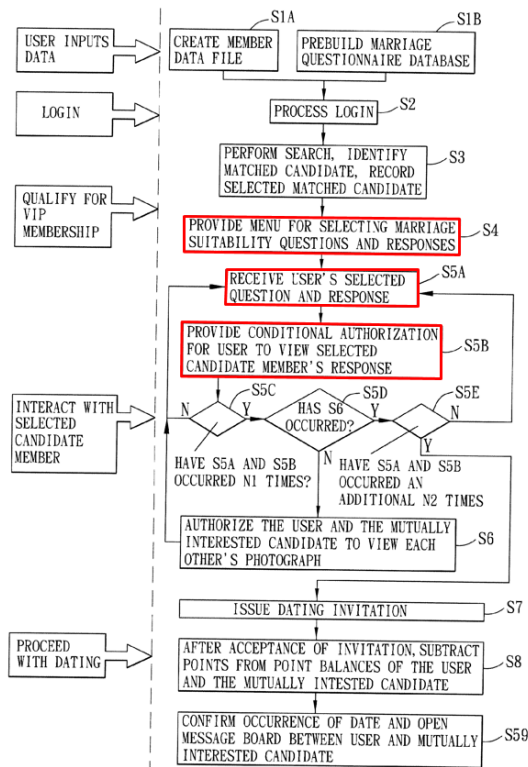


FIG. 2

At step S34A in Figure 3, the system determines the mutual interest of the users. (Chang, Fig. 3; Schmandt, ¶¶228-230.) A “Yes” determination indicates that the Chang system has “receive[d] from the first electronic device of the first user the first positive preference indication regarding the second user and receiv[ed] from the second electronic device of the second user the positive preference indication regarding the first user.” (Chang, Fig. 3; Schmandt, ¶229.)

After recording at step S35, the user is then able to advance to steps S4, and S5A-S5B, which correspond to the claimed “determine to allow the first user to communicate with the second user.” (Chang, Figs. 2-3, ¶¶0035-38; Schmandt, ¶¶23-232.) Step S4 provides a menu for selecting marriage suitability questions and responses. (Chang, Figs. 2-3, ¶¶0036.) Figures 8-9 provide additional disclosures of how communication is enabled through this menu. (Chang, Figs. 8, 9; ¶¶0036-0037.) At Step S5A, “when the user intends to ask the user 92 a question, he selects the option to ‘ask her a question’”. (Chang, ¶0037, Fig. 8.)

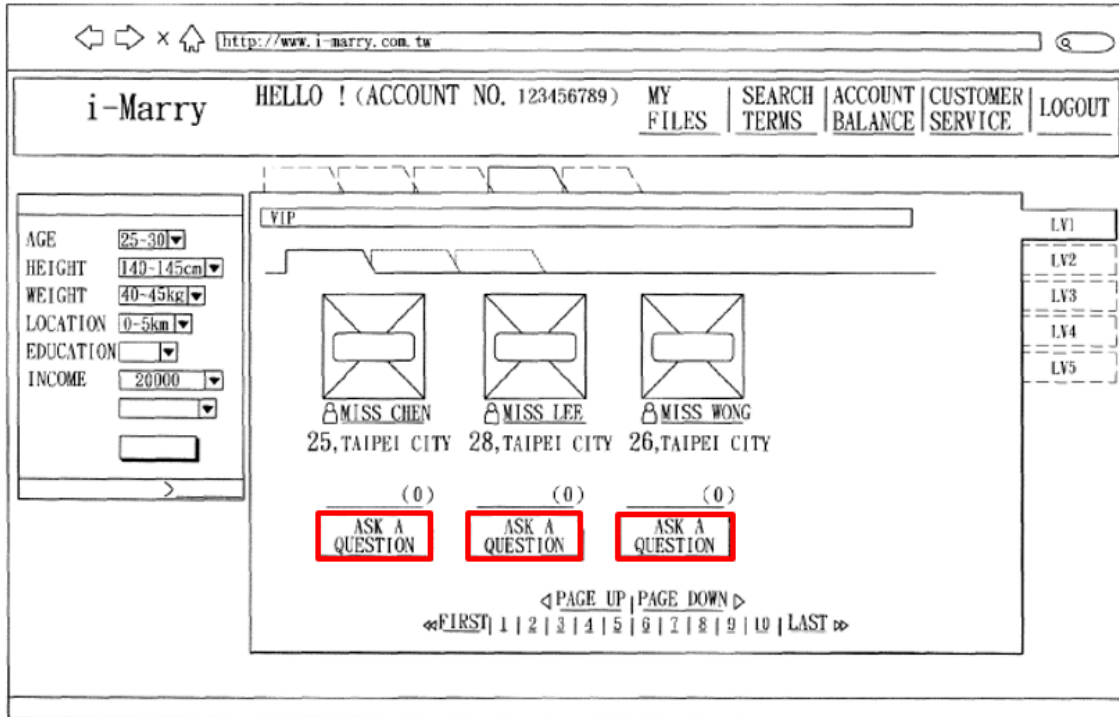


FIG. 8

“As shown in FIG. 9, a menu is presented with a plurality of questions and possible replies, which permits the user 91 to select the marriage suitability question to ask the user 92 and to enter his own reply to the same marriage suitability question.”

(Chang, ¶0037.)

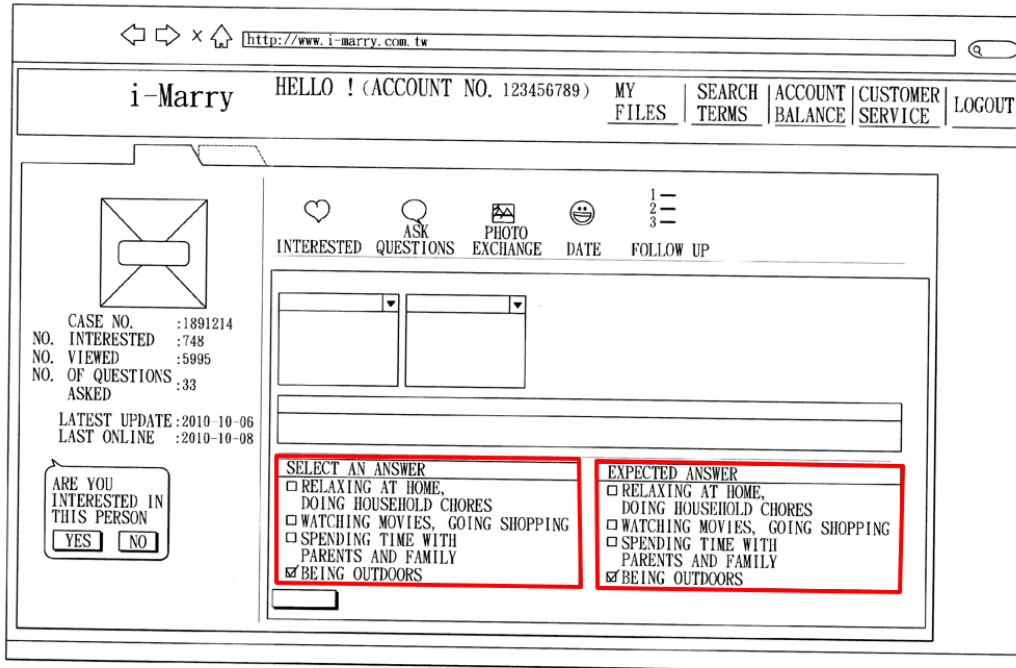


FIG. 9

Chang discloses the marriage suitability question and user 91's response are sent to user 92, allowing the first user to communicate with the second user. (Schmandt, ¶¶235-236; Chang, ¶0037.) User 92 (the second user) can read and respond to user 91's (the first user's) questions and read user 91's response after points are deducted. (Schmandt, ¶¶235-236; Chang, ¶¶0037-0039.) Chang discloses element 1[h]. In addition, it would have been obvious to a POSITA that text messaging or chatting could be used in place of marriage suitability questions given the prevalence of such forms of communication by August 2012. (Schmandt, ¶238.)

**j. Claim 1[i]**

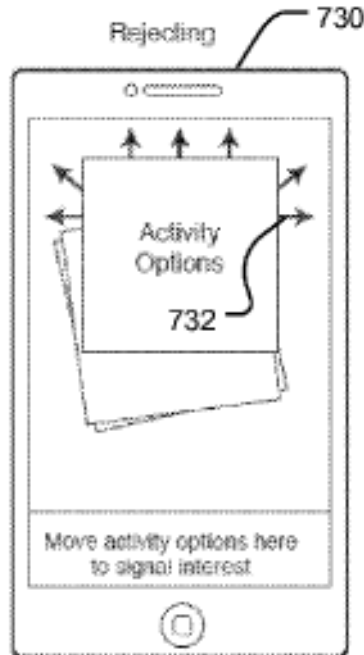
Chang discloses "receiv[ing] from the first electronic device of the first user a first negative preference indication associated with a graphical representation of a

third potential match on the graphical user interface.” As shown in Figures 7 and 3 at Step S34, user 91 (the first user) can express a negative preference indication (a no selection) regarding a potential match using the “no” button. (Chang, Figs. 3, 7, ¶0034.) The “negative preference indication” is “associated with the graphical representation of the [] potential match...” for the same reasons the “positive preference indication” is associated with the graphical representation of the [] user” in element 1[e]. (Chang, Fig. 7; Schmandt ¶¶239.) A POSITA would have further understood that this negative preference indication is “receive[d] from the first electronic device of the first user” as with element 1[e]. (Schmandt, ¶239.)

A POSITA would have understood that the method disclosed in Figure 3 allows a first user to first select “yes” for a second user, and then select “no” for a third user. (Schmandt, ¶240.) For example, Figure 6, which shows names of three candidate members a user may view and provide an indication of interest or indicate lack of interest. (Chang, Fig. 6, ¶0033.) This would indicate to a POSITA that the process disclosed in Figure 3 could be repeated with a number of candidate members, including a “third potential match” corresponding to “a third user.” (Schmandt, ¶¶240-242; Chang, Fig. 6, ¶0033.)

**Combination with Wernick:** Wernick discloses receiving from the first electronic device of the first user a negative preference indication associated with a second gesture performed on the GUI. (Wernick, 9:64-10:49, Fig. 7.) Wernick

discloses a second swiping gesture different than the first swiping gesture. (Wernick, Fig. 7, 10:45-49.)



As shown in Figure 7 “[t]he user . . . flings [an object] to the side 730, 732 to reject it. Screen 730 shows how an object may be ‘flung’ off the screen to reject it and present the next object.” (Wernick, Fig. 7, 10:40-49.) This second swiping gesture for “rejecting” or expressing a negative preference indication is different from the first gesture, described for step 1[e] and shown at interface 720 of Figure 7. (Wernick, Fig. 7; Schmandt, ¶¶243-244.)

**Rationale and Motivation to Combine:** The rationale and motivation to combine Chang with Wernick for this limitation is the same as the rationale and motivation to combine Chang with Wernick for step 1[e]. (Schmandt, ¶¶245.)

**k. Claim 1[j]**

Chang discloses not allowing communication between the first user and the third user upon receiving the first user's negative preference indication associated with the third user discussed for element 1[i]. Figure 3 shows that if the user and the selected candidate member are not mutually interested, the Chang system will not display the marriage suitability questions interfaces shown in Figures 8-9. (Chang, Figs. 3, 8, 9, ¶0034.) If the first user selects "NO" there is no mutual interest between that first user and the third candidate. (Chang, Fig. 3; Schmandt, ¶¶262-264.) Without an expression of mutual interest, the system will not proceed to steps S35, S4, S5A and S5B, and will not allow communication between those users. (Chang, Figs. 3, 8-9, ¶0034.) Chang discloses this aspect of element 1[j]. (Schmandt, ¶¶261-262.)

Chang further discloses "receiv[ing] from the first electronic device of the first user a second positive preference indication associated with a graphical representation of a fourth potential match on the graphical user interface". (Schmandt, ¶264.) Where there is no mutual interest with one selected candidate member, an additional candidate member is displayed. (Chang, Fig. 3.) As shown in Figures 7 and 3 at Step S34, and discussed for elements 1[d]-1[f], Chang displays a graphical representation of a potential match and includes "a YES/NO option for the user 91 to indicate interest. (Chang, ¶0034, Figs. 3, 7; Schmandt, ¶263.) For the

same reasons as discussed for element 1[e] the positive preference indication is associated with the graphical representation of the potential match. (Schmandt, ¶¶150, 261.) User 91 corresponds to the claimed first user and the “yes” option corresponds to the claimed “positive preference indication”. A POSITA would have understood that this positive preference is “receive[d] from the first electronic device of the first user” by the server in Chang. (Schmandt, ¶264.)

Chang discloses user 91 performing this “yes or no” step for multiple potential matches. Chang discloses that when “the user 91 selects NO and another selected matched candidate exists, the basic data of the next one of the selected matched candidates is shown” and the mutual interest determination is repeated. (Chang, Fig. 3, ¶0034.) Figure 6 shows three potential candidate members a user may view and indicate interest or lack of interest. (Chang, Fig. 6, ¶0033; Schmandt, ¶240.) This would indicate to a POSITA that the process disclosed in Chang Figure 3 would have been repeated with multiple candidate members, including a fourth potential match corresponding to a fourth user (e.g., Miss Lee from Fig. 6.) (Chang, Figs. 3, 6; Schmandt, ¶¶240, 263.) Chang therefore discloses receiving “a second positive preference indication associated with a graphical representation of a fourth potential match on the graphical user interface.”

**Combination with Wernick:** As with element 1[e], Wernick discloses receiving a positive preference indication when the user performs the first gesture

on the GUI (e.g., swiping down to “like” something or “signal interest[s].”) (Wernick, 10:10-11, Fig. 7; (Schmandt, ¶¶265.) This first gesture corresponds to the “second positive preference indication” limitation of element 1[j]. (Schmandt, ¶¶265.)

**Rationale and Motivation to Combine:** The rationale and motivation to combine Chang with Wernick for this limitation is the same as the rationale and motivation to combine Chang with Wernick concerning element 1[e]. (Schmandt, ¶¶265.)

#### **I. Claim 1[k]**

Chang discloses “receiv[ing] from a third electronic device of the fourth user a second negative preference indication associated with a graphical representation of the first user.” At Step S34 in Figure 3 and Figure 7, and discussed above, a graphical representation of a selected candidate is shown with a “YES/NO option” to indicate interest. (Chang, Figs. 3, 7, ¶¶0034; Schmandt, ¶¶277.) A POSITA would have understood that the Chang system would have multiple users. (Chang, Fig. 6, ¶¶0033; Schmandt, ¶¶278.) A fourth user using a third electronic device, could indicate a negative preference (a “no” selection) associated with the graphical representation of the first user 91. (Schmandt, ¶¶278.) A POSITA would further understand that this negative preference indication is “receive[d] from a third electronic device” by the server. (Schmandt, ¶¶279.)

**m. Claim 1[l]**

Chang discloses not allowing communication between the first and fourth user upon receiving the fourth user's negative preference indication of element 1[k]. A POSITA would have understood that the Chang system has many users and a fourth user could select "no" for a first user. (Schmandt, ¶282.) If a user selects "NO" there is no mutual interest between that first user and the third candidate. (Chang, Figs 3, 7.) Without receiving an indication of mutual interest the system will not proceed to steps S35, S4, S5A and S5B, thus communication between those two members is not allowed. (Chang, Figs. 3, 8, 9, ¶0034.) Chang discloses this element of step 1[l]. (Schmandt, ¶¶282-283.)

Chang further discloses "receiv[ing] from the first electronic device of the first user a third positive preference indication associated with a graphical representation of a fifth potential match on the graphical user interface". (Schmandt, ¶¶284-285.) As shown in Figures 7 and 3 at Step S34, and discussed for elements 1[d]-1[f], Chang displays a graphical representation of a potential match with "a YES/NO option to indicate interest. (Chang, ¶0034, Figs. 3, 7; Schmandt, ¶286.) User 91 corresponds to the claimed first user and the "yes" option corresponds to the claimed "positive preference indication". For the same reasons as discussed for element 1[e] the positive preference indication is associated with the graphical representation of the potential match. (Schmandt, ¶286.)

Chang discloses user 91 performing this “yes or no” step for multiple potential matches. When “user 91 selects NO and another selected matched candidate exists, the basic data of the next one of the selected matched candidates is shown” and the mutual interest determination is repeated. (Chang, Fig. 3, ¶¶0034; Schmandt, ¶¶282-284.) Although Figure 6 only displays three potential candidates, a POSITA would have understood that Chang discloses multiple users, including a fifth potential match. (Schmandt, ¶284.) Chang therefore discloses a first user indicating a “third positive preference” “associated with a graphical representation of a fifth potential match on the graphical user interface” wherein the fifth potential match corresponds to a fifth user. (Schmandt, ¶¶285, 286.) This third positive preference indication is “receive[d] from the first electronic device of the first user” by the server in Chang. (Schmandt, ¶285.)

**Combination with Wernick:** As with step 1[e] and 1[j], Wernick discloses receiving a third positive preference indication associated with the first gesture performed on the GUI (e.g., swiping down to “like” something or “signal interests.”) (Wernick, 10:10-11, Fig. 7; (Schmandt, ¶¶287-288.) This first gesture corresponds to the “third positive preference indication” limitation of element 1[l]. (Schmandt, ¶¶286-287.)

**Rationale and Motivation to Combine:** The rationale and motivation to combine Chang with Wernick for this limitation is the same as the rationale and

motivation to combine Chang with Wernick concerning element 1[e]. (Schmandt, ¶289.)

## 2. Claim 4

Claim 4 recites a “system” corresponding to claim 1, having an “interface” and a “processor coupled to the interface” “operable to” perform the elements of claim 1. (Schmandt, ¶301.) Chang Figure 1 corresponds to the claimed “system for profile matching”:

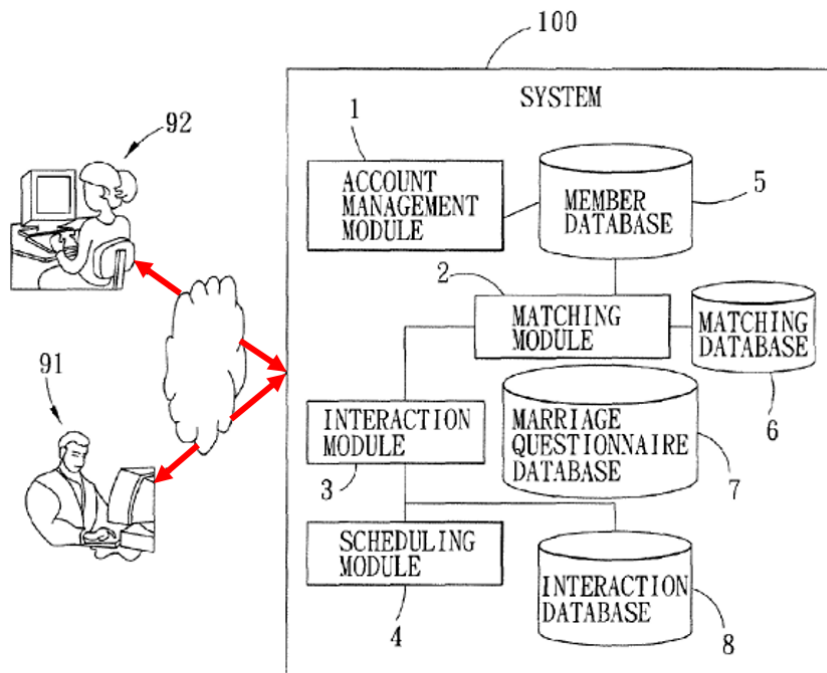


FIG. 1

Claim 4 is obvious in light of Chang and Wernick for the same reasons discussed for claim 1. The claimed “interface” is operable to perform elements 4[a]-4[b], 4[e], 4[g], and 4[i]-4[l] which correspond to functions 1[a]-1[b], 1[e], 1[g], and

1[i]-1[l]. In the related litigation, PO interpreted the claimed interface to be the user interface, but elsewhere suggested that it may be a communications interface between the apparatus and server. (Ex.1049, 86, 115-16, 127-20.) Figure 1 discloses a user interface (e.g., user 91's computer) that receives a plurality of profiles from the server and receives a first request for matching from user 91, as discussed for elements 1[a] and 1[b]. (Schmandt, ¶307.) If the claimed "interface" is interpreted as the communications interface between the end users and server, Chang discloses this limitation, as shown above in red. (Chang, Fig. 1, ¶0017; Schmandt, ¶309.) This communications interface receives a plurality of online dating profiles from a plurality of users as with element 1[a]. (Chang, Fig. 1, Fig. 2, ¶0027; Schmandt, ¶310.) The communications interface also receives a first request for matching from user 91 as discussed for element 1[b]. (Schmandt, ¶312.)

Figure 7 discloses a user interface (e.g., user 91's computer) that receives a preferences indication from a user's electronic device, as discussed for elements 1[e], 1[g], and 1[i]-1[l]. If a user presses the "yes" or "no" button shown in Figure 7, the user interface receives this preference indication. (Chang, Fig. 7; Schmandt, ¶313.) If the claimed "interface" is interpreted as the communications interface between the end users and server, Chang discloses this limitation as shown in Figures 2-3. (Chang, Fig. 2; Schmandt, ¶314.) At step S3 (shown in detail in Figure 2), the server "record[s] selected matched candidate" indicating to a POSITA that the

communications interface has received the positive or negative preference indication. (Chang, Fig. 2; Schmandt, ¶¶314.) Thus, both the user interface and communications interface receive the positive or negative preference indication from the user's electronic device as recited in elements 4[e], 4[g], and 4[i]-4[l].

Elements 4[j] and 4[l] further recite “without allowing” communication between the first user and another use. If the interface is the user interface, this is disclosed by Chang Figures 1 and 7 wherein if a user presses the “no” button, the user interface in Chang does not allow communication because a menu for marriage suitability questions is not provided on the user interface. (Chang, Figs. 1, 3, 7-9, ¶0034; Schmandt, ¶¶315-316.) A POSITA would have understood that the user interface is operable to “without allowing” two users to communicate, receive a preference as recited in elements 4[j] and 4[l]. (Schmandt, ¶¶315-316.) A communications interface would meet the “without allowing” communication limitations of elements 4[j] and 4[l] because the communications interface would not transmit any questions or other communication between users where a negative preference indication occurred. (Schmandt, ¶¶315-316.)

Elements 4[c]-4[d], 4[f], and 4[h] are performed by “a processor coupled to the interface”. A POSITA would have understood that the user devices (computers) and the server in Chang necessarily include processors. (Chang, Fig. 1; Schmandt, ¶317.) Both of these processors are coupled to both the communications interface

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and the user interface. The device processor and server processor are coupled to the user interface because they both respond to input on the user interface. (Schmandt, ¶¶318-319.) Both the device processor and the server processor are coupled to the communications interface because the user device and the server communicate through the communications interface as shown in Chang Fig. 1. (Chang, Fig. 1; Schmandt, ¶¶318-319.)

A POSITA would have understood that elements 4[c]-4[d], 4[f], and 4[h] are performed by the Chang server processor. (Chang, ¶¶0017-0039; Figs. 1-3, Schmandt, ¶320.) In the related litigation, however, PO has taken the position that the claimed processor may be the user device processor, the server-side processor, or a combination of both. (Ex.1049, 99.) To the extent the relevant disclosures in Chang would be performed by the user device processor or a combination of the server processor and user device processor, Chang still meets the “processor” limitation, given PO’s broad reading of “processor” as discussed below.

As with element 1[c], a POSITA would have understood that the Chang server processor is operable to “determine[] from the plurality of user online-dating profiles a set of potential matches for the first user” as recited in element 4[c]. (Schmandt, ¶320.)

A POSITA would have understood that Chang’s server processor is operable to cause the displays of potential matches claimed in elements 4[d] and 4[f]

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(discussed for elements 1[d] and 1[f]) by sending html to the user’s browser, thereby controlling GUI’s display. (Schmandt, ¶¶321-322.) The server processor sends instructions to the user device browser and the user device then executes a display of the graphical representation on the graphical user interface. (Chang, Fig. 7; Schmandt, ¶¶321-322.)

As with element 1[h], a POSITA would have understood that the Chang server processor is operable to determine to allow communication between two users after receiving both users’ positive preference indications. (Schmandt, ¶¶320, 323.) A POSITA similarly would have understood that a user device processor of the Chang system would interpret the command sent from the server to “allow” communication between two users. (Schmandt, ¶323.)

For the reasons stated here and for claim 1, therefore, claim 4 is obvious over Chang in view of Wernick. (Schmandt, ¶¶301-324.) The rationale and motivation to combine Wernick with Chang is the same for claim 4 as for claim 1. (Schmandt, ¶324.)

**C. Ground 2: Obviousness of Claims 1-6 Based on Chang in View of Wernick and Norena**

**1. Claims 1 and 4**

For independent claims 1 and 4, Ground 2 is similar to Ground 1, but adds Norena for the “graphical representation” limitations in elements 1[d]-1[f], 1[i]-1[l] (and the corresponding limitations of claim 4).

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As outlined for Ground 1, Chang renders obvious the “graphical representation” limitations of claims 1 and 4. Were the Board to conclude otherwise, however, the “graphical representation” limitations of elements 1[d]-1[f], 1[i]-1[l] (and the corresponding limitations of claim 4) are satisfied by combining Norena with Chang and Wernick; thus, claims 1 and 4 would have been obvious over this combination. (Schmandt, ¶¶141-142, 168, 216, 253, 267, 280, 290.) Ground 2 cites Norena for the “graphical representation” limitations of elements 1[d]-1[f], 1[i]-1[l] and corresponding limitations of claim 4, while relying on Chang and Wernick and the mapping from Ground 1 for all other limitations of claims 1 and 4.

Elements 1[d] and 4[d] claim “cause the display of a **graphical representation of a first potential match** of a set of potential matches to the first user on a graphical user interface of the first electronic device.” Elements 1[e] and 4[e] reference the same “graphical representation of the second user” that was first claimed in elements 1[d] and 4[d] respectively. Elements 1[f] and 4[f] claim “a graphical representation of a second potential match” and a “graphical representation of the first potential match.” (Schmandt, ¶216.) Elements 1[i] and 4[i] claim “a graphical representation of a third potential match.” Elements 1[j] and 4[j] claim “a graphical representation of a fourth potential match.” Elements 1[l] and 4[l] disclose “a graphical representation of a fifth potential match.” Elements 1[k] and 4[k] claim “a graphical representation of the first user.”

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Norena Figure 3 shows a display of a picture of User2, which would correspond to “the graphical representation of a first potential match” required by elements 1[d], 1[e], 1[f], and the corresponding elements of claim 4. This picture may be a photograph taken by a camera. (Norena, ¶¶0022, 0033, 0045.)

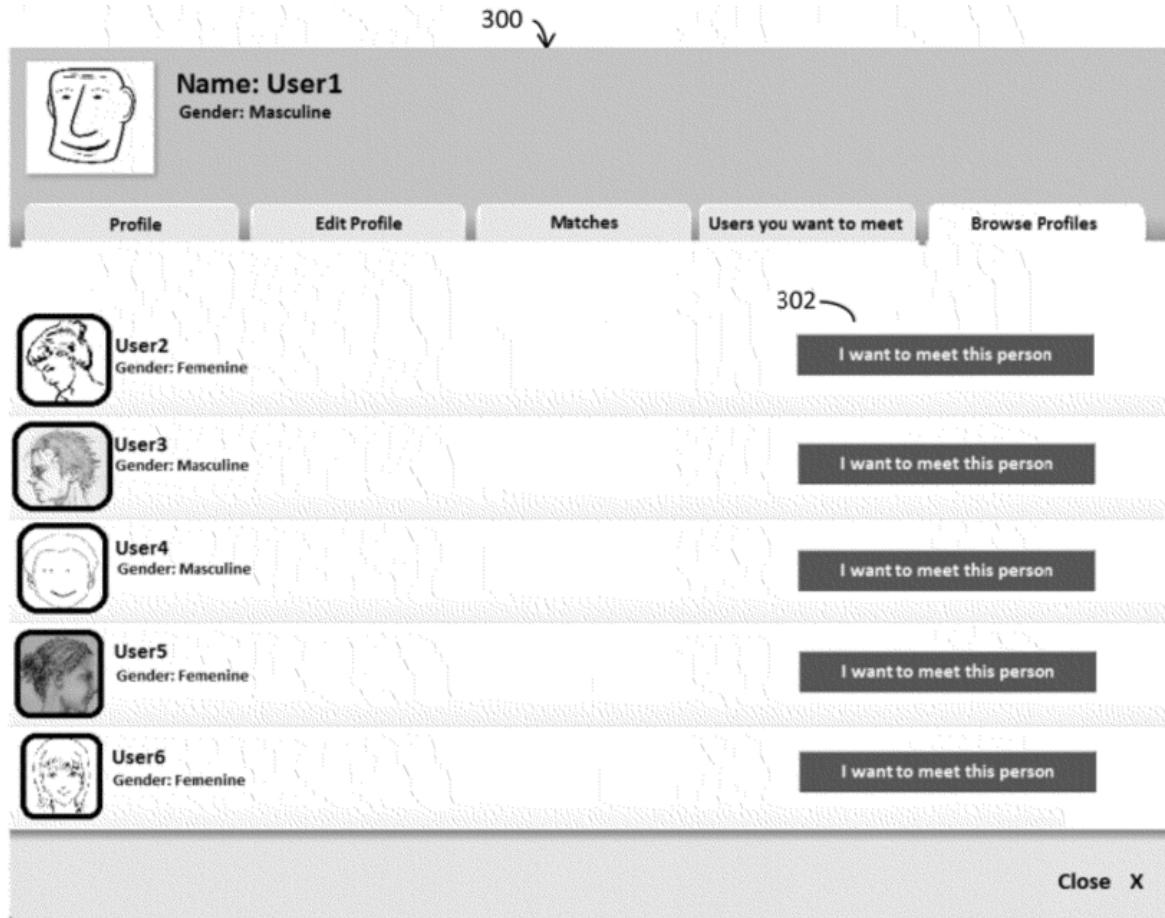


FIG. 3

Similarly, Norena discloses picture and profile information for Users 3 through 6 which can correspond to a graphical representation of the second through fifth potential matches required by elements 1[f], 1[i], 1[j], 1[l] and the corresponding elements of claim 4. (Schmandt, ¶¶216, 253, 267.) Norena Figure 3 also discloses

a graphical representation of the first user (e.g., the picture and profile information of User1). (Schmandt, ¶¶216.) Norena further discloses, “[o]nce User1 has entered and saved 506 his/her profile on the system, other users will be able to see User1’s profile including only User1’s picture, name and gender.” (Norena, ¶¶0023, 0034, 0046.)

**Rationale and Motivation to Combine:** It would have been obvious to combine Chang and Wernick with Norena predictably resulting in a system where a picture and basic data regarding a potential match is displayed to a user as a card which the user could swipe to indicate preference. Chang and Norena are analogous references in the field of online dating. (Schmandt, ¶143.) The systems disclosed in Chang and Norena are remarkably similar. (Schmandt, ¶143.) Both disclose an online dating system where users create profiles, view potential matches, and only communicate if there is a mutual expression of interest. (Norena, ¶¶0010-11, 0024-0030; Schmandt, ¶143.) A POSITA would have had every expectation that combining the concept of showing a picture with basic information disclosed in Norena could easily be applied to Chang as modified by Wernick as discussed above. (Schmandt, ¶143.) A POSITA would not have perceived any technological obstacle to this combination. (Schmandt, ¶143.)

Both Chang and Norena disclose creating a profile with at least basic user data and pictures. (Chang, ¶0027; Norena, ¶¶0021-0023, 0033-0034, 0044-0045.)

Although Chang discloses a model where photographs are displayed after indications of interest and communication has occurred, a POSITA would be motivated to modify Chang so that pictures would be viewed along with basic data preceding a determination of interest. (Schmandt, ¶144.) Chang itself reflects this since the basic data displayed in Figure 7 relates primarily to physical appearance. (Chang, Fig. 7; Schmandt, ¶144.) The inclusion of height and weight in the basic data displayed in Chang would reinforce for a POSITA that, for many individuals, physical appearance of a potential match plays a big part in interest. (Schmandt, ¶144.) A POSITA would recognize that a potential user may want to view a picture in addition to height and weight information and would recognize the market potential for a dating system like Chang that displays photographs to users with this profile information. (Schmandt, ¶144.) This market potential is evidenced by the numerous apps that existed in 2012 in which photographs were shown along with basic data, such as Are you interested?, Hot or Not Meetme, FriendFinder, Match, Chemistry.com, Grindr and others. (Schmandt, ¶145; Ex.1015 at 3; Ex.1037 at 2; Shostack, Figs. 1-4, ¶0012, 0029-30, 0104, 0217; Terrill, Figs. 2A-3B, 6B, 8-9B, 11-13A, 14, 15A, 16, 6:14-25, 8:30-50; Simkhai, Figs. 9, 18, 45-48, 5:53-56. 6:60 – 7:11, 8:16-33.)

Given the plethora of online dating sites that allowed a user to view a photograph initially with other profile information, it would have been well within

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a POSITA's skill to combine Chang and Norena to include a photograph when a potential match was first displayed in a system like Chang's. (Schmandt, ¶¶146-147.) Nothing in Chang or Norena teaches away from this, or suggests that one could not show a photograph in Chang at any of the possible stages of the process. (Schmandt, ¶146.)

Displaying a photograph in the matching process as in Chang does not teach away from combining Chang with Norena, especially since the timing of such display in Chang is not a technical consideration but a revenue consideration. (Schmandt, ¶147.) Chang discloses generating revenue by associating points with each interaction between users prior to issuing a dating invitation. (Chang, Fig. 2, ¶¶0039-0044.) A POSITA would recognize that there are various obvious modifications possible to accommodate an earlier presentation of a photo without losing revenue. For instance, Chang could add a point deduction along with performing a search for matches before seeing photos of potential matches, which is precisely what Norena discloses. (See Chang, Figs. 2-3; ¶¶0032-33; Norena, Fig. 1, ¶¶0033-0044; Schmandt, ¶147.) A POSITA would recognize that one could simply keep the number of total interactions before a dating invitation the same, but show a picture before a determination of mutual interest, without losing any revenue. (Schmandt, ¶147.)

A POSITA would have been motivated to combine Chang and Norena with

Wernick for the same reasons set forth for step 1[e] with respect to combining Chang and Wernick. (Schmandt, ¶169.) As noted above, Chang and Norena are analogous online dating references. (Schmandt, ¶169.) Therefore, the same motivations to combine Chang and Wernick would apply to combining Chang and Norena with Wernick. (Schmandt, ¶¶169-171.)

As discussed above, a POSITA would have been motivated to combine Chang and Norena with Wernick given the rise of smartphones and mobile apps in the years before the alleged invention. (Schmandt, ¶171.) Norena discloses that client 204 may be a cell phone and that an application or web browser may be used, even though it displays a conventional computer interface. (Norena ¶0019, 0043; Schmandt, ¶171.) Accordingly, a POSITA would have been motivated to combine Norena and Wernick because recognizing the growth of the mobile app dating market, a POSITA would recognize that Norena would benefit from the more mobile-friendly interface disclosed in Wernick. (Schmandt, ¶171.)

Accordingly, the “graphical representation elements of claims 1 and 4 are obvious from Chang with Norena and Wernick.

## **2. Claims 2 and 5**

Claims 2 and 5 depend from independent claims 1 and 4 respectively, and further require “wherein at least one or more of the plurality of user on-line dating profiles is associated with a social networking platform.” As discussed below, this

limitation is disclosed in Norena and claims 2 and 5 are obvious over Chang in view of Wernick and Norena. Alternatively, to the extent that the claimed profile matching system is the social networking platform, then Chang satisfies this element alone. (Schmandt, ¶¶325.)

**Combination with Norena:** Norena explicitly discloses that users' profiles may be associated with another social networking platform:

[U]sers have the option **to create a profile using the data they already entered in another social network account** like Facebook, Twitter or any other similar social network where users create a profile with basic personal information, in that case users just would have to enter the user name and password of the other social network and authorize the data (picture, cell phone number, e-mail) to be downloaded from that account into the system being described herein.

(Norena, ¶¶0010, 0021, 0057.) It would have been obvious to a POSITA that the system disclosed in Chang could allow a user to sign up using a social networking platform account, as in Norena. (Schmandt, ¶¶327-328.) The claim limitation “wherein at least one or more of the plurality of user on-line dating profiles is associated with a social networking platform,” is therefore rendered obvious by Chang in view of Norena. (Schmandt, ¶¶327-328.)

**Rationale and Motivation to Combine:** It would have been obvious to combine Chang, as modified by Wernick, with Norena predictably resulting in a

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system such as that of claims 1 and 4 in which a profile is created using an existing social network account, like Facebook, as disclosed in Norena. (Schmandt, ¶329.) Chang and Norena are analogous references in the field of online dating that are remarkably similar. (Schmandt, ¶330.) Both disclose an online dating system where users create profiles, view potential matches and only communicate if there is a mutual expression of interest. (Norena, ¶¶0010-11, 0024-0030; Schmandt, ¶330.) A POSITA would have had every expectation that combining the Chang system with log-in capability via an existing social media account (Norena) would have been successful and would not have perceived any technological obstacle to the combination. (Schmandt, ¶331.)

As discussed above, a POSITA would have been motivated to combine Chang and Norena with Wernick in light of the rise of smartphones and mobile apps around the time of the alleged invention. (Schmandt, ¶171.) A POSITA would have had many reasons to make the proposed combination. Logging in using credentials from an existing social networking platform account was not novel. This technique was well known in the field of online dating at the relevant time. (Schmandt, ¶¶334-335; *see, e.g.* Simkhai, Fig. 3A, 10:64-11:2; Ex.1012, 3:5-10, 3:39-42, 6:44-52, 7:7-15; Ex.1013, 15:25-37.) For example, in a 2012 internet article about the “Top 10 Best Mobile Dating Apps”, online dating commentator Julie Spira, wrote, “most apps let you sign up directly from their Facebook page.” (Ex.1014.) Given the prevalence

of this feature, a POSITA would be motivated to combine Norena's functionality with the teachings of Chang, as modified by Wernick, with predictable results. (Schmandt, ¶338.)

A POSITA would also have been motivated to combine the teachings of Norena and Chang because using login data from an existing social media account would make it faster and easier to sign into the online dating system disclosed in Chang. (Schmandt, ¶333.)

Thus, the added limitations of claims 2 and 5 are found in either Chang alone in Chang taken with Norena such that claims 2 and 5 are obvious from Chang, as modified by Wernick, and Norena. (Schmandt, ¶¶340, 341-3432.)

### **3. Claims 3 and 6**

Claims 3 and 6 depend from independent claims 1 and 4 respectively, and further require "in response to determining to allow the first user to communicate with the second user, caus[ing] the display of a graphical notification on the graphical user interface of the first electronic device of the first user, the graphical notification indicating that a match exists between the first user and the second user and presenting an option for the first user to communicate with the second user." Chang discloses the additional limitations of claims 3 and 6.

As discussed for elements 1[h] and 4[h] Chang discloses determining to allow the first user to communicate with the second user. (Chang, Figs. 2-3, 8, ¶¶0034,

0036; Schmandt, ¶¶343.) The system in Chang “cause[s] the display on graphical notification on the graphical user interface” “in response to” this determination. (Schmandt, ¶¶343-345.) When the system in Chang determines to allow communication between two users after mutual interest is indicated by each user, the Chang system presents an option for the first user to communicate with the second user by asking questions. (Chang, Fig. 8, 9, ¶¶0036, 0037.) These questions are presented to the first user “in response to” the system determining to allow the first user to communicate with the second user.

Figure 8 shows an interface for communicating and discloses “causing the display of a graphical notification ... that a match exists between the first user and the second user” limitation of claims 3 and 6. (Chang, Figs. 2-3, 8, ¶0036; Schmandt, ¶¶346.) Figure 8 shows candidates with whom the first user shares mutual interest, and therefore can communicate with. (Schmandt, ¶346.) Accordingly, it serves as a “graphical notification indicating that a match exists between the first user and the second user.” (Schmandt, ¶¶346.) This graphical notification is displayed on the interface of the first user’s computer. (Schmandt, ¶¶346.)

Chang Figure 8 includes an “ask a question” button associated with each potential match. (Chang, Fig. 8, ¶¶0036, 0037.) As shown in Figure 9, if a user selects this button it displays potential questions and answers to be presented to a

first user. (Chang, Fig. 9, ¶¶0036, 0037.) These satisfy the claimed “presenting an option for the first user to communicate with the second user.”

For claim 3, Chang further discloses “instructions configured to” cause the display of this graphical notification on the GUI. As discussed above regarding claim 1, a POSITA would have understood that Chang disclosed backend computer running web server software that stores instructions on a non-transitory medium to carry out the limitations of claim 3. (Schmandt, ¶¶343.)

For claim 6, Chang discloses that the processor “is further operable to” cause this display. As discussed for claim 4, Chang discloses a server processor that is operable to cause a display on the GUI of the electronic device. (Schmandt, ¶362.) A POSITA would have understood the server processor is operable to perform the limitations of claim 6. (Schmandt, ¶362.) To the extent the user device processor performs one or more of these limitations Chang meets the “processor []further operable to” element because PO has taken the position that the claimed processor for claims 3 and 6 may be the user device processor, the server-side processor, or a combination of both. (Ex.1049, 99, 159-160; Schmandt, ¶362.) To the extent the relevant disclosures in Chang would be performed by the user device processor, Chang still meets the “processor” limitation, given PO’s broad reading of “processor”. (Schmandt, ¶362.)

**Combination with Norena:** To the extent that the PO argues that Figure 8

in Chang does not disclose a “graphical notification indicating that a match exists between the first user and the second user”, this limitation is obvious over Chang in view of Norena. Norena explicitly discloses a graphical representation that a match exists and provides a notification to both users when mutual interest is expressed. (Norena, Fig. 1 at step 124 (“let[ting] both users know about a match”), Fig. 4 (“User 2 has notified in the system that she wants to meet you”), Norena, Fig. 5 at step 518, ¶¶0025-0027,0037-0038.) Norena discloses, “[i]t would be readily understood by those skilled in the art that also a picture and any other type of data stored on the system memory could be sent to users when using other notification methods ....” (Norena, ¶0027.) “[A] picture and any other type of data” would correspond to the graphical notification of claims 3 and 6. (Schmandt, ¶352.) Norena also discusses presenting an option for the first user to communicate with the second user by providing a telephone number. (Norena, Fig. 4, ¶¶0026-0029; Schmandt, ¶353.)

**Rationale and Motivation to Combine:** It would have been obvious to combine Chang and Wernick with Norena predictably resulting a system in which a first user receives an active, affirmative notification that a match exists between the first user and the second user. (Schmandt, ¶¶354-359.) Chang and Norena disclose systems where users can only communicate if there is a mutual expression of interest. (Norena, ¶¶0024-0030; Schmandt, ¶¶354.) A POSITA would expect success in combining the Chang system, as modified by Wernick, including the

graphical representation Figure 8 and the explicit notification of a match disclosed in Norena. (Schmandt, ¶¶355.) A POSITA would not have perceived any technological obstacle to the combination and would have had strong motivation to make the proposed combination. (Schmandt, ¶¶355.)

It would have been obvious to a POSITA that users would have been interested in knowing when a match occurs. (Schmandt, ¶356.) In accordance with the steps of Figure 3, Figure 8 is displayed on the GUI of a first user after users both express mutual interest and provides a graphical representation that a match exists. (Chang, Figs. 3, 8, ¶¶0034-0036; Schmandt, ¶356.) It would have been obvious to a POSITA that a more explicit message regarding the existence of a match, such as that disclosed in Norena, could be included in the GUI shown Figure 8. (Schmandt, ¶¶356.) A POSITA would have been motivated to combine Chang and Norena with Wernick for the reasons set forth for step 1[e].

Accordingly, claims 3 and 6 are obvious from Chang with Norena and Wernick.

**D. Ground 3: Obviousness of Claims 1 and 4 Based on Chang in View Morris.**

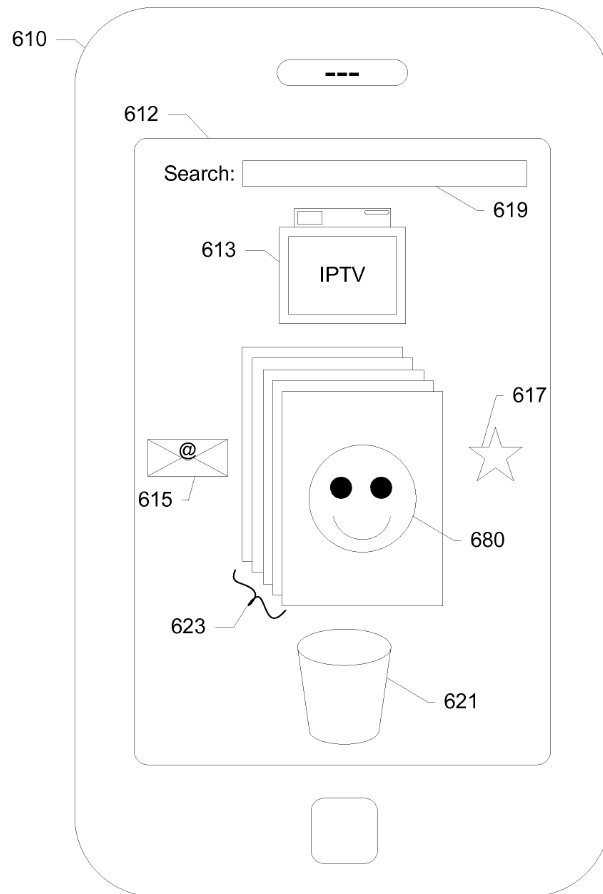
Ground 3 is similar to Ground 1, but combines Chang with Morris, rather than Wernick. Ground 3 cites Morris, for certain limitations of elements 1[e]-1[f], 1[i]-1[j], and 1[l] and the corresponding limitations of claim 4 and relies on the disclosure of Chang from Ground 1 for all other limitations of claims 1 and 4. Accordingly,

only elements 1[e]-1[f], 1[i]-1[j], and 1[l] (and their corresponding elements of claim 4) are addressed below.

**1. Claim Elements 1[e] and 4[e]**

As explained for Ground 1, Chang discloses and renders obvious certain limitations of element 1[e]. (Schmandt ¶¶149-151.) The analysis of Chang for claim 1[e] is the same for Grounds 1 and 3. Ground 3 differs in that it relies on Morris for the gesture element.

**Combination with Morris:** Morris discloses a “positive preference indication associated with a first gesture performed on the GUI, wherein the first gesture comprises a first swiping gesture.” (Schmandt, ¶¶172-174.)



**FIG. 6**

Figure 6 of Morris discloses an interface in which “[a] user of device 610 uses their finger ... to manipulate stack of images 623 and **slide** the top image 680 to anywhere on display.” (Morris, ¶0039, Fig. 6.) Morris discloses that a user may save an image in “favorites” by “sliding image 680 to star icon 617.” (Morris, ¶0039.) Saving an image in “favorites” corresponds to a “positive preference indication”. (Schmandt, ¶173.)

Morris uses the terms “dragging” and “sliding” understood by a POSITA to be other terms for swiping gestures. (Schmandt, ¶174.) This is particularly true in

the context of Morris, since Morris discloses a touchscreen where cards slide to four destinations corresponding to the four cardinal directions. (Schmandt, ¶¶174.) A POSITA would have understood that the “sliding” and “dragging” in Morris are “swiping”. (Schmandt, ¶¶177.) Even if argued otherwise, “sliding” and “dragging” in Morris would render “swiping” obvious given how ubiquitous swiping was for touchscreen devices at the time of the alleged invention. (Schmandt, ¶¶177.)

The analysis of Morris for element 4[e] is identical to the analysis of Morris for element 1[e]. To the extent element 4[e] differs slightly from element 1[e] because it claims an “interface” “operable to” those differences are disclosed by Chang and addressed in the discussion of claim 4 in Ground 1.

**Rationale and Motivation to Combine:** It would have been obvious to a POSITA to combine the interface and swiping gesture, disclosed in Morris, with the Chang dating system predictably resulting in an online dating system where choices regarding interest in another user were made using the swiping gesture of Morris. (Schmandt, ¶179.) A POSITA would not have perceived any technological obstacle to the combination because swiping was a well-known touchscreen interface technique and mobile dating apps implemented on touchscreen devices were widespread at the time of the alleged invention. (Schmandt, ¶179.)

The motivation to combine Chang with Morris is very similar to the motivation to combine Chang with Wernick. Like Wernick, Morris discloses an

interface designed for handheld devices, such as smartphones. (Morris, Abstract, ¶0021; Schmandt, ¶180.) Morris provides a user-friendly interface for sorting through search results represented in a visual format on such a device. (Morris, ¶0025, 0026; Schmandt, ¶180.) Like Wernick, Morris discloses a mobile-device interface that allows a user to easily express preference indications on visually-presented items. (Schmandt, ¶180.)

As discussed in Ground 1, there was a significant rise in smartphone and mobile app usage prior to the alleged invention. (Schmandt, ¶181.) This was true both generally, and for online dating. (Schmandt, ¶181.) Morris explicitly discusses the prevalence of handheld communication devices. (Morris, ¶0004.) A POSITA would have looked to references, such as Morris, that disclose mobile-friendly interfaces, to convert the traditional computer-based web browser interface of Chang to a mobile-friendly interface. (Schmandt, ¶181.)

Morris explicitly acknowledges the limited “viewing capabilities” of mobile devices due to their “small screens.” (Morris, ¶0006; Schmandt, ¶182.) Morris seeks to provide “an improved way to browse multimedia search results” on a handheld device. (Morris, ¶0007; Schmandt, ¶182.) A POSITA would recognize that the user interface elements applied to all forms of multimedia, including where a user wanted to review and evaluate images or graphical representations. (Schmandt, ¶182.) Morris itself teaches this because it defines “media resource or

file” broadly as including “any information or data that can be represented in a visual format.” (Morris, ¶0025; Schmandt, ¶183.) A POSITA would recognize the data regarding potential matches disclosed in Chang to be an example of a “media resource or file” discussed in Morris because it is “information or data that can be represented in a visual format.” (Morris, ¶0025; Schmandt, ¶183.) In addition, Chang and Morris both disclose performing a search, displaying search results, and making decisions regarding search results. (Chang, Fig. 3, ¶¶0032-0034; Morris ¶¶0026, 0039; Norena, ¶0024; Schmandt, ¶184.) A POSITA would recognize the applicability of the Morris interface to Chang’s online dating system and be motivated to combine them. (Schmandt, ¶184.)

A POSITA would recognize that you could replace the “yes” and “no” buttons disclosed in Chang or with the swiping gesture disclosed in Morris. (Schmandt, ¶185.) As described for Ground 1, touchscreen movements and gestures, such as swiping were known substitutions for a button prior to the alleged invention. (Kulas, ¶¶0022, 0027, Fig. 1; ’854, 22:4-7; Schmandt, ¶185.) Accordingly, it would have been obvious to a POSITA to replace the “yes” and “no” buttons of Chang with the swiping gesture of Morris. (Schmandt, ¶185.) The results of doing so would have been entirely predictable. (Schmandt, ¶185.)

## 2. Claim Elements 1[f] and 4[f]

As explained for Ground 1, Chang discloses and renders obvious the limitations of element 1[f]. (Schmandt ¶¶206-208.) The analysis of Chang for element 1[f] is the same for Grounds 1 and 3. Ground 3 differs in that it relies on Morris for additional disclosure related to this element.

**Combination with Morris:** Morris discloses, “[w]hen top image 680 is moved off of the stack 623, the next image is [sic] becomes the top image and can be similarly manipulated.” (Morris, ¶0040; *see also* Morris, ¶0032.) A POSITA would have understood that displaying the “next image” when the “top image” is “moved off the stack” corresponds to “caus[ing] the graphical user interface to display a graphical representation of a second potential match . . . instead of the graphical representation of the first potential match.” (Schmandt, ¶¶219-220.) As discussed for element 1[e], a POSITA would have been motivated to combine Morris with Chang and would have understood that the images in Morris correspond to the claimed “first potential match” and “second potential match” as disclosed in Chang. (Schmandt, ¶221.)

The analysis of Morris for element 4[f] is identical to the analysis of Morris for element 1[f]. To the extent element 4[f] differs slightly from element 1[f] because it claims a “processor” “operable to” those differences are disclosed by Chang and addressed in the discussion of claim 4 in Ground 1.

**Rationale and Motivation to Combine:** It would have been obvious to a POSITA to combine the GUI in Morris, with the Chang dating system predictably resulting in an online dating system where choices regarding interest in another user were made using the gesture disclosed in Morris to cause the interface to display the profile of the next selected candidate member. (Schmandt, ¶222.)

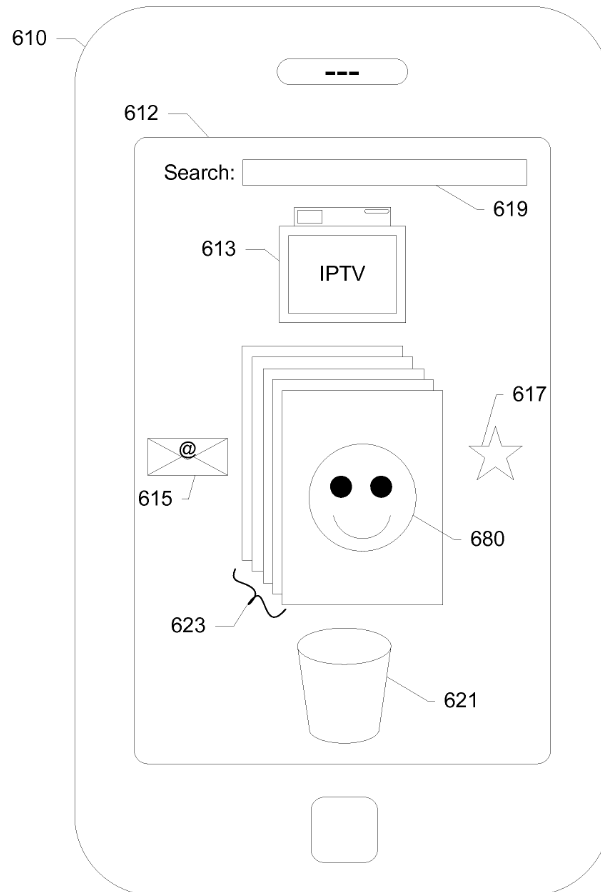
The same rationale and motivation to combine Chang with Morris discussed for element 1[e] applies equally to element 1[f] (and the corresponding element of claim 4). (Schmandt, ¶223.) In addition, a POSITA would have been further motivated to combine Chang as modified by Morris for element 1[f] (and corresponding elements of claim 4) because like the card-stack interface disclosed in Morris, Chang discloses that potential matches are represented graphically on a card. (Chang, Fig. 7; Morris Fig. 6, ¶0026; Schmandt, ¶223.) Because both Chang and Morris disclose displaying choices as cards, a POSITA would have been motivated to combine the teachings of Chang with references like Morris. (Schmandt, ¶¶223-224.)

### **3. Claim Elements 1[i] and 4[i]**

The analysis of Chang for element 1[i] is the same for Ground 1 and 3. Ground 3 differs in that it relies on Morris for the swiping elements of the element.

**Combination with Morris:** Morris discloses “the first negative preference indication associated with a second gesture performed on the graphical user interface

. . . wherein the second gesture comprises a second swiping gesture different than the first swiping gesture.” (Morris, ¶¶0038, 0039, Fig. 6.)



**FIG. 6**

Figure 6 of Morris shows “image 680 can be ‘dragged’ . . . to trash icon 621 to be erased.” (Morris, ¶0039, Fig. 6.) A POSITA would have understood dragging or sliding to be synonymous with “swiping” in the context of Morris, or would at least render this claim limitation obvious given that swiping was ubiquitous at this time. (Schmandt, ¶250.) Morris dragging or swiping an image to the trash corresponds to second swiping gesture, different from the positive preference

indication of swiping to the star icon, associated with a negative preference indication. (Morris, ¶¶0038, 0039, Fig. 6; Schmandt, ¶251.)

The analysis of Morris for element 4[i] is identical to the analysis of Morris for element 1[i]. To the extent element 4[i] differs slightly from element 1[i] because it claims an “interface” “operable to” those differences are disclosed by Chang and addressed in the discussion of claim 4 in Ground 1.

**Rationale and Motivation to Combine:** The rationale and motivation to combine Chang with Morris for this limitation is the same as described in the analysis of element 1[e] (and the corresponding element of claim 4). (Schmandt, ¶252.)

#### **4. Claim Elements 1[j], 1[l], 4[j], and 4[l]**

The analysis of Chang for elements 1[j] and 1[l] is the same for Grounds 1 and 3. Ground 3 differs in that it relies on Morris for the swiping elements of element 1[j] and 1[l].

**Combination with Morris:** The swiping limitations of elements of 1[j] and 1[l] are essentially the same as 1[e] except that they concern fourth and fifth potential matches. A POSITA would have understood that the process disclosed in Chang could be repeated with multiple users and potential matches. (Schmandt, ¶263.) Morris discloses that as each card of the stack of cards appears on the top of the stack the user has the option of showing a positive or negative preference by swiping in a

particular direction. Therefore Morris discloses and suggests applying positive or negative preferences to various graphical representations of potential interest. (Schmandt, ¶269.) As shown for 1[e], Morris discloses a positive preference indication associated with a first gesture on the GUI by sliding an image to the star icon on the right to indicate it is a “favorite.” (Morris, ¶¶0038, 0039, Fig. 6.) This gesture corresponds to the claimed “a second[/third] positive preference indication . . . associated with the first gesture performed on the graphical user interface.” (Schmandt, ¶270.) Thus Morris also satisfies 1[j] and 1[l].

The analysis of Morris for elements 4[j] and 4[l] is identical to the analysis of Morris for elements 1[j] and 1[l]. To the extent elements 4[j] and 4[l] differ slightly from elements 1[j] and 1[l] because they require an “interface” “operable to” those differences are disclosed by Chang and addressed in the discussion of claim 4 in Ground 1.

**Rationale and Motivation to Combine:** The rationale and motivation to combine Chang with Morris for 1[j] and 1[l] (and corresponding elements of claim 4) is the same as described in connection with element 1[e]. (Schmandt, ¶270.)

**E. Ground 4: Obviousness of Claims 1-6 Based on Chang, Norena, and Morris**

Ground 4 builds atop Ground 3 by adding Norena, which as discussed in Ground 2, provides further disclosures of the graphical representation limitations in elements 1[d]-1[f], 1[i]-1[l] (and the corresponding limitations of claim 4). Ground

4 also adds Norena to address the additional limitations of claims 2 and 5 related to a social networking platform and the additional limitations of claims 3 and 6 related to displaying a graphical notification of a match. The mapping of Norena and motivation to combine Norena for Ground 4, however is the same as in Ground 2. For the reasons stated for Ground 2, therefore, claims 1-6 are disclosed in Chang (in combination with Wernick or in this case Morris) and would have been obvious over a further combination with Norena.

The substitution of Morris for Wernick would have no impact on a POSITA's motivation to add Norena to the combination. (Schmandt, ¶¶187-188.) A POSITA would have been motivated to combine Chang and Morris for the reasons stated in Ground 3. (Schmandt, ¶¶187-188.) Chang as modified by Norena could similarly benefit from the mobile user interface disclosed in Morris. (Schmandt, ¶¶189-190.) A POSITA would have been motivated to combine Chang and Norena with Morris in light of the rise of smartphones and mobile apps around the time of the alleged invention. (Schmandt, ¶190.)

**F. Ground 5: Obviousness of Claims 1 and 4 Based on Chang, in view of Morris and Kulas**

Ground 5 is similar to Ground 3, but adds Kulas for a narrow purpose. As explained in the discussion of Ground 3, Morris discloses positive and negative preference indications associated with different gestures performed on the GUI as required by elements 1[e], 1[i]-1[j], and 1[l] and the corresponding limitations of

claim 4. (Schmandt, ¶191.) To be clear, for the reasons stated above, a POSITA would have understood that Morris discloses swiping even though the reference does not use that exact word. (Schmandt, ¶191.)

Were the Board to conclude otherwise, however, the swiping limitations of elements 1[e], 1[i]-1[j], and 1[l] and the corresponding limitations of claim 4 are satisfied by Kulas. (Schmandt, ¶192.) Thus, claims 1 and 4 would have been obvious over Chang, in view of Morris and Kulas. (Schmandt, ¶192.) Ground 5 cites Kulas, in combination with Chang and Morris for an even more explicit disclosure of the swiping and gesture limitations of elements 1[e], 1[i]-1[j], and 1[l] and the corresponding limitations of claim 4 while relying on Chang and Morris and the mapping from Ground 3 for all other limitations of claims 1 and 4.

### **1. Claim Elements 1[e] and 4[e]**

As discussed for Ground 3, Chang with Morris together disclose this limitation. Additionally, Kulas explicitly discloses using a first swiping gesture on the GUI to indicate a positive preference. (Schmandt, ¶193.) Specifically, Kulas discloses that a “user may swipe their finger ... upward to indicate approval.” (Kulas, ¶0027.) The motivation to combine Chang and Morris with Kulas for this limitation is discussed below for elements 1[j] and 1[l].

### **2. Claim Elements 1[i] and 4[i]**

As discussed for Ground 3, Chang and Morris disclose this limitation.

Additionally, Kulas explicitly discloses using a second swiping gesture on the GUI to indicate a negative preference indication. (Schmandt, ¶¶255-256.) Specifically, Kulas discloses that a “user may swipe their finger downward to indicate disapproval, or upward to indicate approval.” (Kulas, ¶0027.) The motivation to combine Chang and Morris with Kulas for this limitation is discussed below for elements 1[j] and 1[l].

### 3. Claim Elements 1[j], 1[l], 4[j] and 4[l]

As discussed for Ground 3, Chang and Morris disclose these limitations related to positive preference indications. Additionally, Kulas even more explicitly discloses performing a swiping gesture on the GUI to express a positive preference indication as discussed for elements 1[e] and 4[e]. (Kulas, ¶¶0027; Schmandt, ¶273.)

**Rationale and Motivation to Combine:** It would have been obvious to a POSITA to combine the swiping gestures, disclosed in Kulas, with the online dating system disclosed in Chang and the GUI disclosed in Morris predictably resulting in an online dating system where choices regarding interest in another user were made using the GUI and swiping gestures such as Morris and Kulas. (Schmandt, ¶¶273.) The motivation to combine Chang and Morris is discussed for Ground 3.

A POSITA would have been further motivated to combine Chang and Morris with the swiping disclosure in Kulas for the same reasons a POSITA would have

been motivated to combine Morris and Chang. (Schmandt, ¶¶274.) As indicated for Grounds 1 and 3, there was a significant rise in smartphone and mobile app usage around the time of the alleged invention. (Schmandt, ¶198.) This was true both generally and for online dating. (Schmandt, ¶198.) As discussed further for Ground 1, in light of the rising popularity of mobile online dating apps, a POSITA would have been motivated to combine references, such as Kulas that disclose alternative user interface controls for touchscreen mobile devices that correspond to interface controls on a traditional computer, with the online dating system disclosed in Chang as modified by Morris. (Schmandt, ¶202.)

Like Chang and Morris, Kulas discloses a method for expressing approval or disapproval regarding search results. (Kulas, ¶¶0022, 0027, 0031, 0035-0037, Figs. 3, 7-9; Schmandt, ¶¶193, 256.) Kulas explicitly teaches that a swiping gesture can be used in place of a button on a mobile device. (Kulas, ¶¶0026-0027, Schmandt, ¶200.) Given Kulas's explicit teaching that a swipe may be substituted for a button when expressing approval or disapproval, a POSITA would have been motivated to combine the teachings of Kulas regarding swiping with the button disclosure in Chang. (Schmandt, ¶¶200-202.) The results would have been entirely predictable. (Schmandt, ¶¶200-202.)

It would have been obvious to combine the swiping gesture disclosed in Kulas with the GUI disclosed in Morris. (Schmandt, ¶201.) As discussed above, Morris

discloses that a user can drag or slide cards in different directions to indicate positive preference or negative preference. (Schmandt, ¶201.) As discussed for Ground 3, this discloses and at least renders obvious swiping. (Schmandt, ¶201.) To the extent the Board disagrees, however, Morris’s disclosure regarding moving cards on a touchscreen represents strong motivation to combine this reference with the swiping gestures disclosed in Kulas because a swiping gesture, like the one disclosed in Kulas was a known method of moving images on a touchscreen. (Schmandt, ¶201.)

**G. Ground 6: Obviousness of Claims 1-6 Based on Chang, Morris, and Kulas in Further View of Norena.**

Ground 6 builds atop Ground 5 by adding Norena, which as discussed in Grounds 2 and 4, provides further disclosures of the graphical representation limitations in elements 1[d]-1[f], 1[i]-1[l] (and the corresponding limitations of claim 4). Ground 6 also adds Norena for the “social networking platform” limitations of claims 2 and 5 and the displaying a graphical notification of a match limitations of claims 3 and 6. The mapping of Norena for Ground 6 is the same as Grounds 2 and 4. (Schmandt, ¶203.)

**Rationale and Motivation to Combine:** It would have been obvious to a POSITA to combine the swiping gestures, disclosed in Kulas, with the online dating system disclosed in Chang as modified by Norena and the GUI disclosed in Morris predictably resulting in an online dating system where choices regarding interest in another user were made using the GUI and swiping gestures such as Morris and

Kulas. (Schmandt, ¶¶204-205.)

The motivation to combine Norena with Chang and Morris is discussed for Ground 4 and is the same for Ground 6. (Schmandt, ¶¶204-205.) A POSITA would have been motivated to combine with teachings of Chang, Norena, and Morris with Kulas for the same reasons a POSITA would have been motivated to combine the teachings of Chang, Morris and Kulas as discussed for Ground 5, for example because of the rise in prevalence of smartphones and mobile app usage at the time of the alleged invention which would have motivated a POSITA to look to references like Kulas that disclose alternative user interface controls for touchscreen devices. (Schmandt, ¶205.) Moreover, like Chang, Morris, and Kulas, Norena also discloses a method of expressing approval of search results. (*See, e.g.*, Chang Fig. 7; Norena Fig. 3; Morris, Fig. 6; Kulas, Fig. 9; Schmandt, ¶205.) A POSITA would not have perceived any technical obstacles to adding the explicit swiping gesture disclosure of Kulas to the Chang/Morris/Norena combination of Ground 4.

For the reasons stated for Grounds 2, and 4-5, therefore, claims 1-6 would have been obvious over a further combination with Norena.

#### **VIII. SECONDARY CONSIDERATIONS**

During prosecution of the '854 patent, PO did not identify any evidence of secondary indicia of non-obviousness tied to the subject matter claimed in the '854 patent. While PO did submit some articles during prosecution of the '811 patent that

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allegedly provided evidence of secondary considerations, the Examiner found that evidence unpersuasive. (Schmandt, ¶363.) Accordingly, there is no objective evidence of non-obviousness that might warrant a finding that the Petitioned Claims are patentable. Moreover, even if PO were able to establish any secondary considerations and a proper nexus, secondary considerations are insufficient to overcome a strong case of obviousness, like the one here. *Leapfrog Enters., Inc. v. Fisher-Price, Inc.*, 485 F.3d 1157, 1162 (Fed. Cir. 2007).

#### **IX. CONCLUSION**

Petitioner respectfully requests institution of review on claims 1-6, and a finding they are unpatentable.

Dated: August 26, 2019

Respectfully submitted,

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## **CERTIFICATE OF COMPLIANCE WITH WORD COUNT**

Pursuant to 37 C.F.R. § 42.24(d), I certify that this petition complies with the type-volume limits of 37 C.F.R. § 42.24(a)(1)(i) because it contains 13,716 words, according to the word-processing system used to prepare this petition, excluding the parts of this petition that are exempted by 37 C.F.R. § 42.24(a) (including the table of contents, a table of authorities, mandatory notices, a certificate of service or this certificate word count, appendix of exhibits, and claim listings).

DATED: August 26, 2019

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**CERTIFICATE OF SERVICE**

I hereby certify, pursuant to 37 C.F.R. Sections 42.6 and 42.105, that a complete copy of the attached **PETITION FOR INTER PARTES REVIEW OF U.S. PATENT NO. 10,203,854 B2**, including all exhibits (Nos. 1001-1061) and related documents, are being served via Federal Express on the 26 day of August, 2019, the same day as the filing of the above-identified document in the United States Patent and Trademark Office/Patent Trial and Appeal Board, upon the PO by serving the correspondence address of record with the USPTO as follows:

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And, via Federal Express upon counsel of record for the PO in the litigation pending before the U.S. District Court for the Western District of Texas entitled *Match Group LLC. v. Bumble Trading Inc.*, Case No. 6:18-cv-00080-ADA (W.D. Tex.) as follows:

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