UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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APPLE INC.,

Petitioner,

v.

MESSAGELOUD, INC.,

Patent Owner.

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Case No. IPR2025-01427
U.S. Patent No. 10,110,725

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**DECLARATION OF DR. BENJAMIN B. BEDERSON, PH.D.**

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1. 23[pre]: “A mobile phone, comprising: one or more processors; a memory, a touch screen, and one or more

programs, wherein the one or more programs are stored in the memory and configured to be executed by the one or more processors, the one or more programs including instructions for steps comprising:”.....106

2. 23[a]: “determining without any input by a user that two or more different types of messages selected from the group consisting of a text message, an email, and a message from the messenger application have been received;”.....107

3. 23[b]: “analyzing without any input by the user a content of the received text message, message from the messenger application, or email;” .....107

4. 23[c]: “placing the received email, message from the messenger application, or text message in a single queue to be read aloud in order of receipt time regardless of message type, wherein emails, messages from the messenger application, and text messages are read aloud one after another regardless of whether a next message in the queue is a new text message, a new message from the messenger application, or a new email;”.....107

5. 23[d]: “informing the user without any input by the user that the received text message, email, or message from the messenger application has been received from a sender by reading aloud at least an identity of the sender;”.....108

6. 23[e]: “allowing the user a time to take an affirmative action to stop reading a body of the received text message, message from the messenger application, or email aloud to the user, wherein the affirmative action is limited to a gesture performed on the touch screen; and”.....108

7. 23[f]: “based on not receiving an input corresponding to the affirmative action from the user, reading aloud the body of the received text message, message from the messenger application or email, and for the received

email, further reading aloud a subject of the received email." ....108

E. Independent Claim 24 ....112

1. 24[pre]: "A system for delivering one or more of a text message and an email and a message from the messenger application to a user engaged in an activity, the system comprising a processor, a memory, and a touch screen, the system configured to deliver the text message, the message from the messenger application, and the email to the user by:" ....112

2. 24[a]: "running an application configured to deliver one or more of a text message, an email, or a message from the messenger application to a user while the user is engaged in an activity;" ....112

3. 24[b]: "determining without any input by the user that two or more different types of messages selected from the group consisting the text message, the email, and the message from the messenger application have been received;" ....113

4. 24[c]: "placing the received email, message from the messenger application, or text message in a single queue to be read aloud in order of receipt time regardless of message type, wherein emails, messages from the messenger application, and text messages are read aloud one after another regardless of whether a next message in the queue is a new text message, a new message from the messenger application, or a new email;" ....113

5. 24[d]: "analyzing without any input by the user a content of the received text message, message from the messenger application, or email;" ....114

6. 24[e]: "informing the user without any input by the user that the received text message, message from the messenger application, or email has been received from a

sender by reading aloud at least an identity of the sender;”.....114

7. 24[f]: “allowing the user a time to take an affirmative action to stop reading a body of the received text message, message from the messenger application, or email aloud to the user, wherein the affirmative action is limited to a gesture performed on the touch screen; and”.....114

8. 24[g]: “based on not receiving an input corresponding to the affirmative action from the user, reading aloud the body of the received text message, message from the messenger application, or email, and for the received email, further reading aloud a subject of the received email.” .....115

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# I. INTRODUCTION

1. I have been retained by Apple Inc. ("Petitioner") as an independent expert consultant in this proceeding before the Patent Trial and Appeal Board of the United States Patent and Trademark Office.

2. I am over 18 years of age and, if I am called upon to do so, I would be willing and able to testify as to the matters set forth herein.

3. My compensation is in no way contingent on the nature of my findings, the presentation of my findings in testimony, or the outcome of any related proceeding.

4. I understand that this proceeding involves U.S. Patent No. 10,110,725 ("the '725 patent," EX1001). The application for the '725 patent was filed January 31, 2017, as U.S. Patent Application No. 15/421,237.

5. I have been asked by Petitioner to provide my opinion on whether the claims of the '725 patent would have been obvious to a person of ordinary skill in the art (sometimes referred to as a "POSITA" or "ordinary artisan") at the time of the earliest claimed priority date of the '725 patent. In performing my analysis, I have been asked to assume that the priority date is November 21, 2014, the date of Provisional Application 62/083,085, to which the '725 patent claims priority. My opinions are set forth below.

6. Throughout this declaration, I refer to specific pages, figures, or line numbers of various exhibits. These citations are illustrative and are not intended to suggest that they are the only support for the propositions for which they are cited.

## II. SUMMARY OF OPINIONS

7. This declaration considers claims 1-24 of the ’725 patent. Below, I set forth the opinions I have formed, the conclusions I have reached, and the bases for these opinions and conclusions. I believe the statements contained in this declaration to be true and correct to the best of my knowledge.

8. Based on my experience and knowledge of the art at the time of the earliest claimed priority date of November 21, 2014, it is my opinion that claims 1-24 of the ’725 patent would have been obvious based on the asserted grounds discussed below. A person of ordinary skill in the art would have found it obvious to combine the prior art references I cite and would have been motivated to do so before the priority date.

## III. QUALIFICATIONS AND BACKGROUND

9. I believe that I am well qualified to serve as a technical expert in this matter based upon my qualifications, discussed in detail below. A copy of my curriculum vitae is included as Exhibit 1004.

10. I am competent to prepare this declaration.

11. I received a Bachelor of Science degree in Computer Science with a minor in Electrical Engineering from Rensselaer Polytechnic Institute ("RPI") in 1986. I received a Master of Science degree and a Ph.D. in Computer Science from New York University ("NYU") in 1989 and 1992, respectively. Since 1998, I have been a Professor of Computer Science at the University of Maryland ("UMD" or "Maryland"), where I have had joint appointments at the Institute for Advanced Computer Studies and the College of Information Studies (Maryland's "iSchool") and am currently Professor Emeritus. I was also Associate Provost of Learning Initiatives and Executive Director of the Teaching and Learning Transformation Center from 2014 to 2018. I am a member and previous director of the Human-Computer Interaction Lab ("HCIL"), the oldest and one of the best-known Human-Computer Interaction research groups in the country.

12. I am also co-founder and co-director of the International Children's Digital Library ("ICDL"), a web site launched in 2002 that provides the world's largest collection of freely-available online children's books from around the world with an interface aimed to make it easy for children and adults to search and read children's books online. I was also co-founder and Chief Scientist of Zumobi, Inc., a Seattle-based startup that is a publisher of content applications and advertising platforms for smartphones, from 2006 to 2014. I was also co-founder and prior

Chief Technology Officer of Hazel Analytics, a data analytics company whose product sends alerts in warranted circumstances. In addition, I have for more than 25 years consulted for numerous companies in the area of user interfaces, including EPAM, Logitech, Microsoft, the Palo Alto Research Center, Sony, Lockheed Martin, and NASA Goddard Space Flight Center.

13. For more than 30 years, I have studied, designed, and worked in the field of computer science and human-computer interaction. My experience includes 30 years of teaching and research, with research interests in human-computer interaction and the software and technology underlying today's interactive computing systems. This includes the design and implementation of user interfaces and software applications using a wide range of technologies, including web servers and websites, databases, embedded systems, and mobile devices, such as smartphones and PDAs. I have combined my hardware and software skills throughout my career in Human-Computer Interface research, building various interactive electrical and mechanical systems that couple with software to provide an innovative user experience.

14. At UMD, my research has been in the area of Human-Computer Interaction ("HCI"), a field that relates to the development and understanding of computing systems to serve users' needs. Researchers in this field are focused on

making universally usable, useful, efficient, and appealing systems to support people in their wide range of activities. My approach is to balance the development of innovative technology that serves people's practical needs. Example systems that I have built following this approach include Pad++ (1994 software for zoomable user interfaces), KidPad (1997 software to support children collaboratively writing stories), PadPrints (1998 software to graphically show interactive web browsing histories), PhotoMesa (2001 software for end users to browse personal photos), Pocket PhotoMesa (2004 software for browsing of personal photos on a mobile device), DateLens (2002 software for end users to use their mobile devices to efficiently access their calendar information), LaunchTile (2005 "home screen" software for mobile devices to allow users to navigate apps in a zoomable environment), SpaceTree (2001 software for end users to efficiently browse very large hierarchies), ICDL (as described above), and StoryKit (2009 iPhone app for children to create stories).

15. Several of my projects involved messaging, messaging content analysis, notifications, and text-to-speech. For example, in the period from 2003 to 2006, I worked on supporting intergenerational families and analyzing how

calendars including notifications could support them. Two papers I wrote described this work.[1,2]

16. Another example was in software I wrote in 2004-2005 called LaunchTile, which included a Graphical User Interface (GUI) including notifications for touch-screen mobile devices designed for one-handed use. LaunchTile, described in a 2005 paper,[3] allowed zooming and scrolling of multiple

[1] Hilary Hutchinson, Wendy Mackay, Bo Westerlund, Benjamin B. Bederson, Allison Druin, Catherine Plaisant, Michel Beaudouin-Lafon, Stéphane Conversy, Helen Evans, Heiko Hansen, Nicolas Roussel, and Björn Eiderbäck. 2003. Technology probes: inspiring design for and with families. In Proceedings of the SIGCHI Conference on Human Factors in Computing Systems (CHI '03). Association for Computing Machinery, New York, NY, USA, 17–24. https://doi.org/10.1145/642611.642616.

[2] Catherine Plaisant, Aaron Clamage, Hilary Browne Hutchinson, Benjamin B. Bederson, and Allison Druin. 2006. Shared family calendars: Promoting symmetry and accessibility. ACM Trans. Computer-Human Interact. 13, 3 (September 2006), 313–346. https://doi.org/10.1145/1183456.1183458.

[3] Amy K. Karlson, Benjamin B. Bederson, and John SanGiovanni, AppLens and

applications on a handheld touch-screen PDA. The interfaces offered a grid of applications that could be zoomed and scrolled. The applications included email, voicemail, and text messages. As can be seen in the top-left screenshot in Figure 1 from the paper, the GUI included notifications showing new emails, voicemail, and text messages.

**Figure 1. AppLens Zoom Levels: (a) Notification, (b) Full, (c, d) Context.**

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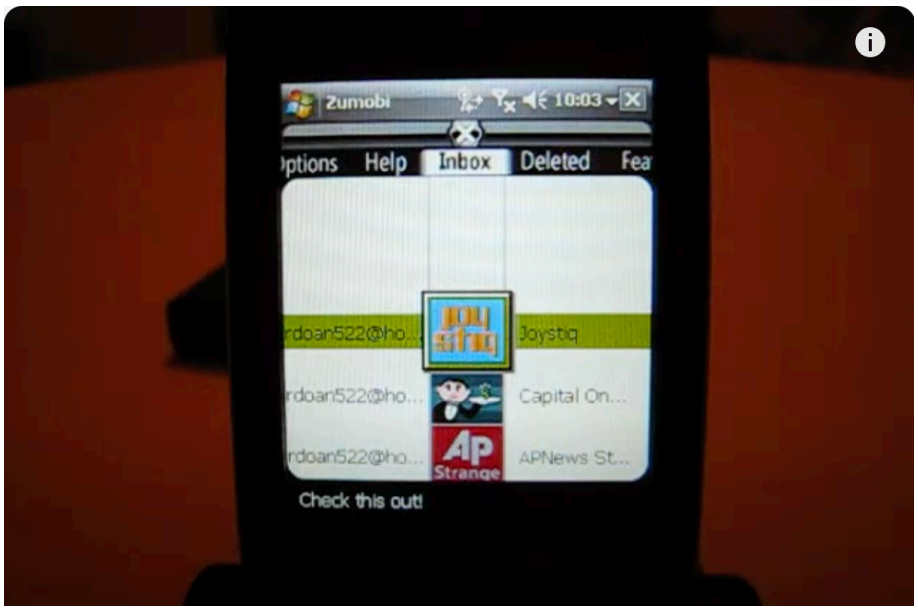
LaunchTile: Two Designs for One-handed Thumb Use on Small Devices, CHI '05: Proceedings of the SIGCHI Conference on Human Factors in Computing Systems (2005), Association for Computing Machinery, New York, NY, USA, pp. 201-210. https://doi.org/10.1145/1054972.1055001.

17. Building on the work of LaunchTile and AppLens, I co-founded Zumobi, Inc. where I was responsible for investigating new software platforms and developing new user interface designs that provided efficient and engaging interfaces to permit end users to access a wide range of content on a variety of touchscreen mobile platforms (including iPhone and Android-based devices.) The Zumobi app, which was publicly available in 2007, included the ability to send applications (which we called "tiles") to friends. The app included notifications that let a user know that they received a tile. The following image from a video review uploaded to YouTube in 2008 shows the inbox.[4]




[4] https://www.youtube.com/watch?v=810jR144KMs at 4:12.

18. In 2010, I worked on a project generating synthesized audio from text using the actual voice of the person. Collaborating with computational linguist Philip Resnik, we developed the idea but never published any papers about it.

19. In 2014, I applied my long history of work in information visualization to the analysis of messages in forums by students participating in large online courses. Published in March 2014, a paper I wrote describing this work analyzed how participation in online forums related to student performance in classes.[5]

20. My work has been published extensively in more than 160 technical publications, and I have given about 100 invited talks, including 9 keynote lectures. I have won a number of awards, including the Janet Fabri Memorial Award for Outstanding Doctoral Dissertation for my Ph.D. work in robotics and computer vision, as well as the Brian Shackel Award for "outstanding contribution

[5] Zhengzheng Xu, Dan Goldwasser, Benjamin B. Bederson, and Jimmy Lin. 2014. Visual analytics of MOOCs at Maryland. In Proceedings of the first ACM conference on Learning @ scale conference (L@S '14). Association for Computing Machinery, New York, NY, USA, 195–196. https://doi.org/10.1145/2556325.2567878.

with international impact in the field of HCI" in 2007, and the Social Impact Award in 2010 from Association for Computing Machinery's ("ACM") Special Interest Group on Computer Human Interaction ("SIGCHI"). ACM is the primary international professional community of computer scientists, and SIGCHI is the primary international professional HCI community. I have been honored by both professional organizations. I am an "ACM Distinguished Scientist," which "recognizes those ACM members with at least 15 years of professional experience and 5 years of continuous Professional Membership who have achieved significant accomplishments or have made a significant impact on the computing field." I am a member of the "CHI Academy," which is described as follows: "The CHI Academy is an honorary group of individuals who have made substantial contributions to the field of human-computer interaction. These are the principal leaders of the field, whose efforts have shaped the disciplines and/or industry, and led the research and/or innovation in human-computer interaction." The criteria for election to the CHI Academy are: (1) cumulative contributions to the field; (2) impact on the field through development of new research directions and/or innovations; and (3) influence on the work of others. I have received two "Test of

Time" awards from IEEE InfoVis for my 2001 and 2002 work on visualizing hierarchies, including those containing digital photos.[6]

21. I have appeared on radio shows numerous times to discuss issues relating to user interface design and people's use and frustration with common technologies, web sites, and mobile devices. My work has been discussed and I have been quoted by mainstream media around the world over 120 times, including by the NEW YORK TIMES, the WALL STREET JOURNAL, the WASHINGTON POST, NEWSWEEK, the SEATTLE POST-INTELLIGENCER, the INDEPENDENT, LE MONDE, NPR's All Things Considered, NEW SCIENTIST MAGAZINE, and MIT's TECHNOLOGY REVIEW.

22. I have designed, programmed, and publicly deployed dozens of user-facing software products that have cumulatively had millions of users. I am the coinventor of 14 U.S. patents and 20 U.S. patent applications.

## IV. MATERIALS CONSIDERED

| Exhibit | Description |
|---|---|
| EX1001 | U.S. Patent No. 10,110,725 B1 ("the '725 patent") |
| EX1002 | Prosecution File History of the '725 patent |

[6] https://ieeevis.org/year/2021/info/awards/test-of-time-awards; https://ieeevis.org/year/2022/info/awards/test-of-time-awards.

| Exhibit | Description |
|---|---|
| EX1005 | U.S. Patent Application Publication No. 2014/0303842 A1 ("*Boelter*") |
| EX1006 | U.S. Patent Application Publication No. 2013/0275138 A1 ("*Gruber*") |
| EX1007 | U.S. Patent Application Publication No. 2015/0350400 A1 ("*Polak*") |
| EX1008 | U.S. Patent Provisional Application No. 61/942,059 ("*Polak Provisional*") |
| EX1009 | *Ford SYNC - Reading Text Messages* (YouTube, June 21, 2013), https://www.youtube.com/watch?v=MaZZ7t3ppn0 |
| EX1010 | U.S. Patent Application Publication No. 2013/0275899 A1 ("*Schubert*") |
| EX1011 | U.S. Patent Application Publication No. 2014/0195252 A1 ("*Gruber '252*") |
| EX1012 | U.S. Patent Application Publication No. 2013/0172027 A1 ("*Sturges*") |
| EX1013 | U.S. Patent No. 8,577,422 B1 ("*Ledet*") |
| EX1014 | U.S. Patent No. 7,920,682 B2 ("*Byrne*") |
| EX1015 | U.S. Patent Application Publication No. 2014/0273975 A1 ("*Barat*") |
| EX1016 | Michael A. Nees and Bruce N. Walker, Chapter 2: *Auditory Displays for In-Vehicle Technologies*, Reviews of Human Factors & Ergonomics, Vol. 7, pp. 58-99, at 60 (2011) |
| EX1017 | Charles Arthur, *The History of Smartphones: Timeline*, Jan. 24, 2012, *available at* https://www.theguardian.com/technology/2012/jan/24/smartphones-timeline |
| EX1018 | Ryan Blundell, *CrackBerry Guide to BlackBerry Voice to Text Apps*, Aug. 4, 2010, *available at* https://crackberry.com/crackberry-guide-blackberry-voice-text-apps |

| Exhibit | Description |
|---|---|
| EX1019 | Athima Chansanchai, *This Hands-Free Testing App Is Easy to Use, Accurate*, Mar. 9, 2012, *available at* https://www.nbcnews.com/tech/gadgets/hands-free-texting-app-easy-use-accurate-flna383127 |

23. I have also relied on my education, experience, research, training, and knowledge in the relevant art and my understanding of legal principles described in this declaration.

24. All of the opinions contained in this declaration are based on the documents I reviewed and my knowledge and professional judgment. My opinions have also been guided by my understanding of how a person of ordinary skill in the art would have understood the claims of the ’725 patent at the time of the earliest claimed priority date.

25. I reserve the right to supplement and amend any of my opinions in this declaration based on documents, testimony, and other information that becomes available to me after the date of this declaration.

## V. LEGAL STANDARDS

26. I am an engineer and not a lawyer. My understanding of the legal standards to apply in reaching the conclusions in this declaration is based on discussions with counsel for Petitioner, my experience applying similar standards

in other patent-related matters, and my reading of the documents submitted in this proceeding. I have applied these legal standards in preparing this declaration.

27. I have been informed that there are two ways in which prior art may render a patent claim unpatentable. First, I have been informed that the prior art can "anticipate" a claim. Second, I have been informed that the prior art can render a claim "obvious" to a person of ordinary skill in the art. I understand that a claim is patentable if it was not anticipated and would not have been rendered obvious by the prior art at the effective filing date of the patent.

28. I have been informed that a dependent claim is a patent claim that refers back to another patent claim. I have been informed that a dependent claim includes all of the limitations of the claim to which it refers plus its own limitation(s).

29. I have been asked to provide my opinions as to whether the cited prior art discloses or renders obvious claims 1-24 of the '725 patent from the perspective of a person of ordinary skill in the art at the time of the earliest claimed priority date, as described in more detail below.

30. I have been informed that in IPR proceedings, such as this one, the party challenging the patent bears the burden of proving unpatentability by a

preponderance of the evidence. I understand that a preponderance of the evidence means "more likely than not."

31. For purposes of this declaration, I have been asked to provide my opinions on issues regarding unpatentability. I have been informed of the following legal standards, which I have applied in forming my opinions.

**A. Level Of Ordinary Skill**

32. I have been informed that a person of ordinary skill in the art is determined by considering several factors, including the (i) type of problems encountered in the art; (ii) prior art solutions to those problems; (iii) rapidity with which innovations are made; (iv) sophistication of the technology; and (v) educational level of active workers in the field.

33. I have been instructed to assume that a person of ordinary skill in the art is not a specific real individual, but rather a hypothetical individual having the qualities reflected by the factors discussed above. A person of ordinary skill in the art is assumed to be person of ordinary creativity familiar with the prior art as of the priority date of the patent at issue.

**B. Prior Art**

34. I have been advised and understand that the information used to evaluate whether an invention was new and not obvious when made is generally

referred to as "prior art." I understand that in an IPR proceeding, prior art includes patents and printed publications that existed before the earliest claimed priority date or the earliest filing date of the patent (which I have been informed is also called the "effective filing date"). I have been informed and understand that a patent or published patent application is prior art if it was filed before the earliest filing date of the claimed invention and that a printed publication is prior art if it was publicly available before the earliest filing date.

**C. Anticipation**

35. I have been informed that under 35 U.S.C. § 102, a patent claim is unpatentable for anticipation if the claimed subject matter was patented or described in a printed publication before the effective filing date of the claimed invention. I have been informed that this is referred to as unpatentability by anticipation. I have been informed that a patent claim is anticipated under § 102 if a single prior art reference discloses all the limitations of the claimed invention. I understand that limitations may be expressed or inherent such that the limitation is essential to the prior art.

**D. Obviousness**

36. I have been informed that for obviousness under 35 U.S.C. § 103, a patent claim is unpatentable if the differences between the subject matter sought to

be patented and the prior art are such that the subject matter as a whole would have been obvious to a person of ordinary skill in the art to which said subject matter pertains at the time the invention was made. I have been informed that this is referred to as unpatentability by obviousness.

37. I have been informed that an obviousness analysis includes the following considerations:

a. Determining the scope and content of the prior art;

b. Ascertaining the differences between the prior art and the claims at issue;

c. Resolving the level of ordinary skill in the pertinent art; and

d. Considering evidence of secondary indicia of nonobviousness (if available).

38. I have been informed that the relevant time for considering whether a claim would have been obvious to a person of ordinary skill in the art is the time of invention. For my obviousness analysis, counsel for Petitioner instructed me to assume that the date of invention for the challenged claims is November 21, 2014. My opinions would not change if I assumed another, e.g., later, date of invention.

39. I have been informed that a reference may be modified or combined with other references or with a person of ordinary skill in the art's own knowledge

if the person would have found the modification or combination obvious. I have also been informed that a person of ordinary skill in the art is presumed to know all the relevant prior art, and the obviousness analysis may take into account the inferences and creative steps that a person of ordinary skill in the art would employ.

40. I have been informed that an obviousness determination must be made from the perspective of a person of ordinary skill in the art. I have also been informed that there is no requirement that the prior art contains an express suggestion to combine known elements to achieve the claimed invention, and that a suggestion to combine known elements to achieve the claimed invention may come from the prior art as a whole or individually. Also, the obviousness analysis may rely on the inferences and creative steps a person of ordinary skill in the art would employ, as filtered through his or her knowledge as of the priority date. But I understand that obviousness grounds cannot be sustained by mere conclusory statements and must include some articulated reasoning and rationale to support a legal conclusion of obviousness.

41. In determining whether a prior art reference could have been combined with another prior art reference or other information known to a person

of ordinary skill in the art, I have been informed that the following principles may be considered:

a. A combination of familiar elements according to known methods is likely to be obvious if it yields predictable results;
b. The substitution of one known element for another is likely to be obvious if it yields predictable results;
c. The use of a known technique to improve similar items or methods in the same way is likely to be obvious if it yields predictable results;
d. The application of a known technique to a prior art reference that is ready for improvement is likely to be obvious if it yields predictable results;
e. Any need or problem known in the field and addressed by the reference can provide a reason for combining the elements in the manner claimed;
f. A person of ordinary skill often will be able to fit the teachings of multiple references together like a puzzle; and
g. The proper analysis of obviousness requires a determination of whether a person of ordinary skill in the art would have a

"reasonable expectation of success"—but not "absolute predictability" of success—in achieving the claimed invention by combining prior art references.

42. I have been informed that, when a work is available in one field, design alternatives and other market forces can prompt variations of it, either in the same field or in another. I have been informed that if a person of ordinary skill in the art could have implemented a predictable variation and would have seen the benefit of doing so, that variation is likely to have been obvious. I have been informed that, in many fields, such as the mechanical or electrical arts, market demand—not scientific literature—may drive design trends. I have been informed that, when there was a design need or market pressure and there are a finite number of predictable solutions, a person of ordinary skill in the art would have had a good reason to pursue those known options.

43. I have been informed that the law permits the application of "common sense" in examining whether a claimed invention would have been obvious to a person of ordinary skill in the art. For example, I have been informed that combining familiar elements according to known methods and in a predictable way may suggest obviousness when such a combination would yield nothing more than predictable results. I understand, however, that a claim is not obvious merely

because every claim element is disclosed in the prior art. A party asserting obviousness must provide a specific motivation to combine or modify the references as recited in the claims and explain why one skilled in the art would have reasonably expected to succeed in doing so.

44. I have been informed that there is no rigid rule that a reference or combination of references must contain a "teaching, suggestion, or motivation" to combine references. But I also understand that the "teaching, suggestion, or motivation" test can be a useful guide in establishing a rationale for combining elements of the prior art. I have been informed that this test poses the question as to whether there is an express or implied teaching, suggestion, or motivation to combine prior art elements in a way that results in the claimed invention, and that it helps to counter the use of hindsight, which is impermissible. Likewise, if a prior art reference "teaches away" from a potential prior art combination, then a motivation to combine may not exist.

45. I am not aware of any evidence of secondary considerations, such as unexpected results, industry skepticism, long-felt unresolved need, commercial success, praise by others, or copying, that would alter my opinions set forth below.

46. I have been informed that, in an obviousness analysis, prior art must be analogous art to the patent being considered. I have been informed that a prior

art reference is considered to be analogous, or in the same field of art, if the reference is either (1) in the same field of endeavor as the challenged patent, regardless of the problems the challenged patent and the prior art address, or (2) reasonably pertinent to the particular problem being solved by the challenged patent.

## VI. TECHNOLOGY OVERVIEW

47. By November 21, 2014, messaging applications and systems were widely used. Email, instant, and text messaging were invented in the late 1900s, and their use became part of most people's daily lives by the early 2010s. The commercialization of smart phones around 2007 enabled us to have many different messaging apps in our pockets at all times. EX1017 (Arthur), 1.

48. While messaging came with many benefits, it also came with some problems. For example, texting while driving became a widespread problem. EX1018 (CrackBerry), 1-2. To address this issue, people began inventing methods and applications to decrease or mitigate the safety risks associated with texting while driving. EX1018 (CrackBerry), 1-2. This led to the launch of applications like Vlingo that "reads your email and text messages to you when they appear on your BlackBerry. Besides messages, you can use Vlingo to make a call, open applications, browse, update Twitter or Facebook and send Vlingo to Vlingo

messages." EX1018 (CrackBerry), 4. Vlingo was just one of several applications that read different message types to a user while the user was driving or engaged in other activities. EX1018 (CrackBerry), 4-7. These messaging applications began to appear not only on phones but in cars as well, integrating messaging and calls into the infotainment systems of vehicles. *See generally* EX1005 (*Boelter*); EX1007 (*Polak*); EX1009 (Ford SYNC).

49. As mentioned earlier, it was common that mobile devices received messages from multiple sources, flooding users with frequent notifications. *Boelter*, ¶[0002]. Constant notifications could overload users, particularly when they were driving or engaged in other activities requiring their attention. *Boelter*, ¶¶[0002], [0008], [0010]; EX1015 (*Barat*), ¶¶[0003], [0022].

50. Those in the art knew various methods for minimizing user distraction by collecting, summarizing, and presenting messages and notifications. Known systems received email, text messages, phone calls, and other notifications sent to a driver, then waited to display them until the system determined it was safe to do so. *Boelter*, ¶¶[0010], [0028]. Messages were analyzed to determine the sender (who sent them), message type (whether they were an email, text message, phone call, or other notification), and date/time (when they were received). *Boelter*, ¶[0036];

*Gruber*, ¶[0680]. This information was presented to the driver in a list of messages or notifications, regardless of type, organized by date/time received.

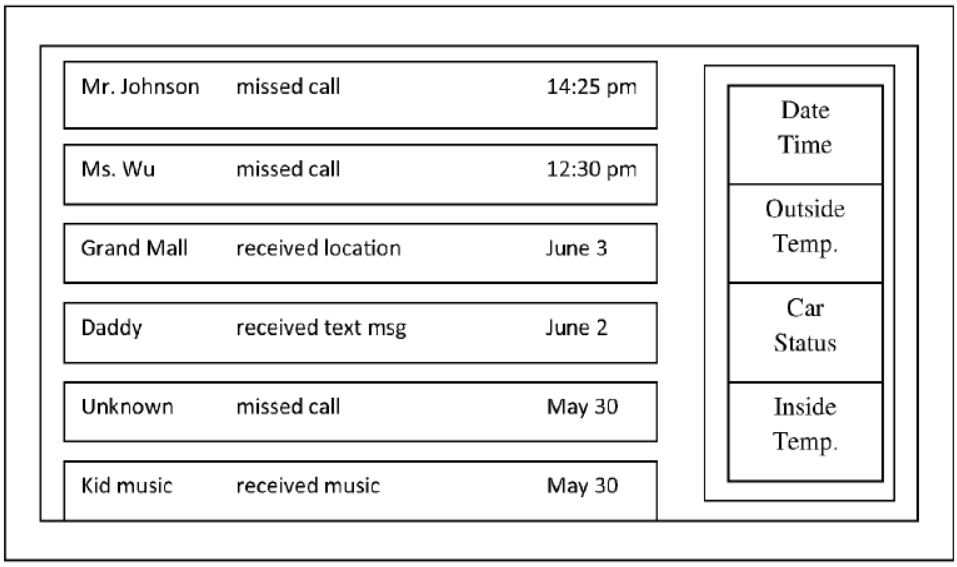



Fig. 4

*Boelter*, Fig. 4, ¶[0036].

51. Reading information about text messages, emails, and other notifications aloud was known to improve the human-computer interface for driving and other "hands-free" contexts. *Gruber*, ¶¶[0005]-[0007]. To present a list of messages, known systems would read the sender and title of each message, pause, then read the message body. *Gruber*, ¶[0686]. The pause gave the user time to stop playback or skip the message, helping the user to efficiently move through the list. *Gruber*, ¶[0686].

52. Methods for managing text messages, emails, and other notifications were known to have applications beyond driving. Notifications were commonly routed to various user devices, including mobile phones, smart watches, tablets, or computers. EX1015 (*Barat*), ¶¶[0019], [0033]. These devices were used in many different activities, including running or walking, driving a car, riding on a train, or being in a high-noise-level environment. EX1015 (*Barat*), ¶¶[0022], [0068]. The hands-free benefits of queueing messages and reading them aloud applied to these additional activities. *Gruber*, ¶¶[0182]-[0183].

## VII. THE '725 PATENT

53. According to the '725 patent, mobile phones were ubiquitous before the '725 patent's claimed priority date. EX1001, 1:15-17. Users carried these devices while engaging in various activities, such as driving, working, or exercising. EX1001, 1:15-30, 5:4-18. These activities limit users' ability to access and read the text of incoming messages. EX1001, 1:15-30, 5:4-18. The '725 patent accordingly discloses methods and systems that allow a user to receive text messages, email, or other messages while engaged in an activity. EX1001, 8:19-25.

54. Figure 10 of the '725 patent illustrates a method for processing email messages received when a user's device is in "Drive Mode." EX1001, 10:58-11:41, Fig. 10.

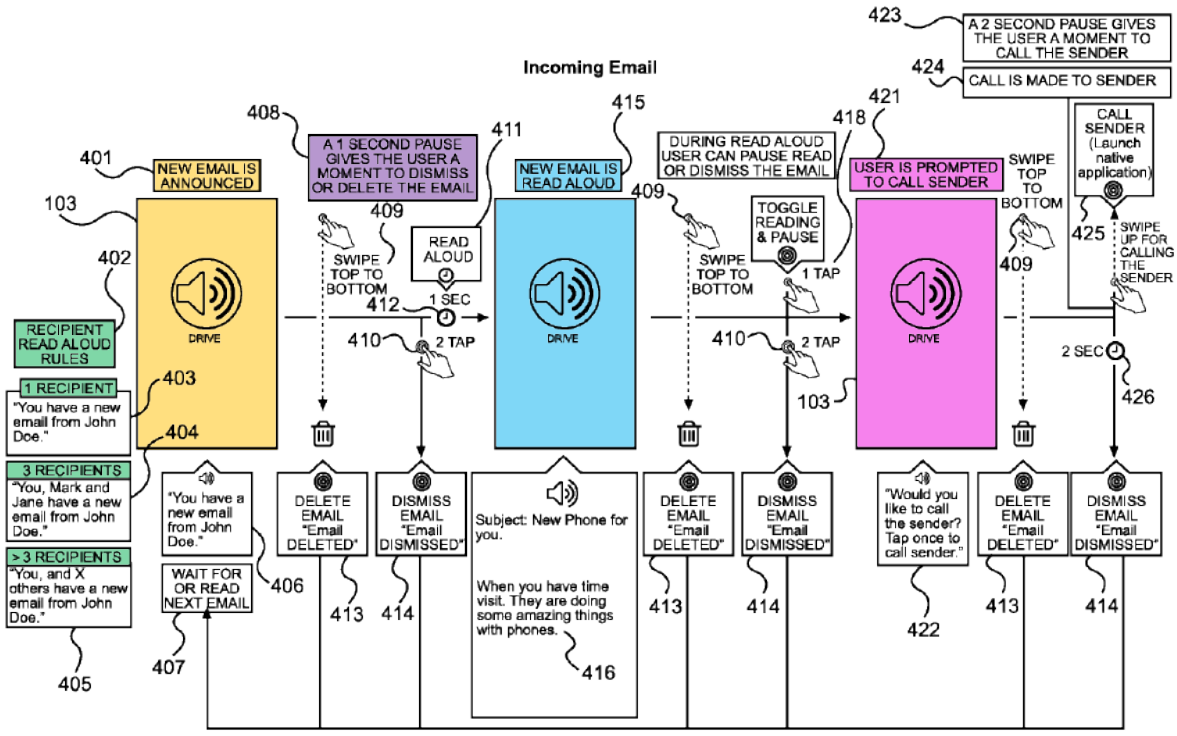



**FIG. 10**

EX1001, Fig. 10 (annotated). In step 401, the method announces the email "automatically without any user input." EX1001, 10:66-11:1. This audible announcement may include data associated with the message, such as sender and recipient information. EX1001, 11:1-9. A time delay 408, such as a one- or two-second pause, gives the user time to stop reading the message by swiping or tapping the device. EX1001, 11:9-14. But if the user takes no action, the body of the email is read aloud (415). EX1001, 11:14-20. In step 421, the user is prompted to call the sender of the email. EX1001, 11:20-31.

55. Figure 22 of the '725 patent illustrates the receipt, processing, and delivery of multiple types of messages. EX1001, 15:4-16:26, Fig. 22.

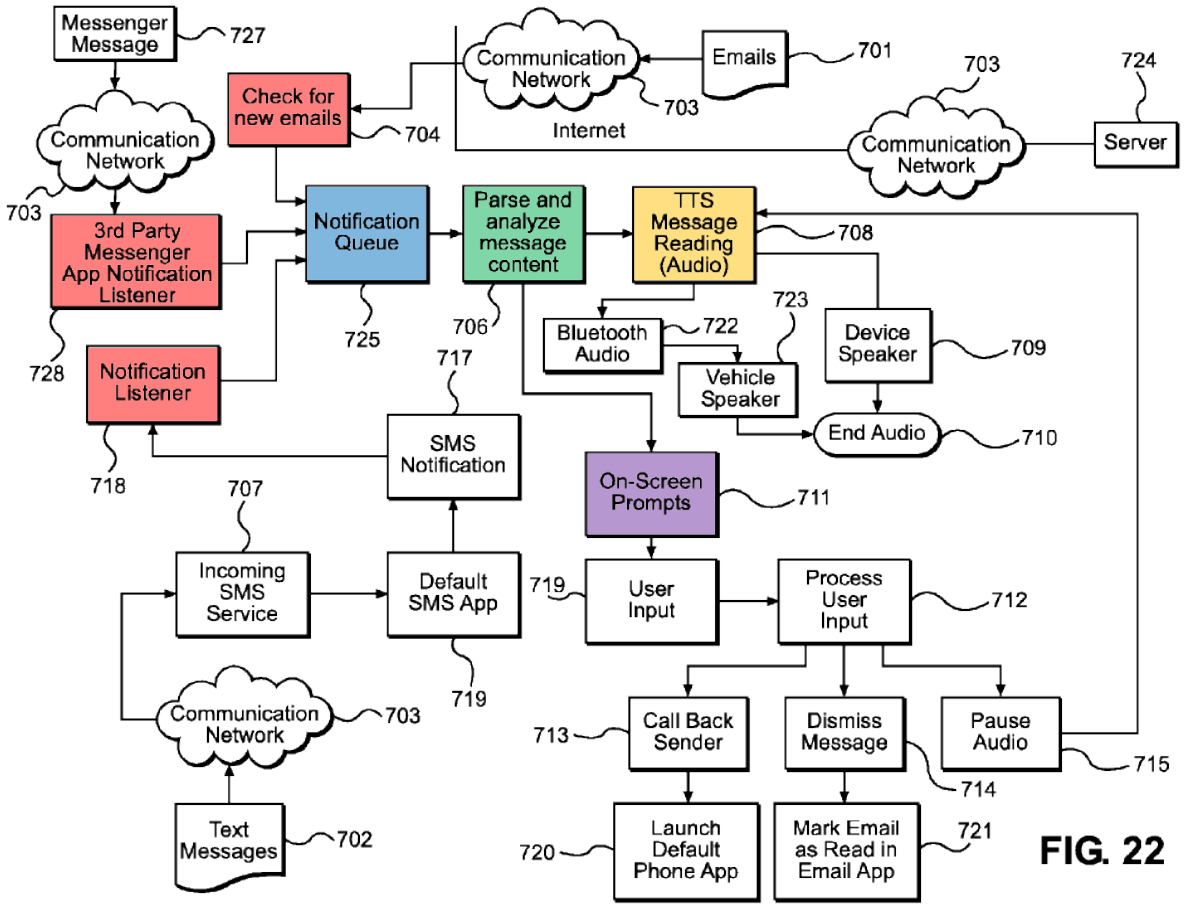



FIG. 22

EX1001, Fig. 22 (annotated). The user's mobile phone or other device receives emails 701, text messages 702, and messenger application messages 727 via a communication network 703. EX1001, 15:29-42. The new messages are placed in a notification queue 725. EX1001, 15:42-43. After being dispatched from the queue, the messages are processed by parsing and analyzing 706 the message content. EX1001, 15:42-59. This parsing/analysis may include determining the

message type, sender, subject, and body. EX1001, 15:50-59. The messages may be read aloud 708 to the user. EX1001, 15:59-61, 15:66-16:2. And the user may be prompted 711 to respond to the messages. EX1001, 16:2-10.

56. Figure 24 of the '725 patent illustrates a notification queue 726:

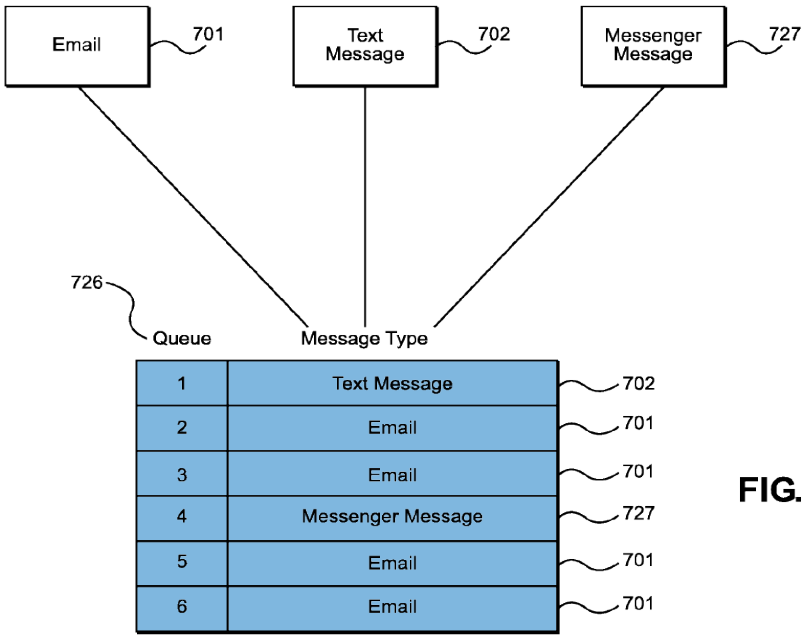



FIG. 24

EX1001, Fig. 24 (annotated), 15:42-50, 16:27-34. This queue contains different types of messages—emails, text messages, and messenger messages—organized by receipt time. EX1001, 16:27-34.

### A. Prosecution History

57. During prosecution of the '725 patent, the Examiner applied three prior art references, finding that they disclosed all elements of the as-filed independent claims: *Schubert* (U.S. Patent Publication 2013/0275899, EX1010),

*Gruber '252* (U.S. Patent Publication 2014/0195252, EX1011), and *Sturges* (U.S. Patent Publication 2013/0172027, EX1012). Each of these prior art references described informing a user of incoming messages, then allowing the user to have the message read:

- *Schubert* disclosed limited-distraction user interfaces for applications on a device, such as a mobile phone. *Schubert*, ¶¶[0005]-[0006]. A virtual assistant read a user's text messages, including the sender's name and the message content. *Schubert*, ¶[0192].
- *Gruber '252* disclosed a virtual assistant that notified a user of incoming messages, then allowed the user to dictate a response. *Gruber '252*, Abstract, ¶¶[0010]-[0011]. This virtual assistant could read the sender's name and content of messages to the user. *Gruber '252*, ¶¶[0186], [0188].
- *Sturges* disclosed systems and methods that processed incoming communications to a mobile device (such as text messages, e-mail, or phone calls), displayed portions of the messages (such as sender name or phone number), and allowed the user to request the message to be read. *Sturges*, ¶¶[0037]-[0045]. This system was intended to permit

safe, hands-free communication while the user was driving. *Sturges*, ¶[0001].

EX1002, 155-161.

58. The Applicant for the ’725 patent narrowed its claims in response to this prior art. EX1002, 179-183. Each independent claim was amended to require placing messages in “a single queue to be read aloud in order of receipt time regardless of message type….” EX1002, 179-183 (underlined text showing amended text). Applicant argued its “single queue” and “informing the user without any input by the user” limitations distinguished the claimed invention from the asserted prior art. EX1002, 184-187.

59. The Examiner allowed the amended claims, highlighting that she allowed the claims because of the “additional limitation of placing all messages, regardless of type, into a single queue to be read aloud in order of receipt time.” EX1002, 232. The Applicant submitted an Amendment after Notice of Allowance to “improve the claim language for purposes of clarity.” EX1002, 255.

## VIII. LEVEL OF ORDINARY SKILL IN THE ART

60. A person of ordinary skill in the art would have had at least a bachelor’s degree in computer science, computer architecture, or a similar field and two to three years of experience designing or analyzing messaging or notification

systems. Additional relevant work experience can compensate for less education, and vice versa.

## IX. CLAIM CONSTRUCTION

61. I understand that, in this proceeding, the claims are construed according to their ordinary and customary meaning, in light of the specification and prosecution history, as understood by a person of ordinary skill in the art at the time of the invention. I understand that this is the same claim construction approach used in district court litigation.

62. I have been instructed that the "intrinsic record" includes the '725 patent itself, including the claims, description, and figures (EX1001), and the '725 patent's prosecution history—i.e., the record of proceedings at the U.S. Patent and Trademark Office ("USPTO" or "Patent Office") concerning the patent (EX1002). I understand that, like the claims and written description, the prosecution history provides evidence to a person of ordinary skill in the art of how the inventor intended his patent to be understood, and how the USPTO understood the patent. I understand that the inventor is permitted to apply a special definition to the terms or to limit the scope of claim terms in his patent claims, which may differ from the terms' plain and ordinary meaning. That special definition or limitation on scope

may be provided in the patent's written description, the patent's prosecution history, or both.

63. I understand that claim interpretation may also be informed by "extrinsic evidence" (that is, evidence outside of the patent record itself). I have been informed that extrinsic evidence may include dictionaries, technical treatises, and other materials evidencing the meaning of a claim term and the understanding held by a person of ordinary skill in the art in the relevant time period.

64. In my opinion, none of the claim terms in the '725 patent require an express construction for the purpose of review by the Patent Office, and should all be given their plain and ordinary meaning as they would have been understood by a person of ordinary skill in the art at the earliest priority date of the '725 patent.

## X. THE PRIOR ART

65. As explained below, it is my opinion that claims 1-24 would have been obvious over combinations of *Boelter* and *Gruber* or *Boelter*, *Gruber*, and *Polak.*

### 1. *Boelter*

66. *Boelter* is titled "System and Method for Managing Incoming Messages in a Vehicle." Boelter, cover. *Boelter* was filed on August 31, 2011, and published on October 9, 2014. Boelter, cover.

67. I have been told that *Boelter* qualifies as prior art because it is a printed publication that published before the earliest effective filing date of the '725 patent.

68. *Boelter* discloses a system for managing in-vehicle message notifications. *Boelter*, Abstract, ¶¶[0009]-[0010]. *Boelter* discloses how it became common for vehicles to be "equipped with a large number of messaging functions that alert and inform a driver about incoming cellular phone calls, e-mail messages, infotainment options, [and] navigation instructions …." *Boelter*, ¶[0002]; *see also Boelter*, ¶¶[0003]-[0007] (describing evolution of and implementation of in-vehicle notifications and touchscreens). Because these notifications can distract and be dangerous for drivers, *Boelter* presents systems and methods designed to minimize the distractions—especially during critical driving situations. *Boelter*, ¶[0008].

69. *Boelter* discloses a system comprising a detection unit, a receiver unit, and a notification unit coupled together as depicted in Figure 1, reproduced below:

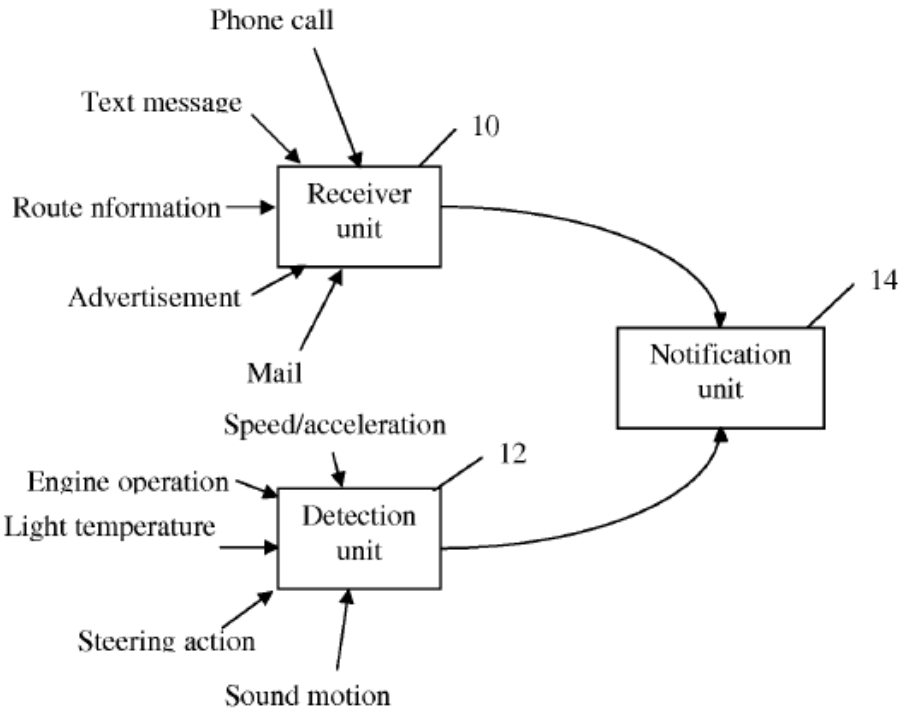



Fig. 1

*Boelter*, Fig. 1, ¶¶[0010], [0024]. The detection unit is "configured for classifying a driving situation into one of a number of driving conditions" and sends this information to the notification unit as a "notification control signal." *Boelter*, ¶¶[0011], [0010], [0026]. The receiver unit "is preferably configured to receive a number of different types of messages, such as phone calls, text messages, [and] e-mails …," and forward these messages to the notification unit. *Boelter*, ¶¶[0025], [0028], [0010]-[0011]. The notification unit is configured to "notify a driver of a received message in one of a number of different formats in response to the notification control signal." *Boelter*, ¶¶[0010], [0024], [0028]. In other words, the

notification unit determines whether to notify the driver of an incoming message based on the current driving situation. *Boelter*, ¶¶[0010], [0024], [0028].

70. *Boelter* discloses that its notification unit 14 is made up of "a control unit 16, a memory 18, and a touch-screen 20." *Boelter*, ¶[0028], Fig. 2.

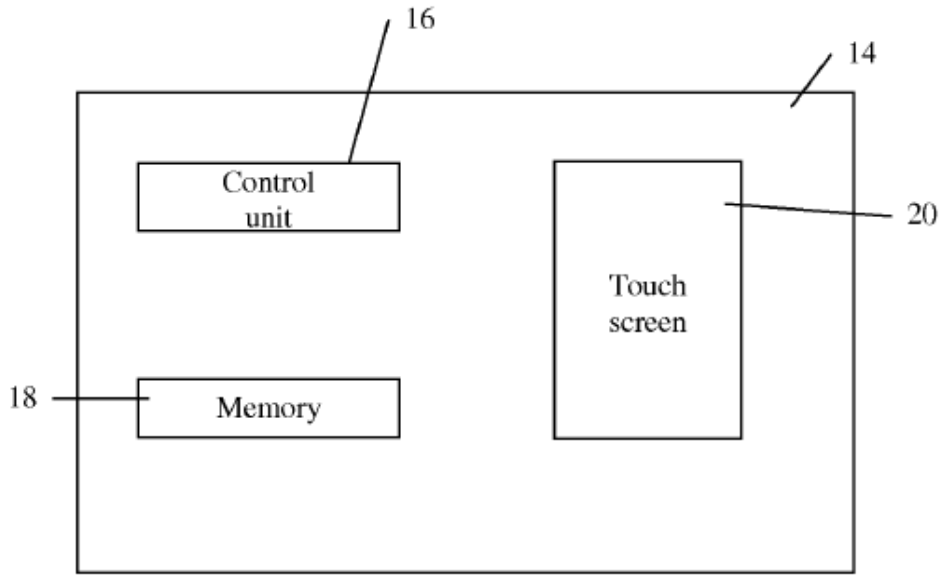



Fig. 2

*Boelter*, Fig. 2. "The control unit 16 and the memory 18 cooperate to determine which type of message shall be displayed [on the touchscreen], when the message is to be displayed, and in which format the message is displayed to a driver, as a function of the notification control signal." *Boelter*, ¶[0028], Fig. 2. Notifications may, for example, be delayed until after a critical driving situation ends or prioritized based on a driver's preferences. *Boelter*, ¶¶[0029]-[0032].

71. *Boelter*'s system notifies users of different types of messages at the same time. *Boelter*, ¶¶[0010], [0013], [0017], [0025], [0036]. For example, Figure 4, reproduced below, illustrates a chronological list of missed calls, text messages, and notifications. *Boelter*, ¶¶[0036], [0013], [0017], Fig. 4.

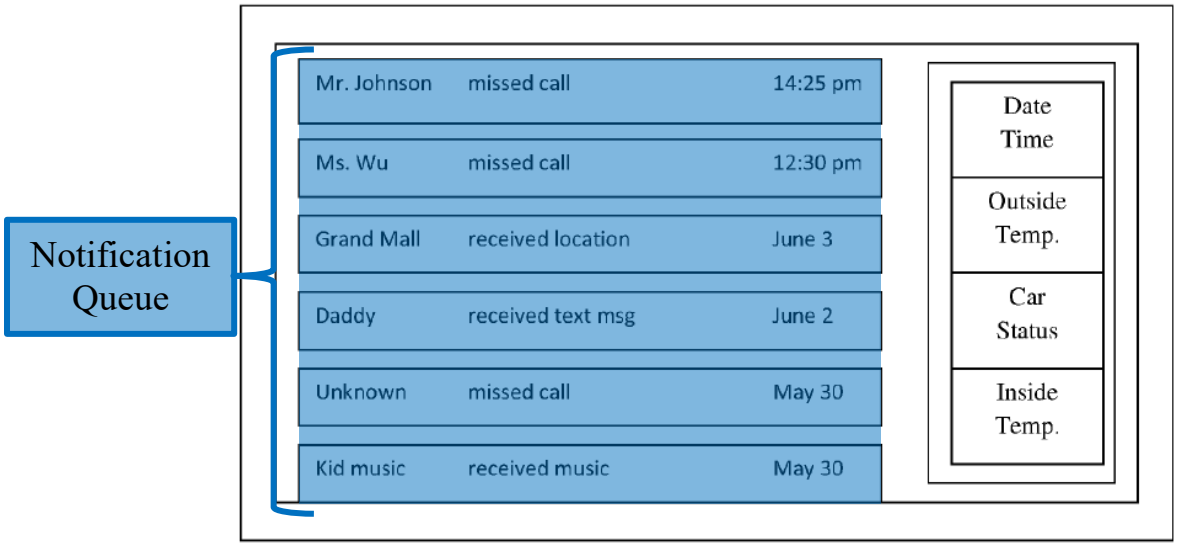



Fig. 4

*Boelter*, Fig. 4 (annotated). A user can interact with this screen using "intuitive finger gesture[s] … without the driver having even to look at the screen." *Boelter*, ¶[0034]; *see also Boelter*, ¶¶[0031]-[0033], Fig. 3.

**2. *Gruber***

72. *Gruber* is titled "Hands-Free List-Reading by Intelligent Automated Assistant." Gruber, cover page. *Gruber* was filed on June 8, 2013, and published on October 17, 2013. *Gruber*, cover page.

73. I have been told that *Gruber* qualifies as prior art because it is a printed publication that published before the earliest effective filing date of the '725 patent.

74. *Gruber* discloses methods and systems related to the hands-free use of a virtual assistant on an electronic device. *Gruber*, ¶¶[0009], [0016]. For example, *Gruber* describes that a user can use the virtual assistant "for receiving and replying to text message[s]" when "the user may be unable to interact with device 60, for example, if he or she is driving or engaged in some other activity." *Gruber*, ¶[0168]. The virtual assistant is configured to "automatically detect[] the hands-free context … by any means of determining a scenario or situation where it may be difficult or impossible for the user to interact with the screen of device 60," such as driving a car. *Gruber*, ¶¶[0169]-[0170]; *see also Gruber*, ¶¶[0662]-[0663] (describing action triggers, such as walking, that cause the assistant to announce a reminder).

75. *Gruber*'s virtual assistant is configured to notify the user of various message types. *Gruber* discloses how the assistant "may monitor the conversation and reply to individuals or the group using one or more … techniques" disclosed in the specification for texts, emails, and instant messaging. *Gruber*, ¶¶[0081],

[0111]-[0118], [0187], [0213], [0315]-[0322], [0409]-[0496] ("SMS Text Messaging Use Cases"), [0556].

76. *Gruber* discloses reading text or email messages aloud. Assistant 1002 can "read content of text messages, email messages, and the like, and can provide options to the user in spoken form." *Gruber*, ¶[0187]. For example, assistant 1002 may read text messages by emitting spoken output such as "You have a new message from Tom Devon," followed by the message contents—"Hey, are you going to the game?" *Gruber*, ¶[0188]; *see also Gruber*, ¶¶[0409]-[0416]. *Gruber* also discloses reading and replying to messages from a messaging application. *Gruber*, ¶¶[0452]-[0458]. *Gruber* depicts the following flow for reading an email:

> The assistant provides a speech output saying "Next message, From Harry Saddler, today at 8:23 am, with the subject: List reading use cases." After a pause for user interruption, the assistant continues to read the unbounded content of the message "Harry wrote: By popular demand ….

*Gruber*, ¶[0686].

77. *Gruber* also discloses reading lists of text messages or email messages. *Gruber*, ¶¶[0270] (task flow may include "reading aloud each text message individually, and pausing after each message to allow the user to provide

a spoken command"), [0683] (assistant providing a domain-specific, item-specific paraphrase of each item in a list of emails followed by each message's unbounded content). Hands-free list reading is described as a "core, cross-domain ability for users to be able to navigate results involving more than one item." *Gruber*, ¶[0555]. Typically, groups of data items can be "sorted in a particular order (e.g., by time, location, sender, and other criteria), and hence result in a list." *Gruber*, ¶[0555].

**3. Polak**

78. *Polak* is titled "Method and System for Safe Messaging While Driving." *Polak*, cover page. *Polak* was filed on April 23, 2015, as Application No. 14/625,899 and published on December 3, 2015. *Polak*, cover page. *Polak* claims priority to Provisional Application No. 61/942,059 ("*Polak's Provisional*") filed on February 20, 2014.

79. I have been told that *Polak* qualifies as prior art at least if it *Polak Provisional* provides support for *Polak*'s disclosures. I reviewed *Polak* and *Polak's Provisional* and have determined that *Polak's Provisional* contains such support. I provide citations to both *Polak* and *Polak's Provisional* to show how *Polak's Provisional* provides support for *Polak*.

80. *Polak* discloses methods and systems that "enable drivers to hear text messages vocally, while driving, and/or to respond to messages in various manners without touching the phone" *Polak*, ¶[0019]; EX1008 (*Polak's Provisional*), ¶[0018]. *Polak*'s program may be carried out by an application on a mobile device. *Polak*, ¶[0022]; EX1008 (*Polak's Provisional*), ¶[0020]. "FIG. 6 is a schematic illustration of an exemplary application screen 150 displayed on a display of mobile device 100." *Polak*, ¶[0029], Fig. 6; EX1008 (*Polak's Provisional*), ¶[0026], Fig. 5.

Fig. 6

*Polak*, ¶[0029]; EX1008 (*Polak's Provisional*), ¶[0026]. The application may be started manually or automatically. *Polak*, ¶[0025]; EX1008 (*Polak's Provisional*), ¶[0022].

81. When *Polak*'s system receives an incoming message, it provides "a vocal and/or visual indication via the mobile device" and then converts the message to a voice message. *Polak*, ¶[0029]; EX1008 (*Polak's Provisional*), ¶[0026]. The message content may be sounded "continuously followed by or following the name and/or phone number of the sender." *Polak*, ¶[0030]; EX1008 (*Polak's Provisional*), ¶[0027]. The application then "may wait a few seconds or as may be defined by a user to receive the user's instructions." *Polak*, ¶[0030]; EX1008 (*Polak's Provisional*), ¶[0027]. For example, user instructions include saying repeat, stop, or taking no action. *Polak*, ¶¶[0030]-[0035]; EX1008 (*Polak's Provisional*), ¶¶[0027]-[0033].

82. I have also been asked to consider whether *Polak's Provisional* provides support for at least one claim of *Polak*. As an example, claim 8 of *Polak* recites:

| ***Polak*** | ***Polak's Provisional*** |
|---|---|
| 8. A system for safe messaging while driving comprising: | *Polak's Provisional* discloses "[a] system for safe messaging while |

| ***Polak*** | ***Polak's Provisional*** |
|---|---|
| a receiving messages feature;<br>a sounding feature, configured for sounding of sender details and said messages;<br>a transmitting messages feature, configured for sending text or voice message;<br>wherein said features are operated using voice commands. | driving comprising" because it teaches a "method and system that may improve the safety of driving. The method and system may enable drivers to hear text messages vocally, while driving, and/or to respond to messages in various manners without touching the phone." *See* EX1008 (*Polak's Provisional*), ¶[0018].<br>*Polak's Provisional* discloses "a receiving messages feature" because it teaches "[a]s shown in Fig. 5, when a text message is received to the mobile device, the application may provide a vocal and/or visual indication via the mobile device." *See* EX1008 (*Polak's Provisional*), ¶[0026]. |

| ***Polak*** | ***Polak's Provisional*** |
|---|---|
| | *Polak's Provisional* discloses "a sounding feature, configured for sounding of sender details and said messages" because it teaches "[a]ccording to embodiments of the present invention, the mobile application may convert the received text message to voice message and may sound the message and/or the message details …. the message content may be sounded, for example, continuously followed by or following the name and/or phone number of the sender." *See* EX1008 (*Polak's Provisional*), ¶¶[0026]-[0027].<br>*Polak's Provisional* discloses "a transmitting messages feature, configured for sending text or voice |

| *Polak* | *Polak's Provisional* |
|---|---|
| | message" because it teaches "[a]nother possible reaction may include, for example, an instruction, for example a vocal instruction, to send a predefined response message, such as, for example, a default message of the application or a prewritten response by the user…. Another possible reaction may include, for example, an instruction, for example a vocal instruction, to record a message in response to the received message. The application may then record the user speaking his message. The application may then receive an additional instruction, for example vocally, to send the recorder message to the sender of the received message." *See* EX1008 |

| *Polak* | *Polak's Provisional* |
|---|---|
| | (*Polak's Provisional*), ¶¶[0031]-[0032].<br><br>*Polak's Provisional* discloses "wherein said features are operated using voice commands" because it teaches "[t]hen, the application may wait a few seconds or as may be defined by a user to receive the user's instructions. The application may receive vocal instructions from a user and translate them to events." *See* EX1008 (*Polak's Provisional*), ¶¶[0027], [0028]-[0032]. |

## XI. GROUND 1: CLAIMS 1-24 ARE UNPATENTABLE OVER *BOELTER* AND *GRUBER* (GROUND 1A) OR *BOELTER*, *GRUBER*, AND *POLAK* (GROUND 1B)

### A. Motivation to Combine

83. In my opinion, *Boelter*, *Gruber*, and *Polak* are analogous art to the '725 patent because they are in the same field of endeavor: management of

incoming notifications. *Boelter*, ¶¶[0001], [0009]-[0018]; *Polak*, ¶¶[0018]-[0019], [0027]-[0035]; *Gruber*, ¶¶[0409]-[0496], [0682]-[0693]; EX1001, 1:14-29, 1:54-57. Further, it is my opinion that *Boelter*, *Gruber*, and *Polak* share a common goal with the '725 patent: improving the delivery of notifications to users engaged in a distracting activity, like driving. *Boelter*, ¶¶[0008]-[0010]; *Polak*, ¶¶[0001], [0018]-[0019], [0021]; *Gruber*, ¶¶[0008], [0567]; EX1001, 1:54-57.

84. In my opinion, a person of ordinary skill in the art would have been motivated to modify *Boelter* in view of *Gruber* and *Polak*. The references describe notification systems with similar functions and uses. All contemplate using their systems in vehicles. *Boelter*, ¶[0010]; *Polak*, ¶[0026]; *Gruber*, ¶¶[0011], [0182]. They highlight that their systems are configured to detect varied driving conditions. *Boelter*, ¶¶[0010]-[0011]; *Polak*, ¶[0026]; *Gruber*, ¶¶[0205]-[0207]. They all also disclose systems that respond to user input to review, respond to, or delete messages. *Boelter*, ¶¶[0032]-[0034] (touch input); *Polak*, ¶[0032] (voice or touch); *Gruber*, ¶¶[0210], [0562] (voice or touch). Indeed, Gruber allows "input from multiple input channels" even in hands-free contexts. *Gruber*, ¶[0562].

85. Aiming to minimize distracted driving, *Boelter* suggests limiting the text displayed to a driver. *Boelter*, ¶[0008]. For example, *Boelter* discloses configuring a screen to allow for "intuitive finger gesture[s] … without the driver

having even to look at the screen." *Boelter*, ¶[0034]; *see also Boelter*, ¶¶[0031]-[0033], Fig. 3. Although *Boelter* discloses providing notifications on a touchscreen, in my opinion, a person of ordinary skill in the art would have understood that *Boelter* is not limited to this embodiment—*Boelter* says its "concepts can be used to notify the driver of an incoming message in one of a number of different ways." *Boelter*, ¶[0010]. A person of ordinary skill in the art would have understood *Boelter* to be compatible with, and ready for improvement by, other user notification schemes, like reading messages aloud.

86. In my opinion, a person of ordinary skill in the art would have looked to *Gruber* and *Polak* for other ways of notifying a driver because they suggest minimizing users' need to read from a display while driving. *Gruber* indicates that "looking at and touching the screen" are "impractical to perform in certain contexts." *Gruber*, ¶[0155]. By providing audio output, *Gruber's* system can inform the user of available actions in a manner well-suited to the hands-free context and can "reduce[] the need for a user to interact with a display screen and/or to use a touch interface." *Gruber*, ¶¶[0166]-[0167], [0191]. *Gruber* further contemplates a combination of audio and visual outputs. *Gruber*, ¶[0006]. *Polak* discloses a process where incoming messages are announced, allowing users to interact with them "without taking their eyes off the road." *Polak*, ¶[0021];

EX1008 (*Polak's Provisional*), ¶[0019]. After sounding a new message, *Polak* instructs that a user provides "an instruction vocally, or by another user interface method such as, for example, by touching the screen." *Polak*, ¶[0032]; EX1008 (*Polak's Provisional*), ¶[0029].

87. In my opinion, a person of ordinary skill in the art would have been motivated to incorporate *Gruber*'s and *Polak*'s teachings related to reading messages aloud into *Boelter*'s notification method because doing so would further *Boelter*'s goal of limiting distractions. Such a combination would encourage the driver to look at the screen less, reducing the amount of time a driver would take their eyes off the road. A person of ordinary skill in the art would have known that this reduction would have been beneficial because it would reduce the risk of accidents. A person of ordinary skill in the art would have understood that any form of messaging while driving present dangers; however, because drivers are more likely than not going to continue these bad habits, persons of ordinary skill in the art would have built systems that allow drivers to do so as safely as possible. EX1016 (Nees), 78. A person of ordinary skill in the art would have found reading incoming messages (as *Polak* suggests) and lists of new messages and notifications (as *Gruber* suggests) to be predictable improvements to *Boelter*'s text-based notification system, which displays a queue of notifications, because text-to-speech

message reading had already been implemented in vehicles. *See, e.g.*, EX1009 (Ford SYNC) (describing a system that reads messages out loud in a car).

88. In my opinion, a person of ordinary skill in the art would have further been motivated to read *Boelter*'s mixed message queue aloud because it would simplify message review for the user. For example, reading aloud *Boelter*'s queue would prevent a user from toggling between multiple applications to review different messages. A user would not have to decide which messages to open in different applications as they are all read aloud, which would have simplified the process.

89. It is my opinion that a person of ordinary skill in the art would have at least had a reasonable expectation of success in modifying *Boelter* in view of *Gruber* and *Polak* because virtual assistants were well known, and implementing text-to-speech in *Boelter* and aspects of the *Gruber* and *Polak* processes discussed herein would not have required physically changing *Boelter*'s system or altering its features. *See* EX1009 (Ford SYNC); EX1018 (CrackBerry), 4-7. For example, *Boelter* describes systems "installed [i.e., carried out] in a vehicle" or integrated "in a mobile communication device such as a smartphone" comprised of computing components similar to those disclosed in *Gruber* and *Polak*. *Boelter*, ¶¶[0018], [0024], [0028], [0030]; *Gruber*, ¶¶[0056]-[0066], Figs. 9, 10; *Polak*,

¶[0025]; EX1008 (*Polak's Provisional*), ¶[0038]. Because *Boelter* already included these physical components, only software modifications would be needed for *Boelter*'s notification queue to be read aloud sequentially (as *Gruber* suggests). I believe that a person of ordinary skill in the art would have understood that the implementation of text-to-speech would have been a routine programming change for persons of ordinary skill in the art by the claimed priority date. EX1016 (Nees), 59 ("Audio output and feedback have become a ubiquitous element in human-machine systems as a result in part of engineering improvements in sound delivery capability, most often via digital sound-producing devices."); *Gruber*, ¶[0744] ("In addition, the present invention is not described with reference to any particular programming language. It will be appreciated that a variety of programming languages may be used to implement the teachings of the present invention…."); EX1014 (*Byrne*), 4:63-5:19. Indeed, audio playback of text messages was commercially available in vehicles and other devices well over a year before the claimed priority date. EX1009 (Ford SYNC); EX1018 (CrackBerry), 1-7. *Gruber* suggests that the programming of hands-free reading is applicable beyond its disclosed embodiments. *Gruber*, ¶¶[0736]-[0745]. *Gruber* even explicitly discloses reading a "plurality of data items [] presented on the visual interface" (*Gruber*, ¶[0696]), like *Boelter* discloses. Persons of ordinary skill in the art would have

known that "audio has been and will continue to be an integral mode of information display in [in-vehicle technologies]." EX1016 (Nees), 60. And therefore, a person of ordinary skill in the art would have had the skills to implement this routine programming. *See* EX1009 (Ford SYNC); EX1018 (CrackBerry), 1-7; EX1016 (Nees), 79-80; *Polak*, ¶[0019]; EX1008 (*Polak's Provisional*), ¶[0018]; *Gruber*, ¶¶[0056]-[0057], [0736], [0744].

90. Combining the references would apply a known technique—*Gruber*'s and *Polak*'s audible notifications—to a similar system—*Boelter*'s notification system. Reading *Boelter*'s notifications as *Gruber* and *Polak* suggest would yield predictable results: reducing user reliance on textual display while allowing the user to select which items to hear. A person of ordinary skill in the art would have seen this as an improvement in view of *Gruber*'s disclosure that reading text to the user "may be beneficial where it may be unsafe for a user to read text from a screen, such as when the user is driving." *Gruber*, ¶[0282].

91. In my opinion, a person of ordinary skill in the art would have been motivated to use *Gruber*'s and *Polak*'s read-aloud approaches because there were few other ways to present messages and notifications without requiring users to read from a display screen. Because text-to-speech processing was well understood and commercially available, the combination would not have involved the

exploration of new technology. *Gruber*, ¶[0188] (describing commercially available technology for implementing its method steps); *Polak*, ¶[0029]; EX1008 (*Polak's Provisional*), ¶[0026]. Moreover, *Boelter*'s notification unit determines "when and ***how*** to notify a driver" that a message has arrived. *Boelter*, ¶¶[0025], [0037] (emphasis added). A person of ordinary skill in the art would have found *Polak*'s and *Gruber*'s audible notifications a suitable option for ***how*** to notify a driver in *Boelter*'s method because it would improve user safety.

92. An ordinary artisan would have understood that combining *Boelter* with *Gruber* and *Polak* as further detailed below (Sections XI.B-XI.E) would not affect *Boelter*'s operations in other respects because the combinations further *Boelter*'s goal of reducing distractions without removing any features.

93. I provide additional rationales for the combination below for specific claim limitations.

### B. Independent Claim 1

#### 1. 1[pre]: "A computer implemented method to be carried out with a processor, a memory, and a touch screen, comprising:"

94. In my opinion, *Boelter* discloses 1[pre].

95. *Boelter* discloses its notification method may be implemented as a program "stored on a computer-readable medium" (i.e., memory) that is executed

by a vehicle control unit (i.e., processor) and where the notifications/messages are displayed on a touchscreen. *Boelter*, ¶¶[0018], [0024], [0028], [0030].

96. *Boelter*'s Figure 2 illustrates a notification unit 14 comprising a control unit 16, a memory 18, and a touchscreen 20:

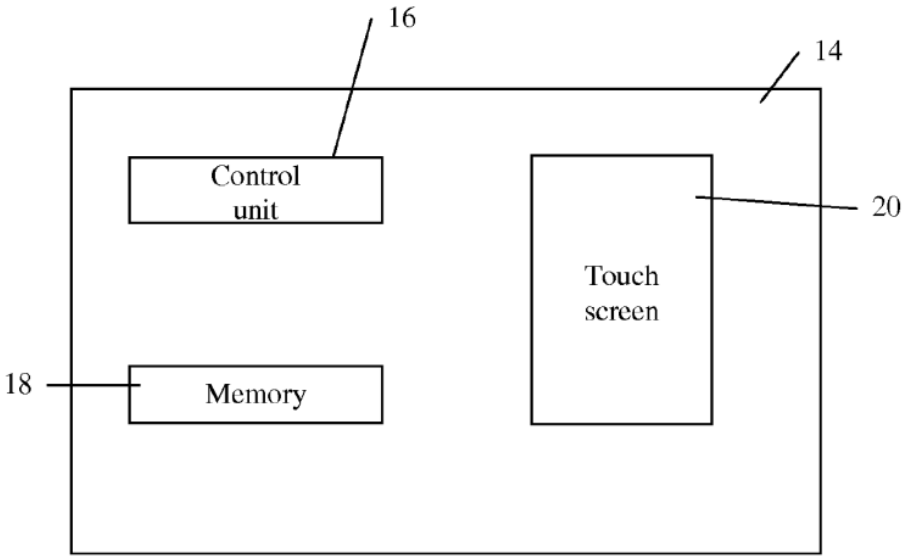



Fig. 2

*Boelter*, ¶[0028], Fig. 2. Control unit 16 is a processor because it determines whether, when, and how to display different message types based on information stored in memory 18. *Boelter*, ¶[0028]. These components carry out *Boelter*'s computer-implemented method.

**2. 1[a]: "determining without any input by a user that two or more different types of messages selected from the group consisting of a text message, an email, and a message from the messenger application have been received;"**

97. In my opinion, *Boelter* discloses 1[a].

98. *Boelter*'s system contains a receiver unit 10, "preferably configured to receive a number of different types of messages, such as phone calls, text messages, [and] e-mails …." *Boelter*, ¶[0025]; *see also Boelter*, ¶[0010]. *Boelter* thus discloses that the system receives at least two different types of messages—texts and emails—from the claimed group.

99. *Boelter*'s system determines—without any user input—that two or more different types of messages have arrived because receiver unit 10 is "configured to receive" various message types. *Boelter*, ¶[0025]. This happens without any user input—the system, "[r]ather than [immediately] notifying a driver of an incoming message each time the message arrives," "first determines a current driving situation and then decides whether, when, and how to notify the driver," without relying on user input to figure out when a new message has arrived. *Boelter*, ¶¶[0025]; *see also Boelter*, ¶[0028] ("The message received by the receiver unit 10 and the notification control signal determined by the detection unit 12 are forwarded to the notification unit 14 ….").

**3. 1[b]: "analyzing without any input by the user a content of the received text message, message from the messenger application, or email;"**

100. In my opinion, *Boelter* discloses 1[b].

101. *Boelter*'s notification unit automatically analyzes the content of received messages to determine sender identity, message type, and date/time received. *Boelter*, ¶¶[0028], [0036], Figs. 2, 4. This information is separated from the message body and displayed to the user at appropriate times. *Boelter*, ¶¶[0027]-[0029], [0036], [0038]. *Boelter*'s Figure 4 depicts a summary page listing sender or caller names, message types, and date/time received. *Boelter*, ¶[0036], Fig. 4.

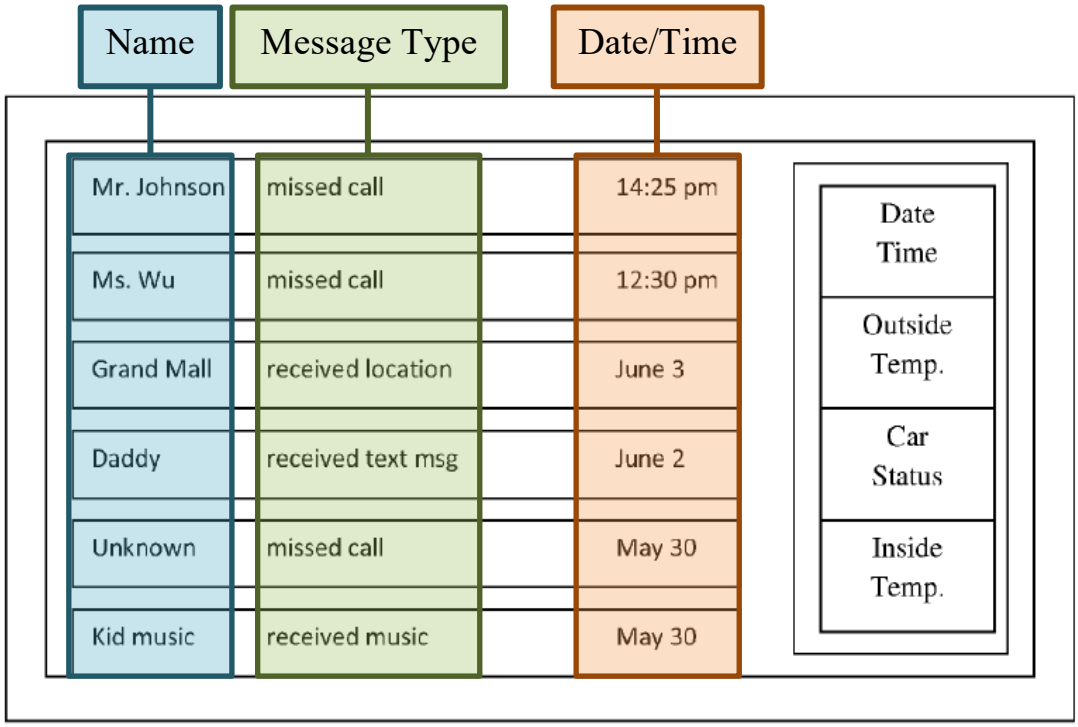



Fig. 4

*Boelter*, Fig. 4 (annotated). As discussed in greater detail below, *Boelter*'s separation of message details into different parts is consistent with claim 2, which recites that "analyzing the content comprises … parsing the text message or the message from the messenger application into the sender and the body." Section XI.C.1.

102. *Boelter*'s analysis proceeds without user input, before messages are displayed to the user. Messages are analyzed "to determine which type of message shall be displayed, when the message is to be displayed, and in which format the message is displayed to a driver." *Boelter*, ¶[0028]. Thus, while a user may set prioritization rules, the analysis of incoming messages does not involve user input. *Boelter*, ¶¶[0013], [0028]-[0031].

103. In my opinion, a person of ordinary skill in the art would have understood that *Boelter*'s prioritization rule setup is a different step than the determination of which, when, and what format to display the incoming message because these steps occur at different times. For example, *Boelter* describes that "a driver can designate predetermined callers," which indicates that the setup of prioritization rule happens before the user is driving, while the determination of which, when, and what format to display the incoming message occurs while the user is driving. *Boelter*, ¶¶[0014], [0025], [0028].

**4. 1[c]: "placing the received email, message from the messenger application, or text message in a single queue to be read aloud in order of receipt time regardless of message type, wherein emails, messages from the messenger application, and text messages are read aloud one after another regardless of whether a next message in the queue is a new text message, a new message from the messenger application, or a new email;"**

104. In my opinion, *Boelter* and *Gruber* render obvious 1[c].

105. *Boelter* discloses notifying users of various received message types—including email and text messages—based on receipt time. *Boelter*, ¶¶[0010], [0013], [0017], [0025], [0036], Fig. 4. During critical driving conditions, emails, text messages, and other notifications are queued for later display at a later time after the critical driving situation ends. *Boelter*, ¶¶[0013], [0027], [0036], Fig. 4. These messages are provided to the driver "at an appropriate selected time or times" after the critical driving situation ends. *Boelter*, ¶¶[0013], [0027], [0029], [0036], Fig. 4.

106. *Boelter*'s Figure 4 illustrates a "summarized notification page" that displays this queue of missed calls, text messages, and notifications, organized by time and date. *Boelter*, ¶¶[0036], [0013], [0017], Fig. 4.

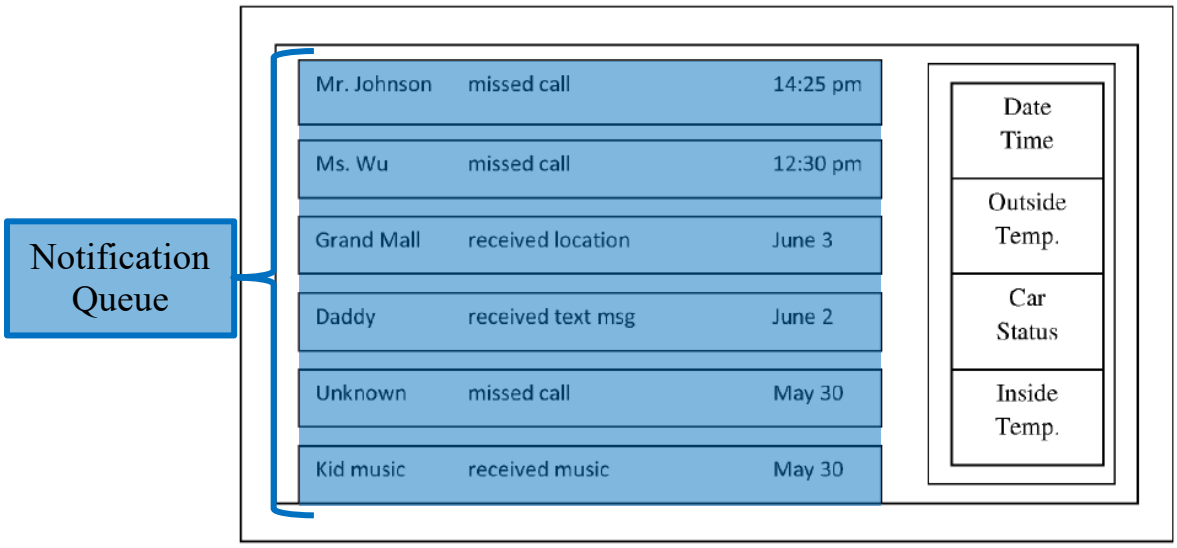



Fig. 4

*Boelter*, Fig. 4 (annotated).

107. *Boelter* discloses that this screen is "used for informing a driver of incoming messages after the critical driving situation has passed." *Boelter*, ¶[0036]. It includes "any missed calls, unread notifications of other types, and messages of other types not previously notified." *Boelter*, ¶[0036], Fig. 4. The notifications in the queue are presented to the user, regardless of whether they are a new text message, new email, new missed call, or other notification. *Boelter*, ¶[0036], Fig. 4. Because these notifications are organized by time/date, a person of ordinary skill in the art would have understood that *Boelter*'s notification page depicts a single queue organized in order of receipt time regardless of the message type. For example, a person of ordinary skill in the art would have interpreted

*Boelter* this way because similar art did the same thing. *See* EX1013 (*Ledet*), 10:17-29 ("previously received messages are presented chronologically in the order received. For example, if a text message were received from a person, followed by a voice mail....").

108. In my opinion, a person of ordinary skill in the art would have been motivated to configure *Boelter*'s system to read messages aloud because *Gruber* describes reading lists of emails one after another. *Gruber*, ¶¶[0685]-[0686]. *Gruber* even expressly suggests reading a "plurality of data items [] presented on the visual interface at the same time, … a subset at a time." *Gruber*, ¶[0696]. Reading *Boelter*'s messages as queued in Figure 4 would have improved message management because it would have decreased the user's need to click through or select messages on their own, furthering *Boelter*'s goal of reducing distractions. *Boelter*, ¶[0036].

109. I believe that a person of ordinary skill in the art would have been motivated to read aloud *Boelter*'s entire queue of messages and notifications, because *Boelter*'s queue is a list of messages collected in one place and reading them would have been no different than reading a list of emails from one person as described in *Gruber*. *Gruber*, ¶[0555]. *Gruber* discloses hands-free list reading is a

"core, cross-domain ability for users to be able to navigate results involving more than one item," providing further motivation. *Gruber*, ¶[0555].

110. In my opinion, *Gruber* would have made it obvious to read *Boelter*'s messages in order of receipt. *Gruber*'s assistant 1002 "read[s] content of text messages, email messages, and the like, and can provide options to the user in spoken form." *Gruber*, ¶[0187]. This includes reading lists of emails or text messages. *Gruber*, ¶¶[0467]-[0472] ("Read all Unread SMS Messages"), [0682]-[0689] (reading emails in a list). *Gruber* suggests reading its messages aloud in "sequential order" and sorting lists "by time." *Gruber*, ¶¶[0555], [0685]-[0689], [0699], [0705].

111. In my opinion, a person of ordinary skill in the art would also have been motivated to read aloud *Boelter*'s entire queue regardless of message type. *Boelter* teaches its queue contains additional notification messages, such as calls, location data, and infotainment messages. *Boelter*, ¶¶[0025], [0036], Fig. 4. As with *Boelter*'s text-based messages, a person of ordinary skill in the art would have programmed these other messages to be read aloud to the extent possible as *Gruber* suggests. For example, as *Gruber* discloses, even emails "may include content that cannot be readily converted to speech," such as pictures, that "can be identified … but may be omitted from hands-free reading." *Gruber*, ¶[0682]; *see*

*also Gruber*, ¶¶[0013], [0559], [0564], [0598], [0736]. As another example, to announce the first notification from *Boelter* Figure 4 (a missed call), the system would be programmed to say "You have a missed call from Mr. Johnson, at 14:25 today." *See Gruber*, ¶¶[0013], [0559], [0564], [0598], [0736]. Although message content may differ, a person of ordinary skill in the art would have implemented *Gruber*'s reading for all of *Boelter*'s notification and messages.

112. In my opinion, a person of ordinary skill in the art would also have had a reasonable expectation of success in reading aloud *Boelter*'s queue one message after another regardless of the new message's type because *Gruber* suggests reading different types of content as described above. Because *Gruber* teaches reading messages, a person of ordinary skill in the art would have had the skills to program a device to read aloud different types of content. Indeed, such programming was well established and easily implemented. For example, as I discussed in the Technology Overview (Section VI), there were many applications that read aloud different types of messages. *See* EX1009 (Ford SYNC); EX1018 (CrackBerry), 1-7; EX1016 (Nees), 79-80; *Polak*, ¶[0019]; EX1008 (*Polak's Provisional*), ¶[0018]; *Gruber*, ¶¶[0056]-[0057], [0736], [0744]. The Nees paper even notes that those in the art knew how to program text-to-speech in-vehicle

systems as early as 2001. EX1016 (Nees), 79. Additional motivations to combine and reasonable expectations of success appear in Section XI.A.

**5. 1[d]: "informing the user without any input by the user that the received text message, message from the messenger application, or email has been received from a sender by reading aloud at least an identity of the sender;"**

113. In my opinion, *Boelter* and *Gruber* (Ground 1A) or *Boelter*, *Gruber*, and *Polak* (Ground 1B) render obvious 1[d].

114. *Boelter* teaches notifying (i.e., informing) users of messages' arrival without user input. *Boelter*, ¶¶[0010], [0013], [0017], [0025], [0036]. *Boelter*'s Figure 4, reproduced below, illustrates a "summarized notification page" including a queue of missed calls, text messages, and notifications, identified by sender name, message type, and time/date received. *Boelter*, ¶¶[0036], [0013], [0017], Fig. 4.

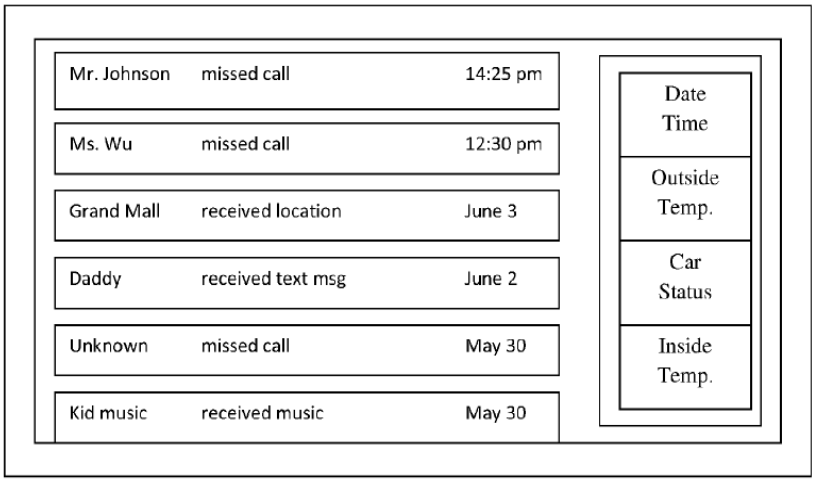



Fig. 4

*Boelter*, Fig. 4. This screen is "used for informing a driver of incoming messages after the critical driving situation has passed." *Boelter*, ¶[0036]. It includes "any missed calls, unread notifications of other types, and messages of other types not previously notified." *Boelter*, ¶[0036], Fig. 4. The items in this queue, including email and text messages, are organized by time of receipt.

115. *Boelter*'s summarized notification page may include emails and text messages. Indeed, *Boelter* discloses an embodiment where email and text messages are queued during critical driving conditions, but "after the critical driving situation end[s], the driver would be notified of all newly arrived emails and text messages" at an appropriate selected time. *See Boelter*, ¶¶[0027], [0029], [0036].

116. Based on these disclosures, I believe that a person of ordinary skill in the art would have understood that driving conditions, not user input, dictate when the user is notified of incoming messages. *Boelter*, ¶[0029].

**a. Ground 1A**

117. *Gruber* would have made it obvious to read at least sender identities aloud to complete *Boelter*'s notification, which occurs without any user input. *Gruber* teaches reading lists of new text messages or emails. *Gruber*, ¶¶[0270] (task flow may include "reading aloud each text message individually, and pausing after each message to allow the user to provide a spoken command"), [0682]-

[0688] (assistant providing paraphrase of each email in a list followed by each message's unbounded content), [0409]-[0419], [0452]-[0458] (SMS use cases). For example, *Gruber*'s assistant 1002 may announce the sender of an email message from the list—"Next message, From Harry Saddler, 30 minutes ago. In reply to a message from you on the subject: no way to shut up TTS." *Gruber*, ¶[0688]. After a pause, it then proceeds to read the message body. *Gruber*, ¶[0688]. Applying a similar approach to *Boelter*'s notifications—identifying sender identity, message type, and time/date; pausing; then reading additional message contents—would have been obvious.

118. A person of ordinary skill in the art would have had motivation to combine *Boelter* and *Gruber*, as well as a reasonable expectation of success for the reasons described above. Section XI.A.

**b. Ground 1B**

119. To the extent there is a question that *Boelter* and *Gruber* render obvious 1[d], *Polak* would have further made it obvious to read at least sender identities aloud without any user input. *Polak* teaches that upon arrival of a message, "the sender details such as, for example, name and/or phone number may be sounded to the user first…." *Polak*, ¶[0033]; EX1008 (*Polak's Provisional*), ¶[0030]. In my opinion, a person of ordinary skill in the art would have understood

this occurs without user input because a user does not need to engage with the application to hear the message notification and sender details.

120. In my opinion, a person of ordinary skill in the art would have been motivated to implement *Polak*'s automatic reading into the *Boelter/Gruber* combination because announcing the arrival of a message (after a critical driving situation has passed) without requiring the user to select the message would remove one decision a user has to make. A person of ordinary skill in the art would also have been motivated to make such a change because *Polak* teaches its process will "enable drivers to drive safely while paying attention to the road, without taking their eyes off the road," and removing a decision a user has to make while driving furthers that aim. *Polak*, ¶[0021]; EX1008 (*Polak's Provisional*), ¶[0019].

121. In my opinion, a person of ordinary skill in the art would have had a reasonable expectation of success in the combination because it would only require simple and routine programming changes. *See* Section XI.A.

**6. 1[e]: "allowing the user time to take an affirmative action to stop reading a body of the received text message, message from the messenger application, or the email aloud to the user, wherein the affirmative action is limited to a gesture performed on the touch screen; and"**

122. In my opinion, *Boelter* and *Gruber* render obvious 1[e].

123. *Boelter* discloses allowing the user time to perform an affirmative action on the touchscreen. *Boelter*'s touchscreen "provides a human machine interaction interface." *Boelter*, ¶[0030]. "[D]efined finger movements" on this touchscreen allow for user-system interaction, including the rejection of incoming messages. *Boelter*, ¶¶[0033]-[0034]. In some embodiments, the user touches a particular portion of *Boelter*'s screen (e.g., a predefined third or quarter of the screen) corresponding to different commands. *Boelter*, ¶¶[0032]-[0033]. For example, touching the top left portion of the screen in *Boelter*'s Figure 3 would reject a call, touching the top right portion would accept the call, and touching the bottom portion would reject the call and send an automatic reply:

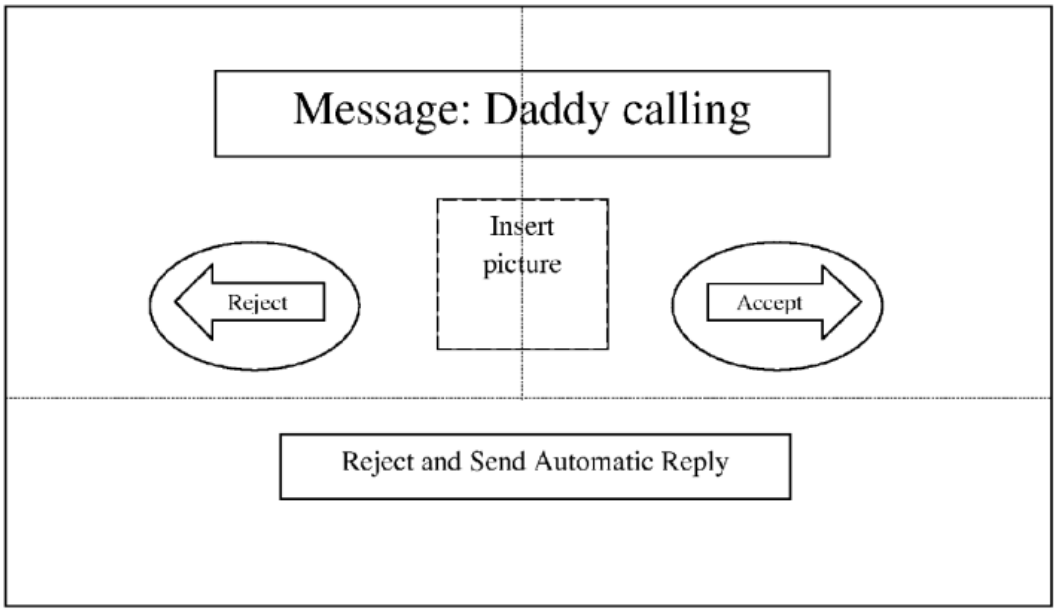



Fig. 3

*Boelter*, ¶¶[0032]-[0033], Fig. 3.

124. *Boelter* also teaches that "defined finger movements, such as right and left sweep, one-finger tap or two-finger tap, anywhere within the screen surface can be associated with certain input control signals." *Boelter*, ¶[0034]. In this way, the system's screen "may be configured such that an intuitive finger gesture allows a driver to interact with the notification unit without the driver having even to look at the screen, and hence without requiring much attention from the driver." *Boelter*, ¶[0034].

125. *Gruber* discloses allowing the user time to take an affirmative action to stop reading the body of the messages. For example, *Gruber* teaches reading an "item-specific paraphrase of the list of emails one by one," briefly pausing, then reading the "unbounded content of the message" (message body). *Gruber*, ¶¶[0683], [0685]-[0686]. *Gruber* explains this pause is "for user interruption," meaning that it allows the user to stop the reading of the message's body. *Gruber*, ¶¶[0684], [0686].

126. In my opinion, a person of ordinary skill in the art would have found it obvious to include *Gruber*'s pause between reading aloud the sender name (identity) and body of the message as part of the implementation of reading aloud *Boelter*'s notifications because doing so would give the user an opportunity to decide whether they wanted to hear the message now or later. In my opinion, a

person of ordinary skill in the art would have been motivated to include such a feature because they would have understood not all messages should be read aloud in every scenario. For example, a user may not wish to have their private messages read aloud if others are in the vehicle with them. In my opinion, a person of ordinary skill in the art would have been motivated with a reasonable expectation of success to include the feature for the same reasons discussed above. *See* Sections XI.A, XI.B.4 (1[c]).

127. In my opinion, a person of ordinary skill in the art would have been motivated to maintain *Boelter*'s predefined tap or swipe as a response feature for interacting with notifications because *Gruber* describes the use of "gestures on a touch-sensitive surface or display" as responsive input to list reading. *Gruber*, ¶[0562]. *Boelter* discloses that this input may be made without the driver even looking at the screen, and with minimal distraction. *Boelter*, ¶[0034]. Following the reading of a message notification with this no-look physical response would provide a way for users to easily work their way through a series of new incoming messages. A person of ordinary skill in the art would have further motivation to maintain this feature because *Gruber* allows a user to respond to its virtual assistant in multiple ways, including natural language commands and gestures on a touchscreen. *See Gruber*, ¶¶[0197], [0562], [0673], [0683], [0693]. In my opinion,

a person of ordinary skill in the art would also have found the gestures to decrease the frustrations with audio input. While speech recognition systems were improving and becoming increasingly more accurate by November 2014, tactile responses were more reliable because there is less variation in them compared to audible input.

128. In my opinion, a person of ordinary skill in the art would have had a reasonable expectation of success in maintaining *Boelter*'s predefined tap or swipe because gesture-based responses were common and routine features of touchscreen devices. Gesture-based responses were compatible with and complementary to read-aloud systems. *See Gruber*, ¶[0562]; *Polak*, ¶[0032]; EX1008 (*Polak's Provisional*), ¶[0029]. Pausing between identifying the sender and reading the body of a message and allowing the user to prevent the message from being presented had been successfully implemented in similar systems. *Polak*, ¶¶[0030] [0032]; EX1008 (*Polak's Provisional*), ¶¶[0027], [0029]. Accordingly, such a combination would have yielded predictable results.

**7. 1[f]: "based on not receiving an input corresponding to the affirmative action from the user, reading aloud the body of the received text message, message from the messenger application, or the email."**

129. In my opinion, *Boelter* and *Gruber* render obvious 1[f].

130. As illustrated in *Boelter*'s Figure 4, *Boelter* teaches notifying users of messages' arrival with a list of messages identified by sender name, message type, and time/date received. *Boelter*, ¶¶[0036], [0013], [0017], Fig. 4. This allows the user to decide whether to "select, view, delete, and/or respond to individual messages." *Boelter*, ¶[0036]; Fig. 4.

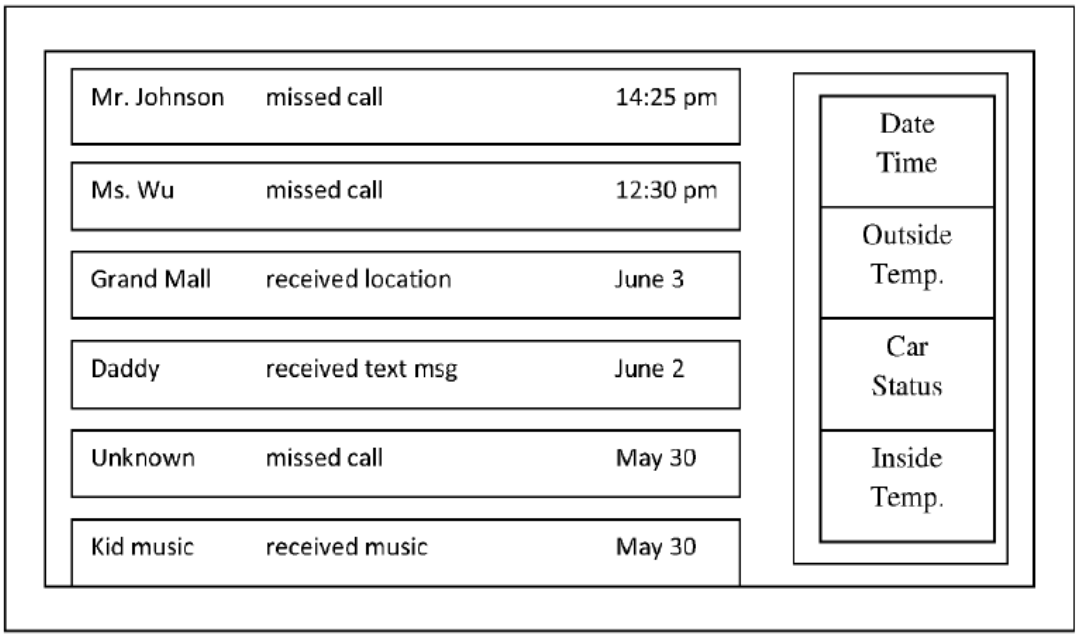



Fig. 4

*Boelter*, Fig. 4.

131. *Gruber* would have made it obvious to read the message body aloud after providing time for user instructions. *Gruber* teaches announcing each email in a list, pausing, then reading the entirety of the message's unbounded content (i.e., the message body). *Gruber*, ¶¶[0683], [0685]-[0686]. For example, *Gruber*'s

assistant 1002 may announce the sender of an email message from the list—"Next message, From Harry Saddler, 30 minutes ago. In reply to a message from you on the subject: no way to shut up TTS." *Gruber*, ¶[0688]. If the user takes no action, *Gruber*'s system proceeds to read the message body—"Harry wrote: How about this simple solution …." *Gruber*, ¶[0688]. I believe that applying a similar approach to *Boelter*'s notifications would notify the user of the message (reading sender's name, message type, and time/date), allow time for a user action (delete, reply, or view/hear the message (*see Boelter*, ¶[0036], Fig. 4)), and then proceed with reading the full message body ("Harry said:….").

132. An ordinary artisan would have been motivated with a reasonable expectation of success to implement *Gruber*'s message reading flow into *Boelter* for the reasons described in Sections XI.A. and XI.B.4-XI.B.6.

133. In my opinion, a person of ordinary skill in the art would also have been motivated to program the system to read *Boelter*'s messages aloud as disclosed by *Gruber* because this audible output would have reduced the user's need to read from the touchscreen. This would further *Boelter*'s goal of providing a "convenient human machine interface which causes minimum distraction to the driver's attention" by limiting the display of distracting text while driving. *Boelter*, ¶¶[0015], [0034]. In my opinion, a person of ordinary skill in the art would have

had a reasonable expectation of success in the combination because read-aloud features were already implemented in safe messaging technology. *See Polak*, ¶[0030]; EX1008 (*Polak's Provisional*), ¶[0027]. Indeed, such a combination would have been no more than a simple application of one known technique—*Gruber*'s audible notifications—to a similar system—*Boelter*'s notification system—to yield predictable results. Additional motivations to combine and reasonable expectations of success appear in Sections XI.A and XI.B.4-XI.B.6.

### C. Dependent Claims

#### 1. Claim 2: "The computer implemented method of claim 1, wherein analyzing the content comprises parsing the email into a subject, the sender, and the body, and parsing the text message or the message from the messenger application into the sender and the body."

134. In my opinion, *Boelter* and *Gruber* or *Boelter*, *Gruber*, and *Polak* render obvious claim 2 for at least the reasons discussed in Section XI.B.3 (1[b]). *Boelter*, ¶¶[0027]-[0029], [0036], [0038], Figs. 2, 4. *Boelter*'s notification unit analyzes incoming messages to determine sender identity, message type, and date/time received, which is displayed on the "summary screen." *Boelter*, ¶¶[0027]-[0029], [0036], [0038], Figs. 2, 4. This information is separated from the message body and made available for the user to view. *Boelter*, ¶[0036].

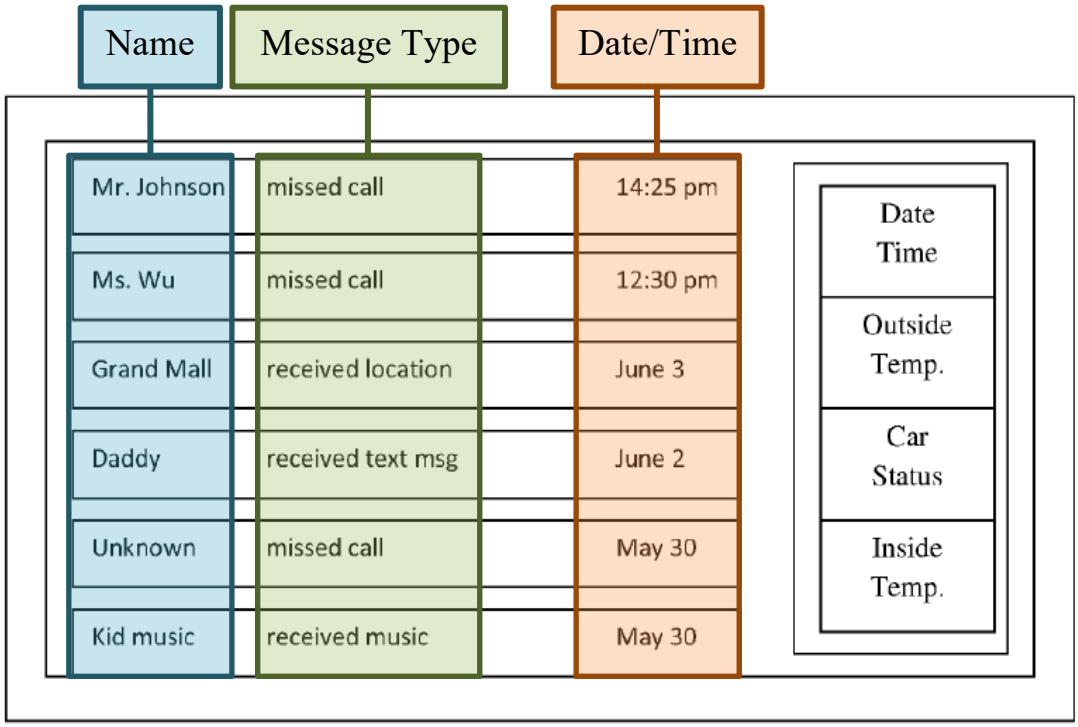



Fig. 4

*Boelter*, Fig. 4 (annotated), ¶[0036]. The division of this information is parsing because it divides the incoming message into separate parts.

135. To the extent there is any question that *Boelter* discloses the additional limitations of claim 2, it is also my opinion that the asserted references render obvious the additional limitations of claim 2. *Gruber* discloses dividing messages into parts for reading to a user. *Gruber*, ¶¶[0680], [0682]. For example, when analyzing text messages, *Gruber* teaches separating the notification into announcing the sender's identity and then reading the body of the message. *Gruber*, ¶¶[0409]-[0416] ("Assistant's 1002 spoken output: 'Message from Mary

Richards ***<change of voice>*** are you free for dinner tonight?'" (emphasis added)). *Gruber* further teaches dividing emails into subparts including at least sender, subject, and body. *Gruber*, ¶¶[0680]-[0682]. Thus, *Gruber* discloses parsing emails into the subject, the sender, and the body, and other messages into the sender and the body.

136. In my opinion, a person of ordinary skill in the art would have found it obvious to implement *Gruber*'s parsing into *Boelter*'s notification method. *Gruber* demonstrates efficiency benefits of separating the sender and subject from the body, such as allowing the user to search or skip messages based on these attributes. *Gruber*, ¶¶[0682]-[0683]. I believe that a person of ordinary skill in the art would have been motivated to conserve time and resources by providing the user with pieces of information, making it easier for the user to hear and understand the message. A person of ordinary skill in the art would also have found parsing incoming messages into subparts obvious because it was one of a few known, predictable options for improving efficiency—messages were already coded with subpart information, others used the approach, and implementing the approach would not require new technology. In my opinion, a person of ordinary skill in the art would have had a reasonable expectation of success implementing this approach because *Boelter* already suggests its system is configured to separate

messages into parts. And I discussed additional motivations to combine and reasonable expectations of success above in Section XI.A.

**2. Claim 3: "The computer implemented method of claim 1, wherein the computer implemented method is carried out with an application that is configured to run in a foreground or in a background, and is further configured to switch back and forth between the foreground and the background, and is further configured to read aloud the identity of the sender, and the body of the received email, text message, or message from the messenger application while the application is in the background."**

137. In my opinion, *Boelter* and *Gruber* or *Boelter*, *Gruber*, and *Polak* render obvious claim 3.

138. *Boelter*'s method is carried out on an application because it is "implemented in software or firmware" and has the specific purpose of "managing incoming messages." *Boelter*, ¶[0018]. As discussed above, this application collects incoming messages and notifications while a user is in a critical driving situation and then switches screens to deliver these messages to the user at an appropriate time. *Boelter*, ¶¶[0012], [0015], [0027]-[0031], [0036], [0038].

139. *Gruber* discloses its virtual assistant application switches between the foreground and background of the device it is on. *Gruber*, ¶¶[0104], [0154], [0182]. This system may detect a hands-free context "while a digital assistant application is not being executed in the foreground of an operating system, or is

not displaying a graphical user interface on the device." *Gruber*, ¶[0182]. *Gruber* further teaches reading messages aloud when virtual assistant 1002 is not in the foreground. For example, while virtual assistant 1002 may cause a display screen to show the words read to/spoken by the user, "such visual echoing is optional, and the present invention can be implemented without any visual display on the screen of device 60 or elsewhere." *Gruber*, ¶¶[0189], [0191]. *Gruber* suggests limiting the display of visual outputs when the electronic device is in a vehicle while still allowing the user to respond with touch input. *Gruber*, ¶¶[0203], [0219]-[0220], [0282], [0562]. Based on these disclosures, a person of ordinary skill in the art would have understood that *Gruber* discloses that its application is configured to run in the foreground or background of a device, and switch between the two states, because it reads messages even without displaying them on a screen.

140. *Boelter* calls for a "convenient human machine interface which … may use a touch screen which provides different formats for notifying a driver." *Boelter*, ¶[0015]. For example, different screens include "a message accept/reject screen, a message blocked screen, and a message summary screen." *Boelter*, ¶[0015]. *Boelter* also suggests formats where "substantially the whole screen can be used for a swiping/touching action so that a driver does not need to locate individual touch-screen buttons." *Boelter*, ¶¶[0015], [0016], [0036]. *Boelter*

determines which screen to display to the user based on sensor data deduced from different situations (e.g., driving or in a parked car). *Boelter*, ¶¶[0027]-[0028]. *Gruber* teaches that "when a hands-free context is determined (e.g.[,] driving a vehicle), device 60 limits the ability to view visual output presented by the electronic device." *Gruber*, ¶[0272]. This may include "limiting the ability to view visual output presented by the electronic device (for example, deactivating a screen/visual output mode …)." *Gruber*, ¶[0273]; *see also Gruber*, ¶¶[0210], [0219]-[0220] ("preventing [] the display of a subset of visual outputs"), [0562] ("fully responsive to user input from multiple input channels…"). Consistent with these disclosures, a person of ordinary skill in the art would have been motivated to include *Gruber*'s foreground/background switching and background message reading in the asserted combinations' systems because it would have reduced distractions. *Boelter*, ¶¶[0015]-[0016], [0027]-[0028], [0036]. In my opinion, an ordinary artisan would have implemented this combination by programming the system to read the messages in the background followed by a display that allows the user to input gestures in the foreground. Such programming would have been similar to how *Boelter* switches between displays depending on the driving situation because it essentially involves different displays. *Boelter*, ¶¶[0012], [0015], [0027]-[0031], [0036], [0038].

141. A person of ordinary skill in the art would have been motivated to implement *Gruber*'s reading-aloud steps in *Boelter* with a reasonable expectation of success for the reasons discussed above with respect to 1[d]-1[f]. *See* Sections XI.A, XI.B.5-VI.B.7. A person of ordinary skill in the art would also have been motivated to configure *Boelter*'s system to read messages aloud while the application is in the background because *Boelter* suggests notifications "that require[] minimal attention from the driver" are safer and less distracting than other notifications. *Boelter*, ¶¶[0015], [0035]. And a person of ordinary skill in the art would have understood providing notifications while an application is in the background would display less text on the screen, providing fewer distractions. *Boelter*, ¶¶[0035], [0038]. A user would have further been motivated to implement reading aloud messages while the application is in the background because it would allow users to hear messages while another application, such as a navigation screen, is being displayed.

142. A person of ordinary skill in the art would have had a reasonable expectation of success in such a combination because applications that read messages aloud while in the background were common and routine. For example, Sonalight Text was a message reading application that was configured to read messages aloud while the application was running in the background. EX1019

(Chansanchai), 2-3. Moreover, a person of ordinary skill in the art would have expected the combination to be reasonably successful because it would not have required physical changes to *Boelter*'s system, but merely minor tweaks to the programming within an ordinary artisan's skill. *See* Section XI.A.

**3. Claim 4: "The computer implemented method of claim 1, further comprising prompting the user to call the sender without any input from the user."**

143. In my opinion, *Boelter* and *Gruber* or *Boelter*, *Gruber*, and *Polak* render obvious claim 4.

144. *Boelter* discloses that its system is configured to receive, send, and respond to various types of messages, including phone calls, text messages, and emails. *Boelter*, ¶¶[0025], [0028]. *Boelter*'s Figure 3 discloses that drivers may be automatically presented with buttons, allowing the user to accept an incoming call, reject it, or send a responsive message. *Boelter*, ¶[0032], Fig. 3. In my opinion, these disclosures suggest placing text-based messages and calls in the same notification queue and automatically prompting users to respond to incoming messages from this queue without user input. *Boelter*, ¶¶[0032], [0036], Figs. 3-4.

145. *Gruber* similarly discloses providing a user with various action options after a message or list is read. *Gruber*, ¶¶[0686] ("a brief pause is provided, so that the user can enter a command for an action (e.g., reply, delete, repeat, etc.)

…."), [0597] (prompting the user "would you like to call or get directions?"). It also discloses one-button calling. For example, *Gruber*'s system may prompt the user to make a call when the system senses the user is driving and reminding the user to call someone. *Gruber*, ¶¶[0395]-[0405], [0497]-[0506]. The system may also be configured to allow users the option of calling by contact name or phone number at any time. *Gruber*, ¶[0311]. These disclosures suggest prompting telephone calls as an option for responding to a variety of messages. *Gruber*, ¶¶[0311], [0339]-[0373], [0395]-[0405], [0686], [0597].

146. In my opinion, a person of ordinary skill in the art would have found it obvious to modify *Boelter*'s notification method to prompt a user to call the sender without any input from the user based on *Gruber*'s message reply and calling options. A person of ordinary skill in the art would have been motivated to implement such a feature into *Boelter*'s notification method because *Boelter* already contemplates using its system for calls in addition to messages. A person of ordinary skill in the art would have been motivated to implement such a feature into *Boelter*'s notification method because providing an option to call back a sender would have reduced the user's interaction with a screen or the need to draft a reply message, which would have supported *Boelter*'s goals of creating a safer messaging system. Adding a prompt to call the sender would not have required

new technology because such a prompt already existed in the art. *See* Section XI.A.

147. A person of ordinary skill in the art would have also known there are limited next steps to consider after a message is read aloud, including prompting the user to take an action, waiting for the user to input a command, or ending the interaction with this message. *See Polak*, ¶¶[0033]-[0036]; EX1008 (*Polak's Provisional*), ¶¶[0030]-[0033]. There are also limited ways for the user to interact with each message, including responding with another message, responding with a call, repeating the message, or taking no further action (including deleting/dismissing the message). *See Polak*, ¶¶[0033]-[0036]; EX1008 (*Polak's Provisional*), ¶¶[0030]-[0033]; EX1015 (*Barat*), ¶¶[0024]-[0027], [0040], [0054]-[0058], [0070], [0072]. In my opinion, it would have made sense to prompt the user to select one or more of these options because providing the user with limited options reduces the user's cognitive load while engaged in a distracting activity. *Gruber*, ¶¶[0554], [0561], [0567], [0710]. In other words, prompting the user to call the sender without input would have been an obvious design choice.

148. A person of ordinary skill in the art would have had a reasonable expectation of success in such a combination because prompting users with response options was routine and well known. In fact, just as *Boelter* prompts users

to respond to a call with a text message, it would have been just as simple to prompt a phone call in response to an incoming text message or email because the programming would be similar and not new.

#### 4. Claim 5: "The computer implemented method of claim 1, wherein a different interface is presented on the touch screen depending on an activity of the user."

149. In my opinion, *Boelter* and *Gruber* or *Boelter*, *Gruber*, and *Polak* render obvious claim 5. *Boelter* teaches varying screen configurations for different activities—it provides different interfaces for normal driving conditions and for critical driving conditions. *Boelter*, ¶¶[0013], [0030]-[0035].

150. In my opinion, a person of ordinary skill in the art would have thus understood *Boelter* discloses different driving conditions are different activities, requiring different levels of user attention. *Boelter*, ¶[0029] (limiting certain notifications until "[a]fter a critical [driving] situation has passed"). *Boelter's* detection unit differentiates between driving situations using vehicle speed and acceleration, traffic conditions, driver fatigue, and other factors. *Boelter*, ¶¶[0011], [0012], [0026]. This accords with the '725 patent, which does not restrict the definition of an "activity." It merely provides examples, such as driving "a vehicle," "working with a desktop … computer," and "exercise." EX1001, 5:4-14.

151. *Boelter*'s various interfaces are "different interfaces" as claimed because *Boelter*'s screen changes based on the type of driving the user is engaged in. Driving in a normal driving situation is a different activity than driving in a critical situation (e.g., poor road conditions, high traffic volume, frequent lane changes, or elevated speeds), which requires heightened attention and care. *Boelter*, ¶[0026]

152. To the extent there is any question that *Boelter* discloses the additional limitations of claim 5, the asserted combinations render them obvious. *Gruber* discloses a virtual assistant that provides "hands-free" operation when users are engaged in activities, like driving or walking, that limit their ability to interact with a device. *Gruber*, ¶¶[0007]-[0009], [0168]. The system "adapts various stages of a complex interactive system to modify the user experience to reflect the particular limitations of such a [hands-free] context." *Gruber*, ¶[0009]. *Gruber* suggests mechanisms for accepting and processing speech input that may reduce the need for the user to interact with a display screen and/or to use a touch interface. *Gruber*, ¶[0166]. In some situations, the system may be implemented without displaying on the device's screen. *Gruber*, ¶¶[0189], [0680], [0682] (preventing display of email objects and attachments in eyes-free mode).

153. *Gruber* discloses adjusting the user interface limits distraction, while allowing user access to messages and alerts when the user is driving or engaged in other activities. *Gruber*, ¶¶[0008]-[0009]. In my opinion, these disclosures would have motivated a person of ordinary skill in the art to present different interfaces during select activities "to simplify the user experience, limit distractions, and improve safety" during activities (like *Boelter*'s critical driving situations) requiring more user attention than other activities (like sitting in a parked car).

154. By the November 14, 2014, the priority date claimed by the '725 patent, persons of ordinary skill in the art would have been familiar with application design and graphical user interfaces for use in vehicles, mobile phones, and a variety of consumer electronic devices. They would understand methods for using device sensors to determine user activity, as described in *Boelter*, ¶¶[0026]-[0027], and *Gruber*, ¶¶[0169]-[0183]. As I described in the Technology Overview (Section VI), persons of ordinary skill in the art would also be familiar with the creation of graphical user interfaces for display on devices, allowing them to configure an application to display less information based on user activity. *See also Boelter*, ¶[0028] (suggesting look-up table for modifying display contents).

155. An ordinary skill artisan thus would have had motivation to combine the asserted references, as well as a reasonable expectation of success. *See also* Section XI.A.

**5. Claim 6: "The computer implemented method of claim 5, wherein the activity is driving a vehicle."**

156. In my opinion, *Boelter* and *Gruber* or *Boelter*, *Gruber*, and *Polak* render obvious claim 6. *Boelter* discloses that its notification method may be "installed [i.e., carried out] in a vehicle" and utilized during driving. *Boelter*, ¶[0024]; *see* Sections XI.B, XI.C.4 (claims 1, 5); *see also Boelter*, ¶¶[0009]-[0010], [0018]. As discussed in claim 5, *Boelter* discloses or the asserted combinations render obvious displaying a different interface when the user is engaged in different driving situations. *See* Section XI.C.4 (claim 5). Indeed, as I described in the Technology Overview above, the use of message reading applications while driving was already well established in the art. The ordinary artisan would have had motivation to combine the asserted references, as well as a reasonable expectation of success. *See* Section XI.A.

**6. Claim 7: "The computer implemented method of claim 5, wherein the activity is working with a desktop, a laptop, or a tablet computer."**

157. In my opinion, *Boelter* and *Gruber* or *Boelter*, *Gruber*, and *Polak* render obvious claim 7. *See* Section VI.C.4. *Boelter* discloses its notification

method may be "installed [i.e., carried out] in a vehicle" or integrated "in a mobile communication device such as a smartphone." *Boelter*, ¶[0024]. *Gruber* similarly discloses its assistant may be installed on devices other than a phone or vehicle. *Gruber*, ¶[0245]. For example, "assistant 1002 is installed on device 60 such as a mobile computing device, … , laptop, tablet computer, consumer electronic device, music player, or the like." *Gruber*, ¶[0245].

158. In my opinion, a person of ordinary skill in the art would have found it obvious to implement *Boelter*'s notification system and method as modified by *Gruber* for other activities, such as working on a laptop. *Gruber*, ¶¶[0011], [0057]. A person of ordinary skill in the art would have been motivated to apply these combined teachings to other activities outside of driving because reducing distractions would have been beneficial while working on other devices. For example, the art had recognized that message reading applications "come in handy even when you're not behind the wheel." EX1018 (CrackBerry), 7. The art found it beneficial that "[i]f you can walk and chew gum, you surely can dictate an email to your BlackBerry while working on a project from your computer, preparing a meal or even massaging your loved ones feet." EX1018 (CrackBerry), 7. Indeed, collecting notifications in a queue and having them read aloud while working on a laptop would have reduced the amount of effort a user would have needed to exert

to manage multiple devices or messaging applications. And *Boelter* already contemplates the use of its system on a mobile device, which would have, in my opinion, motivated its use beyond driving because users rely on mobile devices outside of driving. *Boelter*, ¶[0024]. A person of ordinary skill in the art would have had a reasonable expectation of success in such an application because *Gruber* suggests that virtual assistants could be used in various devices and is agnostic as to the activity. *See* Section XI.A.

159. A person of ordinary skill in the art would have found it obvious to display a different interface on the device when the user is working with a desktop, a laptop, or a tablet computer. *Gruber*, ¶[0011]. A person of ordinary skill in the art would have been motivated to create a different interface for when the user is working with a computer because the activity presents fewer safety concerns. As such, a person of ordinary skill in the art would have implemented an interface that is less restricted compared to when the user is driving. *Gruber*, ¶[0011] ("the same interface can be made adaptable to both an office environment and a moving vehicle, *with the system dynamically making the necessary changes to user interface behavior as the environment changes*." (emphasis added)); *see also Gruber*, ¶¶[0013]-[0015], [0166]. A person of ordinary skill in the art would have

had a reasonable expectation of success as described in claim 5. *See* Section XI.C.4.

### 7. Claim 8: "The computer implemented method of claim 5, wherein the activity is exercise (Active Mode)."

160. In my opinion, *Boelter* and *Gruber* or *Boelter*, *Gruber*, and *Polak* render obvious claim 8. *See* Section VI.C.4.

161. A person of ordinary skill in the art would have found it obvious to use asserted combinations' notification system and method while a user is exercising. For example, *Gruber* describes its hands-free assistant may be triggered "when the assistant detects that the user is performing an action (e.g., driving, or walking)." *Gruber*, ¶¶[0662], [0725]. *Gruber* further describes that this determination can be made based on how fast a user is moving. *Gruber*, ¶[0183]. Based on these disclosures, a person of ordinary skill in the art would have understood that *Gruber* suggests reading notifications and messages aloud during other types of activities, such as exercise like walking. *Gruber*, ¶¶[0116], [0170]-[0181], [0662], [0725].

162. In my opinion, a person of ordinary skill in the art would have been motivated to use the asserted combinations' combined notification systems and methods during exercise like walking, running, or cycling because the user would benefit from reduced distractions while performing the activity. *Gruber*, ¶[0013]

(detecting hands-free context and adjusting operation when receiving input and providing output). Looking at a screen is not conducive to these activities, where the user is moving (e.g., walking outside). *Gruber*, ¶¶[0662], [0725]. In my opinion, a person of ordinary skill in the art would have known that exercise requires heightened attention because users may be on exercise equipment (e.g., a treadmill) or navigating through streets and trails. A person of ordinary skill in the art would have had a reasonable expectation of success in implementing the asserted combinations during exercise because doing so would have been no more than implementing *Boelter*'s assessment of speed to determine a driving condition as an assessment of speed related to exercise. Moreover, a person of ordinary skill in the art would have understood that this combination would not have required substantial system changes to implement it outside of a vehicle, as *Boelter* discloses it can be implemented on a phone. *Boelter*, ¶[0024]

163. A person of ordinary skill in the art would have found it obvious to display a different interface on the device when a user is exercising. A person of ordinary skill in the art would have been motivated to create a different interface for when a user is exercising because the user likely has limited access to their device. As such, a person of ordinary skill in the art would have implemented an interface that 1) requires simple input to prevent the user from having to stop

exercise to interact with their device and 2) allows the device to distinguish between intentional input and unintentional input (e.g., a pocket dial). *Gruber*, ¶¶[0013] (virtual assistant can "adjust its operation accordingly when receiving input, providing output, engaging in dialog with the user, and/or performing (or initiating) actions."), [0166]. A person of ordinary skill in the art would have had a reasonable expectation of success as described in claim 5. *See* Section XI.C.4.

**8. Claim 9: "The computer implemented method of claim 1, wherein informing the user comprises reading aloud a name of the sender."**

164. In my opinion, *Boelter* and *Gruber* or *Boelter*, *Gruber*, and *Polak* render obvious claim 9 for at least the reasons described in Section XI.B.5 (1[d]). It is my opinion that this is the case because the language of claim 6 is very similar to the language of in the informing step of claim 1 (i.e., 1[d]).

**9. Claim 10: "The computer implemented method of claim 1, the method further comprising based on receiving the input corresponding to the affirmative action from the user, not reading aloud the body of the received text message, message from the messenger application, or email to the user."**

165. In my opinion, *Boelter* and *Gruber* or *Boelter*, *Gruber*, and *Polak* render obvious claim 10 for at least the reasons described in Sections XI.B.6-XI.B.7 (1[e]-1[f]). As discussed above, claim limitations 1[e]-1[f] describe providing the user time to stop the reading of the body of a message. A person of

ordinary skill in the art would have understood that claim 10 merely clarifies that the input of the affirmative action causes the message to not be read aloud. *Gruber* discloses allowing the user time to take an affirmative action to stop reading the body of the messages. *Gruber*, ¶¶[0683]-[0686]; Sections XI.B.6-XI.B.7. A person of ordinary skill in the art would have been motivated with a reasonable expectation of success to include *Gruber*'s message flow, which includes the ability to stop or prevent the reading of messages, into *Boelter* for the same reasons described in Sections XI.B.6-XI.B.7 (1[e]-1[f]), XI.A.

### 10. Claim 11: "The computer implemented method of claim 1. further comprising receiving the input from the user without the user looking at the touch screen."

166. In my opinion, *Boelter* and *Gruber* or *Boelter*, *Gruber*, and *Polak* render obvious claim 11. As discussed in 1[e] above, *Boelter* discloses an "intuitive finger gesture [that] allows a driver to interact with the notification unit without the driver having even to look at the screen, and hence without requiring much attention from the driver." *Boelter*, ¶[0034]; *see also Boelter*, ¶¶[0031]-[0033], [0038]; Section XI.B.6 (1[e]). In my opinion, a person of ordinary skill in the art would have found claim understood *Boelter*'s gestures were to interact with messages by deleting or responding to them. *Boelter*, ¶¶[0033], [0036]; Section XI.B.6 (1[e]).

### 11. Claim 12: "The computer implemented method of claim 1, further comprising displaying an interface on the touch screen with no prompts for the user to touch."

167. In my opinion, *Boelter* and *Gruber* or *Boelter*, *Gruber*, and *Polak* render obvious claim 12.

168. As discussed in 1[e] above, *Boelter* discloses an "intuitive finger gesture [that] allows a driver to interact with the notification unit …." *Boelter*, ¶[0034]; *see also Boelter*, ¶¶[0031]-[0033], [0038]; Section XI.B.6 (1[e]). In some embodiments, the system will understand predetermined gestures made ***anywhere*** on *Boelter*'s touchscreen—the driver may "interact with the notification unit without the driver having even to look at the screen." *Boelter*, ¶[0034]. In my opinion, this would have suggested providing a display interface without buttons or other prompts for the user to touch because a person of ordinary skill in the art would have preferred to provide displays that decreased driver distraction.

169. *Gruber* teaches a "hands-free context" that can "limit the tasks or functionalities that are allowed at a given time." *Gruber*, ¶[0272]. "In some embodiments, when a hands-free context is determined (e.g.[,] driving a vehicle), device 60 limits the ability to view visual output presented by the electronic device." *Gruber*, ¶[0272]. This feature may include "limiting the ability to interact with a graphical user interface presented by the electronic device (for example,

limiting a device so as to not request touch input from the user …).” *Gruber*, ¶[0274].

170. It is my opinion that these teachings would have motivated a person of ordinary skill in the art to limit display of requests for touch input in *Boelter*’s notification system because doing so would have decreased distractions. *Boelter*, ¶¶[0008]-[0010], [0015], [0034], [0036]. This aligns with *Boelter*’s goals. A person of ordinary skill in the art would have had motivation to combine the asserted references, as well as a reasonable expectation of success. *See* Section XI.A.

#### 12. Claim 13: “The computer implemented method of claim 1, further comprising receiving the input from the user based on gestures by the user.”

171. In my opinion, *Boelter* and *Gruber* or *Boelter*, *Gruber*, and *Polak* render obvious claim 13 for the same reasons as discussed in 1[e] and claims 11 and 12. Sections XI.B.6, XI.C.10, XI.C.11 (1[e], claims 11, 12).

172. As discussed in 1[e] above, *Boelter* discloses an “intuitive finger gesture [that] allows a driver to interact with the notification unit without the driver having even to look at the screen.” *Boelter*, ¶[0034]; *see also Boelter*, ¶¶[0031]-[0033], [0038]; Section VI.C.6 (1[e]). These gestures include “defined finger movements, such as right and left sweep, one-finger tap or two-finger tap, anywhere within the screen ….” *Boelter*, ¶[0034]. An ordinary artisan would have

understood *Boelter*'s gestures were user input, used to interact with the system by deleting or responding to messages. *Boelter*, ¶¶[0033], [0036]; *see also* Sections XI.A, XI.B.6 (1[e]).

**13. Claim 14: "The computer implemented method of claim 13, wherein the input from the user is limited to tapping or swiping the touch screen without a need to look at the touch screen."**

173. In my opinion, *Boelter* and *Gruber* or *Boelter*, *Gruber*, and *Polak* render obvious claim 14 for the same reasons described in Sections XI.B.6, XI.C.9, and XI.C.10 (1[e], claims 10, 11), as *Boelter* describes "swiping or tapping" controls. *Boelter*, claim 18, ¶¶[0033]-[0034]. A person of ordinary skill in the art would have been motivated to limit *Boelter*'s gestures to tapping or swiping the touch screen because such gestures are expressly described in *Boelter* and less distracting than typing on a screen, for example. A person of ordinary skill in the art would have had motivation to combine the asserted references, as well as a reasonable expectation of success. *See* Section XI.A.

**14. Claim 15: "The computer implemented method of claim 1, further comprising informing the user by voice of an option to call the sender."**

174. In my opinion, *Boelter* and *Gruber* or *Boelter*, *Gruber*, and *Polak* render obvious claim 15 for the reasons discussed in claim 4. *See* Section XI.C.3 (claim 4).

175. *Gruber*'s virtual assistant provides a "speech-based prompt" with a question such as "would you like to call or get directions?" which audibly informs the user of an option to call a number corresponding to a data item. *Gruber*, ¶[0704] As discussed above in claim 4, a person of ordinary skill in the art would have found it obvious to modify *Boelter*'s notification method to include a prompt to call the sender without any input from the user based on *Gruber*'s message reply and calling options. *See* Section XI.C.3 (claim 4). Based on *Gruber*'s disclosures, a person of ordinary skill in the art would have further found this option is informed by voice. *See* Section XI.A.

**15. Claim 16: "The computer implemented method of claim 15, further comprising, based on receiving an input from the user to call the sender, calling the sender."**

176. In my opinion, *Boelter* and *Gruber* or *Boelter*, *Gruber*, and *Polak* render obvious claim 16 for the reasons discussed above in claims 4 and 15. *See* Sections XI.C.3, XI.C.14 (claims 4, 15). In my opinion, a person of ordinary skill in the art would have further found it obvious that, upon being prompted, a user would respond to the prompt, and the system would call the sender when the user responds affirmatively to the prompt because this is the natural flow of a speech-based prompt and was known in the art.

177. In addition, *Gruber* suggests a responsive system configured to prompt an action, receive a user's input, and then execute the action. For example, *Gruber*'s system is configured to prompt the user with an option to take an action (e.g., "Shall I send [your text]?"), receive a user's affirmative command for the system to complete the action (e.g., "yes"), and then complete the action (e.g., send the message). *Gruber*, ¶¶[0473]-[0482], [0685]-[0687]; *see also Gruber*, ¶¶[0311], [0339]-[0373], [0395]-[0405], [0597].

178. In my opinion, a person of ordinary skill in the art would have had motivation to combine the asserted references, as well as a reasonable expectation of success. *See* Section XI.A. A person of ordinary skill in the art would also have been motivated to implement *Gruber*'s responsive system configuration into *Boelter*'s notification method because doing so would have enabled a hands-free way to respond to messages with phone calls. Indeed, doing so would have further improved *Boelter*'s objective of decreasing distractions while driving because it would have reduced a user's need to engage with a screen. A person of ordinary skill in the art would have had a reasonable expectation of success in such a combination because *Gruber*'s responsive system configuration was a well-known and routine set of steps for virtual assistants.

**16. Claim 17: "The computer implemented method of claim 1, wherein informing the user comprises informing the user of the identity of the sender and the subject of the received email, or the identity of the sender of the received text message or the message from the messenger application."**

179. In my opinion, *Boelter* and *Gruber* or *Boelter*, *Gruber*, and *Polak* render obvious claim 17 for the reasons discussed above in 1[d] and claim 2. *See* Sections XI.B.5, XI.C.1 (1[d], claim 2)

180. As discussed above with respect to 1[d], *Gruber* discloses reading sender names aloud when announcing messages. *See* Section XI.B.5. In my opinion, and for emails specifically, a person of ordinary skill in the art would have found it obvious to inform the user of sender identity and email subject because *Gruber* discloses announcing both the sender name and subject. *Gruber*, ¶[0686] ("The assistant provides a speech output saying 'Next message, From Harry Saddler, today at 8:23 am, with the subject: List reading use cases.'"); *see also Gruber*, ¶¶[0682]-[0688]; *see* Section XI.B.5. A person of ordinary skill in the art would have had motivation to combine the asserted references, as well as a reasonable expectation of success. *See* Section XI.A.

**17. Claim 18: "The computer implemented method of claim 1, wherein after reading aloud the received email, text message or message from the messenger application, the received email, text message or message from the messenger application is automatically dismissed and a status of the received email, text message or message from the messenger application is changed to read."**

181. In my opinion, *Boelter* and *Gruber* or *Boelter*, *Gruber*, and *Polak* render obvious claim 18.

182. *Boelter* and *Gruber* describe messages as having read and unread states. *Boelter*, ¶[0036] ("[T]he summarized notification page may include any missed calls[ and] unread notifications of other types …."); *Gruber*, ¶¶[0467]-[0472], [0682], [0685], [0734]. *Boelter* notifies users of incoming messages—missed calls, unread notifications, and "messages of other types not previously notified." *Boelter*, ¶[0036]. These newly received, previously unread messages and notifications appear, for example, in *Boelter*'s Figure 4:

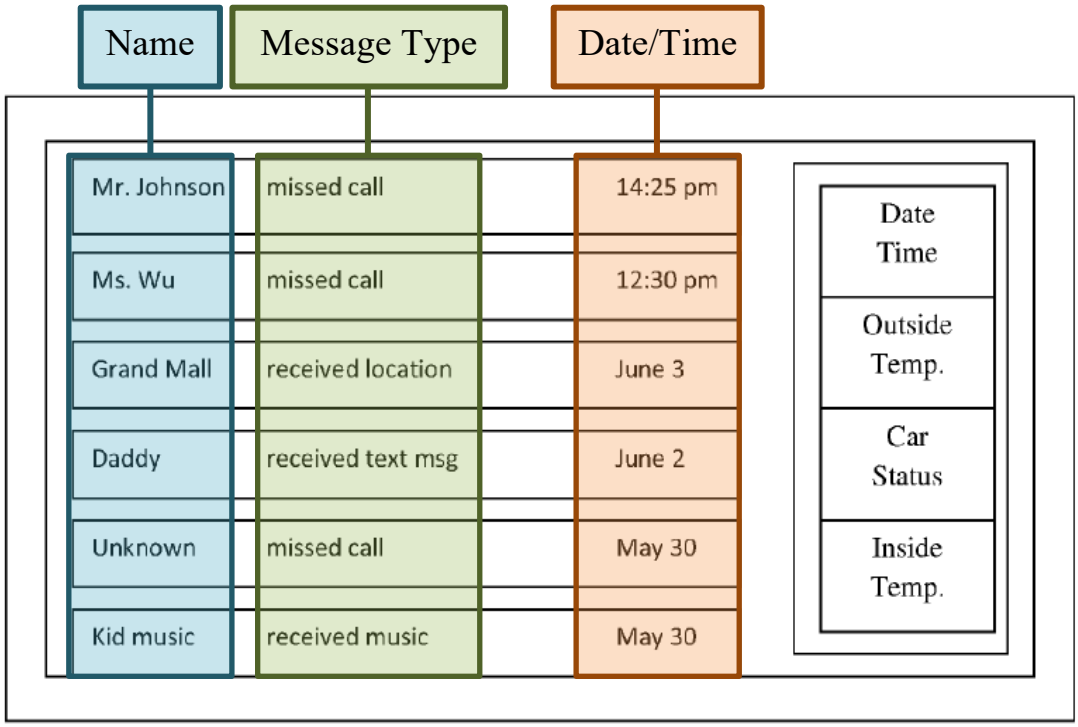



Fig. 4

*Boelter*, Fig. 4 (annotated), ¶[0036]. *Gruber* similarly discloses presenting "NEW" or "unread" messages to the user. *Gruber*, ¶¶[0467]-[0472], [0682]-[0683], [0685]. *Gruber*'s system tracks a "read/unread status" that indicates "NEW" messages, allowing it to present previously unseen messages to the user. *Gruber*, ¶¶[0682], [0685].

183. In my opinion, a person of ordinary skill in the art would have found it obvious to automatically dismiss the notification associated with a message as part of *Boelter*'s status change. This would have prevented the user from being notified of the same message or reviewing the same multiple times. In addition, a

person of ordinary skill in the art would have found dismissing the notification would have furthered *Boelter*'s goal of providing a system with fewer distractions—removing a notification from the queue would decrease the amount of information within the user's view. A person of ordinary skill in the art would have been motivated to implement an automatic dismissal because adding the dismissal feature to the asserted combinations' combined methods would have been one of a few limited options for addressing messages after they are read. These options would have included dismiss or do not dismiss, dismiss automatically or dismiss manually, or keep as "new." Indeed, these options were well known in the art. *See* EX1015 (*Barat*), ¶¶[0024]-[0027], [0040], [0054]-[0058], [0070], [0072]. Implementing such a feature would not have required new technology or any significant changes to the asserted combinations' programming because *Boelter* already contemplates new and old messages. *See* EX1015 (*Barat*), ¶¶[0024]-[0027], [0040], [0054]-[0058], [0070], [0072]. Indeed, a person of ordinary skill in the art would have found incorporating an automatic dismissal alongside a status change was common sense because it would avoid repeating notifications that have already been reviewed while limiting the need for user input.

184. A person of ordinary skill in the art would have had a reasonable expectation of success in such a combination. *See* Section XI.A. For example, automatic dismissal of messages/notifications was well known and commonplace. A person of ordinary skill in the art would further have reasonably expected a successful combination because adding the dismissal feature to the combination would not have required any significant changes to the system. Indeed, a person of ordinary skill in the art would have known or found it routine to include a dismissal step in a notification method because maintaining (or displaying) every notification in a queue indefinitely would have been unnecessary. *See* Section XI.A.

**18. Claim 19: "The computer implemented method of claim 18, wherein after the received email, text message or message from the messenger application is read aloud and the status changed to read, the user is notified that a new email, text message, or message from the messenger application has been received."**

185. In my opinion, *Boelter* and *Gruber* or *Boelter*, *Gruber*, and *Polak* render obvious claim 19 at least for the reasons discussed above in claim 18. *See* Section XI.C.17 (claim 18).

186. After the status change discussed in claim 18, an ordinary artisan would have found it obvious to notify the user that a new message has been received because *Gruber* discloses a notification before announcing the name of

the sender. *See Gruber*, ¶¶[0185], [0409]-[0416]. For example, *Gruber* describes that "upon receiving text message … virtual assistant 1002 causes device 60 to output an audio indication, such as a beep or tone, indicating receipt of a text message." *Gruber*, ¶[0185]. In my opinion, a person of ordinary skill in the art would have found this notification consistent with a cellphone's default notification as the use of sounds to announce incoming messages was common for all types of messages (unless the phone is silenced).

187. A person of ordinary skill in the art would have been motivated to combine the asserted references with a reasonable expectation of success. *See* Section XI.A. For example, in my opinion, a person of ordinary skill in the art would have been motivated to include *Gruber*'s beep upon receipt of a new message because this would align with standard notification methods. It would have been obvious to delay this beep until the system finished reading the current message because doing so would avoid interrupting the message reading and distracting the user. A person of ordinary skill would also, in my opinion, have had a reasonable expectation of success in including *Gruber*'s beep after a message was read because it merely requires completing one action before doing the next. Adding the beep would not require any changes that were not already known or within an ordinary artisan's skill set.

**19. Claim 20: "The computer implemented method of claim 1, wherein the reading aloud is carried out by an audio system in a vehicle."**

188. In my opinion, *Boelter* and *Gruber* or *Boelter*, *Gruber*, and *Polak* render obvious claim 20.

189. As discussed above, *Boelter* discloses its notification method may be "installed [i.e., carried out] in a vehicle." *Boelter*, ¶[0024]; *see* Section XI.B (claim 1); *see also Boelter*, ¶¶[0009]-[0010], [0018]. A person of ordinary skill in the art would have understood that vehicles included sound systems. Indeed, when *Gruber*'s virtual assistant is used within a vehicle, the "assistant 1002 provides spoken output, which may be output via speakers (in device 60 or installed in the vehicle) …." *Gruber*, ¶[0187]. In my opinion, a person of ordinary skill in the art would have been motivated to read aloud *Boelter*'s notification queue/messages on a vehicle's audio system because *Gruber* suggests using a vehicle's audio for playback. A person of ordinary skill in the art would have had a reasonable expectation of success in such a combination because it would not require any changes to a vehicle's system and had already been implemented in cars. *See* Section XI.A. Reading messages using a vehicle's audio system would be no different than sending music or a call to the system because it is just the playback of sound. *See also* Section XI.A.

**20. Claim 21: "The computer implemented method of claim 1, wherein the input from the user is limited to a) pausing or rereading the reading of the received email, text message or message from the messenger application; b) dismissing the received email, text message, or message from the messenger application; c) deleting the received emails; and d) calling the sender."**

190. In my opinion, *Boelter* and *Gruber* or *Boelter*, *Gruber*, and *Polak* render obvious claim 21.

191. *Gruber* discloses "[a]fter reading the first message, a brief pause is provided, so that the user can enter a command for an action (e.g., reply, delete, repeat, etc.) …." *Gruber*, ¶[0686]. *Gruber* further suggests that message playback can be paused. *Gruber*, ¶¶[0562], [0706]. And as discussed above, *Gruber* also suggests receiving an input to call a sender. *Gruber*, ¶¶[0311]-[0405]; Sections XI.C.3, XI.C.12-XI.C.13 (claims 4, 13-14). *Gruber* suggests that providing users with limited options reduces the user's cognitive load while engaged in a distracting activity. *Gruber*, ¶¶[0554], [0561], [0567], [0710].

192. In my opinion, it would have been obvious to limit the options presented to the user so that the system does not distract the user from driving. A user could replay, pause, dismiss, delete, or call back without looking at the touchscreen. *Boelter*, ¶[0032] (no free-form option). These limited options would also require less attention than drafting a responsive message, limiting distractions.

A person of ordinary skill in the art would have understood that limiting the number of options would also allow the user to be presented with fewer buttons (or portions of the touchscreen) to touch, limiting distractions that could be caused by a more complicated menu structure. *Boelter*, ¶¶[0031]-[0033] (dividing touchscreen into quarters or thirds to avoid distracting driver); Fig. 3 (same). A person of ordinary skill in the art would have understood that limiting the options would increase the accuracy of the voice recognition since it would have fewer options to distinguish between.

193. A person of ordinary skill in the art would have had motivation to combine the asserted references, as well as a reasonable expectation of success. *See* Section XI.A.

**21. Claim 22: "The computer implemented method of claim 1, wherein the method is carried out on a device selected from the group consisting of: a smart phone, a mobile phone, a phablet, a tablet, a wearable device, a watch, and a vehicle operating device."**

194. In my opinion, *Boelter* and *Gruber* or *Boelter*, *Gruber*, and *Polak* render obvious claim 22 because *Boelter* discloses that its notification method may be "installed [i.e., carried out] in a vehicle" or integrated "in a mobile communication device such as a smartphone." *Boelter*, ¶[0024]; *see* Sections XI.B, XI.C.17, XI.C.19 (claims 1, 18, 20); *see also Boelter*, ¶¶[0009]-[0010], [0018].

### D. Independent Claim 23

#### 1. 23[pre]: "A mobile phone, comprising: one or more processors; a memory, a touch screen, and one or more programs, wherein the one or more programs are stored in the memory and configured to be executed by the one or more processors, the one or more programs including instructions for steps comprising:"

195. In my opinion, *Boelter* discloses or renders obvious 23[pre]. As discussed above in 1[pre], *Boelter* teaches a computer-implemented method carried out on a control unit (i.e., processor), a memory, and a touchscreen. *Boelter*, ¶¶[0018], [0024], [0028]; *see* Section XI.B.1 (1[pre]).

196. *Boelter*'s method is a program stored in memory executed on a mobile phone. *Boelter* provides that its "method can be implemented in software or firmware to run in a messaging control unit of a vehicle. The program can also be stored on a computer-readable medium for execution by a control device of a vehicle." *Boelter*, ¶[0018]. *Boelter* further discloses that its method "could be implemented … in a mobile communication device such as a smartphone." *Boelter*, ¶[0024]. A person of ordinary skill in the art would have found it obvious to implement *Boelter*'s method on a smartphone having the same components (i.e., processor, memory with program, and touchscreen) and would have had a reasonable expectation of success in doing so because *Boelter* suggests that a smartphone is a suitable option for its method.

197. *Boelter* and *Gruber* (Ground 1A) or *Boelter*, *Gruber*, and *Polak* (Ground 1B) render obvious the program including instructions for the following steps.

**2. 23[a]: "determining without any input by a user that two or more different types of messages selected from the group consisting of a text message, an email, and a message from the messenger application have been received;"**

198. In my opinion, *Boelter* discloses 23[a] for the same reasons discussed above in 1[a]. *See* Section XI.B.2 (1[a]).

**3. 23[b]: "analyzing without any input by the user a content of the received text message, message from the messenger application, or email;"**

199. In my opinion, *Boelter* discloses 23[b] for the same reasons discussed above in 1[b]. *See* Section XI.B.3 (1[b]).

**4. 23[c]: "placing the received email, message from the messenger application, or text message in a single queue to be read aloud in order of receipt time regardless of message type, wherein emails, messages from the messenger application, and text messages are read aloud one after another regardless of whether a next message in the queue is a new text message, a new message from the messenger application, or a new email;"**

200. In my opinion, *Boelter* and *Gruber* render obvious 23[c] for the same reasons discussed above in 1[c]. *See* Section XI.B.4 (1[c]).

**5. 23[d]: "informing the user without any input by the user that the received text message, email, or message from the messenger application has been received from a sender by reading aloud at least an identity of the sender;"**

201. In my opinion, *Boelter* and *Gruber* (Ground 1A) or *Boelter*, *Gruber*, and *Polak* (Ground 1B) render obvious 23[d] for the same reasons discussed above in 1[d]. *See* Section XI.B.5 (1[d]).

**6. 23[e]: "allowing the user a time to take an affirmative action to stop reading a body of the received text message, message from the messenger application, or email aloud to the user, wherein the affirmative action is limited to a gesture performed on the touch screen; and"**

202. In my opinion, *Boelter* and *Gruber* render obvious 23[e] for the same reasons discussed above in 1[e]. *See* Section XI.B.6 (1[e]).

**7. 23[f]: "based on not receiving an input corresponding to the affirmative action from the user, reading aloud the body of the received text message, message from the messenger application or email, and for the received email, further reading aloud a subject of the received email."**

203. In my opinion, *Boelter* and *Gruber* render obvious 23[f] for the same reasons discussed above in 1[f]. *See* Section XI.B.7 (1[f]). *Boelter* and *Gruber* further render obvious 23[f]'s additional language ("and for the received email, further reading aloud a subject of the received email") because *Gruber* discloses reading aloud the subject of an email. *Gruber*, ¶¶[0682]-[0688]; *see* Sections XI.B.7, XI.C.16 (1[f], claim 17).

204. *Gruber*'s assistant provides email subjects as part of reading emails aloud. *Gruber*, ¶¶[0686]-[0688]. *Boelter*'s "summarized notification page" includes sender name, message type, and time/date, but allows the user to "view" the full message. *Boelter*, ¶[0036], Fig. 4. A person of ordinary skill in the art would have included email subjects as part of the initial notification (informing the user of the message's arrival), as part of the message body, or both because *Gruber* teaches that "[t]he domain-specific speakable text templates arrange the different data fields of a domain-specific item type in a suitable order…." *Gruber*, ¶[0559].

205. In my opinion, *Gruber* would have motivated a person of ordinary skill in the art to read an email's subject with the message body because it provides context for the message. In one example, *Gruber*'s assistant announces: "First message, From Harry Saddler, 3 days ago. With the subject: Short meeting today 3 pm." *Gruber*, ¶[0685]. After the pause, the unbounded content of the message is read: "'Harry wrote: Next meeting to scope a project X—is Monday October 17, 2 pm. I can't find a room, so let's meet in the IL2/4th elevator lobby, and go from there.'" *Gruber*, ¶[0685]. In this example, a person of ordinary skill in the art would have found reading the subject with the body beneficial because it clarifies the message and provides context as to when the meeting in the lobby will take place—3pm today. A person of ordinary skill in the art would have found this

beneficial when applied to *Boelter*, because it provides the user with additional information while they are engaged in a distracting activity, such as driving. Further, reading aloud the sender identity during the informing (step 23[c]) without the subject would enable the user to skip messages without divulging additional information about the message. A person of ordinary skill in the art would have had a reasonable expectation of success in the combination because *Gruber* already reads the subject aloud as part of its message flow. *Gruber*, ¶¶[0685]-[0688]. Reading the subject after the pause instead of before it would have involved similar programming that was within the skill of the ordinary artisan.

206. In my opinion, it would also have been obvious to a person of ordinary skill in the art to read the email subject twice—once when the user is deciding whether to stop reading of the message (claim 17) and again with the message body (as in claim 23[f]). Although repeating the subject adds redundancy, an ordinary artisan would have understood the context to be helpful because it would improve the user's ability to keep track of information while engaged in distracting activities. *Gruber*, ¶¶[0567], [0559]. *Gruber* suggests reading other message information—including sender name—multiple times to provide context and is configured to "arrange the different data fields of a domain-specific item type in a suitable order, and connecting the data fields with suitable connection

words, and apply suitable variations (e.g., variations based on grammatical, cognitive, and other requirements).” *Gruber*, ¶¶[0559], [0685]. Indeed, an ordinary artisan would have found reading the subject with the body a “suitable variation” of the message reading because it caters to the user’s cognitive requirements. An ordinary artisan would have had a reasonable expectation of success in the combination because *Gruber* already repeats the sender’s name in the initial notification and with the body. *Gruber*, ¶¶[0685]-[0688]. Repeating the subject would have involved similar programming.

207. In my opinion, a person of ordinary skill in the art would further have been motivated to program the system to read *Boelter*’s messages aloud as disclosed by *Gruber* because this audible output would have reduced the user’s need to read from the touchscreen. This would further *Boelter*’s goal of providing a “convenient human machine interface which causes minimum distraction to the driver’s attention” by limiting the display of distracting text while driving. *Boelter*, ¶¶ [0015], [0034]. In my opinion, a person of ordinary skill in the art would have had a reasonable expectation of success in the combination because read-aloud features were already implemented in the safe messaging technology. *See Polak*, ¶[0030]; EX1008 (*Polak’s Provisional*), ¶[0027]. Indeed, such a combination would have been no more than a simple application of one known technique—

*Gruber*'s audible notifications—to a similar system—*Boelter*'s notification system—to yield predictable results. Additional motivations to combine and reasonable expectations of success appear in Sections XI.A and XI.C.16.

### E. Independent Claim 24

#### 1. 24[pre]: "A system for delivering one or more of a text message and an email and a message from the messenger application to a user engaged in an activity, the system comprising a processor, a memory, and a touch screen, the system configured to deliver the text message, the message from the messenger application, and the email to the user by:"

208. In my opinion, *Boelter* discloses or renders obvious 24[pre] for the reasons discussed above in 1[pre], claims 5-8, and 23[pre]. *See* Sections XI.B.1, XI.C.4-XI.C.7, XI.D.1; *see also Boelter*, ¶[0029] (using the term "delivery embodiments" to describe its invention).

#### 2. 24[a]: "running an application configured to deliver one or more of a text message, an email, or a message from the messenger application to a user while the user is engaged in an activity;"

209. In my opinion, *Boelter* discloses or renders obvious 24[a] for the reasons discussed above in 23[pre] and claim 3. *See* Sections XI.D.1, XI.C.2 (23[pre], claim 3). *Boelter* discloses that its user is engaged in driving, which is an activity. *Boelter*, ¶[0036].

**3. 24[b]: "determining without any input by the user that two or more different types of messages selected from the group consisting the text message, the email, and the message from the messenger application have been received;"**

210. In my opinion, *Boelter* discloses 24[b] for the reasons discussed above in 1[a]. *See* Section XI.B.2 (1[a]).

**4. 24[c]: "placing the received email, message from the messenger application, or text message in a single queue to be read aloud in order of receipt time regardless of message type, wherein emails, messages from the messenger application, and text messages are read aloud one after another regardless of whether a next message in the queue is a new text message, a new message from the messenger application, or a new email;"**

211. In my opinion, *Boelter* and *Gruber* render obvious 24[c] for the reasons discussed above in 1[c]. *See* Section XI.B.4 (1[c]).

212. Claim 1 and claim 24 both recite analyzing content of a message (1[b]/24[d]) and placing the message in a queue (1[c]/24[c]) but list these claim limitations in a different order. A person of ordinary skill in the art would understand that analyzing a message content (identifying a sender name) could be done either before or after placing the message in a queue. *Boelter* does not limit these steps to a particular order. And swapping the order of the analyzing and queueing steps does not change how the queue is formed, how the user is informed of message, or how a user interacts with a message.

**5. 24[d]: "analyzing without any input by the user a content of the received text message, message from the messenger application, or email;"**

213. In my opinion, *Boelter* discloses 24[d] for the reasons discussed above in 1[b] and 24[c]. *See* Sections XI.B.3, XI.E.4 (1[b], 24[c]).

**6. 24[e]: "informing the user without any input by the user that the received text message, message from the messenger application, or email has been received from a sender by reading aloud at least an identity of the sender;"**

214. In my opinion, *Boelter* and *Gruber* (Ground 1A) or *Boelter*, *Gruber*, and *Polak* (Ground 1B) render obvious 24[e] for the reasons discussed above in 1[d]. *See* Section XI.B.5 (1[d]).

**7. 24[f]: "allowing the user a time to take an affirmative action to stop reading a body of the received text message, message from the messenger application, or email aloud to the user, wherein the affirmative action is limited to a gesture performed on the touch screen; and"**

215. In my opinion, *Boelter* and *Gruber* render obvious 24[f] for the reasons discussed above in 1[e]. *See* Section XI.B.6 (1[e]).

**8. 24[g]: "based on not receiving an input corresponding to the affirmative action from the user, reading aloud the body of the received text message, message from the messenger application, or email, and for the received email, further reading aloud a subject of the received email."**

216. In my opinion, *Boelter* and *Gruber* (Ground 1A) or *Boelter*, *Gruber*, and *Polak* (Ground 1B) render obvious 24[g] for the reasons discussed above in 1[f] and 23[f]. *See* Sections XI.B.7, XI.D.7 (1[f], 23[f]).

## XII. CONCLUSION

217. For the reasons set forth above, it is my opinion that one skilled in the art would have found claims 1-24 of the '725 patent obvious.

218. In signing this declaration, I understand that the declaration will be filed as evidence in a contested case before the Patent Trial and Appeal Board of the United States Patent and Trademark Office. I acknowledge that I may be subject to cross-examination in this case and that cross-examination will take place within the United States. If cross-examination is required of me, I will appear for cross-examination within the United States during the time allotted for cross-examination.

219. I declare that all statements made herein of my knowledge are true, and that all statements made on information and belief are believed to be true, and that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code.

Date: August 29, 2025

Respectfully submitted,

Dr. Benjamin B. Bederson